

# **SOIL AND GROUNDWATER INVESTIGATION REPORT**

Terminal 1 Property  
Port of Vancouver, USA  
100 Columbia Street  
Vancouver, Washington

January 21, 2016

HAI Project No. 8832

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**HAI HAHN AND ASSOCIATES, INC.**

434 NW 6TH AVENUE, SUITE 203  
PORTLAND, OREGON 97209-3651  
Tel 503.796.0717 • Fax 503.227.2209

**ENVIRONMENTAL CONSULTANTS**

ASSESSMENT  
INVESTIGATION  
REMEDATION

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Prepared for:

Port of Vancouver, USA  
Vancouver, Washington

Prepared by:

Hahn and Associates, Inc.  
Portland, Oregon

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## 1.0 SUMMARY OF FINDINGS

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Subsurface investigation activities were performed at the 10.14 acre Port of Vancouver Terminal 1 property (the Site) located at 100 Columbia Street in Vancouver, Washington. The Site was formerly used as a World War I era shipyard; a municipal dock; and a lumber yard until it was developed in the 1960s for its current use as a hotel and small office complex.

In May and June 2015, a subsurface investigation was conducted by Hahn and Associates, Inc. (HAI) to evaluate the current environmental condition of soils and groundwater at the Site, in particular regard to potential impacts of hazardous substances originating from historical uses at, and in the vicinity of, the Site and to target several areas of interest as were previously identified during a 2008 site-wide investigation conducted by Ecology and Environment, Inc. (E & E). The 2015 investigation included installation and sampling of a total of 11 soil borings, five of which were completed as monitoring wells. A summary of the findings relating to the HAI 2015 soil and groundwater investigation is presented below.

### 1) Subsurface Conditions

- a) The northern Site area is underlain by fill including silts and gravelly silts with a few sand lenses, while the southern portion of the Site (closer to the Columbia River) is underlain by poorly graded sands to 45 feet below ground surface (bgs), the maximum depth explored. Overall it appears that the nature of the fill used at the site includes construction debris (brick and asphalt fragments) or miscellaneous fill with a high silt fraction on the northern portion of the Site, while fill at the southern portion of the Site, especially below depths of 5 to 10 feet, may have been predominantly a dredged sand fill material – with the distinction between native and fill materials at this portion of the Site being difficult to ascertain.
- b) Soils at a single boring near the northeastern corner of the Site had a strong petroleum hydrocarbon odor with a rainbow-colored sheen and black discoloration across the upper approximate 8 feet bgs, correlating with a zone containing asphalt fragments. Several other zones with field screening evidence of potential contamination were observed at the Site, but were relatively minor,

deep, and appeared associated with the zone of water table fluctuation.

- c) Groundwater was encountered at depths of approximately 20 to 25 feet bgs during the investigation activities. Measurements at the monitoring wells suggest that the predominant flow direction of the shallow groundwater beneath the Site is away from the Columbia River to the north, apparently in response to large volume pumping at water supply wells owned by the City of Vancouver located northwest of the Site.

## 2) Soil Testing Results

Soil samples were analyzed for gasoline-, diesel-, and oil-range petroleum hydrocarbons, volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and priority pollutant metals. Samples were analyzed to characterize near-surface soil quality at the Site and to support delineation of two previously identified zones of PAH and lead-contaminated soils at the eastern portion of the Site.

- a) Low-level diesel or oil-range total petroleum hydrocarbon (TPH) concentrations were detected in a majority of near-surface soil sampling locations, but with the exception of a single boring location near the northeastern corner of the Site (boring SB-012), all concentrations were all well below the 2,000 milligrams/kilogram (mg/kg) Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A Cleanup Levels for Unrestricted and Industrial Land Uses. The SB-012 zone of contamination (4,080 mg/kg of diesel- and 4,190 mg/kg of oil-range TPH) corresponds with soils exhibiting strong field screening evidence of impact (rainbow sheen, discoloration, odor) with incorporation of asphaltic debris that extended to a depth of approximately 8 feet below ground surface (bgs) at this location.
- b) With the exception of the boring SB-012 shallow zone of contamination, gasoline-range TPH or VOCs were not detected in soil samples at concentrations greater than laboratory method detection limits (MDLs) in any soil sample. Gasoline-range TPH (3,020 mg/kg) and naphthalene (200 mg/kg) were detected in shallow soil (2.0 feet bgs) at the SB-012 zone of contamination at concentrations exceeding the MTCA Method A Cleanup Levels for

Unrestricted and Industrial Land Use (100 mg/kg for gasoline; 5 mg/kg for naphthalene).

- c) PCBs were not detected in any soil samples at concentrations greater than MTCA Method A Cleanup Levels for Unrestricted Land Use.
- d) One or more PAH compound was detected in all but two of the 20 soil samples analyzed as part of the 2015 investigation. Of the 18 samples with detected PAH concentrations, only four samples detected PAH concentrations higher than the 0.1 mg/kg MTCA Method A Toxicity Equivalence Factor (TEF) Cleanup Level for Unrestricted Land Use [0.44 mg/kg at SB-011 (1.5 to 3.5 feet bgs); 3.43 mg/kg at SB-012 (1.5 to 3.5 feet bgs); 0.11 mg/kg at SB-014 (1 to 2.5 feet bgs); and 0.19 mg/kg at MW-1-37 (5 to 7 feet bgs). Of these four samples, only the sample collected from the shallow zone of soil contamination at the SB-012 location had a TEF concentration (3.43 mg/kg) higher than the 2 mg/kg TEF MTCA Method A Cleanup Level for Industrial Properties.

In general, the areas of the Site with MTCA exceedances for PAHs in soil appear sporadically detected at the eastern portion of the Site, with a majority of the exceedances occurring within the gravel silt fill as present near the northeastern portion of the Site.

- e) With regard to metals, soil concentrations of lead higher than the 250 mg/kg MTCA Method A Cleanup Level for Unrestricted Land Use were detected at three soil boring locations during the 2015 investigation, with 821 mg/kg detected at SB-014 (1 to 2.5 feet bgs); 772 mg/kg at MW-1-37 (5 to 7 feet bgs); and 545 mg/kg at MW-2-40 (0.2 to 1.2 feet bgs). In addition to lead, mercury was also detected in the near-surface soil sample collected from the SB-014 soil boring location at a concentration (3.61 mg/kg), exceeding the MTCA Method A Cleanup Level for Unrestricted Land Use and for Industrial Properties for this metal (2 mg/kg).

Follow-up testing for leachability did not find that any samples produced leachate at a concentration that would require soils to be designated as hazardous waste for lead and mercury leachability if excavated and requiring disposal.

Total chromium was analyzed in near-surface soils at all 11 boring locations during the 2015 investigation as well as in select deeper

soil samples. All detected total chromium concentrations were less than the 42 mg/kg state-wide default naturally-occurring background concentration for this metal and well below the 2,000 mg/kg MTCA Method A Cleanup Level for Unrestricted Land Use for this metal. Hexavalent chromium was not detected in any tested soil samples at concentrations above the 19 mg/kg MTCA Method A Cleanup Levels for Unrestricted Land Use, with the maximum detected hexavalent chromium concentration of any sample being 2.18 mg/kg (MW-5-34).

As an overall summary, the table below summarizes all (E & E 2008 and HAI 2015) soil testing results where a detected chemical concentration exceeded MTCA Method A Cleanup Levels for Unrestricted or Industrial Land Uses, with **red font** indicating soil samples with detections above Industrial Land Use MTCA levels.

#### Detections in Soil above MTCA Method A (2008 and 2015)

Location	Depth (feet bgs)	Analyte	Detected Concentration (mg/kg)	MTCA-Unrestricted (mg/kg)	MTCA-Industrial (mg/kg)
SB-004	26-28	Arsenic	25.6	20	20
		Cadmium	2.43	2	2
SB-006	6-8	PAHs-TEF	0.13	0.1	2
		Lead	1,100	250	1,000
SB-007	21-23	Cadmium	2.12	2	2
SB-009	8-10	PAHs-TEF	0.36	0.1	2
SB-010	6-8	PAHs-TEF	0.11	0.1	2
	13-15	Lead	1,180	250	1,000
SB-011	1.5-3.5	PAHs-TEF	0.44	0.1	2
SB-012	1.5-3.5	Diesel	4,080	2,000	2,000
		Oil	4,190	2,000	2,000
		Gasoline	3,020	100	100
		Naphthalene	200	5	5
		PAHs-TEF	3.43	0.1	2
SB-014	1-2.5	PAHs-TEF	0.11	0.1	2
		Lead	821	250	1,000
		Mercury	3.61	2	2
MW-1-37	5-7	PAHs-TEF	0.19	0.1	2
		Lead	772	250	1,000
MW-2-40	0.2-1.2	Lead	545	250	1,000

### 3) Groundwater Testing Results

Groundwater samples were collected from all five newly installed monitoring well locations, and were analyzed for gasoline-range petroleum hydrocarbons, diesel- and oil-range petroleum hydrocarbons, PAHs, total and dissolved metals, and VOCs.

- a) Regarding TPH and VOCs in groundwater, diesel- and gasoline-range TPH and naphthalene concentrations slightly exceeded the MTCA Method A Cleanup Level for Groundwater at a single location, well MW-3-35, located near the southeastern portion of the Site. Specifically, diesel-range petroleum hydrocarbons were detected at 795 µg/L (MTCA Method A Cleanup Value of 500 µg/L); gasoline-range petroleum hydrocarbons were detected at a concentration of 1,360 µg/L (MTCA Method A Cleanup Value of 1,000 µg/L); and naphthalene was detected at a concentration of 227 µg/L (MTCA Method A Cleanup Value of 160 µg/L). Additionally, the naphthalene concentration detected in groundwater at the MW-3-35 location was higher than the 8.93 µg/L MTCA Method B Screening Level for Vapor Intrusion into indoor air. No other VOCs detected in groundwater exceed the MTCA Method B Screening Level for Vapor Intrusion into indoor air.
- b) Total carcinogenic PAH TEF concentrations, although present sporadically in soil at concentrations greater than MTCA Cleanup Levels, were not detected in groundwater at any well location at a concentration exceeding the MTCA Method A Cleanup Value for Groundwater.
- c) Total (unfiltered) arsenic was detected above the 5 µg/L MTCA Method A Cleanup Value for Groundwater at well locations MW-2-40 (14 µg/L), MW-4-34 (5.38 µg/L), and MW-5-34 (5.5 µg/L). Total chromium (319 µg/L) and total lead (34.4 µg/L) were detected at the MW-2-40 well location above the MTCA Method A Cleanup Values for Groundwater of 50 µg/L and 15 µg/L, respectively. These exceedances of total (unfiltered) metals were limited to well locations with limited water column and low yields during well purging which increased the solids component of the samples. Dissolved phase (field filtered) testing of these metals did not detect concentrations higher than MTCA Method A Cleanup Values. Hexavalent chromium was detected in an unfiltered groundwater at a single location (7 µg/L).

at MW-2-40), but the detected concentration was well below the 48 µg/L MTCA Cleanup Value.

The table below summarizes groundwater testing results (single monitoring event) where a detected chemical concentration exceeded MTCA Method A Cleanup Levels for Groundwater.

**Detections in Groundwater above MTCA Method A**

Location	Depth (feet bgs)	Analyte	Detected Concentration (µg/L)	MTCA Method A Cleanup Value for Groundwater
MW-2-40	30-40	Total Arsenic*	14	5
		Total Chromium*	319	50
		Total Lead*	34.4	15
MW-3-35	25-35	Diesel	795	500
		Gasoline	1,360	1,000
		Naphthalene	227	160
MW-4-34	24-34	Total Arsenic*	5.38	5
MW-5-34	24-34	Total Arsenic*	5.5	5

\* The dissolved concentration was below the MTCA Method A Cleanup Value for Groundwater.

4) Discussion of Findings

As documented during the 2015 investigation and described herein, the presence of petroleum and metals-related impacts to soil appears limited to the eastern portion of the Site. With exception of near surface soils located near the northeastern corner of the Site (SB-012), contaminants appear sporadically present within fill and, with several exceptions, concentrations are generally less than MTCA Method A Cleanup Levels for both Unrestricted Use and Industrial Properties.

Expanded testing of site soils for chromium during the 2015 investigation, including total and hexavalent species, did not identify the presence of this metal at concentrations higher than naturally-occurring background or MTCA Method A Cleanup Levels for Unrestricted Land Use.

Concentrations of contaminants (gasoline-, diesel-, oil-range TPH, naphthalene, and carcinogenic PAH TEF values) as detected in soil near the northeastern corner of the property (SB-012) exceed MTCA Method A Cleanup Levels for Industrial Properties. This zone of contamination is

visually discernable from soils at adjacent locations based on significant field screening evidence of contamination (rainbow sheen, discoloration, petroleum odor to a depth of approximately 8 feet bgs) and significant incorporation of asphaltic fragments in this area.

Soils with PAH TEF or total lead values exceeding MTCA Method A Cleanup Values for Unrestricted Use extend sporadically west and south of the SB-012 location in the northeastern portion of the Site, as well as in soils at two boring locations (SB-006 and SB014) near the southeastern portion of the Site.

Contaminated soils at the preceding areas of the Site are presently capped with asphalt paving, preventing dermal contact and therefore do not present a current human health risk. The shallow nature of the impacts precludes contact with groundwater, which was not encountered at depths shallower than 20 feet bgs at any location.

With regard to groundwater quality, concentrations of petroleum-related contaminants at concentrations greater than MTCA Method A Cleanup Values (TPH and naphthalene) were limited to a single well (MW-3-35), located near the southeastern (hydraulically up-gradient) portion of the Site. Additionally, the naphthalene concentration detected in groundwater at the MW-3-35 location was higher than the MTCA Method B Screening Level for Vapor Intrusion into indoor air. The source for the groundwater contamination at this hydraulically up-gradient portion of the Site is not known, but it appears limited in overall magnitude and extent.

Total arsenic, chromium, and lead were detected above the MTCA Method A Cleanup Value for Groundwater at the MW-2-40 well location, while total arsenic was detected at concentrations slightly above the MTCA Method A Cleanup Level at the MW-4-34 and MW-5-34 well locations. Dissolved concentrations for all metals at all locations were below MTCA Method A Cleanup Value for Groundwater. The preceding suggests that the MTCA exceedances for total metals concentrations may be a function of suspended solids in these samples.

## 5) Recommendations

### a) Additional Groundwater Monitoring Event (High Water Table)

It is recommended that a second groundwater monitoring event at the existing site-wide well network be completed. The additional groundwater monitoring should occur during a period of high water table so that temporal fluctuations in groundwater flow direction or



chemical analyte concentrations may be evaluated. For data comparison purposes, it is recommended that analytical testing and sampling procedures conducted during high water table conditions be identical to that as completed during the June 2015 sampling event. Naphthalene concentration trends in groundwater at the MW-3-35 location, in conjunction with future uses of the adjacent building (eastern end of the former Red Lion Hotel), should be considered in determining the possible future need for a Vapor Intrusion Assessment in this area.

b) Contaminated Media Management Evaluation

Because concentrations of contaminants as detected in shallow soil near the northeastern and southeastern portions of Site exceed MTCA Method A Cleanup Levels for Unrestricted or Industrial Use, these soils should either remain capped to prevent future exposure, or they should be excavated and transported off-site for proper disposal (either prior to, or as a component of, future Site development).

c) Northeastern Area Soil Assessment

In order to assist the port with future construction and soil management options, the port may want to consider installation of additional borings at the northeastern portion of the subject property. These additional borings would be proximate to borings SB-005, SB-009, SB010, SB-011, SB-012, MW-1-37, and MW-2-40 as necessary to provide better estimation of the volume and extent of soils with contaminant concentrations above MTCA Method A Cleanup Levels for Unrestricted and Industrial Properties. Analyses should include gasoline-, diesel-, oil-range petroleum hydrocarbons, PAHs, and lead in soils near the SB-12 location, while analytes can be limited to PAHs and lead at locations further away from boring SB-012. Target depths will vary based on location, but in no case is it considered necessary for collection of additional data at depths greater than 15 feet bgs.

d) Southeastern Area Soil Assessment

In order to assist the port with future construction and soil management options, the port may want to consider installation of additional borings at the southeastern portion of the subject property. These additional borings would be proximate to borings SB-006 and SB-014 to provide better estimation of the volume and extent of soils with lead and PAH concentrations above MTCA Method A Cleanup

Levels for Unrestricted and Industrial Properties. Analyses should include PAHs and lead in soils at both locations, with the inclusion of mercury in select soil samples proximate to the SB014 location. Data collection in both areas, based on current delineation, can be limited to the upper 10 feet bgs.

## **2.0 INTRODUCTION**

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The Port of Vancouver, USA (port) retained HAI to complete soil and groundwater investigation activities on a 10.14 acre property (the Site) located at 100 Columbia Street in Vancouver, Washington (Figures 1 and 2).

The Site consists primarily of a paved parking lot and a former (closed in November 2015) Red Lion hotel. Additionally, the parking lot serves the Columbia Shores commercial office building, which is located west of the hotel structure. A portion of the Site is presently under construction with a new access roadway as part of the redevelopment of the former Boise Cascade lumber mill property immediately west of the Terminal 1 property.

The Site, zoned City Center Mixed Use (CX) by the City of Vancouver, is bounded by Columbia Street to the east, an unnamed entrance road to the north, the Columbia River to the south, and the former Boise Cascade lumber mill property to the west, which is undergoing redevelopment with new commercial, urban residential, and green space uses.

The port is preparing a concept development plan for the 100 Columbia Street property (Site), focusing on development of a diverse commercial and public center with urban residential, commercial, and green space uses of the property. The Port's Board of Commissioners has emphasized the following goals for consideration in preparation of the Concept Development Plan for the Site:

- Provide public access to the water at all times
- Promote sustainable development and management of the port's land and facilities
- Incorporate the port's history at Terminal 1 – it's first marine terminal
- Incorporate existing assets of the Terminal 1 building, docks, and possibly the amphitheater into the development

- Allow for development that provides new revenue streams in balance with public asset development

The Waterfront Development Master Plan envisions the Site divided into four overall categories or zones of development, as follows:

- Zone 1: Mixed Use: Office, Retail, Urban Residential; Parking
- Zone 2: Hospitality: Hotel, Restaurant, Meetings, retail
- Zone 3: Multi-Purpose: Performance, Community Gathering Space, Office, Retail, Urban Residential
- Zone 4: Waterfront: Terminal 1 Marketplace, Retail/Office, Visitor Center, Outdoor Civic, Recreation

Prior subsurface investigation activities were completed on behalf of the port by E & E in November 2008, with results of that investigation documented in a March 2009 report (E & E 2009).

The soil and groundwater investigation as described herein was completed to supplement findings of the 2009 E & E report as related to several areas where data gaps were identified, as well as to collect near surface soil data to support evaluation of future re-development options for the Site.

## **3.0 BACKGROUND**

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### **3.1 Site History**

According to a summary of historical information provided in the 2009 E & E report, the earliest known development on the Site was in the early twentieth century when the port leased the land for use as a shipyard for construction of wooden and steel vessels related to the World War I effort. The Site was subsequently used as a city dock (eastern shoreline) or municipal dock (western shoreline). According to a report published by the U.S. Army Corps of Engineers and the U.S. Shipping Board, the municipal dock was used as “lumber and general cargo; foreign and domestic business, largely for consolidation of lumber shipments received by rail” (E & E 2009). The port accepted ownership of the municipal dock in 1925 and began operations at the Site as “Terminal 1” in December 1926 (Port 2015).

E & E review of a 1948 aerial photograph suggests that much of the Site was used as a lumber yard by the mid-1940s and that an asphalt plant was located immediately north of the Site during this timeframe. The Red Lion hotel, the tenant at the property until closing in November 2015, was constructed in the 1960s, at which time the entire Site, except for the far western area, was either paved or otherwise covered with hotel or office facilities. E & E describes the western portion of the Site, based on review of aerial photographs, as having been used as an outdoor staging or storage yard during this timeframe. The 2009 E & E report provides additional description of historical activities as well as the approximate locations / uses of former structures in the Site vicinity.

### **3.2 2008 Ecology and Environment (E &E) Investigation**

As described above, E & E completed a subsurface investigation at the Site in November 2008, with results of that investigation documented in a March 2009 report.

The 2008 E & E investigation was designed for collection of soil and groundwater quality data spatially across the Site, with a focus on areas proximate to buildings that may have been associated with past chemical or fuel/metals contamination.

The E & E investigation included installation of 10 direct push boreholes (SB001 through SB010) to depths ranging from 16 to 29 feet below ground surface (bgs). E & E had planned on collecting groundwater samples from temporary well points to be installed at three of the ten borehole locations, but groundwater sufficient for sampling was encountered at only one location (at SB003 below a depth of approximately 26 feet bgs). E & E concluded that the boring depths (with exception of SB003) were not sufficient to reach the water table at the time that the investigation occurred, possibly due to low tide conditions in the adjacent Columbia River. The approximate locations for E & E's 2008 direct push boring investigation are depicted on Figure 3.

Soil samples were collected by E & E from two depth ranges at all boring locations – with “shallower” samples collected at depths less than 10 feet bgs and “deeper” samples generally collected at depths greater than 16 feet bgs. Field boring logs provided by E & E indicate the presence of variable sands, silts, and gravelly sands across the depth horizons investigated, all reported as being apparent fill material. No field screening evidence of

potential contamination was noted by E & E in soils at any of the 10 boring locations.

All soil samples and the single groundwater sample were analyzed for volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), polynuclear aromatic hydrocarbons (PAHs), and total priority pollutant metals. A sub-set of the soil samples also received follow-up testing for polychlorinated biphenyls (PCBs).

Results of the investigation were compared by E & E to Washington Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup levels for both Unrestricted Land Use and for Industrial Properties.

As described in the referenced E & E report, no specific sources of contamination were identified during the assessment. However, soil samples from some boreholes detected concentrations of PAHs, petroleum hydrocarbons, and certain metals (above naturally-occurring background), with samples collected from the eastern portion of the property generally containing the highest concentrations. A brief summary of findings as presented in the E & E report is as follows:

- Gasoline-range petroleum hydrocarbons were not detected in any soil sample. Oil- and diesel-range petroleum hydrocarbons were detected in five of 20 soil samples (borehole locations SB006, SB008, SB009, and SB010), with all detections significantly lower than the 2,000 milligram per kilogram (mg/kg) MTCA Method A cleanup levels. Gasoline- diesel-, and oil-range petroleum hydrocarbons were not detected in the groundwater sample (SB003 location).
- PCBs were not detected in any soil sample where analyzed.
- VOCs were detected only at a single soil sample location (toluene at SB010) but at a concentration well below the MTCA Method A cleanup level. Toluene was detected in groundwater at SB003, but this detection was similarly well below the MTCA cleanup level.
- PAHs were detected in seven of the 20 soil samples collected (borehole locations SB004, SB006, SB008, SB009, and SB010). Of the detections, concentrations of one or more PAH greater than MTCA cleanup levels as established for unrestricted land use were present in soil samples collected from borings SB006, SB009, and SB010. No PAHs were

detected in any soil sample at a concentration greater than MTCA values established for industrial land use. PAHs were not detected in groundwater where analyzed at the SB003 location.

With regard to metals:

- Lead was detected at concentrations greater than default statewide background concentrations (17 mg/kg) and MTCA unrestricted and industrial levels (250 mg/kg and 1,000 mg/kg, respectively) in soil samples collected from the SB006 (1,100 mg/kg at 6 to 8 feet bgs) and SB010 (1,180 mg/kg at 13 to 15 feet bgs) boring locations.
- Elevated thallium and arsenic were detected in a soil sample collected from the SB004 boring location, with elevated arsenic (greater than the 7 mg/kg default background concentration) also being detected in samples collected from the SB003, SB005, SB006, SB007, and SB010 boring locations. As described by E & E, the elevated arsenic concentrations were generally limited to the deeper soil samples across the eastern portion of the property.
- Cadmium was detected at concentrations slightly greater than typical background concentrations and the MTCA value established for unrestricted land use in deep soil samples collected from the SB004 and SB007 boring locations.
- The maximum total chromium concentration detected in soil at any boring location was 46.4 mg/kg. The maximum detected total chromium concentration is in the range deemed typical for naturally-occurring levels in Washington (31.9 to 47.4 mg/kg). All total chromium concentrations in soil were well below the 2,000 mg/kg MTCA value established for the trivalent chromium (chromium III) at unrestricted or industrial properties, but exceeded the 19 mg/kg hexavalent chromium (chromium VI) value established for unrestricted or industrial properties. No speciation of chromium was completed as part of the 2008 investigation and therefore concentrations of trivalent and hexavalent chromium were not ascertained.
- The metals arsenic, copper, chromium, lead, nickel, and zinc were detected in the groundwater sample collected from boring SB003. None of the detected metal concentrations exceed MTCA Method A Cleanup Values for groundwater where established.

