CLEANUP ACTION REPORT (CAR)

14610 Purdy Drive Northwest
Gig Harbor, Washington 98332

April 26, 2017

Prepared For:

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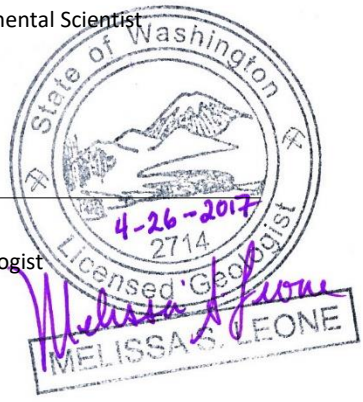

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ECI Project No. 0359-01-04

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1.0 INTRODUCTION

EcoCon, Inc. (ECI), has prepared this Cleanup Action Report (CAR) for the property located at 14610 Purdy Drive Northwest in Gig Harbor, Washington (the Property) (Figures 1 and 2; Appendix A). This CAR was prepared on behalf of Ms. Tracey Larson for submittal to the Washington State Department of Ecology (Ecology), and was developed to meet the general requirements of a CAR as defined by the Washington State Model Toxics Control Act (MTCA) Regulation in Chapter 173-340-400 and -410 of the Washington Administrative Code (WAC).

As established in WAC 173-340-200, a "Site" is defined by the full lateral and vertical extent of contamination that has resulted from a release of hazardous substances. Based on the findings of environmental investigations and results of previous remedial actions discussed within this report, this Site had been defined as soil contaminated with: oil-range organics (ORO); polycyclic aromatic hydrocarbons (PAHs); and total lead. As discussed within this report, the release was associated with an above ground leaking hydraulic lift, and the area of impact was limited to two drainage trenches adjacent to this site feature (Figure 3; Appendix A).

1.1 Document Purpose

The purpose of this CAR is to present historical information regarding the source and extent of impacts, describe the remediation activities to remove the contaminated soil, and provide compliance sampling results documenting the completion of the cleanup action.

The work presented herein was performed on behalf of the Property owner with the ultimate objective of obtaining a determination of No Further Action from Ecology.

2.0 BACKGROUND

The following section provides a description of the Property, a summary of environmental investigations conducted on the Site, and a description of the physical characteristics of the Site.

2.1 Property Description

The Property consists of a commercial lot, 0.36 acres in size, currently improved with two structures. Both structures are occupied by Gig Harbor Transmission. The service garage was reportedly constructed in 1951 with the second structure, primarily used as storage, erected in 1975.

According to the USGS, Burley, WA topographic map (2014), the central elevation of the Property is at approximately 50 feet above mean sea level (NAD83/WGS84). The ground surface (or topography) at the Property generally slopes towards the Burley Lagoon to the west and southwest. The vicinity of the Property also gradually slopes towards the Burley Lagoon to the west and southwest. (Figure 2, Appendix A).

2.2 Physical Setting

2.2.1 Site Geology

The Site is located in the region of the Puget Lowlands an elongated topographic and structural depression filled with complex sequences of glacial and nonglacial sediments that overlie bedrock. Continental ice sheets up to 3,000 feet thick covered portions of the Puget Lowland several times during the Quaternary period. Retreating ice carved new landscapes, rechanneled rivers, drained or formed lakes, and deposited glacial drift including till and outwash (WA DNR, 2002).

Based on previous investigations conducted by EMS discussed in Section 2.3, the Site's surface geology varies across the Site. South of the Site's main structure, shallow soils consist clayey sands and concrete within the former tank pit to clayey, gravelly sand to clay (till) at depth. The soils in boring B2 consisted of clayey, silty and gravelly sand fill to approximately 15 feet bgs. The shallow soils around location B6 consisted of clayey, silty and gravelly sand fill to a depth of 14 feet bgs.

2.2.2 Site Hydrogeology

The primary aquifers in the Puget Sound region are typically overlain by relatively impermeable glacial till deposits that are present at or near the ground surface. Within these till deposits are localized areas or lenses of water-bearing sands and gravels that may result in a shallow, perched water table. Lateral and vertical migration of shallow groundwater may be impeded by the relatively impermeable nature of the till and by the sometimes-discontinuous nature of the perched water-bearing sands and gravel. Perched and discontinuous zones of shallow groundwater may be seasonally or perennially present, depending on site-specific conditions. Shallow groundwater flow directions fluctuate and tend to follow topographic gradient but are also affected by seasonal high water tables and variable soil porosity characteristics. Groundwater migration pathways may also follow underground conduits.

A review of Washington State Department of Ecology well logs for the Site vicinity within one-eighth of a mile indicates depth to the first water bearing zone at approximately 33 feet below ground surface (bgs) and a second water bearing zone at depths greater than 110 feet bgs. At the subject Site, shallow groundwater (perched water table) ranges from approximately 8.5 to 10.5 feet (bgs) and exists as discontinuous lenses. No settling ponds, lagoons, surface impoundments, wetlands or natural catch basins were observed at the Site or surrounding properties.

2.3 Previous Site Investigations/ Remedial Actions

2.3.1 Tacoma Pierce County Health Department 2009 – Site Hazard Assessment

In 2009, the Tacoma Pierce County Health Department (TPCHD) visited the Property and collected soil samples from a drainage trench adjacent to the north Property boundary (abutting a concrete pad staging an exterior hydraulic hoist) and a drainage trench on the western side of the main service garage. Both

areas receive runoff from the vicinity of the uncovered, above-ground hydraulic hoist. The soil samples collected contained concentrations of ORO, PAHs, cadmium, and/or lead above their respective Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Use. The exact location of the samples within the trenches was not provided in TPCHD records.

2.3.2 Alkai Consultants 2010 – Phase I ESA

In January of 2010, a Phase I ESA was conducted by Alkai Consultants, LLC (Alkai). Within the Phase I ESA report, two RECs were identified. The first REC was contamination previously discovered by the TPCHD within the drainage trenches on the Property. The second REC was Environmental Cleanup Liens or Activity and Use Limitations filed against the Subject Property. ECI reviewed available records at the Pierce County Recorder's Office, and was not able to identify any Environmental Cleanup Lien or Activity and Use Limitations filed against the Subject Property.

The Alkai Phase I report also included details pertaining to the decommissioning of four Underground Storage Tanks (USTs) on the Property in 1989. According to Alkai, one 10,000 gallon UST, one 5,000 gallon UST, two 2,000 gallon USTs, and all of the associated piping and dispenser islands were tested for leaks prior to being decommissioned. The Petro Tite Tank Tester representative onsite reported that all four USTs and associated piping had no detectable leaks. During the decommissioning, no holes or damage was identified on the USTs and no contamination was discovered in the surrounding soil. Two soil samples were reportedly collected from the bottom of the tank pits and analyzed as verification, however, the laboratory analytical report was not included within the Alkai Phase I report that was reviewed. Groundwater was reportedly not encountered during the decommissioning of the USTs.

2.3.3 2010 – Interim Cleanup Action and Confirmation Sampling

In February of 2010, the owner of the Property had the contaminated soil within the two drainage trenches excavated and removed.

Environmental Management Services (EMS) subsequently completed a Phase II Subsurface Investigation to evaluate the effectiveness of the interim cleanup action. The Phase II Subsurface Investigation involved the advancement of six (6) soil borings (B1, B2, B3, B4, B5 and B6) on the Property using direct push drilling techniques. Borings B1, B3, B4 and B5 were placed on the south side of the site building. Boring B2 was placed in the southwest area of the exterior lift area and B6 was placed in front of the north working bay. EMS also collected four (4) surface soil samples (T1-T4) from the north trench along the exterior lift area and the trench running parallel to the west side of the main building. One (1) surface soil sample was collected just off the sidewalk south of the building office area (SS1).

Shallow groundwater was encountered in five (5) of the six (6) borings in isolated, perched lenses. Groundwater water was encountered in B1 at 9 feet bgs, in B2 at 8.5 feet bgs, in B4 at 11.5 feet bgs, in B5 at 10.5 feet bgs and in B6 at 9.5 feet bgs. Groundwater was not encountered in boring B3. At the

completion of the drilling each boring was backfilled with bentonite pellets and sealed at the surface with an asphalt or concrete plug and patch.

Ten (10) soil samples and three (3) water samples were collected from the soil borings, and five (5) discrete soil samples were collected using hand tools. The boring locations, sample locations and sample depths, were selected based on historical site use to best characterize the subsurface.

Selected soil and groundwater samples were analyzed for: diesel-range organics (DRO) and ORO by Ecology Method NWTPH-Dx; gasoline-range organics (GRO) by Ecology Method NWTPH-Gx; benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021b, metals (lead, chromium, and cadmium) by EPA Method 6020; and/or PAHs by EPA Method 8270C.

Analytical results reported metal concentrations in the five (5) shallow soil samples (T1, T2, T3, T4 and SS1) above the laboratories practical quantification limit but below the MTCA Method A Soil Cleanup Levels. No other contaminants were detected above their respective laboratory reporting limits. A summary of the laboratory analytical results is provided on Table 1 in Appendix B.

None of the groundwater samples contained detectable concentrations of any petroleum related contaminant. The groundwater sample collected from B2 did contain a concentration of lead above the MTCA Method A Cleanup Level, however the concentration was considered anomalous as suspended solids within reconnaissance groundwater samples typically bias metal concentrations high, and none of the carrier contaminants of concern were detected.

Based on these results, EMS concluded that the contamination identified by TPCHD in 2009 had been successfully remediated. The northern drainage trench was then filled with clean soil to surface grade and the western drainage trench filled to approximately 6-inches bgs. Oil absorbent socks were lined within the western drainage trench to avoid further contamination.

2.3.5 ECI 2017 – Phase I ESA

In January of 2017, a Phase I ESA was conducted by ECI in connection to a potential purchase of the Property. ECI noted that the exterior hydraulic hoist was still uncovered, and noted some oil staining on the concrete pad. Oil absorbent socks were present within the western drainage trench, however ECI did not consider this to be a sufficient engineering control to avoid potential contamination from the leaking hoist. The exposed soils to the north of the hydraulic pad, where the northern drainage trench formerly existed, also was identified as a potential receptor for contaminated runoff. One REC was identified during the assessment in reference to the leaking hoist and lack of secondary containment.

ECI recommended additional assessment of the western trench, and former northern trench areas, to evaluate if impacts from the leaking hoist had occurred since the interim cleanup action was conducted in 2010.

2.3.6 ECI 2017 – Focused Subsurface Investigation

On January 24, 2017, ECI collected four (4) near surface soil samples (TN1-6, TN1-12; TS1-6; and TS2-6) using stainless steel hand tools (spade and trowel) (Figure 3, Appendix A). The sample locations were strategically selected along the trench lines, within the areas of concern previously identified by the TPCHD and ECI's Phase I ESA. The samples were collected at depths between 6 and 12 inches below ground surface (bgs).

Four (4) soil samples were submitted to the Libby Environmental, of Olympia Washington, and analyzed for one or more of the following COCs:

- GRO by NWTPH-Gx;
- BTEX by EPA Method 8260C; and/or
- DRO and ORO by Northwest Method NWTPH-Dx.

Soil sample TS1-6 contained a concentration of ORO above its MTCA Method Cleanup Level of 2,000mg/kg. The three remaining soil samples also contained concentrations of ORO, however they were below the MTCA Method A Cleanup Level. No other COC was detected above its respective laboratory reporting limit in any of the four samples. A summary of the laboratory analytical results is provided on Table 1 in Appendix B.

As required in Table 830-1 in MTCA, an additional sample (TS1-6B) was collected in the vicinity of TS1-6 and analyzed for:

- DRO and ORO by Northwest Method NWTPH-Dx;
- Volatile Organic Compounds by EPA Method 8260C;
- Polychlorinated Biphenyls (PCBs) by EPA Method 8082;
- PAHs by EPA Method EPA Method 8270 (SIM); and
- Total lead by EPA Method 7010 Series.

The soil sample contained concentrations of ORO, PAHs, and lead above their respective MTCA Method A Cleanup Level. The remaining contaminants were not detected above their respective laboratory reporting limits. A summary of the laboratory analytical results is provided on Table 1 in Appendix B.

3.0 CONCEPTUAL SITE MODEL

This section provides a summary of the conceptual site model, which includes a discussion of the contaminants of concern (COCs), the media of concern, the distribution of contamination in soil, and the potential exposure pathways for the Site.

3.1 Contaminants of Concern and Cleanup Levels

Based upon the results of previous investigations, the COCs and respective cleanup levels for the Site are presented below:

MTCA Method-A Cleanup Levels for Soil and Groundwater (MTCA Cleanup Regulation 173-340-900: Tables 720-1 and 740-1)	
Contaminant of Concern (COCs)	**Soil Cleanup Levels (CUL) mg/kg**
Oil Range Organics (ORO)-Method NWTPH-Dx	2,000
Polycyclic Aromatic Hydrocarbons (PAHs)	0.1*
Total Lead	250

*Total PAH concentration using toxicity equivalency methodology.

The MTCA Method A Cleanup Level has been selected for the purpose of returning the Site to its original condition and allowing for unrestricted land use during any future property transaction or redevelopment.

3.2 Media of Concern

Based upon the results of previous investigations, soil is the only media of concern for the Site.

3.3 Distribution of Contamination in Soil

The vertical and lateral extent of soil contamination appears limited to within the concrete drainage trench on the western side of the repair shop. The trench consists of foundation footing wall, abutted by a large concrete pad, utilized for bulk storage. A depiction of this site feature is presented on Figure 4 in Appendix A.

3.4 Points of Compliance

The point compliance is the location where the enforcement limits will be measured and cannot be exceeded.

3.5.1 Point of Compliance for Soil

The point of compliance for direct contact is throughout the Site, from ground surface to 15 feet bgs. This is the depth at which one would reasonably assume workers could encounter contaminated soil during construction or development activities. In situations where achieving the standard point of compliance is

not practicable, conditional points of compliance may be established, or institutional controls implemented to prevent direct contact and protect human health and the environment.

The point of compliance established for this Site is positioned at the end of the concrete drainage trench, which is the point where contaminants could be introduced, unimpeded, into the environment.

4.0 CLEANUP ACTION

Based on the conceptual model developed for the Site, the selected cleanup action components that were used are generally described below.

4.1 Health and Safety

Prior to implementation of the cleanup action a Site-specific Health and Safety Plan (HASP) was prepared in accordance with Chapter 296-62 of the Washington Administrative Code (WAC) and 29 CFR 1910.120 (Code of Federal Regulations). The HASP identified potential physical and chemical hazards and specified personal protection and safety monitoring requirements. Health and safety meetings were conducted during fieldwork to review aspects of the HASP, and to provide an opportunity for ECI workers and contractor personnel to discuss health and safety issues or concerns.

4.2 On-Property Excavation Activities

On April 3, 2017, Property owner representatives performed soil removal activities under the guidance of an ECI environmental professional. Approximately 3.69 tons of soil was removed from the western trench line, as well as from the northern edge of the hydraulic hoist pad (former northern trench). COC concentrations in this northern drainage area were below MTCA Method A Cleanup Levels during the characterization sampling, however the Property owner elected to remove this material due to the low level ORO concentrations. Soil disposal documentation is provided in Appendix C.

Excavation activities continued in the western trench until all soil was removed and the concrete footing was encountered. The trench measured approximately 8-inches wide, 24-inches deep, and 48-feet long (Figure 4; Appendix A).

The excavation extent in the northern drainage area measured approximately 24-inches wide, 24-inches deep, and 27-feet long (Figure 4; Appendix A).

5.0 CONFIRMATION SAMPLING

Confirmation sampling was conducted at the limits of the excavation to assess the concentrations of COCs in subsurface soil, to verify compliance with applicable cleanup standards, and to confirm the long-term effectiveness of the cleanup action. One soil sample (EX1-18) was collected just beyond the point where the concrete slab, abutting the foundation footing, terminated. This would be the location where

contaminants could enter the subsurface and where soil could be accessed. One soil sample (EX2-18) was also collected within the northern trench area excavation. Confirmation sample locations are shown on Figure 4 in Appendix A.

To confirm that cleanup levels had been achieved, the concentrations of COCs were compared to the MTCA Method A Cleanup Level for Unrestricted Land Uses. Each sample was analyzed by Libby Environmental for ORO by NWTPH-Dx; PAHs by EPA Method 8270 (SIM); and total lead by EPA 7010 Series.

Neither confirmation soil sample contained concentrations of any COC in excess of its respective MTCA Method A Cleanup Level. A summary of the sample analytical results is provided on Table 2 in Appendix B. Laboratory analytical reports are provided in Appendix D.

6.0 SUMMARY AND CONCLUSIONS

On April 3, 2017 ECI documented the excavation and removal of 3.69 tons of petroleum contaminated soil within two drainage areas on the Property. The purpose of the excavation was to remove soil with concentrations of COCs in excess of the MTCA Method A Cleanup Level and obtain a determination of "No Further Action" from the Washington State Department of Ecology.

Laboratory testing of soil samples collected from the final limits of the excavation have demonstrated that the goals of the cleanup action were successfully achieved.

7.0 REFERENCES

Tacoma Pierce County Health Department 2009. *Site Inspection Letter*. April 7.

Alkai Consultants, LLC. 2010. *Phase I Environmental Site Assessment*. January 22.

