Cleanup Action Report

Rufus 2.0
Block 19
Denny Triangle Neighborhood
Seattle, Washington

for

Acorn Development LLC

June 10, 2015

GeoEngineers
Earth Science + Technology

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Plaza 600 Building
600 Stewart Street, Suite 1700
Seattle, Washington 98101
206.728.2674

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Denny Triangle Neighborhood
Seattle, Washington

File No. 20434-001-25

June 10, 2015

Prepared for:

Acorn Development LLC
c/o Seneca Group
1191 Second Avenue, Suite 1500
Seattle, Washington 98101

Attention: John Schoettler

Prepared by:

GeoEngineers, Inc.
Plaza 600 Building
600 Stewart Street, Suite 1700
Seattle, Washington 98101
206.728.2674

Jessica Smith, LG
Project Manager

David A. Cook, LG, CPG
Principal

JAS:DAC:lw

cc: Washington State Department of Ecology, Northwest Regional Office

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EXECUTIVE SUMMARY

This report summarizes a Cleanup Action completed at the Block 19 project site located in the Denny Triangle Neighborhood in downtown Seattle, Washington. Block 19 is bounded by 7th Avenue to the north, Lenora Street to the east, 6th Avenue to the south and Blanchard Street to the west. Remedial excavations were conducted concurrent with property redevelopment of a large 38-story office tower with seven levels of underground parking. Petroleum hydrocarbons and PAHs detected at concentrations greater than the Washington State Model Toxics Control Act (MTCA) cleanup levels were removed during construction excavation from six localized areas. The remedial excavations were conducted between April and September 2014. The sources of the petroleum hydrocarbon contamination included a former residential heating oil underground storage tank (UST), an oil water separator and four unknown sources. The contamination at all six areas was shallow and completely removed within the bounds of the Subject Property and construction excavation. Upon discovery of the petroleum contaminated soil during building construction, remedial excavations were conducted to remove the contaminated soil from the Subject Property for transport and permitted treatment and disposal at CEMEX' facility in Everett, Washington and Waste Management's (WM) transfer station in Seattle, Washington for rail haul to the WM subtitle D landfill in Arlington, Oregon. The total tonnage of contaminated soil transported to CEMEX and WM from Block 19 was 1,546 tons. Based on chemical analytical testing from the six areas, contaminants of concern either were not detected or were detected at concentrations less than the MTCA cleanup levels in the soil at the final limits of the remedial excavations.

This Executive Summary should be used only in the context of the full report for which it is intended.

1.0 INTRODUCTION

This report summarizes a Cleanup Action of petroleum hydrocarbon and polycyclic aromatic hydrocarbon (PAH)-contaminated soil at the Block 19 redevelopment project in the Denny Triangle Neighborhood in downtown Seattle, Washington. Block 19 is bounded by 7th Avenue to the north, Lenora Street to the east, 6th Avenue to the south and Blanchard Street to the west. Diesel- and heavy oil-range petroleum hydrocarbon contaminated soil was encountered at five localized areas on Block 19. Additionally, PAH-contaminated soil was encountered in one isolated location on Block 19.

At the time of this report, Block 19 is being redeveloped. The former buildings on the Subject Property were demolished in early 2014 and the Subject Property is being redeveloped with an approximately 38-story office building with seven levels of underground parking. The approximate location of Block 19 relative to surrounding physical features is shown on the Vicinity Map, Figure 1. The locations of the remedial excavations conducted on Block 19 are shown on Figure 2.

Several environmental studies have been completed at Block 19 since 2012 and are summarized in the reports listed in Section 6.0, References. Based on the results of the Phase I and II ESAs, a handling plan for soil and groundwater management (aka a Construction Contingency Plan, GeoEngineers, 2014a) was developed by GeoEngineers to provide guidance to Acorn Development LLC (Acorn) and their contractors regarding recognition, characterization, handling and disposal of potentially contaminated soil and groundwater encountered during construction excavation and shoring activities associated with the property redevelopment.

1.1. Statement of Objective

The objective of this document is to summarize the Independent MTCA Cleanup Action of soil impacted with petroleum hydrocarbons and polycyclcic aromatic hydrocarbons (PAHs) exceeding MTCA cleanup levels at six locations (referred to as Areas A through F), including one former unregulated residential heating oil UST (Area C), at Block 19.

2.0 BACKGROUND AND SITE DEFINITION

2.1. Historic Operations and Property Uses

Based on the results of our Phase I Environmental Site Assessment (GeoEngineers, 2012a), Block 19 was developed with approximately 18 residential buildings in 1905. These buildings were demolished by the early 1930s. The west half of the block appears vacant in a 1936 aerial photograph. Historical documents suggest auto sales and repair businesses and the possible past presence of a fuel station at the site during this time period. From the 1940s to the 1970s, residential and office buildings were constructed and demolished. Prior to the 2014 building demolition and property redevelopment, Block 19 was most recently occupied by office space, a theater and surface parking lots.

2.2. Phase II ESA Summary and Subsurface Conditions

2.2.1. Soil Conditions

GeoEngineers conducted a Phase II ESA at Block 19 in 2012 (GeoEngineers, 2012b). Soil encountered at Block 19 consists of:

- relatively shallow fill (loose to dense silty sand and silt with variable gravel and cobble content and occasional brick, charcoal or wood debris) overlying,
- recent deposits (stiff to very stiff silt and clay with occasional sand interbeds and variable gravel content or medium dense to dense sand with variable silt and gravel content), and
- competent glacially consolidated soils (cohesive silt and clay, cohesionless sand and gravel, and till-like deposits).

The thickness of fill encountered in the explorations completed at Block 19 ranged up to approximately 22 feet, with the fill increasing from about 1 to 4 feet along the boundary with 6th Avenue to about 11 to 22 feet along the boundary with 7th Avenue.

As reported in our Phase II ESA (GeoEngineers, 2012b), contaminants of concern (PAHs, VOCs and petroleum hydrocarbons) were not detected and metals were detected at concentrations similar to the state background metals concentrations in each of the soil samples submitted for chemical analysis from fill and native soil samples. The approximate locations of 2012 borings are shown on Figure 2. However, as will be discussed in this report, undocumented petroleum hydrocarbon- and PAH-contaminated soil was discovered during construction excavation at six localized areas.

2.2.2. Groundwater Conditions

Groundwater is present beneath the Subject Property at approximately 80 to 90 feet below the ground surface at Block 19. Two deep monitoring wells (MW19-2 and MW19-3) were completed to an approximate depth of 100 feet below the ground surface. Groundwater measurements in the two deep wells indicate the regional water table ranges in depth between 80 and 90 feet below ground surface. Perched groundwater was not observed on Block 19.

2.2.3. Vapor Conditions

Vapor conditions were not evaluated at the Subject Property because no contaminants of concern were identified on Block 19 during the Phase II ESA. The historic site use (use as residences, a theater, offices and a parking lot) did not warrant soil vapor sampling or testing. Additionally, the six undocumented soil contamination locations that were discovered during construction excavation (heavier hydrocarbons and PAHs) have limited, if any, volatility. Finally, the selected remedy (remedial excavation) resulted in the removal of source material that could result in vapor generation.

2.3. Contaminants of Concern

Based on the chemical analytical results of a characterization soil samples obtained prior to the start of remedial excavation activities, the potential contaminants of concern are summarized on the table below, based on Table 830-1 in WAC 173-340.

Area of Remedial Excavation (See Figure 2)	Potential Source	Contaminants of Concern
A	Unknown	Diesel and Heavy Oil - Range Petroleum Hydrocarbons
B	Unknown	Diesel and Heavy Oil - Range Petroleum Hydrocarbons
C	Residential Heating Oil Underground Storage Tank	Diesel and Heavy Oil - Range Petroleum Hydrocarbons
D	Unknown	Diesel and Heavy Oil - Range Petroleum Hydrocarbons, cPAHs
E	Unknown	Diesel and Heavy Oil - Range Petroleum Hydrocarbons
F	Oil – Water Separator	Diesel and Heavy Oil - Range Petroleum Hydrocarbons

Soil samples obtained from the limits of the six remedial excavations (A – F) were submitted for chemical analysis of each of the potential contaminants of concern listed above.

2.4. Establishment of Cleanup Levels and Terrestrial Ecological Evaluation

GeoEngineers completed a Terrestrial Ecological Evaluation (TEE) for the Site in accordance with MTCA. The site qualifies for an exclusion from the TEE because there is "less than 1.5 acres of contiguous undeveloped land on the site or within 500 feet of the site" (WAC 173-340-7491(c)(i)). No further evaluation relative to the TEE is necessary. MTCA Method A cleanup levels were used for the remedial excavations completed at the site.

2.5. Review of Feasible Cleanup Alternatives and Selection of Preferred Remedy

The objectives of the cleanup action to be completed at the Subject Property are to: (1) prevent direct human contact with soil containing contaminant concentrations greater than the MTCA Method A cleanup levels for unrestricted land use, and (2) prevent leaching of contaminants from soil to groundwater. Other pathways such as groundwater to surface water, and soil vapor intrusion to indoor air are not considered complete exposure pathways for the Subject Property based on site conditions, absence of contaminant impacts to groundwater, contaminant type and current and future land use. Excavation and off-site disposal were selected as the cleanup remedy for the following reasons:

- The selected alternative meets the "minimum requirements for cleanup actions" (WAC 173-340-360(2)). Specifically, the alternative: (1) could be completed within a relatively short period of time, (2) meets threshold requirements described by MTCA (e.g. protects human health and the environment, complies with the cleanup standards, complies with state and federal laws and provides for compliance monitoring), (3) is expected to be more effective than other available methods in achieving concentrations that are protective of human health and the environment, (4) is permanent, and (5) considers public concerns.
- Excavation and transport off site of contaminated soil was considered to be the most permanent and cost effective cleanup option for this Site.
- Excavation of and transport off site of contaminated soil was necessary for property redevelopment.

The soil cleanup action was conducted by Sellen Construction and their earthwork contractor Hos Brothers from April to September 2014. The remaining sections of this report below describe GeoEngineers' scope, remedial excavation activities, cleanup confirmation soil sampling, and off-site permitted disposal of contaminated soil.

3.0 PURPOSE AND SCOPE

The purpose of our services was to document the removal of the petroleum and PAH-contaminated soil impacted by known and unknown sources on Block 19 in general accordance with the Model Toxics Control Act (MTCA). Our scope of services included the following activities:

3.1. Preparation for Field Activities

- GeoEngineers prepared a Construction Contingency Plan dated March 4, 2014 to prepare the contractor to handle and dispose of contaminated soil discovered at the site. A preconstruction meeting was completed to establish a communication protocol should potentially contaminated soil be discovered by the earthwork contractor (remember that no contaminated soil was identified on this site based on the Phase II ESA study). A procedure was established where GeoEngineers was notified, excavation halted in the area of suspect soil and then GeoEngineers visited the site to oversee field screening, soil sampling and appropriate handling of contaminated soil as outlined in Section 3.2.

3.2. Field Activities: Soil Removal and Subcontracted Chemical Analysis

- GeoEngineers oversaw and observed soil excavation and segregation of contaminated soils.
- GeoEngineers obtained soil samples from the limits of the remedial excavations and field screened soil from the excavation for evidence of petroleum hydrocarbons using visual and water sheen screening methods.
- GeoEngineers submitted selected soil samples obtained from the limits of the remedial excavation to an Ecology-accredited laboratory, Fremont Analytical in Seattle, Washington, for chemical analytical testing of contaminants of concern.

3.3. Reporting and Technical Support

- GeoEngineers evaluated field and laboratory data relative to the Washington State Model Toxics Control Act (MTCA) Method A cleanup levels.

4.0 REMEDIAL EXCAVATION ACTIVITIES

During excavation for property redevelopment, soil with physical indications of petroleum contamination (odor, sheen, staining) was discovered in six localized areas (A – F) on Block 19. Additionally, an underground storage tank (UST) was encountered in one of the six areas (Area C). GeoEngineers observed the remedial excavation of the contaminated soil in each of the six areas and obtained characterization and confirmation soil samples. GeoEngineers also observed and documented the removal of the UST encountered in Area C. The remedial excavation of soil from Areas A, B, D, E and F is described in Section 4.1. The UST removal activities and remedial excavation of soil in Area C is described in Section 4.2.

4.1. Areas A, B, D, E and F

4.1.1. General

Five remedial excavations were conducted by Hos Brothers Construction (Hos) at Block 19 to remove petroleum-contaminated soil encountered in Areas A, B, D, E and F during mass excavation of soil for property redevelopment. Hos removed a total of 550 tons (according to weight tickets provided by CEMEX and Waste Management) of petroleum-contaminated soil from Areas A, B, D, E and F concurrent with property redevelopment activities. GeoEngineers performed field screening (visual, headspace and/or water sheen) to evaluate the potential lateral and vertical extent of petroleum-impacted soil in the release areas. Soil samples were obtained throughout remedial excavation activities for field screening using visual, water sheen, and headspace vapor screening methods. Field screening methods are described in Appendix A. Soil samples were obtained for chemical analysis prior to remedial excavation activities to characterize the contaminated soil encountered and following remedial excavation activities to confirm the final vertical and lateral limits of the contaminated soil. The approximate final limits of the remedial excavations to remove contaminated soil from Areas A, B, D, E and F are shown on Figures 3, 4, 6, 7 and 8.

4.1.2. Areas A, B, D, E and F Characterization Soil Sampling

A total of six discrete and/or composite soil samples were obtained from suspect soil that had evidence of contamination based on field screening at each of the areas: A, B, D, E and F (at Area C, a UST was discovered and it is described separately below). The characterization samples were obtained prior to the initiation of remedial excavation activities at areas A, B, D, E and F in order to understand the chemical type and then to characterize soil for off-site permitted disposal. Each of the soil samples were submitted for chemical analysis of gasoline- and/or diesel-range petroleum hydrocarbons using Northwest Methods NWTPH-Gx, NWTPH-HCID or NWTPH-Dx. Additionally, two soil samples obtained from Area D were submitted for chemical analysis of polycyclic aromatic hydrocarbons (PAHs) using EPA Method 8270D/SIM.

Diesel- and/or heavy oil-range petroleum hydrocarbons were detected in each of the nine characterization soil samples submitted for chemical analysis during the excavation. Additionally, carcinogenic PAHs (cPAHs) were detected at a concentration greater than the MTCA Method A cleanup level in one of the two characterization soil samples obtained from Area D. Soil represented by each of the characterization samples were subsequently excavated and removed from the site for permitted disposal. Confirmation soil samples were obtained at the limits of the remedial excavations, as described in Section 4.1.3.

4.1.3. Areas A, B, D, E and F Confirmation Soil Sampling

A total of 23 discrete and composite soil samples were obtained after the remedial excavations of the contaminated soil encountered from the five areas: A, B, D, E and F. The approximate locations of the cleanup confirmation soil samples are shown in Figures 3, 4, 6, 7 and 8. Soil samples obtained from the limits of the remedial excavations were field screened for evidence of petroleum hydrocarbon and/or volatile contamination using visual, water sheen and headspace vapor screening. Field screening evidence of petroleum hydrocarbon contamination was not observed in any of the confirmation soil samples obtained. Field screening methods are described in Appendix B. Each of the samples were submitted to Fremont Analytical for chemical analysis of one or more of the following:

- Diesel- and heavy oil-range petroleum hydrocarbons by Northwest Method NWTPH-Dx;
- Gasoline-range petroleum hydrocarbons by Northwest Method NWTPH-Gx; and,
- Polycyclic aromatic hydrocarbons (PAHs, including naphthalenes) by EPA Method 8270D/SIM.

Contaminants of concern were not detected in the confirmation soil samples obtained at the final limits of the six remedial excavations that were completed to remove the contaminated soil represented by characterization soil samples, with one exception. Diesel-range petroleum hydrocarbons were detected at a concentration of 59.7 milligrams per kilogram (mg/kg) in one confirmation soil sample obtained from Area C. This detected concentration is significantly less than the cleanup level of 2,000 mg/kg. Chemical analytical results are summarized in Table 1. The laboratory reports and our review of the laboratory quality control data are presented in Appendix B.

4.2. UST Removal, Area C

4.2.1. General

On April 15, 2014, a residential heating oil UST was encountered on Block 19 during mass excavation for property redevelopment. The presence of the UST was unknown and was damaged by an excavator during construction excavation activities, which caused it to leak approximately 100-gallons of residual petroleum and water into soil immediately adjacent to the UST. The approximate location of the UST is shown on Figure 2. Prior to the removal of the UST, a "30-Day Notice" was submitted to the Washington State Department of Ecology (Ecology) to notify them of the removal of the UST. Following the removal of the UST, Ecology's Site Check/Site Assessment Checklist was completed by GeoEngineers for the site in general accordance with Ecology's "Guidance for Site Checks and Site Assessments for Underground Storage Tanks." The 30-Day Notice and the Site Check/Site Assessment Checklist are presented in Appendix C.

The UST removal activities described below were conducted on April 22, 2014. The UST was removed by an accredited UST decommissioning contractor, Filco. The UST was inspected and certified safe for removal by a marine chemist with Sound Testing, Inc. of Seattle, Washington. A Washington State Site Assessment certified representative of GeoEngineers (Dean Chahim, ICC ID Number 8218427) was present to observe UST removal operations and document its condition. During the UST removal activities, our representative also visually observed the soils encountered and performed field screening of soil samples obtained from the limits of the excavation. Selected samples from the excavation were submitted for chemical analytical testing.

4.2.2. UST Removal Observations

The UST was constructed of single-walled steel and estimated to be approximately 1,000 - gallons in size and formerly contained heating oil. The top of the UST was buried approximately 4 feet below the ground surface. The UST was rusted with small holes observed on the exterior of the tank at the time of removal.

Following the removal of the UST, Hos removed approximately 623 cubic yards (996 tons) of petroleum contaminated soil in the vicinity of the UST. Soil was removed and temporarily stockpiled on site pending chemical analytical results, remedial excavation and transport off-site for permitted disposal. During the excavation of the UST, the foundation of a concrete basement was encountered. This basement is likely the foundation of the former apartment building for which the heating oil UST fueled, indicating that the UST is not regulated, as per Washington Administrative Code (WAC) 173-360-110(2)(h).

4.2.3. UST Removal Characterization Soil Sampling

Three discrete soil samples (PCS-4, SP-1 and SP-2) were obtained from contaminated soil adjacent to the UST to understand the hydrocarbon type and to characterize the soil for off-site disposal. Sample PCS-4 was a discrete soil sample obtained from soil with physical indications of petroleum contamination located

immediately beneath the leaking UST and samples SP-1 and SP-2 were discrete soil samples obtained from a stockpile generated during the removal of the UST. Sample PCS-4 was submitted for chemical analysis of petroleum hydrocarbon identification using Northwest Method NWTPH-HCID. Samples SP-1 and SP-2 were submitted for chemical analysis of diesel- and heavy oil-range petroleum hydrocarbons using Northwest Method NWTPH-Dx.

Diesel- and heavy oil-range petroleum hydrocarbons (consistent with heating oil) were detected at concentrations greater than the MTCA Method A cleanup level in sample PCS-4. Diesel-range petroleum hydrocarbons were detected at concentrations greater than the MTCA Method A cleanup in SP-2. Contaminants of concern were not detected in sample SP-1. Soil represented by each of the characterization stockpile samples was subsequently excavated and transported off-site for permitted disposal. Confirmation soil samples were obtained at the limits of the remedial excavation, as described in Section 4.2.4.

4.2.4. UST Removal Confirmation Soil Sampling

Eight discrete confirmation soil samples (UST-1-1-25.0 through UST-1-10-10.0) were obtained at depths ranging between approximately 7 and 13 feet below the ground surface from soil encountered at the limits of the excavation to remove the UST. Two of the soil samples (UST-1-4-12.0 and UST-1-6-13.0) were base samples obtained from immediately below the UST at each end of the UST. The remaining soil samples were sidewall samples obtained from the excavation. Confirmation soil sample UST-1-1-25.0 is representative of soil at the south end of the excavation. Due to conditions at the site from excavation activities, and heavy rainfall, petroleum product from the UST ran down the steep excavation hillslope, where the sidewall sample was obtained at 25 feet below the ground surface. The approximate locations of the confirmation soil samples obtained at the limits of the UST excavation are shown on Figure 5.

Soil samples obtained from the limits of the UST excavation were field screened for evidence of petroleum hydrocarbon and/or volatile contamination using visual, water sheen and headspace vapor screening. Field screening evidence of petroleum hydrocarbon contamination was not observed in each of the soil samples obtained from the UST removal excavation limits. Field screening methods are described in Appendix B. Each of the samples was submitted to Fremont Analytical in Seattle, Washington for chemical analysis of diesel- and heavy oil-range petroleum hydrocarbons using Northwest Method NWTPH-Dx (in accordance with WAC 173-340-900 Table 830-1, Footnotes (13)(14)(15) for residential heating oil).

Diesel and heavy oil-range petroleum hydrocarbons were either not detected or were detected at concentrations less than the MTCA Method A cleanup levels in each of the confirmation soil samples. The chemical analytical results for soil samples obtained at the limits of the UST removal are summarized in Table 1. Laboratory reports and our review of the laboratory quality control data are presented in Appendix B.

4.3. Groundwater

Groundwater was not observed during the remedial excavations completed at Block 19.

4.4. Contaminated Soil Disposal

Contaminated soil removed from the six remedial excavation areas was transported to Waste Management's transfer station in Seattle, Washington for permitted disposal at their Subtitle D landfill located in Arlington, Oregon or CEMEX for permitted disposal at their treatment and disposal facility in Everett, Washington. Approximately 1,546 tons (according to weight summaries provided by the disposal facilities) of petroleum contaminated soil was removed from the site during remedial excavations performed by Hos. Contaminated soil tonnage summaries provided by the disposal facilities are included in Appendix D.

5.0 CONCLUSIONS

5.1. Soil

Soil with diesel and heavy oil-range petroleum hydrocarbons or cPAHs at concentrations greater than MTCA Method A cleanup levels was encountered during construction activities at Block 19. Five remedial excavations were conducted from five localized areas (Areas A, B, D, E and F) to remove contaminated soil encountered during the redevelopment construction activities from April to September, 2014. In a sixth area (Area C), one residential heating oil underground storage tank was discovered and removed in April 2014. The UST was damaged during its discovery, releasing diesel and heavy oil-range petroleum hydrocarbons to the soil around the UST. Contaminants of concern were detected at concentrations greater than the MTCA Method A cleanup level in soil samples obtained near the UST, confirming that a remedial action was necessary. A remedial excavation to remove contaminated soil was conducted immediately following the UST removal.

Based on the chemical analytical results of the soil samples obtained at the final limits of the six remedial excavations, soil with concentrations greater than the MTCA Method A cleanup levels was successfully removed from the Subject Property. Additionally, our site observations, characterization soil samples and confirmation soil samples confirmed that the contaminated soil encountered did not extend off of the Subject Property into the ROWs. Based on the weight tickets provided by Waste Management and CEMEX, the total quantity of soil removed Block 19 for permitted disposal was 1,546 tons. The remedial actions completed resulted in site conditions that are protective of human health and the environment.

5.2. Groundwater

Regional groundwater is present at approximately 80 to 90 feet below the ground surface beneath Block 19. In our opinion, groundwater is not impacted by the releases at Areas A through F based on the following:

1. The contaminated soil extended to a maximum depth of approximately 13 feet below the ground surface and the regional groundwater aquifer is present at a depth of approximately 80-90 feet below the ground surface. Additionally, the regional groundwater aquifer does not fluctuate significantly with seasons based on GeoEngineers study of the groundwater aquifer in the Denny Triangle and South Lake Union neighborhoods of downtown Seattle. Based on this, the soil to groundwater pathway for contaminant migration is incomplete;
2. The potential source of contaminated groundwater (contaminated soil) was successfully excavated and removed from the site; and,

3. Petroleum hydrocarbons and PAHs were not detected in groundwater samples obtained from the deep regional aquifer at the adjacent blocks (Blocks 14 and 20) during the Phase II ESA activities.

Based on the rationale above, groundwater was not likely impacted at Block 19. Confirmation groundwater sampling is not necessary to document the successful cleanup action of the contaminated soil.

5.3. Vapor

Vapor conditions were not evaluated at the Subject Property because no contaminants of concern were identified on Block 19 during the Phase II ESA. The historic site use (use as residences, a theater, offices and a parking lot) did not warrant soil vapor sampling or testing. Additionally, the six undocumented soil contamination locations that were discovered during construction excavation (heavier hydrocarbons and PAHs) have limited, if any, volatility. Finally, the selected remedy (remedial excavation) resulted in the removal of source material that could result in vapor generation. As a result vapor conditions were not evaluated following completion of the remedial excavation. Therefore, these conditions are protective of human health and the environment.

6.0 REFERENCES

GeoEngineers, 2012a. Phase I Environmental Site Assessment, Rufus 2.0, Denny Triangle, Blocks 14, 19, 20, 18 and 21, Seattle Washington, dated June 7, 2012.

GeoEngineers, 2012b. Phase II Environmental Site Assessment, Rufus 2.0, Rufus 2.0 Development, Blocks 14, 19, and 20, Denny Triangle, Seattle Washington 98101, dated June 7, 2012.

GeoEngineers, 2014a. Block 19 Construction Contingency Plan, Soil and Groundwater Management, Rufus 2.0 Development, Block 19, Denny Triangle, Seattle, Washington 98101, dated March 4, 2014.

7.0 LIMITATIONS

We have prepared this report for the exclusive use of Acorn Development LLC, their authorized agents and regulatory agencies. This report is not intended for use by others and the information contained herein is not applicable to other sites. No other party may rely on the product of our services unless we agree in advance, and in writing, to such reliance. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions.

Our conclusions are based on our site observations, field screening results and chemical analysis of a limited number of soil samples at the site. It is always possible that contaminants remain in areas that were not observed, sampled or tested.

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. No warranty or other conditions, express or implied, should be understood.

Any electronic form of this document (email, text, table, and/or figure), if provided, and any attachments are only a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Please refer to Appendix E, titled "Report Limitations and Guidelines for Use," for additional information pertaining to use of this report.