## 4.0 INVESTIGATION OBJECTIVES

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The overall objectives of the soil and groundwater investigation activities described herein are as follows:

- Provide lateral and vertical delineation of the lead and PAH contamination present on a portion of the eastern Site area as described in the 2009 E & E report.
- Collection of speciated chromium (trivalent and hexavalent) data at the Site such that potential risks associated with this metal may be more fully evaluated.
- Collection of near-surface (e.g., upper 3 to 4 feet bgs) chemical data in soils to evaluate the potential surface soil exposure pathway as well as potential future contaminated media management issues as may be related to future site re-development options.
- Collection of groundwater quality data at the Site to allow evaluation of whether soil impacts have adversely impacted groundwater beneath the Site.

## 5.0 FIELD ACTIVITIES

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### 5.1 Soil Boring Location and Rationale

Six soil borings (SB-006A and SB-011 through SB-015) and five monitoring wells (MW-1 through MW-5) were installed at the Site in May and June 2015 to address the investigation objectives described in Section 4. The boring and monitoring well locations are shown on Figure 3, and are described in the table below.

#### Boring (SB) and Monitoring Well (MW) Rationale, Depth, Media Tested

Area of Interest	Boring	Depth (feet)	Media Tested	
			Soil	Groundwater
Lateral and vertical delineation of PAH and lead contaminated soils as	SB-011	30	X	
	SB-012	30	X	

identified in 2008 E & E borings SB-009 and SB-010	MW-1-37	45	X	X
	MW-2-40	40	X	X
Lateral and vertical delineation of PAH and lead contaminated soils as identified in 2008 E & E borings SB-006	SB-006A	35	X	
	SB-013	30	X	
	SB-014	30	X	
	MW-3-35	30	X	X
	MW-4-34	30	X	X
Chromium speciation at 2008 E & E boring SB-003	SB-015	13	X	
Shallow soil and baseline groundwater quality at the western portion of the Site	MW-5-34	35	X	X

## 5.2 Field Procedures

### 5.2.1 Subsurface Drilling Procedures

In May and June 2015, 11 direct push borings, five of which were completed as monitoring wells, were installed at the site for the collection of soil and groundwater samples (Figure 3). Boring SB-015 was installed to a depth of 13 feet bgs for collection of a shallow soil sample, while all remaining SB- or MW-series borings were installed to depths of between 30 and 45 feet bgs as described in Section 5.1.

All borings and monitoring well installations were installed by Pacific Soil & Water, LLC of Tigard, Oregon with a truck-mounted Geo-Probe Systems hydraulic hammer unit using 2-inch outside diameter (OD) hydraulically-driven steel rods.

An HAI geologist was present during investigation activities to observe and document drilling and sample collection procedures, obtain field samples, perform field screening activities, select and prepare samples for laboratory analysis, and prepare lithologic logs for each boring. The boring logs,



including a field estimate of the Unified Soil Classification System (USCS) of the soil types encountered, as well as the field screening results, are included in Appendix A.

Following completion of the soil boring activities (SB-006A and SB-011 through SB-015), the borings were backfilled with 3/8-inch bentonite chips to within 6 inches of the ground surface. Asphalt was placed in the upper six inches of each boring to match the surrounding surface. Monitoring wells were installed at MW-series boring locations as described in Section 5.2.3.

The borings and monitoring wells were completed in accordance with the Washington Administrative Code (WAC) for the Minimum Standards for Construction and Maintenance of Wells (WAC Chapter 173-160) and General Requirements for Resource Protection Well Construction and Geotechnical Soil Borings (WAC Chapter 173-160-400).

### **5.2.2 Soil Sampling and Screening Procedures**

Continuous soil cores were collected at all boring locations using a 5-foot long, 2-inch OD Macro-Core Sampler. Near-surface soil samples were collected from each boring within the upper 5 feet bgs and subsurface soil samples collected approximately every 5 feet thereafter. Soil samples were also collected across any depth intervals where field screening indicated the possible presence of contamination. The properties of each soil core were noted in the field by the HAI geologist and recorded on the field logs.

Upon collection, each non-volatile soil sample was homogenized, placed in sample jars, and capped with Teflon-lined lids. The sample jars were then labeled and transferred to a chilled container for shipment to the analytical laboratory. Standard sampling protocols, including the use of chain-of-custody documentation, were followed for all sampling procedures.

Soil samples collected for potential analysis of volatile organic compounds (VOCs) or gasoline-range petroleum hydrocarbons were collected and preserved in the field with methanol in accordance with U.S. Environmental Protection Agency (EPA) Method 5035A.

The subsurface soil samples were field-screened for the presence of potential contamination by the visual, olfactory, sheen test, and headspace vapor methods. The presence of sheen was assessed by placing clean tap water in a black pan and introducing approximately 5 grams of

disaggregated soil to the water. Screening for the presence of organic vapors was conducted by the headspace method using a photoionization detector (PID) equipped with a 10.6 eV lamp. The results of the headspace screening are recorded on the boring log in parts per million (ppm). The headspace method results should be considered a qualitative indicator of possible contamination and used for relative comparison purposes.

### **5.2.3      *Monitoring Well Installation and Development***

In order to evaluate site wide groundwater quality, five monitoring wells (MW-1-37 through MW-5-34) were installed at the Site. Monitoring well name designations include the depth of the base of the screen. For example, the base of the screen for monitoring well MW-1-37 is at a depth of approximately 37 feet bgs.

All wells were installed with use of a direct push drill rig to depths of 35 to 40 feet bgs. The monitoring wells were constructed with 10 feet of 2-inch inside diameter (ID) polyvinyl chloride (PVC) pre-packed 0.010-inch slotted screen surrounded by a stainless steel mesh. Filter pack silica sand (20/40 environmental grade) is packed between the slotted PVC and the stainless mesh prior to installation, with an appropriate well seal placed above the sand pack. Each well was completed with a flush traffic-grade monument and locking cap.

Monitoring well installation logs and construction detail summaries are included in Appendix A.

Monitoring well development activities were performed on June 9 and June 10, 2015 using a variety of pumping methods including electric submersible, peristaltic, and disposable bailer. Groundwater was purged from each well until relatively clear / low turbidity water was produced or the well purged dry. During development activities, monitoring wells MW-2-40 and MW-5-34 were purged to dryness. Water level, pH, conductivity, temperature, and turbidity were measured and recorded during the development process. All monitoring well development logs are included in Appendix A.

### **5.2.4      *Boring and Monitoring Well Survey Activities***

On June 24, 2015, all monitoring well and soil boring locations were surveyed on behalf of the port by HDJ Design Group, PLLC (HDJ) of Vancouver, Washington. The ground surface elevation was surveyed at

boring (SB) locations while the elevation of the top of the PVC casing was surveyed at well (MW) locations. All survey data were collected within an accuracy of 0.01 feet vertically and feet horizontally. X and Y were surveyed using the Washington State Plane coordinate system (South Zone 4602), while the elevation was measured relative to mean sea level using the National Geodetic Vertical Datum 29 (NGVD29) (City of Vancouver Datum). The survey report as prepared by HDJ, is included in Appendix A.

## **5.2.5 Groundwater Monitoring Activities**

### Groundwater Level Measurements

Prior to any well purging or sampling activities, the static water levels in all five (5) monitoring wells were measured using a Solinst water level indicator (conductive probe), recorded to the nearest 0.01 feet. The wells were initially opened to permit equilibration with the ambient air pressure followed by one round of water level measurements. The water levels were measured from the north side of the casing, and were recorded on the Groundwater Level Measurement Field Log, which is included in Appendix B.

### Monitoring Well Purging

Prior to the sampling of each monitoring well, the well casings were purged (where applicable) using low-flow purging methods, which is an U.S. Environmental Protection Agency (EPA)-approved groundwater sampling method that is designed to minimize turbidity and suspended solids in samples, allowing for collection of representative samples. A peristaltic pump and dedicated high-density polyethylene (HDPE) tubing were used for purging each monitoring well. The pump was set to a target purge flow rate of approximately 200 ml per minute.

Low-flow purging was conducted for the collection of groundwater samples at MW-1-37, MW-3-35, and MW-4-34. Low-flow purging was not implemented at the MW-2-40 and MW-5-35 well locations, as drawdown was too great for this method.

A new disposable plastic bailer was used for purging MW-2-40 and MW-5-35, with both wells purging to dryness.

Stabilization parameter measurements were collected during low flow purging and sampling with use of a flow-through cell and an in-line multi-probe meter, at approximate 3 to 5 minute intervals. Water levels within each well were also measured during the purging process to monitor drawdown. Purging continued until all parameters achieved the minimum stability criteria for three consecutive measurements, which were achieved at all well locations using low-flow purging. Parameter measurements recorded during purging were: time, purge volume, water level, temperature, specific conductivity, dissolved oxygen (DO), pH, oxygen reduction potential (ORP), and turbidity. Stabilization criteria are established as readings within 10% for DO and turbidity; within 3% for conductivity; within 0.1 pH units; and within 10 millivolts for ORP. At those locations where drawdown prevented appropriate low-flow purging (MW-2-40 and MW-5-35), the wells were bailed dry.

#### Monitoring Well Sampling

Once all monitoring parameters achieved the minimum stability criteria for three consecutive measurements, and water recharge within the well was adequate, sampling was conducted using the peristaltic pump. Flow rates did not exceed 200 ml per minute during sampling. The discharge end of the dedicated HDPE tubing was removed from the flow-through cell prior to sampling to ensure the sample was not cross-contaminated by the re-useable flow-through cell equipment. For wells MW-2-40 and MW-5-35, which were purged to dryness, sampling was conducted after sufficient recharge had occurred to allow sampling, which occurred the morning following the purging activities. These two wells were sampled using a Geotech stainless steel bladder pump and controller at a very low flow rate in an effort to minimize the turbidity of the sample.

Laboratory-supplied containers appropriate for the analytical suite described in Section 6.0 were properly filled, labeled, and capped. All water samples were transferred into the appropriate sampling containers and were preserved as per method requirements. Samples collected for dissolved constituent analyses were field-filtered through a 0.45-micron in-line disposable filter prior to preservation and transferred into the appropriate sampling containers. All sampling containers were completely filled such that no headspace was present that would allow the loss of volatiles. The sample bottles were then labeled and transferred to a chilled container for shipment to the analytical laboratory.

### **5.2.6 Decontamination Procedures**

All reusable drilling and soil sampling equipment was steam cleaned with potable water prior to use, and between boring locations, to prevent cross-contamination. All reusable groundwater sampling equipment that contacted the sampled media (bladder pump at MW-2-40 and MW-5-35 only) was cleaned with an Alconox detergent and laboratory-provided distilled water prior to use and in between uses. A new disposable bladder was used at each location sampled.

### **5.2.7 Investigative Derived Waste**

Approximately 150 gallons (three 55-gallon drums) of soil cuttings and 110 gallons (two 55-gallon drums) of decontamination water, well development water, and purge water were generated during the soil and groundwater investigation activities. All containers were labeled and staged on-site pending the completion of profiling for disposal. The investigative derived waste (IDW) was profiled and picked up by WasteXpress Environmental Services, Inc. (WasteXpress) of Portland, Oregon on August 27, 2015 for permitted non-hazardous disposal. Profile documentation as well as the WasteXpress non-hazardous waste manifest documenting pick-up of all IDW is included within Appendix C.

## **6.0 ANALYTICAL TESTS**

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The soil and groundwater samples were shipped with chain-of-custody documentation in sealed and chilled containers to Apex Laboratories, LLC, a Washington-accredited analytical laboratory located in Tigard, Oregon.

Soil samples were submitted to the laboratory and selected for analysis based on visual observations, odors, the specific area being assessed, depth, and PID readings. With regard to depths, soil samples were targeted for collection and analysis from near-surface soils within the upper 5 feet as well as from depth intervals required to provide further delineation contamination identified during the 2008 E & E investigation. Select soil samples with the highest oil-range petroleum hydrocarbons were selected for polychlorinated biphenyl (PCB) follow-up testing and samples with the highest lead or mercury concentrations were analyzed for leachability using the by Toxicity Characteristic Leaching Procedure (TCLP).

Soil samples were analyzed for one or more of the following parameters:

- Diesel- and Oil-range Total Petroleum Hydrocarbons (TPH) by Northwest (NW) Method TPH-Dx (31 samples),
- Gasoline-range TPH by NW Method TPH-Gx (19 samples),
- Priority Pollutant 13 metals (total) by EPA Method 6020 (15 samples),
- Lead (total) by EPA Method 6020 (40 samples),
- Leachable lead by Toxicity Characteristic Leaching Procedure (TCLP) EPA Method 1311/6020 (4 samples),
- Leachable mercury by TCLP EPA Method 1311/6020 (1 sample),
- Hexavalent chromium by EPA Method 7196A (6 samples),
- Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8270D SIM (20 samples),
- Polychlorinated biphenyls (PCBs) by EPA Method 8082A (4 samples),
- Volatile Organic Compounds (VOCs) by EPA 8260B (10 samples).

Groundwater samples as collected from the five monitoring wells installed in June 2015 were all analyzed for the following parameters:

- Diesel- and Oil-range Total Petroleum Hydrocarbons (TPH) by Northwest (NW) Method TPH-Dx,
- Gasoline-range TPH by NW Method TPH-Gx,
- Priority Pollutant 13 metals (total) by EPA Method 6020,
- Hexavalent chromium by EPA Method 7196A,
- Polynuclear Aromatic Hydrocarbons (PAHs) by EPA Method 8270D SIM,
- Volatile Organic Compounds (VOCs) by EPA 8260B.

Results of the 2015 soil and groundwater analytical testing are summarized on Tables 1 through 4 (soil) and Table 5 (groundwater). The laboratory reports and chain-of-custody documentation for the 2015 soil and groundwater investigation activities are included in Appendices C and D,

respectively. For comparison purposes, results of the 2008 E & E investigation have also been tabulated on Tables 1 through 5.

## **7.0 RESULTS AND DISCUSSION**

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### **7.1 Subsurface Conditions**

#### Soil Types

Soils observed beneath the site during the 2015 investigation were predominantly silts and gravelly silts with a few sand lenses at boring installed at northern portions of the property (SB-011, SB-012, MW-1-37, and MW-2-40) to the maximum depth explored (40 feet bgs). Soils at those borings installed closer to the Columbia River (southern Site area) were predominantly poorly graded sands with little to no silt to the maximum depth explored (35 feet bgs).

Evidence of fill debris including asphalt fragments in a gravelly silt matrix were observed at the SB-012, MW-1-37, MW-2-40 locations to depths of between 8 feet (SB-12) and 10 feet bgs (MW-1-37), all located near the northeastern corner of the property. Other evidence of fill, including brick and glass fragments were observed at these locations across similar depth intervals. Brick fragments were also present in soils within the upper 5 to 10 feet bgs at the SB-015 (northwestern Site area), and borings SB-014, MW-3-35, and MW-4-34 (southeastern Site area).

Based on the preceding, it appears that the nature of the fill used at the site included construction debris (brick and asphalt fragments) or miscellaneous fill with a high silt fraction on the northern portion of the property, while fill at the southern portion of the Site, especially below depths of 5 to 10 feet, may have been predominantly a dredged sand fill material – with the distinction between possible native and fill materials being difficult to ascertain.

#### Soil Field Screening

Field screening evidence of potential contamination was identified extending from immediately below ground surface to a depth of 8 feet bgs at boring SB-012, located at the northeastern corner of the Site. Specifically, soils across this depth interval had a strong petroleum hydrocarbon odor with a rainbow-colored sheen and black discoloration. Correlative with the strong petroleum odor across this depth interval was a relatively high organic vapor reading (171 parts per million) as measured in sample headspace with the

PID. This zone of impact correlates with an apparent zone of asphalt / potential demolition debris incorporation into the fill at this area. Field screening evidence of contamination did not extend below a depth of 8 feet bgs at SB-012 and no field screening evidence of contamination was observed at nearby boring locations MW-1, MW-2, or SB-011.

In addition to the preceding, deeper zones of potential soil contamination, as evidenced by petroleum hydrocarbon odor and sheen were identified at boring locations SB-013 and MW-4. Specifically, a zone of petroleum hydrocarbon odor and a rainbow-colored sheen was identified below the water table (25 to 29 feet bgs) at the MW-4 boring location, while a mild petroleum hydrocarbon odor and light sheen was observed between 20 to 25 feet bgs (immediately above the water table) at the SB-013 boring location. The screened interval for monitoring well MW-4-34 (24 to 34 feet bgs) was constructed across the zone of apparent impact as observed at this location.

No other zones with significant field screening evidence of contamination were observed during the investigation, with only minor indications of a very light sheen (via sheen test) noted at several depth intervals within borings MW-4 (7 to 15 feet bgs); MW-5 (5 to 8 feet bgs); SB-011 (9.5 feet bgs); SB-013 (5 to 15 feet bgs) and SB-014 (0 to 2 and 5 to 15 feet bgs).

#### Groundwater

Groundwater was encountered at an approximate depth interval of between 20 to 25 feet bgs in soil borings installed at the Site. Measurements made in completed monitoring wells on June 16, 2015 identified the depth to groundwater as ranging from approximately 23 to 26 feet below ground surface at the Site.

As depicted on Figure 4, interpretation of flow direction based on groundwater level measurements collected on June 16, 2015 is suggestive of flow to the north, away from the Columbia River. This flow regime is contrary to the basic conceptual model, with the Columbia River being a regional groundwater discharge area.

With this regard, groundwater modeling work conducted on behalf of the Port in vicinity of the Site by Parametrix has predicted groundwater flow direction within the Troutdale and Unconsolidated Sedimentary Aquifers (deeper water-bearing zones) in the area of the Site to be from the south to the north, away from the Columbia River. Specifically, the model shows groundwater beneath the Terminal 1 property being recharged by the Columbia River,



with flow to the north in response to large volume pumping that occurs at City of Vancouver water stations 1, 3, and 4 and possibly closer supply wells. For instance, the pumping of a groundwater supply well owned by The Columbian and located approximately 900 feet northwest of the Site (heating and cooling) could possibly have a localized influence on groundwater elevations. Information available from Ecology indicates the Columbian well is screened from between 74 and 130 feet bgs, with a yield of 1,250 gallons per minute resulting in a drawdown of 9 feet.

Based on the preceding, it appears that groundwater elevations as measured within shallow groundwater beneath the Site are likely influenced by regional pumping stresses, with the magnitude of such an influence likely fluctuating as a function of river stage in conjunction with fluctuations in groundwater withdrawal rates.

## **7.2 Screening Levels**

To provide a framework for evaluating the significance of findings, site data were compared to various established risk-screening levels. The screening levels are listed on Tables 1 through (soil samples) and Table 5 (groundwater samples) for comparison purposes.

### Model Toxics Control Act (MTCA)

The results of soil and groundwater testing were compared to MTCA Method A Cleanup Levels that have been established for both Unrestricted Land Uses and Industrial Properties WAC 173-340-704 and WAC 173-340-900. Specifically, the results of soil analytical testing were compared to Table 740-1 Method A Soil Cleanup Levels (Unrestricted) and Table 745-1 Method A Soil Cleanup Levels (Industrial). MTCA Method A lookup tables provide cleanup levels that are protective of human health for 25 to 30 of the most common hazardous substances found in soil and groundwater. Soil results were compared to both “unrestricted” and “industrial” cleanup levels as a conservative measure and to provide context to the detected concentrations. The results of groundwater analytical testing were compared to Table 720-1 Method A Cleanup Levels for Groundwater.

In addition to the proceeding, concentrations of volatile constituents in groundwater were compared to MTCA Method B Groundwater Screening Levels (2015 revision) as established by Ecology in draft guidance for evaluation of the vapor intrusion to indoor air pathway (Ecology 2009).

### Cleanup Levels and Risk Calculations (CLARC)

Where no Method A Cleanup Levels were available, analytical results were compared to Ecology Cleanup Levels and Risk Calculations (Ecology 2014). According to the Ecology website, CLARC is a web-based compendium of technical information related to the calculation of cleanup levels under the MTCA program. Ecology has compiled and calculated this technical information to assist in the development of cleanup levels. The formula values pre-calculated using MTCA Method B and provided in CLARC are not cleanup values and are used for comparison purposes only.

For metals in soil, in addition to screening against MTCA Method A Cleanup Levels for Unrestricted Land Use and Industrial Properties and CLARC screening level values, concentrations were also compared to regional background concentrations as established by Ecology (Ecology 1994).

Exceeding one of the screening levels does not necessarily mean that cleanup is required or necessary, but would suggest that additional evaluation or investigation may be necessary to determine the need for remedial action.

## **7.3 Soil Testing Results**

Soil samples, collected in 2015 from near-surface and subsurface soils from multiple depths at 11 boring locations at the site (SB-006A, SB-011 to SB-015 and MW-1-37 to MW-5-35) were analyzed for one or more of the following: gasoline- diesel- and oil-range petroleum hydrocarbons, VOCs, PAHs, PCBs, and priority pollutant metals. Analytical results for these soil tests are summarized on Tables 1 through 4, with select results depicted on Figures 5 through 8. Laboratory reports and chain-of-custody documentation for the 2015 investigation soil samples are included as Appendix D. Results are described in the following sections.

### **7.3.1 Diesel- and Oil-Range Total Petroleum Hydrocarbons**

Diesel- or oil-range petroleum hydrocarbons were detected in 17 of the 31 soil samples tested in 2015, with detected concentrations present in shallow soils (less than 4 feet bgs) at 8 of the 10 tested boring locations (Table 1 and Figure 5). Of the detections, only one sample, collected from 1.5 to 3.5 feet bgs at the SB-012 location, detected diesel-range (4,080 mg/kg) and oil-range (4,190 mg/kg) petroleum hydrocarbons at concentrations higher than

the 2,000 mg/kg MTCA Method A Cleanup Level for both Unrestricted Land Use and Industrial Properties.

The soil sample collected from a depth of 8 to 10 feet bgs at SB-012, which is immediately below the zone of field screening evidence of contamination (rainbow sheen, petroleum odor, asphalt fragments) at this location, did not detect diesel- or oil-range petroleum hydrocarbons at concentrations higher than laboratory method detection limits (MDLs).

Diesel- and oil-range petroleum hydrocarbons were not detected in any analyzed soil sample as part of the 2008 E & E investigation at concentrations higher than MTCA Method A Cleanup Levels.

### **7.3.2 Gasoline-Range Total Petroleum Hydrocarbons**

Gasoline-range petroleum hydrocarbons were detected in 1 of the 19 soil samples tested in 2015, with the single detection occurring in the same sample as described above with the highest diesel- and oil-range petroleum hydrocarbon concentrations (1.5 to 3.5 feet bgs at boring SB-012). The detected gasoline-range petroleum hydrocarbon concentration (3,020 mg/kg) exceeds the 100 mg/kg MTCA Method A Cleanup Level for Unrestricted Land Use or Industrial Properties. The chromatogram for the gasoline-range detection was noted by the laboratory as not being typical of the fuel standard used for quantitation, suggesting that the hydrocarbons present in this range may be attributable to overlap with diesel, heavy weathering, and/or be related to a source other than gasoline fuel.

As with the diesel- and oil-range petroleum hydrocarbons described above, the soil sample collected from a depth of 8 to 10 feet bgs at SB-012 (below the zone of field screening evidence of contamination) did not detect gasoline-range petroleum hydrocarbons at concentrations higher than laboratory MDLs (Table 1, Figure 6), suggesting the chemical contamination correlates well with the field screening evidence of impact.

Gasoline-range petroleum hydrocarbons were not detected in any analyzed soil sample as part of the 2008 E & E investigation (Table 1).

### **7.3.3 Polychlorinated biphenyls (PCBs)**

As summarized on Table 1, PCBs were analyzed in the four soil samples with the highest detected oil-range petroleum hydrocarbon concentrations as

detected during the 2015 investigation. Of the four analyzed samples PCBs were detected in only one sample, with a trace concentration (0.0149 mg/kg Aroclor 1260) detected in the soil sample collected from 1 to 2.5 feet bgs at the SB-014 soil boring location. The detected total PCB concentration in this sample (0.0149 mg/kg) is well below the 10 mg/kg MTCA Method A Cleanup Level for Unrestricted Land Use.

PCBs were not detected in any analyzed soil sample as part of the 2008 E & E investigation (Table 1).

#### **7.3.4 Volatile Organic Compounds (VOCs)**

As summarized on Table 4, VOCs were analyzed in all 10 near-surface (upper 4 feet bgs) soil samples as collected at 10 of the 11 soil borings installed during the 2015 investigation (all but the SB-015 location). VOCs were detected in only one of the 10 soil samples. Specifically, VOC detections were limited to the shallow soil sample as collected from 1.5 to 3.5 feet bgs at boring SB-012, with only naphthalene at this location being detected at a concentration (200 mg/kg) higher than the 5 mg/kg MTCA Method A Cleanup Level for Unrestricted Land Use and Industrial Properties. Naphthalene, is also reported as a PAH, results of which are described in Section 7.3.5.