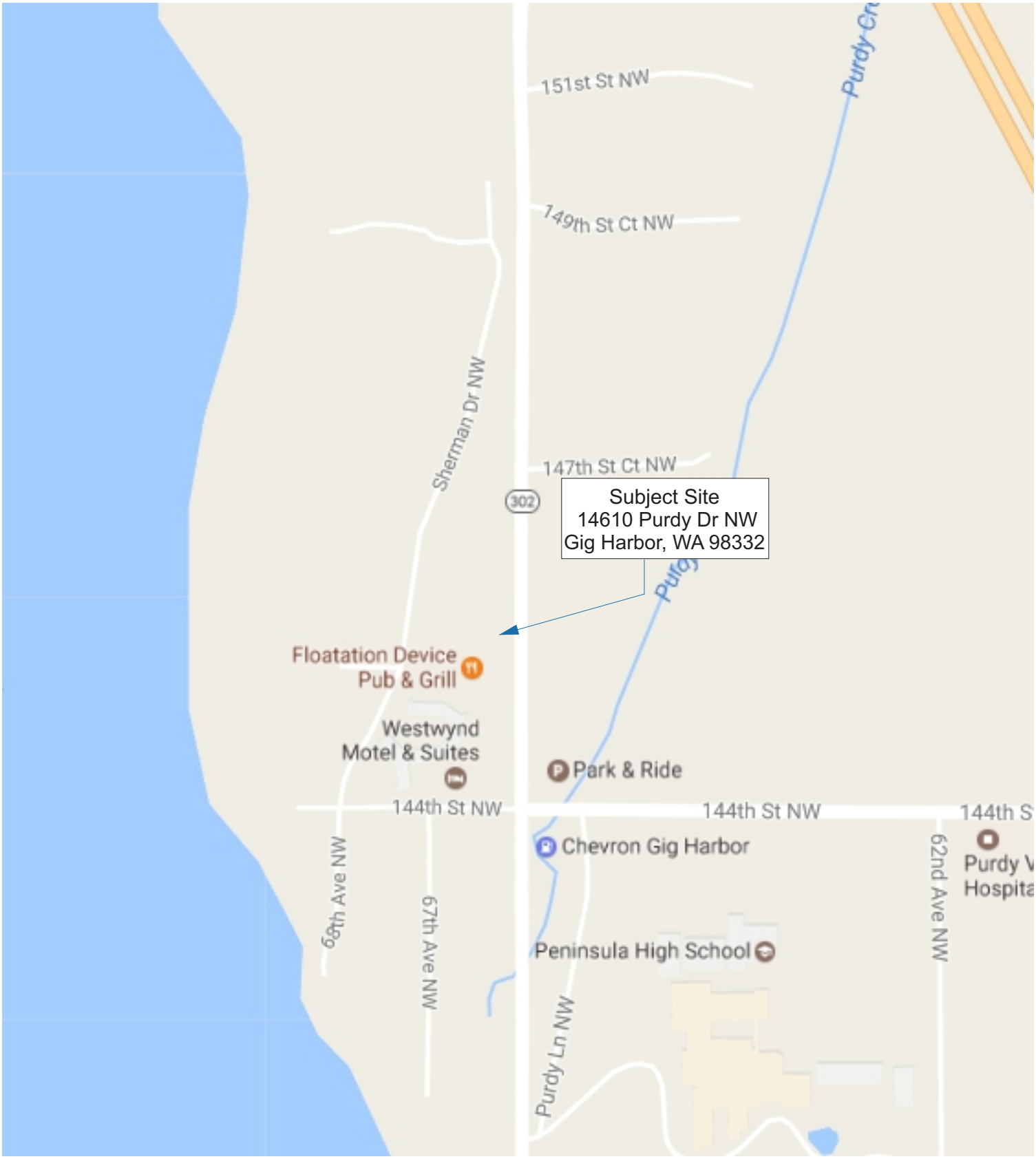
Environmental Management Services. 2010. *Phase II Subsurface Investigation*. February 19.

EcoCon Inc. 2017. *Phase I Environmental Site Assessment*. January 27.

EcoCon Inc. 2017. *Focused Subsurface Investigation*. February 3.

Appendix A

Project Figures



N
Not To Scale

Property Vicinity Map
Cleanup Action Report
14610 Purdy Dr NW
Gig Harbor, WA 98332

Date:	April 26, 2017
Completed By:	K. Spencer
Reviewed By.:	B. Dixon
Version:	ECI-001
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Figure No.:
01
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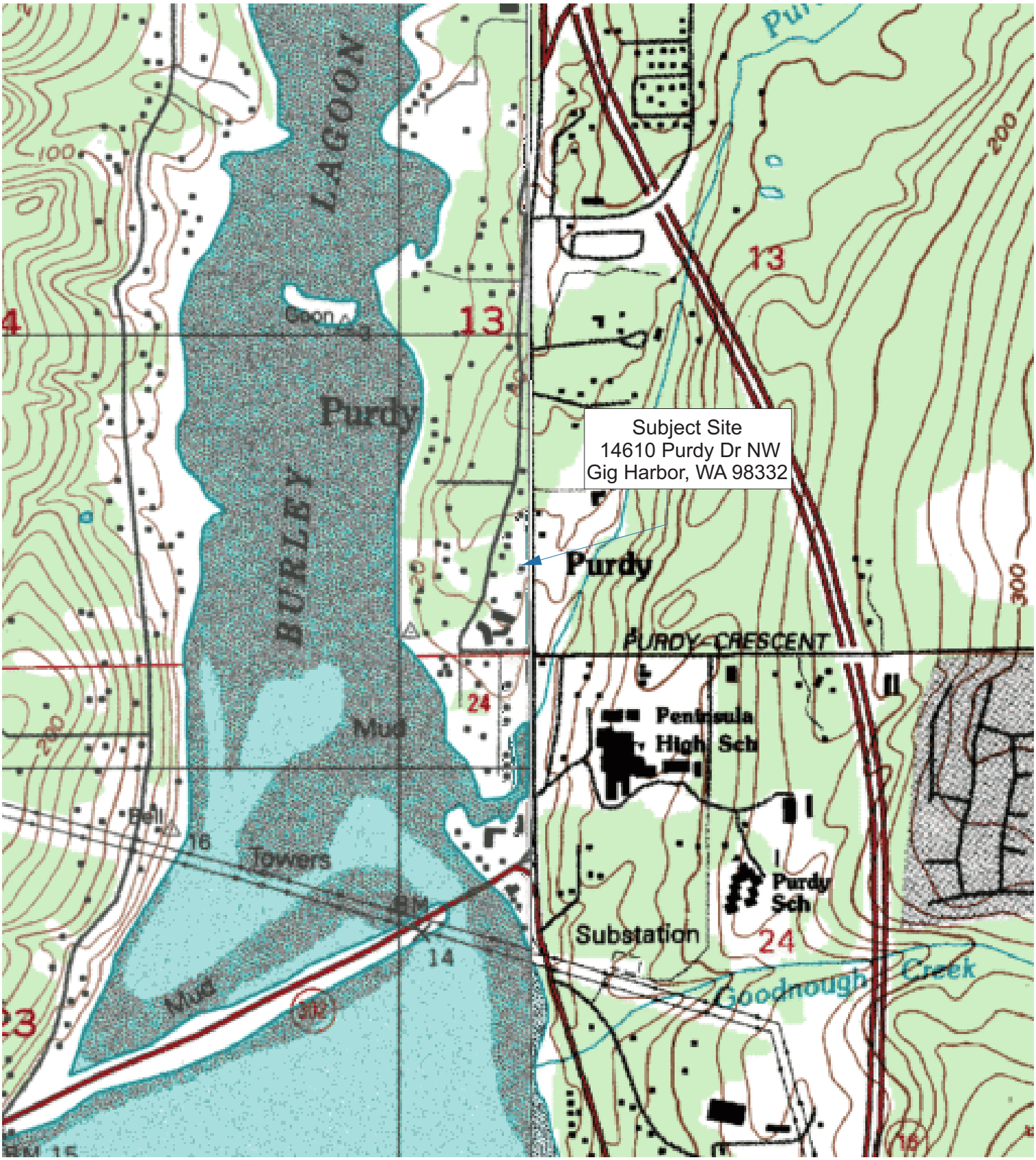

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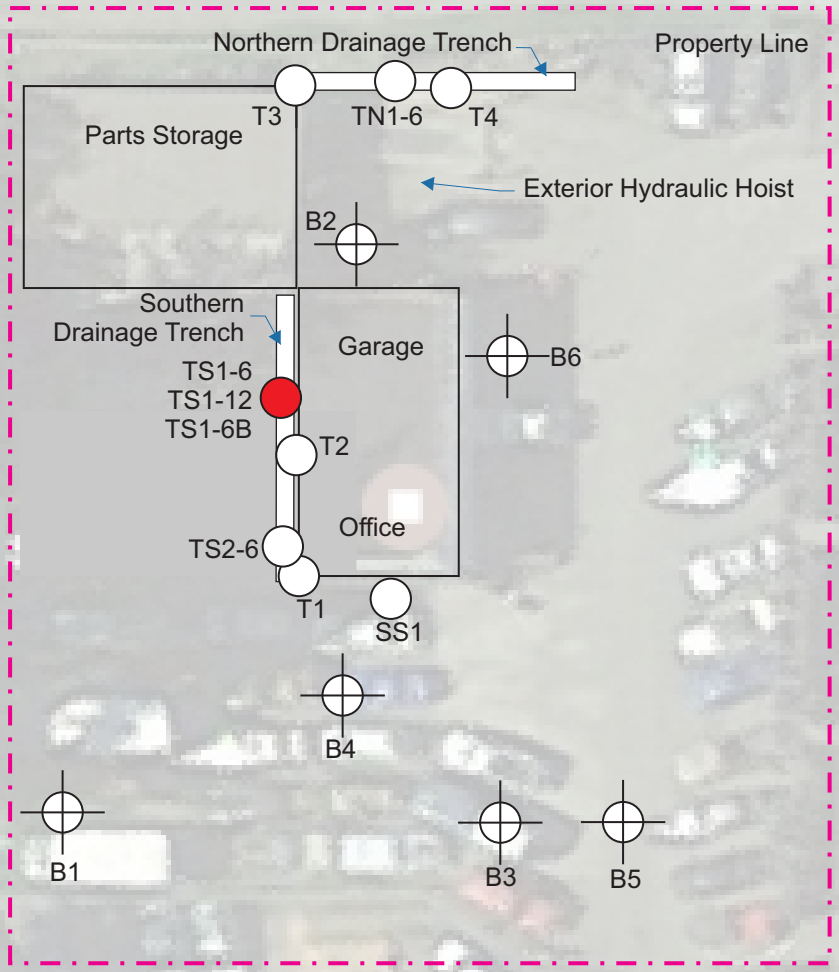

State Hwy 302 Kp N

Legend

Trench/Shallow Sample Location

Boring Location, EMS 2010

Contaminant Concentration in Soil Exceeds MTCA Method A Cleanup Level

N

Historical Soil Sample Location Map

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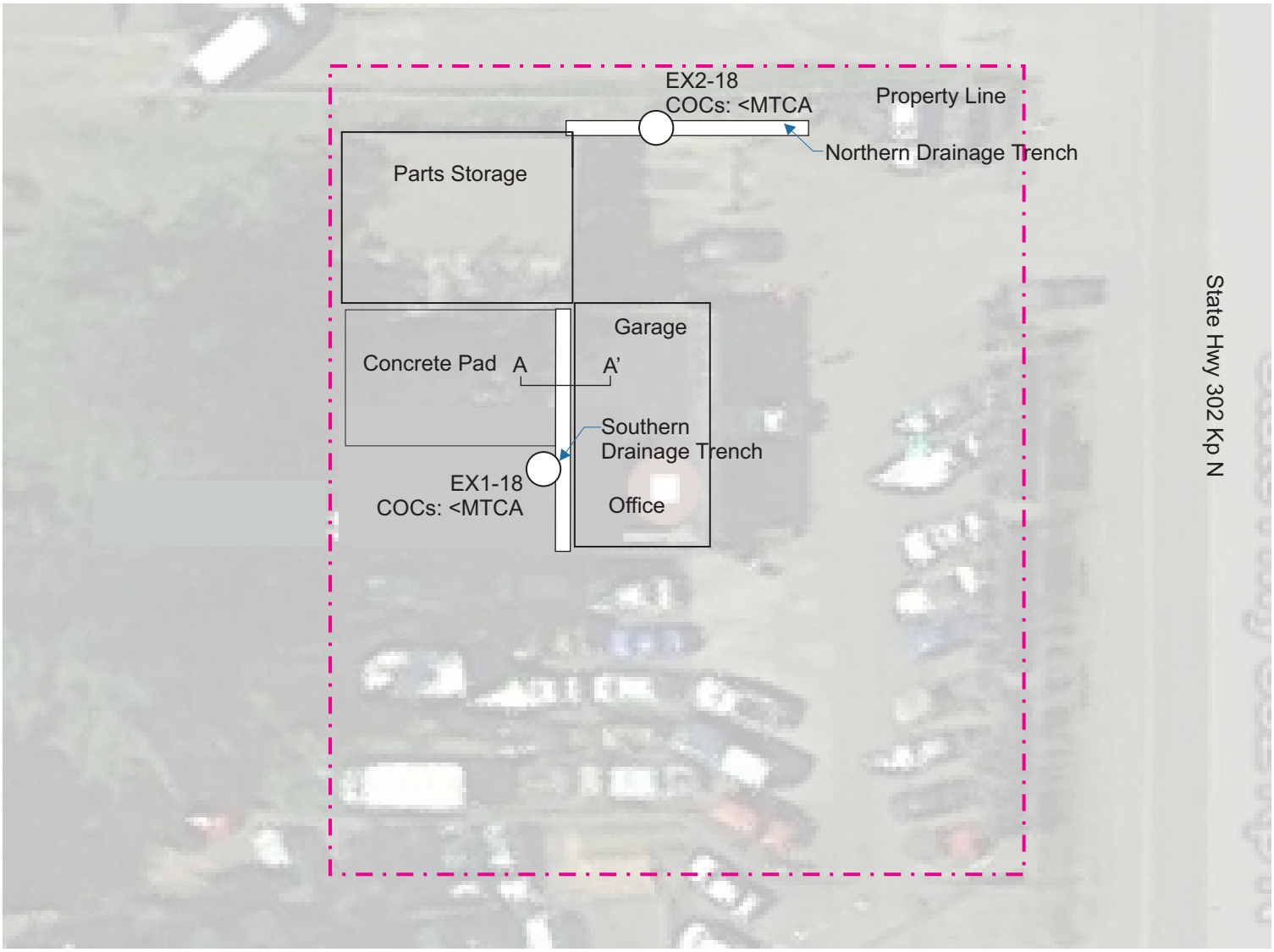
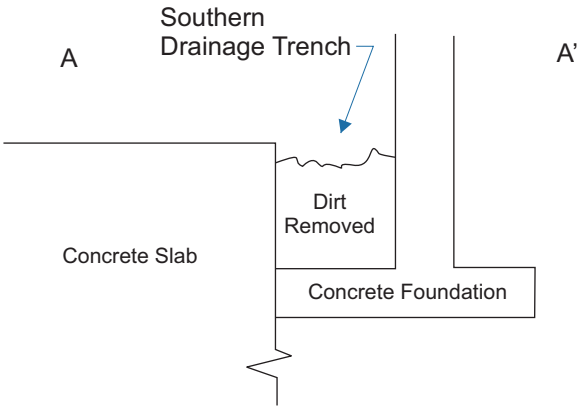


Cross Section



Legend

- Trench/Shallow Sample Location
- COC — Contaminant of Concern
- <MTCA — COC Concentrations below MTCA Method A Cleanup Level

Confirmation Soil Sample Location Map

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Digging Out Southern Drainage Trench

Sampling Northern Drainage Trench

Sampling Southern Drainage Trench

Close-up of Base of Footing Abutting Concrete Slab

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Appendix B

Project Tables

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Table 1: Summary of Soil Analytical Results

Sample ID	Sample Date	Sample Depth (Feet)	Total Petroleum Hydrocarbons (mg/kg)			Volatile Organic Compounds (mg/kg)				Carcinogenic PAHs (mg/kg)								Metals (mg/kg)							
			Gasoline-Range	Diesel- Range	Oil- Range	Benzene	Toluene	Ethylbenzene	Total Xylenes	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Total cPAHs*	Arsenic	Barium	Cadmium	Total Chromium	Lead	Mercury	Selenium	Silver
TPCHD 2009 - Site Inspection																									
S1-surface-031209	3/12/2009	Surface	<25	<31	**180**	<0.0012	<0.0062	<0.0012	<0.0037	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	ND	<13	**100**	<0.63	**57**	**120**	<0.31	<13	<0.63
S2-surface-031209	3/12/2009	Surface	<270	<4,200	**29,000**	<0.0013	<0.0065	<0.0013	<0.0026	**0.094**	**0.21**	**0.33**	<0.090	**0.13**	**0.11**	<0.090	**0.20**	<14	**130**	**8.8**	**30**	**400**	0.53	<14	<0.68
EMS 2010 - Phase II Subsurface Investigation																									
B1-10-021010	2/10/2010	10	<5	<20	<50	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B2-8-021010	2/10/2010	8	--	<20	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B3-10-021010	2/10/2010	10	<5	<20	<50	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B4-11-021010	2/10/2010	11	<5	<20	<50	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B5-14-021010	2/10/2010	14	<5	<20	<50	<0.02	<0.05	<0.05	<0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B6-8-021010	2/10/2010	8	--	<20	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SS1	2/10/2010	0.5-1	--	<20	<50	--	--	--	--	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	--	--	--	**0.6**	**3.4**	**17**	--	--	--
T1	2/10/2010	0.5-1	--	--	--	--	--	--	--	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	--	--	--	**0.5**	**8.4**	**35**	--	--	--
T2	2/10/2010	0.5-1	--	--	--	--	--	--	--	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	--	--	--	**0.3**	**13**	**20**	--	--	--
T3	2/10/2010	0.5-1	--	--	--	--	--	--	--	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	--	--	--	**0.4**	**35**	**53**	--	--	--
T4	2/10/2010	0.5-1	--	--	--	--	--	--	--	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	--	--	--	**1.2**	**33**	**30**	--	--	--
ECI 2017 - Focused Subsurface Investigation																									
TN1-6	1/24/2017	0.5	--	<50	**1,040**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TS1-6	1/24/2017	0.5	<10	<50	**3,440**	<0.02	<0.1	<0.05	<0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TS1-12	1/24/2017	1	--	<50	**638**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TS2-6	1/24/2017	0.5	--	<50	**714**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TS1-6B	1/24/2017	0.5	--	<50	**5,660**	--	--	--	--	<0.0703	**0.156**	**0.174**	<0.0703	**0.0868**	<0.0703	<0.0703	**0.13**	--	--	--	--	**660**	--	--	--
ECI 2017 - Confirmation Soil Sampling																									
EX1-18	4/4/2017	1.5	--	<50	**1,170**	--	--	--	--	<0.0451	<0.0451	<0.0451	<0.0451	<0.0451	<0.0451	<0.0451	ND	--	--	--	--	**100**	--	--	--
EX2-18	4/4/2017	1.5	--	<50	<250	--	--	--	--	<0.0466	<0.0466	<0.0466	<0.0466	<0.0466	<0.0466	<0.0466	ND	--	--	--	--	**55**	--	--	--
MTCA Method A Cleanup Levels			100	2,000	2,000	0.03	7	6	9	NA	NA	NA	NA	0.1	NA	NA	0.1	20	NA	2	2,000	250	2	NA	NA