TABLES

GeoEngineers

Table 1

Summary of Field Screening and Chemical Analytical Data

Project Rufus 2.0

Block 19, Denny Triangle, Seattle, Washington

GeoEngineers File No. 20434-001-25

Area Description	Sample ID[1]	Sample Date	Depth (feet bgs)	Location of Sample Relative to Remedial Excavation	Field Screening[3]		Petroleum Hydrocarbons (mg/kg)			Non-Carcinogenic PAHs[6] (µg/kg)			Total cPAHs[7] (µg/kg)
					Sheen	Headspace (ppm)	Gasoline Range[4]	Diesel Range[5]	Heavy Oil Range[5]	Naphthalene	2-Methylnaphthalene	1-Methylnaphthalene	TEQ
Characterization Samples[2]													
Area B (Near Soldier Pile N44)	N-44-6.0	9/9/2014	6.0	Sidewall	NS	<1	--	<21.9	**108**	--	--	--	--
Area C (UST Removal)	PCS-4	4/15/2014	8.0	--	HS	500	<511	**20,700**	**3,320**	--	--	--	--
	SP-1	4/24/2014	--	--	NS	<1	--	<23.7	<59.3	--	--	--	--
	SP-2	4/25/2014	8.0	--	MS	108	--	**5,400**	**855**	--	--	--	--
Area D (Tremie Pipe Area)	B19-12-0.5-2	2/21/2014	0.5-2.0	--	NS	<1	<21.0	<21.0	**304**	<52.8	**103.0**	**71.8**	**131**
	TP-5-2.0	4/4/2014	2.0	--	NS	<1	--	<23.3	**183**	<60.5	<60.5	<60.5	45.7
Area E (East Wall)	PCS-2-3.0	4/9/2014	3.0	--	SS	<1	<23.4	**10,000**	<58.4	--	--	--	--
Area F (Oil Water Separator)	PCS-1-10.0	4/8/2014	10.0	--	HS	220	<27.2	**308**	**3,530**	--	--	--	--
Confirmation Samples													
Area A (Near Soldier Pile N13)	SP-1	5/9/2014	--	Composite	NS	<1	<23.9	<59.9	<120	--	--	--	--
Area B (Near Soldier Pile N44)	N-44-10.0	9/9/2014	10.0	Sidewall	NS	<1	--	<24.2	<60.6	--	--	--	--
Area C (UST Removal)	UST-1-1-25.0	4/23/2014	25.0	Sidewall	SS	<1	--	**59.7**	<60.1	--	--	--	--
	UST-1-2-8.0	4/23/2014	8.0	Sidewall	NS	<1	--	<25.2	<63.0	--	--	--	--
	UST-1-3-7.0	4/23/2014	7.0	Sidewall	NS	<1	--	<25.8	<64.5	--	--	--	--
	UST-1-4-12.0	4/23/2014	12.0	Base	NS	<1	--	<24.8	<62.0	--	--	--	--
	UST-1-6-13.0	4/28/2014	13.0	Base	NS	<1	--	<23.3	<58.1	--	--	--	--
	UST-1-7-12.0	4/28/2014	12.0	Sidewall	NS	<1	--	<242	<60.5	--	--	--	--
	UST-1-9-10.0	4/28/2014	10.0	Sidewall	NS	<1	--	<22.9	<57.3	--	--	--	--
	UST-1-10-10.0	4/28/2014	10.0	Sidewall	NS	<1	--	<23.6	<59.0	--	--	--	--

Area Description	Sample ID[1]	Sample Date	Depth (feet bgs)	Location of Sample Relative to Remedial Excavation	Field Screening[3]		Petroleum Hydrocarbons (mg/kg)			Non-Carcinogenic PAHs[6] (µg/kg)			Total cPAHs[7] (µg/kg)
					Sheen	Headspace (ppm)	Gasoline Range[4]	Diesel Range[5]	Heavy Oil Range[5]	Naphthalene	2-Methylnaphthalene	1-Methylnaphthalene	TEQ
Area D (Tremie Pipe Area)	B19-12-4.5-7.5	2/21/2014	4.5-7.5	Center	NS	<1	<24.4	<60.9	<122	<63.1	<63.1	<63.1	47.6
	TP-4-2.0	4/4/2014	2.0	Sidewall	NS	<1	–	–	–	<61.4	<61.4	<61.4	46.3
	TP-6-2.0	4/4/2014	2.0	Sidewall	NS	<1	–	–	–	<63.4	<63.4	<63.4	47.9
	TP-7-2.0	4/4/2014	2.0	Sidewall	NS	<1	–	–	–	<63.3	<63.3	<63.3	47.8
	TP-8-2.0	4/4/2014	2.0	Sidewall	NS	<1	–	<22.8	<56.9	<59.5	<59.5	<59.5	44.9
Area E (East Wall Petroleum Impacted Area)	EX-6-4.5	4/9/2014	4.5	Base	NS	<1	–	<26.5	<66.4	–	–	–	–
	EX-7-4.5	4/9/2014	4.5	Sidewall	NS	<1	–	<24.0	<60.0	–	–	–	–
	EX-8-4.5	4/9/2014	4.5	Sidewall	NS	<1	–	<26.7	<66.7	–	–	–	–
	EX-9-5.0	4/10/2014	5.0	Base	NS	<1	–	<24.7	<61.7	–	–	–	–
	EX-10-5.0	4/10/2014	5.0	Sidewall	NS	<1	–	<26.0	<65.0	–	–	–	–
	EX-11-4.5	7/17/2014	4.5	Sidewall	NS	<1	–	<22.2	**125**	–	–	–	–
	EX-12-4.5	7/17/2014	4.5	Sidewall	NS	<1	–	<24.0	<59.9	–	–	–	–
	EX-13-5.0	7/17/2014	5.0	Base	NS	<1	–	<24.3	<60.7	–	–	–	–
	EX-14-4.5	8/29/2014	4.5	Sidewall	NS	<1	–	<21.5	<53.7	–	–	–	–
	EX-15-4.5	8/29/2014	4.5	Sidewall	NS	<1	–	<21.3	<53.1	–	–	–	–
	EX-16-3.5	8/29/2014	3.5	Sidewall	NS	<1	–	<22.3	<55.7	–	–	–	–
	EX-17-Comp	8/29/2014	–	Composite	NS	<1	–	<22.1	<55.4	–	–	–	–
Area F (Oil Water Separator)	EX-1-12.0	4/8/2014	12.0	Base	NS	<1	–	<22.6	<56.6	–	–	–	–
	EX-2-10.0	4/8/2014	10.0	Sidewall	NS	<1	–	<24.4	<61.0	–	–	–	–
	EX-3-10.0	4/8/2014	10.0	Sidewall	NS	<1	–	<23.7	<59.2	–	–	–	–
	EX-4-10.0	4/8/2014	10.0	Sidewall	NS	<1	–	<23.4	<58.5	–	–	–	–
	EX-5-10.0	4/8/2014	10.0	Sidewall	NS	<1	–	<23.4	<58.5	–	–	–	–
MTCA Method A or B Cleanup Level for Unrestricted Land Use							30/100[8]	2,000	2,000	5,000			100

Notes:

[1]Soil samples were obtained between April and September, 2014. Approximate sample locations shown on the attached figures. Chemical analytical testing by Fremont Analytical in Seattle, Washington.

[2]Soil represented by each of these samples was subsequently excavated and transported to Cemex or Waste Management for permitted disposal.

[3]Field screening methods are described in Appendix A.

[4]Gasoline-range hydrocarbons analyzed by petroleum hydrocarbon identification using Northwest Method NWTPH-HCID.

[5]Diesel- and heavy oil-range hydrocarbons analyzed by Northwest Method NWTPH-Dx xtended with a silica gel cleanup.

[6]Polycyclic aromatic hydrocarbons (PAHs) analyzed by EPA Method 8270D/SIM. Only compounds with detections greater than the MTCA Method A cleanup levels are shown in the table. See the laboratory report for the full list of compounds analyzed.

these calculations. See Appendix A for the cPAH calculations.

[8]When benzene is present, the gasoline range cleanup level is 30 mg/kg. When benzene is not present the gasoline range cleanup level is 100 mg/kg.

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

NS = no sheen, SS = slight sheen, MS = moderate sheen, HS = heavy sheen

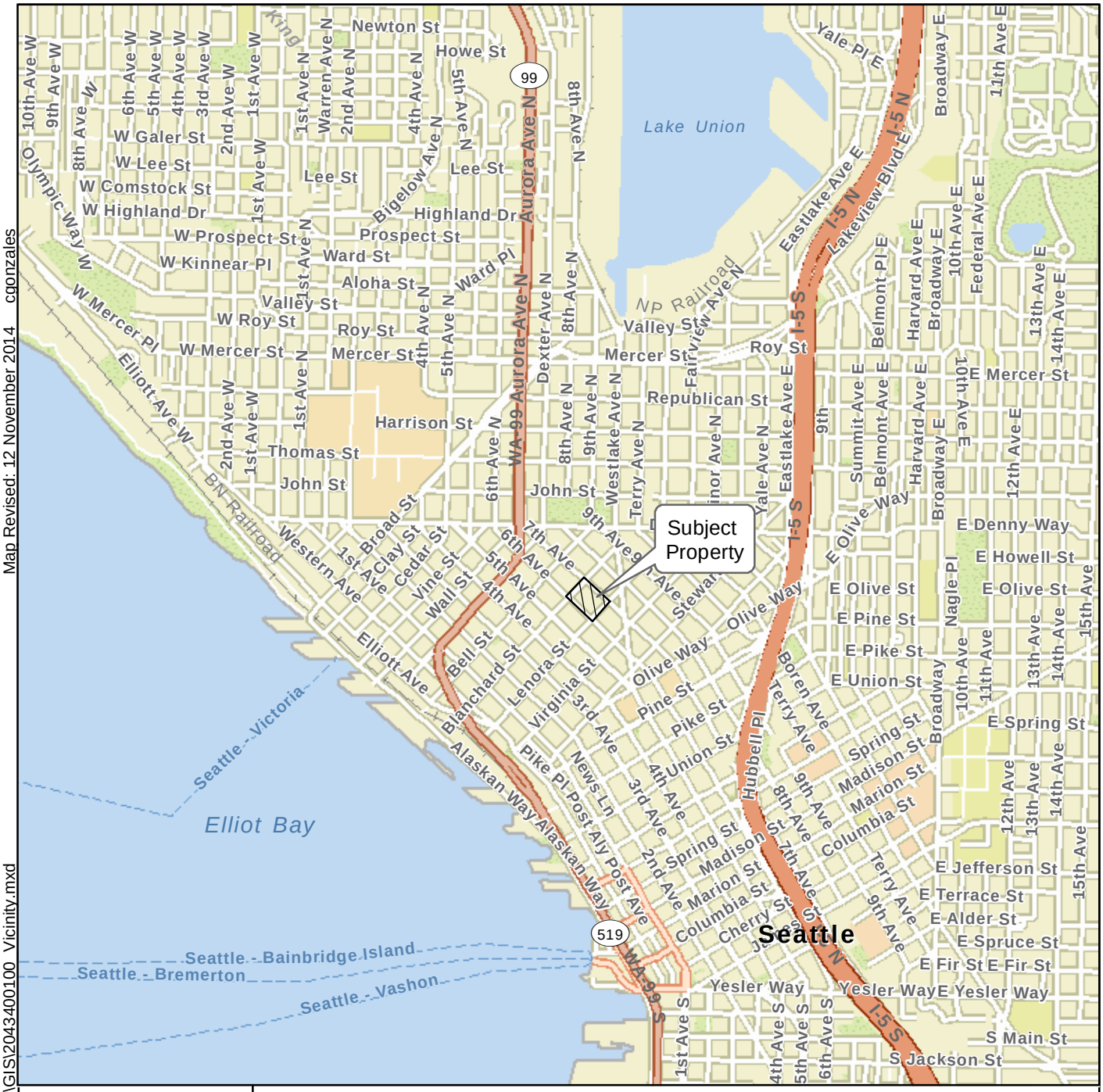
bgs = below ground surface

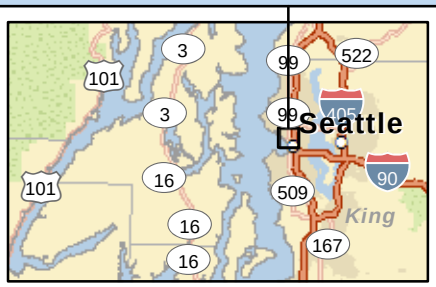
-- = not tested

Bolding indicates analyte was detected. Shading indicates that detected concentration is greater than the applicable cleanup level.

FIGURES

GeoEngineers





N
W E
S

2,000 0 2,000

Feet

Vicinity Map
Block 19

Rufus 2.0
Seattle, Washington

GeoEngineers

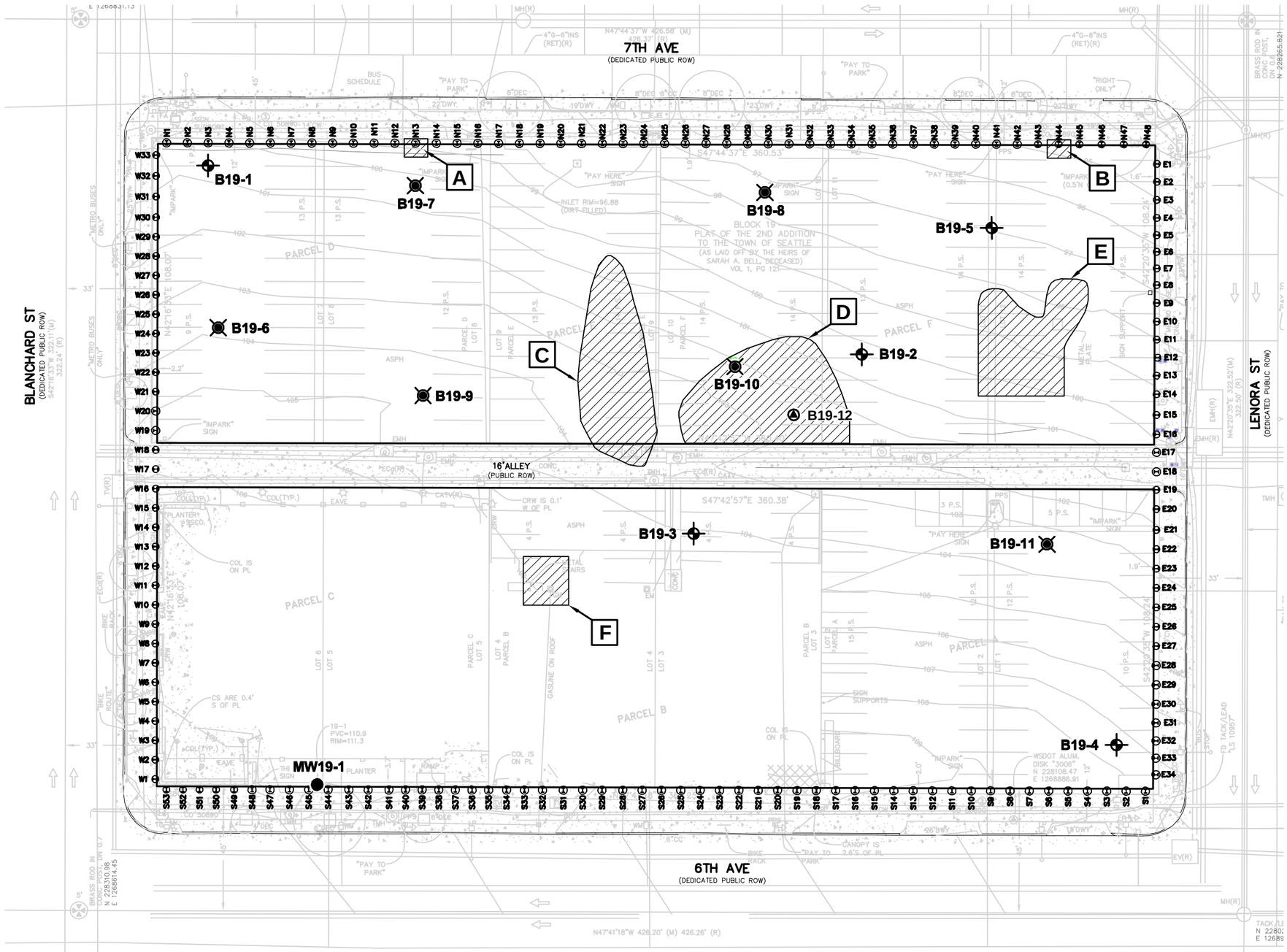
Figure 1

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. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.

Data Sources: ESRI Data & Maps, Street Maps 2013

Transverse Mercator, Zone 10 N North, North American Datum 1983
North arrow oriented to grid north

Office: SEA Path: \\sea\projects\20\20434001\GIS\20434001 00 Vicinity.mxd Map Revised: 12 November 2014 cgonzales



Legend

A — Remedial Excavation Areas (A-E). Excavation areas identified by field screening and soil sampling. See figures 2-6 for characterization and confirmation soil sample locations.

- A: Petroleum impacted soil near soldier pile N13
- B: Petroleum impacted soil near soldier pile N44
- C: Former underground storage tank and remedial excavation of petroleum contaminated soil
- D: PAH contaminated soil from tremie pipe
- E: Petroleum contaminated soil
- F: Former oil-water separator and petroleum contaminated soil

B19-12 — Lead Flight Auger Test Boring Completed in Feburary 2014

MW14-3 — Shallow Monitoring Wells Completed in April 2012

B14-6 — Direct-Push Borings Completed in April 2012

B14-1 — Hollow-stem Auger Borings Completed in February 2012

MW19-1 — Monitoring Well Completed in February 2012

Notes

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Reference: Site survey CAD file "XS-SUR.dwg" provided by Bush, Roed & Hitchings , Inc., dated March 2012. Shoring design cad files by Ground Support provided on 4-9-14.

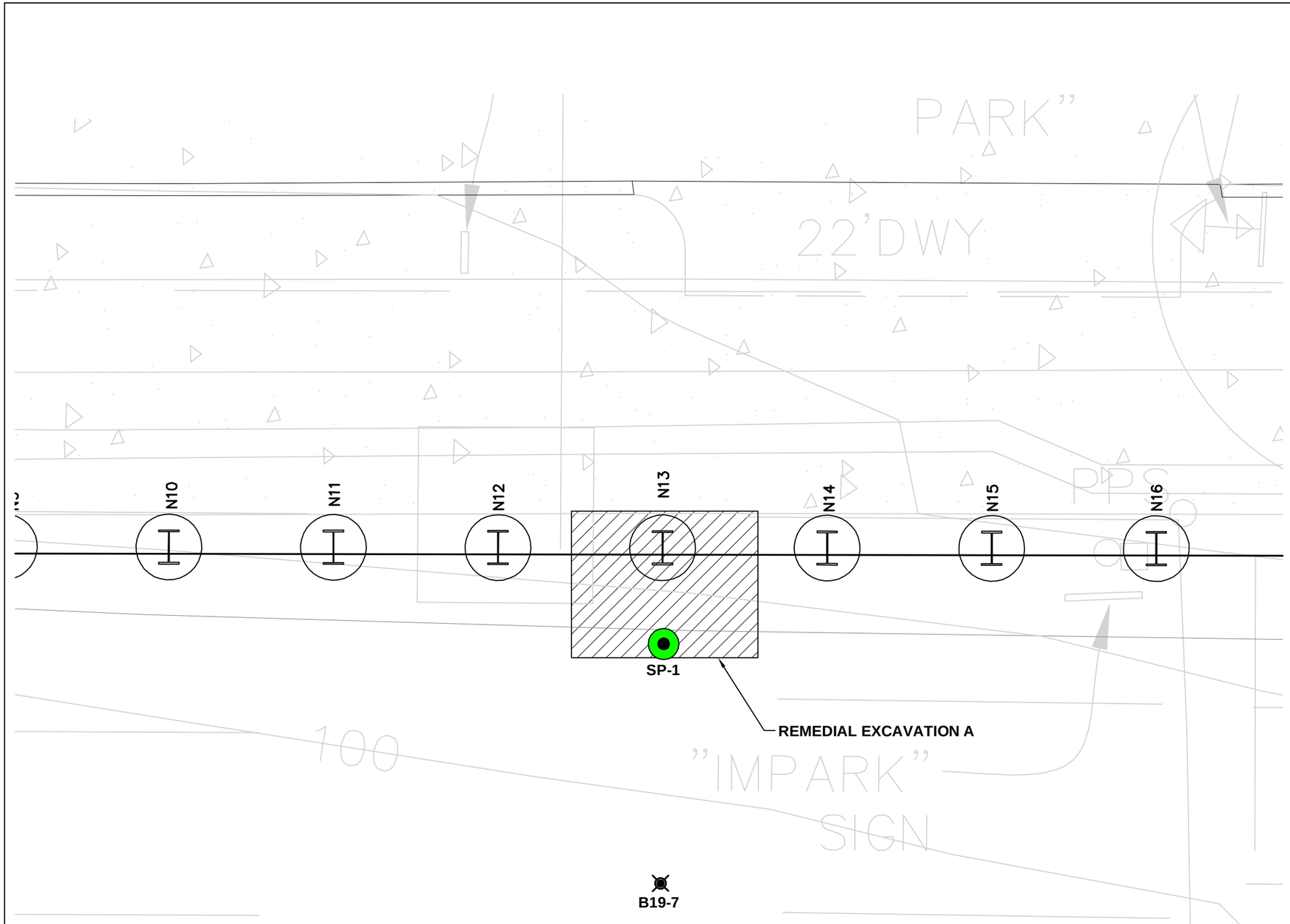
Block 19 Remedial Excavation Areas

Block 19 Remedial Excavation Areas
Seattle, Washington

GeoEngineers

Figure 2

P:\20\20434001\CAD\19\Remedial Excavation Figures\20434001-19 Fig 2 RE Excavation Site Plan.dwg\TAB:Fig 1 modified by tmichaud on Feb 13, 2015 - 15:30



Legend

- Approximate Remedial Excavation Area. Soil excavated from this area was transported to CEMEX in Everett, WA for permitted disposal.
- **B19-7** Direct-Push Borings Completed in April 2012
- **SP-1** Characterization or Confirmation Soil Sample
- Contaminants of concern were not detected
- Soldier Pile

N E S W

5 0 5
FEET

Notes

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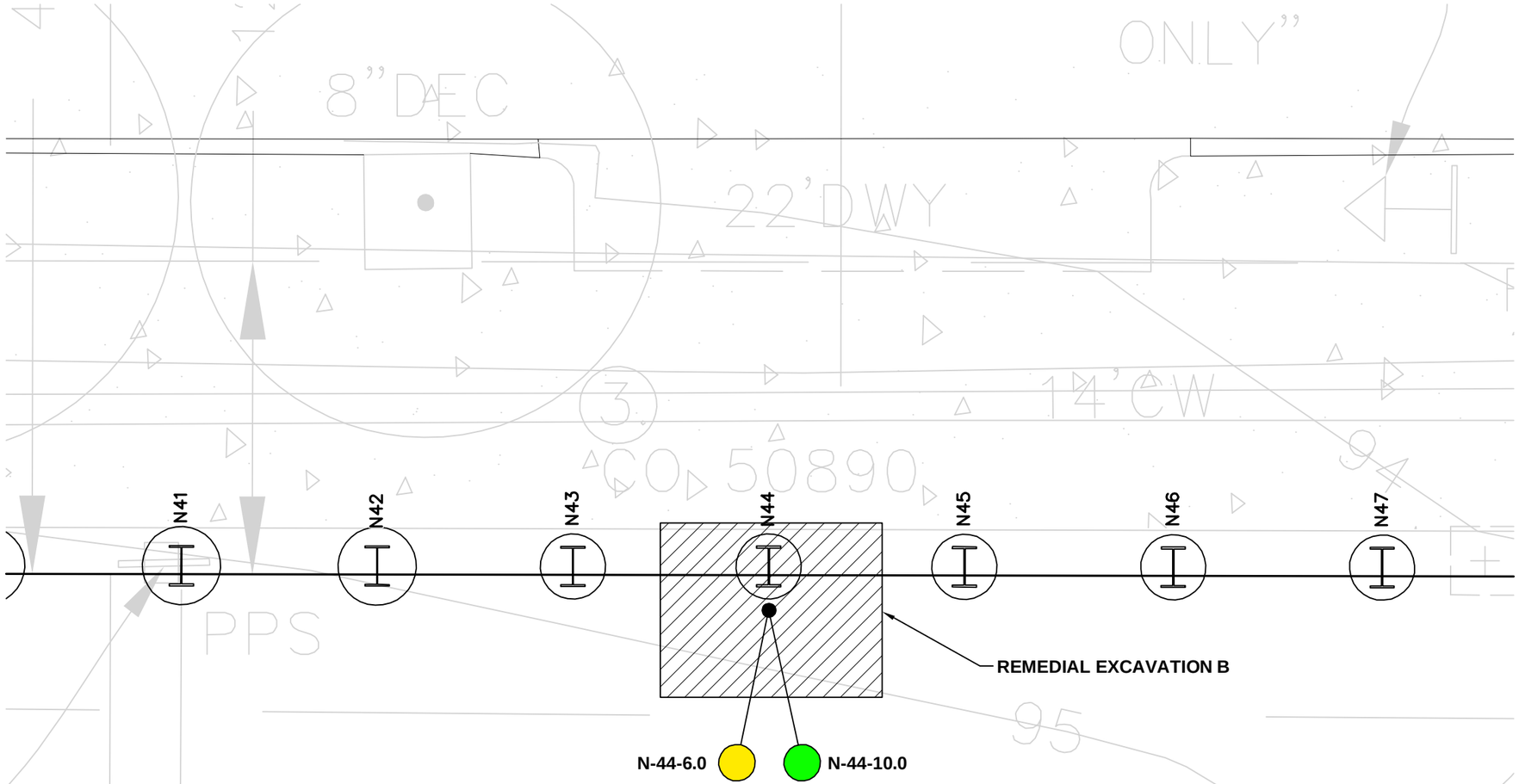
Reference: Site survey CAD file "XS-SUR.dwg" provided by Bush, Roed & Hitchings , Inc., dated March 2012. Shoring design cad files by Ground Support provided on 4-9-14.

Remedial Excavation Area A

Block 19 Remedial Excavation Areas
Seattle, Washington

GeoEngineers

Figure 3



Legend

- Approximate Remedial Excavation Area. Soil excavated from this area was transported to CEMEX in Everett, WA for permitted disposal.
- **N-44-6.0** ● Characterization or Confirmation Soil Sample - Obtained in 2014
  - Approximate Depth Below Ground Surface
  - Sample ID
- Contaminants of concern detected at concentrations less than MTCA Method A Cleanup levels. Soil represented by this sample was subsequently excavated and transported off-site for permitted disposal.
- Contaminants of concern were not detected
- Soldier Pile

N E S W

5 0 5
FEET

Notes

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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.

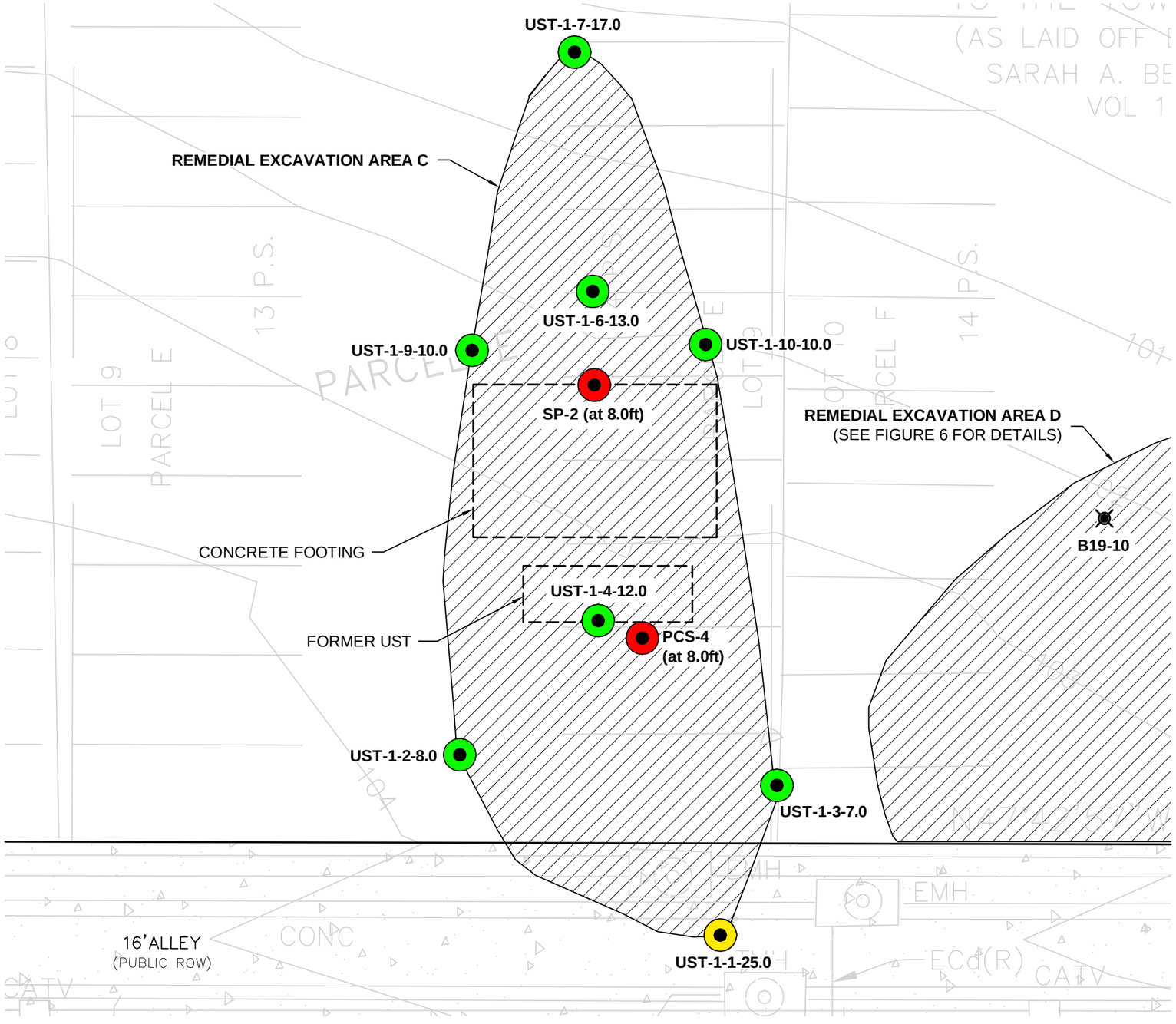
Reference: Site survey CAD file "XS-SUR.dwg" provided by Bush, Roed & Hitchings , Inc., dated March 2012. Shoring design cad files by Ground Support provided on 4-9-14.