The single detected naphthalene concentration as described above was co-located with soil at the only area of the property where gasoline-, diesel-, and oil-range concentrations were similarly detected in excess of MTCA Method A Cleanup Level for both Unrestricted Land Use and for Industrial Properties (Figure 5).

VOCs were not detected in any analyzed soil sample as part of the 2008 E & E investigation at concentrations higher than MTCA Method A Cleanup Levels.

#### **7.3.5 Polynuclear Aromatic Hydrocarbons**

One or more PAH compound was detected in all but two of the 20 soil samples analyzed as part of the 2015 investigation (Table 2). Of the 20 samples with detected PAH concentrations, four samples (from boring locations SB-011, SB-012, SB-014, and MW-1-37) detected PAH concentrations that were higher than 0.1 MTCA Method A Toxicity Equivalence Factor (TEF) Cleanup Level for Unrestricted Land Use. Of

these four samples, one (1.5 to 3.5 feet bgs at SB-012) had a TEF concentration (3.43 mg/kg) higher than the 2 mg/kg TEF MTCA Method A Cleanup Level for Industrial Properties.

The SB-012 soil sample is the same sample with exceedances in the gasoline-, diesel-, and oil-range petroleum hydrocarbons and is representative of soils with a rainbow color sheen, discoloration, odor, and asphalt incorporation into the fill at the northeastern portion of the Site.

As depicted on Figure 7, areas of the Site with MTCA exceedances for PAHs in soil appear sporadically detected across the eastern portion of the Site, with a majority of the exceedances occurring within the gravel silt fill as present near the northeastern portion of the Site.

### **7.3.6 Priority Pollutant Metals**

As summarized on Table 3, one or more priority pollutant metal was detected above state-wide default naturally-occurring background concentrations in soil samples collected from 7 of the 8 soil boring locations sampled as part of the 2015 investigation. Of these, only lead (five boring locations) and mercury (one boring location) were detected at concentrations higher than MTCA Method A Cleanup Level for Unrestricted Land Use. These two metals are discussed below in the following sub-sections, as is chromium - which underwent speciated testing (trivalent and hexavalent) as part of the 2015 investigation.

In addition to the elevated lead and mercury mentioned above, elevated arsenic and cadmium concentrations were detected by E & E in a soil sample collected from 26 to 28 feet bgs at their SB-004 boring location. HAI installed a boring (MW-5-34) immediately adjacent to boring SB-004 as part of the 2015 investigation. It is noted that a soil sample collected by HAI across the 26 to 28 foot bgs depth interval from the MW-5-34 boring in 2015 did not detect elevated arsenic or cadmium concentrations, suggesting that heterogeneities in the fill may play a significant role in metals distribution.

#### Lead

With regard to lead (Figure 8), soil concentrations higher than the 250 mg/kg MTCA Method A Cleanup Level for Unrestricted Land Use were detected at soil boring locations SB-014 (821 mg/kg at 1 to 2.5 feet bgs), MW-1-37 (772 mg/kg at 5 to 7 feet bgs), and MW-2-40 (545 mg/kg at 0.2 to 1.2 feet bgs)

during the 2015 investigation. As summarized on Table 3, follow-up testing of these samples for leachability did not find that any of these samples produced leachate at a concentration greater than the Resource Conservation and Recovery Act (RCRA) Toxicity Characteristic (TC) threshold value and as such it does not appear likely that these soils would be designated as hazardous waste for lead leachability if excavated and requiring disposal.

None of the analyzed samples collected during the 2015 investigation detected lead concentrations higher than the 1,000 mg/kg MTCA Method A Cleanup Values for Industrial Properties, although two samples collected as part of the 2008 E & E investigation did exceed these levels (Table 3, Figure 8).

As with PAHs described in Section 7.3.5 above, it appears that areas with total lead concentrations greater than MTCA Method A Cleanup Values are limited to the eastern portion of the Site, and are only sporadically present, either laterally or vertically (Figure 8).

#### Mercury

With regard to mercury (Table 3), soil concentrations higher than the 2 mg/kg MTCA Method A Cleanup Level for Unrestricted Land Use and for Industrial Properties was detected at a single location (3.61 mg/kg from 1 to 2.5 feet bgs at boring SB-014). The sample with the elevated mercury concentration similarly had elevated lead presence as described above. Similar to the findings with lead, follow-up testing of this sample for leachability did not detect concentrations greater than the RCRA TC threshold value for mercury and as such it does not appear likely that these soils would be designated as hazardous waste for mercury leachability if excavated and requiring disposal.

#### Chromium

Total chromium was analyzed in near-surface soils at all 11 boring locations during the 2015 investigation as well as in select deeper soil samples. All detected total chromium concentrations were below the 42 mg/kg state-wide default naturally-occurring background concentration for this metal (Table 3). Total chromium was not detected at any soil sample location at concentrations higher than the 2,000 mg/kg MTCA Method A Cleanup Value for the trivalent species of chromium. With the exception of total chromium

concentrations at soil borings SB-011 (20.1 mg/kg) and SB-015 (21 mg/kg), all other detected total chromium concentrations were below the 19 mg/kg hexavalent chromium MTCA Method A Cleanup Value for Unrestricted Land Use.

In order to fully evaluate potential risks posed by chromium, selected soil samples were analyzed for hexavalent chromium species in order to allow a direct comparison with the corollary MTCA cleanup level. Specifically, hexavalent chromium was analyzed in soil samples collected from soil boring locations SB-012 (1.45 U mg/kg), SB-014 (1.18 U mg/kg), SB-015 (2.02 J mg/kg), MW-2-40 (1.42 J mg/kg), MW-3-35 (1.19 U mg/kg), and MW-5-34 (2.18 J mg/kg) with all detected concentrations well below the 19 mg/kg MTCA Method A Cleanup Values for Unrestricted Land Use for hexavalent chromium (Table 3).

## **7.4 Groundwater Testing Results**

Groundwater samples, collected from uppermost groundwater as encountered at all five newly installed monitoring wells (MW-1 through MW-5) were analyzed for gasoline-, diesel-, and oil-range total petroleum hydrocarbons, Priority Pollutant metals, PAHs and VOCs. Analytical results for these groundwater tests are summarized on Table 5, with select results depicted on Figures 9 through 14. Laboratory reports and chain-of-custody documentation for the 2015 investigation groundwater samples are included as Appendix E. Results are described in the following sections.

### **7.4.1 Diesel- and Oil-Range Total Petroleum Hydrocarbons**

As summarized on Table 5 and Figure 9, diesel-range petroleum hydrocarbons were detected in groundwater at three of the five monitoring well locations during the 2015 investigation as follows: 140 micrograms per liter (µg/L) at MW-2-40; 795 µg/L at MW-3-35; and 120 µg/L at MW-4-34. Of the detections, only the sample collected from the MW-3-35 well location (southeastern portion of the Site) detected a diesel-range petroleum hydrocarbon concentration higher than the 500 µg/L MTCA Method A Cleanup Level for Groundwater. No field screening evidence of potential contamination was observed in soils at the MW-3-35 boring location. Further, the laboratory noted that the chromatographic pattern for the diesel-range hydrocarbons did not resemble the diesel fuel standard used for quantitation.

Oil-range petroleum hydrocarbons were not detected above laboratory MDLs in groundwater samples collected from any of the five monitoring well locations during the 2015 investigation (Figure 9).

#### **7.4.2 Gasoline-Range Total Petroleum Hydrocarbons**

As summarized on Table 5 and Figure 9, gasoline-range petroleum hydrocarbons were detected in groundwater at only one of the five monitoring well locations sampled during the 2015 investigation, with 1,360 µg/L detected in the sample collected from the MW-3-35 location.

The detected gasoline-range petroleum hydrocarbon concentration (1,360 µg/L) exceeds the 1,000 µg/L MTCA Method A Cleanup Level for Groundwater and correlates with the location of the diesel-range exceedance as described above. Similarly to the diesel detection, the laboratory noted that the chromatographic pattern for the gasoline-range hydrocarbons did not resemble the gasoline fuel standard used for quantitation, suggesting a source of contamination other than relatively fresh gasoline or diesel fuel.

#### **7.4.3 Volatile Organic Compounds**

One or more VOC constituents were detected in groundwater samples collected only from the MW-2-40 and the MW-3-35 well locations during the 2015 investigation.

With regard to the MW-2-40 location, trace levels of acetone (21 µg/L) and chloroform (0.88 µg/L) were detected - both of which are common laboratory contaminants. Neither chloroform or acetone were detected at a concentration higher than MTCA Method A Cleanup Values.

With regard to the MW-3-35 well location, naphthalene was detected above at a concentration of 227 µg/L, higher than the 160 µg/L MTCA Method A Cleanup Value (Table 5 and Figure 10) and also higher than the 8.93 µg/L MTCA Method B Screening Level for Vapor Intrusion into indoor air. The elevated naphthalene detection correlates with the location of the elevated gasoline- and diesel-range petroleum hydrocarbon detections as described in Sections 7.41 and 7.42 above.

No other VOCs were detected above laboratory MDLs at any of the five well locations.



#### **7.4.4 Polynuclear Aromatic Hydrocarbons**

Low levels of one or more PAH compound were detected in groundwater samples collected from all five monitoring wells during the 2015 investigation (Table 5). The highest PAH concentrations were detected at the MW-3-35 location, as would be anticipated based on the total petroleum hydrocarbon and naphthalene results as described above. Regardless, and as summarized on Table 5 and depicted on Figure 11, total TEF PAH results did not exceed MTCA Method A Cleanup Values for Groundwater in sample collected from MW-3-35 or any of the other monitoring well locations.

#### **7.4.5 Priority Pollutant Metals**

Of the list of priority pollutant metals, only arsenic (3 locations), lead (1 location), and chromium (1 location) were detected at concentrations higher than MTCA Method A Cleanup Levels, as summarized on Table 5 and described below.

As depicted on Figure 12, total arsenic was detected above the 5 µg/L MTCA Method A Cleanup Value at well locations MW-2-40 (14 µg/L), MW-4-34 (5.38 µg/L), and MW-5-34 (5.5 µg/L). Dissolved arsenic testing at these well locations did not detect arsenic concentrations higher than the MTCA Method A Cleanup Value, suggesting that the elevated total arsenic concentrations may be attributable to suspended solids incorporated into the sample container as a function of sampling-induced turbidity resulting from the low yield and limited water column at these locations at the time of sample collection.

Total lead was detected at a concentration of 34.4 µg/L at the MW-2-40 well location, above the 15 µg/L MTCA Method A Cleanup Value (Table 5, Figure 12). Total lead was not detected at any other location at a concentration higher than the referenced MTCA level. Dissolved lead testing at the MW-2-40 well location did not detect a concentration above the laboratory MDL suggesting that the elevated total concentration may be attributable to suspended solids incorporated into the sample container as a function of sampling-induced turbidity as described above.

Total chromium was detected at a concentration of 319 µg/L at the MW-2-40 well location during the 2015 investigation (Table 5, Figure 13). The detected total chromium concentration at the MW-2-40 well location was the only of the five well locations where the 50 µg/L MTCA Method A Cleanup

Values for total chromium was exceeded (Figure 13). Dissolved chromium testing at the MW-2-40 well location did not detect chromium above laboratory MDLs, suggesting that the elevated detection was a function of sampling induced turbidity at this low yield location.

Hexavalent chromium was detected at a concentration of 7 µg/L in the unfiltered groundwater sample collected from the MW-2-40 well location. There is no MTCA Method A Cleanup Value established for hexavalent chromium in groundwater, but the detected concentration was well below the 48 µg/L MTCA Method B Cleanup Value for Groundwater (Unrestricted Land Use). As described above, chromium (of any speciation) was not detected in the dissolved groundwater sample collected from the MW-2-40 well location. Further, hexavalent chromium was not detected in groundwater samples collected from any other well location.

## **7.5 Discussion of Findings**

As documented during the 2015 investigation and described herein, the presence of petroleum and metals-related impacts to soil appears limited to the eastern portion of the Site. With exception of near surface soils located near the northeastern corner of the Site (SB-012), contaminants appear sporadically present within fill and, with several exceptions, concentrations are generally less than MTCA Method A Cleanup Levels for both Unrestricted Use and Industrial Properties.

Expanded testing of site soils for chromium during the 2015 investigation, including total and hexavalent species, did not identify the presence of this metal at concentrations higher than naturally-occurring background or MTCA Method A Cleanup Levels for Unrestricted Land Use.

Concentrations of contaminants (gasoline-, diesel-, oil-range TPH, naphthalene, and carcinogenic PAH TEF values) as detected in soil near the northeastern corner of the property (SB-012) exceed MTCA Method A Cleanup Levels for Industrial Properties. This zone of contamination is visually discernable from soils at adjacent locations based on significant field screening evidence of contamination (rainbow sheen, discoloration, petroleum odor to a depth of approximately 8 feet bgs) and significant incorporation of asphaltic fragments in this area.

Soils with PAH TEF or total lead values exceeding MTCA Method A Cleanup Values for Unrestricted Use extend sporadically west and south of the SB-012 location in the northeastern portion of the Site, as well as in soils at two

boring locations (SB-006 and SB014) near the southeastern portion of the Site.

Contaminated soils at the preceding areas of the Site are presently capped with asphalt paving, preventing dermal contact and therefore do not present a current human health risk. The shallow nature of the impacts precludes contact with groundwater, which was not encountered at depths shallower than 20 feet bgs at any location. The on-site extent of contamination, although broadly delineated by nearby borings, is not sufficiently defined for developing a reliable estimate of the volume of contaminated soils present at concentrations higher than MTCA Method A Cleanup Levels.

With regard to groundwater quality, concentrations of petroleum-related contaminants at concentrations greater than MTCA Method A Cleanup Values (TPH and naphthalene) were limited to a single well (MW-3-35), located near the southeastern (hydraulically up-gradient) portion of the Site. Additionally, the naphthalene concentration detected in groundwater at the MW-3-35 location was higher than the MTCA Method B Screening Level for Vapor Intrusion into indoor air. No other VOCs detected in groundwater exceed the MTCA Method B Screening Level for Vapor Intrusion into indoor air. The source for the groundwater contamination at this hydraulically up-gradient portion of the Site is not known, but it appears limited in overall magnitude and extent.

Total arsenic, chromium, and lead were detected above the MTCA Method A Cleanup Value for Groundwater at the MW-2-40 well location, while total arsenic was detected at concentrations slightly above the MTCA Method A Cleanup Level at the MW-4-34 and MW-5-34 well locations. Dissolved concentrations for all metals at all locations were below MTCA Method A Cleanup Value for Groundwater. The preceding suggests that the MTCA exceedances for total metals concentrations may be a function of suspended solids in these samples.

#### Recommendations

Based on the preceding, the following recommendations are presented:

a) Additional Groundwater Monitoring Event (High Water Table)

It is recommended that a second groundwater monitoring event at the existing site-wide well network be completed. The additional groundwater monitoring should occur during a period of high water table so that temporal fluctuations in groundwater flow direction or chemical analyte concentrations may be evaluated. For data

comparison purposes, it is recommended that sampling methodologies and analytical testing conducted during high water table conditions be identical to that as completed during the June 2015 sampling event. Naphthalene concentration trends in groundwater at the MW-3-35 location, in conjunction with future uses of the adjacent building (eastern end of the former Red Lion Hotel), should be considered in determining the possible future need for a Vapor Intrusion Assessment in this area.

b) Contaminated Media Management Evaluation

Because concentrations of contaminants as detected in shallow soil near the northeastern and southeastern portions of Site exceed MTCA Method A Cleanup Levels for Unrestricted or Industrial Use, these soils should either remain capped to prevent future exposure, or they should be excavated and transported off-site for proper disposal (either prior to, or as a component of, future Site development).

c) Northeastern Area Soil Assessment

In order to assist the port with future construction and soil management options, the port may want to consider installation of additional borings at the northeastern portion of the subject property. These additional borings would be installed at the northeastern portion of the subject property proximate to borings SB-005, SB-009, SB010, SB-011, SB-012, MW-1-37, and MW-2-40 as necessary to provide better estimation of the volume and extent of soils with contaminant concentrations above MTCA Method A Cleanup Levels for Unrestricted and Industrial Properties. Analyses should include gasoline-, diesel-, oil-range petroleum hydrocarbons, PAHs, and lead in soils near the SB-12 location, while analytes can be limited to PAHs and lead at locations further away from boring SB-012. Target depths will vary based on location, but in no case is it considered necessary for collection of additional data at depths greater than 15 feet bgs.

d) Southeastern Area Soil Assessment

In order to assist the port with future construction and soil management options, the port may want to consider installation of additional borings at the southeastern portion of the subject property. These additional borings would be proximate to borings SB-006 and SB-014 to provide better estimation of the volume and extent of soils with lead and PAH concentrations above MTCA Method A Cleanup

Levels for Unrestricted and Industrial Properties. Analyses should include PAHs and lead in soils at both locations, with the inclusion of mercury in select soil samples proximate to the SB014 location. Data collection in both areas, based on current delineation, can be limited to the upper 10 feet bgs.

## 8.0 REFERENCES

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E & E (2009). *Terminal 1 Phase II Environmental Assessment Report, Port of Vancouver, USA, Vancouver, Washington*, Ecology and Environment, Inc. March 2009.

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## 9.0 LIMITATIONS AND SIGNATURES

The information presented in this report was collected, analyzed, and interpreted following the standards of care, skill, and diligence ordinarily provided by a professional in the performance of similar services as of the time the services were performed. This report and the conclusions and/or recommendations contained in it are based solely upon research and/or observations, and physical sampling and analytical activities that were conducted.

The information presented in this report is based only upon activities witnessed by HAI or its contractors, and/or upon information provided to HAI by the Client and/or its contractors. The analytical data presented in this report document only the concentrations of the target analytes in the particular sample, and not the property as a whole.

Unless otherwise specified in writing, this report has been prepared solely for the use by the Client and for use only in connection with the evaluation of the subject property. Any other use by the Client or any use by any other person shall be at the user's sole risk, and HAI shall have neither liability nor responsibility with respect to such use.

Hahn and Associates, Inc.

Prepared by:

Benjamin A. Uhl

Ben Uhl, L.G.  
Field Manager

Reviewed by:

Rob Ede

Rob Ede, L.G.  
Principal



Date JANUARY 21, 2016

BENJAMIN A UHL

Exp. 1-28-2017



## 10.0 GLOSSARY OF ABBREVIATIONS

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bgs	below ground surface
DO	dissolved oxygen
E & E	Ecology and Environment, Inc.
eV	electron Volt
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
HAI	Hahn and Associates, Inc.
ID	inside diameter
IDW	investigative derived waste
mg/kg	milligrams per kilogram
MDLs	Method Detection Limits
MTCA	Model Toxics Control Act
NGVD	National Geodetic Vertical Datum
NW	Northwest Method
OD	outer diameter
ORP	oxidation reduction potential
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PID	photoionization detector
port	Port of Vancouver, USA
PVC	polyvinyl chloride
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
TCLP	Toxicity Characteristic Leaching Procedure
TEF	Toxicity Equivalence Factor
TPH	total petroleum hydrocarbons
µg/L	micrograms per liter
VOCs	volatile organic compounds



## TABLES

Table 1 - Summary of Soil Testing Results: Total Petroleum Hydrocarbons and Polychlorinated Biphenyls (PCBs)

					Total Petroleum Hydrocarbons			Polychlorinated Biphenyls								
					NWTPH-Dx		NWTPH-Gx	EPA Method 8082A								
					Diesel-Range Organics	Oil-Range Organics	Gasoline Range Organics	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Sum of total)	
Screening Levels					WA Method A Cleanup for Industrial Properties => <sup>1</sup>	2,000	2,000	100								10
					WA Method A Cleanup for Unrestricted Land Use => <sup>1</sup>	2,000	2,000	100								1
					WA Method B Soil Cancer => <sup>2</sup>				14.3					0.5	0.5	0.5
					WA Method B Soil Non Cancer => <sup>2</sup>				5.6					1.6		
Boring Location	Sample Number	Sample Depth (feet bgs)	Grab Sample Depth (feet bgs) <sup>3</sup>	Sample Date	Analytical Results (mg/kg)											
Ecology and Environment, Inc. - Soil Samples (November 2008)																
SB001	SB001 (6-8)	6.0 - 8.0	-	25-Nov-08	UJ	UJ	U									
	SB001 (16-18)	16 - 18	-	25-Nov-08	UJ	UJ	U									
SB002	SB002 (6-8)	6.0 - 8.0	-	25-Nov-08	UJ	UJ	U									
	SB002 (13-15)	13 - 15	-	25-Nov-08	UJ	UJ	U									
SB003	SB003 (8-10)	8.0 - 10	-	25-Nov-08	UJ	UJ	U									
	SB003 (24-26)	24 - 26	-	25-Nov-08	UJ	UJ	U	U	U	U	U	U	U	U	U	U
SB004	SB004 (8-10)	8.0 - 10	-	26-Nov-08	UJ	UJ	U									
	SB004 (26-28)	26 - 28	-	26-Nov-08	UJ	UJ	U									
SB005	SB005 (10-12)	10 - 12	-	26-Nov-08	UJ	UJ	U									
	SB005 (22-24)	22 - 24	-	26-Nov-08	UJ	UJ	U									
SB006	SB006 (6-8)	6.0 - 8.0	-	26-Nov-08	82.1 J	279 J	U									
	SB006 (26-28)	26 - 28	-	26-Nov-08	UJ	UJ	U									
SB007	SB007 (4-8)	4.0 - 8.0	-	26-Nov-08	UJ	UJ	U									
	SB007 (21-23)	21 - 23	-	26-Nov-08	UJ	UJ	U	U	U	U	U	U	U	U	U	U
SB008	SB008 (12-14)	12 - 14	-	26-Nov-08	61.8 J	366 J	U									
	SB008 (24-26)	24 - 26	-	26-Nov-08	14.6 J	90.8 J	U	U	U	U	U	U	U	U	U	U
SB009	SB009 (8-10)	8.0 - 10	-	26-Nov-08	92.9 J	618 J	U									
	SB009 (16-18)	16 - 18	-	26-Nov-08	UJ	UJ	U									
SB010	SB010 (6-8)	6.0 - 8.0	-	26-Nov-08	171 J	655 J	U									
	SB010 (13-15)	13 - 15	-	26-Nov-08	UJ	UJ	U									

Notes:

bgs = below ground surface  
**bold** = detected concentration  
**Color** = concentrations exceeding one or more cleanup levels  
EPA = Environmental Protection Agency  
J = Estimated Result  
mg/kg = milligrams per kilogram  
MTCA = Model Toxics Control Act  
PCBs = polychlorinated biphenyls  
R-02 = The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample  
U = Not detected above posted concentration  
Soil and Groundwater Investigation  
POV - Terminal 1 Property  
Vancouver, Washington

1 = MTCA Cleanup Regulation, Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007  
2 = MTCA Cleanup Regulation, Method B Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007  
3 = Discrete-depth soil sample collected for VOCs and Gx by EPA Method 5035 (methanol preservation)  
  
F-11 = The hydrocarbon pattern indicates possible weathered diesel, or a contribution from a related component  
F-13 = The chromatographic pattern does not resemble the fuel standard used for quantitation

Table 1 - Summary of Soil Testing Results: Total Petroleum Hydrocarbons and Polychlorinated Biphenyls (PCBs)