ND: Not detected above laboratory reporting limit

*: Total Concentration using the toxicity equivalency methodology in WAC 173-340-708 (8)

Bold: Contaminant Detected Above Laboratory Reporting Limit

ECI environmental services
www.ecocononline.com
Anchorage | Tacoma | Portland

Table 2: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Total Petroleum Hydrocarbons (µg/L)			Volatile Organic Compounds (µg/L)				Carcinogenic PAHs (µg/L)								Metals (µg/L)		
		Gasoline-Range	Diesel- Range	Oil- Range	Benzene	Toluene	Ethylbenzene	Total Xylenes	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Total cPAHs[1]	Cadmium	Chromium	Lead
ECI 2017 - Focused Subsurface Investigation																			
B1H2O	2/10/2010	<50	<100	<200	<1	<1	<1	<2	--	--	--	--	--	--	--	--	--	--	--
B2H2O	2/10/2010	<50	<100	<200	<1	<1	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND	<0.4	**50**	**35[2]**
B6H2O	2/10/2010	<50	<100	<200	<1	<1	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND	--	--	--
MTCA Method A Cleanup Levels		800	500	500	5	1,000	700	1,000	NA	NA	NA	NA	0.1	NA	NA	0.1	5	50	15

ND: Not detected above laboratory reporting limit

[1]: Total Concentration using the toxicity equivalency methodology in WAC 173-340-708 (8)

[2]: Concentration is considered anomolous. Reconnassaince groundwater samples tend to bias metal concentrations high due to presence of suspended solids.

--: Not Analyzed

Appendix C

Disposal Documentation

PRS Group, Inc.
3003 Taylor Way
Tacoma, WA 98421

Phone 253-383-4175
Fax 253-383-4531
jay@prsplant.net

GENERATOR'S PROFILE

☐ **Sample Provided** ☐ **MSDS** ☑ **Analytical Report** ☑ **Generator Knowledge**

Profile Number: 6063-b **Approved By:** Jay Johnson **Date Active:** 3/3/2017

Waste Name: Petroleum Contaminated Soils	**Process generating waste:** Site remedial activities

A. Generator Information:

Generator Name: Gig Harbor Transmission	**PRS Customer Name:** Same
Technical Contact: Tracey Larson	**Technical Contact:**
Site Address: 146120 Purdy Drive NW	**Mailing Address:**
City: Gig Harbor **State:** WA **Zip:** 98332	**City:** **State:** **Zip:**
Phone Number: 253-973-1347	**Phone Number:**
E Mail Address: tracey98359@yahoo.com	**E Mail Address:**

B. PHYSICAL & CHEMICAL CHARACTERISTICS OF WASTE –

Color ☑ brown Odor ☑ oil Flash Test ☑ >140F pH ☑ N/A Layers ☑ single Chlorinated ☑ NS PCBs ☑ NS

C. WASTE MATRIX – Estimate percentage

Petroleum Impacted soils (heavy oil)	To 100 %
	To %
	To %
	To %
	To %

D. Total Heavy Metals -- Complete if you have representative lab data - --- Submit lab data with this form – Date: 2/2 & 1/27/2017

Arsenic ☐	PPM	Barium ☐	PPM	Cadmium ☐	PPM	Chromium ☐	PPM	Copper ☐	PPM
Lead ☐	PPM	Mercury ☐	PPM	Nickel ☐	PPM	Selenium ☐	PPM	Silver ☐	PPM
Zinc ☐	PPM	Other. Please List NWTPH-Dx & G; BTEX		No heavy metals suspected ☑		No regulated metals ☐			

E. Shipping Information – Check a box to indicate how material is to be shipped

Containers ☐ **Bulk** ☑ **Quantity to Ship** <5 tons **Frequency** one time event

DOT Shipping Description: Material not regulated by DOT

Generator Certification

I hereby certify, as an authorized representative of the Generator named above, that PRS Group, Inc. has been fully informed about this waste's designation, including but not limited to, the waste's generation process, composition, and physical characteristics, necessary to identify proper treatment and disposal of waste and this information is true and accurate.

If this is an existing profile which is being renewed, I hereby certify that there have been no changes in this waste, chemical, physical or regulatory designation since full characterization by sample testing.

Signature Tracey Larson (Printed Name) Owner (Title) 3/3/17 (Date)

096080

Carlile TRANSPORTATION SYSTEMS, INC.

2301 Taylor Way, Tacoma, WA 98421
phone 800-323-2296 • fax 253-838-9631

PRS — Horse Shoe Lake
COMPANY

AUTHORIZED SIGNATURE

HLP 5557
EMPLOYEE NUMBER

TRK / TRL

☒ WT. ☐ RWT.

4740 G1 lb
13140 G2 lb
0 G3 lb

17880 G lb

CN: 159795

TRUCK 04-03-2017 13:21
TRAILER
CONVERTER
TRAILER
TOTAL WEIGHT

096091

Carlile TRANSPORTATION SYSTEMS, INC.

2301 Taylor Way, Tacoma, WA 98421
phone 800-323-2296 • fax 253-838-9631

PRS — Horse Shoe Lake
COMPANY

AUTHORIZED SIGNATURE

HLP 5557
EMPLOYEE NUMBER

TRK / TRL

☐ WT. ☒ RWT.

5220 G1 lb
5280 G2 lb
0 G3 lb

10500 G lb

CN: 159806

TRUCK 04-03-2017 14:00
TRAILER
CONVERTER
TRAILER
TOTAL WEIGHT

71555

PRS Group, Inc.

ENTRY LOG FOR NON-HAZARDOUS ITEMS

3003 Taylor Way
Tacoma, WA 98421
Phone: (253)383-4175 Fax: (253)383-4531
prs@prsplant.net

Date: 4-3-2017	**Carrier:** Horseshoe Lake	**Vehicle #:** 1
Drivers Signature *:	**Plant Employee:** Colton	**Time:** 3:12 PM

% Water: 0%	**% Oil / Fuel** 0%	**Ph:** na	**Flash>140** ☒ Other Value (Fuel Only):
% Solids: 100%	**% Other** 0%	**Tank # Or Area:** PIT	**Chlor Test:NA** ☒ **Chlor Value <1000:** ☐

Generator Name	Profile #	Work Order, BOL, Or Manifest #	Used Oil	"A" & "C" Category Waste	Used Oil Filters	Off Spec. Fuel	Oil / Water Mix	Oily Solids / Sludges	PCS	Absorbent	Empty Drums	Other
Gig Harbor Transmission	6063 -b								3.69T			l/c

* The information contained in this entry log describes your waste as specified in the specific waste profile approved in to the PRS facility. Please verify the information for accuracy prior to signing.

PRS Group, Inc.
3003 Taylor Way
Tacoma, WA 98421

Invoice

Date	Invoice #
4/3/2017	59722

PAID
04/03/2017

Bill To:

Horse Shoe Lake Wrecking
PO Box 36
Wauna, WA 98395

P.O. No.	Terms	Due Date	Profile #	Entry Log
	On Receipt	4/3/2017	6063-b	71555

Item	Qty	Description	Rate	Amount
PCS	3.69	Ton(s)	85.00	313.65

PRS GROUP INC
3003 TAYLOR WAY
TACOMA, WA 98421
(253) 383-4175
MID 86788250425366

Merchant ID: 8882504425366
Record Num.: 0002

CREDIT CARD
Sale

Application Label: CAPITAL ONE VISA
XXXXXXXXXXXX1586 Exp: XX/XX
AID: A0000000031010
VISA Entry Method: Contact
CHIP READ
ATC: 0017
AC: D16A4190048637395

Total: USD$ 313.65

04/03/17 14:18:32
Resp Code: 00
TVR: 0080008000
TSI: F800
Inv#: 000002
Apprvd: Online Appr Code: 049759
Batch#: 000033
TRN Ref #: 467093767129390
Validation Code: STDX

CARDHOLDER COPY
RETAIN THIS COPY FOR STATEMENT
VERIFICATION

Subtotal	$313.65
Sales Tax (9.6%)	$0.00
Total	$313.65

Phone #	Fax #	E-mail	Web Site
253-383-4175	253-383-4531	prs@prsplant.net	www.prsplant.net

Appendix D

Project Analytical Results

TPCHD 2009 - Site Inspection
EMS 2010 - Phase II Subsurface Investigation
ECI 2017 - Focused Subsurface Investigation
ECI 2017 - Confirmation Soil Sampling

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

March 27, 2009

Kirsten Wecker
Tacoma-Pierce County Health Department
3629 South "D" Street
Tacoma, WA 98418-6813

Re: Analytical Data for Project 609920
Laboratory Reference No. 0903-065

Dear Kirsten:

Enclosed are the analytical results and associated quality control data for samples submitted on March 13, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

for David Baumeister
Project Manager

Enclosures

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881 • Fax (425) 885-4603

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

Case Narrative

Samples were collected on March 12, 2009, and received by the laboratory on March 13, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Volatiles EPA 8260B Analysis

Per EPA Method 5035A, samples were received by the laboratory in Encore sampler devices within 48 hours of sample collection. They were transferred into the proper analytical vials and then either stored in a freezer at between -7°C and -20°C or preserved with sodium bisulfate and/or methanol until extraction or analysis.

Internal Standard 1,4-Dichlorobenzene-d4 does not meet acceptance criteria and Surrogate Standard 4-Bromofluorobenzene is outside control limits for sample S2-surface-031209 due to sample matrix effects. The sample was re-analyzed with similar results. All results, including Practical Quantitation Limits, from Bromobenzene onward should be considered estimates.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

NWTPH-HCID

Date Extracted: 3-16-09
Date Analyzed: 3-18-09

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	S1-surface-031209	S2-surface-031209
Lab ID:	03-065-01	03-065-02
Gasoline:	ND	ND
PQL:	25	270
Diesel Fuel:	ND	ND
PQL:	63	680
Lube Oil:	Lube Oil	Lube Oil
PQL:	130	1400
Surrogate Recovery:		
o-Terphenyl	114%	---
Flags:	Y	Y,S

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

NWTPH-HCID
METHOD BLANK QUALITY CONTROL

Date Extracted:	3-16-09
Date Analyzed:	3-17-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0316S1
Gasoline:	**ND**
PQL:	20
Diesel Fuel:	**ND**
PQL:	50
Lube Oil:	**ND**
PQL:	100
Surrogate Recovery:	
o-Terphenyl	113%

Flags

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

TCLP Metals
EPA 1311/6010B/7470A

Date Prepared:	3-17-09
Date Extracted:	3-18-09
Date Analyzed:	3-18-09
Matrix:	TCLP Extract
Units:	mg/L (ppm)
Lab ID:	03-065-01
Client ID:	**S1-Surface-031209**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	0.40
Barium	6010B	**0.60**	0.20
Cadmium	6010B	**ND**	0.020
Chromium	6010B	**ND**	0.020
Lead	6010B	**0.25**	0.20
Mercury	7470A	**ND**	0.0050
Selenium	6010B	**ND**	0.40
Silver	6010B	**ND**	0.020

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

TCLP Metals
EPA 1311/6010B/7470A

Date Prepared: 3-17-09
Date Extracted: 3-18-09
Date Analyzed: 3-18-09

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 03-065-02
Client ID: **S2-Surface-031209**

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	0.40
Barium	6010B	**0.54**	0.20
Cadmium	6010B	**0.047**	0.020
Chromium	6010B	**ND**	0.020
Lead	6010B	**0.23**	0.20
Mercury	7470A	**ND**	0.0050
Selenium	6010B	**ND**	0.40
Silver	6010B	**ND**	0.020

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

TCLP Metals
EPA 1311/6010B/7470A
METHOD BLANK QUALITY CONTROL

Date Prepared:	3-17-09
Date Extracted:	3-18-09
Date Analyzed:	3-18-09
Matrix:	TCLP Extract
Units:	mg/L (ppm)
Lab ID:	MB0318T1&MB0318T2

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	0.40
Barium	6010B	**ND**	0.20
Cadmium	6010B	**ND**	0.020
Chromium	6010B	**ND**	0.020
Lead	6010B	**ND**	0.20
Mercury	7470A	**ND**	0.0050
Selenium	6010B	**ND**	0.40
Silver	6010B	**ND**	0.020

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

TCLP Metals
EPA 1311/6010B/7470A
DUPLICATE QUALITY CONTROL

Date Prepared: 3-17-09
Date Extracted: 3-18-09
Date Analyzed: 3-18-09

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 03-065-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	0.40	
Barium	**0.596**	**0.591**	1	0.20	
Cadmium	**ND**	**ND**	NA	0.020	
Chromium	**ND**	**ND**	NA	0.020	
Lead	**0.247**	**ND**	NA	0.20	
Mercury	**ND**	**ND**	NA	0.0050	
Selenium	**ND**	**ND**	NA	0.40	
Silver	**ND**	**ND**	NA	0.020	

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

NWTPH-Dx

Date Extracted:	3-23-09
Date Analyzed:	3-23&24-09
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID:	**S1-surface-031209**	**S2-surface-031209**
Lab ID:	03-065-01	03-065-02
Diesel Range:	**ND**	**ND**
PQL:	31	4200
Identification:	---	---
Lube Oil Range:	**180**	**29000**
PQL:	63	1400
Identification:	Lube Oil	Lube Oil
Surrogate Recovery		
o-Terphenyl:	72%	---
Flags:	Y	Y,U1,S

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	3-23-09
Date Analyzed:	3-23-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0323S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	96%
Flags:	Y

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	3-23-09
Date Analyzed:	3-23-09
Matrix:	Soil
Units:	mg/kg (ppm)

Lab ID:	03-113-01	03-113-01 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	82%	90%
Flags:	Y	Y

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	3-23-09
Date Analyzed:	3-23-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	03-065-01
Client ID:	**S1-surface-031209**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0012
Chloromethane	ND		0.0062
Vinyl Chloride	ND		0.0012
Bromomethane	ND		0.0012
Chloroethane	ND		0.0062
Trichlorofluoromethane	ND		0.0012
1,1-Dichloroethene	ND		0.0012
Acetone	ND		0.0062
Iodomethane	ND		0.0062
Carbon Disulfide	ND		0.0012
Methylene Chloride	ND		0.0062
(trans) 1,2-dichloroethene	ND		0.0012
Methyl t-Butyl Ether	ND		0.0012
1,1-Dichloroethane	ND		0.0012
Vinyl Acetate	ND		0.0062
2,2-Dichloropropane	ND		0.0012
(cis) 1,2-Dichloroethene	ND		0.0012
2-Butanone	ND		0.0062
Bromochloromethane	ND		0.0012
Chloroform	ND		0.0012
1,1,1-Trichloroethane	ND		0.0012
Carbon Tetrachloride	ND		0.0012
1,1-Dichloropropene	ND		0.0012
Benzene	ND		0.0012
1,2-Dichloroethane	ND		0.0012
Trichloroethene	ND		0.0012
1,2-Dichloropropane	ND		0.0012
Dibromomethane	ND		0.0012
Bromodichloromethane	ND		0.0012
2-Chloroethyl Vinyl Ether	ND		0.0062
(cis) 1,3-Dichloropropene	ND		0.0012
Methyl Isobutyl Ketone	ND		0.0062
Toluene	ND		0.0062
(trans) 1,3-Dichloropropene	ND		0.0012

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 03-065-01
Client ID: S1-surface-031209

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0012
Tetrachloroethene	ND		0.0012
1,3-Dichloropropane	ND		0.0012
2-Hexanone	ND		0.0062
Dibromochloromethane	ND		0.0012
1,2-Dibromoethane	ND		0.0012
Chlorobenzene	ND		0.0012
1,1,1,2-Tetrachloroethane	ND		0.0012
Ethylbenzene	ND		0.0012
m,p-Xylene	ND		0.0025
o-Xylene	ND		0.0012
Styrene	ND		0.0012
Bromoform	ND		0.0012
Isopropylbenzene	ND		0.0012
Bromobenzene	ND		0.0012
1,1,2,2-Tetrachloroethane	ND		0.0012
1,2,3-Trichloropropane	ND		0.0012
n-Propylbenzene	ND		0.0012
2-Chlorotoluene	ND		0.0012
4-Chlorotoluene	ND		0.0012
1,3,5-Trimethylbenzene	ND		0.0012
tert-Butylbenzene	ND		0.0012
1,2,4-Trimethylbenzene	ND		0.0012
sec-Butylbenzene	ND		0.0012
1,3-Dichlorobenzene	ND		0.0012
p-Isopropyltoluene	ND		0.0012
1,4-Dichlorobenzene	ND		0.0012
1,2-Dichlorobenzene	ND		0.0012
n-Butylbenzene	ND		0.0012
1,2-Dibromo-3-chloropropane	ND		0.0062
1,2,4-Trichlorobenzene	ND		0.0012
Hexachlorobutadiene	ND		0.0062
Naphthalene	ND		0.0012
1,2,3-Trichlorobenzene	ND		0.0012