Remedial Excavation Area B

Block 19 Remedial Excavation Areas
Seattle, Washington

GeoEngineers | **Figure 4**

P:\20\20434001\CAD\19\Remedial Excavation Figures\20434001-19 Fig 3-8 RE Excavation Site Plans.dwg\TAB:Fig 4 modified by tmichaud on Feb 13, 2015 - 15:08



Legend

- Approximate Remedial Excavation Area. Soil excavated from this area was transported to Waste Management in Seattle, WA for permitted disposal.
- **B19-10** — Direct-Push Borings Completed in April 2012
- **UST-1-1-25.0** — Characterization or Confirmation Soil Sample - Obtained in 2014
  - Approximate Depth Below Ground Surface
  - Sample ID
- Contaminants of concern detected at concentrations greater than MTCA Method A Cleanup levels. Soil represented by this sample was subsequently excavated and transported off-site for permitted disposal.
- Contaminants of concern detected at concentrations less than MTCA Method A Cleanup levels. Soil represented by this sample was subsequently excavated and transported off-site for permitted disposal.
- Contaminants of concern were not detected

10 0 10
FEET

Notes

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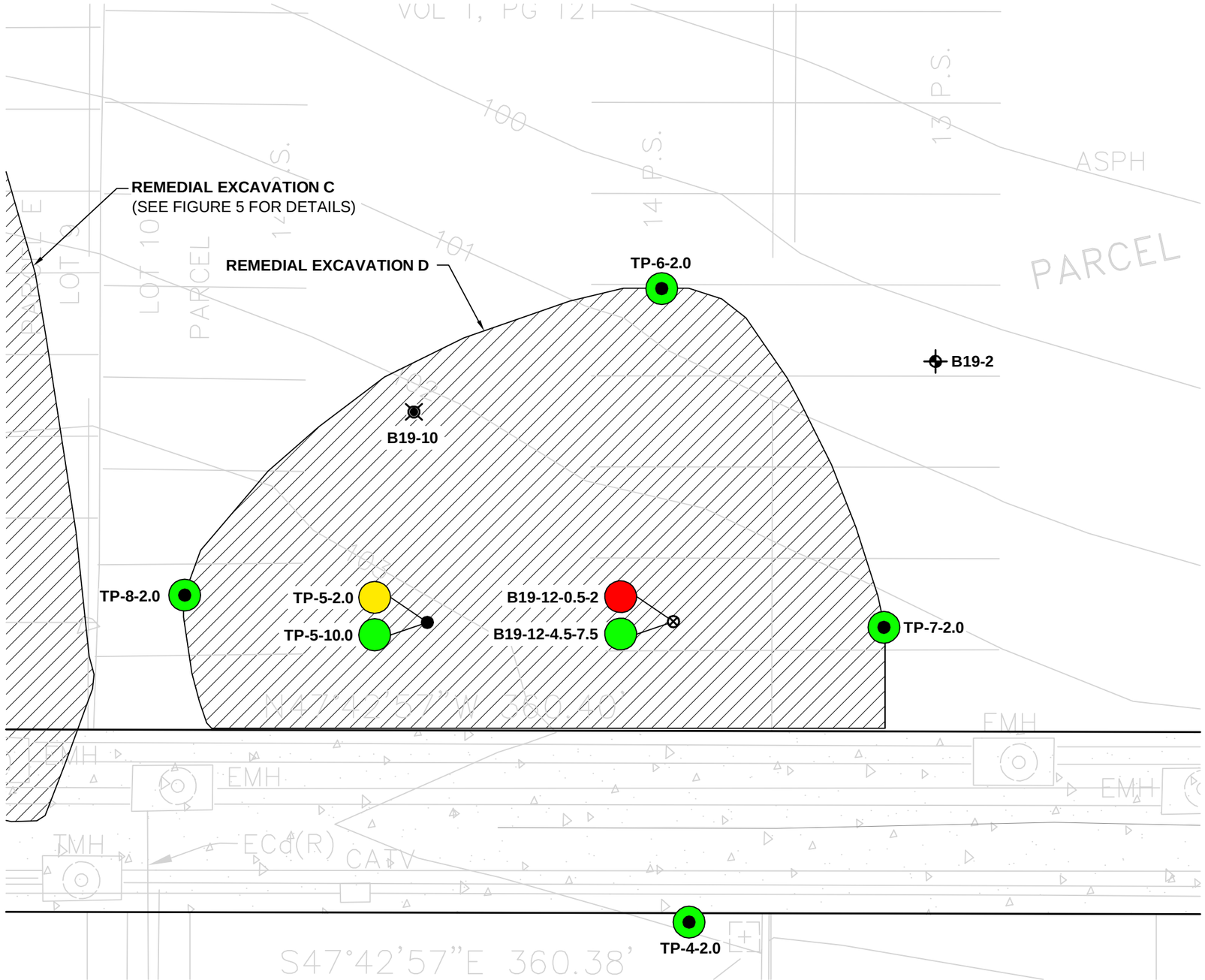
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Site survey CAD file "XS-SUR.dwg" provided by Bush, Roed & Hitchings , Inc., dated March 2012. Shoring design cad files by Ground Support provided on 4-9-14.

Remedial Excavation Area C

Block 19 Remedial Excavation Areas
Seattle, Washington

GeoEngineers | **Figure 5**



Legend

- Approximate Remedial Excavation Area. Soil excavated from this area was transported to Waste Management in Seattle, WA for permitted disposal.
- **B19-12** ⊗ Lead Flight Auger Test Boring Completed by Sellen Construction in Feburary 2014
- **B19-10** Direct-Push Borings Completed in April 2012
- **B19-2** Hollow-stem Auger Borings Completed in February 2012
- **TP-5-10.0** Characterization or Confirmation Soil Sample - Obtained in 2014
  - Approximate Depth Below Ground Surface Sample ID
- Contaminants of concern detected at concentrations greater than MTCA Method A Cleanup levels. Soil represented by this sample was subsequently excavated and transported off-site for permitted disposal.
- Contaminants of concern detected at concentrations less than MTCA Method A Cleanup levels. Soil represented by this sample was subsequently excavated and transported off-site for permitted disposal.
- Contaminants of concern were not detected

10 0 10
FEET

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.

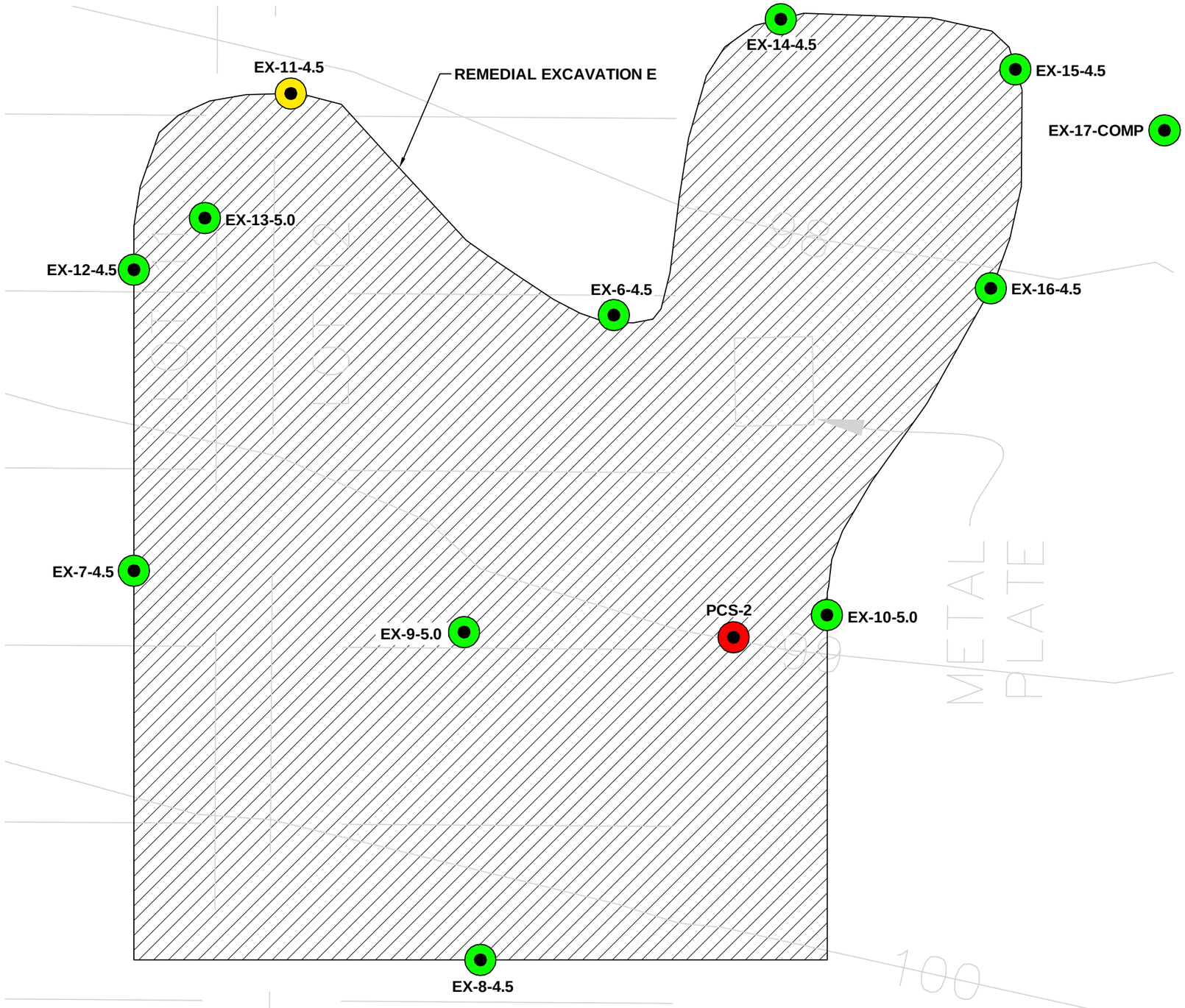
Reference: Site survey CAD file "XS-SUR.dwg" provided by Bush, Roed & Hitchings , Inc., dated March 2012. Shoring design cad files by Ground Support provided on 4-9-14.

Remedial Excavation Area D

Block 19 Remedial Excavation Areas
Seattle, Washington

GeoEngineers | **Figure 6**

P:\20\20434001\CAD\19\Remedial Excavation Figures\20434001-19 Fig 3-8 RE Excavation Site Plans.dwg\TAB:Fig 6 modified by tmichaud on Feb 13, 2015 - 15:51



Legend

Approximate Remedial Excavation Area. Soil excavated from this area was transported to Waste Management in Seattle, WA for permitted disposal.

EX-7-4.5 ● Characterization or Confirmation Soil Sample - Obtained in 2014
Approximate Depth Below Ground Surface
Sample ID

Contaminants of concern detected at concentrations greater than MTCA Method A Cleanup levels. Soil represented by this sample was subsequently excavated and transported off-site for permitted disposal.

Contaminants of concern detected at concentrations less than MTCA Method A Cleanup levels. Soil represented by this sample was subsequently excavated and transported off-site for permitted disposal.

Contaminants of concern were not detected

N W E S

5 0 5
FEET

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. Chemical analytical data pending for EX-11-4.5, EX-12-4.5, and EX-13-5.0.

Reference: Site survey CAD file "XS-SUR.dwg" provided by Bush, Roed & Hitchings , Inc., dated March 2012. Shoring design cad files by Ground Support provided on 4-9-14.

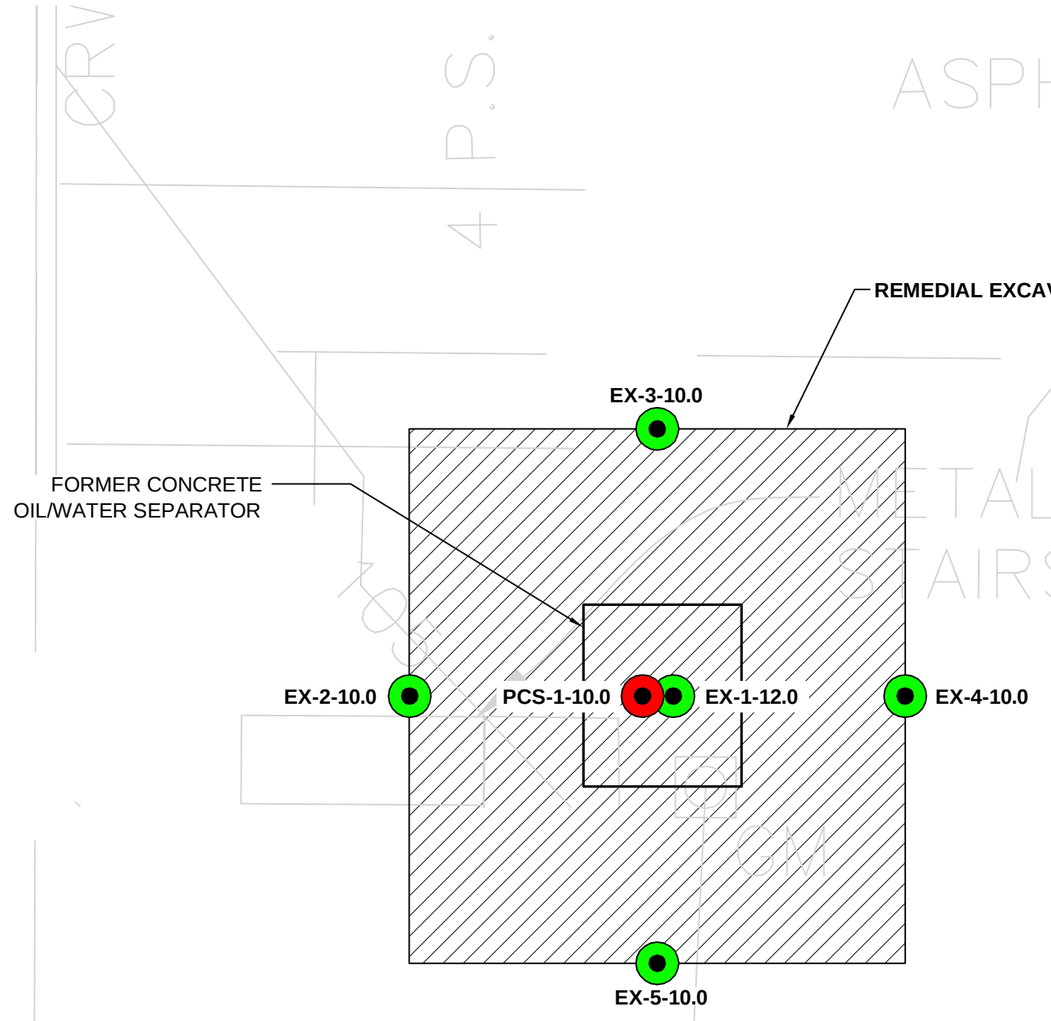
Remedial Excavation Area E

Block 19 Remedial Excavation Areas
Seattle, Washington

GeoEngineers

Figure 7

P:\20\20434001\CAD\19\Remedial Excavation Figures\20434001-19 Fig 3-8 RE Excavation Site Plans.dwg\TAB:Fig 7 modified by tmichaud on Jun 09, 2015 - 15:37



Legend

Approximate Remedial Excavation Area. Soil excavated from this area was transported to Waste Management in Seattle, WA for permitted disposal.

EX-1-12.0 ● Characterization or Confirmation Soil Sample - Obtained in 2014
Approximate Depth Below Ground Surface
Sample ID

Contaminants of concern detected at concentrations greater than MTCA Method A Cleanup levels. Soil represented by this sample was subsequently excavated and transported off-site for permitted disposal.

Contaminants of concern were not detected

5 0 5
FEET

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.

Reference: Site survey CAD file "XS-SUR.dwg" provided by Bush, Roed & Hitchings , Inc., dated March 2012. Shoring design cad files by Ground Support provided on 4-9-14.

Remedial Excavation Area F

Block 19 Remedial Excavation Areas
Seattle, Washington

GeoEngineers | **Figure 8**

P:\20\2043400\CAD\19\Remedial Excavation Figures\2043400-19 Fig 3-8 RE Excavation Site Plans.dwg\TAB:Fig 8 modified by tmichaud on Feb 13, 2015 - 15:54

APPENDICES

GeoEngineers

APPENDIX A
Field Methods

APPENDIX A
FIELD METHODS

Sample Collection and Handling

Soil samples were obtained from the excavation area using a clean nitrile-gloved hand from the excavator bucket. Each sample was placed in a 4-ounce laboratory-prepared jar filled to minimize headspace. Gloves were changed between samples to prevent cross-contamination. The samples were placed in an iced cooler pending transport to the analytical laboratory.

Each sample submitted for chemical analysis was identified by a unique sample designation that corresponded to its mapped sample location and depth below ground surface. Chain-of-custody procedures were followed in transporting the samples to the laboratory.

Field Screening of Soil Samples

A representative from our staff performed field screening of soil samples obtained from the excavation. Field screening results are used as a general guideline to delineate areas with possible petroleum hydrocarbons. In addition, screening results are used to aid in the selection of soil samples for chemical analysis. The screening methods used include: (1) visual screening, and (2) water sheen screening.

Visual screening consists of inspecting the soil for stains indicative of petroleum hydrocarbons. Visual screening is generally more effective when hydrocarbons are heavier, such as motor oil, or when hydrocarbon concentrations are high. Water sheen screening is a more sensitive methods that can be effective in detecting contamination at concentrations less than regulatory cleanup levels. However, field screening results are site-specific. The effectiveness of field screening varies with temperature, moisture content, organic content, soil type and age of contaminant. The presence or absence of a sheen does not necessarily indicate the presence or absence of petroleum hydrocarbons.

Water sheen screening involves placing soil in water and observing the water surface for signs of sheen. Sheen screening may detect both volatile and nonvolatile petroleum hydrocarbons. Sheen classifications are as follows:

No Sheen (NS)	No visible sheen on 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 water surface.
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

APPENDIX B
Chemical Analytical Program

APPENDIX B
CHEMICAL ANALYTICAL PROGRAM

Analytical Methods

Chain-of-custody procedures were followed during the transport of the field samples to the analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference and laboratory quality control records are included in this appendix. The analytical results are also summarized in the text and tables of this report.

Analytical Data Review

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the validity of 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 any exceptions in the laboratory report.

Analytical Data Review Summary

No quality control exceptions were noted by the testing laboratory. It is our opinion that the analytical data are of acceptable quality for their intended use in this report.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers, Inc. - Redmond
Jessica Smith
8410 154th Ave. NE
Redmond, Washington 98052

RE: Rufus 2.0 Block 19
Lab ID: 1402225

April 04, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 4 sample(s) on 2/21/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Hydrocarbon Identification by NWTPH-HCID
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *04/04/2014*

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 Block 19
Lab Order: 1402225

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1402225-001	B19-12-0.5-2	02/21/2014 10:30 AM	02/21/2014 3:12 PM
1402225-002	B19-12-2-4.5	02/21/2014 10:50 AM	02/21/2014 3:12 PM
1402225-003	B19-12-4.5-7.5	02/21/2014 11:10 AM	02/21/2014 3:12 PM
1402225-004	B19-12-7.5-10	02/21/2014 11:20 AM	02/21/2014 3:12 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1402225**
Date: **4/4/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1402225**
Date Reported: **4/4/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 2/21/2014 10:30:00 AM
Project: Rufus 2.0 Block 19
Lab ID: 1402225-001
Matrix: Soil
Client Sample ID: B19-12-0.5-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 6795		Analyst: BR
Diesel (Fuel Oil)	ND	21.0		mg/Kg-dry	1	2/27/2014 9:09:00 PM
Heavy Oil	304	52.5		mg/Kg-dry	1	2/27/2014 9:09:00 PM
Surr: 2-Fluorobiphenyl	109	50-150		%REC	1	2/27/2014 9:09:00 PM
Surr: o-Terphenyl	106	50-150		%REC	1	2/27/2014 9:09:00 PM
Hydrocarbon Identification by NWTPH-HCID				Batch ID: 6725		Analyst: BR
Gasoline	ND	21.0		mg/Kg-dry	1	2/27/2014 9:09:00 PM
Mineral Spirits	ND	31.5		mg/Kg-dry	1	2/27/2014 9:09:00 PM
Kerosene	ND	52.5		mg/Kg-dry	1	2/27/2014 9:09:00 PM
Diesel (Fuel Oil)	ND	52.5		mg/Kg-dry	1	2/27/2014 9:09:00 PM
Heavy Oil	DETECT	105		mg/Kg-dry	1	2/27/2014 9:09:00 PM
Mineral Oil	ND	105		mg/Kg-dry	1	2/27/2014 9:09:00 PM
Surr: 2-Fluorobiphenyl	109	50-150		%REC	1	2/27/2014 9:09:00 PM
Surr: o-Terphenyl	106	50-150		%REC	1	2/27/2014 9:09:00 PM
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 6705		Analyst: PH
Naphthalene	ND	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
2-Methylnaphthalene	103	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
1-Methylnaphthalene	71.8	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Acenaphthylene	89.5	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Acenaphthene	ND	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Fluorene	ND	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Phenanthrene	89.3	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Anthracene	ND	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Fluoranthene	66.4	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Pyrene	146	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Benz(a)anthracene	102	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Chrysene	128	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Benzo(b)fluoranthene	109	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Benzo(k)fluoranthene	90.7	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Benzo(a)pyrene	94.3	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Indeno(1,2,3-cd)pyrene	ND	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Dibenz(a,h)anthracene	ND	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1402225**
Date Reported: **4/4/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 2/21/2014 10:30:00 AM
Project: Rufus 2.0 Block 19
Lab ID: 1402225-001
Matrix: Soil
Client Sample ID: B19-12-0.5-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 6705		Analyst: PH
Benzo(g,h,i)perylene	175	52.8		µg/Kg-dry	1	2/26/2014 2:11:00 PM
Surr: 2-Fluorobiphenyl	99.4	50.4-142		%REC	1	2/26/2014 2:11:00 PM
Surr: Terphenyl-d14 (surr)	96.4	48.8-157		%REC	1	2/26/2014 2:11:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R12723		Analyst: KZ
Percent Moisture	7.50			wt%	1	2/25/2014 4:30:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1402225**
Date Reported: **4/4/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 2/21/2014 11:10:00 AM
Project: Rufus 2.0 Block 19
Lab ID: 1402225-003
Matrix: Soil
Client Sample ID: B19-12-4.5-7.5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Hydrocarbon Identification by NWTPH-HCID				Batch ID: 6725		Analyst: BR
Gasoline	ND	24.4		mg/Kg-dry	1	2/27/2014 8:09:00 PM
Mineral Spirits	ND	36.6		mg/Kg-dry	1	2/27/2014 8:09:00 PM
Kerosene	ND	60.9		mg/Kg-dry	1	2/27/2014 8:09:00 PM
Diesel (Fuel Oil)	ND	60.9		mg/Kg-dry	1	2/27/2014 8:09:00 PM
Heavy Oil	ND	122		mg/Kg-dry	1	2/27/2014 8:09:00 PM
Mineral Oil	ND	122		mg/Kg-dry	1	2/27/2014 8:09:00 PM
Surr: 2-Fluorobiphenyl	110	50-150		%REC	1	2/27/2014 8:09:00 PM
Surr: o-Terphenyl	109	50-150		%REC	1	2/27/2014 8:09:00 PM
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 7065		Analyst: PH
Naphthalene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
2-Methylnaphthalene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
1-Methylnaphthalene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Acenaphthylene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Acenaphthene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Fluorene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Phenanthrene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Anthracene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Fluoranthene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Pyrene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Benz(a)anthracene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Chrysene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Benzo(b)fluoranthene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Benzo(k)fluoranthene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Benzo(a)pyrene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Indeno(1,2,3-cd)pyrene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Dibenz(a,h)anthracene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Benzo(g,h,i)perylene	ND	63.1	H	µg/Kg-dry	1	4/4/2014 12:09:00 AM
Surr: 2-Fluorobiphenyl	86.6	50.4-142	H	%REC	1	4/4/2014 12:09:00 AM
Surr: Terphenyl-d14 (surr)	80.2	48.8-157	H	%REC	1	4/4/2014 12:09:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R12723		Analyst: KZ
Percent Moisture	21.9			wt%	1	2/25/2014 4:30:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/4/2014*

Work Order: 1402225
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **MB-6795**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **2/26/2014**		RunNo: **12882**		
Client ID: **MBLKS**	Batch ID: **6795**					Analysis Date: **2/27/2014**		SeqNo: **257929**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	23.0		20.00		115	50	150				
Surr: o-Terphenyl	22.8		20.00		114	50	150				

Sample ID: **LCS-6795**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **2/26/2014**		RunNo: **12882**		
Client ID: **LCSS**	Batch ID: **6795**					Analysis Date: **2/27/2014**		SeqNo: **257930**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	472	20.0	500.0	0	94.4	65	135				
Surr: 2-Fluorobiphenyl	21.4		20.00		107	50	150				
Surr: o-Terphenyl	21.6		20.00		108	50	150				

Sample ID: **1402225-003ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **2/26/2014**		RunNo: **12882**		
Client ID: **B19-12-4.5-7.5**	Batch ID: **6795**					Analysis Date: **2/27/2014**		SeqNo: **257933**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	24.1						0		30	
Heavy Oil	ND	60.3						0		30	
Surr: 2-Fluorobiphenyl	26.3		24.13		109	50	150		0		
Surr: o-Terphenyl	26.1		24.13		108	50	150		0		

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/4/2014*

Work Order: 1402225
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Hydrocarbon Identification by NWTPH-HCID

Sample ID: **LCS-6725** SampType: **LCS** Units: **mg/Kg** Prep Date: **2/26/2014** RunNo: **12844**
Client ID: **LCSS** Batch ID: **6725** Analysis Date: **2/27/2014** SeqNo: **256960**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	472	50.0	500.0	0	94.4	65	135				
Surr: 2-Fluorobiphenyl	21.4		20.00		107	50	150				
Surr: o-Terphenyl	21.6		20.00		108	50	150				

Sample ID: **MB-6725** SampType: **MBLK** Units: **mg/Kg** Prep Date: **2/26/2014** RunNo: **12844**
Client ID: **MBLKS** Batch ID: **6725** Analysis Date: **2/27/2014** SeqNo: **256961**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	20.0									
Mineral Spirits	ND	30.0									
Kerosene	ND	50.0									
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	ND	100									
Mineral Oil	ND	100									
Surr: 2-Fluorobiphenyl	23.0		20.00		115	50	150				
Surr: o-Terphenyl	22.8		20.00		114	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1402225
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **LCS-6705** SampType: **LCS** Units: **µg/Kg** Prep Date: **2/25/2014** RunNo: **12741**
Client ID: **LCSS** Batch ID: **6705** Analysis Date: **2/26/2014** SeqNo: **254612**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	993	50.0	1,000	0	99.3	61.6	125				
2-Methylnaphthalene	956	50.0	1,000	0	95.6	58.2	129				
1-Methylnaphthalene	982	50.0	1,000	0	98.2	56.4	132				
Acenaphthylene	875	50.0	1,000	0	87.5	52.2	133				
Acenaphthene	870	50.0	1,000	0	87.0	54	131				
Fluorene	792	50.0	1,000	0	79.2	53.4	131				
Phenanthrene	1,010	50.0	1,000	0	101	55.6	128				
Anthracene	983	50.0	1,000	0	98.3	51	132				
Fluoranthene	889	50.0	1,000	0	88.9	48.4	134				
Pyrene	895	50.0	1,000	0	89.5	48.6	135				
Benz(a)anthracene	734	50.0	1,000	0	73.4	41.9	136				
Chrysene	1,070	50.0	1,000	0	107	51.4	135				
Benzo(b)fluoranthene	625	50.0	1,000	0	62.5	39.7	137				
Benzo(k)fluoranthene	956	50.0	1,000	0	95.6	45.7	138				
Benzo(a)pyrene	857	50.0	1,000	0	85.7	45.3	135				
Indeno(1,2,3-cd)pyrene	783	50.0	1,000	0	78.3	45.4	137				
Dibenz(a,h)anthracene	616	50.0	1,000	0	61.6	45.8	134				
Benzo(g,h,i)perylene	868	50.0	1,000	0	86.8	49.3	134				
Surr: 2-Fluorobiphenyl	503		500.0		101	50.4	142				
Surr: Terphenyl-d14 (surr)	440		500.0		88.0	48.8	157				