					Total Petroleum Hydrocarbons			Polychlorinated Biphenyls								
					NWTPH-Dx		NWTPH-Gx	EPA Method 8082A								
					Diesel-Range Organics	Oil-Range Organics	Gasoline Range Organics	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Sum of total)	
Screening Levels					WA Method A Cleanup for Industrial Properties => <sup>1</sup>	2,000	2,000	100								10
					WA Method A Cleanup for Unrestricted Land Use => <sup>1</sup>	2,000	2,000	100								1
					WA Method B Soil Cancer => <sup>2</sup>				14.3					0.5	0.5	0.5
					WA Method B Soil Non Cancer => <sup>2</sup>				5.6					1.6		
Boring Location	Sample Number	Sample Depth (feet bgs)	Grab Sample Depth (feet bgs) <sup>3</sup>	Sample Date	Analytical Results (mg/kg)											
Hahn and Associates, Inc. - Soil Samples (May and June 2015)																
SB-006A	8832-150527-007	0.5 - 2.5	1.5	27-May-15	18.9 J	39 J	3.58 U									
	8832-150527-009	10 - 11.5	10.5	27-May-15	10.4 J	19.4 J	-									
SB-011	8832-150608-054	1.5 - 3.5	2.0	8-Jun-15	8.96 U	17.9 U	2.85 U									
	8832-150608-055	7.7 - 9.7	8.5	8-Jun-15	10.5 U	20.9 U	-									
SB-012	8832-150609-067	1.5 - 3.5	-	9-Jun-15	4,080 J	4,190 J	3,020 F-13	0.00512 U	0.00512 U	0.00512 U	0.00512 U	0.00512 U	0.00512 U	0.0113 R-02 U	0.0113 U	
	8832-150609-068	8.0 - 10	-	9-Jun-15	10.2 U	20.3 U	6.84 U									
	8832-150609-069	11 - 13	-	9-Jun-15	11.4 U	22.7 U	-									
	8832-150609-070	17.5 - 19.5	-	9-Jun-15	11.8 U	27.7 J	-									
SB-013	8832-150527-014	1.0 - 2.5	1.5	27-May-15	10.5 U	213	3.53 U									
	8832-150527-015	5.5 - 7.5	6.5	27-May-15	176 U	1,060	3.29 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	
	8832-150527-016	11 - 13	12.0	27-May-15	8.59 U	17.2 U	3.08 U									
	8832-150527-018	21 - 23	-	27-May-15	97.4	22.2 J	4.37 U									
SB-014	8832-150527-001	1.0 - 2.5	2.0	27-May-15	42.7 U	475	2.97 U	0.00567 U	0.00567 U	0.00567 U	0.00567 U	0.00567 U	0.00567 U	0.0149	0.0149	
	8832-150527-002	5.0 - 7.0	6.0	27-May-15	8.5 U	17 U	3.34 U									
	8832-150527-003	11.5 - 13.5	12.5	27-May-15	9.01 U	18 U	-									
MW-1-37	8832-150528-026	0.5 - 1.5	0.5	28-May-15	106 U	1,160	4.02 U	0.00568 U	0.00568 U	0.00568 U	0.00568 U	0.00568 U	0.00568 U	0.00568 U	0.00568 U	
	8832-150528-027	5.0 - 7.0	5.0	28-May-15	53.3 U	634	4.05 U									
	8832-150528-028	12 - 14	12.5	28-May-15	10.6 U	23.5 J	-									

Notes:

bgs = below ground surface  
**bold** = detected concentration  
**Color** = concentrations exceeding one or more cleanup levels  
EPA = Environmental Protection Agency  
J = Estimated Result  
mg/kg = milligrams per kilogram  
MTCA = Model Toxics Control Act  
PCBs = polychlorinated biphenyls  
R-02 = The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample  
U = Not detected above posted concentration

1 = MTCA Cleanup Regulation, Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007  
2 = MTCA Cleanup Regulation, Method B Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007  
3 = Discrete-depth soil sample collected for VOCs and Gx by EPA Method 5035 (methanol preservation)  
  
F-11 = The hydrocarbon pattern indicates possible weathered diesel, or a contribution from a related component  
F-13 = The chromatographic pattern does not resemble the fuel standard used for quantitation

Table 1 - Summary of Soil Testing Results: Total Petroleum Hydrocarbons and Polychlorinated Biphenyls (PCBs)

					Total Petroleum Hydrocarbons			Polychlorinated Biphenyls								
					NWTPH-Dx		NWTPH-Gx	EPA Method 8082A								
					Diesel-Range Organics	Oil-Range Organics	Gasoline Range Organics	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Sum of total)	
Screening Levels					WA Method A Cleanup for Industrial Properties => <sup>1</sup>	2,000	2,000	100								10
					WA Method A Cleanup for Unrestricted Land Use => <sup>1</sup>	2,000	2,000	100								1
					WA Method B Soil Cancer => <sup>2</sup>				14.3					0.5	0.5	0.5
					WA Method B Soil Non Cancer => <sup>2</sup>				5.6					1.6		
Boring Location	Sample Number	Sample Depth (feet bgs)	Grab Sample Depth (feet bgs) <sup>3</sup>	Sample Date	Analytical Results (mg/kg)											
Hahn and Associates, Inc. - Soil Samples (May and June 2015) (continued)																
MW-2-40	8832-150605-046	0.2 - 1.2	0.5	5-Jun-15	16.9 J	36.3 J	3.01 U									
	8832-150605-047	6.3 - 8.3	6.5	5-Jun-15	11.8 U	23.6 U	-									
	8832-150605-048	11.2 - 13.2	12	5-Jun-15	12.5 J	23.6 J	-									
MW-3-35	8832-150605-040	2.0 - 4.0	2.0	5-Jun-15	9.62 U	19.2 U	3.32 U									
	8832-150605-041	6.0 - 8.0	6.5	5-Jun-15	9.56 U	19.1 U	-									
	8832-150605-042	11 - 13	11.5	5-Jun-15	9.66 U	19.3 U	-									
MW-4-34	8832-150609-060	1.5 - 3.5	2.0	9-Jun-15	8.45 U	105	2.43 UJ									
	8832-150609-061	6.0 - 8.0	-	9-Jun-15	9.86 U	19.7 U	3.33 U									
	8832-150609-062	10 - 12	-	9-Jun-15	7.87 U	15.7 U	-									
	8832-150609-065	26 - 28	-	9-Jun-15	289 J, F-11	200 J	3.86 U									
	8832-150609-066	32.5 - 34.5	-	9-Jun-15	11.5 U	108 F-13	-									
MW-5-34	8832-150528-020	4.0 - 5.0	4.0	28-May-15	8.84 U	43 J	6.61 U									
	8832-150528-021	6.0 - 8.0	6.5	28-May-15	9.88 U	19.8 U	3.34 U									

Notes:

bgs = below ground surface  
**bold** = detected concentration  
**Color** = concentrations exceeding one or more cleanup levels  
EPA = Environmental Protection Agency  
J = Estimated Result  
mg/kg = milligrams per kilogram  
MTCA = Model Toxics Control Act  
PCBs = polychlorinated biphenyls  
R-02 = The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample  
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1 = MTCA Cleanup Regulation, Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007  
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3 = Discrete-depth soil sample collected for VOCs and Gx by EPA Method 5035 (methanol preservation)  
  
F-11 = The hydrocarbon pattern indicates possible weathered diesel, or a contribution from a related component  
F-13 = The chromatographic pattern does not resemble the fuel standard used for quantitation

Table 2 - Summary of Soil Testing Results: Polynuclear Aromatic Hydrocarbons

Port of Vancouver, USA  
Terminal 1 Property  
Vancouver, WA

					Polyaromatic Hydrocarbons by EPA Method 8270D SIM																				
					1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Total Carcinogenic PAH TEF Value <sup>3</sup>	
Screening Levels					WA Method A Cleanup for Industrial Properties => <sup>1</sup>																				2
					WA Method A Cleanup for Unrestricted Land Use => <sup>1</sup>																				0.1
					WA Method B Soil Cancer => <sup>2</sup>																				13.7
					WA Method B Soil Non Cancer => <sup>2</sup>																				13.7
					34.5					1.37	0.137	1.37		13.7	137	0.137				1.37	5			0.1	
					5,600	320	4,800		24,000								80	3,200	3,200		1,600		2,400		
Boring Location	Sample Number	Sample Depth (feet bgs)	Grab Sample Depth (feet bgs)	Sample Date	Analytical Results (mg/kg)																				
Ecology and Environment, Inc. - Soil Samples (November 2008)																									
SB001	SB001 (6-8)	6.0 - 8.0	-	25-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
	SB001 (16-18)	16 - 18	-	25-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
SB002	SB002 (6-8)	6.0 - 8.0	-	25-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
	SB002 (13-15)	13 - 15	-	25-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
SB003	SB003 (8-10)	8.0 - 10	-	25-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
	SB003 (24-26)	24 - 26	-	25-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
SB004	SB004 (8-10)	8.0 - 10	-	26-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
	SB004 (26-28)	26 - 28	-	26-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	0.0373	U	U	0.029	0.0603	0.0343	U	
SB005	SB005 (10-12)	10 - 12	-	26-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
	SB005 (22-24)	22 - 24	-	26-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
SB006	SB006 (6-8)	6.0 - 8.0	-	26-Nov-08	-	-	ND	0.0633	0.0404	0.0723	0.103	0.0842	0.166	0.087	0.0939	0.0207	-	0.15	U	0.0825	U	0.101	0.159	0.13	
	SB006 (26-28)	26 - 28	-	26-Nov-08	-	-	1.92	U	0.042	0.032	U	U	U	U	0.0384	U	-	0.172	0.239	U	0.0228	1.1	0.119	0.003	
SB007	SB007 (4-8)	4.0 - 8.0	-	26-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
	SB007 (21-23)	21 - 23	-	26-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
SB008	SB008 (12-14)	12 - 14	-	26-Nov-08	-	-	U	0.0164	U	0.057	0.0721	0.0621	0.0687	0.0558	0.0747	U	-	0.123	U	0.049	U	0.0583	0.125	0.09	
	SB008 (24-26)	24 - 26	-	26-Nov-08	-	-	U	U	U	0.0279	0.0285	0.0298	0.0253	0.0312	0.0393	U	-	0.0594	U	0.0203	U	0.0209	0.0686	0.03	
SB009	SB009 (8-10)	8.0 - 10	-	26-Nov-08	-	-	UJ	UJ	UJ	0.186	0.267	0.233	0.248	0.229	0.279	0.0634	-	0.362	UJ	0.196	UJ	0.128	0.416	0.36	
	SB009 (16-18)	16 - 18	-	26-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
SB010	SB010 (6-8)	6.0 - 8.0	-	26-Nov-08	-	-	UJ	UJ	UJ	0.0722	0.0824	0.0785	0.0654	0.0742	0.0963	UJ	-	0.13	UJ	0.0498	0.0456	0.113	0.124	0.11	
	SB010 (13-15)	13 - 15	-	26-Nov-08	-	-	U	U	U	U	U	U	U	U	U	U	-	U	U	U	U	U	U	U	
Hahn and Associates, Inc. - Soil Samples (May and June 2015)																									
SB-006A	8832-150527-007	0.5 - 2.5	1.5	27-May-15	0.00527 U	0.00563 J	0.00527 U	0.00527 U	0.00527 U	0.0398	0.0717	0.0937 J	0.0865	0.0313 J	0.0504	0.0117	0.00527 U	0.0376	0.00527 U	0.0838	0.00527 U	0.0194	0.0453	0.09	
	8832-150527-009	10 - 11.5	10.5	27-May-15	0.00498 U	0.00498 U	0.00498 U	0.00498 U	0.00498 U	0.0244	0.0387	0.0489 J	0.0313	0.0192 J	0.0344	0.00639 J	0.00498 U	0.0402	0.00498 U	0.0335	0.00724 J	0.0222	0.0357	0.05	
SB-011	8832-150608-054	1.5 - 3.5	2.0	8-Jun-15	0.00518 U	0.00518 U	0.00518 U	0.0699	0.0265	0.218	0.34	0.363 J	0.208	0.127 J	0.278	0.0472	0.00518 U	0.348	0.0104 U	0.22	0.0076 J	0.104	0.443	0.44	
	8832-150608-055	7.7 - 9.7	8.5	8-Jun-15	0.00549 U	0.00549 U	0.00549 U	0.00549 U	0.00549 U	0.00695 J	0.00549 U	0.00606 J	0.00549 U	0.00549 U	0.00551 J	0.00549 U	0.00549 U	0.00783 J	0.00549 U	0.00549 U	0.00549 U	0.00549 U	0.00974 J	0.007	
SB-012	8832-150609-067	1.5 - 3.5	-	9-Jun-15	23	23.7	3.33	0.827 UJ	4.58	2.7	2.6	2.44	2.06	0.795 M-02	4.46	0.339	1.04	7.13	6.23	1.61	48.4	21.2	9.3	3.43	
	8832-150609-068	8.0 - 10	-	9-Jun-15	0.0843	0.00625 J	0.0119	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.0052 U	0.00737 J	0.0052 U	0.0316	0.00624 J	0.0052 U	0.007	
SB-013	8832-150527-014	1.0 - 2.5	1.5	27-May-15	0.0785	0.0913	0.031 J	0.0277 U	0.0478 J	0.0927	0.0778	0.0458 J	0.0546 J	0.0277 U	0.154	0.0277 U	0.0277 U	0.047 J	0.0419 J	0.0297 J	0.0277 U	0.182	0.21	0.09	
	8832-150527-015	5.5 - 7.5	6.5	27-May-15	0.0267 U	0.0267 U	0.0267 U	0.0267 U	0.0267 U	0.0352 J	0.0314 J	0.0307 J	0.0345 J	0.0267 U	0.0555 J	0.0267 U	0.0267 U	0.0267 U	0.0267 U	0.0267 U	0.0267 U	0.0267 U	0.0329 J	0.04	
SB-014	8832-150527-001	1.0 - 2.5	2.0	27-May-15	0.0269 U	0.0269 U	0.0269 U	0.0269 U	0.0269 U	0.0579	0.0768	0.0928 J	0.159	0.0325 J	0.0578	0.0295 J	0.0269 U	0.0621	0.0269 U	0.0912	0.0269 U	0.0347 J	0.0627	0.11	
	8832-150527-003	11.5 - 13.5	12.5	27-May-15	0.00482 U	0.00482 U	0.00482 U	0.00482 U	0.00482 U	0.00482 U	0.00482 U	0.00482 U	0.00482 U	0.00482 U	0.00482 U	0.00482 U	0.00482 U	0.0108	0.00482 U	0.00482 U	0.00482 U	0.0162	0.00482 U	0.006	
MW-1-37	8832-150528-026	0.5 - 1.5	0.5	28-May-15	0.0281 U	0.0281 U	0.0281 U	0.0281 U	0.0281 U	0.0328 J	0.0346 J	0.0385 J	0.0608	0.0281 U	0.0297 J	0.0281 U	0.0281 U	0.0281 U	0.0281 U	0.0309 J	0.0281 U	0.0281 U	0.031 J	0.04	
	8832-150528-027	5.0 - 7.0	5.0	28-May-15	0.0306 U	0.0306 U	0.0306 U	0.0306 U	0.0306 U	0.0838	0.134	0.235 J	0.167	0.0853 J	0.154	0.0359 J	0.0306 U	0.181	0.0306 U	0.168	0.0306 U	0.0693	0.193	0.19	
	8832-150528-028 <sup>4</sup>	12 - 14	12.5	28-May-15	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.00564 UJ	0.004	
MW-2-40	8832-150605-046	0.2 - 1.2	0.5	5-Jun-15	3.3	6.77	0.0729 UJ	0.0626 UJ	0.0717 UJ	0.0759 J	0.0279	0.0434 J	0.0694	0.0127 J	0.07 J	0.00569 U	0.0478 UJ	0.16	0.212	0.0156	4.11	0.435	0.297	0.04	
MW-3-35	8832-150605-040	2.0 - 4.0	2.0	5-Jun-15	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.00528 U	0.007	
	8832-150605-045 <sup>4</sup>	25.8 - 27.8	-	5-Jun-15	0.00502 UJ	0.00502 UJ	0.00502 UJ	0.00502 UJ	0.00502 UJ	0.00502 UJ	0.00502 UJ	0.00502 UJ	0.00502 UJ	0.00502 UJ											

Notes:  
bgs = below ground surface  
bold = detected concentration  
Color

Table 3 - Summary of Soil Testing Results: Metals

Port of Vancouver, USA  
Terminal 1 Property  
Vancouver, WA

					Total Metals															
					EPA Method 6020															
					Antimony	Arsenic	Beryllium	Cadmium	Chromium (III+VI)	Chromium (hexavalent) <sup>4</sup>	Chromium (Trivalent) <sup>5</sup>	Copper	Lead	TCLP Lead (mg/L) <sup>6</sup>	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
Screening Levels					5	7	2	1	42			36	17		0.07	38	0.78	0.61		86
						20		2		19	2,000		1,000		2					
						20		2		19	2,000		250		2					
						0.667														
WA Background <sup>1</sup> =>					32	24	160	80		240	120,000	3,200			1,600	400	400	0.8	24,000	
WA Method A Cleanup for Industrial Properties => <sup>2</sup>																				
WA Method A Cleanup for Unrestricted Land Use => <sup>2</sup>																				
WA Method B Soil Cancer => <sup>3</sup>																				
WA Method B Soil Non Cancer => <sup>3</sup>																				
Boring Location	Sample Number	Sample Depth (feet bgs)	Grab Sample Depth (feet bgs)	Sample Date	Analytical Results (mg/kg)															
Ecology and Environment, Inc. - Soil Samples (November 2008)																				
SB001	SB001 (6-8)	6.0 - 8.0	-	25-Nov-08	UJ	1.65 J	U	U	8.1 J	-	-	8.34 J	3.07	-	U	8.22	U	U	U	34.3
	SB001 (16-18)	16 - 18	-	25-Nov-08	UJ	2.01 J	U	U	8.31 J	-	-	8.82 J	22.2	-	U	8.26	U	U	U	59.4
SB002	SB002 (6-8)	6.0 - 8.0	-	25-Nov-08	UJ	1.97 J	U	U	8.08 J	-	-	9.37 J	3.09	-	U	7.44	U	U	U	38.3
	SB002 (13-15)	13 - 15	-	25-Nov-08	UJ	2.72 J	U	U	9.59 J	-	-	14.4 J	12.7	-	U	11	U	U	U	71.3
SB003	SB003 (8-10)	8.0 - 10	-	25-Nov-08	UJ	7.75 J	U	U	26.5 J	-	-	42.7 J	15	-	0.109	24	U	U	U	78
	SB003 (24-26)	24 - 26	-	25-Nov-08	UJ	2.02 J	U	U	33.4 J	-	-	25.8 J	6.11	-	U	23.8	U	U	U	53.1
SB004	SB004 (8-10)	8.0 - 10	-	26-Nov-08	UJ	1.41 J	U	U	11.1 J	-	-	9.22 J	2.23	-	U	10.2	U	U	92.5	37.1
	SB004 (26-28)	26 - 28	-	26-Nov-08	UJ	25.6 J	U	2.43	21.9 J	-	-	40.1 J	69.6	-	U	19.3	U	U	71.5	328
SB005	SB005 (10-12)	10 - 12	-	26-Nov-08	UJ	5.19 J	0.761	0.774	27.6 J	-	-	31.4 J	10.1	-	U	24.7	U	U	U	124
	SB005 (22-24)	22 - 24	-	26-Nov-08	UJ	7.77 J	0.96	U	36 J	-	-	33 J	11	-	U	27.5	U	U	U	88.2
SB006	SB006 (6-8)	6.0 - 8.0	-	26-Nov-08	5.29 UJ	14.3 J	U	1.46	23.9 J	-	-	143 J	1,100	-	0.316	21.2	U	U	U	1,140
	SB006 (26-28)	26 - 28	-	26-Nov-08	UJ	18 J	U	0.748	21.9 J	-	-	39.3 J	38.4	-	U	20.2	U	U	U	191
SB007	SB007 (4-8)	4.0 - 8.0	-	26-Nov-08	UJ	1.71 J	U	U	8.27 J	-	-	8.42 J	4.54	-	U	7.65	U	U	U	39
	SB007 (21-23)	21 - 23	-	26-Nov-08	UJ	10.2 J	U	2.12	21.1 J	-	-	36.9 J	47.1	-	U	19.1	U	U	U	328
SB008	SB008 (12-14)	12 - 14	-	26-Nov-08	UJ	2.52 J	U	U	13.5 J	-	-	26.6 J	90.7	-	U	12.4	U	U	U	146
	SB008 (24-26)	24 - 26	-	26-Nov-08	UJ	1.75 J	U	U	8.78 J	-	-	10.7 J	23.5	-	0.0885	8.49	U	U	U	53.5
SB009	SB009 (8-10)	8.0 - 10	-	26-Nov-08	UJ	4.26 J	U	U	14.2 J	-	-	46.5 J	114	-	U	13.5	U	U	U	135
	SB009 (16-18)	16 - 18	-	26-Nov-08	UJ	5.79 J	0.83	U	28.6 J	-	-	32.3 J	11.7	-	U	24.8	1.12	U	U	74.5
SB010	SB010 (6-8)	6.0 - 8.0	-	26-Nov-08	2.94 J	9.32 J	U	U	19.6 J	-	-	111 J	181	-	U	17.3	0.811	U	U	95.7
	SB010 (13-15)	13 - 15	-	26-Nov-08	UJ	15.7 J	U	U	46.4 J	-	-	53.9 J	1,180	-	0.226	24.6	U	U	U	412
Hahn and Associates, Inc. - Soil Samples (May and June 2015)																				
SB-006A	8832-150527-007	0.5 - 2.5	1.5	27-May-15	4.82	2.37	0.84	0.535	11.1	-	-	30	121	-	0.092 J	18.6	0.608 U	0.122 U	0.134 J	80
	8832-150527-008	5.0 - 7.0	5.5	27-May-15	0.595 U	2.25	0.904	0.559	10.2	-	-	21.7	15	-	0.0476 U	12.8	0.595 U	0.119 U	0.155 J	59.5
	8832-150527-009	10 - 11.5	10.5	27-May-15	-	-	-	-	-	-	-	-	37.2	-	-	-	-	-	-	-
	8832-150527-010	16 - 18	-	27-May-15	-	-	-	-	-	-	-	-	2.73	-	-	-	-	-	-	-
	8832-150527-011	21 - 23	-	27-May-15	-	-	-	-	-	-	-	-	41.5	-	-	-	-	-	-	-
	8832-150527-012	26 - 28	-	27-May-15	-	-	-	-	-	-	-	-	24.7	-	-	-	-	-	-	-
	8832-150527-013	31 - 33	-	27-May-15	-	-	-	-	-	-	-	-	15.6	-	-	-	-	-	-	-
SB-011	8832-150608-054	1.5 - 3.5	2.0	8-Jun-15	0.531 U	1.02 J	0.106 U	0.191 J	3.06	-	-	5.15	2.56	-	0.0425 U	4.73	0.531 U	0.106 U	0.106 U	27.1
	8832-150608-055	7.7 - 9.7	8.5	8-Jun-15	-	-	-	-	-	-	-	-	5.67	-	-	-	-	-	-	-
	8832-150608-056	12.4 - 14.4	13	8-Jun-15	0.686 U	4.28	2.21	0.467	20.1	-	-	25.5	8.08	-	0.0571 J	20	1.02 J	0.137 U	0.151 J	55
	8832-150608-057	18 - 20	-	8-Jun-15	-	-	-	-	-	-	-	-	9.16	-	-	-	-	-	-	-

Notes:  
bgs = below ground surface  
**bold** = detected at a concentration higher than default Washington State background levels  
**Color** = denotes concentrations exceeding background and Method A MTCA Cleanup Value for Unrestricted Land Use  
EPA = Environmental Protection Agency

J = estimated concentration  
mg/kg = milligrams per kilogram  
mg/L = milligrams per liter  
TCLP = Toxicity Characteristic Leaching Procedure (EPA 1311)  
U = not detected above posted concentration

1 = Natural Background Soil Metals Concentrations in Washington State, October 1994  
2 = MTCA Cleanup Regulation, Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.  
3 = MTCA Cleanup Regulation, Method B Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.  
4 = Hexavalent chromium testing by EPA Method 7196A  
5 = Trivalent chromium concentration based on calculation between total and hexavalent chromium  
6 = TCLP lead screening level value is 5.0 mg/L  
7 = TCLP mercury screening level value is 0.2 mg/L