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	90	70-118
Toluene-d8	97	70-121
4-Bromofluorobenzene	92	70-130

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	3-23-09
Date Analyzed:	3-23-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	03-065-02
Client ID:	**S2-surface-031209**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0013
Chloromethane	ND		0.0065
Vinyl Chloride	ND		0.0013
Bromomethane	ND		0.0013
Chloroethane	ND		0.0065
Trichlorofluoromethane	ND		0.0013
1,1-Dichloroethene	ND		0.0013
Acetone	0.13		0.0065
Iodomethane	ND		0.0065
Carbon Disulfide	ND		0.0013
Methylene Chloride	ND		0.0065
(trans) 1,2-dichloroethene	ND		0.0013
Methyl t-Butyl Ether	ND		0.0013
1,1-Dichloroethane	ND		0.0013
Vinyl Acetate	ND		0.0065
2,2-Dichloropropane	ND		0.0013
(cis) 1,2-Dichloroethene	ND		0.0013
2-Butanone	ND		0.0065
Bromochloromethane	ND		0.0013
Chloroform	ND		0.0013
1,1,1-Trichloroethane	ND		0.0013
Carbon Tetrachloride	ND		0.0013
1,1-Dichloropropene	ND		0.0013
Benzene	ND		0.0013
1,2-Dichloroethane	ND		0.0013
Trichloroethene	ND		0.0013
1,2-Dichloropropane	ND		0.0013
Dibromomethane	ND		0.0013
Bromodichloromethane	ND		0.0013
2-Chloroethyl Vinyl Ether	ND		0.0065
(cis) 1,3-Dichloropropene	ND		0.0013
Methyl Isobutyl Ketone	ND		0.0065
Toluene	ND		0.0065
(trans) 1,3-Dichloropropene	ND		0.0013

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

VOLATILES by EPA 8260B

Page 2 of 2

Lab ID: 03-065-02
Client ID: S2-surface-031209

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0013
Tetrachloroethene	0.013		0.0013
1,3-Dichloropropane	ND		0.0013
2-Hexanone	ND		0.0065
Dibromochloromethane	ND		0.0013
1,2-Dibromoethane	ND		0.0013
Chlorobenzene	ND		0.0013
1,1,1,2-Tetrachloroethane	ND		0.0013
Ethylbenzene	ND		0.0013
m,p-Xylene	ND		0.0026
o-Xylene	ND		0.0013
Styrene	ND		0.0013
Bromoform	ND		0.0013
Isopropylbenzene	ND		0.0013
Bromobenzene	ND		0.0013
1,1,2,2-Tetrachloroethane	ND		0.0013
1,2,3-Trichloropropane	ND		0.0013
n-Propylbenzene	ND		0.0013
2-Chlorotoluene	ND		0.0013
4-Chlorotoluene	ND		0.0013
1,3,5-Trimethylbenzene	ND		0.0013
tert-Butylbenzene	ND		0.0013
1,2,4-Trimethylbenzene	ND		0.0013
sec-Butylbenzene	ND		0.0013
1,3-Dichlorobenzene	ND		0.0013
p-Isopropyltoluene	ND		0.0013
1,4-Dichlorobenzene	ND		0.0013
1,2-Dichlorobenzene	ND		0.0013
n-Butylbenzene	ND		0.0013
1,2-Dibromo-3-chloropropane	ND		0.0065
1,2,4-Trichlorobenzene	ND		0.0013
Hexachlorobutadiene	ND		0.0065
Naphthalene	ND		0.0013
1,2,3-Trichlorobenzene	ND		0.0013

Surrogate	Percent Recovery		Control Limits
Dibromofluoromethane	95		70-118
Toluene-d8	73		70-121
4-Bromofluorobenzene	70	Q	70-130

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted:	3-23-09
Date Analyzed:	3-23-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0323S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.0010
Chloromethane	ND		0.0050
Vinyl Chloride	ND		0.0010
Bromomethane	ND		0.0010
Chloroethane	ND		0.0050
Trichlorofluoromethane	ND		0.0010
1,1-Dichloroethene	ND		0.0010
Acetone	ND		0.0050
Iodomethane	ND		0.0050
Carbon Disulfide	ND		0.0010
Methylene Chloride	ND		0.0050
(trans) 1,2-dichloroethene	ND		0.0010
Methyl t-Butyl Ether	ND		0.0010
1,1-Dichloroethane	ND		0.0010
Vinyl Acetate	ND		0.0050
2,2-Dichloropropane	ND		0.0010
(cis) 1,2-Dichloroethene	ND		0.0010
2-Butanone	ND		0.0050
Bromochloromethane	ND		0.0010
Chloroform	ND		0.0010
1,1,1-Trichloroethane	ND		0.0010
Carbon Tetrachloride	ND		0.0010
1,1-Dichloropropene	ND		0.0010
Benzene	ND		0.0010
1,2-Dichloroethane	ND		0.0010
Trichloroethene	ND		0.0010
1,2-Dichloropropane	ND		0.0010
Dibromomethane	ND		0.0010
Bromodichloromethane	ND		0.0010
2-Chloroethyl Vinyl Ether	ND		0.0050
(cis) 1,3-Dichloropropene	ND		0.0010
Methyl Isobutyl Ketone	ND		0.0050
Toluene	ND		0.0050
(trans) 1,3-Dichloropropene	ND		0.0010

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB0323S1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.0010
Tetrachloroethene	ND		0.0010
1,3-Dichloropropane	ND		0.0010
2-Hexanone	ND		0.0050
Dibromochloromethane	ND		0.0010
1,2-Dibromoethane	ND		0.0010
Chlorobenzene	ND		0.0010
1,1,1,2-Tetrachloroethane	ND		0.0010
Ethylbenzene	ND		0.0010
m,p-Xylene	ND		0.0020
o-Xylene	ND		0.0010
Styrene	ND		0.0010
Bromoform	ND		0.0010
Isopropylbenzene	ND		0.0010
Bromobenzene	ND		0.0010
1,1,2,2-Tetrachloroethane	ND		0.0010
1,2,3-Trichloropropane	ND		0.0010
n-Propylbenzene	ND		0.0010
2-Chlorotoluene	ND		0.0010
4-Chlorotoluene	ND		0.0010
1,3,5-Trimethylbenzene	ND		0.0010
tert-Butylbenzene	ND		0.0010
1,2,4-Trimethylbenzene	ND		0.0010
sec-Butylbenzene	ND		0.0010
1,3-Dichlorobenzene	ND		0.0010
p-Isopropyltoluene	ND		0.0010
1,4-Dichlorobenzene	ND		0.0010
1,2-Dichlorobenzene	ND		0.0010
n-Butylbenzene	ND		0.0010
1,2-Dibromo-3-chloropropane	ND		0.0050
1,2,4-Trichlorobenzene	ND		0.0010
Hexachlorobutadiene	ND		0.0050
Naphthalene	ND		0.0010
1,2,3-Trichlorobenzene	ND		0.0010

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	85	70-118
Toluene-d8	93	70-121
4-Bromofluorobenzene	103	70-130

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 3-23-09
Date Analyzed: 3-23-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: SB0323S1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	0.0500	0.0367	73	0.0356	71	70-130	
Benzene	0.0500	0.0409	82	0.0428	86	70-128	
Trichloroethene	0.0500	0.0499	100	0.0466	93	73-121	
Toluene	0.0500	0.0456	91	0.0463	93	74-122	
Chlorobenzene	0.0500	0.0510	102	0.0519	104	76-115	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	3	15	
Benzene	4	12	
Trichloroethene	7	17	
Toluene	2	14	
Chlorobenzene	2	13	

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**S1-Surface-031209**					
Laboratory ID:	03-065-01					
Naphthalene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
2-Methylnaphthalene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
1-Methylnaphthalene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Acenaphthylene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Acenaphthene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Fluorene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Phenanthrene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Anthracene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Fluoranthene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Pyrene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[a]anthracene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Chrysene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[b]fluoranthene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[k]fluoranthene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[a]pyrene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Dibenz[a,h]anthracene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[g,h,i]perylene	**ND**	0.0083	EPA 8270/SIM	3-26-09	3-26-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
Nitrobenzene-d5	*95*	*39 - 110*				
2-Fluorobiphenyl	*71*	*41 - 107*				
Terphenyl-d14	*81*	*54 - 126*				

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

PAHs by EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**S2-Surface-031209**					
Laboratory ID:	03-065-02					
Naphthalene	**ND**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
2-Methylnaphthalene	**0.19**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
1-Methylnaphthalene	**0.11**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Acenaphthylene	**ND**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Acenaphthene	**ND**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Fluorene	**ND**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Phenanthrene	**0.099**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Anthracene	**ND**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Fluoranthene	**0.17**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Pyrene	**0.39**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[a]anthracene	**0.094**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Chrysene	**0.21**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[b]fluoranthene	**0.33**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[k]fluoranthene	**ND**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[a]pyrene	**0.13**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Indeno(1,2,3-c,d)pyrene	**0.11**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Dibenz[a,h]anthracene	**ND**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[g,h,i]perylene	**0.31**	0.090	EPA 8270/SIM	3-26-09	3-26-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
Nitrobenzene-d5	*98*	*39 - 110*				
2-Fluorobiphenyl	*67*	*41 - 107*				
Terphenyl-d14	*88*	*54 - 126*				

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0326S1					
Naphthalene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Acenaphthylene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Acenaphthene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Fluorene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Phenanthrene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Anthracene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Fluoranthene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Pyrene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Chrysene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270/SIM	3-26-09	3-26-09	
Surrogate:	*Percent Recovery*	*Control Limits*				
Nitrobenzene-d5	*94*	*39 - 110*				
2-Fluorobiphenyl	*68*	*41 - 107*				
Terphenyl-d14	*93*	*54 - 126*				

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065
Project: 609920

PAHs by EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	03-065-01 MSD										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0614**	**0.0564**	0.0833	0.0833	ND	74	68	45 - 94	8	24	
Acenaphthylene	**0.0776**	**0.0722**	0.0833	0.0833	ND	93	87	51 - 104	7	25	
Acenaphthene	**0.0768**	**0.0690**	0.0833	0.0833	ND	92	83	53 - 103	11	21	
Fluorene	**0.0777**	**0.0722**	0.0833	0.0833	ND	93	87	57 - 107	7	19	
Phenanthrene	**0.0741**	**0.0695**	0.0833	0.0833	ND	89	83	61 - 104	6	17	
Anthracene	**0.0725**	**0.0705**	0.0833	0.0833	ND	87	85	58 - 102	3	14	
Fluoranthene	**0.0850**	**0.0799**	0.0833	0.0833	ND	102	96	69 - 109	6	27	
Pyrene	**0.0848**	**0.0798**	0.0833	0.0833	ND	102	96	71 - 114	6	27	
Benzo[a]anthracene	**0.0910**	**0.0874**	0.0833	0.0833	ND	109	105	61 - 123	4	18	
Chrysene	**0.0881**	**0.0823**	0.0833	0.0833	ND	106	99	66 - 124	7	19	
Benzo[b]fluoranthene	**0.0839**	**0.0820**	0.0833	0.0833	ND	101	98	72 - 114	2	26	
Benzo[k]fluoranthene	**0.0837**	**0.0756**	0.0833	0.0833	ND	100	91	70 - 115	10	17	
Benzo[a]pyrene	**0.0830**	**0.0807**	0.0833	0.0833	ND	100	97	57 - 104	3	18	
Indeno(1,2,3-c,d)pyrene	**0.0790**	**0.0736**	0.0833	0.0833	ND	95	88	63 - 121	7	20	
Dibenz[a,h]anthracene	**0.0798**	**0.0741**	0.0833	0.0833	ND	96	89	62 - 125	7	15	
Benzo[g,h,i]perylene	**0.0820**	**0.0752**	0.0833	0.0833	ND	98	90	64 - 117	9	21	
Surrogate:											
Nitrobenzene-d5						*94*	*96*	*39 - 110*			
2-Fluorobiphenyl						*84*	*74*	*41 - 107*			
Terphenyl-d14						*103*	*88*	*54 - 126*			

Date of Report: March 27, 2009
Samples Submitted: March 13, 2009
Lab Traveler: 0903-065
Project: 609920

% MOISTURE

Date Analyzed: 3-16-09

Client ID	Lab ID	% Moisture
S1-surface-031209	03-065-01	20
S2-surface-031209	03-065-02	26

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Page 1 of 1

Company: TPCHD
Project Number: 09920
Project Name: Transmission Service @ Gig Harbor
Project Manager: Kristin Mercer
Sampled by: Kristin Mercer

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Day ☐ 3 Day
- ☒ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 03-065

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID *	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	% Moisture
1	S1-Surface-032309	03.12.09	1:10	Soil	4	X		X	X			X					X		X
2	S2-Surface-032-09	03.12.09	1:30	Soil	4	X		X	X			X					X		X

	Signature	Company	Date	Time
Relinquished by		TPCHD	3/13/09	8:40
Received by	Van Hackett	Speedy	3/13/09	8:40
Relinquished by	Van Hackett	Speedy	3/13/09	1:50
Received by		QSI Inc FD	3/13/09	1:50
Relinquished by				
Received by				

Comments/Special Instructions:
* Depending on results of HCID, other analytes may be added
Added 3/23/09 DB

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

April 2, 2009

Kirsten Wecker
Tacoma-Pierce County Health Department
3629 South "D" Street
Tacoma, WA 98418-6813

Re: Analytical Data for Project 609920
Laboratory Reference No. 0903-065B

Dear Kirsten:

Enclosed are the analytical results and associated quality control data for samples submitted on March 13, 2009.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: April 2, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065B
Project: 609920

Case Narrative

Samples were collected on March 12, 2009, and received by the laboratory on March 13, 2009. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: April 2, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065B
Project: 609920

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 4-1-09
Date Analyzed: 4-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-065-01
Client ID: S1-Surface-031209

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	13
Barium	6010B	**100**	3.1
Cadmium	6010B	**ND**	0.63
Chromium	6010B	**57**	0.63
Lead	6010B	**120**	6.3
Mercury	7471A	**ND**	0.31
Selenium	6010B	**ND**	13
Silver	6010B	**ND**	0.63

Date of Report: April 2, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065B
Project: 609920

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 4-1-09
Date Analyzed: 4-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-065-02
Client ID: S2-Surface-031209

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	14
Barium	6010B	**130**	3.4
Cadmium	6010B	**8.8**	0.68
Chromium	6010B	**30**	0.68
Lead	6010B	**400**	6.8
Mercury	7471A	**0.53**	0.34
Selenium	6010B	**ND**	14
Silver	6010B	**ND**	0.68

Date of Report: April 2, 2009
Samples Submitted: March 13, 2009
Laboratory Reference: 0903-065B
Project: 609920

TOTAL METALS
EPA 6010B/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted:	4-1-09
Date Analyzed:	4-1-09
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0401S2&MB0401S3

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	10
Barium	6010B	**ND**	2.5
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.25
Selenium	6010B	**ND**	10
Silver	6010B	**ND**	0.50

Date of Report: April 2, 2009
Samples Submitted. March 13, 2009
Laboratory Reference. 0903-065B
Project: 609920

TOTAL METALS
EPA 6010B/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 4-1-09
Date Analyzed: 4-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-142-04

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Barium	**76.4**	**77.8**	2	2.5	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**37.2**	**36.4**	2	0.50	
Lead	**ND**	**ND**	NA	5.0	
Mercury	**ND**	**ND**	NA	0.25	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	0.50	

Date of Report: April 2, 2009
Samples Submitted: March 13, 2009
Laboratory Reference. 0903-065B
Project: 609920

TOTAL METALS
EPA 6010B/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 4-1-09
Date Analyzed: 4-1-09

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 03-142-04

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**85.6**	86	**91.2**	91	6	
Barium	100	**171**	95	**178**	101	4	
Cadmium	50	**43.2**	86	**45.3**	91	5	
Chromium	100	**122**	85	**130**	92	6	
Lead	250	**220**	88	**230**	92	5	
Mercury	0.50	**0.488**	98	**0.523**	105	7	
Selenium	100	**84.6**	85	**86.5**	86	2	
Silver	25	**20.9**	84	**20.7**	83	1	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: TPCHD
Project Number: 609920
Project Name: Transmission Service @ Gig Harbor
Project Manager: Kirsten Wecker
Sampled by: Kirsten Wecker

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

Laboratory Number: 03-065

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# Cont.	NWTPH-HCID *	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	% Moisture
1	S1-Surface-031209	03.12.09	1:10	Soil	4	X		⊗	⊗			⊗				⊗	X		X
2	S2-Surface-031209	03.12.09	1:30	Soil	4	X		⊗	⊗			⊗				⊗	X		X

	Signature	Company	Date	Time
Relinquished by		TPCHD	3/13/09	8:40
Received by	Van Hackett	Speedy	3/13/09	8:40
Relinquished by	Van Hackett	Speedy	3/13/09	9:50
Received by		OnSite Fc	3/13/09	9:50
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
* Depending on results of HCID, other analytes may be added
⊗ Added 3/23/09. DB
⊗ Added 3/19/09 Exc 2day TA

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

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Environmental Management Services, LLC
Attn: Robin Hamlet
PO Box 153
652 8th Ave.
Fox Island, WA 98333

RE: Gig Harbor Transmission
Fremont Project No: CHM100211-8
EMS Project No: 0359-01

February 18th, 2010

Robin:

Enclosed are the analytical results for the ***Gig Harbor Transmission*** soil and water samples submitted to Fremont Analytical on Thursday February 11th, 2010.