Sample ID: **1402255-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **2/25/2014** RunNo: **12741**
Client ID: **BATCH** Batch ID: **6705** Analysis Date: **2/26/2014** SeqNo: **254620**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	53.6						0		30	
2-Methylnaphthalene	ND	53.6						0		30	
1-Methylnaphthalene	ND	53.6						0		30	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1402225
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1402255-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **2/25/2014** RunNo: **12741**
Client ID: **BATCH** Batch ID: **6705** Analysis Date: **2/26/2014** SeqNo: **254620**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	ND	53.6						0		30	
Acenaphthene	ND	53.6						0		30	
Fluorene	ND	53.6						0		30	
Phenanthrene	ND	53.6						0		30	
Anthracene	ND	53.6						0		30	
Fluoranthene	ND	53.6						0		30	
Pyrene	ND	53.6						0		30	
Benz(a)anthracene	ND	53.6						0		30	
Chrysene	ND	53.6						0		30	
Benzo(b)fluoranthene	ND	53.6						0		30	
Benzo(k)fluoranthene	ND	53.6						0		30	
Benzo(a)pyrene	ND	53.6						0		30	
Indeno(1,2,3-cd)pyrene	ND	53.6						0		30	
Dibenz(a,h)anthracene	ND	53.6						0		30	
Benzo(g,h,i)perylene	ND	53.6						0		30	
Surr: 2-Fluorobiphenyl	435		535.7		81.2	50.4	142		0		
Surr: Terphenyl-d14 (surr)	484		535.7		90.4	48.8	157		0		

Sample ID: **1402225-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **2/25/2014** RunNo: **12741**
Client ID: **B19-12-0.5-2** Batch ID: **6705** Analysis Date: **2/26/2014** SeqNo: **254622**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,040	52.9	1,058	45.66	93.8	42.9	138				
2-Methylnaphthalene	1,030	52.9	1,058	103.5	87.4	42.8	151				
1-Methylnaphthalene	1,100	52.9	1,058	71.81	96.9	41.6	148				
Acenaphthylene	1,170	52.9	1,058	89.51	102	32.6	160				
Acenaphthene	1,010	52.9	1,058	6.373	95.2	46.3	142				
Fluorene	934	52.9	1,058	0	88.2	43.4	153				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1402225
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1402225-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **2/25/2014** RunNo: **12741**
Client ID: **B19-12-0.5-2** Batch ID: **6705** Analysis Date: **2/26/2014** SeqNo: **254622**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenanthrene	1,280	52.9	1,058	89.26	113	45.5	140				
Anthracene	1,090	52.9	1,058	36.59	99.7	32.6	160				
Fluoranthene	1,250	52.9	1,058	66.43	112	44.6	161				
Pyrene	1,370	52.9	1,058	145.6	115	48.3	158				
Benz(a)anthracene	1,060	52.9	1,058	102.4	90.0	57.5	169				
Chrysene	1,110	52.9	1,058	127.7	93.0	45.2	146				
Benzo(b)fluoranthene	1,110	52.9	1,058	108.9	94.7	42.2	168				
Benzo(k)fluoranthene	1,110	52.9	1,058	90.74	95.9	48	161				
Benzo(a)pyrene	1,280	52.9	1,058	94.26	112	34.4	179				
Indeno(1,2,3-cd)pyrene	1,460	52.9	1,058	0	138	41.1	165				
Dibenz(a,h)anthracene	1,430	52.9	1,058	0	135	38.1	166				
Benzo(g,h,i)perylene	1,540	52.9	1,058	175.5	129	45.6	157				
Surr: 2-Fluorobiphenyl	503		529.2		95.1	50.4	142				
Surr: Terphenyl-d14 (surr)	557		529.2		105	48.8	157				

Sample ID: **MB-6705** SampType: **MBLK** Units: **µg/Kg** Prep Date: **2/25/2014** RunNo: **12741**
Client ID: **MBLKS** Batch ID: **6705** Analysis Date: **2/26/2014** SeqNo: **254626**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	50.0									
2-Methylnaphthalene	ND	50.0									
1-Methylnaphthalene	ND	50.0									
Acenaphthylene	ND	50.0									
Acenaphthene	ND	50.0									
Fluorene	ND	50.0									
Phenanthrene	ND	50.0									
Anthracene	ND	50.0									
Fluoranthene	ND	50.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1402225
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-6705**	SampType: **MBLK**	Units: **µg/Kg**	Prep Date: **2/25/2014**	RunNo: **12741**
Client ID: **MBLKS**	Batch ID: **6705**		Analysis Date: **2/26/2014**	SeqNo: **254626**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pyrene	ND	50.0									
Benz(a)anthracene	ND	50.0									
Chrysene	ND	50.0									
Benzo(b)fluoranthene	ND	50.0									
Benzo(k)fluoranthene	ND	50.0									
Benzo(a)pyrene	ND	50.0									
Indeno(1,2,3-cd)pyrene	ND	50.0									
Dibenz(a,h)anthracene	ND	50.0									
Benzo(g,h,i)perylene	ND	50.0									
Surr: 2-Fluorobiphenyl	569		500.0		114	50.4	142				
Surr: Terphenyl-d14 (surr)	455		500.0		91.0	48.8	157				

Sample ID: **MB-7065**	SampType: **MBLK**	Units: **µg/Kg**	Prep Date: **4/3/2014**	RunNo: **13418**
Client ID: **MBLKS**	Batch ID: **7065**		Analysis Date: **4/3/2014**	SeqNo: **270585**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	50.0									
2-Methylnaphthalene	ND	50.0									
1-Methylnaphthalene	ND	50.0									
Acenaphthylene	ND	50.0									
Acenaphthene	ND	50.0									
Fluorene	ND	50.0									
Phenanthrene	ND	50.0									
Anthracene	ND	50.0									
Fluoranthene	ND	50.0									
Pyrene	ND	50.0									
Benz(a)anthracene	ND	50.0									
Chrysene	ND	50.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1402225
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-7065** SampType: **MBLK** Units: **µg/Kg** Prep Date: **4/3/2014** RunNo: **13418**
Client ID: **MBLKS** Batch ID: **7065** Analysis Date: **4/3/2014** SeqNo: **270585**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	ND	50.0									
Benzo(k)fluoranthene	ND	50.0									
Benzo(a)pyrene	ND	50.0									
Indeno(1,2,3-cd)pyrene	ND	50.0									
Dibenz(a,h)anthracene	ND	50.0									
Benzo(g,h,i)perylene	ND	50.0									
Surr: 2-Fluorobiphenyl	385		500.0		77.1	50.4	142				
Surr: Terphenyl-d14 (surr)	358		500.0		71.7	48.8	157				

Sample ID: **LCS-7065** SampType: **LCS** Units: **µg/Kg** Prep Date: **4/3/2014** RunNo: **13418**
Client ID: **LCSS** Batch ID: **7065** Analysis Date: **4/3/2014** SeqNo: **270586**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	770	50.0	1,000	0	77.0	61.6	125				
2-Methylnaphthalene	883	50.0	1,000	0	88.3	58.2	129				
1-Methylnaphthalene	791	50.0	1,000	0	79.1	56.4	132				
Acenaphthylene	822	50.0	1,000	0	82.2	52.2	133				
Acenaphthene	770	50.0	1,000	0	77.0	54	131				
Fluorene	768	50.0	1,000	0	76.8	53.4	131				
Phenanthrene	760	50.0	1,000	0	76.0	55.6	128				
Anthracene	765	50.0	1,000	0	76.5	51	132				
Fluoranthene	744	50.0	1,000	0	74.4	48.4	134				
Pyrene	744	50.0	1,000	0	74.4	48.6	135				
Benz(a)anthracene	709	50.0	1,000	0	70.9	41.9	136				
Chrysene	853	50.0	1,000	0	85.3	51.4	135				
Benzo(b)fluoranthene	732	50.0	1,000	0	73.2	39.7	137				
Benzo(k)fluoranthene	702	50.0	1,000	0	70.2	45.7	138				
Benzo(a)pyrene	687	50.0	1,000	0	68.7	45.3	135				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1402225
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **LCS-7065** SampType: **LCS** Units: **µg/Kg** Prep Date: **4/3/2014** RunNo: **13418**
Client ID: **LCSS** Batch ID: **7065** Analysis Date: **4/3/2014** SeqNo: **270586**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	579	50.0	1,000	0	57.9	45.4	137				
Dibenz(a,h)anthracene	610	50.0	1,000	0	61.0	45.8	134				
Benzo(g,h,i)perylene	587	50.0	1,000	0	58.7	49.3	134				
Surr: 2-Fluorobiphenyl	410		500.0		82.0	50.4	142				
Surr: Terphenyl-d14 (surr)	364		500.0		72.7	48.8	157				

Sample ID: **1404019-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **4/3/2014** RunNo: **13418**
Client ID: **BATCH** Batch ID: **7065** Analysis Date: **4/4/2014** SeqNo: **270589**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	53.2						0		30	
2-Methylnaphthalene	ND	53.2						0		30	
1-Methylnaphthalene	ND	53.2						0		30	
Acenaphthylene	ND	53.2						0		30	
Acenaphthene	ND	53.2						0		30	
Fluorene	ND	53.2						0		30	
Phenanthrene	ND	53.2						0		30	
Anthracene	ND	53.2						0		30	
Fluoranthene	ND	53.2						0		30	
Pyrene	ND	53.2						0		30	
Benz(a)anthracene	ND	53.2						0		30	
Chrysene	ND	53.2						0		30	
Benzo(b)fluoranthene	ND	53.2						0		30	
Benzo(k)fluoranthene	ND	53.2						0		30	
Benzo(a)pyrene	ND	53.2						0		30	
Indeno(1,2,3-cd)pyrene	ND	53.2						0		30	
Dibenz(a,h)anthracene	ND	53.2						0		30	
Benzo(g,h,i)perylene	ND	53.2						0		30	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1402225
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1404019-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **4/3/2014** RunNo: **13418**
Client ID: **BATCH** Batch ID: **7065** Analysis Date: **4/4/2014** SeqNo: **270589**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	418		532.0		78.6	50.4	142		0		
Surr: Terphenyl-d14 (surr)	430		532.0		80.9	48.8	157		0		

Sample ID: **1404019-002AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **4/3/2014** RunNo: **13418**
Client ID: **BATCH** Batch ID: **7065** Analysis Date: **4/4/2014** SeqNo: **270591**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	973	54.2	1,084	156.4	75.3	42.9	138				
2-Methylnaphthalene	1,050	54.2	1,084	53.18	92.4	42.8	151				
1-Methylnaphthalene	980	54.2	1,084	68.09	84.2	41.6	148				
Acenaphthylene	906	54.2	1,084	0	83.6	32.6	160				
Acenaphthene	1,020	54.2	1,084	179.7	77.8	46.3	142				
Fluorene	969	54.2	1,084	119.3	78.4	43.4	153				
Phenanthrene	1,100	54.2	1,084	273.6	75.8	45.5	140				
Anthracene	912	54.2	1,084	56.28	78.9	32.6	160				
Fluoranthene	959	54.2	1,084	129.6	76.6	44.6	161				
Pyrene	908	54.2	1,084	84.99	75.9	48.3	158				
Benz(a)anthracene	819	54.2	1,084	17.70	73.9	57.5	169				
Chrysene	939	54.2	1,084	23.24	84.5	45.2	146				
Benzo(b)fluoranthene	889	54.2	1,084	7.460	81.3	42.2	168				
Benzo(k)fluoranthene	803	54.2	1,084	7.534	73.4	48	161				
Benzo(a)pyrene	824	54.2	1,084	7.672	75.4	34.4	179				
Indeno(1,2,3-cd)pyrene	695	54.2	1,084	0	64.1	41.1	165				
Dibenz(a,h)anthracene	732	54.2	1,084	0	67.6	38.1	166				
Benzo(g,h,i)perylene	672	54.2	1,084	0	62.0	45.6	157				
Surr: 2-Fluorobiphenyl	437		541.9		80.7	50.4	142				
Surr: Terphenyl-d14 (surr)	432		541.9		79.7	48.8	157				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI1**	Work Order Number:	**1402225**
Logged by:	**Chelsea Ward**	Date Received:	**2/21/2014 3:12:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Cooler	8.5	Good
Sample	7.9	Good

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Chain of Custody

Page 1 of 1

Laboratory Number: 1402225

Company: GEI
Project Number: 20434-001-19
Project Name: RUFUS 2.0 BLOCK 19
Project Manager: JESSICA SMITH
Sampled by: NATHAN SOLOMON

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorous Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
	B19-12-0.5_2	2/21/14	1030	Soil	1																
	B19-12-2_4.5		1050																		
	B19-12-4.5_7.5		1110																		
	B19-12-7.5_10		1120																		

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		GEI	2/21/14	15:11	
Received		FAI	2/21/14	15:12	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐

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Chain of Custody

Page 1 of 1

Company: GEI
Project Number: 20434-001-19
Project Name: RUFUS 2.0 BLOCK 19
Project Manager: JESSICA SMITH
Sampled by: NATHAN SOLOMON

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
(TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 14C2225

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D-SIM (with low-level PAHs)	PAHs 8270D-SIM (low level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorous Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
	B19-12-0.5_2	2/21/14	1030	Soil	1	X							X								
	B19-12-2_4.5		1050																		
	B19-12-4.5_7.5		1110			X															
	B19-12-7.5_10		1120																		

	Signature	Company	Date	Time
Relinquished		GEI	2/21/14	15:11
Received		FAI	2/21/14	15:12
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
X = added 02.25.14 @ 9:00 am

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐

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Analytical Laboratory Testing Services
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Phone: (425) 883-3881 • www.onsite-env.com

Chain of Custody

Page 1 of 1

Laboratory Number: 14C2225 A

Company: GEI
Project Number: 20434-001-19
Project Name: RUFUS 2.0 BLOCK 19
Project Manager: JESSICA SMITH
Sampled by: NATHAN SOLOMON

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
(TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D-SIM (with low level PAHs)	PAH	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals (8 MTCA Metals)	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
	B19-12-0.5_2	2/21/14	1030	Soil	1	X							X								
	B19-12-2_4.5		1050																		
	B19-12-4.5_7.5		1110			X							(X)								
	B19-12-7.5_10		1120																		

	Signature	Company	Date	Time
Relinquished		GEI	2/21/14	15:11
Received		FAI	2/21/14	15:12
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
X = added 02-25-14 @ 9:00 am
(X) Added per Chris Brown 2 day 2/27/14 cg

Data Package: Level III ☐ Level IV ☐
Electronic Data Deliverables (EDDs) ☐
Cooler temperature at final report ☐

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers
Jessica Smith
600 Stewart Street, Suite 1700
Seattle, WA 98101

RE: Rufus 2.0 Block 19
Lab ID: 1403183

March 19, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 8 sample(s) on 3/14/2014 for the analyses presented in the following report.

Hydrocarbon Identification by NWTPH-HCID
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

CC:
Nate Solomon

Date: *03/19/2014*

CLIENT: GeoEngineers
Project: Rufus 2.0 Block 19
Lab Order: 1403183

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1403183-001	TP1-2	03/14/2014 1:10 PM	03/14/2014 4:21 PM
1403183-002	TP1-4	03/14/2014 1:15 PM	03/14/2014 4:21 PM
1403183-003	TP1-6	03/14/2014 1:20 PM	03/14/2014 4:21 PM
1403183-004	TP2-2	03/14/2014 1:30 PM	03/14/2014 4:21 PM
1403183-005	TP2-4	03/14/2014 1:45 PM	03/14/2014 4:21 PM
1403183-006	TP3-2	03/14/2014 2:05 PM	03/14/2014 4:21 PM
1403183-007	TP3-4	03/14/2014 2:20 PM	03/14/2014 4:21 PM
1403183-008	TP3-6	03/14/2014 2:40 PM	03/14/2014 4:21 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1403183**
Date: **3/19/2014**

CLIENT: GeoEngineers
Project: Rufus 2.0 Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1403183**
Date Reported: **3/19/2014**

Client: GeoEngineers
Collection Date: 3/14/2014 1:10:00 PM
Project: Rufus 2.0 Block 19
Lab ID: 1403183-001
Matrix: Soil
Client Sample ID: TP1-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Hydrocarbon Identification by NWTPH-HCID				Batch ID: 6901		Analyst: EM
Gasoline	ND	26.2		mg/Kg-dry	1	3/18/2014 3:15:00 PM
Mineral Spirits	ND	39.2		mg/Kg-dry	1	3/18/2014 3:15:00 PM
Kerosene	ND	65.4		mg/Kg-dry	1	3/18/2014 3:15:00 PM
Diesel (Fuel Oil)	ND	65.4		mg/Kg-dry	1	3/18/2014 3:15:00 PM
Heavy Oil	ND	131		mg/Kg-dry	1	3/18/2014 3:15:00 PM
Mineral Oil	ND	131		mg/Kg-dry	1	3/18/2014 3:15:00 PM
Surr: 2-Fluorobiphenyl	104	50-150		%REC	1	3/18/2014 3:15:00 PM
Surr: o-Terphenyl	105	50-150		%REC	1	3/18/2014 3:15:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13102		Analyst: KZ
Percent Moisture	27.8			wt%	1	3/18/2014 11:30:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1403183**
Date Reported: **3/19/2014**

Client: GeoEngineers
Collection Date: 3/14/2014 1:45:00 PM
Project: Rufus 2.0 Block 19
Lab ID: 1403183-005
Matrix: Soil
Client Sample ID: TP2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 6905		Analyst: PH
Naphthalene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
2-Methylnaphthalene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
1-Methylnaphthalene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Acenaphthylene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Acenaphthene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Fluorene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Phenanthrene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Anthracene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Fluoranthene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Pyrene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Benz(a)anthracene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Chrysene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Benzo(b)fluoranthene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Benzo(k)fluoranthene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Benzo(a)pyrene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Indeno(1,2,3-cd)pyrene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Dibenz(a,h)anthracene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Benzo(g,h,i)perylene	ND	62.4		µg/Kg-dry	1	3/19/2014 12:51:00 PM
Surr: 2-Fluorobiphenyl	77.1	50.4-142		%REC	1	3/19/2014 12:51:00 PM
Surr: Terphenyl-d14 (surr)	94.0	48.8-157		%REC	1	3/19/2014 12:51:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13102		Analyst: KZ
Percent Moisture	26.9			wt%	1	3/18/2014 11:30:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1403183**
Date Reported: **3/19/2014**

Client: GeoEngineers
Collection Date: 3/14/2014 2:40:00 PM
Project: Rufus 2.0 Block 19
Lab ID: 1403183-008
Matrix: Soil
Client Sample ID: TP3-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Hydrocarbon Identification by NWTPH-HCID				Batch ID: 6901		Analyst: EM
Gasoline	ND	26.3		mg/Kg-dry	1	3/18/2014 4:16:00 PM
Mineral Spirits	ND	39.5		mg/Kg-dry	1	3/18/2014 4:16:00 PM
Kerosene	ND	65.8		mg/Kg-dry	1	3/18/2014 4:16:00 PM
Diesel (Fuel Oil)	ND	65.8		mg/Kg-dry	1	3/18/2014 4:16:00 PM
Heavy Oil	ND	132		mg/Kg-dry	1	3/18/2014 4:16:00 PM
Mineral Oil	ND	132		mg/Kg-dry	1	3/18/2014 4:16:00 PM
Surr: 2-Fluorobiphenyl	105	50-150		%REC	1	3/18/2014 4:16:00 PM
Surr: o-Terphenyl	106	50-150		%REC	1	3/18/2014 4:16:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13102		Analyst: KZ
Percent Moisture	26.5			wt%	1	3/18/2014 11:30:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *3/19/2014*

Work Order: 1403183
CLIENT: GeoEngineers
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Hydrocarbon Identification by NWTPH-HCID

Sample ID: **LCS-6901** SampType: **LCS** Units: **mg/Kg** Prep Date: **3/18/2014** RunNo: **13116**
Client ID: **LCSS** Batch ID: **6901** Analysis Date: **3/18/2014** SeqNo: **263246**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	484	50.0	500.0	0	96.9	65	135				
Surr: 2-Fluorobiphenyl	28.3		20.00		141	50	150				
Surr: o-Terphenyl	23.3		20.00		116	50	150				

Sample ID: **MB-6901** SampType: **MBLK** Units: **mg/Kg** Prep Date: **3/18/2014** RunNo: **13116**
Client ID: **MBLKS** Batch ID: **6901** Analysis Date: **3/18/2014** SeqNo: **263247**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	20.0									
Mineral Spirits	ND	30.0									
Kerosene	ND	50.0									
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	ND	100									
Mineral Oil	ND	100									
Surr: 2-Fluorobiphenyl	21.1		20.00		105	50	150				
Surr: o-Terphenyl	21.1		20.00		106	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *3/19/2014*

Work Order: 1403183
CLIENT: GeoEngineers
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-6905** SampType: **MBLK** Units: **µg/Kg** Prep Date: **3/18/2014** RunNo: **13136**
Client ID: **MBLKS** Batch ID: **6905** Analysis Date: **3/19/2014** SeqNo: **263871**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	50.0									
2-Methylnaphthalene	ND	50.0									
1-Methylnaphthalene	ND	50.0									
Acenaphthylene	ND	50.0									
Acenaphthene	ND	50.0									
Fluorene	ND	50.0									
Phenanthrene	ND	50.0									
Anthracene	ND	50.0									
Fluoranthene	ND	50.0									
Pyrene	ND	50.0									
Benz(a)anthracene	ND	50.0									
Chrysene	ND	50.0									
Benzo(b)fluoranthene	ND	50.0									
Benzo(k)fluoranthene	ND	50.0									
Benzo(a)pyrene	ND	50.0									
Indeno(1,2,3-cd)pyrene	ND	50.0									
Dibenz(a,h)anthracene	ND	50.0									
Benzo(g,h,i)perylene	ND	50.0									
Surr: 2-Fluorobiphenyl	407		500.0		81.5	50.4	142				
Surr: Terphenyl-d14 (surr)	465		500.0		92.9	48.8	157				

Sample ID: **LCS-6905** SampType: **LCS** Units: **µg/Kg** Prep Date: **3/18/2014** RunNo: **13136**
Client ID: **LCSS** Batch ID: **6905** Analysis Date: **3/19/2014** SeqNo: **263872**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	827	50.0	1,000	0	82.7	61.6	125				
2-Methylnaphthalene	859	50.0	1,000	0	85.9	58.2	129				
1-Methylnaphthalene	793	50.0	1,000	0	79.3	56.4	132				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *3/19/2014*

Work Order: 1403183
CLIENT: GeoEngineers
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **LCS-6905** SampType: **LCS** Units: **µg/Kg** Prep Date: **3/18/2014** RunNo: **13136**
Client ID: **LCSS** Batch ID: **6905** Analysis Date: **3/19/2014** SeqNo: **263872**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	813	50.0	1,000	0	81.3	52.2	133				
Acenaphthene	835	50.0	1,000	0	83.5	54	131				
Fluorene	824	50.0	1,000	0	82.4	53.4	131				
Phenanthrene	835	50.0	1,000	0	83.5	55.6	128				
Anthracene	829	50.0	1,000	0	82.9	51	132				
Fluoranthene	828	50.0	1,000	0	82.8	48.4	134				
Pyrene	821	50.0	1,000	0	82.1	48.6	135				
Benz(a)anthracene	812	50.0	1,000	0	81.2	41.9	136				
Chrysene	847	50.0	1,000	0	84.7	51.4	135				
Benzo(b)fluoranthene	868	50.0	1,000	0	86.8	39.7	137				
Benzo(k)fluoranthene	826	50.0	1,000	0	82.6	45.7	138				
Benzo(a)pyrene	734	50.0	1,000	0	73.4	45.3	135				
Indeno(1,2,3-cd)pyrene	699	50.0	1,000	0	69.9	45.4	137				
Dibenz(a,h)anthracene	689	50.0	1,000	0	68.9	45.8	134				
Benzo(g,h,i)perylene	851	50.0	1,000	0	85.1	49.3	134				
Surr: 2-Fluorobiphenyl	392		500.0		78.4	50.4	142				
Surr: Terphenyl-d14 (surr)	436		500.0		87.2	48.8	157				

Sample ID: **1403175-002ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **3/18/2014** RunNo: **13136**
Client ID: **BATCH** Batch ID: **6905** Analysis Date: **3/19/2014** SeqNo: **263879**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	49.7						0		30	
2-Methylnaphthalene	ND	49.7						0		30	
1-Methylnaphthalene	ND	49.7						0		30	
Acenaphthylene	ND	49.7						0		30	
Acenaphthene	ND	49.7						0		30	
Fluorene	ND	49.7						0		30	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *3/19/2014*

Work Order: 1403183
CLIENT: GeoEngineers
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1403175-002ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **3/18/2014** RunNo: **13136**
Client ID: **BATCH** Batch ID: **6905** Analysis Date: **3/19/2014** SeqNo: **263879**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenanthrene	ND	49.7						0		30	
Anthracene	ND	49.7						0		30	
Fluoranthene	ND	49.7						0		30	
Pyrene	ND	49.7						0		30	
Benz(a)anthracene	ND	49.7						0		30	
Chrysene	ND	49.7						0		30	
Benzo(b)fluoranthene	ND	49.7						0		30	
Benzo(k)fluoranthene	ND	49.7						0		30	
Benzo(a)pyrene	ND	49.7						0		30	
Indeno(1,2,3-cd)pyrene	ND	49.7						0		30	
Dibenz(a,h)anthracene	ND	49.7						0		30	
Benzo(g,h,i)perylene	ND	49.7						0		30	
Surr: 2-Fluorobiphenyl	387		497.1		77.8	50.4	142		0		
Surr: Terphenyl-d14 (surr)	469		497.1		94.4	48.8	157		0		

Sample ID: **1403175-002AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **3/18/2014** RunNo: **13136**
Client ID: **BATCH** Batch ID: **6905** Analysis Date: **3/19/2014** SeqNo: **263880**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	631	47.4	947.3	0	66.6	42.9	138				
2-Methylnaphthalene	739	47.4	947.3	0	78.0	42.8	151				
1-Methylnaphthalene	689	47.4	947.3	0	72.7	41.6	148				
Acenaphthylene	754	47.4	947.3	0	79.6	32.6	160				
Acenaphthene	769	47.4	947.3	0	81.2	46.3	142				
Fluorene	784	47.4	947.3	0	82.7	43.4	153				
Phenanthrene	738	47.4	947.3	0	77.9	45.5	140				
Anthracene	763	47.4	947.3	0	80.6	32.6	160				
Fluoranthene	766	47.4	947.3	0	80.8	44.6	161				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *3/19/2014*