Table 3 - Summary of Soil Testing Results: Metals

Port of Vancouver, USA  
Terminal 1 Property  
Vancouver, WA

					Total Metals															
					EPA Method 6020															
					Antimony	Arsenic	Beryllium	Cadmium	Chromium (III+VI)	Chromium (hexavalent) <sup>4</sup>	Chromium (Trivalent) <sup>5</sup>	Copper	Lead	TCLP Lead (mg/L) <sup>6</sup>	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
Screening Levels					5	7	2	1	42			36	17		0.07	38	0.78	0.61		86
						20		2		19	2,000		1,000		2					
						20		2		19	2,000		250		2					
						0.667														
WA Background <sup>1</sup> =>					32	24	160	80		240	120,000	3,200			1,600	400	400	0.8	24,000	
WA Method A Cleanup for Industrial Properties => <sup>2</sup>																				
WA Method A Cleanup for Unrestricted Land Use => <sup>2</sup>																				
WA Method B Soil Cancer => <sup>3</sup>																				
WA Method B Soil Non Cancer => <sup>3</sup>																				
Boring Location	Sample Number	Sample Depth (feet bgs)	Grab Sample Depth (feet bgs)	Sample Date	Analytical Results (mg/kg)															
Hahn and Associates, Inc. - Soil Samples May and June 2015) (continued)																				
SB-012	8832-150609-067	1.5 - 3.5	-	9-Jun-15	1.1 J	2.18	0.298	0.515 J	8.91	-	-	33.2	119	0.147	0.227	16.7	0.573 U	0.137 J	0.115 U	88.1
	8832-150609-068	8.0 - 10	-	9-Jun-15	-	-	-	-	-	-	-	-	9.73	-	-	-	-	-	-	-
	8832-150609-069	11 - 13	-	9-Jun-15	0.654 U	3.64	0.445	0.497 J	10.5	1.45 U	-	21.5	6.64	-	0.0523 U	12	0.654 U	0.131 U	0.131 U	53
	8832-150609-070	17.5 - 19.5	-	9-Jun-15	-	-	-	-	-	-	-	-	16.4	-	-	-	-	-	-	-
	8832-150609-071	23 - 25	-	9-Jun-15	-	-	-	-	-	-	-	-	7.89	-	-	-	-	-	-	-
	8832-150609-072	26.5 - 28.5	-	9-Jun-15	-	-	-	-	-	-	-	-	9.53	-	-	-	-	-	-	-
SB-013	8832-150527-014	1.0 - 2.5	1.5	27-May-15	0.578 U	1.48	0.625	0.474	9.67	-	-	24.5	19.4	-	0.0463 U	10.4	0.578 U	0.116 U	0.116 J	62.3
	8832-150527-015	5.5 - 7.5	6.5	27-May-15	0.571 U	1.7	0.663	0.571	9.2	-	-	27.2	37.2	-	0.0457 U	12	0.571 U	0.114 U	0.137 J	72.2
	8832-150527-016	11 - 13	12.0	27-May-15	-	-	-	-	-	-	-	-	2.43	-	-	-	-	-	-	-
	8832-150527-018	21 - 23	-	27-May-15	-	-	-	-	-	-	-	-	36.1	-	-	-	-	-	-	-
SB-014	8832-150527-001	1.0 - 2.5	2.0	27-May-15	0.772 J	3.23	0.399	0.897	10.4	-	-	87.8	821	4.38	3.61/ND <sup>7</sup>	10.8	0.623 U	0.361	0.125 U	220
	8832-150527-002	5.0 - 7.0	6.0	27-May-15	-	-	-	-	-	-	-	-	2.34	-	0.0432 U	-	-	-	-	-
	8832-150527-003	11.5 - 13.5	12.5	27-May-15	0.565 U	1.51	0.113 U	0.204 J	3.26	1.18 U	3.26	6.99	4.13	-	0.0452 U	5.56	0.565 U	0.113 U	0.113 U	29.5
	8832-150527-004	16.5 - 18.5	-	27-May-15	-	-	-	-	-	-	-	-	31.3	-	-	-	-	-	-	-
	8832-150527-005	21 - 23	-	27-May-15	-	-	-	-	-	-	-	-	35	-	-	-	-	-	-	-
	8832-150527-006	25 - 27	-	27-May-15	-	-	-	-	-	-	-	-	30.8	-	-	-	-	-	-	-
SB-015	8832-150605-053	8.0 - 10	-	5-Jun-15	-	-	-	-	21	2.02 J	19	-	-	-	-	-	-	-	-	-
MW-1-37	8832-150528-026	0.5 - 1.5	0.5	28-May-15	0.587 U	2.08	0.587	0.517	9.13	-	-	25.1	56.7	-	0.11	10.9	0.587 U	0.129 J	0.117 J	78.5
	8832-150528-027	5.0 - 7.0	5.0	28-May-15	-	-	-	-	-	-	-	-	772	1.19	-	-	-	-	-	-
	8832-150528-028	12 - 14	12.5	28-May-15	-	-	-	-	-	-	-	-	27.1	-	-	-	-	-	-	-
MW-2-40	8832-150605-046	0.2 - 1.2	0.5	5-Jun-15	0.616 U	1.96	0.677	0.628	18.3	-	-	26.5	545	0.118	0.241	10.7	0.616 U	0.172 J	0.123 U	195
	8832-150605-047	6.3 - 8.3	6.5	5-Jun-15	-	-	-	-	-	-	-	-	9.05	-	-	-	-	-	-	-
	8832-150605-048	11.2 - 13.2	12	5-Jun-15	0.68 U	4.16	0.516	0.598	13.5	1.42 J	-	26.1	29.4	-	0.0637 J	14.4	0.68 U	0.136 U	0.136 U	62.9
	8832-150605-049	17.5 - 19.5	-	5-Jun-15	-	-	-	-	-	-	-	-	9.37	-	-	-	-	-	-	-
	8832-150605-050	21.5 - 23.5	-	5-Jun-15	-	-	-	-	-	-	-	-	8.46	-	-	-	-	-	-	-
	8832-150605-051	28 - 30	-	5-Jun-15	-	-	-	-	-	-	-	-	8.63	-	-	-	-	-	-	-
MW-3-35	8832-150605-040	2.0 - 4.0	2.0	5-Jun-15	0.576 U	1.11 J	0.161 J	0.219 J	3.57	-	-	8.15	4.85	-	0.0461 U	6.22	0.576 U	0.127 J	0.115 U	31
	8832-150605-041	6.0 - 8.0	6.5	5-Jun-15	-	-	-	-	-	-	-	-	2.35	-	-	-	-	-	-	-
	8832-150605-042	11 - 13	11.5	5-Jun-15	0.582 U	1.39	0.128 J	0.256	3.83	1.19 U	-	6.09	3.77	-	0.0466 U	6.77	0.582 U	0.116 U	0.116 U	34.7
	8832-150605-043	16 - 18	-	5-Jun-15	-	-	-	-	-	-	-	-	7.15	-	-	-	-	-	-	-

Notes:  
bgs = below ground surface  
**bold** = detected at a concentration higher than default Washington State background levels  
**Color** = denotes concentrations exceeding background and Method A MTCA Cleanup Value for Unrestricted Land Use  
EPA = Environmental Protection Agency

J = estimated concentration  
mg/kg = milligrams per kilogram  
mg/L = milligrams per liter  
TCLP = Toxicity Characteristic Leaching Procedure (EPA 1311)  
U = not detected above posted concentration

1 = Natural Background Soil Metals Concentrations in Washington State, October 1994  
2 = MTCA Cleanup Regulation, Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.  
3 = MTCA Cleanup Regulation, Method B Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.  
4 = Hexavalent chromium testing by EPA Method 7196A  
5 = Trivalent chromium concentration based on calculation between total and hexavalent chromium  
6 = TCLP lead screening level value is 5.0 mg/L  
7 = TCLP mercury screening level value is 0.2 mg/L

Table 3 - Summary of Soil Testing Results: Metals

Port of Vancouver, USA  
Terminal 1 Property  
Vancouver, WA

					Total Metals															
					EPA Method 6020															
					Antimony	Arsenic	Beryllium	Cadmium	Chromium (III+VI)	Chromium (hexavalent) <sup>4</sup>	Chromium (Trivalent) <sup>5</sup>	Copper	Lead	TCLP Lead (mg/L) <sup>6</sup>	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
Screening Levels					5	7	2	1	42			36	17		0.07	38	0.78	0.61		86
						20		2		19	2,000		1,000		2					
						20		2		19	2,000		250		2					
						0.667														
					32	24	160	80		240	120,000	3,200				1,600	400	400	0.8	24,000
Boring Location	Sample Number	Sample Depth (feet bgs)	Grab Sample Depth (feet bgs)	Sample Date	Analytical Results (mg/kg)															
Hahn and Associates, Inc. - Soil Samples (May and June 2015) (continued)																				
MW-4-34	8832-150609-060	1.5 - 3.5	2.0	9-Jun-15	0.549 U	1.27	0.56	0.725	7.02	-	-	28.1	24.2	-	0.0439 U	10.3	0.703 J	0.11 U	0.11 J	61.6
	8832-150609-061	6.0 - 8.0	-	9-Jun-15	-	-	-	-	-	-	-	-	20.8	-	-	-	-	-	-	-
	8832-150609-062	10 - 12	-	9-Jun-15	-	-	-	-	-	-	-	-	2.6	-	-	-	-	-	-	-
	8832-150609-063	15 - 17	-	9-Jun-15	-	-	-	-	-	-	-	-	3.12	-	-	-	-	-	-	-
	8832-150609-064	21 - 23	-	9-Jun-15	-	-	-	-	-	-	-	-	13.4	-	-	-	-	-	-	-
	8832-150609-065	26 - 28	-	9-Jun-15	0.744 U	5.25	0.402	0.64 J	14.7	-	-	29.2	20.8	-	0.435	14.6	0.744 U	0.149 U	0.149 U	89.8
	8832-150609-066	32.5 - 34.5	-	9-Jun-15	-	-	-	-	-	-	-	-	16.8	-	-	-	-	-	-	-
MW-5-34	8832-150528-020	4.0 - 5.0	4.0	28-May-15	0.526 U	1.7	0.105 J	0.189 J	3.62	-	-	7.57	3.57	-	0.0421 U	5.04	0.526 U	0.105 U	0.105 U	22.7
	8832-150528-021	6.0 - 8.0	6.5	28-May-15	0.559 U	1.31	0.134 J	0.235	4.6	-	-	6.46	2.59	-	0.0447 U	6.06	0.559 U	0.112 U	0.112 U	30.4
	8832-150528-023	16 - 18	-	28-May-15	-	1.12	-	0.112 U	2.28	-	-	-	2.83	-	-	-	-	-	0.112 U	-
	8832-150528-024	20 - 22	-	28-May-15	-	1.08 J	-	0.137 J	2.78	-	-	-	3.45	-	-	-	-	-	0.114 U	-
	8832-150528-025	26 - 28	-	28-May-15	-	13.2	-	1.36	11.1	2.18 J	-	-	45.5	-	-	-	-	-	0.128 U	-

Notes:  
bgs = below ground surface  
**bold** = detected at a concentration higher than default Washington State background levels  
**Color** = denotes concentrations exceeding background and Method A MTCA Cleanup Value for Unrestricted Land Use  
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J = estimated concentration  
mg/kg = milligrams per kilogram  
mg/L = milligrams per liter  
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1 = Natural Background Soil Metals Concentrations in Washington State, October 1994  
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3 = MTCA Cleanup Regulation, Method B Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.  
4 = Hexavalent chromium testing by EPA Method 7196A  
5 = Trivalent chromium concentration based on calculation between total and hexavalent chromium  
6 = TCLP lead screening level value is 5.0 mg/L  
7 = TCLP mercury screening level value is 0.2 mg/L



Table 4 - Summary of Soil Testing Results: Volatile Organic Compounds (VOCs)

Port of Vancouver, USA  
Terminal 1 Property  
Vancouver, WA

				Boring Location =>	SB-006A	SB-011	SB-012	SB-013	SB-014	MW-1-37	MW-2-40	MW-3-35	MW-4-34	MW-5-34	
				Sample Date =>	27-May-15	8-Jun-15	9-Jun-15	27-May-15	27-May-15	28-May-15	5-Jun-15	5-Jun-15	9-Jun-15	28-May-15	
				Sample Depth (feet bgs) =>	0.5 - 2.5	1.5 - 3.5	1.5 - 3.5	2.0 - 2.5	1.0 - 2.0	0.5 - 1.5	0.2 - 1.2	2.0 - 4.0	1.5 - 3.5	4.0 - 5.0	
				Grab Sample Depth (feet bgs) =>	1.5	2.0	2.0	1.5	2.0	0.5	0.5	2.0	2.0	4.0	
				Sample Number =>	8832-150527-007	8832-150608-054	8832-150609-067	8832-150527-014	8832-150527-001	8832-150528-026	8832-150605-046	8832-150605-040	8832-150609-060	8832-150528-020	
		WA Method A Cleanup for Industrial Properties <sup>1</sup>	WA Method A Cleanup for Unrestricted Land Use <sup>1</sup>	WA Method B Soil Cancer <sup>2</sup>	WA Method B Soil Non Cancer <sup>2</sup>	Analytical Testing Results (mg/kg)									
Volatile Organic Compounds (VOCs) by EPA 8260B															
1,1,1,2-tetrachloroethane				38.5	2,400	0.0358 U	0.0143 U	0.163 U	0.0353 U	0.0297 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
1,1,1-trichloroethane	2	2			160,000	0.0358 U	0.0143 U	0.163 U	0.0353 U	0.0297 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
1,1,2,2-tetrachloroethane				5	1,600	0.0179 U	0.0143 U	0.783 UJ	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
1,1,2-trichloroethane				17.5	320	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
1,1-dichloroethane				175	16,000	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
1,1-dichloroethene					4,000	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
1,1-dichloropropene						0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0243 UJ	0.0331 U
1,2,3-trichlorobenzene						0.179 U	0.143 U	1.63 U	0.177 U	0.148 U	0.201 U	0.151 U	0.166 U	0.121 UJ	0.165 U
1,2,3-trichloropropane				0.0333	320	0.0358 U	0.0285 U	0.653 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0243 UJ	0.0331 U
1,2,4-trichlorobenzene				34.5	800	0.179 U	0.143 U	1.63 U	0.177 U	0.148 U	0.201 U	0.151 U	0.166 U	0.121 UJ	0.165 U
1,2,4-trimethylbenzene						0.0358 U	0.0285 U	67.2	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0243 UJ	0.0331 U
1,2-dibromo-3-chloropropane				1.25	16	0.179 U	0.143 U	1.63 U	0.177 U	0.148 U	0.201 U	0.151 U	0.166 U	0.121 UJ	0.165 U
1,2-dibromoethane	0.005	0.005		0.5	720	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
1,2-dichlorobenzene					7,200	0.0179 U	0.0143 U	0.653 UJ	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
1,2-dichloroethane				11	480	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
1,2-dichloropropane				27.8	7,200	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
1,3,5-trimethylbenzene					800	0.0358 U	0.0285 U	9.99	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
1,3-dichlorobenzene						0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
1,3-dichloropropane						0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
1,4-dichlorobenzene				185	5,600	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
2,2-dichloropropane						0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
Methyl Ethyl Ketone					48,000	0.358 U	0.285 U	3.26 U	0.353 U	0.297 U	0.402 U	0.301 U	0.332 U	0.0121 UJ	0.331 U
2-chlorotoluene					1,600	0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
2-hexanone (MBK)						0.358 U	0.285 U	3.26 U	0.353 U	0.297 U	0.402 U	0.301 U	0.332 U	0.0121 UJ	0.331 U
4-chlorotoluene						0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
Acetone					72,000	0.716 U	0.57 U	6.53 U	0.706 U	0.594 U	0.804 U	0.602 U	0.664 U	0.0121 UJ	0.661 U
Benzene	0.03	0.03		18.2	320	0.00895 U	0.00713 U	0.0816 U	0.00883 U	0.00742 U	0.0101 U	0.00753 U	0.0083 U	0.0121 UJ	0.00827 U
Bromobenzene						0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
Bromochloromethane						0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
Bromodichloromethane				16.1	1,600	0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
Bromoform				127	1,600	0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
Bromomethane					112	0.716 U	0.57 U	6.53 U	0.706 U	0.594 U	0.804 U	0.602 U	0.664 U	0.0121 UJ	0.661 U
Carbon tetrachloride				14.3	320	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
Chlorobenzene					1,600	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
Chlorodibromomethane				11.9	1,600	0.0716 U	0.057 U	0.653 U	0.0706 U	0.0594 U	0.0804 U	0.0602 U	0.0664 U	0.0121 UJ	0.0661 U
Chloroethane						0.358 U	0.285 U	3.26 U	0.353 U	0.297 U	0.402 U	0.301 U	0.332 U	0.0121 UJ	0.331 U
Chloroform				32.3	800	0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
Chloromethane						0.179 U	0.143 U	1.63 U	0.177 U	0.148 U	0.201 U	0.151 U	0.166 U	0.0121 UJ	0.165 U
cis-1,2-dichloroethene					160	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
cis-1,3-dichloropropene						0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
Dibromomethane					800	0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
Dichlorodifluoromethane					16,000	0.0716 U	0.057 U	0.653 U	0.0706 U	0.0594 U	0.0804 U	0.0602 U	0.0664 U	0.0121 UJ	0.0661 U
Dichloromethane	0.02	0.02		500	480	0.179 U	0.143 U	1.63 U	0.177 U	0.148 U	0.201 U	0.151 U	0.166 U	0.0121 UJ	0.165 U
Ethylbenzene	6	6			8,000	0.0179 U	0.0143 U	2.78	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U
Hexachlorobutadiene				12.8	80	0.0716 U	0.057 U	0.653 U	0.0706 U	0.0594 U	0.0804 U	0.0602 U	0.0664 U	0.0121 UJ	0.0661 U
Isopropylbenzene					8,000	0.0358 U	0.0285 U	3.41	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
MTBE	0.1	0.1		556		0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U
4-Methyl-2-pentanol						0.358 U	0.285 U	3.26 U	0.353 U	0.297 U	0.402 U	0.301 U	0.332 U	0.0121 UJ	0.331 U
Naphthalene	5	5			1,600	0.0716 U	0.057 U	200	0.0706 U	0.0594 U	0.0804 U	0.0602 U	0.0664 U	0.0121 UJ	0.0661 U
n-butylbenzene					4,000	0.0358 U	0.0285 U	3.49 J	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U

Notes:

bgs = below ground surface

**bold** = detected concentration

**Color** = concentrations exceeding one or more cleanup levels

EPA = Environmental Protection Agency

J = estimated concentration

mg/kg = milligrams per kilogram

U = not detected above posted concentration

VOCs = volatile organic compounds

1 = MTCA Cleanup Regulation, Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

2 = MTCA Cleanup Regulation, Method B Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

Table 4 - Summary of Soil Testing Results: Volatile Organic Compounds (VOCs)

Port of Vancouver, USA  
Terminal 1 Property  
Vancouver, WA

				Boring Location =>		SB-006A	SB-011	SB-012	SB-013	SB-014	MW-1-37	MW-2-40	MW-3-35	MW-4-34	MW-5-34
				Sample Date =>		27-May-15	8-Jun-15	9-Jun-15	27-May-15	27-May-15	28-May-15	5-Jun-15	5-Jun-15	9-Jun-15	28-May-15
				Sample Depth (feet bgs) =>		0.5 - 2.5	1.5 - 3.5	1.5 - 3.5	2.0 - 2.5	1.0 - 2.0	0.5 - 1.5	0.2 - 1.2	2.0 - 4.0	1.5 - 3.5	4.0 - 5.0
				Grab Sample Depth (feet bgs) =>		1.5	2.0	2.0	1.5	2.0	0.5	0.5	2.0	2.0	4.0
				Sample Number =>		8832-150527-007	8832-150608-054	8832-150609-067	8832-150527-014	8832-150527-001	8832-150528-026	8832-150605-046	8832-150605-040	8832-150609-060	8832-150528-020
		WA Method A Cleanup for Industrial Properties <sup>1</sup>	WA Method A Cleanup for Unrestricted Land Use <sup>1</sup>	WA Method B Soil Cancer <sup>2</sup>	WA Method B Soil Non Cancer <sup>2</sup>	Analytical Testing Results (mg/kg)									
Volatile Organic Compounds (VOCs) by EPA 8260B (continued)															
n-propylbenzene				8,000	0.0179 U	0.0143 U	2.47	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U	
p-isopropyltoluene					0.0358 U	0.0285 U	6.37 J	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U	
sec-butylbenzene				8,000	0.0358 U	0.0285 U	1.36	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U	
Styrene				16,000	0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0121 UJ	0.0331 U	
Trichloroethene	0.03	0.03	12	40	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U	
tert-butylbenzene				8,000	0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0243 UJ	0.0331 U	
Tetrachloroethene	0.05	0.05	476	480	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U	
Toluene	7	7		6,400	0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0243 UJ	0.0331 U	
trans-1,2-dichloroethene				1,600	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U	
trans-1,3-dichloropropene					0.0358 U	0.0285 U	0.326 U	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0243 UJ	0.0331 U	
Trichlorofluoromethane (Freon 11)				24,000	0.0716 U	0.057 U	0.653 U	0.0706 U	0.0594 U	0.0804 U	0.0602 U	0.0664 U	0.0485 UJ	0.0661 U	
Vinyl chloride				240	0.0179 U	0.0143 U	0.163 U	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U	
Xylene (m & p)					0.0358 U	0.0285 U	0.973	0.0353 U	0.0297 U	0.0402 U	0.0301 U	0.0332 U	0.0243 UJ	0.0331 U	
Xylene (o)				16,000	0.0179 U	0.0143 U	7.37	0.0177 U	0.0148 U	0.0201 U	0.0151 U	0.0166 U	0.0121 UJ	0.0165 U	
Xylene Total	9	9		16,000	0.0537 U	0.31166 U	8.343	0.053 U	0.0445 U	0.0603 U	0.20276 U	0.1089 U	0.0364 U	0.0496 U	

Notes:

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EPA = Environmental Protection Agency  
J = estimated concentration  
mg/kg = milligrams per kilogram  
U = not detected above posted concentration  
VOCs = volatile organic compounds

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Table 5 - Summary of Groundwater Testing Results: Metals, Polynuclear Aromatic Hydrocarbons, Total Petroleum Hydrocarbons, and Volatile Organic Compounds

Port of Vancouver, USA  
Terminal 1 Property  
Vancouver, WA

								E & E (2008 Sample)	HAI (2015 Samples)						
	WA Method A Cleanup for Groundwater <sup>1</sup>	Benzene (Non Detect) <sup>1</sup>	WA Method B Ground Water Cancer <sup>2</sup>	WA Method B Ground Water Non Cancer <sup>2</sup>	WDOE Vapor Intrusion Screening Level Cancer <sup>3</sup>	WDOE Vapor Intrusion Screening Level Non Cancer <sup>3</sup>	Well Location =>	SB03 <sup>4</sup>	MW-1-37	MW-1-37 (DUP)	MW-2-40	MW-3-35	MW-4-34	MW-5-34	Equipment Blank <sup>5</sup>
							Screen Interval (feet bgs) =>	24 - 29	27 - 37	27 - 37	30 - 40	25 - 35	24 - 34	24 - 34	-
							Sample Number =>	GW003 (24 - 29)	8832-150616-102	8832-150616-103	8832-150617-107	8832-150616-100	8832-150616-101	8832-150617-104	8832-150617-105
							Sample Date =>	25-Nov-08	16-Jun-15	16-Jun-15	17-Jun-15	16-Jun-15	16-Jun-15	17-Jun-15	17-Jun-15
								Analytical Results							
							Units								
Total and Dissolved Metals by EPA Method 6020															
Antimony				6.4			µg/L	U	0.5 U	-	0.989 J	0.5 U	0.5 U	0.5 U	-
Arsenic	5		0.0583	4.8			µg/L	3.6	3.48	-	14	4.53	5.38	5.5	-
Arsenic (filtered)	5		0.0583	4.8			µg/L	-	-	-	1.22	-	4.88	4.59	-
Beryllium				32			µg/L	U	0.1 U	-	1.01	0.1 U	0.1 U	0.1 U	-
Cadmium	5			8			µg/L	U	0.04 U	-	0.689	0.1 J	0.04 U	0.189 J	-
Chromium (VI)				48			µg/L	-	5 H UJ	-	7	5 H UJ	5 H UJ	5 U	-
Chromium (III+VI)	50						µg/L	20.5	0.5 U	-	319	0.5 U	0.856 J	2.31	-
Chromium (III+VI) (filtered)	50						µg/L	-	-	-	0.5 U	-	-	-	-
Copper				320			µg/L	32.2	0.589 J	-	140	1.71 J	2.03	4.98	-
Lead	15						µg/L	7.36	0.1 J	-	34.4	0.267	1.52	4.92	-
Lead (filtered)	15						µg/L	-	-	-	0.1 U	-	-	-	-
Mercury	2					0.89	µg/L	U	0.04 U	-	0.0831	0.04 U	0.04 U	0.04 U	-
Nickel				320			µg/L	13	0.778 J	-	52	8.91	3.91	10.9	-
Selenium				80			µg/L	U	0.667 J	-	2.01	0.978 J	0.678 J	0.5 U	-
Silver				80			µg/L	U	0.1 U	-	0.233	0.1 U	0.1 U	0.1 U	-
Thallium				0.16			µg/L	U	0.1 U	-	0.233	0.1 U	0.1 U	0.1 U	-
Zinc				4,800			µg/L	76.1	2 U	-	103	12.7	8.31	25.5	-
Polyaromatic Hydrocarbons (PAHs) by EPA Method 8270D															
1-Methylnaphthalene			1.51	560			µg/L	U	0.0415 U	-	0.0392 U	26.1	0.0433 U	0.04 U	0.0395 U
2-Methylnaphthalene				32			µg/L	U	0.0415 U	-	0.0392 U	49.9 J	0.0433 U	0.04 U	0.0395 U
Acenaphthene				960			µg/L	U	0.0166 U	-	0.0313 U	85.8	0.0242 J	0.016 U	0.0158 U
Acenaphthylene							µg/L	U	0.0166 U	-	0.0157 U	5.15	0.0173 U	0.016 U	0.0158 U
Anthracene				4,800			µg/L	U	0.0166 U	-	0.0157 U	0.866	0.0173 U	0.016 U	0.0158 U
Benz(a)anthracene			0.12				µg/L	U	0.0166 U	-	0.0192 J	0.333 U	0.0173 U	0.016 U	0.0158 U
Benzo(a) pyrene	0.1		0.012				µg/L	U	0.0166 U	-	0.0282 J	0.333 U	0.0173 U	0.016 U	0.0158 U
Benzo(b)fluoranthene			0.12				µg/L	U	0.0166 U	-	0.0305 J	0.333 U	0.0173 U	0.016 U	0.0158 U
Benzo(g,h,i)perylene							µg/L	U	0.0166 U	-	0.0219 J	0.333 U	0.0173 U	0.016 U	0.0158 U
Benzo(k)fluoranthene			1.2				µg/L	U	0.0166 U	-	0.0168 J	0.333 U	0.0173 U	0.016 U	0.0158 U
Chrysene			12				µg/L	U	0.0166 U	-	0.0258 J	0.333 U	0.0173 U	0.016 U	0.0158 U
Dibenz(a,h)anthracene			0.012				µg/L	U	0.0166 U	-	0.0157 U	0.333 U	0.0173 U	0.016 U	0.0158 U
Dibenzofuran				16			µg/L	U	0.0166 U	-	0.0157 U	34.8 J	0.0173 U	0.016 U	0.0158 U
Fluoranthene				640			µg/L	U	0.0166 U	-	0.036	2.71	0.0173 U	0.016 U	0.0158 U
Fluorene				640			µg/L	U	0.0166 U	-	0.0313	30.4	0.0173 U	0.016 U	0.0158 U
Indeno(1,2,3-c,d)pyrene			0.12				µg/L	U	0.0166 U	-	0.0192 J	0.333 U	0.0173 U	0.016 U	0.0158 U
Naphthalene	160			160	8.93	167	µg/L	U	0.0627 J	-	0.286	149	0.152	0.169	0.0395 U
Phenanthrene							µg/L	U	0.0415 U	-	0.0431 J	33.2	0.0433 U	0.04 U	0.0395 U
Pyrene				480			µg/L	U	0.0166 U	-	0.0392	1.28	0.0173 U	0.016 U	0.0158 U
Total Carcinogenic PAH TEF Value <sup>6</sup>	0.1						µg/L	U	0.00001	-	0.00002	0.0002	2.08465E-05	0.00001	0.00001
Total Petroleum Hydrocarbons by NWTPH-Dx and NWTPH-Gx															
Diesel Range Organics	500						µg/L	U	105 U	102 U	140 J	795 F-13	120 J	110 U	100 U
Oil Range Organics	500						µg/L	U	211 U	204 U	194 U	213 U	211 U	220 U	200 U
Gasoline Range Organics		1,000					µg/L	U	50 U	-	50 U	1,360 F-13	50 U	50 U	-