Examination of these samples was conducted for the presence of the following:

- ***Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B)***
- ***Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.***
- ***Polyaromatic Hydrocarbons by EPA Method 8270***
- ***Total Metals by EPA Method 6020***

These applications were performed under Washington State Department of Ecology accreditation parameters. All appropriate Quality Assurance / Quality Control method parameters have been applied.

Laboratory Notation – 6020 (soil): Matrix Effect - The relative percent difference between the sample and sample duplicate for lead was outside of the laboratory control limits (40%, range = 30%).

Please contact the laboratory if you should have any questions about the report.

Thank you for using Fremont Analytical!

Sincerely,

Michael Dee
Sr. Chemist / Principal
mikedee@fremontanalytical.com

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Analysis of Gasoline (NWTPH-Gx) and BTEX (EPA Method 8021B) in Soil

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

8021B+NWTPH-Gx (mg/kg)	MRL	Method Blank	LCS	B1-10-021010	B1-10-021010 Duplicate	B3-10-021010
Date Preserved				2/11/10	2/11/10	2/11/10
Date Analyzed		2/15/10	2/15/10	2/15/10	2/15/10	2/15/10
Matrix				Soil	Soil	Soil
8021B (mg/kg)						
Benzene	0.02	nd	80%	nd	nd	nd
Toluene	0.05	nd	77%	nd	nd	nd
Ethylbenzene	0.05	nd		nd	nd	nd
Total Xylenes	0.15	nd		nd	nd	nd
NWTPH-Gx (mg/kg)						
Gasoline	5.0	nd	108%	nd	nd	nd
Gasoline Range Hydrocarbons (GRO)*	5.0	nd		nd	nd	nd
Surrogate Recovery						
(Surr 1) a,a,a-Trifluorotoluene		105%	105%	99%	103%	105%
(Surr 2) Bromofluorobenzene		81%	85%	81%	82%	82%

"nd" Indicates not detected at listed reporting limits
"C" Indicates coelution prevents determination
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limits
"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference
" * " Indicates presence of petroleum distilate

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogate = 65% to 135%
LCS, LCSD, MS, MSD = 65% to 135%
Surrogate Concentration = 0.25 mg/kg
BTEX Spike Concentration = 0.5 mg/kg
Gx Spike Concentration = 5.0 mg/kg
GRO = C6-C12

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Analysis of Gasoline (NWTPH-Gx) and BTEX (EPA Method 8021B) in Soil

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

				MS	MSD	
8021B+NWTPH-Gx (mg/kg)	**MRL**	**B4-11-021010**	**B5-14-021010**	**B1-10-021010**	**B1-10-021010**	**RPD %**
Date Preserved		2/11/10	2/11/10	2/11/10	2/11/10	
Date Analyzed		2/15/10	2/15/10	2/15/10	2/15/10	
Matrix		Soil	Soil	Soil	Soil	
8021B (mg/kg)						
Benzene	0.02	nd	nd	79%	81%	3%
Toluene	0.05	nd	nd	78%	79%	1%
Ethylbenzene	0.05	nd	nd			
Total Xylenes	0.15	nd	nd			
NWTPH-Gx (mg/kg)						
Gasoline	5.0	nd	nd			
Gasoline Range Hydrocarbons (GRO)*	5.0	nd	nd			
Surrogate Recovery						
(Surr 1) a,a,a-Trifluorotoluene		100%	103%	104%	107%	
(Surr 2) Bromofluorobenzene		80%	82%	90%	90%	

"nd" Indicates not detected at listed reporting limits
"C" Indicates coelution prevents determination
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limits
"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference
" * " Indicates presence of petroleum distilate

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogate = 65% to 135%
LCS, LCSD, MS, MSD = 65% to 135%
Surrogate Concentration = 0.25 mg/kg
BTEX Spike Concentration = 0.5 mg/kg
Gx Spike Concentration = 5.0 mg/kg
GRO = C6-C12

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Analysis of Gasoline (NWTPH-Gx) and BTEX (EPA Method 8021B) in Water

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

8021B+NWTPH-Gx (µg/L)	MRL	Method Blank	LCS	B1H$_2$O-021010	Duplicate B1H$_2$O-021010	B2H$_2$O-021010
Date Analyzed		2/15/10	2/15/10	2/15/10	2/15/10	2/15/10
Matrix				Water	Water	Water
8021B (µg/L)						
Benzene	1.0	nd	82%	nd	nd	nd
Toluene	1.0	nd	83%	nd	nd	nd
Ethylbenzene	1.0	nd		nd	nd	nd
Total Xylenes	2.0	nd		nd	nd	nd
NWTPH-Gx (µg/L)						
Gasoline	50	nd	104%	nd	nd	nd
Gasoline Range Hydrocarbons (GRO)*	50	nd		nd	nd	nd
Surrogate Recovery						
(Surr 1) a,a,a-Trifluorotoluene		103%	105%	107%	105%	107%
(Surr 2) Bromofluorobenzene		87%	91%	89%	86%	88%

"nd" Indicates not detected at listed reporting limits
"C" Indicates coelution prevents determination
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limits
"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference
" * " Indicates presence of petroleum distilate

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogate = 65% to 135%
LCS, LCSD, MS, MSD = 65% to 135%
Surrogate Concentration = 5.0 µg/L
BTEX Spike Concentration = 10 µg/L
Gx Spike Concentration = 100 µg/L
GRO = C6-C12

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Analysis of Gasoline (NWTPH-Gx) and BTEX (EPA Method 8021B) in Water

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

8021B+NWTPH-Gx (µg/L)	MRL	B6H$_2$O-021010	MS B2H$_2$O-021010	MSD B2H$_2$O-021010	RPD %
Date Analyzed		2/15/10	2/15/10	2/15/10	
Matrix		Water	Water	Water	
8021B (µg/L)					
Benzene	1.0	nd	76%	79%	4%
Toluene	1.0	nd	77%	79%	3%
Ethylbenzene	1.0	nd			
Total Xylenes	2.0	nd			
NWTPH-Gx (µg/L)					
Gasoline	50	nd			
Gasoline Range Hydrocarbons (GRO)*	50	nd			
Surrogate Recovery					
(Surr 1) a,a,a-Trifluorotoluene		105%	101%	104%	
(Surr 2) Bromofluorobenzene		87%	89%	91%	

"nd" Indicates not detected at listed reporting limits
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"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference
" * " Indicates presence of petroleum distilate

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogate = 65% to 135%
LCS, LCSD, MS, MSD = 65% to 135%
Surrogate Concentration = 5.0 µg/L
BTEX Spike Concentration = 10 µg/L
Gx Spike Concentration = 100 µg/L
GRO = C6-C12

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Analysis of Diesel and Heavy Oil in Soil by NWTPH-Dx / Dx Ext.

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

NWTPH-Dx/Dx Ext. (mg/kg)	MRL	Method Blank	LCS	B1-10-021010	Duplicate B1-10-021010
Date Extracted		2/17/10	2/17/10	2/17/10	2/17/10
Date Analyzed		2/17/10	2/17/10	2/17/10	2/17/10
Matrix				Soil	Soil
Diesel (Fuel Oil)	20	nd	121%	nd	nd
Mineral Oil	40	nd		nd	nd
Heavy Oil	50	nd		nd	nd
Surrogate Recovery					
(Surr 1) 2-Fluorobiphenyl		107%	119%	109%	103%
(Surr 2) o-Terphenyl		108%	110%	106%	99%

"nd" Indicates not detected at listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"C" Indicates coelution prevents determination
"RPD" Indicates Relative Percent Difference
"MRL" Indicates Method Reporting Limit

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogate = 65% to 135%
Surrogate Concentration = 20 mg/kg
Spike Concentration = 500 mg/kg
Diesel (Fuel Oil) = C12-C24
Mineral Oil = C15-C40
Heavy Oil = C24-C40

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Analysis of Diesel and Heavy Oil in Soil by NWTPH-Dx / Dx Ext.

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

NWTPH-Dx/Dx Ext. (mg/kg)	MRL	B2-8-021010	B3-10-021010	B4-11-021010	B5-14-021010
Date Extracted		2/17/10	2/17/10	2/17/10	2/17/10
Date Analyzed		2/17/10	2/17/10	2/17/10	2/17/10
Matrix		Soil	Soil	Soil	Soil
Diesel (Fuel Oil)	20	nd	nd	nd	nd
Mineral Oil	40	nd	nd	nd	nd
Heavy Oil	50	nd	nd	nd	nd
Surrogate Recovery					
(Surr 1) 2-Fluorobiphenyl		107%	104%	103%	104%
(Surr 2) o-Terphenyl		102%	100%	99%	100%

"nd" Indicates not detected at listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"C" Indicates coelution prevents determination
"RPD" Indicates Relative Percent Difference
"MRL" Indicates Method Reporting Limit

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogate = 65% to 135%
Surrogate Concentration = 20 mg/kg
Spike Concentration = 500 mg/kg
Diesel (Fuel Oil) = C12-C24
Mineral Oil = C15-C40
Heavy Oil = C24-C40

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Analysis of Diesel and Heavy Oil in Soil by NWTPH-Dx / Dx Ext.

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

NWTPH-Dx/Dx Ext. (mg/kg)	MRL	B6-8-021010	SS1-.5-021010
Date Extracted		2/17/10	2/17/10
Date Analyzed		2/17/10	2/17/10
Matrix		Soil	Soil
Diesel (Fuel Oil)	20	nd	nd
Mineral Oil	40	nd	nd
Heavy Oil	50	nd	nd
Surrogate Recovery			
(Surr 1) 2-Fluorobiphenyl		103%	104%
(Surr 2) o-Terphenyl		98%	99%

"nd" Indicates not detected at listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"C" Indicates coelution prevents determination
"RPD" Indicates Relative Percent Difference
"MRL" Indicates Method Reporting Limit

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogate = 65% to 135%
Surrogate Concentration = 20 mg/kg
Spike Concentration = 500 mg/kg
Diesel (Fuel Oil) = C12-C24
Mineral Oil = C15-C40
Heavy Oil = C24-C40

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Analysis of Diesel and Heavy Oil in Water by NWTPH-Dx / Dx Ext.

Project: Gig Harbor Transmissi
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

NWTPH-Dx/Dx Ext. (µg/L)	MRL	Method Blank	LCS	B1H$_2$O-021010	B1H$_2$O-021010 Duplicate	B$_2$H2O-021010	B6H$_2$O-021010
Date Extracted		2/16/10	2/16/10	2/16/10	2/16/10	2/16/10	2/16/10
Date Analyzed		2/17/10	2/17/10	2/17/10	2/17/10	2/17/10	2/17/10
Matrix				Water	Water	Water	Water
Diesel (Fuel Oil)	100	nd	110%	nd	nd	nd	nd
Mineral Oil	100	nd		nd	nd	nd	nd
Heavy Oil	200	nd		nd	nd	nd	nd
Surrogate Recovery							
(Surr 1) 2-Fluorobiphenyl		99%	95%	68%	132%	98%	97%
(Surr 2) o-Terphenyl		80%	88%	84%	74%	84%	97%

"nd" Indicates not detected at listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"C" Indicates coelution prevents determination
"RPD" Indicates Relative Percent Difference
"MRL" Indicates Method Reporting Limit

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogate = 65% to 135%
Surrogate Concentration = 160 µg/L
Spike Concentration = 4000 µg/L
Diesel (Fuel Oil) = C12-C24
Mineral Oil = C15-C40
Heavy Oil = C24-C40

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Analysis of Polyaromatic Hydrocarbons in Soil by EPA Method 8270C

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

EPA 8270C (mg/kg)	MRL	Method Blank	LCS	SS1-.5-021010	T1-.5-021010	T1-.5-021010 Duplicate
Date Extracted		2/16/10	2/16/10	2/16/10	2/16/10	2/16/10
Date Analyzed		2/16/10	2/16/10	2/16/10	2/16/10	2/16/10
Matrix				Soil	Soil	Soil
Naphthalene	0.1	nd		nd	nd	nd
1-Methylnaphthalene	0.1	nd		nd	nd	nd
2-Methylnaphthalene	0.1	nd		nd	nd	nd
Acenaphthene	0.1	nd	57%	nd	nd	nd
Acenaphthylene	0.1	nd		nd	nd	nd
Fluorene	0.1	nd		nd	nd	nd
Phenanthrene	0.1	nd		nd	nd	nd
Anthracene	0.1	nd		nd	nd	nd
Fluoranthene	0.1	nd		nd	nd	nd
Pyrene	0.1	nd	126%	nd	nd	nd
Benzo(a)anthracene	0.08	nd		nd	nd	nd
Chrysene	0.08	nd		nd	nd	nd
Benzo(b)fluoranthene	0.08	nd		nd	nd	nd
Benzo(k)fluoranthene	0.08	nd		nd	nd	nd
Benzo(a)pyrene	0.08	nd		nd	nd	nd
Indeno(1,2,3-cd)pyrene	0.08	nd		nd	nd	nd
Dibenzo(a,h)anthracene	0.08	nd		nd	nd	nd
Benzo(g,h,i)perylene	0.1	nd		nd	nd	nd
Total PAH Carcinogens				0.0	0.0	0.0

Total PAH Carcinogens Defined as:
Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene,
Benzo(k)fluoranthene, Benzo(a)pyrene,
Ideno(1,2,3-cd)pyrene & Dibenzo(a,h)anthracene

Surrogate Recovery					
(Surr 1) 2-Fluorobiphenyl	73%	68%	76%	86%	83%
(Surr 2) p-Terphenyl	66%	63%	67%	67%	65%

"nd" Indicates not detected at listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limit
"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogates = 50% to 150%
LCS, LCSD, MS, MSD = 50% to 150%
Surrogate Concentration = 0.5 mg/kg
Spike Concentration = 1.0 mg/kg

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Analysis of Polyaromatic Hydrocarbons in Soil by EPA Method 8270C

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

EPA 8270C (mg/kg)	MRL	T2-.5-021010	T3-.5-021010	T4-.5-021010
Date Extracted		2/16/10	2/16/10	2/16/10
Date Analyzed		2/16/10	2/16/10	2/16/10
Matrix		Soil	Soil	Soil
Naphthalene	0.1	nd	nd	nd
1-Methylnaphthalene	0.1	nd	nd	nd
2-Methylnaphthalene	0.1	nd	nd	nd
Acenaphthene	0.1	nd	nd	nd
Acenaphthylene	0.1	nd	nd	nd
Fluorene	0.1	nd	nd	nd
Phenanthrene	0.1	nd	nd	nd
Anthracene	0.1	nd	nd	nd
Fluoranthene	0.1	nd	nd	nd
Pyrene	0.1	nd	nd	nd
Benzo(a)anthracene	0.08	nd	nd	nd
Chrysene	0.08	nd	nd	nd
Benzo(b)fluoranthene	0.08	nd	nd	nd
Benzo(k)fluoranthene	0.08	nd	nd	nd
Benzo(a)pyrene	0.08	nd	nd	nd
Indeno(1,2,3-cd)pyrene	0.08	nd	nd	nd
Dibenzo(a,h)anthracene	0.08	nd	nd	nd
Benzo(g,h,i)perylene	0.1	nd	nd	nd
Total PAH Carcinogens		0.0	0.0	0.0

Total PAH Carcinogens Defined as:
Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene,
Benzo(k)fluoranthene, Benzo(a)pyrene,
Ideno(1,2,3-cd)pyrene & Dibenzo(a,h)anthracene

Surrogate Recovery			
(Surr 1) 2-Fluorobiphenyl	77%	74%	81%
(Surr 2) p-Terphenyl	64%	64%	67%

"nd" Indicates not detected at listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limit
"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogates = 50% to 150%
LCS, LCSD, MS, MSD = 50% to 150%
Surrogate Concentration = 0.5 mg/kg
Spike Concentration = 1.0 mg/kg

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Analysis of Polyaromatic Hydrocarbons in Soil by EPA Method 8270C

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

EPA 8270C (mg/kg)	MRL	MS T1-.5-021010	MSD T1-.5-021010	RPD %
Date Extracted		2/16/10	2/16/10	
Date Analyzed		2/16/10	2/16/10	
Matrix		Soil	Soil	
Naphthalene	0.1			
1-Methylnaphthalene	0.1			
2-Methylnaphthalene	0.1			
Acenaphthene	0.1	54%	56%	4%
Acenaphthylene	0.1			
Fluorene	0.1			
Phenanthrene	0.1			
Anthracene	0.1			
Fluoranthene	0.1			
Pyrene	0.1	121%	110%	10%
Benzo(a)anthracene	0.08			
Chrysene	0.08			
Benzo(b)fluoranthene	0.08			
Benzo(k)fluoranthene	0.08			
Benzo(a)pyrene	0.08			
Indeno(1,2,3-cd)pyrene	0.08			
Dibenzo(a,h)anthracene	0.08			
Benzo(g,h,i)perylene	0.1			
Total PAH Carcinogens				

Total PAH Carcinogens Defined as:
Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene,
Benzo(k)fluoranthene, Benzo(a)pyrene,
Ideno(1,2,3-cd)pyrene & Dibenzo(a,h)anthracene

Surrogate Recovery		
(Surr 1) 2-Fluorobiphenyl	70%	66%
(Surr 2) p-Terphenyl	56%	48%