Work Order: 1403183
CLIENT: GeoEngineers
Project: Rufus 2.0 Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1403175-002AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **3/18/2014** RunNo: **13136**
Client ID: **BATCH** Batch ID: **6905** Analysis Date: **3/19/2014** SeqNo: **263880**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pyrene	753	47.4	947.3	0	79.5	48.3	158				
Benz(a)anthracene	782	47.4	947.3	0	82.6	57.5	169				
Chrysene	765	47.4	947.3	0	80.8	45.2	146				
Benzo(b)fluoranthene	730	47.4	947.3	0	77.0	42.2	168				
Benzo(k)fluoranthene	806	47.4	947.3	0	85.1	48	161				
Benzo(a)pyrene	766	47.4	947.3	0	80.8	34.4	179				
Indeno(1,2,3-cd)pyrene	798	47.4	947.3	0	84.3	41.1	165				
Dibenz(a,h)anthracene	796	47.4	947.3	0	84.0	38.1	166				
Benzo(g,h,i)perylene	894	47.4	947.3	0	94.4	45.6	157				
Surr: 2-Fluorobiphenyl	344		473.6		72.6	50.4	142				
Surr: Terphenyl-d14 (surr)	414		473.6		87.5	48.8	157				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI**	Work Order Number:	**1403183**
Logged by:	**Clare Griggs**	Date Received:	**3/14/2014 4:21:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☐	No ☑	NA ☐
	Samples received straight from field.			
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Cooler	9.7	Good
Sample	11.8	

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (Internal): 1403183

Date: 3.14.14

Page: 1 of 1

Client: GEI
Address: 600 STEWART ST.
City, State, Zip: SEATTLE WA 98101 Tel:
Reports To (PM): JESSICA SMITH Fax: JASMITH@GEOENGINEERS.COM Email: NSOLOMON@GEOENGINEERS

Project Name: RUFUS 2.0 BLOCK 19
Location: SEATTLE WA
Collected by: NATE SOLOMON
Project No: 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	OXBTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T)	Dissolved (D)	Anions (EC)***	EDB (8011)	Comments/Depth
1	TP2-2	3.14	1010	SOIL				X											
2	TP1-4		1315																
3	TP1-6		1320																
4	TP2-2		1330																
5	TP2-4		1345							X									
6	TP3-2		1405																
7	TP3-4		1420																
8	TP3-6		1440					X											
9																			
10																			

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Special Remarks: Analysis added 3/17/14 by Chris Brown -GEI

Relinquished	Date/Time	Received	Date/Time
NATE SOLOMON	3.14.14 1621		3/14/14 1621
Relinquished	Date/Time	Received	Date/Time

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers, Inc. - Redmond
Jessica Smith
8410 154th Ave. NE
Redmond, Washington 98052

RE: Rufus Block 19
Lab ID: 1404053

April 09, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 21 sample(s) on 4/4/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *04/09/2014*

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19
Lab Order: 1404053

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1404053-001	TP-4-2.0	04/04/2014 11:17 AM	04/04/2014 5:17 PM
1404053-002	TP-4-4.0	04/04/2014 11:23 AM	04/04/2014 5:17 PM
1404053-003	TP-4-6.0	04/04/2014 11:25 AM	04/04/2014 5:17 PM
1404053-004	TP-4-8.0	04/04/2014 11:26 AM	04/04/2014 5:17 PM
1404053-005	TP-5-2.0	04/04/2014 11:37 AM	04/04/2014 5:17 PM
1404053-006	TP-5-4.0	04/04/2014 11:39 AM	04/04/2014 5:17 PM
1404053-007	TP-5-6.0	04/04/2014 11:43 AM	04/04/2014 5:17 PM
1404053-008	TP-5-8.0	04/04/2014 11:44 AM	04/04/2014 5:17 PM
1404053-009	TP-5-10.0	04/04/2014 11:49 AM	04/04/2014 5:17 PM
1404053-010	TP-6-2.0	04/04/2014 12:27 PM	04/04/2014 5:17 PM
1404053-011	TP-6-4.0	04/04/2014 12:32 PM	04/04/2014 5:17 PM
1404053-012	TP-6-6.0	04/04/2014 12:35 PM	04/04/2014 5:17 PM
1404053-013	TP-6-8.0	04/04/2014 12:37 PM	04/04/2014 5:17 PM
1404053-014	TP-7-2.0	04/04/2014 12:42 PM	04/04/2014 5:17 PM
1404053-015	TP-7-4.0	04/04/2014 12:45 PM	04/04/2014 5:17 PM
1404053-016	TP-7-6.0	04/04/2014 12:47 PM	04/04/2014 5:17 PM
1404053-017	TP-7-8.0	04/04/2014 12:48 PM	04/04/2014 5:17 PM
1404053-018	TP-8-2.0	04/04/2014 2:25 PM	04/04/2014 5:17 PM
1404053-019	TP-8-4.0	04/04/2014 2:26 PM	04/04/2014 5:17 PM
1404053-020	TP-8-6.0	04/04/2014 2:28 PM	04/04/2014 5:17 PM
1404053-021	EX-8-8.0	04/04/2014 2:30 PM	04/04/2014 5:17 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1404053**
Date: **4/9/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1404053**
Date Reported: **4/9/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/4/2014 11:17:00 AM
Project: Rufus Block 19
Lab ID: 1404053-001
Matrix: Soil
Client Sample ID: TP-4-2.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 7090		Analyst: PH
Naphthalene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
2-Methylnaphthalene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
1-Methylnaphthalene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Acenaphthylene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Acenaphthene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Fluorene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Phenanthrene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Anthracene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Fluoranthene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Pyrene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Benz(a)anthracene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Chrysene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Benzo(b)fluoranthene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Benzo(k)fluoranthene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Benzo(a)pyrene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Indeno(1,2,3-cd)pyrene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Dibenz(a,h)anthracene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Benzo(g,h,i)perylene	ND	61.4		µg/Kg-dry	1	4/8/2014 12:12:00 PM
Surr: 2-Fluorobiphenyl	107	50.4-142		%REC	1	4/8/2014 12:12:00 PM
Surr: Terphenyl-d14 (surr)	105	48.8-157		%REC	1	4/8/2014 12:12:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13453		Analyst: AK
Percent Moisture	21.7			wt%	1	4/7/2014 4:32:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404053**
Date Reported: **4/9/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/4/2014 11:37:00 AM
Project: Rufus Block 19
Lab ID: 1404053-005
Matrix: Soil
Client Sample ID: TP-5-2.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7092		Analyst: TN
Diesel (Fuel Oil)	ND	23.3		mg/Kg-dry	1	4/7/2014 11:09:00 PM
Heavy Oil	183	58.3		mg/Kg-dry	1	4/7/2014 11:09:00 PM
Surr: 2-Fluorobiphenyl	67.3	50-150		%REC	1	4/7/2014 11:09:00 PM
Surr: o-Terphenyl	74.0	50-150		%REC	1	4/7/2014 11:09:00 PM
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 7090		Analyst: PH
Naphthalene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
2-Methylnaphthalene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
1-Methylnaphthalene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Acenaphthylene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Acenaphthene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Fluorene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Phenanthrene	99.0	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Anthracene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Fluoranthene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Pyrene	92.6	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Benz(a)anthracene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Chrysene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Benzo(b)fluoranthene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Benzo(k)fluoranthene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Benzo(a)pyrene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Indeno(1,2,3-cd)pyrene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Dibenz(a,h)anthracene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Benzo(g,h,i)perylene	ND	60.5		µg/Kg-dry	1	4/8/2014 1:03:00 PM
Surr: 2-Fluorobiphenyl	89.5	50.4-142		%REC	1	4/8/2014 1:03:00 PM
Surr: Terphenyl-d14 (surr)	113	48.8-157		%REC	1	4/8/2014 1:03:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13453		Analyst: AK
Percent Moisture	20.9			wt%	1	4/7/2014 4:32:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404053**
Date Reported: **4/9/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/4/2014 11:49:00 AM
Project: Rufus Block 19
Lab ID: 1404053-009
Matrix: Soil
Client Sample ID: TP-5-10.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7092		Analyst: TN
Diesel (Fuel Oil)	ND	24.7		mg/Kg-dry	1	4/7/2014 10:12:00 PM
Heavy Oil	ND	61.9		mg/Kg-dry	1	4/7/2014 10:12:00 PM
Surr: 2-Fluorobiphenyl	67.3	50-150		%REC	1	4/7/2014 10:12:00 PM
Surr: o-Terphenyl	68.3	50-150		%REC	1	4/7/2014 10:12:00 PM
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 7090		Analyst: PH
Naphthalene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
2-Methylnaphthalene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
1-Methylnaphthalene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Acenaphthylene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Acenaphthene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Fluorene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Phenanthrene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Anthracene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Fluoranthene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Pyrene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Benz(a)anthracene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Chrysene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Benzo(b)fluoranthene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Benzo(k)fluoranthene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Benzo(a)pyrene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Indeno(1,2,3-cd)pyrene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Dibenz(a,h)anthracene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Benzo(g,h,i)perylene	ND	62.7		µg/Kg-dry	1	4/8/2014 3:08:00 PM
Surr: 2-Fluorobiphenyl	75.0	50.4-142		%REC	1	4/8/2014 3:08:00 PM
Surr: Terphenyl-d14 (surr)	92.4	48.8-157		%REC	1	4/8/2014 3:08:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13453		Analyst: AK
Percent Moisture	22.9			wt%	1	4/7/2014 4:32:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404053**
Date Reported: **4/9/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/4/2014 12:27:00 PM
Project: Rufus Block 19
Lab ID: 1404053-010
Matrix: Soil
Client Sample ID: TP-6-2.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 7090		Analyst: PH
Naphthalene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
2-Methylnaphthalene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
1-Methylnaphthalene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Acenaphthylene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Acenaphthene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Fluorene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Phenanthrene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Anthracene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Fluoranthene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Pyrene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Benz(a)anthracene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Chrysene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Benzo(b)fluoranthene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Benzo(k)fluoranthene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Benzo(a)pyrene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Indeno(1,2,3-cd)pyrene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Dibenz(a,h)anthracene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Benzo(g,h,i)perylene	ND	63.4		µg/Kg-dry	1	4/8/2014 3:34:00 PM
Surr: 2-Fluorobiphenyl	91.9	50.4-142		%REC	1	4/8/2014 3:34:00 PM
Surr: Terphenyl-d14 (surr)	115	48.8-157		%REC	1	4/8/2014 3:34:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13453		Analyst: AK
Percent Moisture	24.7			wt%	1	4/7/2014 4:32:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404053**
Date Reported: **4/9/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/4/2014 12:42:00 PM
Project: Rufus Block 19
Lab ID: 1404053-014
Matrix: Soil
Client Sample ID: TP-7-2.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 7090		Analyst: PH
Naphthalene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
2-Methylnaphthalene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
1-Methylnaphthalene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Acenaphthylene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Acenaphthene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Fluorene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Phenanthrene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Anthracene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Fluoranthene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Pyrene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Benz(a)anthracene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Chrysene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Benzo(b)fluoranthene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Benzo(k)fluoranthene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Benzo(a)pyrene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Indeno(1,2,3-cd)pyrene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Dibenz(a,h)anthracene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Benzo(g,h,i)perylene	ND	63.3		µg/Kg-dry	1	4/8/2014 3:59:00 PM
Surr: 2-Fluorobiphenyl	79.1	50.4-142		%REC	1	4/8/2014 3:59:00 PM
Surr: Terphenyl-d14 (surr)	100	48.8-157		%REC	1	4/8/2014 3:59:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13453		Analyst: AK
Percent Moisture	24.5			wt%	1	4/7/2014 4:32:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404053**
Date Reported: **4/9/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/4/2014 2:25:00 PM
Project: Rufus Block 19
Lab ID: 1404053-018
Matrix: Soil
Client Sample ID: TP-8-2.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7092		Analyst: TN
Diesel (Fuel Oil)	ND	22.8		mg/Kg-dry	1	4/7/2014 10:40:00 PM
Heavy Oil	ND	56.9		mg/Kg-dry	1	4/7/2014 10:40:00 PM
Surr: 2-Fluorobiphenyl	73.5	50-150		%REC	1	4/7/2014 10:40:00 PM
Surr: o-Terphenyl	71.7	50-150		%REC	1	4/7/2014 10:40:00 PM
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 7090		Analyst: PH
Naphthalene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
2-Methylnaphthalene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
1-Methylnaphthalene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Acenaphthylene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Acenaphthene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Fluorene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Phenanthrene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Anthracene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Fluoranthene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Pyrene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Benz(a)anthracene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Chrysene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Benzo(b)fluoranthene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Benzo(k)fluoranthene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Benzo(a)pyrene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Indeno(1,2,3-cd)pyrene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Dibenz(a,h)anthracene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Benzo(g,h,i)perylene	ND	59.5		µg/Kg-dry	1	4/8/2014 4:24:00 PM
Surr: 2-Fluorobiphenyl	92.8	50.4-142		%REC	1	4/8/2014 4:24:00 PM
Surr: Terphenyl-d14 (surr)	121	48.8-157		%REC	1	4/8/2014 4:24:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13453		Analyst: AK
Percent Moisture	20.3			wt%	1	4/7/2014 4:32:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/9/2014*

Work Order: 1404053
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **1404059-003ADUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **4/7/2014**	RunNo: **13466**
Client ID: **BATCH**	Batch ID: **7092**		Analysis Date: **4/8/2014**	SeqNo: **272062**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	28.1	20.7						12.21	78.8	30	
Heavy Oil	123	51.8						121.0	1.86	30	
Surr: 2-Fluorobiphenyl	15.7		20.72		75.6	50	150		0		
Surr: o-Terphenyl	14.9		20.72		72.1	50	150		0		

Sample ID: **LCS-7092**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **4/7/2014**	RunNo: **13466**
Client ID: **LCSS**	Batch ID: **7092**		Analysis Date: **4/7/2014**	SeqNo: **272070**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	473	20.0	500.0	0	94.7	65	135				
Surr: 2-Fluorobiphenyl	12.4		20.00		62.2	50	150				
Surr: o-Terphenyl	12.7		20.00		63.4	50	150				

Sample ID: **MB-7092**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **4/7/2014**	RunNo: **13466**
Client ID: **MBLKS**	Batch ID: **7092**		Analysis Date: **4/7/2014**	SeqNo: **272071**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	14.4		20.00		71.8	50	150				
Surr: o-Terphenyl	14.6		20.00		73.1	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1404053
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **MB-7090**	SampType: **MBLK**	Units: **µg/Kg**	Prep Date: **4/7/2014**	RunNo: **13480**
Client ID: **MBLKS**	Batch ID: **7090**		Analysis Date: **4/8/2014**	SeqNo: **272214**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	50.0									
2-Methylnaphthalene	ND	50.0									
1-Methylnaphthalene	ND	50.0									
Acenaphthylene	ND	50.0									
Acenaphthene	ND	50.0									
Fluorene	ND	50.0									
Phenanthrene	ND	50.0									
Anthracene	ND	50.0									
Fluoranthene	ND	50.0									
Pyrene	ND	50.0									
Benz(a)anthracene	ND	50.0									
Chrysene	ND	50.0									
Benzo(b)fluoranthene	ND	50.0									
Benzo(k)fluoranthene	ND	50.0									
Benzo(a)pyrene	ND	50.0									
Indeno(1,2,3-cd)pyrene	ND	50.0									
Dibenz(a,h)anthracene	ND	50.0									
Benzo(g,h,i)perylene	ND	50.0									
Surr: 2-Fluorobiphenyl	417		500.0		83.3	50.4	142				
Surr: Terphenyl-d14 (surr)	437		500.0		87.5	48.8	157				

Sample ID: **LCS-7090**	SampType: **LCS**	Units: **µg/Kg**	Prep Date: **4/7/2014**	RunNo: **13480**
Client ID: **LCSS**	Batch ID: **7090**		Analysis Date: **4/8/2014**	SeqNo: **272215**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,010	50.0	1,000	0	101	61.6	125				
2-Methylnaphthalene	1,040	50.0	1,000	0	104	58.2	129				
1-Methylnaphthalene	1,000	50.0	1,000	0	100	56.4	132				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1404053
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **LCS-7090** SampType: **LCS** Units: **µg/Kg** Prep Date: **4/7/2014** RunNo: **13480**
Client ID: **LCSS** Batch ID: **7090** Analysis Date: **4/8/2014** SeqNo: **272215**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthylene	1,040	50.0	1,000	0	104	52.2	133				
Acenaphthene	1,030	50.0	1,000	0	103	54	131				
Fluorene	1,020	50.0	1,000	0	102	53.4	131				
Phenanthrene	1,040	50.0	1,000	0	104	55.6	128				
Anthracene	1,060	50.0	1,000	0	106	51	132				
Fluoranthene	1,030	50.0	1,000	0	103	48.4	134				
Pyrene	1,030	50.0	1,000	0	103	48.6	135				
Benz(a)anthracene	1,040	50.0	1,000	0	104	41.9	136				
Chrysene	1,080	50.0	1,000	0	108	51.4	135				
Benzo(b)fluoranthene	1,060	50.0	1,000	0	106	39.7	137				
Benzo(k)fluoranthene	1,020	50.0	1,000	0	102	45.7	138				
Benzo(a)pyrene	995	50.0	1,000	0	99.5	45.3	135				
Indeno(1,2,3-cd)pyrene	952	50.0	1,000	0	95.2	45.4	137				
Dibenz(a,h)anthracene	947	50.0	1,000	0	94.7	45.8	134				
Benzo(g,h,i)perylene	940	50.0	1,000	0	94.0	49.3	134				
Surr: 2-Fluorobiphenyl	471		500.0		94.2	50.4	142				
Surr: Terphenyl-d14 (surr)	494		500.0		98.8	48.8	157				

Sample ID: **1404053-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **4/7/2014** RunNo: **13480**
Client ID: **TP-4-2.0** Batch ID: **7090** Analysis Date: **4/8/2014** SeqNo: **272217**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	62.3						0		30	
2-Methylnaphthalene	ND	62.3						0		30	
1-Methylnaphthalene	ND	62.3						0		30	
Acenaphthylene	ND	62.3						0		30	
Acenaphthene	ND	62.3						0		30	
Fluorene	ND	62.3						0		30	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1404053
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1404053-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **4/7/2014** RunNo: **13480**
Client ID: **TP-4-2.0** Batch ID: **7090** Analysis Date: **4/8/2014** SeqNo: **272217**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenanthrene	ND	62.3						0		30	
Anthracene	ND	62.3						0		30	
Fluoranthene	ND	62.3						0		30	
Pyrene	ND	62.3						0		30	
Benz(a)anthracene	ND	62.3						0		30	
Chrysene	ND	62.3						0		30	
Benzo(b)fluoranthene	ND	62.3						0		30	
Benzo(k)fluoranthene	ND	62.3						0		30	
Benzo(a)pyrene	ND	62.3						0		30	
Indeno(1,2,3-cd)pyrene	ND	62.3						0		30	
Dibenz(a,h)anthracene	ND	62.3						0		30	
Benzo(g,h,i)perylene	ND	62.3						0		30	
Surr: 2-Fluorobiphenyl	682		622.6		110	50.4	142		0		
Surr: Terphenyl-d14 (surr)	637		622.6		102	48.8	157		0		

Sample ID: **1404053-005AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **4/7/2014** RunNo: **13480**
Client ID: **TP-5-2.0** Batch ID: **7090** Analysis Date: **4/8/2014** SeqNo: **272219**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,030	60.3	1,205	16.00	83.9	42.9	138				
2-Methylnaphthalene	1,220	60.3	1,205	53.84	97.1	42.8	151				
1-Methylnaphthalene	1,160	60.3	1,205	49.30	92.3	41.6	148				
Acenaphthylene	1,200	60.3	1,205	50.06	95.4	32.6	160				
Acenaphthene	1,150	60.3	1,205	7.542	94.8	46.3	142				
Fluorene	1,170	60.3	1,205	26.19	94.6	43.4	153				
Phenanthrene	1,230	60.3	1,205	98.97	93.5	45.5	140				
Anthracene	1,230	60.3	1,205	47.53	97.7	32.6	160				
Fluoranthene	1,240	60.3	1,205	59.30	97.9	44.6	161				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1404053
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID: **1404053-005AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **4/7/2014** RunNo: **13480**
Client ID: **TP-5-2.0** Batch ID: **7090** Analysis Date: **4/8/2014** SeqNo: **272219**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pyrene	1,250	60.3	1,205	92.62	96.1	48.3	158				
Benz(a)anthracene	1,280	60.3	1,205	41.88	103	57.5	169				
Chrysene	1,210	60.3	1,205	42.78	96.8	45.2	146				
Benzo(b)fluoranthene	1,340	60.3	1,205	27.54	109	42.2	168				
Benzo(k)fluoranthene	1,440	60.3	1,205	32.05	116	48	161				
Benzo(a)pyrene	1,520	60.3	1,205	38.84	123	34.4	179				
Indeno(1,2,3-cd)pyrene	1,520	60.3	1,205	22.19	124	41.1	165				
Dibenz(a,h)anthracene	1,560	60.3	1,205	7.869	129	38.1	166				
Benzo(g,h,i)perylene	1,520	60.3	1,205	34.67	124	45.6	157				
Surr: 2-Fluorobiphenyl	520		602.7		86.3	50.4	142				
Surr: Terphenyl-d14 (surr)	627		602.7		104	48.8	157				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI1**	Work Order Number:	**1404053**
Logged by:	**Chelsea Ward**	Date Received:	**4/4/2014 5:17:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
	Most samples received straight from field.			
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Sample	16.6	

Fremont analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404053

Date: 4/4/14

Page: 1 of: 3

Client: GeoEngineers
Address:
City, State, Zip
Tel:
Reports To (PM): Jessica Smith
Fax:

Project Name: Rufus Block 19
Location: Seattle
Collected by: Chris Brown
Email:
Project No:

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T)	Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1 TP-4-2.0	4/4/14	1117	S															
2 TP-4-4.0		1123																
3 TP-4-6.0		1125																
4 TP-4-8.0		1126																
5 TP-5-2.0		1137																
6 TP-5-4.0		1139																
7 TP-5-6.0		1143																
8 TP-5-8.0		1144																
9 TP-5-10.0		1149																
10 TP-6-2.0	↓	1227	↓															

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x	4/4/14 1717	x	4/4/14 1717
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

*Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404053

Date: 4/4/14

Page: 2 of: 3

Client: GeoEngineers
Address:
City, State, Zip
Tel:
Reports To (PM): Jessica Smith
Fax:

Project Name: Rufus Block 19
Location:
Collected by: Chris Brown
Email:
Project No:

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOC (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1	TP-6-4.0	4/4/14	1232	S														
2	TP-6-6.0		1235															
3	TP-6-8.0		1237															
4	TP-7-2.0		1242															
5	TP-7-4.0		1245															
6	TP-7-6.0		1247															
7	TP-7-8.0		1248															
8	TP-8-2.0		1425															
9	TP-8-4.0		1426															
10	TP-8-6.0		1428															

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Special Remarks:

Relinquished	Date/Time	Received	Date/Time
X	4/4/14 1717	X	4/4/14 1717
Relinquished	Date/Time	Received	Date/Time
X		X	

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404053

Date: 4/4/14

Page: 3 of: 3

Client: GeoEngineers
Address:
City, State, Zip
Tel:
Reports To (PM): Jessica Smith
Fax:

Project Name: Rufus Block 19
Location: Seattle
Collected by: Chris Brown
Email:
Project No:

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOC (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T)	Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1	EX-8-8-0	4/4/14	1430	S															
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Si Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x	4/4/14 1717	x	4/4/14 1717
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

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Fremont ANALYTICAL

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404053A

Date: 4/4/14

Page: 1 of: 3

Client: GeoEngineers
Address:
City, State, Zip
Tel:
Reports To (PM): Jessica Smith
Fax:

Project Name: Rufus Block 19
Location: Seattle
Collected by: Chris Brown
Email:
Project No:

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI-VOC (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020A / 200.8)	Total (T)	Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1 TP-4-2.0	4/4/14	1117	S								⊗							
2 TP-4-4.0		1123																
3 TP-4-6.0		1125																
4 TP-4-8.0		1126																
5 TP-5-2.0		1137								⊗	⊗							
6 TP-5-4.0		1139																
7 TP-5-6.0		1143																
8 TP-5-8.0		1144																
9 TP-5-10.0		1149								⊗	⊗							
10 TP-6-2.0	↓	1227	↓								⊗							

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished: [signature] Date/Time: 4/4/14 1717

Received: [signature] Date/Time: 4/4/14 1717

Special Remarks:

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404053

Date: 4/4/14

Page: 2 of: 3

Client: GeoEngineers

Address:

City, State, Zip

Tel:

Reports To (PM): Jessica Smith

Fax:

Project Name: Rufus Block 19

Location:

Collected by: Chris Brown

Email:

Project No:

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOC (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1	TP-6-4.0	4/4/14	1232	S														
2	TP-6-6.0		1235															
3	TP-6-8.0		1237															
4	TP-7-2.0		1242								⊗							
5	TP-7-4.0		1245															
6	TP-7-6.0		1247															
7	TP-7-8.0		1248															
8	TP-8-2.0		1425						⊗		⊗							
9	TP-8-4.0		1426															
10	TP-8-6.0	↓	1428	↓														

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Tl Ti U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x [signature]	4/4/14 1717	[signature]	4/4/14 1717
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

*Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404053

Date: 4/4/14

Page: 3 of: 3

Client: GeoEngineers

Address:

City, State, Zip

Tel:

Reports To (PM): Jessica Smith

Fax:

Project Name: Rufus Block 19

Location: Seattle

Collected by: Chris Brown

Email:

Project No:

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	BAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020) / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1	EX-S-S-0	4/4/14	1430	S														
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x	4/4/14 1717	x	4/4/14 1717
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

www.fremontanalytical.com

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers, Inc. - Redmond
Jessica Smith
8410 154th Ave. NE
Redmond, Washington 98052

RE: Rufus Block 19
Lab ID: 1404070

April 10, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 6 sample(s) on 4/8/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Hydrocarbon Identification by NWTPH-HCID
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *04/10/2014*

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19
Lab Order: 1404070

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1404070-001	PCS-1-10.0	04/08/2014 2:08 PM	04/08/2014 5:15 PM
1404070-002	EX-1-12.0	04/08/2014 2:31 PM	04/08/2014 5:15 PM
1404070-003	EX-2-10.0	04/08/2014 2:32 PM	04/08/2014 5:15 PM
1404070-004	EX-3-10.0	04/08/2014 2:33 PM	04/08/2014 5:15 PM
1404070-005	EX-4-10.0	04/08/2014 2:34 PM	04/08/2014 5:15 PM
1404070-006	EX-5-10.0	04/08/2014 2:35 PM	04/08/2014 5:15 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1404070**
Date: **4/10/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1404070**
Date Reported: **4/10/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/8/2014 2:08:00 PM
Project: Rufus Block 19
Lab ID: 1404070-001
Matrix: Soil
Client Sample ID: PCS-1-10.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7112		Analyst: BR
Diesel (Fuel Oil)	308	27.2		mg/Kg-dry	1	4/9/2014 7:06:00 AM
Heavy Oil	3,530	68.0		mg/Kg-dry	1	4/9/2014 7:06:00 AM
Surr: 2-Fluorobiphenyl	66.6	50-150		%REC	1	4/9/2014 7:06:00 AM
Surr: o-Terphenyl	69.3	50-150		%REC	1	4/9/2014 7:06:00 AM
Hydrocarbon Identification by NWTPH-HCID				Batch ID: 7100		Analyst: TN
Gasoline	ND	27.2		mg/Kg-dry	1	4/9/2014 7:06:00 AM
Mineral Spirits	ND	40.8		mg/Kg-dry	1	4/9/2014 7:06:00 AM
Kerosene	ND	68.0		mg/Kg-dry	1	4/9/2014 7:06:00 AM
Diesel (Fuel Oil)	DETECT	68.0		mg/Kg-dry	1	4/9/2014 7:06:00 AM
Heavy Oil	DETECT	136		mg/Kg-dry	1	4/9/2014 7:06:00 AM
Mineral Oil	ND	136		mg/Kg-dry	1	4/9/2014 7:06:00 AM
Surr: 2-Fluorobiphenyl	66.6	50-150		%REC	1	4/9/2014 7:06:00 AM
Surr: o-Terphenyl	69.3	50-150		%REC	1	4/9/2014 7:06:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R13486		Analyst: KZ
Percent Moisture	31.8			wt%	1	4/9/2014 8:53:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404070**
Date Reported: **4/10/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/8/2014 2:31:00 PM
Project: Rufus Block 19
Lab ID: 1404070-002
Matrix: Soil
Client Sample ID: EX-1-12.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7105		Analyst: TN
Diesel (Fuel Oil)	ND	22.6		mg/Kg-dry	1	4/9/2014 4:02:00 PM
Heavy Oil	ND	56.6		mg/Kg-dry	1	4/9/2014 4:02:00 PM
Surr: 2-Fluorobiphenyl	129	50-150		%REC	1	4/9/2014 4:02:00 PM
Surr: o-Terphenyl	118	50-150		%REC	1	4/9/2014 4:02:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13497		Analyst: AK
Percent Moisture	18.9			wt%	1	4/9/2014 5:30:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404070**
Date Reported: **4/10/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/8/2014 2:32:00 PM
Project: Rufus Block 19
Lab ID: 1404070-003
Matrix: Soil
Client Sample ID: EX-2-10.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7105		Analyst: TN
Diesel (Fuel Oil)	ND	24.4		mg/Kg-dry	1	4/9/2014 4:30:00 PM
Heavy Oil	ND	61.0		mg/Kg-dry	1	4/9/2014 4:30:00 PM
Surr: 2-Fluorobiphenyl	71.3	50-150		%REC	1	4/9/2014 4:30:00 PM
Surr: o-Terphenyl	65.6	50-150		%REC	1	4/9/2014 4:30:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13497		Analyst: AK
Percent Moisture	20.0			wt%	1	4/9/2014 5:30:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404070**
Date Reported: **4/10/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/8/2014 2:33:00 PM
Project: Rufus Block 19
Lab ID: 1404070-004
Matrix: Soil
Client Sample ID: EX-3-10.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7105		Analyst: TN
Diesel (Fuel Oil)	ND	23.7		mg/Kg-dry	1	4/9/2014 4:59:00 PM
Heavy Oil	ND	59.2		mg/Kg-dry	1	4/9/2014 4:59:00 PM
Surr: 2-Fluorobiphenyl	71.5	50-150		%REC	1	4/9/2014 4:59:00 PM
Surr: o-Terphenyl	64.0	50-150		%REC	1	4/9/2014 4:59:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13497		Analyst: AK
Percent Moisture	20.4			wt%	1	4/9/2014 5:30:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404070**
Date Reported: **4/10/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/8/2014 2:34:00 PM
Project: Rufus Block 19
Lab ID: 1404070-005
Matrix: Soil
Client Sample ID: EX-4-10.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7105		Analyst: TN
Diesel (Fuel Oil)	ND	23.4		mg/Kg-dry	1	4/9/2014 5:27:00 PM
Heavy Oil	ND	58.5		mg/Kg-dry	1	4/9/2014 5:27:00 PM
Surr: 2-Fluorobiphenyl	96.8	50-150		%REC	1	4/9/2014 5:27:00 PM
Surr: o-Terphenyl	90.5	50-150		%REC	1	4/9/2014 5:27:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13497		Analyst: AK
Percent Moisture	20.6			wt%	1	4/9/2014 5:30:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404070**
Date Reported: **4/10/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/8/2014 2:35:00 PM
Project: Rufus Block 19
Lab ID: 1404070-006
Matrix: Soil
Client Sample ID: EX-5-10.0

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7105		Analyst: TN
Diesel (Fuel Oil)	ND	23.4		mg/Kg-dry	1	4/9/2014 5:55:00 PM
Heavy Oil	ND	58.5		mg/Kg-dry	1	4/9/2014 5:55:00 PM
Surr: 2-Fluorobiphenyl	72.5	50-150		%REC	1	4/9/2014 5:55:00 PM
Surr: o-Terphenyl	67.0	50-150		%REC	1	4/9/2014 5:55:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13497		Analyst: AK
Percent Moisture	19.7			wt%	1	4/9/2014 5:30:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/10/2014*

Work Order: 1404070
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **1404070-001ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **4/8/2014**		RunNo: **13495**			
Client ID: **PCS-1-10.0**	Batch ID: **7112**					Analysis Date: **4/9/2014**		SeqNo: **272458**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	449	26.7						307.8	37.4	30	R
Heavy Oil	4,330	66.7						3,533	20.2	30	
Surr: 2-Fluorobiphenyl	18.8		26.70		70.5	50	150		0		
Surr: o-Terphenyl	19.5		26.70		73.2	50	150		0		

NOTES:
R - High RPD noted for Diesel.