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F-13 - The chromatographic pattern does not resemble the fuel standard used for quantitation.  
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								Analytical Results								
							Units									
Volatile Organic Compounds (VOCs) by EPA Method 8260B																
1,1,1,2-tetrachloroethane			1.68	240	7.4		µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
1,1,1-trichloroethane	200			16,000		5,240	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
1,1,2,2-tetrachloroethane			0.219	160	6.2		µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
1,1,2-trichloroethane			0.768	32	7.71	4.51	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
1,1-dichloroethane			7.68	1,600	11.2		µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
1,1-dichloroethene				400		130	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
1,1-dichloropropene							µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
1,2,3-trichlorobenzene							µg/L	U	1 U	-	1 U	1 U	1 U	1 U	-	
1,2,3-trichloropropane			0.00146	32			µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
1,2,4-trichlorobenzene			1.51	80		39.2	µg/L	U	1 U	-	1 U	1 U	1 U	1 U	-	
1,2,4-trimethylbenzene						28.4	µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
1,2-dibromo-3-chloropropane			0.0547	1.6			µg/L	U	2.5 U	-	2.5 U	2.5 U	2.5 U	2.5 U	-	
1,2-dibromoethane	0.01		0.0219	72			µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
1,2-dichlorobenzene				720		2,570	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
1,2-dichloroethane	5		0.481	48	4.2	140	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
1,2-dichloropropane			1.22	720	3.89	28.4	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
1,3,5-trimethylbenzene				80			µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
1,3-dichlorobenzene							µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
1,3-dichloropropane							µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
1,4-dichlorobenzene			8.1	560	4.85	7,810	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
2,2-dichloropropane							µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
Methyl Ethyl Ketone				4,800		1,740,000	µg/L	U	5 U	-	5 U	5 U	5 U	5 U	-	
2-chlorotoluene				160			µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
2-hexanone (MBK)							µg/L	U	5 U	-	5 U	5 U	5 U	5 U	-	
4-chlorotoluene							µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
Acetone				7,200			ug/L	U	10 U	-	21	10 U	10 U	10 U	-	
Benzene	5		0.795	32	2.4	103	µg/L	U	0.125 U	-	0.125 U	0.125 U	0.125 U	0.125 U	-	
Bromobenzene							µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
Bromochloromethane							µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
Bromodichloromethane			0.706	160	1.84		µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
Bromoform			5.54	160	200		µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
Bromomethane				11.2		13	µg/L	U	5 UJ	-	5 UJ	5 UJ	5 UJ	5 UJ	-	
Carbon tetrachloride			0.625	32	0.539	59.2	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
Chlorobenzene				160		286	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
Chlorodibromomethane			0.521	160	1.84		µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
Chloroethane							µg/L	U	5 UJ	-	5 UJ	5 UJ	5 UJ	5 UJ	-	
Chloroform			1.41	80	1.2	495	µg/L	U	0.5 U	-	0.88 J	0.5 U	0.5 U	0.5 U	-	
Chloromethane						153	µg/L	U	2.5 U	-	2.5 U	2.5 U	2.5 U	2.5 U	-	
cis-1,2-dichloroethene				16			µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
cis-1,3-dichloropropene							µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
Dibromomethane				80			µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
Dichlorodifluoromethane				1,600		5.66	µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
Dichloromethane	5		21.9	48			µg/L	U	2.5 U	-	2.5 U	2.5 U	2.5 U	2.5 U	-	
Ethylbenzene	700			800		2,780	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
Hexachlorobutadiene			0.561	8	0.81		µg/L	U	2.5 U	-	2.5 U	2.5 U	2.5 U	2.5 U	-	
Isopropylbenzene				800			µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
MTBE	20		24.3		610	87,000	µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
4-Methyl-2-pentanol							µg/L	U	5 U	-	5 U	5 U	5 U	5 U	-	
Naphthalene	160			160	8.93	167	µg/L	U	1 U	-	1 U	227	1 U	1 U	-	
n-butylbenzene				400			µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
n-propylbenzene				800			µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
p-isopropyltoluene							µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
sec-butylbenzene				800			µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
Styrene				1,600		8,100	µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	
Trichloroethene	5		0.54	4	1.55	3.84	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-	
tert-butylbenzene				800			µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-	

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							Sample Number =>	GW003 (24 - 29)	8832-150616-102	8832-150616-103	8832-150617-107	8832-150616-100	8832-150616-101	8832-150617-104	8832-150617-105
							Sample Date =>	25-Nov-08	16-Jun-15	16-Jun-15	17-Jun-15	16-Jun-15	16-Jun-15	17-Jun-15	17-Jun-15
								Analytical Results							
Units															
Volatile Organic Compounds (VOCs) by EPA Method 8260B															
Tetrachloroethene	5		20.8	48	22.9	43.5	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-
Toluene	1,000			640		15,600	µg/L	1.44	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-
trans-1,2-dichloroethene				160			µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-
trans-1,3-dichloropropene							µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-
Trichlorofluoromethane (Freon 11)				2,400		120	µg/L	U	1 U	-	1 U	1 U	1 U	1 U	-
Vinyl chloride	0.2			24	0.347	56.7	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-
Xylene (m & p)						310	µg/L	U	0.5 U	-	0.5 U	0.5 U	0.5 U	0.5 U	-
Xylene (o)				1,600		440	µg/L	U	0.25 U	-	0.25 U	0.25 U	0.25 U	0.25 U	-
Xylene Total	1,000			1,600			µg/L	U	0.75	-	0.75	0.75	0.75	0.75	-

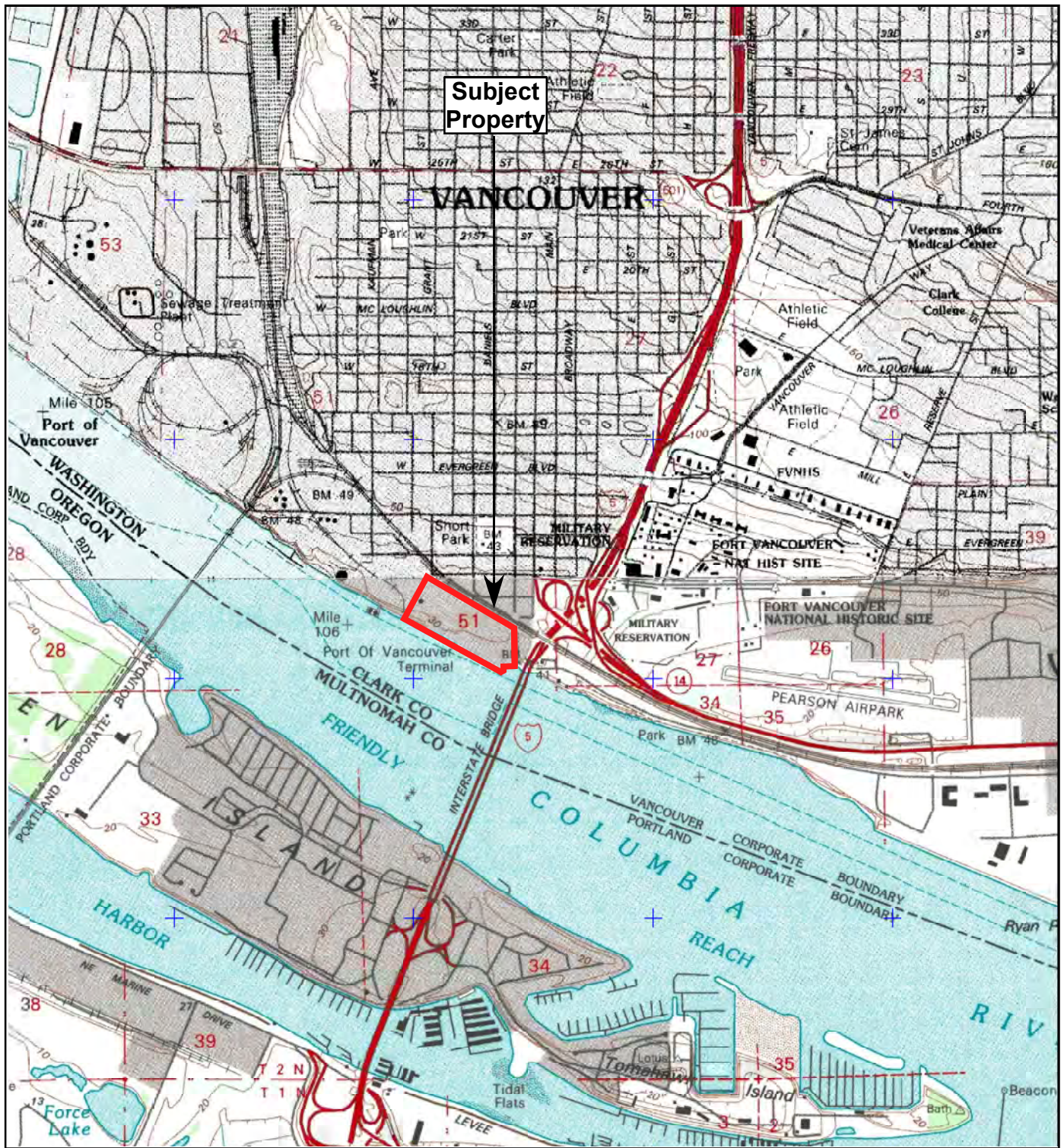
Notes:

bgs = below ground surface  
**bold** - detected concentration  
**Color** = concentrations exceeding one or more cleanup levels.  
EPA = Environmental Protection Agency  
J - Estimated value  
PAHs = polyaromatic hydrocarbons  
TEF = Toxicity Equivalency Factor  
U = Not detected  
µg/L = micrograms per liter  
VOCs = volatile organic compounds

1 = MTCA Cleanup Regulation, Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.  
2 = MTCA Cleanup Regulation, Method B Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.  
3 = Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, Review Draft October 2009, updated April 6, 2015.  
4 = Ecology and Environment, Inc. November 2008 temporary well point location.  
5 = Equipment blank collected upon groundwater sample collection at the MW-5-34 well location, prior to sampling MW-4-34.  
6 = TEF values calculated as described in WAC 173-340-708(8); When the individual PAH concentration was reported as non-detected, then the TEF was multiplied by half the Reporting Level.  
F-13 - The chromatographic pattern does not resemble the fuel standard used for quantitation.  
H = Sample was analyzed outside of the recommended hold time.

## FIGURES





Note:  
Base Map from the Portland, Oregon (1995)  
USGS 7.5-Minute Quadrangle  
Contour Intervals: 10 Feet

— Investigation Area (approximate)



0 1000 2000 4000  
1"=2000'  
Scale in Feet

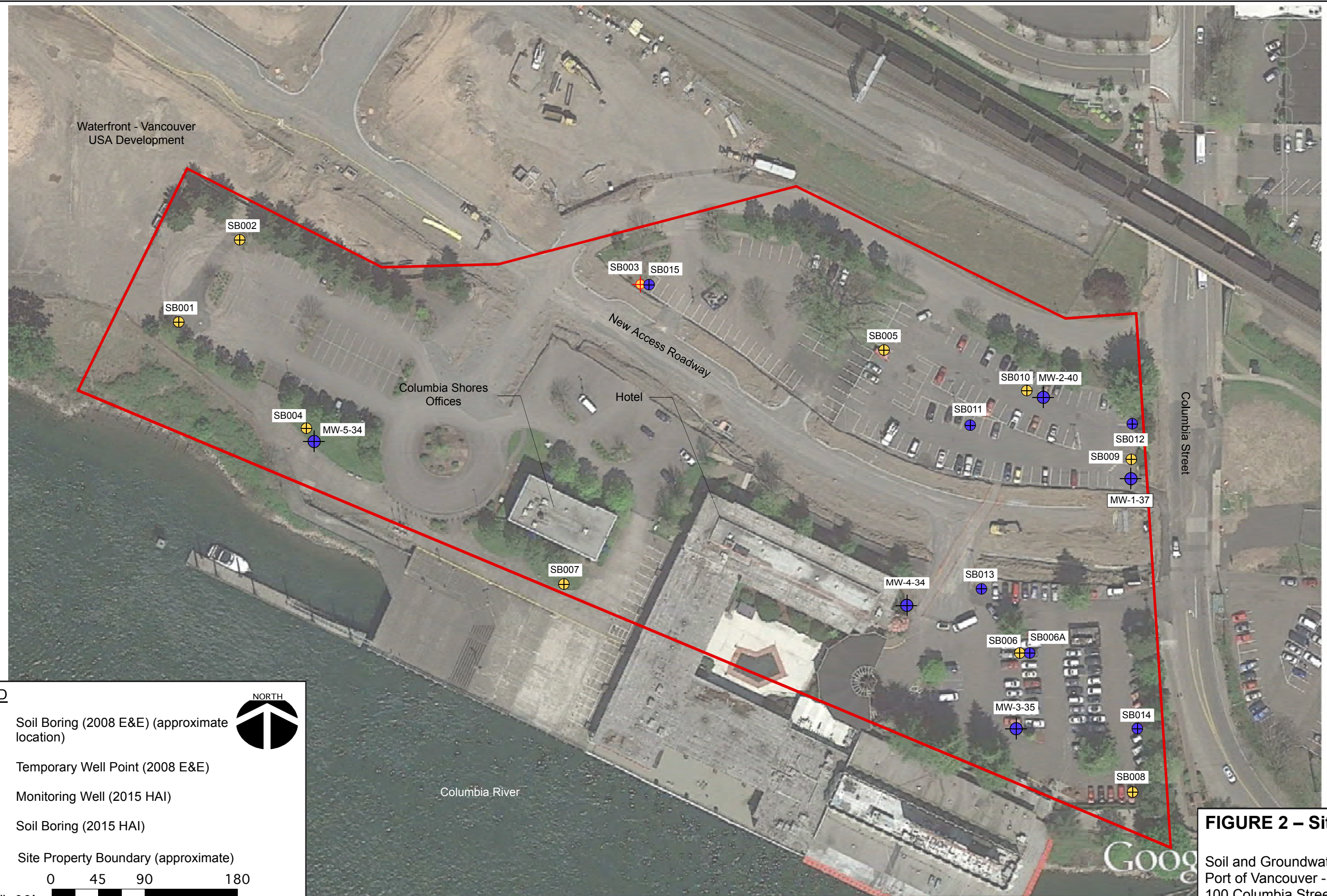
## FIGURE 1 Location Map

Soil and Groundwater Investigation  
Port of Vancouver - Terminal 1 Site  
100 Columbia Street  
Vancouver, WA

HAHN AND ASSOCIATES, INC.  
Project No. 8832

August 2015





#### LEGEND

- SB001 Soil Boring (2008 E&E) (approximate location)
- Temporary Well Point (2008 E&E)
- Monitoring Well (2015 HAI)
- Soil Boring (2015 HAI)

— Site Property Boundary (approximate)

0 45 90 180  
1"=90' Scale in Feet

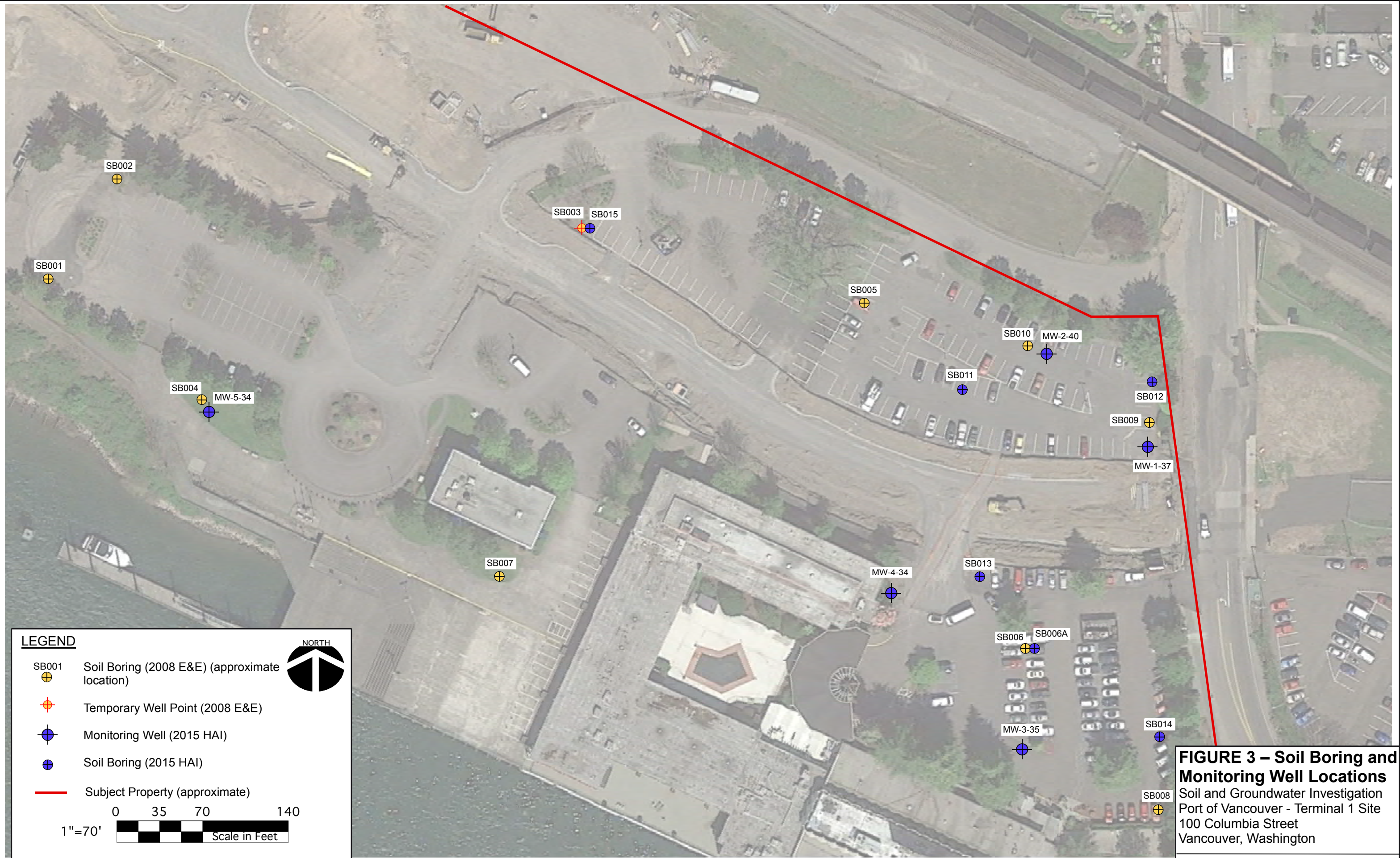
Imagery and Parcel Information - **Google Earth**,  
Landsat. 4/17/2015.

#### FIGURE 2 – Site Map

Soil and Groundwater Investigation  
Port of Vancouver - Terminal 1 Site  
100 Columbia Street  
Vancouver, Washington

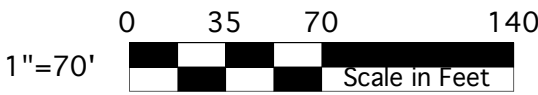
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Project No. 8832 August 2015





**LEGEND**

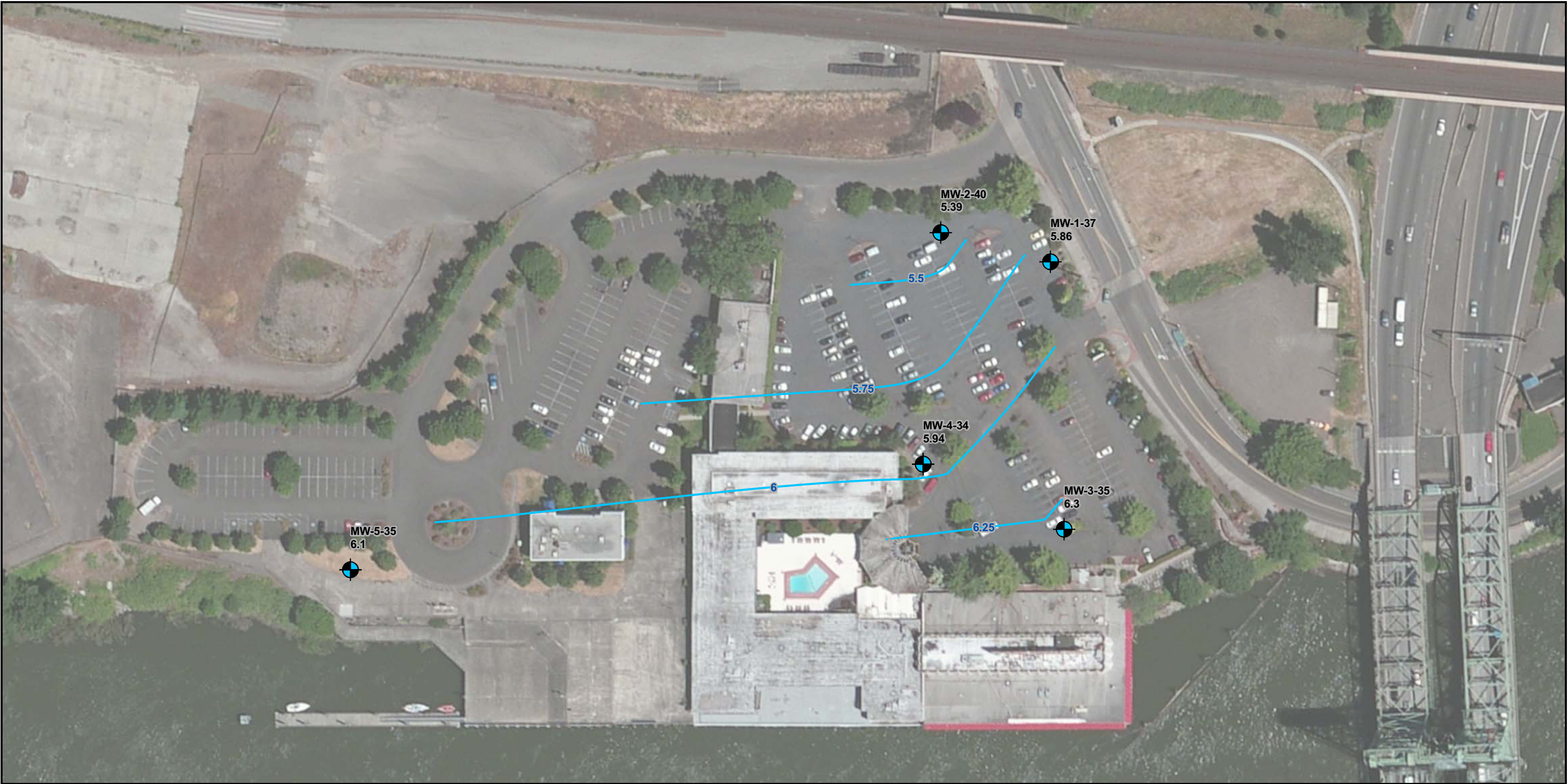
- SB001 Soil Boring (2008 E&E) (approximate location)
- Temporary Well Point (2008 E&E)
- Monitoring Well (2015 HAI)
- Soil Boring (2015 HAI)
- Subject Property (approximate)



Imagery - **Google Earth**, Landsat. 4/17/2015.