"nd" Indicates not detected at listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limit
"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogates = 50% to 150%
LCS, LCSD, MS, MSD = 50% to 150%
Surrogate Concentration = 0.5 mg/kg
Spike Concentration = 1.0 mg/kg

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Analysis of Polyaromatic Hydrocarbons in Water by EPA Method 8270C

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

EPA 8270C (ug/L)	MRL	Method Blank	LCS	$B2H_2O$-021010	$B6H_2O$-021010
Date Extracted		2/16/10	2/16/10	2/16/10	2/16/10
Date Analyzed		2/16/10	2/16/10	2/16/10	2/16/10
Matrix				Water	Water
Naphthalene	0.5	nd		nd	nd
1-Methylnaphthalene	0.5	nd		nd	nd
2-Methylnaphthalene	0.5	nd		nd	nd
Acenaphthene	0.5	nd	95%	nd	nd
Acenaphthylene	0.5	nd		nd	nd
Fluorene	0.5	nd		nd	nd
Phenanthrene	0.5	nd		nd	nd
Anthracene	0.5	nd		nd	nd
Fluoranthene	0.5	nd		nd	nd
Pyrene	0.5	nd	65%	nd	nd
Benzo(a)anthracene	0.1	nd		nd	nd
Chrysene	0.1	nd		nd	nd
Benzo(b)fluoranthene	0.1	nd		nd	nd
Benzo(k)fluoranthene	0.1	nd		nd	nd
Benzo(a)pyrene	0.1	nd		nd	nd
Indeno(1,2,3-cd)pyrene	0.1	nd		nd	nd
Dibenzo(a,h)anthracene	0.1	nd		nd	nd
Benzo(g,h,i)perylene	0.5	nd		nd	nd
Total PAH Carcinogens				0.0	0.0

Total PAH Carcinogens Defined as:
Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene,
Benzo(k)fluoranthene, Benzo(a)pyrene,
Ideno(1,2,3-cd)pyrene & Dibenzo(a,h)anthracene

Surrogate Recovery				
(Surr 1) 2-Fluorobiphenyl	66%	78%	103%	120%
(Surr 2) p-Terphenyl	97%	95%	103%	99%

"nd" Indicates not detected at listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limit
"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference

Samples may be run under SIM
Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogates = 50% to 150%
LCS, LCSD, MS, MSD = 50% to 150%
Surrogate Concentration = 4.0 µg/L
Spike Concentration = 8.0 µg/L

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Analysis of Polyaromatic Hydrocarbons in Water by EPA Method 8270C

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

EPA 8270C (ug/L)	MRL	QA Sample *Batch* *100211-8-17*	QA Duplicate *Batch* *100211-8-17*	MS **B6H$_2$O-021010**
Date Extracted		2/16/10	2/16/10	2/16/10
Date Analyzed		2/16/10	2/16/10	2/16/10
Matrix		Water	Water	Water
Naphthalene	0.5	nd	nd	
1-Methylnaphthalene	0.5	nd	nd	
2-Methylnaphthalene	0.5	nd	nd	
Acenaphthene	0.5	nd	nd	110%
Acenaphthylene	0.5	nd	nd	
Fluorene	0.5	nd	nd	
Phenanthrene	0.5	nd	nd	
Anthracene	0.5	nd	nd	
Fluoranthene	0.5	nd	nd	
Pyrene	0.5	nd	nd	105%
Benzo(a)anthracene	0.1	nd	nd	
Chrysene	0.1	nd	nd	
Benzo(b)fluoranthene	0.1	nd	nd	
Benzo(k)fluoranthene	0.1	nd	nd	
Benzo(a)pyrene	0.1	nd	nd	
Indeno(1,2,3-cd)pyrene	0.1	nd	nd	
Dibenzo(a,h)anthracene	0.1	nd	nd	
Benzo(g,h,i)perylene	0.5	nd	nd	
Total PAH Carcinogens		0.0	0.0	

Total PAH Carcinogens Defined as:
Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene,
Benzo(k)fluoranthene, Benzo(a)pyrene,
Ideno(1,2,3-cd)pyrene & Dibenzo(a,h)anthracene

Surrogate Recovery			
(Surr 1) 2-Fluorobiphenyl	86%	109%	95%
(Surr 2) p-Terphenyl	103%	97%	103%

"nd" Indicates not detected at listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limit
"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference

Samples may be run under SIM
Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogates = 50% to 150%
LCS, LCSD, MS, MSD = 50% to 150%
Surrogate Concentration = 4.0 µg/L
Spike Concentration = 8.0 µg/L

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Analysis of Total Metals in Soil by EPA Method 6020

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

EPA 6020 (mg/kg)	MRL	Method Blank	LCS	SS1-.5-021010	T1-.5-021010	T2-.5-021010
Date Extracted		2/16/10	2/16/10	2/16/10	2/16/10	2/16/10
Date Analyzed		2/17/10	2/17/10	2/17/10	2/17/10	2/17/10
Matrix				Soil	Soil	Soil
Cadmium (Cd)	0.2	nd	84%	**0.6**	**0.5**	**0.3**
Chromium (Cr)	1.0	nd	93%	**3.4**	**8.4**	**13**
Lead (Pb)	1.0	nd	84%	**17**	**35**	**20**

"nd" Indicates no detection at the listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limit
"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
LCS, LCSD, MS, MSD: 65% to 135%
Spiked Soil Concentrations:
Cr = 50 mg/kg
Pb = 25 mg/kg
Cd = 2.5 mg/kg

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Analysis of Total Metals in Soil by EPA Method 6020

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

				Duplicate		MS
EPA 6020 (mg/kg)	**MRL**	**T3-.5-021010**	**T4-.5-021010**	**T4-.5-021010**	**RPD**	**T4-.5-021010**
Date Extracted		2/16/10	2/16/10	2/16/10	%	2/16/10
Date Analyzed		2/17/10	2/17/10	2/17/10		2/17/10
Matrix		Soil	Soil	Soil		Soil
Cadmium (Cd)	0.2	**0.4**	**1.2**	**1.4**	13%	91%
Chromium (Cr)	1.0	**35**	**33**	**34**	5%	86%
Lead (Pb)	1.0	**53**	**30**	**45**	40%	119%

"nd" Indicates no detection at the listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limit
"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
LCS, LCSD, MS, MSD: 65% to 135%
Spiked Soil Concentrations:
Cr = 50 mg/kg
Pb = 25 mg/kg
Cd = 2.5 mg/kg

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Analysis of Total Metals in Water by EPA Method 6020

Project: Gig Harbor Transmission
Client: EMS
Client Project #: 0359-01
Lab Project #: CHM100211-8

					Duplicate		MS	MSD	
EPA 6020 (mg/L)	**MRL**	**Method Blank**	**LCS**	**B_2H2O-021010**	**B_2H2O-021010**	**RPD %**	*Batch 100212-3-1*	*Batch 100212-3-1*	**RPD %**
Date Extracted		2/16/10	2/16/10	2/16/10	2/16/10		2/16/10	2/16/10	
Date Analyzed		2/16/10	2/16/10	2/16/10	2/16/10		2/16/10	2/16/10	
Matrix				Water	Water		Water	Water	
Cadmium (Cd)	0.0004	nd	97%	nd	nd		104%	109%	5%
Chromium (Cr)	0.002	nd	107%	**0.050**	**0.047**	5%	113%	120%	6%
Lead (Pb)	0.002	nd	110%	**0.035**	**0.039**		102%	109%	7%

"nd" Indicates no detection at the listed reporting limits
"int" Indicates that interference prevents determination
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limit
"LCS" Indicates Laboratory Control Sample
"MS" Indicates Matrix Spike
"MSD" Indicates Matrix Spike Duplicate
"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
LCS, LCSD, MS, MSD: 65% to 135%
Spike Concentrations:
Cr = 100 µg/L
Pb = 50 µg/L
Cd = 5.0 µg/L

From: Robin Hamlet
To: Mike Ridgeway (mridgeway@fremontanalytical.com);
Subject: Revised Chain of custody Gig Harbor Samples
Date: Friday, February 12, 2010 12:59:27 PM

Mike,

Here is the revised analysis plan for soils. We reduced the metals to the three listed below. Soil sample B5-9 put on hold. Please revise the chain.

B1-10	Dx/DxExt, Gx-BTEX
B2-8	Dx/DxExt
B3-10	Dx/DxExt, Gx-BTEX
B4-11	Dx/DxExt, Gx-BTEX
B5-14	Dx/DxExt, Gx-BTEX
B6-8	Dx/DxExt
SS1	Dx/DxExt, Cadmium, chromium, lead, PAHs
T1	Cadmium, chromium, lead, PAHs
T2	Cadmium, chromium, lead, PAHs
T3	Cadmium, chromium, lead, PAHs
T4	Cadmium, chromium, lead, PAHs

Changes for waters.

B1H2O	Gx-BTEX, Dx/DxExt
B2H2O	Gx-BTEX, Dx/DxExt, cadmium, chromium, lead, PAHs
B6H2O	Gx-BTEX, Dx/DxExt, PAHs

All other samples on hold. Any remaining material from analysis please hold if there is enough material.

Thanks
Robin

Fremont Analytical

Chain of Custody Record

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Laboratory Project No (internal): CHM100211-8

Date: 2/10/10

Page: 1 of: 3

Client: CMS

Address:

City, State, Zip

Tel:

Project Name: GIG HARBOR TRANSMISSION

Location: GIG HARBOR

Collected by: R. HAMLET

Reports To (PM): ROBIN HAMLET

Fax:

Email:

Project No: 0359-01

Sample Name	Time	Sample Type (Matrix)	Container Type	Date of Collection	VOA 8260	VOA 8021B BTEX	NWTPH-Gx	NWTPH-HCID	NWTPH-Dx/Dx Ext.	SEMI VOL 8270C	PAH 8270	PCBs 8082	Cl PESTICIDES 8081	Cl HERBICIDES 8151A	Metals*	Total (T) | Dissolved (D)	Anions (IC)**					HOLD*-HOLD 4 LATER ANALYSIS IF REQUIRED Comments/Depth
1 B1-10-021010	1029	SOIL	4oz						X		X				X							
2 B1-13-021010	1031								X		X				X							HOLD*
3 B2-8-021010	1120								X		X				X							
4 B2-12-021010	~~1209~~ 1123								X		X				X							HOLD*
5 B3-10-021010	1259								X		X				X							
6 B4-11-021010	1230								X		X				X							
7 B4-13-021010	~~1235~~								X		X				X							HOLD*
8 B5-9-021010	1312								X		X				X							
9 B5-14-021010	1314								X		X				X							HOLD*
10 B6-8-021010	1348								X		X				X							

*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

Relinquished	Date/Time	Received	Date/Time
x R	2/11/10 1250	x	2/11/10 1250
Relinquished	Date/Time	Received	Date/Time
x		x	

Sample Receipt:	
Good?	Y
Cooler Temperature:	OK
Seals Intact?:	n/a
Total Number of Containers:	28

Special Remarks:

TAT --> 24HR 48HR Standard

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

Fremont Analytical

Chain of Custody Record

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Fax: 206-352-7178

Laboratory Project No (internal): _____

Date: 2/10/10

Page: 2 of: 3

Client: EMS

Address: _____

City, State, Zip _____ Tel: _____

Project Name: GIG HARBOR TRANSMISSION

Location: GIG HARBOR

Collected by: R. HAMLET

Reports To (PM): ROBIN HAMLET Fax: Email: Project No: 0359-01

	Sample Name	Time	Sample Type (Matrix)	Container Type	Date of Collection	VOA 8260	VOA 8021B BTEX	NWTPH-Gx	NWTPH-HCID	NWTPH-Dx/Dx Ext.	SEMI VOL 8270C	PAH 8270	PCBs 8082	CI PESTICIDES 8081	CI HERBICIDES 8151A	Metals*	Total (T) | Dissolved (D)	Anions (IC)**					Comments/Depth
1	B6-12-021010	1352	SOIL	4 oz	2/9/10					X		X				X							HOLD*
2	SS1-.5-021010	1400								X		X				X							
3	T1-.5-021010	1004								X		X				X							
4	T2-.5-021010	1015								X		X				X							
5	T3-.5-021010	1026								X		X				X							
6	T4-.5-021010	1035								X		X				X							
7																							
8																							
9																							
10																							

HOLD* - HOLD 4 LATER ANALYSIS IF REQUIRED

*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

Relinquished	Date/Time	Received	Date/Time
x R Hamlet	2/11/10 1250	x	2/11/10 1250
Relinquished	Date/Time	Received	Date/Time
x		x	

Sample Receipt:

Good?	Y
Cooler Temperature:	OK n/a
Seals Intact?:	
Total Number of Containers:	28

Special Remarks:

TAT --> 24HR 48HR Standard

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

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Chain of Custody Record

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Fax: 206-352-7178

Laboratory Project No (internal): _____

Date: 2/10/10

Page: 3 of: 3

Client: EMS

Address: _____

City, State, Zip _____ Tel: _____

Project Name: GIG HARBOR TRANSMISSION

Location: GIG HARBOR

Collected by: RHAMLET

Reports To (PM): ROBIN HAMLET Fax: Email: Project No: 0359-01

Sample Name	Time	Sample Type (Matrix)	Container Type	Date of Collection	VOA 8260	VOA 8021B BTEX	NWTPH-Gx	NWTPH-HCID	NWTPH-Dx/Dx Ext.	SEMI VOL 8270C	PAH 8270	PCBs 8082	Cl PESTICIDES 8081	Cl HERBICIDES 8151A	Metals*	Total (T) | Dissolved (D)	Anions (IC)**					HOLD* - HOLD FOR LATER ANALYSIS IF REQUIRED Comments/Depth
1 B1 H_2O 021010	1040	H_2O	1 LITER 500 HNO3	2/10/10					V		X				X	T						
2 B2 H_2O 021010	1140								X		X				X	T						
3 B4 H_2O 021010	1242								X		X				X	T						HOLD*
4 B6 H_2O 021010	1355								X		X				X	T						
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

Relinquished	Date/Time	Received	Date/Time
x R Hamlet	2/11/10 1250	x	2/11/10 1250
Relinquished	Date/Time	Received	Date/Time
x		x	

Sample Receipt:

Good?	Y
Cooler Temperature:	10°C
Seals Intact?:	N/A
Total Number of Containers:	28

Special Remarks:

TAT --> 24HR 48HR Standard

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

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Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: TPCHD
Project Number: 609920
Project Name: Transmission Service @ Gig Harbor
Project Manager: Kirsten Wecker
Sampled by: Kirsten Wecker

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

Laboratory Number: 03-065

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# Cont.	NWTPH-HCID *	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	% Moisture
1	S1-Surface-031209	03.12.09	1:10	Soil	4	X		⊗	⊗			⊗				⊗	X		X
2	S2-Surface-031209	03.12.09	1:30	Soil	4	X		⊗	⊗			⊗				⊗	X		X

	Signature	Company	Date	Time
Relinquished by		TPCHD	3/13/09	8:40
Received by	Van Hackett	Speedy	3/13/09	8:40
Relinquished by	Van Hackett	Speedy	3/13/09	9:50
Received by		OnSite Fc	3/13/09	9:50
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:
* Depending on results of HCID, other analytes may be added
⊗ Added 3/23/09. DB
⊗ Added 3/19/09 Exc 2day TA

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

Libby Environmental, Inc.
4139 Libby Road NE • Olympia, WA 98506-2518

January 27, 2017

Brian Dixon
ECI
P.O. Box 153
Fox Island, WA 98333

Dear Mr. Dixon:

Please find enclosed the analytical data report for the Gig Harbor Trans. Project located in Gig Harbor, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@aol.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 1/24/17 Page: 1 of 1

Client: ECI
Project Manager: Brian Dixon
Address: 15 S. Oregon Ave #110
Project Name: Gig Harbor Trans.
City: Tacoma State: WA Zip: 98409
Location: Gig Harbor City, State: Gig Harbor, WA
Phone: 253-380-4303 Fax:
Collector: Kaden Reed Date of Collection: 1/24/17
Client Project # 0359-01-02
Email: BDixon@ecdcom.us

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021 +Gx	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals			Field Notes
1	TN1-6	6"		S	4 oz jar					X										
2	TS1-6	6"		S	4oz jar			X		X										
3	TS1-12	12"		S	4oz jar					X										Hold
4	TS2-6	6"		S	4oz jar					X										
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
Kaden Reed	1/24/17 1440	[signature]	1/24/17 2:40pm
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.			°C
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:

TAT: 24HR 48HR 5-DAY

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

Libby Environmental, Inc.

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Email: libbyenv@aol.com

GIG HARBOR TRANS. PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170124-4
Client Project # 0359-01-02

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260C) in Soil

Sample Number	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline (mg/kg)	Surrogate Recovery (%)
Method Blank	1/25/17	nd	nd	nd	nd	nd	106
LCS	1/25/17	81%	82%				96
TS1-6	1/25/17	nd	nd	nd	nd	nd	105
TS1-6 MS	1/25/17	105%	107%				104
TS1-6 MSD	1/25/17	105%	106%				102
Practical Quantitation Limit		0.02	0.10	0.05	0.15	10	

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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Olympia, WA 98506
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GIG HARBOR TRANS. PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170124-4
Client Project # 0359-01-02

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	1/25/17	100	nd	nd
TN1-6	1/25/17	106	nd	1040
TS1-6	1/25/17	123	nd	3440
TS1-6 Dup	1/25/17	111	nd	3680
TS2-6	1/25/17	94	nd	714
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.
4139 Libby Road NE • Olympia, WA 98506-2518

February 2, 2017

Brian Dixon
ECI
P.O. Box 153
Fox Island, WA 98333

Dear Mr. Dixon:

Please find enclosed the analytical data report for the Gig Harbor Trans Project located in Gig Harbor, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@aol.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 1/24/17 Page: 1 of 1

Client: EC1

Project Manager: Brian Dixon

Address: 15 S. Oregon Ave #110

Project Name: Gig Harbor Trans.