Sample ID: **LCS-7112**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **4/8/2014**		RunNo: **13495**			
Client ID: **LCSS**	Batch ID: **7112**					Analysis Date: **4/9/2014**		SeqNo: **272463**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	475	20.0	500.0	0	95.1	65	135				
Surr: 2-Fluorobiphenyl	12.7		20.00		63.7	50	150				
Surr: o-Terphenyl	12.9		20.00		64.5	50	150				

Sample ID: **MB-7112**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **4/8/2014**		RunNo: **13495**			
Client ID: **MBLKS**	Batch ID: **7112**					Analysis Date: **4/9/2014**		SeqNo: **272464**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	14.5		20.00		72.6	50	150				
Surr: o-Terphenyl	14.4		20.00		72.0	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1404070
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **1404070-006ADUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **4/9/2014**	RunNo: **13505**
Client ID: **EX-5-10.0**	Batch ID: **7105**		Analysis Date: **4/9/2014**	SeqNo: **272600**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	23.3						0		30	
Heavy Oil	ND	58.4						0		30	
Surr: 2-Fluorobiphenyl	17.0		23.35		72.9	50	150		0		
Surr: o-Terphenyl	15.4		23.35		66.1	50	150		0		

Sample ID: **LCS-7105**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **4/9/2014**	RunNo: **13505**
Client ID: **LCSS**	Batch ID: **7105**		Analysis Date: **4/9/2014**	SeqNo: **272619**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	446	20.0	500.0	0	89.2	65	135				
Surr: 2-Fluorobiphenyl	24.1		20.00		121	50	150				
Surr: o-Terphenyl	22.8		20.00		114	50	150				

Sample ID: **MB-7105**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **4/9/2014**	RunNo: **13505**
Client ID: **MBLKS**	Batch ID: **7105**		Analysis Date: **4/9/2014**	SeqNo: **272620**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	25.2		20.00		126	50	150				
Surr: o-Terphenyl	23.7		20.00		119	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1404070
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

QC SUMMARY REPORT

Hydrocarbon Identification by NWTPH-HCID

Sample ID: **LCS7100** SampType: **LCS** Units: **mg/Kg** Prep Date: **4/9/2014** RunNo: **13487**
Client ID: **LCSS** Batch ID: **7100** Analysis Date: **4/9/2014** SeqNo: **272363**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	475	50.0	500.0	0	95.1	65	135				
Surr: 2-Fluorobiphenyl	12.7		20.00		63.7	50	150				
Surr: o-Terphenyl	12.9		20.00		64.5	50	150				

Sample ID: **MB7100** SampType: **MBLK** Units: **mg/Kg** Prep Date: **4/9/2014** RunNo: **13487**
Client ID: **MBLKS** Batch ID: **7100** Analysis Date: **4/9/2014** SeqNo: **272364**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	20.0									
Mineral Spirits	ND	30.0									
Kerosene	ND	50.0									
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	ND	100									
Mineral Oil	ND	100									
Surr: 2-Fluorobiphenyl	14.5		20.00		72.6	50	150				
Surr: o-Terphenyl	14.4		20.00		72.0	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI1**	Work Order Number:	**1404070**
Logged by:	**Chelsea Ward**	Date Received:	**4/8/2014 5:15:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
	Samples received straight from field.			
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404070

Date: 4/8/14

Page: 1 of: 1

Client: GeoEngineers
Address:
City, State, Zip
Tel:
Reports To (PM): Jessica Smith
Fax:

Project Name: Rufus-Block 19
Location: Seattle
Collected by: Chris
Email:
Project No: 10434.001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T)	Dissolved (D)	Anions (IC)***	EDB (8011)	Hold				Comments/Depth
1	PCS-1-10.0	4/8/14	1408	S				X															
2	EX-1-12.0		1431															X					
3	EX-2-10.0		1432																				
4	EX-3-10.0		1433																				
5	EX-4-10.0		1434																				
6	EX-5-10.0		1435																				
7																							
8																							
9																							
10																							

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x Cheri Rose	4/8/14 1715	x	4/8/14 1715
Relinquished	Date/Time	Received	Date/Time
x		x	

Special Remarks:

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

www.fremontanalytical.com

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 4/8/14

Laboratory Project No (internal): 1404070

Page: 1 of: 1

Client: GeoEngineers

Address:

City, State, Zip

Tel:

Reports To (PM): Jessica Smith

Fax:

Project Name: Rufus-Block 19

Location: Seattle

Collected by: Chris

Email:

Project No: 10434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Hold			Comments/Depth
1	PCS-1-10.0	4/8/14	1408	S					X												Quant HCID 4/9
2	EX-1-12.0	↓	1431	↓						X											
3	EX-2-10.0	↓	1432	↓						X											
4	EX-3-10.0	↓	1433	↓						X											
5	EX-4-10.0	↓	1434	↓						X											
6	EX-5-10.0	↓	1435	↓						X											
7																					
8																					
9																					
10																					

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks: Analysis added 4/9/14 by CTB, same day TAT

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x [signature]	4/8/14 1715	[signature]	4/8/14 1715
x		x	

TAT -> SameDay^ (circled) NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

www.fremontanalytical.com

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers, Inc. - Redmond
Jessica Smith
8410 154th Ave. NE
Redmond, Washington 98052

RE: Rufus 2.0 - Block 19
Lab ID: 1404084

April 14, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 5 sample(s) on 4/9/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Hydrocarbon Identification by NWTPH-HCID
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *04/14/2014*

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19
Lab Order: 1404084

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1404084-001	PCS-2-3.0	04/09/2014 2:15 PM	04/09/2014 4:29 PM
1404084-002	PCS-3-4.0	04/09/2014 2:45 PM	04/09/2014 4:29 PM
1404084-003	EX-6-4.5	04/09/2014 2:20 PM	04/09/2014 4:29 PM
1404084-004	EX-7-4.5	04/09/2014 2:25 PM	04/09/2014 4:29 PM
1404084-005	EX-8-4.5	04/09/2014 2:30 PM	04/09/2014 4:29 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1404084**
Date: **4/14/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19

SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1404084**
Date Reported: **4/14/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19

Lab ID: 1404084-001 **Collection Date:** 4/9/2014 2:15:00 PM
Client Sample ID: **PCS-2-3.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7130		Analyst: BR
Diesel (Fuel Oil)	10,000	23.4		mg/Kg-dry	1	4/10/2014 5:53:00 AM
Heavy Oil	ND	58.4		mg/Kg-dry	1	4/10/2014 5:53:00 AM
Surr: 2-Fluorobiphenyl	164	50-150	S	%REC	1	4/10/2014 5:53:00 AM
Surr: o-Terphenyl	121	50-150		%REC	1	4/10/2014 5:53:00 AM

NOTES:
S - High surrogate recovery attributed to TPH interference. The method is in control as indicated by the Method Blank (MB) & Laboratory Control Sample (LCS).

Hydrocarbon Identification by NWTPH-HCID				Batch ID: 7111		Analyst: TN
Gasoline	ND	23.4		mg/Kg-dry	1	4/10/2014 5:53:00 AM
Mineral Spirits	ND	35.0		mg/Kg-dry	1	4/10/2014 5:53:00 AM
Kerosene	ND	58.4		mg/Kg-dry	1	4/10/2014 5:53:00 AM
Diesel (Fuel Oil)	DETECT	58.4		mg/Kg-dry	1	4/10/2014 5:53:00 AM
Heavy Oil	ND	117		mg/Kg-dry	1	4/10/2014 5:53:00 AM
Mineral Oil	ND	117		mg/Kg-dry	1	4/10/2014 5:53:00 AM
Surr: 2-Fluorobiphenyl	164	50-150	S	%REC	1	4/10/2014 5:53:00 AM
Surr: o-Terphenyl	121	50-150		%REC	1	4/10/2014 5:53:00 AM

NOTES:
S - High surrogate recovery attributed to TPH interference. The method is in control as indicated by the Method Blank (MB) & Laboratory Control Sample (LCS).

Sample Moisture (Percent Moisture)				Batch ID: R13502		Analyst: KZ
Percent Moisture	15.9			wt%	1	4/10/2014 8:40:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404084**
Date Reported: **4/14/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19

Lab ID: 1404084-003 **Collection Date:** 4/9/2014 2:20:00 PM
Client Sample ID: **EX-6-4.5** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7134		Analyst: BR
Diesel (Fuel Oil)	ND	26.5		mg/Kg-dry	1	4/13/2014 8:19:00 PM
Heavy Oil	ND	66.4		mg/Kg-dry	1	4/13/2014 8:19:00 PM
Surr: 2-Fluorobiphenyl	97.8	50-150		%REC	1	4/13/2014 8:19:00 PM
Surr: o-Terphenyl	98.4	50-150		%REC	1	4/13/2014 8:19:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13541		Analyst: AK
Percent Moisture	26.9			wt%	1	4/11/2014 12:00:35 PM

Lab ID: 1404084-004 **Collection Date:** 4/9/2014 2:25:00 PM
Client Sample ID: **EX-7-4.5** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7134		Analyst: BR
Diesel (Fuel Oil)	ND	24.0		mg/Kg-dry	1	4/13/2014 8:48:00 PM
Heavy Oil	ND	60.0		mg/Kg-dry	1	4/13/2014 8:48:00 PM
Surr: 2-Fluorobiphenyl	103	50-150		%REC	1	4/13/2014 8:48:00 PM
Surr: o-Terphenyl	98.8	50-150		%REC	1	4/13/2014 8:48:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13541		Analyst: AK
Percent Moisture	22.1			wt%	1	4/11/2014 12:00:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404084**
Date Reported: **4/14/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19

Lab ID: 1404084-005 **Collection Date:** 4/9/2014 2:30:00 PM
Client Sample ID: **EX-8-4.5** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7134		Analyst: BR
Diesel (Fuel Oil)	ND	26.7		mg/Kg-dry	1	4/13/2014 9:16:00 PM
Heavy Oil	ND	66.7		mg/Kg-dry	1	4/13/2014 9:16:00 PM
Surr: 2-Fluorobiphenyl	100	50-150		%REC	1	4/13/2014 9:16:00 PM
Surr: o-Terphenyl	97.3	50-150		%REC	1	4/13/2014 9:16:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13541		Analyst: AK
Percent Moisture	25.3			wt%	1	4/11/2014 12:00:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/14/2014*

Work Order: 1404084
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **LCS-7130** SampType: **LCS** Units: **mg/Kg** Prep Date: **4/9/2014** RunNo: **13538**
Client ID: **LCSS** Batch ID: **7130** Analysis Date: **4/10/2014** SeqNo: **273240**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	478	20.0	500.0	0	95.6	65	135				
Surr: 2-Fluorobiphenyl	21.5		20.00		107	50	150				
Surr: o-Terphenyl	21.8		20.00		109	50	150				

Sample ID: **MB-7130** SampType: **MBLK** Units: **mg/Kg** Prep Date: **4/9/2014** RunNo: **13538**
Client ID: **MBLKS** Batch ID: **7130** Analysis Date: **4/10/2014** SeqNo: **273241**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	23.2		20.00		116	50	150				
Surr: o-Terphenyl	23.5		20.00		117	50	150				

Sample ID: **1404084-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **4/9/2014** RunNo: **13538**
Client ID: **PCS-2-3.0** Batch ID: **7130** Analysis Date: **4/10/2014** SeqNo: **273242**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	7,490	23.3						10,030	29.0	30	
Heavy Oil	ND	58.2						0		30	
Surr: 2-Fluorobiphenyl	35.1		23.29		151	50	150		0		S
Surr: o-Terphenyl	28.5		23.29		122	50	150		0		

NOTES:
S - High surrogate recovery attributed to TPH interference. The method is in control as indicated by the Method Blank (MB) & Laboratory Control Sample (LCS).

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1404084
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **1404105-004ADUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **4/11/2014**	RunNo: **13559**
Client ID: **BATCH**	Batch ID: **7134**		Analysis Date: **4/14/2014**	SeqNo: **273819**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	1,550	18.2						1,403	10.2	30	
Heavy Oil	ND	45.6						0		30	
Surr: 2-Fluorobiphenyl	19.4		18.23		107	50	150		0		
Surr: o-Terphenyl	18.1		18.23		99.4	50	150		0		

Sample ID: **LCS-7134**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **4/11/2014**	RunNo: **13559**
Client ID: **LCSS**	Batch ID: **7134**		Analysis Date: **4/13/2014**	SeqNo: **273836**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	506	20.0	500.0	0	101	65	135				
Surr: 2-Fluorobiphenyl	21.4		20.00		107	50	150				
Surr: o-Terphenyl	25.0		20.00		125	50	150				

Sample ID: **MB-7134**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **4/11/2014**	RunNo: **13559**
Client ID: **MBLKS**	Batch ID: **7134**		Analysis Date: **4/13/2014**	SeqNo: **273837**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	19.3		20.00		96.5	50	150				
Surr: o-Terphenyl	19.2		20.00		96.2	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/14/2014*

Work Order: 1404084
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19

QC SUMMARY REPORT

Hydrocarbon Identification by NWTPH-HCID

Sample ID: **LCS-7111**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **4/9/2014**		RunNo: **13513**			
Client ID: **LCSS**	Batch ID: **7111**					Analysis Date: **4/10/2014**		SeqNo: **272721**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	478	50.0	500.0	0	95.6	65	135				
Surr: 2-Fluorobiphenyl	21.5		20.00		107	50	150				
Surr: o-Terphenyl	21.8		20.00		109	50	150				

Sample ID: **MB-7111**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **4/9/2014**		RunNo: **13513**			
Client ID: **MBLKS**	Batch ID: **7111**					Analysis Date: **4/10/2014**		SeqNo: **272722**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	20.0									
Mineral Spirits	ND	30.0									
Kerosene	ND	50.0									
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	ND	100									
Mineral Oil	ND	100									
Surr: 2-Fluorobiphenyl	23.2		20.00		116	50	150				
Surr: o-Terphenyl	23.5		20.00		117	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI1**	Work Order Number:	**1404084**
Logged by:	**Chelsea Ward**	Date Received:	**4/9/2014 4:29:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☐	No ☑	NA ☐
	Samples received straight from field.			
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Cooler	7.3	Good
Sample	15.4	

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404084

Date: 4.9.14

Page: _____ of: _____

Client: GEO ENGINEERS
Address: _____
City, State, Zip _____ Tel: _____
Reports To (PM): JESSICA SMITH Fax: _____

Project Name: RUFUS 2.0 - BLOCK 19
Location: SEATTLE
Collected by: NATE SOLOMON
Email: _____
Project No: 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T)	Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1 PCS-2-9.0	4.9.14	1415	SOIL				X											SAME DAY
2 PCS-3-4.0		1445						X										HOLD
3 EX-6-4.5		1420						X										HOLD
4 EX-7-4.5		1435						X										HOLD
5 EX-8-4.5		1430						X										HOLD
6																		
7																		
8																		
9																		
10																		

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x	4.9.14 16:29	x	4/9/14 1629
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Fremont analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404084 A

Date: 4.9.14

Page: _____ of: _____

Client: GEO ENGINEERS
Address: _____
City, State, Zip _____ Tel: _____
Reports To (PM): JESSICA SMITH Fax: _____

Project Name: RUFUS 2.0 - BLOCK 19
Location: SEATTLE
Collected by: NATE SOLOMONS
Email: _____
Project No: 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOC (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1 PCS-2-9.0	4.9.14	1415	SOIL				X	⊗									SAVE DNA
2 PCS-3-4.0		1445						X									HOLD
3 EX-6-4.5		1420						X									HOLD
4 EX-7-4.5		1435						X									HOLD
5 EX-8-4.5	↓	1430	↓					X									HOLD
6																	⊗ Add Analysis
7																	Quant Dx/Ex
8																	4/10/14 CW
9																	
10																	

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate-Nitrite

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days)

Relinquished	Date/Time	Received	Date/Time
1	4.9.14 16:29		4/9/14 1629
2	Date/Time	Received	Date/Time

Special Remarks:

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

*Please coordinate with the lab in advance

Distribution: White - Lab; Yellow - File, Pink - Originator

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404084A

Date: 4.9.14

Page: _____ of: _____

Client: GEO ENGINEERS
Address:
City, State, Zip: Tel:
Reports To (PM): JESSICA SMITH Fax: Email:

Project Name: BOEING 2.0 - BLOCK 19
Location: SEATTLE
Collected by: NATE SOLOMON
Project No: 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	cVOC (EPA 8260)	BTEX	Gasoline Range Organics (NWTPH-Gx)	Diesel/Heavy Oil Range Organics (NWTPH-Dx) with silica gel cleanup	Carcinogenic PAH (EPA 8270 SIM)	PAH (EPA 8270 SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) / Dissolved (D)	Arsenic Speciation** (EPA 1632)	Comments/Depth
1 BOS-2-9.0	4.9.14	1415	SOIL				X	X							SAVE DNA
2 BOS-3-4.0		1445						X							HOLD
3 EX-6-4.5		1420						X							~~HOLD~~ Run per Chris Brown 4.11.14 ASAP
4 EX-7-4.5		1425						X							~~HOLD~~
5 EX-8-4.5		1430						X							~~HOLD~~
6															⊗ Add Analysis
7															Quant Dx/Ex
8															4/10/14 CW
9															
10															

**Metals Analysis (Circle): NTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Si Sn Sr Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate Nitrite

Sample Disposal: Return to Client Disposal by Lab (A fee may be assessed if samples are retained longer than 30 days)

Relinquished: Date/Time: 4.9.14 16:29
Received: Date/Time: 4/9/14 1629

Special Remarks:

TAT = Same Day* Next Day* 2 Day 3 Day STD
*Please coordinate with the lab in advance

Distribution: White - Lab; Yellow - File; Pink - Originator

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers, Inc. - Redmond
Jessica Smith
8410 154th Ave. NE
Redmond, Washington 98052

RE: Rufus 2.0 - Block 19
Lab ID: 1404100

April 14, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 2 sample(s) on 4/10/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *04/14/2014*

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19
Lab Order: 1404100

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1404100-001	EX-9-5.0	04/10/2014 10:45 AM	04/10/2014 1:50 PM
1404100-002	EX-10-5.0	04/10/2014 10:50 AM	04/10/2014 1:50 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1404100**
Date: **4/14/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1404100**
Date Reported: **4/14/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19

Lab ID: 1404100-001 **Collection Date:** 4/10/2014 10:45:00 AM
Client Sample ID: **EX-9-5.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7134		Analyst: BR
Diesel (Fuel Oil)	ND	24.7		mg/Kg-dry	1	4/13/2014 9:44:00 PM
Heavy Oil	ND	61.7		mg/Kg-dry	1	4/13/2014 9:44:00 PM
Surr: 2-Fluorobiphenyl	101	50-150		%REC	1	4/13/2014 9:44:00 PM
Surr: o-Terphenyl	100	50-150		%REC	1	4/13/2014 9:44:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13541		Analyst: AK
Percent Moisture	25.6			wt%	1	4/11/2014 12:00:35 PM

Lab ID: 1404100-002 **Collection Date:** 4/10/2014 10:50:00 AM
Client Sample ID: **EX-10-5.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7134		Analyst: BR
Diesel (Fuel Oil)	ND	26.0		mg/Kg-dry	1	4/13/2014 10:13:00 PM
Heavy Oil	ND	65.0		mg/Kg-dry	1	4/13/2014 10:13:00 PM
Surr: 2-Fluorobiphenyl	99.0	50-150		%REC	1	4/13/2014 10:13:00 PM
Surr: o-Terphenyl	95.7	50-150		%REC	1	4/13/2014 10:13:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13541		Analyst: AK
Percent Moisture	26.0			wt%	1	4/11/2014 12:00:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1404100
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus 2.0 - Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **1404105-004ADUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **4/11/2014**	RunNo: **13559**
Client ID: **BATCH**	Batch ID: **7134**		Analysis Date: **4/14/2014**	SeqNo: **273819**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	1,550	18.2						1,403	10.2	30	
Heavy Oil	ND	45.6						0		30	
Surr: 2-Fluorobiphenyl	19.4		18.23		107	50	150		0		
Surr: o-Terphenyl	18.1		18.23		99.4	50	150		0		

Sample ID: **LCS-7134**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **4/11/2014**	RunNo: **13559**
Client ID: **LCSS**	Batch ID: **7134**		Analysis Date: **4/13/2014**	SeqNo: **273836**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	506	20.0	500.0	0	101	65	135				
Surr: 2-Fluorobiphenyl	21.4		20.00		107	50	150				
Surr: o-Terphenyl	25.0		20.00		125	50	150				

Sample ID: **MB-7134**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **4/11/2014**	RunNo: **13559**
Client ID: **MBLKS**	Batch ID: **7134**		Analysis Date: **4/13/2014**	SeqNo: **273837**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	19.3		20.00		96.5	50	150				
Surr: o-Terphenyl	19.2		20.00		96.2	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI1**	Work Order Number:	**1404100**
Logged by:	**Chelsea Ward**	Date Received:	**4/10/2014 1:50:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Cooler	4.9	Good
Sample	6.6	Good

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404100

Date: 4.10.14

Page: 1 of: 1

Client: GEO ENGINEERS
Address:
City, State, Zip
Tel:
Reports To (PM): JESSICA SMITH
Fax:

Project Name: RUFUS 2.0 - BLOCK 19
Location: SEATTLE, WA
Collected by: NATE SOLOMON
Email: NSOLOMON@GEOENGINEERS Project No: 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1	EX9-5.0	4.10.14	1045	SOIL						X								HOLD
2	EX-10-5.0	4.10.14	1050	SOIL						X								HOLD
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x [signature]	4.10.14 1350	x [signature]	4/10/14 1350
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (Internal): 1404100

Date: 4.10.14

Page: 1 of: 1

Client: GEO ENGINEERS
Address:
City, State, Zip
Tel:
Reports To (PM): JESSICA SMITH
Fax:

Project Name: RUFUS 2.0 - BLOCK 19
Location: SEATTLE, WA
Collected by: NATE SOLOMON
Email: NSOLOMON@GEOENGINEERS.COM Project No: 20484-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (NWTPH)	Diesel/Heavy Oil Range Organics (DX)	SIM VOC (EPA 8270)	PAH (EPA 8270 SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Composite/Depth
1 EX9-5.0	4.10.14	1045	SOIL					X									HOLD
2 EX-10-5.0	4.10.14	1050	SOIL					X									HOLD
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Run per Chris B. 4-11-14 ASAP

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Unfiltered? Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Si Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Special Remarks:

Relinquished	Date/Time	Received	Date/Time
1 [signature]	4.10.14 1350	1 [signature]	4.10.14 1350
2		2	

TAT: SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers, Inc. - Redmond
Jessica Smith
8410 154th Ave. NE
Redmond, Washington 98052

RE: Rufus Block 19
Lab ID: 1404145

April 17, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 1 sample(s) on 4/15/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Hydrocarbon Identification by NWTPH-HCID
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *04/17/2014*

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19
Lab Order: 1404145

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1404145-001	PCS-4	04/15/2014 1:00 PM	04/15/2014 4:30 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1404145**
Date: **4/17/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1404145**
Date Reported: **4/17/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/15/2014 1:00:00 PM
Project: Rufus Block 19
Lab ID: 1404145-001
Matrix: Soil
Client Sample ID: **PCS-4**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7166		Analyst: BR
Diesel (Fuel Oil)	20,700	511	D	mg/Kg-dry	20	4/16/2014 5:07:00 AM
Heavy Oil	3,320	1,280	D	mg/Kg-dry	20	4/16/2014 5:07:00 AM
Surr: 2-Fluorobiphenyl	102	50-150	D	%REC	20	4/16/2014 5:07:00 AM
Surr: o-Terphenyl	99.8	50-150	D	%REC	20	4/16/2014 5:07:00 AM
Hydrocarbon Identification by NWTPH-HCID				Batch ID: 7157		Analyst: BR
Gasoline	ND	511	D	mg/Kg-dry	20	4/16/2014 5:07:00 AM
Mineral Spirits	ND	766	D	mg/Kg-dry	20	4/16/2014 5:07:00 AM
Kerosene	ND	1,280	D	mg/Kg-dry	20	4/16/2014 5:07:00 AM
Diesel (Fuel Oil)	DETECT	1,280	D	mg/Kg-dry	20	4/16/2014 5:07:00 AM
Heavy Oil	DETECT	2,550	D	mg/Kg-dry	20	4/16/2014 5:07:00 AM
Mineral Oil	ND	2,550	D	mg/Kg-dry	20	4/16/2014 5:07:00 AM
Surr: 2-Fluorobiphenyl	102	50-150	D	%REC	20	4/16/2014 5:07:00 AM
Surr: o-Terphenyl	99.8	50-150	D	%REC	20	4/16/2014 5:07:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R13599		Analyst: KAS
Percent Moisture	28.6			wt%	1	4/15/2014 4:47:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/17/2014*

Work Order: 1404145
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **1404145-001ADUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **4/15/2014**	RunNo: **13631**
Client ID: **PCS-4**	Batch ID: **7166**		Analysis Date: **4/16/2014**	SeqNo: **275178**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	13,800	519						20,710	39.8	30	DR
Heavy Oil	1,960	1,300						3,324	51.6	30	DR
Surr: 2-Fluorobiphenyl	522		519.2		101	50	150		0		D
Surr: o-Terphenyl	515		519.2		99.1	50	150		0		D

NOTES:
R - High RPD due to suspected sample inhomogeneity. Free standing product in the soil. The method is in control as indicated by the Laboratory Control Sample (LCS).