**FIGURE 3 – Soil Boring and Monitoring Well Locations**  
Soil and Groundwater Investigation  
Port of Vancouver - Terminal 1 Site  
100 Columbia Street  
Vancouver, Washington





**HAHN AND ASSOCIATES, INC.**

Environmental Consultants  
434 NW 6th Avenue, Suite 203  
Portland, Oregon 97209  
503-796-0717

Produced By:




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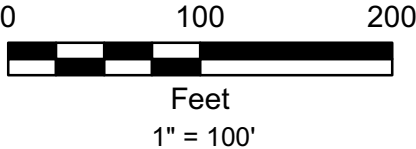
Source: Aerial Photograph obtained from ESRI, ArcGIS Online.

Note: Groundwater contours created using ArcGIS 10.3, Spatial Analyst, Natural Neighbor interpolation tool.

**Legend**

 Monitoring Well  
With Groundwater Elevation in Feet  
(City of Vancouver Datum)

 Isocontour Line - Groundwater Elevation



**FIGURE 4**  
**Groundwater Elevation Map**  
**June 16, 2015**

Subsurface Investigation to Soil and  
Groundwater Investigation  
Port of Vancouver - Terminal 1 Site  
Vancouver, Washington





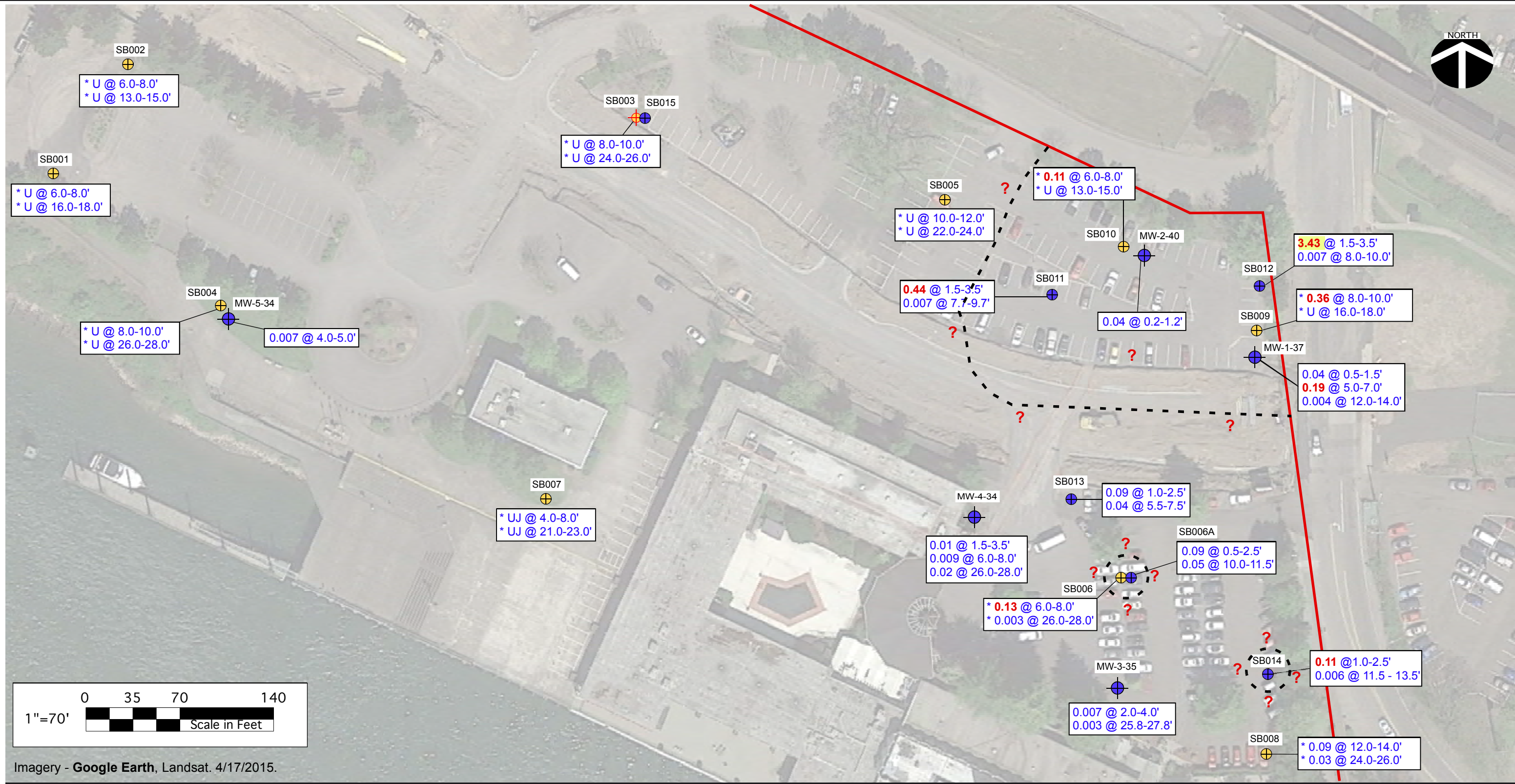




<b>LEGEND</b>			
SB001	Soil Boring (2008 E&E) (approximate location)	3,020 @ 1.5-3.5' U @ 8.0-10.0'	Gasoline-range petroleum hydrocarbon concentration in soil in mg/kg @ depth in feet below ground surface (bgs)
	Temporary Well Point (2008 E&E)	Red and Bold	Gasoline-range petroleum hydrocarbon concentration exceeds MTCA Method A Soil Cleanup Level for Unrestricted Land Use (100 mg/kg)
	Monitoring Well (2015 HAI)		
	Soil Boring (2015 HAI)	Red and Bold	Gasoline-range petroleum hydrocarbon concentration exceeds MTCA Method A Soil Cleanup Level for Industrial Land Use (100 mg/kg)
mg/kg	milligrams per kilograms		
		*	Ecology and Environment, Inc. - Sample Result (November 2008 Environmental Site Assessment)
		J	Estimated Concentration
		U	Not Detected
		—	Subject Property (approximate)

**FIGURE 6**  
**Gasoline-Range Petroleum Hydrocarbon Concentrations in Soil**  
  
Soil and Groundwater Investigation  
Port of Vancouver, USA - Terminal 1 Site  
100 Columbia Street  
Vancouver, Washington  
  
HAHN AND ASSOCIATES, INC.  
Project No. 8832  
  
August 2015





Imagery - Google Earth, Landsat. 4/17/2015.

LEGEND

- SB001  
⊕ Soil Boring (2008 E&E) (approximate location)
- ⊕ Temporary Well Point (2008 E&E)
- ⊕ Monitoring Well (2015 HAI)
- ⊕ Soil Boring (2015 HAI)

mg/kg milligrams per kilograms

0.09 @ 0.5-2.5'  
0.05 @ 10.0-11.5'

Red and Bold

Red and Bold

\*

TEF PAH concentration in soil in mg/kg @ depth in feet below ground surface (bgs)

TEF PAH result exceeds MTCA Method A Soil Cleanup Level for Unrestricted Land Use (0.1 mg/kg)

TEF PAH result exceeds MTCA Method A Soil Cleanup Level for Industrial Land Use (2 mg/kg)

Ecology and Environment, Inc. - Sample Result (November 2008 Environmental Site Assessment)

?

---

TEF

U

J

Estimated Extent of PAH Concentrations Greater than MTCA Method A Soil Cleanup Level for Unrestricted Land Use (0.1 mg/kg)

Subject Property (approximate)

Toxicity Equivalency Factor

Not Detected

Estimated Concentration

FIGURE 7

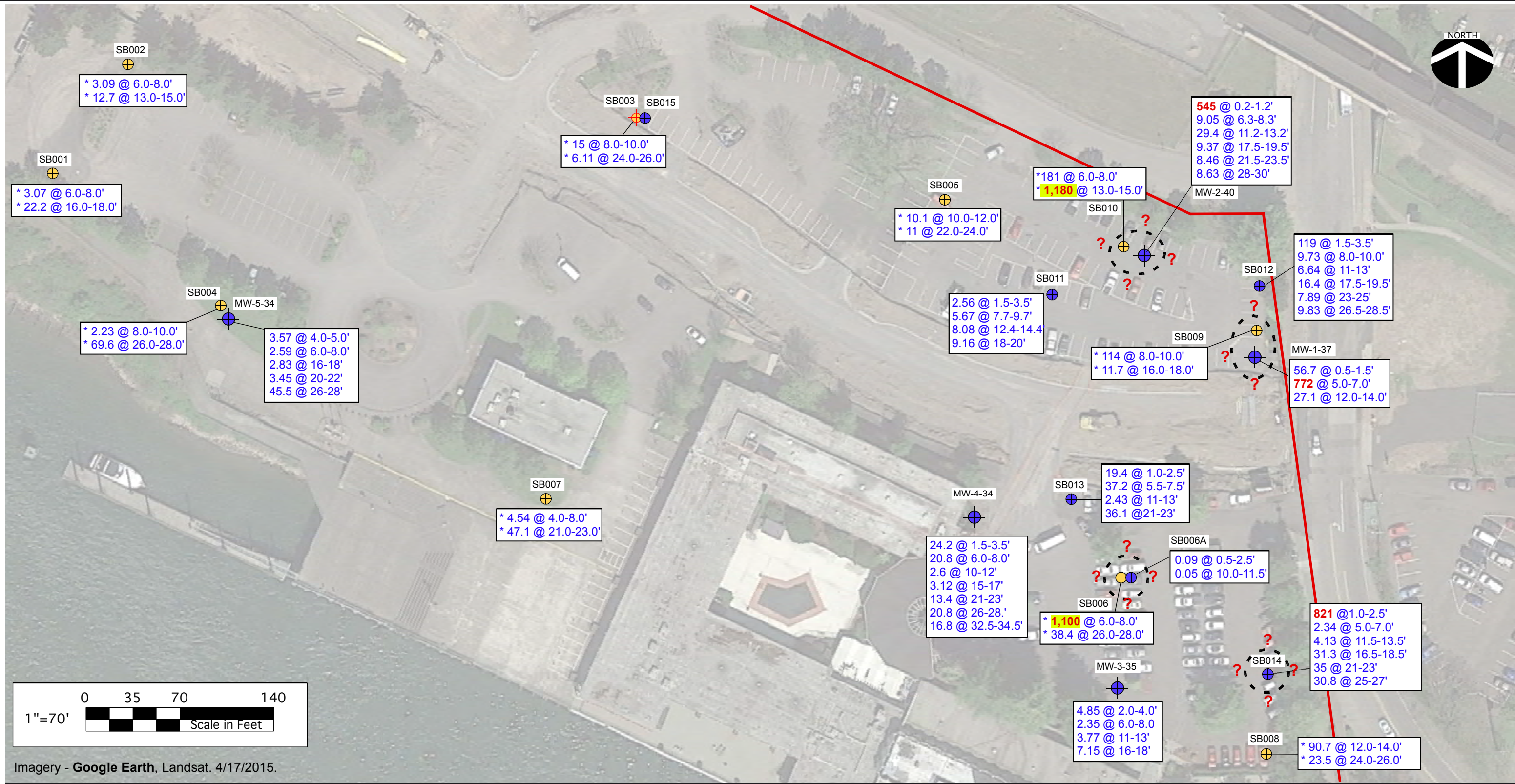
Total Carcinogenic Polyaromatic Hydrocarbon (PAH) TEF Concentrations in Soil

Soil and Groundwater Investigation  
Port of Vancouver, USA - Terminal 1 Site  
100 Columbia Street  
Vancouver, Washington

HAHN AND ASSOCIATES, INC.  
Project No. 8832

August 2015





Imagery - Google Earth, Landsat. 4/17/2015.

**LEGEND**

SB001

Soil Boring (2008 E&E) (approximate location)

Temporary Well Point (2008 E&E)

Monitoring Well (2015 HAI)

Soil Boring (2015 HAI)

mg/kg

milligrams per kilograms

57.9 @ 0.5-2.5'

29.8 @ 10.0-11.5'

**bold**

**Red and Bold**

**Red and Bold**

Total lead concentration in soil in mg/kg @ depth in feet below ground surface (bgs)

Total Lead Concentration Exceeds Background Value (17 mg/kg)

Total Lead Concentration Exceeds Method A Cleanup Level for Unrestricted Land Use (250 mg/kg)

Total Lead Concentration Exceeds Method A Cleanup Level for Industrial Land Use (1,000 mg/kg)

\*

?

- - -

Ecology and Environment, Inc. - Sample Result (November 2008 Environmental Site Assessment)

Estimated Extent of Lead Concentrations Greater than MTCA Method A Soil Cleanup Level for Unrestricted Land Use (250 mg/kg)

Subject Property (approximate)

U

J

Not Detected

Estimated Concentration

**FIGURE 8**

**Total Lead Concentrations in Soil**

Soil and Groundwater Investigation

Port of Vancouver, USA - Terminal 1 Site

100 Columbia Street

Vancouver, Washington

HAHN AND ASSOCIATES, INC.

Project No. 8832

August 2015





#### LEGEND

- SB001  
Soil Boring (2008 E&E) (approximate location)
- Temporary Well Point (2008 E&E)
- Monitoring Well (2015 HAI)
- Soil Boring (2015 HAI)
- ug/L micrograms per liter

Dx 120 J / U @ 24-34'

Gx U @ 24-34'

Red and Bold

Total diesel- / oil-range (Dx) and gasoline-range (Gx) petroleum hydrocarbon concentration in groundwater in ug/L @ screen interval depth in feet below ground surface (bgs)

Concentration exceeds MTCA Method A Cleanup Value for Groundwater for diesel-range (500 ug/L) or oil-range (500 ug/L) petroleum hydrocarbons

- U Not Detected
- Subject Property (approximate)
- \* Ecology and Environment, Inc. - Sample Result (November 2008 Environmental Site Assessment)
- J Estimated Concentration

#### FIGURE 9

#### Total Gasoline-, Diesel-, and Oil-Range Petroleum Hydrocarbon Concentrations in Groundwater

Soil and Groundwater Investigation  
Port of Vancouver, USA - Terminal 1 Site  
100 Columbia Street  
Vancouver, Washington

HAHN AND ASSOCIATES, INC.  
Project No. 8832

August 2015





Imagery - Google Earth, Landsat. 4/17/2015.

LEGEND

- SB001  
⊕ Soil Boring (2008 E&E) (approximate location)
- ⊕ Temporary Well Point (2008 E&E)
- ⊕ Monitoring Well (2015 HAI)
- ⊕ Soil Boring (2015 HAI)
- ug/L micrograms per liter

227 / 149 @ 25-35'

Red and Bold

—

J

Naphthalene concentration in groundwater in ug/L @ screen interval depth in feet below ground surface (bgs)

Concentration exceeds MTCA Method A Cleanup Value for Groundwater (160 ug/L)

Subject Property (approximate)

Estimated Concentration

U Not Detected

\* Ecology and Environment, Inc. - Sample Result (November 2008 Environmental Site Assessment)

**Note:** Results posted are the higher of the naphthalene concentrations as reported by either EPA Method 8260 or 8270.

FIGURE 10  
Naphthalene Concentrations in Groundwater

Soil and Groundwater Investigation  
Port of Vancouver, USA - Terminal 1 Site  
100 Columbia Street  
Vancouver, Washington

HAHN AND ASSOCIATES, INC.  
Project No. 8832

August 2015





LEGEND

- SB001 Soil Boring (2008 E&E) (approximate location)
- Temporary Well Point (2008 E&E)
- Monitoring Well (2015 HAI)
- Soil Boring (2015 HAI)
- ug/L micrograms per liter

0.0002 @ 25-35'

Red and Bold

TEF

TEF PAH concentration in groundwater in ug/L @ screen interval depth in feet below ground surface (bgs)

Concentration exceeds MTCA TEF value for Unrestricted Land Use (0.1 ug/L)

Toxicity Equivalent Factor

\* Ecology and Environment, Inc. - Sample Result (November 2008 Environmental Site Assessment)

U Not Detected

Subject Property (approximate)

FIGURE 11  
Total Carcinogenic Polyaromatic Hydrocarbon (PAH) TEF Concentrations in Groundwater

Soil and Groundwater Investigation  
Port of Vancouver, USA - Terminal 1 Site  
100 Columbia Street  
Vancouver, Washington

HAHN AND ASSOCIATES, INC.  
Project No. 8832

August 2015





**LEGEND**

SB001  
⊕ Soil Boring (2008 E&E) (approximate location)

⊕ Temporary Well Point (2008 E&E)

⊕ Monitoring Well (2015 HAI)

⊕ Soil Boring (2015 HAI)

ug/L micrograms per liter

As 3.48 / - @ 27-37'  
Pb 0.1 J / - @ 27-37'

**Red and Bold**

Total / dissolved arsenic and total / dissolved lead concentrations groundwater in ug/L @ screen interval depth in feet below ground surface (bgs)

Concentration exceeds MTCA Method A Cleanup Value for Groundwater for arsenic (5 ug/L) or lead (15 ug/L)

U Not Detected

\* Ecology and Environment, Inc. - Sample Result (November 2008 Environmental Site Assessment)

J Estimated Concentration

— Subject Property (approximate)

**FIGURE 12**

**Total and Dissolved Arsenic and Lead Concentrations in Groundwater**

Soil and Groundwater Investigation  
Port of Vancouver, USA - Terminal 1 Site  
100 Columbia Street  
Vancouver, Washington

HAHN AND ASSOCIATES, INC.  
Project No. 8832

August 2015





Imagery - Google Earth, Landsat. 4/17/2015.

#### LEGEND

- SB001  
⊕ Soil Boring (2008 E&E) (approximate location)
- ⊕ Temporary Well Point (2008 E&E)
- ⊕ Monitoring Well (2015 HAI)
- ⊕ Soil Boring (2015 HAI)
- ug/L micrograms per liter

2.31 / U @ 24-34'

Red and Bold

Dis Dissolved (Field Filtered) Result

Total / hexavalent chromium concentrations in groundwater in ug/L @ screen interval depth in feet below ground surface (bgs). (Unfiltered sample unless otherwise noted)

Concentration exceeds MTCA Method A Cleanup Value for Groundwater for chromium (50 ug/L)

\* Ecology and Environment, Inc. - Sample Result (November 2008 Environmental Site Assessment)

J Estimated Concentration

U Not Detected

— Subject Property (approximate)

#### FIGURE 13 Total and Hexavalent Chromium Concentrations in Groundwater

Soil and Groundwater Investigation  
Port of Vancouver, USA - Terminal 1 Site  
100 Columbia Street  
Vancouver, Washington

HAHN AND ASSOCIATES, INC.  
Project No. 8832

August 2015

## **Appendix A**

Soil Boring Logs, Monitoring Well Installation Logs, Monitoring Well Development Logs  
and Survey Documentation

## Soil Boring Logs



HAHN AND ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717 PROJECT: POVRED				BORING NUMBER P- SB-006A Page 1 of 2							
PROJECT No. 8832				HAI LOGGER: Ben Uhl SAMPLING METHOD: Macrocore 5-foot Core Barrels DRILLING METHOD: Direct Push EQUIPMENT TYPE: AMS Truck-mount Drill Rig DRILLER: Marcus Johnson and James Melton DRILLING CONTRACTOR: Pacific Soil and Water							
				DRILL START Time: 11:15 Date: 5-27-15		DRILL FINISH Time: 1:30 P Date: 5-27-15					
ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB RESULT N/TPH-Ox (ppm)	CORE INTERVAL	% RECOVERY	DEPTH (feet bgs)	GROUNDWATER	IMPACTED ZONE	STRATA (USCS)	SOIL DESCRIPTION
CONCRETE 007 (0.5'-2.5') ↑ 008 (7.4'-5.5') 3/4" BENTONITE CHIPS ↓ 009 (10-11.5') ↓ 010 (16-18') ↓	007	11:31	1.1		↑	↓	1				(0.0'-0.1' bgs) Asphalt
	008	11:41	1.1		↑	↓	2				(0.1'-2.5' bgs) gravelly SILT, brown, soft, moist, non plastic, no OSD, gravel - sub rounded fine to coarse grained.
								3			
								4			
								5			
	008	11:41	1.1		↑	↓	6				(5.0'-7.0' bgs) SILT w/ some gravel, brown, soft, moist, non plastic, no OSD, gravel is fine to coarse, sub angular to sub rounded
								7			
								8			
								9			
								10			
	009	11:53	-		↑	↓	11				(10.0'-11.5' bgs) gravelly SAND w/ some silt, brown, moist, soft, non plastic, no OSD, gravel is fine to coarse, sub angular to sub rounded
								12			
								13			
								14			
								15			
								16			
	010	12:01	1.3		↑	↓	17				(15.0'-18.0' bgs) SAND, gray, moist loose, medium grain, poorly graded, no OSD
								18			
								19			
								20			

\* Sample No. Prefix: 8832-150527 -

GW Sample Info: 25.0' bgs  
(soil core)

OSD = odor, sheen by sheen test, discoloration  
AA = as above

HAHN AND ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717 PROJECT: POVRED		BORING NUMBER # SB-006A Page 2 of 2									
PROJECT No. 8832		HAI LOGGER: Ben Uhl SAMPLING METHOD: Macrocore 5-foot Core Barrels DRILLING METHOD: Direct Push EQUIPMENT TYPE: AMS Truck-mount Drill Rig DRILLER: Marcus Johnson and James Mellon DRILLING CONTRACTOR: Pacific Soil and Water									
		DRILL START Time: 11:15 Date: 5-27-15	DRILL FINISH Time: 1:30 Date: 5-27-15								
ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB RESULT NWTPH-Dx (ppm)	CORE INTERVAL	% RECOVERY	DEPTH (feet bgs)	GROUNDWATER	IMPACTED ZONE	STRATA (USCS)	BORING DIAMETER: 2.5-inch CASING DIAMETER: N/A SURFACE ELEVATION: Not Surveyed TOP OF CASING ELEVATION: N/A
011 (21-23) 3/8" BENTONITE CHIPS 013 (31-33)							21				(20.0'-23.8' bgs) silty SAND, gray, moist, loose, fine grained, poorly graded, no OSD (23.8'-24.0' bgs) SAND, gray, moist, loose, fine grained, poorly graded, no OSD (25.0'-29.0' bgs) SAND, AA, wet, no OSD (30.0'-35.0' bgs) SAND, AA, wet, no OSD END BORING @ 35.0' bgs
							22				
	011	1208	1.5				23				
							24				
							25				
							26				
	012	1219	0.6				27				
							28				
							29				
							30				
							31				
	013	1253	1.6				32				
							33				
							34				
							35				
						36					
						37					
						38					
						39					
						40					

\* Sample No. Prefix: 8832-150527-

GW Sample Info: 25.0' bgs

(soil core)

OSD = odor, sheen by sheen test, discoloration

AA = as above

PROJECT No. 8832

P. SB-017

Page 1 of 2

HAI LOGGER: Ben Uhl

**SAMPLING METHOD:** Macrocore 5-foot Core Barrels

DRILLING METHOD: Direct Push

EQUIPMENT TYPE: AMS Truck-mount Drill Rig

**DRILLER:** Marcus Johnson and James Melton

**DRILLING CONTRACTOR:** Pacific Soil and Water

DRILL  
START

DRILL  
FINISH

Time:  
8:30

Time: 9:15

Date: 6-8-20

Date: 6-8-2015

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB RESULT NWTPH-Dx (ppm)	CORE INTERVAL	% RECOVERY	DEPTH (feet bgs)	GROUNDWATER	IMPACTED ZONE	STRATA (USCS)	SOIL DESCRIPTION
3 1/8" BENTONITE CHIPS							1			ML	(0.0'-0.2' bgs) ASPHALT gravel w/so
							2			ML	(0.2'-0.7' bgs) gravelly SILT, brown gray, soft, moist, non plastic no OSD, Gravel - fine to medium and
	0546	8:33	0.4 ppm				3				(0.7'-2.0' bgs) gravelly SILT, brown, soft, moist, non plastic, no OSD, gravel is fine to coarse, sub angular
							4				
							5				(2.0'-3.5' bgs) SAND, brown & gray fine to medium grain, moderate graded, no OSD.
							6				
							7			SP	(5.0'-9.4' bgs) SAND, gray, medium grained, poorly graded, loose, n no OSD, some gravel + silt
	0554	8:43	0.1 ppm				8				from 5.8'-6.2' bgs, no OP, slight shear (gray) throughout core (RD)
							9			SM	(9.4'-9.7' bgs) silty SAND, brown, moist, loose, fg, rg, no OSD
							10				
							11				(10.0'-11.4' bgs) SAND, brown moist, loose, medium grained, poorly graded some fine to coarse
							12				grained gravel @ 11.4' bgs no OSD
	0566	8:54	0.3 ppm				13				(11.4'-14.4' bgs) sandy SILT, brown, soft, moist, low plasticity, no OSD
							14				
							15				
							16			ML	(15.0'-20.0' bgs) SILT, brown, med soft, moist, low plasticity no OSD, some fine grained, poorly graded sand from 19.0'-20.0' bgs
							17				
							18				
	051	9:07	0.3 ppm				19				
							20				