City: Tacoma State: WA Zip: 98409

Location: Gig Harbor City, State: Gig Harbor, WA

Phone: 253-380-4303 Fax:

Collector: Kaden Reed Date of Collection: 1/24/17

Client Project # 0359-01-02

Email: BDixon@ecdcorp.us

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	Field Notes
1	TN1-6	6"		S	4oz jar					X								
2	TS1-6	6"		S	4oz jar		X			X								
3	TS1-12	12"		S	4oz jar					X								~~Hold~~
4	TS2-6	6"		S	4oz jar					X								1-31-17 added DxDx per Brian via email. 48hr
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		
16																		
17																		

Relinquished by:	Date / Time	Received by:	Date / Time
Kaden Reed	1/24/17 1440	[signature]	1/24/17 2:40pm
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:

TAT: 24HR ~~48HR~~ 5-DAY

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

Libby Environmental, Inc.

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GIG HARBOR TRANS PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170124-4B
Client Project # 0359-01-02

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	1/31/17	116	nd	nd
TS1-12	1/31/17	99	nd	638
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.
4139 Libby Road NE • Olympia, WA 98506-2518

February 28, 2017

Brian Dixon
ECI
P.O. Box 153
Fox Island, WA 98333

Dear Mr. Dixon:

Please find enclosed the analytical data report for the Gig Harbor Transmission Project located in Gig Harbor, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@aol.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 2-21-17 Page: 1 of 1

Client: ECI
Project Manager: B. Dixon
Address: 15 S Oregon
Project Name: Gig Harbor Transmission
City: Tacoma State: WA Zip: [illegible]
Location: City, State:
Phone: 253-380-4303 Fax:
Collector: Brian Dixon Date of Collection: 2-21-17
Client Project # 0359-01-03
Email: bdixon@ecocon.us

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	cPAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	MTBE, EDB, EDC, NaPH Lead		Field Notes
1 TS1-6B	6"	0915	Soil	4 oz Jar	X					X	X			X			X	X	
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
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13																			
14																			
15																			
16																			
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	2-21-17 1:28	[signature] David Green	2-21-17 1:28
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.			°C
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks: STD

TAT: 24HR 48HR 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a cout of law.*

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

Libby Environmental, Inc.

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GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170221-3
Client Project # 0359-01-03

Volatile Organic Compounds by EPA Method 8260C in Soil

Sample Description		Method Blank	TS1-6B
Date Sampled	Reporting	N/A	2/21/17
Date Analyzed	Limits	2/23/17	2/23/17
	(mg/kg)	(mg/kg)	(mg/kg)
Dichlorodifluoromethane	0.06	nd	nd
Chloromethane	0.06	nd	nd
Vinyl chloride	0.02	nd	nd
Bromomethane	0.09	nd	nd
Chloroethane	0.06	nd	nd
Trichlorofluoromethane	0.05	nd	nd
1,1-Dichloroethene	0.05	nd	nd
Methylene chloride	0.02	nd	nd
Methyl *tert*- Butyl Ether (MTBE)	0.05	nd	nd
trans -1,2-Dichloroethene	0.02	nd	nd
1,1-Dichloroethane	0.03	nd	nd
2,2-Dichloropropane	0.05	nd	nd
cis -1,2-Dichloroethene	0.02	nd	nd
Chloroform	0.02	nd	nd
1,1,1-Trichloroethane (TCA)	0.02	nd	nd
Carbon tetrachloride	0.03	nd	nd
1,1-Dichloropropene	0.02	nd	nd
Benzene	0.02	nd	nd
1,2-Dichloroethane (EDC)	0.03	nd	nd
Trichloroethene (TCE)	0.03	nd	nd
1,2-Dichloropropane	0.02	nd	nd
Dibromomethane	0.04	nd	nd
Bromodichloromethane	0.02	nd	nd
cis-1,3-Dichloropropene	0.02	nd	nd
Toluene	0.10	nd	nd
Trans-1,3-Dichloropropene	0.03	nd	nd
1,1,2-Trichloroethane	0.03	nd	nd
Tetrachloroethene (PCE)	0.02	nd	nd
1,3-Dichloropropane	0.05	nd	nd
Dibromochloromethane	0.03	nd	nd
1,2-Dibromoethane (EDB) *	0.005	nd	nd
Chlorobenzene	0.02	nd	nd
1,1,1,2-Tetrachloroethane	0.03	nd	nd
Ethylbenzene	0.05	nd	nd
Total Xylenes	0.15	nd	nd
Styrene	0.02	nd	nd

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GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170221-3
Client Project # 0359-01-03

Volatile Organic Compounds by EPA Method 8260C in Soil

Sample Description		Method Blank	TS1-6B
Date Sampled	Reporting	N/A	2/21/17
Date Analyzed	Limits	2/23/17	2/23/17
	(mg/kg)	(mg/kg)	(mg/kg)
Bromoform	0.03	nd	nd
Isopropylbenzene	0.05	nd	nd
1,2,3-Trichloropropane	0.03	nd	nd
Bromobenzene	0.03	nd	nd
1,1,2,2-Tetrachloroethane	0.03	nd	nd
n-Propylbenzene	0.04	nd	nd
2-Chlorotoluene	0.03	nd	nd
4-Chlorotoluene	0.03	nd	nd
1,3,5-Trimethylbenzene	0.03	nd	nd
tert-Butylbenzene	0.03	nd	nd
1,2,4-Trimethylbenzene	0.03	nd	nd
sec-Butylbenzene	0.03	nd	nd
1,3-Dichlorobenzene	0.03	nd	nd
Isopropyltoluene	0.03	nd	nd
1,4-Dichlorobenzene	0.03	nd	nd
1,2-Dichlorobenzene	0.03	nd	nd
n-Butylbenzene	0.05	nd	nd
1,2-Dibromo-3-Chloropropane	0.05	nd	nd
1,2,4-Trichlorolbenzene	0.05	nd	nd
Hexachloro-1,3-butadiene	0.10	nd	nd
Naphthalenes	0.10	nd	nd
1,2,3-Trichlorobenzene	0.10	nd	nd
Surrogate Recovery			
Dibromofluoromethane		75	93
1,2-Dichloroethane-d4		100	68
Toluene-d8		126	98
4-Bromofluorobenzene		76	91

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

* ANALYZED BY SIM
ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170221-3
Client Project # 0359-01-03

QA/QC Data - EPA 8260C Analyses

Sample Identification: L170222-2							
	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	
1,1-Dichloroethene	0.50	0.36	72	0.50	0.40	80	10.5
Benzene	0.50	0.49	98	0.50	0.53	106	7.8
Toluene	0.50	0.66	132	0.50	0.56	112	16.4
Chlorobenzene	0.50	0.66	132	0.50	0.61	122	7.9
Trichloroethene (TCE)	0.50	0.63	126	0.50	0.60	120	4.9

Surrogate Recovery		
Dibromofluoromethane	90	80
1,2-Dichloroethane-d4	65	66
Toluene-d8	126	86
4-Bromofluorobenzene	99	91

Laboratory Control Sample			
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
1,1-Dichloroethene	0.50	0.53	106
Benzene	0.50	0.59	118
Toluene	0.50	0.59	118
Chlorobenzene	0.50	0.65	130
Trichloroethene (TCE)	0.50	0.56	112

Surrogate Recovery	
Dibromofluoromethane	107
1,2-Dichloroethane-d4	67
Toluene-d8	99
4-Bromofluorobenzene	110

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%
ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170221-3
Client Project # 0359-01-03

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	2/23/17	107	nd	nd
TS1-6B	2/23/17	93	nd	5660
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

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GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170221-3
Client Project # 0359-01-03

Analyses of PCB (Polychlorinated Biphenyls) in Soil by EPA Method 8082

Sample Description	PQL	Method Blank	LCS	TS1-6B	TS1-6B Dup	TS1-6B MS
Date Sampled		N/A	N/A	2/21/17	2/21/17	2/21/17
Date Analyzed		2/24/17	2/24/17	2/24/17	2/24/17	2/24/17
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor 1016	0.1	nd	91%	nd	nd	98%
Aroclor 1221	0.1	nd		nd	nd	
Aroclor 1232	0.1	nd		nd	nd	
Aroclor 1242	0.1	nd		nd	nd	
Aroclor 1248	0.1	nd		nd	nd	
Aroclor 1254	0.1	nd		nd	nd	
Aroclor 1260	0.1	nd	100%	nd	nd	80%
Surrogate Recovery						
TCMX		124	115	70	101	90
DCBP		96	102	98	133	113

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE 65% TO 135%
ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170221-3
Client Project # 0359-01-03

Analyses of Total Lead in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (mg/kg)
Method Blank	2/26/17	nd
TS1-6B	2/26/17	660
Practical Quantitation Limit		5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

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Email: libbyenv@aol.com

GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170221-3
Client Project # 0359-01-03

QA/QC for Lead in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)
LCS	2/26/17	114%
L170222-6 MS	2/26/17	115%
L170222-6 MSD	2/26/17	109%
RPD	2/26/17	5%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

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

Libby Environmental
Sherry Chilcutt
4139 Libby Rd. NE
Olympia, WA 98506

RE: Gig Harbor Transmission
Work Order Number: 1702233

February 27, 2017

Attention Sherry Chilcutt:

Fremont Analytical, Inc. received 1 sample(s) on 2/21/2017 for the analyses presented in the following report.

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,

Chelsea Ward
Project Manager

Date: *02/27/2017*

CLIENT: Libby Environmental
Project: Gig Harbor Transmission
Work Order: 1702233

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1702233-001	TS1-6B	02/21/2017 9:15 AM	02/21/2017 2:47 PM

Case Narrative

WO#: **1702233**

Date: **2/27/2017**

CLIENT: Libby Environmental
Project: Gig Harbor Transmission

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.

Qualifiers:

* - Flagged value is not within established control limits
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
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1702233**
Date Reported: **2/27/2017**

Client: Libby Environmental
Collection Date: 2/21/2017 9:15:00 AM
Project: Gig Harbor Transmission
Lab ID: 1702233-001
Matrix: Soil
Client Sample ID: **TS1-6B**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 16327		Analyst: EM
Benz(a)anthracene	ND	70.3		µg/Kg-dry	1	2/24/2017 3:14:49 PM
Chrysene	156	70.3		µg/Kg-dry	1	2/24/2017 3:14:49 PM
Benzo(b)fluoranthene	174	70.3		µg/Kg-dry	1	2/24/2017 3:14:49 PM
Benzo(k)fluoranthene	ND	70.3		µg/Kg-dry	1	2/24/2017 3:14:49 PM
Benzo(a)pyrene	86.8	70.3		µg/Kg-dry	1	2/24/2017 3:14:49 PM
Indeno(1,2,3-cd)pyrene	ND	70.3		µg/Kg-dry	1	2/24/2017 3:14:49 PM
Dibenz(a,h)anthracene	ND	70.3		µg/Kg-dry	1	2/24/2017 3:14:49 PM
Surr: 2-Fluorobiphenyl	71.7	24.5-139		%Rec	1	2/24/2017 3:14:49 PM
Surr: Terphenyl-d14 (surr)	87.9	44.3-176		%Rec	1	2/24/2017 3:14:49 PM
Sample Moisture (Percent Moisture)				Batch ID: R34629		Analyst: BB
Percent Moisture	44.3	0.500		wt%	1	2/24/2017 9:44:16 AM

Work Order: 1702233
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID **MB-16327**	SampType: **MBLK**	Units: **µg/Kg**	Prep Date: **2/24/2017**	RunNo: **34645**
Client ID: **MBLKS**	Batch ID: **16327**		Analysis Date: **2/24/2017**	SeqNo: **661321**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	40.0									
Chrysene	ND	40.0									
Benzo(b)fluoranthene	ND	40.0									
Benzo(k)fluoranthene	ND	40.0									
Benzo(a)pyrene	ND	40.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	40.0									
Surr: 2-Fluorobiphenyl	491		500.0		98.2	24.5	139				
Surr: Terphenyl-d14 (surr)	503		500.0		101	44.3	176				

Sample ID **LCS-16327**	SampType: **LCS**	Units: **µg/Kg**	Prep Date: **2/24/2017**	RunNo: **34645**
Client ID: **LCSS**	Batch ID: **16327**		Analysis Date: **2/24/2017**	SeqNo: **661322**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	915	40.0	1,000	0	91.5	41.9	136				
Chrysene	1,010	40.0	1,000	0	101	46.9	138				
Benzo(b)fluoranthene	910	40.0	1,000	0	91.0	41	155				
Benzo(k)fluoranthene	917	40.0	1,000	0	91.7	41.8	153				
Benzo(a)pyrene	955	40.0	1,000	0	95.5	34.3	157				
Indeno(1,2,3-cd)pyrene	938	40.0	1,000	0	93.8	31.3	159				
Dibenz(a,h)anthracene	935	40.0	1,000	0	93.5	28	158				
Surr: 2-Fluorobiphenyl	513		500.0		103	24.5	139				
Surr: Terphenyl-d14 (surr)	479		500.0		95.8	44.3	176				

Sample ID **1702252-001ADUP**	SampType: **DUP**	Units: **µg/Kg-dry**	Prep Date: **2/24/2017**	RunNo: **34645**
Client ID: **BATCH**	Batch ID: **16327**		Analysis Date: **2/24/2017**	SeqNo: **661324**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	45.5						0		30	
Chrysene	ND	45.5						0		30	

Work Order: 1702233
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID **1702252-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **2/24/2017** RunNo: **34645**
Client ID: **BATCH** Batch ID: **16327** Analysis Date: **2/24/2017** SeqNo: **661324**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(b)fluoranthene	ND	45.5						0		30	
Benzo(k)fluoranthene	ND	45.5						0		30	
Benzo(a)pyrene	ND	45.5						0		30	
Indeno(1,2,3-cd)pyrene	ND	45.5						0		30	
Dibenz(a,h)anthracene	ND	45.5						0		30	
Surr: 2-Fluorobiphenyl	486		568.7		85.5	24.5	139		0		
Surr: Terphenyl-d14 (surr)	525		568.7		92.2	44.3	176		0		

Sample ID **1702252-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **2/24/2017** RunNo: **34645**
Client ID: **BATCH** Batch ID: **16327** Analysis Date: **2/24/2017** SeqNo: **661325**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	934	44.2	1,105	14.45	83.2	57.5	169				
Chrysene	1,030	44.2	1,105	0	92.9	45.2	146				
Benzo(b)fluoranthene	1,010	44.2	1,105	0	91.1	42.2	168				
Benzo(k)fluoranthene	1,070	44.2	1,105	0	96.4	48	161				
Benzo(a)pyrene	1,080	44.2	1,105	0	97.9	34.4	179				
Indeno(1,2,3-cd)pyrene	855	44.2	1,105	8.524	76.6	5	113				
Dibenz(a,h)anthracene	883	44.2	1,105	0	79.9	17.3	156				
Surr: 2-Fluorobiphenyl	519		552.5		94.0	24.5	139				
Surr: Terphenyl-d14 (surr)	512		552.5		92.7	44.3	176				

Sample ID **1702252-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **2/24/2017** RunNo: **34645**
Client ID: **BATCH** Batch ID: **16327** Analysis Date: **2/24/2017** SeqNo: **661326**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	1,150	45.5	1,136	14.45	100	57.5	169	934.2	21.1	30	
Chrysene	1,080	45.5	1,136	0	94.9	45.2	146	1,026	4.91	30	
Benzo(b)fluoranthene	1,120	45.5	1,136	0	98.3	42.2	168	1,007	10.3	30	
Benzo(k)fluoranthene	1,040	45.5	1,136	0	91.6	48	161	1,065	2.34	30	

Work Order: 1702233
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID **1702252-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **2/24/2017** RunNo: **34645**
Client ID: **BATCH** Batch ID: **16327** Analysis Date: **2/24/2017** SeqNo: **661326**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	1,030	45.5	1,136	0	90.4	34.4	179	1,082	5.17	30	
Indeno(1,2,3-cd)pyrene	823	45.5	1,136	8.524	71.6	5	113	855.4	3.91	30	
Dibenz(a,h)anthracene	857	45.5	1,136	0	75.4	17.3	156	882.7	2.97	30	
Surr: 2-Fluorobiphenyl	516		568.2		90.9	24.5	139		0		
Surr: Terphenyl-d14 (surr)	545		568.2		95.9	44.3	176		0		

Work Order: 1702233
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Sample Moisture (Percent Moisture)

Sample ID **1702220-010ADUP**	SampType: **DUP**			Units: **wt%**		Prep Date: **2/24/2017**		RunNo: **34629**		
Client ID: **BATCH**	Batch ID: **R34629**					Analysis Date: **2/24/2017**		SeqNo: **661034**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	46.0	0.500						46.96	2.02	20	

Sample ID **1702235-005ADUP**	SampType: **DUP**			Units: **wt%**		Prep Date: **2/24/2017**		RunNo: **34629**		
Client ID: **BATCH**	Batch ID: **R34629**					Analysis Date: **2/24/2017**		SeqNo: **661066**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	22.7	0.500						24.30	6.61	20	

Sample Log-In Check List

Client Name:	**LIBBY**	Work Order Number:	**1702233**
Logged by:	**Clare Griggs**	Date Received:	**2/21/2017 2:47:00 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 present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items 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 there 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
Cooler	2.7
Sample	5.3
Temp Blank	1.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Chain of Custody Record and Laboratory Services Agreement

Fremont Analytical

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

Date: 2-21-17

Laboratory Project No (internal): 1702233

Page: 1 of: 1

Client: Libby Enviromental

Address: 4139 Libby RD NE

City, State, Zip: Olympia WA 98506

Telephone: _____ Fax: _____

Project Name: Gig Harbor Transmission

Project No: _____ Collected by: _____

Location: _____

Report To (PM): Sherry Chilchutt

PM Email: Libby ENZ@aol.com

*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, SW = Storm Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM / 625)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	cPAH			Comments
1	TS2-6B	2-21-17	0915	Soil													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 (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks:

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	2-21-17 2:47	x [signature]	2/21/17 1447
x		x	

TAT → SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Libby Environmental, Inc.
4139 Libby Road NE • Olympia, WA 98506-2518

April 10, 2017

Brian Dixon
ECI
P.O. Box 153
Fox Island, WA 98333

Dear Mr. Dixon:

Please find enclosed the analytical data report for the Gig Harbor Transmission Project located in Gig Harbor, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@aol.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 4/4/17 Page: 1 of 1

Client: ECI

Project Manager: Brian Dixon

Address: 15 S. Oregon Ave #110

Project Name: Gig Harbor Transmission

City: Tacoma State: WA Zip: 98409

Location: Gig Harbor City, State: GigHarbor, WA

Phone: 253-380-4303 Fax:

Collector: Kaden Reed Date of Collection: 4/4/17

Client Project # 0359-01-04

Email: BDixon@ecocon.us

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals	Pb	Field Notes
1	EX1-18	18"	1035	S	4oz jar					X		X					X		
2	Ex2-18	18"	1025	S	4oz jar					X		X					X		
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
Kaden Reed	4/4/17 1232	Rodney Eley	4/4/17 1232
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition? (Y) N

Temp. °C

Seals Intact? (Y) N N/A

Total Number of Containers: 2

Remarks:

TAT: 24HR 48HR (5-DAY)

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

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170404-3
Client Project # 0359-01-04

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	4/5/17	99	nd	nd
EX1-18	4/5/17	99	nd	1170
EX2-18	4/5/17	102	nd	nd
EX2-18 Dup	4/5/17	113	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Maria Friedrich

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170404-3
Client Project # 0359-01-04

Analyses of Total Lead in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (mg/kg)
Method Blank	4/5/17	nd
EX1-18	4/5/17	100
EX2-18	4/5/17	55
Practical Quantitation Limit		5.0

"nd" Indicates not detected at the listed detection limits.