Sample ID: **LCS-7166**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **4/15/2014**	RunNo: **13631**
Client ID: **LCSS**	Batch ID: **7166**		Analysis Date: **4/16/2014**	SeqNo: **275183**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	499	20.0	500.0	0	99.8	65	135				
Surr: 2-Fluorobiphenyl	19.3		20.00		96.6	50	150				
Surr: o-Terphenyl	19.6		20.00		98.0	50	150				

Sample ID: **MB-7166**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **4/15/2014**	RunNo: **13631**
Client ID: **MBLKS**	Batch ID: **7166**		Analysis Date: **4/16/2014**	SeqNo: **275184**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	19.6		20.00		98.0	50	150				
Surr: o-Terphenyl	19.6		20.00		98.0	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/17/2014*

Work Order: 1404145
CLIENT: GeoEngineers, Inc. - Redmond
Project: Rufus Block 19

QC SUMMARY REPORT

Hydrocarbon Identification by NWTPH-HCID

Sample ID: **LCS-7157**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **4/15/2014**		RunNo: **13610**			
Client ID: **LCSS**	Batch ID: **7157**					Analysis Date: **4/16/2014**		SeqNo: **274830**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	507	50.0	500.0	0	101	65	135				
Surr: 2-Fluorobiphenyl	19.3		20.00		96.6	50	150				
Surr: o-Terphenyl	19.6		20.00		98.0	50	150				

Sample ID: **MB-7157**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **4/15/2014**		RunNo: **13610**			
Client ID: **MBLKS**	Batch ID: **7157**					Analysis Date: **4/16/2014**		SeqNo: **274831**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	20.0									
Mineral Spirits	ND	30.0									
Kerosene	ND	50.0									
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	ND	100									
Mineral Oil	ND	100									
Surr: 2-Fluorobiphenyl	19.6		20.00		98.0	50	150				
Surr: o-Terphenyl	19.6		20.00		98.0	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI1**	Work Order Number:	**1404145**
Logged by:	**Chelsea Ward**	Date Received:	**4/15/2014 4:30:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
	Sample received straight from field			
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 4/15/14

Laboratory Project No (internal): 1404145

Page: 1 of: 1

Client: GeoEngineers
Address:
City, State, Zip
Tel:
Reports To (PM): Jessica Smith
Fax:

Project Name: Rufus Block-19
Location:
Collected by: Chris Brown
Email:
Project No: 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1	PCS-4	4/15/14	1300	S				X										
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Special Remarks:

Relinquished	Date/Time	Received	Date/Time
x Chris Brown	4/15/14 1300	x	4/15/14 1630 CH
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 4/15/14

Laboratory Project No (internal): 1404145

Page: 1 of: 1

Client: GeoEngineers

Address:

City, State, Zip

Tel:

Reports To (PM): Jessica Smith

Fax:

Project Name: Rufus Block 19

Location:

Collected by: Chris Brown

Email:

Project No: 20131-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T)	Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1	RCS-4	4/15/14	1300	S				X											Quant HCID per client request 4/16 CW
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Si Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished: Date/Time: 4/15/14 1300

Received: Date/Time: 4/15/14 1630

Relinquished: Date/Time:

Received: Date/Time:

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers, Inc. - Redmond
Jessica Smith
8410 154th Ave. NE
Redmond, Washington 98052

RE: Block 19
Lab ID: 1404279

April 24, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 1 sample(s) on 4/24/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *04/24/2014*

CLIENT: GeoEngineers, Inc. - Redmond
Project: Block 19
Lab Order: 1404279

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1404279-001	SP-1	04/24/2014 9:00 AM	04/24/2014 1:00 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1404279**
Date: **4/24/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1404279**
Date Reported: **4/24/2014**

Client: GeoEngineers, Inc. - Redmond
Collection Date: 4/24/2014 9:00:00 AM
Project: Block 19
Lab ID: 1404279-001
Matrix: Soil
Client Sample ID: SP-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7244		Analyst: MD
Diesel (Fuel Oil)	ND	23.7		mg/Kg-dry	1	4/24/2014 4:56:00 PM
Heavy Oil	ND	59.3		mg/Kg-dry	1	4/24/2014 4:56:00 PM
Surr: 2-Fluorobiphenyl	97.1	50-150		%REC	1	4/24/2014 4:56:00 PM
Surr: o-Terphenyl	96.8	50-150		%REC	1	4/24/2014 4:56:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13795		Analyst: PH
Percent Moisture	19.9			wt%	1	4/24/2014 4:16:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/24/2014*

Work Order: 1404279
CLIENT: GeoEngineers, Inc. - Redmond
Project: Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **LCS-7244** SampType: **LCS** Units: **mg/Kg** Prep Date: **4/24/2014** RunNo: **13797**
Client ID: **LCSS** Batch ID: **7244** Analysis Date: **4/24/2014** SeqNo: **279645**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	468	20.0	500.0	0	93.6	65	135				
Surr: 2-Fluorobiphenyl	20.3		20.00		101	50	150				
Surr: o-Terphenyl	20.6		20.00		103	50	150				

Sample ID: **MB-7244** SampType: **MBLK** Units: **mg/Kg** Prep Date: **4/24/2014** RunNo: **13797**
Client ID: **MBLKS** Batch ID: **7244** Analysis Date: **4/24/2014** SeqNo: **279646**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	21.0		20.00		105	50	150				
Surr: o-Terphenyl	20.9		20.00		104	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI1**	Work Order Number:	**1404279**
Logged by:	**Chelsea Ward**	Date Received:	**4/24/2014 1:00:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
	Sample received at appropriate temperature.			
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Sample	9.6	Good

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404279

Date: 4/24/14

Page: 1 of: 1

Client: GET
Address: 600 Stewart St, Suite 1700
City, State, Zip
Reports To (PM): JESSICA SMITH
Tel:
Fax:

Project Name: Block 19
Location: @ 6th & Lenora
Collected by:
Email: jasmith@geoengineers.com
Project No: 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1	SP-1	4/24	0900	S					X									
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x	4/24/14 1300	x	4/24/14 1300
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT: SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers
Jessica Smith
600 Stewart Street, Suite 1700
Seattle, WA 98101

RE: Block 19
Lab ID: 1404305

April 28, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 1 sample(s) on 4/25/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *04/28/2014*

CLIENT: GeoEngineers
Project: Block 19
Lab Order: 1404305

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1404305-001	SP-2	04/25/2014 9:30 AM	04/25/2014 2:50 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1404305**
Date: **4/28/2014**

CLIENT: GeoEngineers
Project: Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1404305**
Date Reported: **4/28/2014**

Client: GeoEngineers
Collection Date: 4/25/2014 9:30:00 AM
Project: Block 19
Lab ID: 1404305-001
Matrix: Soil
Client Sample ID: SP-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7275		Analyst: PH
Diesel (Fuel Oil)	5,400	23.5		mg/Kg-dry	1	4/26/2014 10:33:00 AM
Heavy Oil	855	58.9		mg/Kg-dry	1	4/26/2014 10:33:00 AM
Surr: 2-Fluorobiphenyl	127	50-150		%REC	1	4/26/2014 10:33:00 AM
Surr: o-Terphenyl	124	50-150		%REC	1	4/26/2014 10:33:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R13830		Analyst: MW
Percent Moisture	23.3			wt%	1	4/25/2014 5:13:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/28/2014*

Work Order: 1404305
CLIENT: GeoEngineers
Project: Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **MB-7275**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **4/25/2014**	RunNo: **13869**
Client ID: **MBLKS**	Batch ID: **7275**		Analysis Date: **4/26/2014**	SeqNo: **281804**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	19.7		20.00		98.7	50	150				
Surr: o-Terphenyl	19.9		20.00		99.7	50	150				

Sample ID: **LCS-7275**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **4/25/2014**	RunNo: **13869**
Client ID: **LCSS**	Batch ID: **7275**		Analysis Date: **4/26/2014**	SeqNo: **281805**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	557	20.0	500.0	0	111	65	135				
Surr: 2-Fluorobiphenyl	19.2		20.00		96.0	50	150				
Surr: o-Terphenyl	19.5		20.00		97.7	50	150				

Sample ID: **1404303-001ADUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **4/25/2014**	RunNo: **13869**
Client ID: **BATCH**	Batch ID: **7275**		Analysis Date: **4/26/2014**	SeqNo: **281807**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	21.8						0		30	
Heavy Oil	124	54.6						156.6	23.0	30	
Surr: 2-Fluorobiphenyl	22.2		21.83		102	50	150		0		
Surr: o-Terphenyl	22.7		21.83		104	50	150		0		

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI**	Work Order Number:	**1404305**
Logged by:	**Clare Griggs**	Date Received:	**4/25/2014 2:50:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Sample	3.9	Good

Chain of Custody Record

Fremont Analytical

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404305 A

Date: 4/25/14

Page: 1 of: 1

Client: GEI
Address: 600 Stewart St, Suite 1700
City, State, Zip: Seattle, WA 98101 Tel:
Reports To (PM): Jessica Smith Fax:

Project Name: Block 19
Location: GT & Laundry
Collected by: Dean Chahim
Email: JASmith@geoengineers.com
Project No: ~~2043~~ 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T)	Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1	SP-2	4/25	0430	S					X										
2																			4/25 Client requested expedited TAT (LW)
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks: DUE MONDAY

Sample Disposal: ☑ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x	4/25/14 1450	x	4/25/14 1450
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day (STD)

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

S:39

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers, Inc. - Redmond
Chris Brown
8410 154th Ave. NE
Redmond, Washington 98052

RE: Block 19
Lab ID: 1404319

April 29, 2014

Attention Chris Brown:

Fremont Analytical, Inc. received 7 sample(s) on 4/28/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *04/29/2014*

CLIENT: GeoEngineers, Inc. - Redmond
Project: Block 19
Lab Order: 1404319

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1404319-001	UST-1-5-10.0	04/28/2014 11:48 AM	04/28/2014 4:06 PM
1404319-002	UST-1-6-13.0	04/28/2014 12:00 PM	04/28/2014 4:06 PM
1404319-003	UST-1-7-12.0	04/28/2014 12:05 PM	04/28/2014 4:06 PM
1404319-004	UST-1-8-10.0	04/28/2014 12:10 PM	04/28/2014 4:06 PM
1404319-005	UST-1-9-10.0	04/28/2014 12:15 PM	04/28/2014 4:06 PM
1404319-006	UST-1-10-10.0	04/28/2014 12:20 PM	04/28/2014 4:06 PM
1404319-007	SP-3	04/28/2014 11:30 AM	04/28/2014 4:06 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1404319**
Date: **4/29/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1404319**
Date Reported: **4/29/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Block 19

Lab ID: 1404319-002 **Collection Date:** 4/28/2014 12:00:00 PM
Client Sample ID: **UST-1-6-13.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7310		Analyst: PH
Diesel (Fuel Oil)	ND	23.3		mg/Kg-dry	1	4/29/2014 9:29:00 AM
Heavy Oil	ND	58.1		mg/Kg-dry	1	4/29/2014 9:29:00 AM
Surr: 2-Fluorobiphenyl	101	50-150		%REC	1	4/29/2014 9:29:00 AM
Surr: o-Terphenyl	101	50-150		%REC	1	4/29/2014 9:29:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R13877		Analyst: KZ
Percent Moisture	22.5			wt%	1	4/29/2014 9:07:36 AM

Lab ID: 1404319-003 **Collection Date:** 4/28/2014 12:05:00 PM
Client Sample ID: **UST-1-7-12.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7310		Analyst: PH
Diesel (Fuel Oil)	ND	24.2		mg/Kg-dry	1	4/29/2014 10:26:00 AM
Heavy Oil	ND	60.5		mg/Kg-dry	1	4/29/2014 10:26:00 AM
Surr: 2-Fluorobiphenyl	98.4	50-150		%REC	1	4/29/2014 10:26:00 AM
Surr: o-Terphenyl	98.8	50-150		%REC	1	4/29/2014 10:26:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R13877		Analyst: KZ
Percent Moisture	21.8			wt%	1	4/29/2014 9:07:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404319**
Date Reported: **4/29/2014**

CLIENT: GeoEngineers, Inc. - Redmond
Project: Block 19

Lab ID: 1404319-005 **Collection Date:** 4/28/2014 12:15:00 PM
Client Sample ID: **UST-1-9-10.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7310		Analyst: PH
Diesel (Fuel Oil)	ND	22.9		mg/Kg-dry	1	4/29/2014 10:54:00 AM
Heavy Oil	ND	57.3		mg/Kg-dry	1	4/29/2014 10:54:00 AM
Surr: 2-Fluorobiphenyl	101	50-150		%REC	1	4/29/2014 10:54:00 AM
Surr: o-Terphenyl	101	50-150		%REC	1	4/29/2014 10:54:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R13877		Analyst: KZ
Percent Moisture	17.3			wt%	1	4/29/2014 9:07:36 AM

Lab ID: 1404319-006 **Collection Date:** 4/28/2014 12:20:00 PM
Client Sample ID: **UST-1-10-10.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7310		Analyst: PH
Diesel (Fuel Oil)	ND	23.6		mg/Kg-dry	1	4/29/2014 11:22:00 AM
Heavy Oil	ND	59.0		mg/Kg-dry	1	4/29/2014 11:22:00 AM
Surr: 2-Fluorobiphenyl	99.0	50-150		%REC	1	4/29/2014 11:22:00 AM
Surr: o-Terphenyl	101	50-150		%REC	1	4/29/2014 11:22:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R13877		Analyst: KZ
Percent Moisture	23.8			wt%	1	4/29/2014 9:07:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/29/2014*

Work Order: 1404319
CLIENT: GeoEngineers, Inc. - Redmond
Project: Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **MB-7310**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **4/28/2014**		RunNo: **13913**		
Client ID: **MBLKS**	Batch ID: **7310**					Analysis Date: **4/29/2014**		SeqNo: **282811**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	23.4		20.00		117	50	150				
Surr: o-Terphenyl	24.5		20.00		122	50	150				

Sample ID: **LCS-7310**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **4/28/2014**		RunNo: **13913**		
Client ID: **LCSS**	Batch ID: **7310**					Analysis Date: **4/29/2014**		SeqNo: **282812**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	556	20.0	500.0	0	111	65	135				
Surr: 2-Fluorobiphenyl	18.7		20.00		93.7	50	150				
Surr: o-Terphenyl	19.6		20.00		98.1	50	150				

Sample ID: **1404319-002ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **4/28/2014**		RunNo: **13913**		
Client ID: **UST-1-6-13.0**	Batch ID: **7310**					Analysis Date: **4/29/2014**		SeqNo: **282824**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	22.0						0		30	
Heavy Oil	ND	54.9						0		30	
Surr: 2-Fluorobiphenyl	21.3		21.97		97.1	50	150		0		
Surr: o-Terphenyl	21.9		21.97		99.7	50	150		0		

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI1**	Work Order Number:	**1404319**
Logged by:	**Chelsea Ward**	Date Received:	**4/28/2014 4:06:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Cooler	2.3	Good
Sample	8.7	Good

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1404319

Date: 4/28/14

Page: 1 of: 1

Client: GEI
Address: 600 STEWART ST, SUITE 1700
City, State, Zip: SEATTLE, WA 98101
Tel:
Reports To (PM): CHRIS BROWN
Fax:

Project Name: BLOCK 19
Location: 6TH & LENORA
Collected by: DEAN CHAHIM
Email: CBROWN@geoengineers.com
Project No: 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOC (EPA 8270 - SIM)	PAH (EPA 8270)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	HOLD	Comments/Depth
1 UST-1-5-10.0	4/28	1148	S													X		
2 UST-1-6-13.0	"	1200	"					X										
3 UST-1-7-12.0		1205						X										
4 UST-1-8-10.0		1210														X		
5 UST-1-9-10.0		1215						X										
6 UST-1-10-10.0	↓	1220	↓					X										
7 ~~UST~~ DMC SP-3	4/28	1130	S													X		
8																		
9																		
10																		

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
X	4/28/14 1606	X	4/28/14 1606
Relinquished	Date/Time	Received	Date/Time
X		X	

TAT - (SameDay^ NextDay^ 2 Day 3 Day STD)
^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers
Chris Brown
600 Stewart Street, Suite 1700
Seattle, WA 98101

RE: Block 19
Lab ID: 1404321

April 29, 2014

Attention Chris Brown:

Fremont Analytical, Inc. received 5 sample(s) on 4/24/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *04/29/2014*

CLIENT: GeoEngineers
Project: Block 19
Lab Order: 1404321

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1404321-001	UST-1-1-25.0	04/23/2014 9:15 AM	04/24/2014 8:08 AM
1404321-002	UST-1-2-8.0	04/23/2014 9:25 AM	04/24/2014 8:08 AM
1404321-003	UST-1-3-7.0	04/23/2014 10:06 AM	04/24/2014 8:08 AM
1404321-004	UST-1-4-12.0	04/23/2014 4:50 PM	04/24/2014 8:08 AM
1404321-005	UNK-1	04/23/2014 11:36 AM	04/24/2014 8:08 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1404321**
Date: **4/29/2014**

CLIENT: GeoEngineers
Project: Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1404321**
Date Reported: **4/29/2014**

CLIENT: GeoEngineers
Project: Block 19

Lab ID: 1404321-001 **Collection Date:** 4/23/2014 9:15:00 AM
Client Sample ID: **UST-1-1-25.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7322		Analyst: PH
Diesel (Fuel Oil)	59.7	24.0		mg/Kg-dry	1	4/29/2014 2:16:00 PM
Heavy Oil	ND	60.1		mg/Kg-dry	1	4/29/2014 2:16:00 PM
Surr: 2-Fluorobiphenyl	101	50-150		%REC	1	4/29/2014 2:16:00 PM
Surr: o-Terphenyl	95.6	50-150		%REC	1	4/29/2014 2:16:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13877		Analyst: KZ
Percent Moisture	24.0			wt%	1	4/29/2014 9:07:36 AM

Lab ID: 1404321-002 **Collection Date:** 4/23/2014 9:25:00 AM
Client Sample ID: **UST-1-2-8.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7322		Analyst: PH
Diesel (Fuel Oil)	ND	25.2		mg/Kg-dry	1	4/29/2014 2:46:00 PM
Heavy Oil	ND	63.0		mg/Kg-dry	1	4/29/2014 2:46:00 PM
Surr: 2-Fluorobiphenyl	99.7	50-150		%REC	1	4/29/2014 2:46:00 PM
Surr: o-Terphenyl	100	50-150		%REC	1	4/29/2014 2:46:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13877		Analyst: KZ
Percent Moisture	29.0			wt%	1	4/29/2014 9:07:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1404321**
Date Reported: **4/29/2014**

CLIENT: GeoEngineers
Project: Block 19

Lab ID: 1404321-003 **Collection Date:** 4/23/2014 10:06:00 AM
Client Sample ID: **UST-1-3-7.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7322		Analyst: PH
Diesel (Fuel Oil)	ND	25.8		mg/Kg-dry	1	4/29/2014 3:14:00 PM
Heavy Oil	ND	64.5		mg/Kg-dry	1	4/29/2014 3:14:00 PM
Surr: 2-Fluorobiphenyl	115	50-150		%REC	1	4/29/2014 3:14:00 PM
Surr: o-Terphenyl	120	50-150		%REC	1	4/29/2014 3:14:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13877		Analyst: KZ
Percent Moisture	26.8			wt%	1	4/29/2014 9:07:36 AM

Lab ID: 1404321-004 **Collection Date:** 4/23/2014 4:50:00 PM
Client Sample ID: **UST-1-4-12.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 7322		Analyst: PH
Diesel (Fuel Oil)	ND	24.8		mg/Kg-dry	1	4/29/2014 3:43:00 PM
Heavy Oil	ND	62.0		mg/Kg-dry	1	4/29/2014 3:43:00 PM
Surr: 2-Fluorobiphenyl	111	50-150		%REC	1	4/29/2014 3:43:00 PM
Surr: o-Terphenyl	114	50-150		%REC	1	4/29/2014 3:43:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R13877		Analyst: KZ
Percent Moisture	23.0			wt%	1	4/29/2014 9:07:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *4/29/2014*

Work Order: 1404321
CLIENT: GeoEngineers
Project: Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **MB-7322**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **4/29/2014**		RunNo: **13915**			
Client ID: **MBLKS**	Batch ID: **7322**					Analysis Date: **4/29/2014**		SeqNo: **282905**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	20.0		20.00		99.9	50	150				
Surr: o-Terphenyl	20.3		20.00		102	50	150				

Sample ID: **LCS-7322**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **4/29/2014**		RunNo: **13915**			
Client ID: **LCSS**	Batch ID: **7322**					Analysis Date: **4/29/2014**		SeqNo: **282909**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	546	20.0	500.0	0	109	65	135				
Surr: 2-Fluorobiphenyl	18.9		20.00		94.3	50	150				
Surr: o-Terphenyl	19.4		20.00		97.3	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI**	Work Order Number:	**1404321**
Logged by:	**Clare Griggs**	Date Received:	**4/24/2014 8:08:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Cooler	7.9	Good
Sample	8.5	Good

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 140321

Date: 4/24/14

Page: 1 of: 1

Client: GEI
Address: 600 STEWART ST, SUITE 700
City, State, Zip
Tel:
Reports To (PM): CHRIS BROWN / JESSICA SMITH
Fax:

Project Name: BLOCK 19
Location: 6TH & LENORA
Collected by: DEAN CHAHIM
Email: cbrown@geoengineers.com
Project No: 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

#	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T)	Dissolved (D)	Anions (IC)***	EDB (8011)	HOLD	Comments/Depth
1	VST-1-1-25.0	4/23	0914	S				⊗										X		per client request
2	VST-1-2-8.0	4/23	0925	↓				⊗										↓		
3	VST-1-3-7.0	4/23	1006	↓				⊗												
4	VST-1-4-12.0	4/23	1650	↓				⊗												
5	UNK-1	4/23	1136	↓														↓		
6																				
7																				
8																				
9																				
10																				

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks: HOLD FOR PM

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x	4/24/14 0710		4/24/14 8:08
Relinquished	Date/Time	Received	Date/Time
x			

TAT - SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers
Jessica Smith
600 Stewart Street, Suite 1700
Seattle, WA 98101

RE: Rufus - Block 19
Lab ID: 1405074

May 14, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 3 sample(s) on 5/9/2014 for the analyses presented in the following report.

Hydrocarbon Identification by NWTPH-HCID
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

CC:
Chris Brown

Date: *05/14/2014*

CLIENT: GeoEngineers
Project: Rufus - Block 19
Lab Order: 1405074

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1405074-001	SP-1	05/08/2014 6:55 AM	05/09/2014 8:00 AM
1405074-002	N13-8.0	05/08/2014 7:00 AM	05/09/2014 8:00 AM
1405074-003	N13-10.0	05/08/2014 7:02 AM	05/09/2014 8:00 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1405074**
Date: **5/14/2014**

CLIENT: GeoEngineers
Project: Rufus - Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1405074**
Date Reported: **5/14/2014**

Client: GeoEngineers
Collection Date: 5/8/2014 6:55:00 AM
Project: Rufus - Block 19
Lab ID: 1405074-001
Matrix: Soil
Client Sample ID: SP-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Hydrocarbon Identification by NWTPH-HCID				Batch ID: 7452		Analyst: EM
Gasoline	ND	23.9		mg/Kg-dry	1	5/10/2014 5:36:00 AM
Mineral Spirits	ND	35.9		mg/Kg-dry	1	5/10/2014 5:36:00 AM
Kerosene	ND	59.9		mg/Kg-dry	1	5/10/2014 5:36:00 AM
Diesel (Fuel Oil)	ND	59.9		mg/Kg-dry	1	5/10/2014 5:36:00 AM
Heavy Oil	ND	120		mg/Kg-dry	1	5/10/2014 5:36:00 AM
Mineral Oil	ND	120		mg/Kg-dry	1	5/10/2014 5:36:00 AM
Surr: 2-Fluorobiphenyl	97.3	50-150		%REC	1	5/10/2014 5:36:00 AM
Surr: o-Terphenyl	98.6	50-150		%REC	1	5/10/2014 5:36:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R14167		Analyst: KZ
Percent Moisture	18.4			wt%	1	5/12/2014 10:12:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *5/14/2014*

Work Order: 1405074
CLIENT: GeoEngineers
Project: Rufus - Block 19

QC SUMMARY REPORT

Hydrocarbon Identification by NWTPH-HCID

Sample ID: **MB-7452**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **5/9/2014**	RunNo: **14180**
Client ID: **MBLKS**	Batch ID: **7452**		Analysis Date: **5/10/2014**	SeqNo: **289685**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	20.0									
Mineral Spirits	ND	30.0									
Kerosene	ND	50.0									
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	ND	100									
Mineral Oil	ND	100									
Surr: 2-Fluorobiphenyl	19.2		20.00		96.1	50	150				
Surr: o-Terphenyl	18.8		20.00		94.0	50	150				

Sample ID: **LCS-7452**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **5/9/2014**	RunNo: **14180**
Client ID: **LCSS**	Batch ID: **7452**		Analysis Date: **5/10/2014**	SeqNo: **289686**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	404	50.0	500.0	0	80.7	65	135				
Surr: 2-Fluorobiphenyl	20.7		20.00		103	50	150				
Surr: o-Terphenyl	22.4		20.00		112	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI**	Work Order Number:	**1405074**
Logged by:	**Clare Griggs**	Date Received:	**5/9/2014 8:00:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐	
2.	How was the sample delivered?	Client			

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐	
	No cooler present				
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐		
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑	
6.	Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐	
	No cooler/ice present.				
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☐	No ☑	NA ☐	
	Sample temp = 11.0				
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐		
10.	Are samples properly preserved?	Yes ☑	No ☐		
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐	
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑	
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐		
14.	Does paperwork match bottle labels?	Yes ☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐		
16.	Is it clear what analyses were requested?	Yes ☑	No ☐		
17.	Were all holding times able to be met?	Yes ☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑	

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

5/12 - Change to 2 Day TAT per Chris Brown

Item Information

Fremont Analytical

Chain of Custo[dy]

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1405074

Date: 5/9/14

Page: 1 of: 1

Client: GeoEngineers

Project Name: Rufus - Block 19

Address:

Location: Seattle, WA

City, State, Zip

Tel:

Collected by: Chris Brown

Reports To (PM): Jessica Smith

Fax:

Email:

Project No: 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

#	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Hold				Comments/Depth
1	SP-1	5/8/14	655	S					X													Quantify detections
2	N13-8.0	↓	700	S														X				
3	N13-10.0	↓	702	S														X				
4																						
5																						
6																						
7																						
8																						
9																						
10																						

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished: [signature] Date/Time: 5/9/14 800 Received: [signature] Date/Time: 5/9/14 800

Relinquished: Date/Time: Received: Date/Time:

TAT -> SameDay* NextDay* 2 Day (3 Day) STD

*Please coordinate with the lab in advance

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers
Jessica Smith
600 Stewart Street, Suite 1700
Seattle, WA 98101

RE: Rufus - Block 19
Lab ID: 1407177

July 23, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 3 sample(s) on 7/17/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Michael Dee
Sr. Chemist / Principal

Date: *07/23/2014*

CLIENT: GeoEngineers
Project: Rufus - Block 19
Lab Order: 1407177

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1407177-001	EX-11-4.5	07/17/2014 10:30 AM	07/17/2014 5:25 PM
1407177-002	EX-12-4.5	07/17/2014 10:45 AM	07/17/2014 5:25 PM
1407177-003	EX-13-5.0	07/17/2014 11:30 AM	07/17/2014 5:25 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1407177**
Date: **7/23/2014**

CLIENT: GeoEngineers
Project: Rufus - Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1407177**
Date Reported: **7/23/2014**

Client: GeoEngineers
Collection Date: 7/17/2014 10:30:00 AM
Project: Rufus - Block 19
Lab ID: 1407177-001
Matrix: Soil
Client Sample ID: **EX-11-4.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 8155		Analyst: EC
Diesel (Fuel Oil)	ND	22.2		mg/Kg-dry	1	7/21/2014 12:57:00 PM
Heavy Oil	125	55.5		mg/Kg-dry	1	7/21/2014 12:57:00 PM
Surr: 2-Fluorobiphenyl	90.0	50-150		%REC	1	7/21/2014 12:57:00 PM
Surr: o-Terphenyl	74.2	50-150		%REC	1	7/21/2014 12:57:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R15657		Analyst: TK
Percent Moisture	21.7			wt%	1	7/18/2014 10:55:42 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1407177**
Date Reported: **7/23/2014**

Client: GeoEngineers
Collection Date: 7/17/2014 10:45:00 AM
Project: Rufus - Block 19
Lab ID: 1407177-002
Matrix: Soil
Client Sample ID: **EX-12-4.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 8155		Analyst: EC
Diesel (Fuel Oil)	ND	24.0		mg/Kg-dry	1	7/21/2014 1:28:00 PM
Heavy Oil	ND	59.9		mg/Kg-dry	1	7/21/2014 1:28:00 PM
Surr: 2-Fluorobiphenyl	88.7	50-150		%REC	1	7/21/2014 1:28:00 PM
Surr: o-Terphenyl	71.0	50-150		%REC	1	7/21/2014 1:28:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R15657		Analyst: TK
Percent Moisture	24.0			wt%	1	7/18/2014 10:55:42 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1407177**
Date Reported: **7/23/2014**

Client: GeoEngineers
Collection Date: 7/17/2014 11:30:00 AM
Project: Rufus - Block 19
Lab ID: 1407177-003
Matrix: Soil
Client Sample ID: **EX-13-5.0**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 8155		Analyst: EC
Diesel (Fuel Oil)	ND	24.3		mg/Kg-dry	1	7/21/2014 1:59:00 PM
Heavy Oil	ND	60.7		mg/Kg-dry	1	7/21/2014 1:59:00 PM
Surr: 2-Fluorobiphenyl	88.3	50-150		%REC	1	7/21/2014 1:59:00 PM
Surr: o-Terphenyl	70.8	50-150		%REC	1	7/21/2014 1:59:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R15657		Analyst: TK
Percent Moisture	26.3			wt%	1	7/18/2014 10:55:42 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *7/23/2014*

Work Order: 1407177
CLIENT: GeoEngineers
Project: Rufus - Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **LCS8155** SampType: **LCS** Units: **mg/Kg** Prep Date: **7/21/2014** RunNo: **15677**
Client ID: **LCSS** Batch ID: **8155** Analysis Date: **7/21/2014** SeqNo: **317332**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	452	20.0	500.0	0	90.5	65	135				
Surr: 2-Fluorobiphenyl	21.5		20.00		107	50	150				
Surr: o-Terphenyl	18.4		20.00		92.1	50	150				

Sample ID: **MBLK8155** SampType: **MBLK** Units: **mg/Kg** Prep Date: **7/21/2014** RunNo: **15677**
Client ID: **MBLKS** Batch ID: **8155** Analysis Date: **7/21/2014** SeqNo: **317333**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	18.9		20.00		94.7	50	150				
Surr: o-Terphenyl	18.3		20.00		91.4	50	150				

Sample ID: **1407177-003ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **7/18/2014** RunNo: **15677**
Client ID: **EX-13-5.0** Batch ID: **8155** Analysis Date: **7/21/2014** SeqNo: **317756**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	24.8						0		30	
Heavy Oil	ND	62.1						0		30	
Surr: 2-Fluorobiphenyl	22.7		24.84		91.3	50	150		0		
Surr: o-Terphenyl	17.5		24.84		70.4	50	150		0		

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI**	Work Order Number:	**1407177**
Logged by:	**Erica Silva**	Date Received:	**7/17/2014 5:25:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐	
2.	How was the sample delivered?	Client			

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐	
		No cooler present			
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐		
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑	
6.	Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐	
		Unknown prior to receipt			
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☐	No ☑	NA ☐	
		Refer to item information			
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐		
10.	Are samples properly preserved?	Yes ☑	No ☐		
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐	
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑	
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐		
14.	Does paperwork match bottle labels?	Yes ☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐		
16.	Is it clear what analyses were requested?	Yes ☑	No ☐		
17.	Were all holding times able to be met?	Yes ☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑	

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Sample	23.5	

Chain of Custody Record

Fremont Analytical

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1407177

Date: 7/17/14

Page: 1 of: 1

Client: GeoEngineers
Address:
City, State, Zip
Tel:
Reports To (PM): Jessica Smith
Fax:

Project Name: Rufus - Block 19
Location: Block 19, Seattle, WA
Collected by: Chris Brown
Email: cbrown@geoengineers.com
Project No: 20434-001-19

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Sslid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) ; Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Detail
1	EX-11-4.5	7/17/14	1030	S					X									
2	EX-12-4.5	↓	1045	S					X									
3	EX-13-5.0	↓	1130	S					X									
4																		
5																		
6																		
7																		
8																		
9																		
10																		

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Si Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x [signature]	7/17/14 1725	[signature]	7-17-2014 17:25
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day (STD)

^Please coordinate with the lab in advance.

Distribution: White - Lab, Yellow - File, Pink - Originator

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

GeoEngineers
Jessica Smith
600 Stewart Street, Suite 1700
Seattle, WA 98101

RE: Block 19
Lab ID: 1409153

September 23, 2014

Attention Jessica Smith:

Fremont Analytical, Inc. received 2 sample(s) on 9/16/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
President

Date: *10/29/2014*

CLIENT: GeoEngineers
Project: Block 19
Lab Order: 1409153

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1409153-001	N-44-6.0	09/09/2014 8:15 AM	09/16/2014 9:10 AM
1409153-002	N-44-10.0	09/09/2014 8:45 AM	09/16/2014 9:10 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1409153**
Date: **9/23/2014**

CLIENT: GeoEngineers
Project: Block 19

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1409153**
Date Reported: **9/23/2014**

CLIENT: GeoEngineers
Project: Block 19

Lab ID: 1409153-001 **Collection Date:** 9/9/2014 8:15:00 AM
Client Sample ID: **N-44-6.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 8732		Analyst: EC
Diesel (Fuel Oil)	ND	21.9		mg/Kg-dry	1	9/16/2014 8:20:00 PM
Diesel Range Organics (C12-C24)	108	21.9		mg/Kg-dry	1	9/16/2014 8:20:00 PM
Heavy Oil	ND	54.8		mg/Kg-dry	1	9/16/2014 8:20:00 PM
Surr: 2-Fluorobiphenyl	88.8	50-150		%REC	1	9/16/2014 8:20:00 PM
Surr: o-Terphenyl	85.7	50-150		%REC	1	9/16/2014 8:20:00 PM

NOTES:
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (C12-C24).

Sample Moisture (Percent Moisture)				Batch ID: R16775		Analyst: TK
Percent Moisture	14.4			wt%	1	9/16/2014 9:47:43 AM

Lab ID: 1409153-002 **Collection Date:** 9/9/2014 8:45:00 AM
Client Sample ID: **N-44-10.0** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 8732		Analyst: EC
Diesel (Fuel Oil)	ND	24.2		mg/Kg-dry	1	9/16/2014 8:51:00 PM
Heavy Oil	ND	60.6		mg/Kg-dry	1	9/16/2014 8:51:00 PM
Surr: 2-Fluorobiphenyl	83.4	50-150		%REC	1	9/16/2014 8:51:00 PM
Surr: o-Terphenyl	84.9	50-150		%REC	1	9/16/2014 8:51:00 PM

Sample Moisture (Percent Moisture)				Batch ID: R16775		Analyst: TK
Percent Moisture	25.1			wt%	1	9/16/2014 9:47:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *9/23/2014*

Work Order: 1409153
CLIENT: GeoEngineers
Project: Block 19

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **MB-8732**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **9/16/2014**		RunNo: **16802**			
Client ID: **MBLKS**	Batch ID: **8732**					Analysis Date: **9/16/2014**		SeqNo: **337568**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	16.1		20.00		80.7	50	150				
Surr: o-Terphenyl	15.0		20.00		75.0	50	150				

Sample ID: **LCS-8732**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **9/16/2014**		RunNo: **16802**			
Client ID: **LCSS**	Batch ID: **8732**					Analysis Date: **9/16/2014**		SeqNo: **337569**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	454	20.0	500.0	0	90.7	65	135				
Surr: 2-Fluorobiphenyl	16.3		20.00		81.4	50	150				
Surr: o-Terphenyl	16.5		20.00		82.5	50	150				

Sample ID: **1409151-004ADUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **9/16/2014**		RunNo: **16802**			
Client ID: **BATCH**	Batch ID: **8732**					Analysis Date: **9/16/2014**		SeqNo: **337596**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.2						0		30	
Heavy Oil	707	50.5						610.2	14.7	30	
Surr: 2-Fluorobiphenyl	16.2		20.21		79.9	50	150		0		
Surr: o-Terphenyl	15.9		20.21		78.6	50	150		0		

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**GEI**	Work Order Number:	**1409153**
Logged by:	**Clare Griggs**	Date Received:	**9/16/2014 9:10:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		No cooler present.		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
		Unknown prior to receipt.		
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☐	No ☑	NA ☐
		Please refer to item information.		
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Sample	20.6	

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1409153

Date: 9/16/14

Page: 1 of: 1

Client: GeoEngineers
Address:
City, State, Zip
Tel:
Reports To (PM): Jessica Smith
Fax:

Project Name: Block 19
Location: Seattle
Collected by: Chris Brown
Email:
Project No: 20434-001-25

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T)	Dissolved (D)	Anions (IC)***	EDB (8011)					Comments/Depth
1	N-44-6-0	9/9/14	915	S					X														
2	N-14-10-0	9/9/14	845	S					X														
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x	9/16/14 910	x	9/16/14 9:10
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

www.fremontanalytical.com

APPENDIX C
UST Notification and Checklist

ENVIRONMENTAL SERVICES
FILCO COMPANY INC.
P.O. Box 31228 • Seattle, WA 98103 • Ph: (206) 547-8347 • Fax: (206) 548-9352
www.FilcoEnviro.com • Lic# FILCOCIØ8ØRU

LETTER OF CERTIFICATION

April 22nd, 2014

Hos Brothers Construction
PO Box 1788
Woodinville, Washington 98072-1788

RE: Commercial Underground Heating Oil Tank at 2101 7th Avenue
Seattle, Washington 98121

This is to certify that Filco Company, Inc. has removed one approximate 1,000 gallon underground commercial heating oil tank from the above named property. The tank and its contents were disposed of according to the codes and guidelines set forth by the Washington State Department of Ecology and local Fire Department regulations and the decommissioned tank meets these standards.

Phil Suetens

Phil Suetens
President Filco Co., Inc.

TUE 4/22/14 11:00

RECEIVED
APR 17 2014
PERMIT SECTION

Your Seattle Fire Department

APPLICATION FOR TEMPORARY PERMIT

Code 7908 **Commercial Tank Removal/Decommissioning**

Permit Fee: $208.00

Date Issued: 4/22/14

Tank(s) must be removed from site same day as permit issued!

TO BE COMPLETED BY PERMIT APPLICANT (PLEASE PRINT)

FIRM NAME Filco Company, Inc

MAILING ADDRESS PO Box 31228 SUITE

CITY Seattle STATE WA ZIP 98103

OPERATION ADDRESS 2101 7TH AVE

CONTACT PERSON NATE MONTGOMERY PHONE NUMBER (206) 547-8347

Number of Tank(s): ONE Tank Size(s): 1,000 ☐ Aboveground tank

Product(s) Previously Contained: DIESEL/HEAVY OIL ☒ Underground tank

☑ Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents)

☐ Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and unknowns)

Hot work being conducted?: ☑ No ☐ Yes (If yes, a separate hot work permit is required)

Please include a check made payable to the CITY OF SEATTLE with this application.

Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to:

Seattle Fire Department
Fire Marshal's Office—Permits
220 Third Avenue South, Second Floor
Seattle, WA 98104-2608

Permit processing: (206) 386-1450
www.seattle.gov/fire

Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment.

TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION

No hot work is allowed on a tank system prior to issuance of this Fire Department permit!

Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. **THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED**

Special permit conditions: _____

FMO USE

Receipt No.: 5-

Check No.: 00007620417 14

Application ID#: 96636

APPROVED BY

Inspector: _____ **SFD ID#** 0807

Name of Marine Chemist CRAIG TRETTEVIK **Certificate #** 46314

Date: _____ #688

(01/11)

SOUND TESTING, INC
P.O. BOX 16204 SEATTLE, WA 98116
(206) 932-0206 FAX (206) 937-3848

MARINE CHEMIST CERTIFICATE

SERIAL № 46314

PILCO Survey Requested by	PILCO Vessel Owner or Agent	22 APR 14 Date
UST Vessel	UST Type of Vessel	2101 - 7th AVE. Specific Location of Vessel
HEAVY PUR OIL X3 Last Three (3) Loadings	VISUAL, O_2, LEL, THC Tests Performed	0915 ~~0815~~ Time Survey Completed

~1000 GAL UST

SAFE FOR EXCAVATION

SAFE FOR TRANSPORTATION

O_2 = 20.9 ± 0.1 %
LEL = 0 ± 1 %
THC = 0 ± 1 ppm

[METER: BW S/N SK107-005146/CAL: 0630-22 APR 14]

In the event of any physical or atmospheric changes adversely affecting the gas-free condition of the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

QUALIFICATIONS: Transfer of ballast or manipulation of valves or closure equipment tending to alter conditions in pipe lines, tanks or compartments subject to gas accumulation, unless specifically approved in this Certificate, requires inspection and endorsement or reissue of Certificate for the spaces so affected. All lines, vents, heating coils, valves, and similarly enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS

SAFE FOR WORKERS Means that in the compartment or space so designated (a) the oxygen content of the atmosphere is at least 19.5 percent by volume, and that, (b) toxic materials in the atmosphere are within permissible concentrations, and that, (c) the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Marine Chemist's Certificate

NOT SAFE FOR WORKERS Means that in the compartment or space so designated, the requirements of Safe for Workers has not been met.

SAFE FOR HOT WORK: Means that in the compartment so designated: (a) oxygen content of the atmosphere is at least 19.5 percent by volume, with the exception of inerted spaces or where external hot work is to be performed; and that, (b) the concentration of flammable materials in the atmosphere is below 10 percent of the lower flammable limit; and that, (c) the residues are not capable of producing a higher concentration than permitted by (b) above under existing atmospheric conditions in the presence of fire, and while maintained as directed on the Marine Chemist's Certificate; and further, that, (d) all adjacent spaces have been cleaned sufficiently to prevent the spread of fire, or are satisfactorily inerted, or, in the case of fuel tanks, or lube oil tanks, or engine room or fire room bilges, have been treated in accordance with the Marine Chemist's requirements.

NOT SAFE FOR HOT WORK Means that in the compartment so designated, the requirements of Safe for Hot Work have not been met

CHEMIST'S ENDORSEMENT This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards on Vessels and have found the condition of each to be in accordance with its assigned designation.

"The undersigned acknowledges receipt of this Certificate under Section 2-6 of NFPA 306 and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed	Name	PILCO Company	22APR14 Date	Signed Craig R. Tetterton	#688 Certificate No.

CRAIG 206-313-6933

VESSEL POSTING

UNDERGROUND STORAGE TANK (UST)
30-DAY NOTICE

DEPARTMENT OF ECOLOGY
State of Washington

(See back of form for instructions)

FOR OFFICE USE ONLY
Site ID # _____
FS ID # _____

Please ✓ the appropriate box: ☐ Intent to Install ☒ Intent to Close

HQ (360)407-7170 / Central (509)575-2490 / Eastern (509)329-3400 / Northwest (425)649-7000 / Southwest (360)407-6300

SITE INFORMATION

N/A	
Tag or UBI number	
Rufus 2.0 - Block 19	
Site Name	
2101 7th Avenue	
Site Physical Address	
Seattle	98121
City	Zip Code
206-812-7915	
Site Phone Number	

OWNER INFORMATION
(this form will be returned to this address)

Acorn Development, LLC.	
UST Owner/Operator	
c/o Seneca Group, 1191 Second Ave, Suite 1500	
Mailing Address/PO Box	
Seattle	98121
City	Zip Code
206-808-7845	
Owner/Operator Phone Number	
lavinas@senecagroup.com c/o Acorn Development, LLC	
Owner/Operator Email Address	

TANK INFORMATION

Tank ID	Substance Stored	Capacity	Date Project is Expected to Begin	Comments:
UST-1	Diesel, heavy oil	1,000 Gal	4.18.14	

1) SERVICE PROVIDER INFORMATION - check the appropriate boxes

PLEASE NOTE: INDIVIDUALS PERFORMING UST SERVICES MUST BE ICC CERTIFIED OR HAVE PASSED ANOTHER QUALIFYING EXAM APPROVED BY THE DEPARTMENT OF ECOLOGY.

☐ Installer ☒ Decommissioner ☐ Site Assessor

Filco	James Leonard
Service Provider Company Name	Contact Person
James Leonard	206-547-8347
Certified Service Provider Name	Contact Phone Number
1035157	
ICC Certification #	Contact Email Address

2) SERVICE PROVIDER INFORMATION (REQUIRED IF USING MORE THAN ONE PROVIDER) - check the appropriate boxes

☐ Installer ☐ Decommissioner ☒ Site Assessor

GeoEngineers	Chris Brown
Service Provider Company Name	Contact Person
Dean Chahim	206-427-7706
Certified Service Provider Name	Contact Phone Number
8218427	cbrown@geoengineers.com
ICC Certification #	Contact Email Address

Instructions

Please Read Carefully

AFTER COMPLETING THIS FORM, RETURN TO:

DEPARTMENT OF ECOLOGY
TOXICS CLEANUP PROGRAM
P.O. BOX 47655
OLYMPIA, WA 98504-7655

GENERAL

Under WAC 173-360-200 and 173-360-385, owners and operators are required to notify Ecology 30 days prior to beginning underground storage tank (UST) installation or decommissioning projects. Please use a separate form for each activity. Once this form is received and processed by Ecology, it is date stamped and returned to the owner listed on the form. Installation and decommissioning projects may begin 30 days after the date stamped on the form. If a project cannot meet the deadlines described below, you must submit an additional 30-Day Notice. The 30-day wait period may be waived on these additional 30-Day Notices by contacting the inspector in your region.

SITE AND OWNER INFORMATION

Fill in the site and owner information and be sure to provide telephone numbers and email addresses so that any problems can be resolved quickly. Include the facility compliance tag or UBI number for tank closures.

TANK INFORMATION

List tanks to be installed or closed, substance stored (e.g. gas, diesel, etc), tank size and date the project is expected to begin. **The contact person listed on this form must confirm the exact date an installation and/or decommissioning project will begin at least three business days before proceeding.** Please report tank ID number(s) for tanks to be closed and assign new Tank ID number(s) to tanks being installed. If you are installing new tanks, do not assign a Tank ID number that has previously been used at the facility. Use the Comments box to include additional information, such as when product was removed so that no more than one inch of residue remains in the system.

TANK INSTALLATIONS

List the installation company. The date stamped on the form indicates the beginning of a 90-day period in which an installation project must begin. Once, processed, this form also allows you to receive a one-time drop of product, for UST system testing purposes only. The fuel drop is not required to occur within this 90-day period.

To dispense product and receive additional deliveries, you must complete the Business License registration and obtain your facility compliance tag from Ecology. The registration information must be submitted to the Department of Revenue within 30 days of installation to receive a Business License with the appropriate tank endorsement(s). **If, at any time, your tank(s) store greater than one inch of product, you must begin using an acceptable release detection method to monitor for leaks every month.**

PERMANENT TANK CLOSURES

List the closure and site assessor companies. Upon receiving a completed 30-day closure form, Ecology will stamp the date received on the form and return a copy to the owner. Decommissioning projects must be completed 90 days after the stamped date. **No work may begin within the first 30 days unless a waiver has been obtained from Ecology.**

Contact your local fire marshal and planning department prior to tank closure to find out if any additional permits are required by county or other local jurisdictions. Compliance with the State Environmental Policy Act (SEPA) Rules, Chapter 197-11 WAC, may be required.

A site assessment is required at the time of closure. Contamination found or suspected at the site must be reported to the appropriate Ecology regional office within 24 hours. If the contamination is confirmed, a site characterization report must be submitted to the regional office within 90 days; if contamination is not confirmed, a site assessment report must be submitted to the above address within 30 days.

The following are examples of tanks that are exempt from notification requirements.

- Farm or residential tanks, 1,100 gallons or less, used to store motor fuel for personal or farm use only. The fuel must be used for farm purposes and cannot be for resale.
- Tanks used for storing heating oil that is used solely for the purpose of heating the premises.
- Tanks with a capacity of 110 gallons or less.
- Equipment or machinery tanks such as hydraulic lifts or electrical equipment tanks.
- Emergency overflow tanks, catch basins, or sumps.

DEPARTMENT OF ECOLOGY
State of Washington

Response to 30 Day Notice Waiver Request

To be completed by Person Submitting Request

UST ID # (if known):

Full Site Address: 2101 7th Avenue, Seattle, WA 98121

Owner/ Operator: Acorn Development, LLC.

Contact phone #: 206-808-7845 (Lavina Sadhwani, C/o Acorn)

Waiver Requested for 30 Day Notice to:
(Circle one or both) (DECOMMISSION) INSTALL

Person and Company Submitting Request: Chris Brown, GeoEngineers

Contact phone #: 206-427-7706

Reason for Submitting Request: (ENVIRONMENTAL HAZARD) HEALTH HAZARD
(Circle all that apply) OTHER

Explain Reason: UST discovered during construction activities

Date Request Submitted: 4/16/14

Date and time of Construction: 4/18/14 0800

Name, Contact Phone Number, and ICC Certification Number for all that apply:

INSTALLER:

DECOMMISSIONER: James Leonard 206-547-8347 #1035157

SITE ASSESSOR: Dean Chahim 206-239-3248 # 8219427

Completed 30 Day Notice Attached to Waiver Request Form?
(Circle one) (YES) NO

Department of Ecology Response to Request (to be completed by UST Inspector):

(WAVIER GRANTED) WAIVER DENIED

Inspector: Brenda Yager Signature and Date: 4-21-2014

DECOMMISSIONER(S) SHALL HAVE A COPY OF 30 DAY NOTICE AND A COPY OF THE WAIVER REQUEST FORM ON SITE DURING ALL DECOMMISSIOING RELATED ACTIONS *

APPENDIX D
Contaminated Soil Tonnage Summaries

Rufus 2.0 - Mass Excavation
Block 19
Class III
Profile: 108658WA

Date	Disposal Site	Ticket ID	Truck #	Estimated CY	Tons
4/14/2014	Waste Management	78177	H6034	17.86	28.58
4/14/2014	Waste Management	78190	H6034	17.79	28.46
4/14/2014	Waste Management	78196	H6034	17.91	28.66
4/14/2014	Waste Management	78210	H6034	19.64	31.43
4/14/2014	Waste Management	78220	H6034	19.15	30.64
4/18/2014	Waste Management	78345	H6041	15.96	25.53
4/18/2014	Waste Management	78346	H6040	17.60	28.16
4/18/2014	Waste Management	78348	H1813	15.02	24.03
4/18/2014	Waste Management	78351	H1896	16.39	26.23
4/18/2014	Waste Management	78353	H1800T	14.95	23.92
4/23/2014	Waste Management	78415	H1803	18.11	28.97
4/23/2014	Waste Management	78427	H1808	17.38	27.81
4/23/2014	Waste Management	78429	H6041	18.43	29.49
4/23/2014	Waste Management	78431	H6050	19.58	31.32
4/23/2014	Waste Management	78434	H6047	16.96	27.13
4/23/2014	Waste Management	78436	H6044	20.38	32.60
4/23/2014	Waste Management	78439	H6033T	20.24	32.39
4/23/2014	Waste Management	78441	H6047	19.88	31.80
4/23/2014	Waste Management	78442	H1806	20.14	32.22
4/23/2014	Waste Management	78445	H6041	19.94	31.91
4/23/2014	Waste Management	78456	H1808	20.55	32.88
4/23/2014	Waste Management	78457	H6002	20.26	32.42
4/23/2014	Waste Management	78461	H1807	19.91	31.85
4/23/2014	Waste Management	78462	H6053	20.31	32.50
4/23/2014	Waste Management	78463	H6050	19.41	31.06
4/24/2014	Waste Management	78478	H6046	15.73	25.16
4/24/2014	Waste Management	78479	H1805	17.80	28.48
4/24/2014	Waste Management	78483	H1807	20.94	33.50
4/24/2014	Waste Management	78484	H6047	19.64	31.42
4/24/2014	Waste Management	78487	H1808	19.28	30.85
4/24/2014	Waste Management	78488	H1814T	20.67	33.07
4/24/2014	Waste Management	78489	H1898T	21.71	34.74
4/24/2014	Waste Management	78491	H1896	17.59	28.15
4/24/2014	Waste Management	78493	H1895	21.59	34.54
4/25/2014	Waste Management	78520	H6047	16.82	26.91
4/25/2014	Waste Management	78521	H1808	16.35	26.16
4/25/2014	Waste Management	78529	H1897	16.55	26.48
4/25/2014	Waste Management	78530	H6047	16.28	26.05
4/25/2014	Waste Management	78536	H6000	20.68	33.09

4/25/2014	Waste Management	78538	H6034	20.62	32.99
4/25/2014	Waste Management	78551	H6050	14.81	23.69
4/25/2014	Waste Management	78554	H1809	15.93	25.49
4/25/2014	Waste Management	78557	H5998	18.26	29.22
4/30/2014	Waste Management	78757	H1806	16.50	26.40
4/30/2014	Waste Management	78758	H1807	16.29	26.06
5/15/2014	Waste Management	79670	H6043	16.30	26.08
5/15/2014	Waste Management	79669	H6041	17.21	27.53
5/15/2014	Waste Management	79672	H1811T	14.86	23.77
5/15/2014	Waste Management	79673	H6034	15.42	24.67
5/15/2014	Waste Management	79675	H1808	17.64	28.22
5/15/2014	Waste Management	79678	H1897	15.54	24.87
7/18/2014	Waste Management	83442	H6045T	19.98	31.97
9/9/2014	Waste Management	87909	H5999S	10.01	16.01
9/9/2014	Waste Management	87924	H5999S	7.96	12.73

TOTALS		**962.68**	**1,540.29**

Rufus 2.0 - Mass Excavation

Block 19

Class II

Date	Disposal Site	# of Loads	Tons
4.3.14	Cemex	1	6.32
	Project Total	1	**6.32**

APPENDIX E
Report Limitations and Guidelines for Use

APPENDIX E
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

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

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.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for the exclusive use of Acorn Development LLC. This report may be provided to regulatory agencies for review. 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 King County 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 excavation activities at the Driscoll Demolition Property. 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.

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

Reliance Conditions for Third Parties

Our report was prepared for the exclusive use of Acorn Development LLC. 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 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 King County 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 after Completion of Remedial Activities

Remediation activity completed in a portion of a site cannot 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.

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 Acorn, LLC. 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**.

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