ANALYSES PERFORMED BY: Dirk Peterson

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

GIG HARBOR TRANSMISSION PROJECT
ECI
Gig Harbor, Washington
Libby Project # L170404-3
Client Project # 0359-01-04

QA/QC for Lead in Soil by EPA Method 7010 Series

Sample Number	Date Analyzed	Lead (% Recovery)
LCS	4/5/17	87%
L170407-6 MS	4/5/17	83%
L170407-6 MSD	4/5/17	87%
RPD	4/5/17	5%

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 75%-125%
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Dirk Peterson

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

Libby Environmental
Sherry Chilcutt
4139 Libby Rd. NE
Olympia, WA 98506

RE: Gig Harbor Transmission
Work Order Number: 1704025

April 05, 2017

Attention Sherry Chilcutt:

Fremont Analytical, Inc. received 2 sample(s) on 4/4/2017 for the analyses presented in the following report.

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,

Chelsea Ward
Project Manager

Date: *04/05/2017*

CLIENT: Libby Environmental
Project: Gig Harbor Transmission
Work Order: 1704025

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1704025-001	EX1-18	04/04/2017 10:35 AM	04/04/2017 1:50 PM
1704025-002	EX2-18	04/04/2017 10:25 AM	04/04/2017 1:50 PM

Case Narrative

WO#: **1704025**

Date: **4/5/2017**

CLIENT: Libby Environmental
Project: Gig Harbor Transmission

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.

Qualifiers:

* - Flagged value is not within established control limits
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
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1704025**
Date Reported: **4/5/2017**

Client: Libby Environmental
Collection Date: 4/4/2017 10:35:00 AM
Project: Gig Harbor Transmission
Lab ID: 1704025-001
Matrix: Soil
Client Sample ID: **EX1-18**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 16695		Analyst: BT
Naphthalene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
2-Methylnaphthalene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
1-Methylnaphthalene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Acenaphthylene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Acenaphthene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Fluorene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Phenanthrene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Anthracene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Fluoranthene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Pyrene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Benz(a)anthracene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Chrysene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Benzo(b)fluoranthene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Benzo(k)fluoranthene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Benzo(a)pyrene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Indeno(1,2,3-cd)pyrene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Dibenz(a,h)anthracene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Benzo(g,h,i)perylene	ND	45.1		µg/Kg-dry	1	4/4/2017 7:51:42 PM
Surr: 2-Fluorobiphenyl	79.5	24.5-139		%Rec	1	4/4/2017 7:51:42 PM
Surr: Terphenyl-d14 (surr)	93.2	44.3-176		%Rec	1	4/4/2017 7:51:42 PM
Sample Moisture (Percent Moisture)				Batch ID: R35351		Analyst: BB
Percent Moisture	12.8	0.500		wt%	1	4/5/2017 12:28:50 PM

Analytical Report

Work Order: **1704025**
Date Reported: **4/5/2017**

Client: Libby Environmental
Collection Date: 4/4/2017 10:25:00 AM
Project: Gig Harbor Transmission
Lab ID: 1704025-002
Matrix: Soil
Client Sample ID: **EX2-18**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)				Batch ID: 16695		Analyst: BT
Naphthalene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
2-Methylnaphthalene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
1-Methylnaphthalene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Acenaphthylene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Acenaphthene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Fluorene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Phenanthrene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Anthracene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Fluoranthene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Pyrene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Benz(a)anthracene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Chrysene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Benzo(b)fluoranthene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Benzo(k)fluoranthene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Benzo(a)pyrene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Indeno(1,2,3-cd)pyrene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Dibenz(a,h)anthracene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Benzo(g,h,i)perylene	ND	46.6		µg/Kg-dry	1	4/4/2017 8:13:10 PM
Surr: 2-Fluorobiphenyl	63.8	24.5-139		%Rec	1	4/4/2017 8:13:10 PM
Surr: Terphenyl-d14 (surr)	72.0	44.3-176		%Rec	1	4/4/2017 8:13:10 PM
Sample Moisture (Percent Moisture)				Batch ID: R35351		Analyst: BB
Percent Moisture	16.6	0.500		wt%	1	4/5/2017 12:28:50 PM

Work Order: 1704025
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID **MB-16695**	SampType: **MBLK**	Units: **µg/Kg**	Prep Date: **4/4/2017**	RunNo: **35358**
Client ID: **MBLKS**	Batch ID: **16695**		Analysis Date: **4/4/2017**	SeqNo: **676760**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	40.0									
2-Methylnaphthalene	ND	40.0									
1-Methylnaphthalene	ND	40.0									
Acenaphthylene	ND	40.0									
Acenaphthene	ND	40.0									
Fluorene	ND	40.0									
Phenanthrene	ND	40.0									
Anthracene	ND	40.0									
Fluoranthene	ND	40.0									
Pyrene	ND	40.0									
Benz(a)anthracene	ND	40.0									
Chrysene	ND	40.0									
Benzo(b)fluoranthene	ND	40.0									
Benzo(k)fluoranthene	ND	40.0									
Benzo(a)pyrene	ND	40.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	40.0									
Benzo(g,h,i)perylene	ND	40.0									
Surr: 2-Fluorobiphenyl	389		500.0		77.8	24.5	139				
Surr: Terphenyl-d14 (surr)	388		500.0		77.7	44.3	176				

Sample ID **LCS-16695**	SampType: **LCS**	Units: **µg/Kg**	Prep Date: **4/4/2017**	RunNo: **35358**
Client ID: **LCSS**	Batch ID: **16695**		Analysis Date: **4/4/2017**	SeqNo: **676761**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	998	40.0	1,000	0	99.8	46.4	125				
2-Methylnaphthalene	986	40.0	1,000	0	98.6	45.1	135				
1-Methylnaphthalene	1,040	40.0	1,000	0	104	46.2	133				
Acenaphthylene	1,010	40.0	1,000	0	101	32.8	136				
Acenaphthene	1,030	40.0	1,000	0	103	38.7	129				

Work Order: 1704025
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID **LCS-16695** SampType: **LCS** Units: **µg/Kg** Prep Date: **4/4/2017** RunNo: **35358**
Client ID: **LCSS** Batch ID: **16695** Analysis Date: **4/4/2017** SeqNo: **676761**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluorene	1,020	40.0	1,000	0	102	41.4	144				
Phenanthrene	1,060	40.0	1,000	0	106	43.9	133				
Anthracene	994	40.0	1,000	0	99.4	44.2	136				
Fluoranthene	1,020	40.0	1,000	0	102	45.9	137				
Pyrene	1,030	40.0	1,000	0	103	46.2	137				
Benz(a)anthracene	916	40.0	1,000	0	91.6	41.9	136				
Chrysene	1,140	40.0	1,000	0	114	46.9	138				
Benzo(b)fluoranthene	950	40.0	1,000	0	95.0	41	155				
Benzo(k)fluoranthene	980	40.0	1,000	0	98.0	41.8	153				
Benzo(a)pyrene	842	40.0	1,000	0	84.2	34.3	157				
Indeno(1,2,3-cd)pyrene	761	40.0	1,000	0	76.1	31.3	159				
Dibenz(a,h)anthracene	690	40.0	1,000	0	69.0	28	158				
Benzo(g,h,i)perylene	861	40.0	1,000	0	86.1	32.4	144				
Surr: 2-Fluorobiphenyl	454		500.0		90.8	24.5	139				
Surr: Terphenyl-d14 (surr)	434		500.0		86.7	44.3	176				

Sample ID **1703366-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **4/4/2017** RunNo: **35358**
Client ID: **BATCH** Batch ID: **16695** Analysis Date: **4/4/2017** SeqNo: **676763**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	45.7						0		30	
2-Methylnaphthalene	ND	45.7						0		30	
1-Methylnaphthalene	ND	45.7						0		30	
Acenaphthylene	ND	45.7						0		30	
Acenaphthene	ND	45.7						0		30	
Fluorene	ND	45.7						0		30	
Phenanthrene	ND	45.7						0		30	
Anthracene	ND	45.7						0		30	
Fluoranthene	ND	45.7						0		30	
Pyrene	ND	45.7						0		30	

Work Order: 1704025
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID **1703366-001ADUP** SampType: **DUP** Units: **µg/Kg-dry** Prep Date: **4/4/2017** RunNo: **35358**
Client ID: **BATCH** Batch ID: **16695** Analysis Date: **4/4/2017** SeqNo: **676763**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	45.7						0		30	
Chrysene	ND	45.7						0		30	
Benzo(b)fluoranthene	ND	45.7						0		30	
Benzo(k)fluoranthene	ND	45.7						0		30	
Benzo(a)pyrene	ND	45.7						0		30	
Indeno(1,2,3-cd)pyrene	ND	45.7						0		30	
Dibenz(a,h)anthracene	ND	45.7						0		30	
Benzo(g,h,i)perylene	ND	45.7						0		30	
Surr: 2-Fluorobiphenyl	378		571.0		66.2	24.5	139		0		
Surr: Terphenyl-d14 (surr)	392		571.0		68.6	44.3	176		0		

Sample ID **1703366-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **4/4/2017** RunNo: **35358**
Client ID: **BATCH** Batch ID: **16695** Analysis Date: **4/4/2017** SeqNo: **676764**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	884	41.4	1,036	0	85.4	42.9	138				
2-Methylnaphthalene	906	41.4	1,036	0	87.5	42.8	151				
1-Methylnaphthalene	928	41.4	1,036	2.446	89.4	41.6	148				
Acenaphthylene	950	41.4	1,036	0	91.8	32.6	160				
Acenaphthene	931	41.4	1,036	0	89.9	46.3	142				
Fluorene	919	41.4	1,036	0	88.8	43.4	153				
Phenanthrene	924	41.4	1,036	2.005	89.1	45.5	140				
Anthracene	938	41.4	1,036	0	90.5	32.6	160				
Fluoranthene	1,020	41.4	1,036	0	98.1	44.6	161				
Pyrene	998	41.4	1,036	5.471	95.9	48.3	158				
Benz(a)anthracene	982	41.4	1,036	5.679	94.3	57.5	169				
Chrysene	976	41.4	1,036	2.679	94.0	45.2	146				
Benzo(b)fluoranthene	1,080	41.4	1,036	10.34	103	42.2	168				
Benzo(k)fluoranthene	981	41.4	1,036	8.774	93.8	34.8	147				
Benzo(a)pyrene	1,060	41.4	1,036	10.97	101	34.4	179				

Work Order: 1704025
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID **1703366-001AMS** SampType: **MS** Units: **µg/Kg-dry** Prep Date: **4/4/2017** RunNo: **35358**
Client ID: **BATCH** Batch ID: **16695** Analysis Date: **4/4/2017** SeqNo: **676764**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	920	41.4	1,036	15.25	87.3	5	113				
Dibenz(a,h)anthracene	856	41.4	1,036	12.52	81.4	17.3	156				
Benzo(g,h,i)perylene	966	41.4	1,036	29.68	90.4	39.4	122				
Surr: 2-Fluorobiphenyl	380		517.8		73.4	24.5	139				
Surr: Terphenyl-d14 (surr)	378		517.8		72.9	44.3	176				

Sample ID **1703366-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **4/4/2017** RunNo: **35358**
Client ID: **BATCH** Batch ID: **16695** Analysis Date: **4/4/2017** SeqNo: **676765**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	953	42.2	1,055	0	90.3	42.9	138	884.2	7.44	30	
2-Methylnaphthalene	977	42.2	1,055	0	92.6	42.8	151	905.6	7.56	30	
1-Methylnaphthalene	1,000	42.2	1,055	2.446	94.7	41.6	148	928.4	7.56	30	
Acenaphthylene	1,030	42.2	1,055	0	97.8	32.6	160	950.5	8.17	30	
Acenaphthene	1,010	42.2	1,055	0	95.5	46.3	142	931.1	7.90	30	
Fluorene	991	42.2	1,055	0	94.0	43.4	153	919.2	7.57	30	
Phenanthrene	993	42.2	1,055	2.005	94.0	45.5	140	924.4	7.18	30	
Anthracene	1,020	42.2	1,055	0	96.5	32.6	160	937.6	8.24	30	
Fluoranthene	1,100	42.2	1,055	0	104	44.6	161	1,016	7.73	30	
Pyrene	1,070	42.2	1,055	5.471	101	48.3	158	998.4	7.31	30	
Benz(a)anthracene	1,070	42.2	1,055	5.679	101	57.5	169	982.1	9.02	30	
Chrysene	1,030	42.2	1,055	2.679	97.3	45.2	146	975.6	5.37	30	
Benzo(b)fluoranthene	1,090	42.2	1,055	10.34	102	42.2	168	1,078	0.946	30	
Benzo(k)fluoranthene	1,090	42.2	1,055	8.774	102	34.8	147	980.6	10.2	30	
Benzo(a)pyrene	1,100	42.2	1,055	10.97	103	34.4	179	1,061	3.50	30	
Indeno(1,2,3-cd)pyrene	1,010	42.2	1,055	15.25	94.4	5	113	919.5	9.46	30	
Dibenz(a,h)anthracene	962	42.2	1,055	12.52	90.0	17.3	156	856.0	11.7	30	
Benzo(g,h,i)perylene	1,050	42.2	1,055	29.68	96.7	39.4	122	966.0	8.33	30	
Surr: 2-Fluorobiphenyl	465		527.5		88.2	24.5	139		0		
Surr: Terphenyl-d14 (surr)	492		527.5		93.3	44.3	176		0		

Work Order: 1704025
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID **1703366-001AMSD** SampType: **MSD** Units: **µg/Kg-dry** Prep Date: **4/4/2017** RunNo: **35358**
Client ID: **BATCH** Batch ID: **16695** Analysis Date: **4/4/2017** SeqNo: **676765**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Work Order: 1704025
CLIENT: Libby Environmental
Project: Gig Harbor Transmission

QC SUMMARY REPORT

Sample Moisture (Percent Moisture)

Sample ID **1704008-001ADUP** SampType: **DUP** Units: **wt%** Prep Date: **4/5/2017** RunNo: **35351**
Client ID: **BATCH** Batch ID: **R35351** Analysis Date: **4/5/2017** SeqNo: **676614**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	9.66	0.500						10.46	7.96	20	

Sample Log-In Check List

Client Name:	**LIBBY**	Work Order Number:	**1704025**
Logged by:	**Erica Silva**	Date Received:	**4/4/2017 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 present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☐	No ☑	NA ☐
	Sample 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 there 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
Cooler	8.5
Sample	15.8
Temp Blank	5.5

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Chain of Custody Record

1704025

www.LibbyEnvironmental.com

Date: 4/4/17 Page: 1 of 1

Client: Libby Environmental
Address: See above
City: State: Zip:
Phone: Fax:
Client Project #

Project Manager: Sherry Chilcutt
Project Name: Gig Harbor Transmission
Location: City, State: Gig Harbor, Wa
Collector: KR Date of Collection: 4/4/17
Email: libbyenv@aol.com

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals			Field Notes
1	Ex-1-18	18"	1035	Soil	4oz							X								
2	Ex-2-18	18"	1025	"	"							X								
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
Rodney Gley	4/4/17 1350		
Relinquished by:	Date / Time	Received by:	Date / Time
			4/4/17 1350
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.			°C
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks: Std.

TAT: 24HR 48HR 5-DAY

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