AA = as above  
OSD = odor, sheen by sheen test, discoloration



HAHN AND ASSOCIATES, INC.  
434 NW Sixth Avenue  
Portland, Oregon 97209  
(503) 796-0717  
PROJECT: POVRED

# BORING NUMBER

SB-011

Page 2 of 2

HAI LOGGER: Ben Uhl

SAMPLING METHOD: Macrocore 5-foot Core Barrels

DRILLING METHOD: Direct Push

EQUIPMENT TYPE: AMS Truck-mount Drill Rig

DRILLER: Marcus Johnson and James Melton

DRILLING CONTRACTOR: Pacific Soil and Water

DRILL  
START

DRILL  
FINISH

Time:  
8:30

Time:  
9:15

Date:  
6-8-15

Date:  
6-8-15

PROJECT No. 8832

ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB RESULT NWTPH-Dx (ppm)	CORE INTERVAL	% RECOVERY	DEPTH (feet bgs)	GROUNDWATER	IMPACTED ZONE	STRATA (USCS)	BORING DIAMETER: 2.5-inch	CASING DIAMETER: N/A	SURFACE ELEVATION: Not Surveyed	TOP OF CASING ELEVATION: N/A
<p>058 27.7-24.7)</p> <p>059 26-28)</p> <p>3/8" BENTONITE CHIPS</p>	058	9:08	0.5 ppm		24.7		21				<p>(20.0' - 24.7' bgs) SILT w/ some sand, brown, moist, soft, low plasticity, no OSD</p> <p>ML (25.0' - 27.1' bgs) SILT w/ some sand, AA, no OSD</p> <p>(27.1' - 29.0' bgs) SILT, brown w/ red mottling, gray firm 28.2-29.0' bgs, hard, highly plastic, moist, no OSD</p> <p>END BORING @ 30.0' bgs</p>			
							22							
							23							
							24							
							25							
							26							
							27							
							28							
							29							
							30							
							31							
							32							
							33							
							34							
							35							
							36							
							37							
							38							
							39							
							40							

\* Sample No. Prefix: 8832-1505

150608

GW Sample Info: -

AA = as above  
OSD = odor, sheen by sheen test, discoloration

HAHN AND ASSOCIATES, INC.  
434 NW Sixth Avenue  
Portland, Oregon 97209  
(503) 795-0717

PROJECT: POVRED

PROJECT No. 8832

# BORING NUMBER

P- SB-012

Page of

HAI LOGGER: Ben Uhl

SAMPLING METHOD: Macrocore, 5-ft Core Barrel

DRILLING METHOD: Direct Push

EQUIPMENT TYPE: AMS Truck-mount Drill Rig

DRILLER: Marcus Johnson and James Mellon

DRILLING CONTRACTOR: Pacific Soil and Water

DRILL

START

Time:

12:18

Date:

6-9-15

DRILL

FINISH

Time:

13:27

Date:

6-9-15

ABANDONMENT DETAILS	SAMPLE NUMBER *	TIME	HEADSPACE (ppm)	LAB RESULT NWTPH-Dx (ppm)	CORE INTERVAL	% RECOVERY	DEPTH (feet bgs)	GROUNDWATER	IMPACTED ZONE	STRATA (USCS)	SOIL DESCRIPTION
<p>Abandonment Details</p> <p>067 (1.5-3.5')</p> <p>068 (8-10')</p> <p>069 (11-13')</p> <p>070 (17.5-19.5')</p> <p>3/8" BENTONITE CHIPS</p>											(0.0'-0.2' bgs) ASPHALT
							1				(0.2'-3.5' bgs) gravelly SILT w/ some sand, brown & black, soft, moist, non-plastic, petroleum odor, rainbow sheen, discoloration (maybe some asphalt - no asphalt aggregate observed but sand grains appear "gummy")
							2				
							3				
	067G	12:32		171.0 ppm			4				
							5				
							6				(5.0'-6.0' bgs) gravelly SILT w/ some sand, As Above, petroleum odor, rainbow sheen, discoloration
							7				
							8				
	068G	12:41		-			9				(6.0'-8.2' bgs) SAND w/ some silt, brown, moist, loose fine grained, poorly graded, petroleum odor, gray sheen, no discoloration
							10				
							11				
	069G	12:54		2.2 ppm			12				(8.2'-13.0' bgs) SAND, gray, moist, loose, fine grained, poorly graded, but from 11.4'-13.0' bgs, no odor, no sheen, no discoloration
							13				
							14				
							15				
							16				(15.0'-17.4' bgs) SAND, AA, wet, loose, gray, fine grained, poorly graded, petroleum odor, gray sheen, no discoloration
							17				
							18				(17.4'-18.0' bgs) WOOD CHIPS
	070G	13:03		2.8 ppm			19				(18.0'-19.5' bgs) SILT, gray, hard, moist, low plasticity, no OSD
							20				

\* Sample No. Prefix: 8832-150609-

GW Sample Info: 20'  
Soil Core

AA = as above  
OSD = odor, sheen by sheen test, discoloration

HAHN AND ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717				BORING NUMBER SB-012				Page 2 of 2			
PROJECT: POVRED				HAI LOGGER: Ben Uhl				DRILL START	DRILL FINISH		
PROJECT No. 8832				SAMPLING METHOD: Macrocore, 5-ft Core Barrel				Time: 12:18	Time: 13:27		
DRILLING METHOD: Direct Push				EQUIPMENT TYPE: AMS Truck-mount Drill Rig				Date: 6-9-15	Date: 6-9-15		
DRILLER: Marcus Johnson and James Melton				DRILLING CONTRACTOR: Pacific Soil and Water							
ABANDONMENT DETAILS	SAMPLE NUMBER *	TIME	HEADSPACE (ppm)	LAB RESULT NWTPH-Dx (ppm)	CORE INTERVAL	% RECOVERY	DEPTH (feet bgs)	GROUNDWATER	IMPACTED ZONE	STRATA (USCS)	SOIL DESCRIPTION
3/8" BENTONITE CHIPS  071 (23.25)  072 (26.5-28.6')							21				(20.0'-21.6' bgs) SAND, gray, wet, loose, fine grained, poorly graded, no OSD
							22				
							23				
							24				(21.6'-25.0' bgs) SILT w some sand, gray, moist, soft, non plastic, no OSD
							25				
							26				
							27				
							28				(25.0'-28.0' bgs) SILT, gray, moist, hard, low plasticity, no OSD.
							29				
							30				
						31				END BORING @ 30.0' bgs	
						32					
						33					
						34					
						35					
						36					
						37					
						38					
						39					
						40					

\* Sample No. Prefix: 8832-150609-

GW Sample Info: 20' bgs  
Soil Core

AA = as above  
OSD = odor, sheen by sheen test, discoloration



HAHN AND ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717			BORING NUMBER P- SB-013			Page 1 of 2						
PROJECT: POVRED			HAI LOGGER: Ben Uhl			DRILL START	DRILL FINISH					
			SAMPLING METHOD: Macrocore 5-foot Core Barrels			Time: 14:17	Time: 15:18					
			DRILLING METHOD: Direct Push			Date: 5-27-15	Date: 5-27-15					
PROJECT No. 8832			EQUIPMENT TYPE: AMS Truck-mount Drill Rig									
			DRILLER: Marcus Johnson and James Mellon									
			DRILLING CONTRACTOR: Pacific Soil and Water									
ABANDONMENT DETAILS	SAMPLE NUMBER *	TIME	HEADSPACE (ppm)	LAB RESULT NWTPH-Dx (ppm)	CORE INTERVAL	% RECOVERY	DEPTH (feet bgs)	GROUNDWATER	IMPACTED ZONE	STRATA (USCS)	BORING DIAMETER: 2.5-inch CASING DIAMETER: N/A SURFACE ELEVATION (MSL): Not Surveyed 31.34' TOP OF CASING ELEVATION: <del>N/A</del> N 113049.63 SOIL DESCRIPTION: E 1084029.65	
CONCRETE 014 (1-2.5) ↑ 015 (5.5-7.5) ↓ 36" BENTONITE CHIPS ↓ 016 (11-13) ↓ 017 (16-18) ↓	014	1431	0.1		1-2.5		1				ml (0.0'-0.1' bgs) Asphalt (0.1'-0.7' bgs) gravelly, SILT w/ some asphalt (0.7'-2.5' bgs) SILT w/ some gravel, brown, moist, soft, non plastic, no OSD. Gravel is fine to coarse grained subangular.  (5.0'-7.5' bgs) SILT w/ some gravel, As Above, moist, soft, non plastic, Gravel - AA, mild gray sheen, no OD  (10.0'-13.5' bgs) SAND, gray, moist, loose, medium grained, poorly graded, no OD, mild gray sheen.  SP (15.0'-15.5' bgs) SAND, AA, moist, light gray sheen, no OD, brown,  (15.5'-19.0' bgs) SAND w/ some silt, gray, moist, loose, fine grained, poorly graded, no OSD, wood fragments @ 16.5' bgs	
	014	1431	0.1		2.5		2					
								3				
								4				
								5				
								6				
	015	1439	0.2		5.5-7.5		7					
								8				
								9				
								10				
								11				
	016	1454	0.1		11-13		12					
								13				
								14				
								15				
								16				
	017	1508	0.7		16-18		17					
								18				
								19				
								20				

\* Sample No. Prefix: 8832-1505 Z-7-

GW Sample Info:  $\nabla$  25' bgs  
(soil core)

AA = as above  
OSD = odor, sheen by sheen test, discoloration

HAHN AND ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717 PROJECT: POVRED				<b>BORING NUMBER</b> <span style="float: right;">P: SB-013</span>				Page <u>2</u> of <u>2</u>							
PROJECT No. 8832				HAI LOGGER: Ben Uhl SAMPLING METHOD: Macrocore 5-foot Core Barrels DRILLING METHOD: Direct Push EQUIPMENT TYPE: AMS Truck-mount Drill Rig DRILLER: Marcus Johnson and James Melton DRILLING CONTRACTOR: Pacific Soil and Water				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">DRILL START</th> <th style="width: 50%;">DRILL FINISH</th> </tr> <tr> <td>Time: 14:17</td> <td>Time: 15:50</td> </tr> <tr> <td>Date: 5-27-15</td> <td>Date: 5-27-15</td> </tr> </table>		DRILL START	DRILL FINISH	Time: 14:17	Time: 15:50	Date: 5-27-15	Date: 5-27-15
DRILL START	DRILL FINISH														
Time: 14:17	Time: 15:50														
Date: 5-27-15	Date: 5-27-15														

ABANDONMENT DETAILS	SAMPLE NUMBER *	TIME	HEADSPACE (ppm)	LAB RESULT NWTPH-Dx (ppm)	CORE INTERVAL	% RECOVERY	DEPTH (feet bgs)	GROUNDWATER	IMPACTED ZONE	STRATA (USCS)	BORING DIAMETER: 2.5-inch	
							21				(20.0' - 24.5' bgs) SAND w/ some silt, gray, moist loose, fine grained poorly graded, mild gray sheen, no ØD, mild petroleum odor.	
	018 (21-23)						22					
	018 1524 0.6						23					
							24					
							25					
							26					
	019 (26-28)						27					(25.0' - 29.7' bgs) SAND, gray, wet, loose, fine grained poorly graded, no OSD
	019 1536 0.6						28					
							29					
							30					
							31				END BORING @ 30.0' bgs	
							32					
							33					
							34					
							35					
							36					
							37					
							38					
							39					
							40					

\* Sample No. Prefix: 8832-1505 27-

GW Sample Info: 250' bgs  
(soil core)

AA = as above  
OSD = odor, sheen by sheen test, discoloration

HAHN AND ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717				BORING NUMBER <b>SB-014</b> Page 1 of 2							
PROJECT: POVRED				HAI LOGGER: Ben Uhl SAMPLING METHOD: Macrocore 5-foot Core Barrels DRILLING METHOD: Direct Push EQUIPMENT TYPE: AMS Truck-mount Drill Rig DRILLER: Marcus Johnson and James Mellon DRILLING CONTRACTOR: Pacific Soil and Water							
PROJECT No. 8832				DRILL START Time: 9:49 Date: 5-27-15							
DRILL FINISH Time: 10:55 Date: 5-27-15											
ABANDONMENT DETAILS	SAMPLE NUMBER *	TIME	HEADSPACE (ppm)	LAB RESULT NWTPH-Dx (ppm)	CORE INTERVAL	% RECOVERY	DEPTH (feet bgs)	GROUNDWATER	IMPACTED ZONE	STRATA (USCS)	BORING DIAMETER: 2.5-inch CASING DIAMETER: N/A SURFACE ELEVATION (MSL): Not Surveyed 30.37' TOP OF CASING ELEVATION: N/A N 112916.93 SOIL DESCRIPTION: E 1084172.56
CONCRETE							1				(0.0' - 0.1' bgs) Asphalt
001 (1-2.5)	0016	9:55	1.9				2				(0.1' - 2.0' bgs) gravelly SAND, brown, moist, loose, medium grain, poorly graded, mild gray sheen, some briar fragments, no OD
							3				(2.0' - 2.5' bgs) SILT w/ some gravel, brown, soft, moist, non plastic, mild gray sheen, no OD
							4				
							5				
002 (5-7)	0026	10:07	0.9				6				(5.0' - 7.3' bgs) SAND, gray, moist, loose, med - coarse grain, moderately graded, mild gray sheen, no OD
							7				
							8				
							9				
3/8" BENTONITE CHIPS							10			SP	(10.0' - 13.5' bgs) SAND, As Above, moist, mild gray sheen, no OD
							11				
003 (11.5-13.5)	0026	10:20	0.2				12				
							13				
							14				
							15				
							16				(15.0' - 16.1' bgs) SAND, As Above, moist, no OSD
							17				(16.1' - 18.2' bgs) SAND w/ some silt, brown, moist, loose, fine grained, poorly graded, no OSD. Fine grained sand 17.4' - 17.6' bgs
004 (16.5-18.5)	0046	10:29	0.9				18				(18.2' - 18.5' bgs) SAND, gray, moist, medium grained, poorly graded, no OSD
							19				
							20				

\* Sample No. Prefix: 8832-150527-

GW Sample Info:  $\nabla$  25' bgs  
(soil core)

AA = as above  
OSD = odor, sheen by sheen test, discoloration

HAHN AND ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717 PROJECT: POVRED				<b>BORING NUMBER</b> P- SB-014				Page 2 of 2			
PROJECT No. 8832				HAI LOGGER: Ben Uhl SAMPLING METHOD: Macrocore 5-foot Core Barrels DRILLING METHOD: Direct Push EQUIPMENT TYPE: AMS Truck-mount Drill Rig DRILLER: Marcus Johnson and James Melton DRILLING CONTRACTOR: Pacific Soil and Water				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: center;">           DRILL START Time: 9:49 Date: 5-27-15         </td> <td style="width:50%; text-align: center;">           DRILL FINISH Time: 10:55 Date: 5-27-15         </td> </tr> </table>		DRILL START Time: 9:49 Date: 5-27-15	DRILL FINISH Time: 10:55 Date: 5-27-15
DRILL START Time: 9:49 Date: 5-27-15	DRILL FINISH Time: 10:55 Date: 5-27-15										
ABANDONMENT DETAILS	SAMPLE NUMBER *	TIME	HEADSPACE (ppm)	LAB RESULT NMTPH-Dx (ppm)	CORE INTERVAL	% RECOVERY	DEPTH (feet bgs)	GROUNDWATER	IMPACTED ZONE	STRATA (USCS)	BORING DIAMETER: 2.5-inch CASING DIAMETER: N/A SURFACE ELEVATION: Not Surveyed TOP OF CASING ELEVATION: N/A SOIL DESCRIPTION
3/8" BENTONITE CHIPS							21				ML (20.0'-21.2' bgs) Sandy SILT, gray, soft, moist, non plastic, no OSD (21.2'-22.1' bgs) SAND, gray, very moist-wet, fine grained, poorly graded, no OSD (22.1'-23.0' bgs) sandy SILT, AA, moist, no OSD  SP (25.0'-29.0') SAND, gray, wet, loose, fine grained, poorly graded, no OSD
							22				
		1005	10:44	0.0			23				
							24				
							25				
		1006	10:54	1.1			26				
							27				
							28				
							29				
							30				
						31				END BORING @ 30.0' bgs	
						32					
						33					
						34					
						35					
						36					
						37					
						38					
						39					
						40					



HAHN AND ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717			BORING NUMBER <b># SB-015</b>									
PROJECT: POVRED			HAI LOGGER: Ben Uhl									
PROJECT No. 8832			SAMPLING METHOD: Macrocore 5-foot Core Barrels DRILLING METHOD: Direct Push EQUIPMENT TYPE: AMS Truck-mount Drill Rig DRILLER: Marcus Johnson and James Melton DRILLING CONTRACTOR: Pacific Soil and Water									
			DRILL START: 14:27 DRILL FINISH: 15:27 Date: 6-5-2015									
			Date: 6-5-2015									
ABANDONMENT DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB RESULT NMTPH-Ox (ppm)	CORE INTERVAL	% RECOVERY	DEPTH (feet bgs)	GROUNDWATER	IMPACTED ZONE	STRATA (USCS)	BORING DIAMETER: 2.5-inch CASING DIAMETER: N/A SURFACE ELEVATION (MSL): Not Surveyed 29.94' TOP OF CASING ELEVATION: N/A N 113334.42 SOIL DESCRIPTION: E 1083718.18	
A. Patch 3 1/2" BENTONITE CHIPS 053 8-10'							1				(0.0'-8.0' bgs) Run sampler "closed" to 8.0' bgs to assure proper recovery for sampling of 8.0'-10.0' bgs	
							2					
							3					
							4				1st attempt @ 8.0-10' bgs bad recovery - gravel.	
							5				Install offset boring & push 8-13' bgs	
							6					
							7					
							8					
							9				(8.0'-10.5' bgs) gravelly SILT w/ some sand brown to 10.0' bgs then sandier gray, moist, soft, non plastic, brick fragments, orange sh	
							10				ml sand (gray 10-10.5) gravel coarse grain, sub angular, no OSD, quartz gravel perc @ 8.5' bgs	
							11					
							12					
							13					
							14				END BORING @ 13.0' bgs	
							15					
							16					
							17					
							18					
							19					
							20					



## Monitoring Well Installation Logs

<b>HAHN AND ASSOCIATES, INC.</b> 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717					<b>MONITORING WELL NUMBER</b> <b>MW - 1 - 37</b> Well #: <u>BH098</u> Start Card #: <u>NOI =</u> HAI LOGGER: <u>Ben Whi</u>					Page <u>1</u> of <u>2</u>	
PROJECT:  <div style="font-size: 1.2em; font-weight: bold;">POVRED</div>					SAMPLING METHOD: <u>5' macrocore</u> DRILLING METHOD: <u>Direct Push</u> EQUIPMENT TYPE: <u>AMS Track rig 9500-VTR</u> DRILLER: <u>Marcus Johnson / Colin Watson</u> DRILLING CONTRACTOR: <u>PS &amp; W</u>					DRILL START  Time: <u>12:36</u>  Date: <u>5-28-15</u>	DRILL FINISH  Time: <u>17:40</u>  Date: <u>5-28-15</u>
PROJECT No. <u>8832</u>					BORING DIAMETER: <u>3.25"</u> <u>5-28-15</u> CASING DIAMETER: <u>2"</u> SURFACE ELEVATION: TOP OF CASING ELEVATION:						

WELL CONSTRUCTION DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB RESULT	SPT (blows/0.5 foot)	SAMPLE RECOVERY	DEPTH (feet bgs)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION	
<div style="font-size: 0.8em;">           026 (5-15)            107 (5-17)            28 (12-14)            29 (5-18)         </div> <div style="font-size: 0.8em; margin-top: 10px;">           GRANULAR            BENTONITE CHIPS (3/4")            SCHEDULE 40 PVC RISER         </div>	0206	13:17	—		↑	↓	1	ML		(0.0' - 0.2' bgs) ASPHALT	
							2				(0.2' - 1.5' bgs) gravelly SILT w/ some sand, brown, moist, soft, non plastic, no OSD, some asphalt @ 0.5' bgs
							3				
							4				
							5				(5.0' - 6.6' bgs) gravelly SILT, AS, Above w/ red brick intervals from 5.5' - 5.9' bgs & 6.4' - 6.6' bgs, some sand, asphalt, glass, no OP, mild gray sheen
		0279 127	13:28	1.3		↑	↓	6	SP		(6.6' - 7.7' bgs) SAND w/ some silt, brown, moist, loose, fine grained, poorly graded, some asphalt @ base of in driller's shoe, no OSD overall
							7				
							8				
							9				
							10				
						↑	↓	11	ML		(10.0' - 14.0' bgs) SAND w/ some silt, brown to 12.5' bgs, then gray, moist wet 6.5' to 7.0' bgs, fine grained, poorly graded, no OSD
							12				
							13				
							14				
							15				(15.0' - 18.5' bgs) SILT w/ trace of sand, dark gray, moist, med hard, low plasticity, no OSD
		0284	13:35	2.0		↑	↓	16	ML		
							17				
							18				
							19				
							20				

N 113149.96  
 E 1084167.48

# HAHN AND ASSOCIATES, INC.

434 NW Sixth Avenue  
Portland, Oregon 97209  
(503) 796-0717

## MONITORING WELL NUMBER

MW - 1-37

Well #: BHR098

Start Card #:

Page 2 of 2

PROJECT:

POURED

HAI LOGGER: Ben WU NOT =

SAMPLING METHOD: 5' macrocore

DRILLING METHOD: Direct Push

EQUIPMENT TYPE AUS Track rig 9500-VTR

DRILLER: Marcus Johnson / Colin Watson

DRILLING CONTRACTOR: PS & W

DRILL  
START

DRILL  
FINISH

Time:  
12:36

Time:  
17:10

Date:  
5-28-15

Date:  
5-28-15

PROJECT No. 8832

WELL CONSTRUCTION DETAILS	SAMPLE NUMBER *	TIME	HEADSPACE (ppm)	LAB RESULT	SPT (blows/0.5 foot)	SAMPLE RECOVERY	DEPTH (feet bgs)	GROUNDWATER	STRATA (USCS)	BORING DIAMETER: CASING DIAMETER: SURFACE ELEVATION: TOP OF CASING ELEVATION:	SOIL DESCRIPTION
130 12-24) granular 130 12-24) granular 31 30-32)	030	1356	1.3				21		ML		(20.0' - 24.0' bgs) SILT w/ trace of sand olive gray, hard, moist med-high plasticity, no ASD
							22				
							23				
							24				
							25				
							26				(25 - 30) SLOW-H-NO RECOVERY
							27				
							28				
							29				
							30				
	031	1408	1.4				31		ML		(30.0' - 35.0' bgs) SILT w/ trace of sand, olive gray, hard, moist high plasticity, no ASD
							32				
							33				
							34				
							35				
							36		SP		(35.0' - 38.7' bgs) SAND w/ some silt, very moist, olive gray, fine grained, poorly graded, no ASD
							37				
							38				
							39				
							40				(38.7' - 45.0' bgs) gravelly SAND AA. Gravel is fine to coarse grained, subangular, no ASD wet.

1 bag 10/20 COLORED SILICA SAND  
1.5 bags of granular bentonite  
1.5 bags concrete

Very wet 40.0 - 45.0' bgs

38.7' bgs  
(soil core)

END BORING @ 45.0' bgs

File: MW Log flush

10' pre pack 0.01"-80# screen  
27' riser SCH 40 PVC 1 flush mount

Screen 27-37  
Sewer 25-37

(07/03)

<b>HAHN AND ASSOCIATES, INC.</b> 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717					<b>MONITORING WELL NUMBER</b> <b>MW - 2-40</b> Well #: <u>BHR078</u> Start Card #: _____ HAI LOGGER: <u>BAH</u>									
PROJECT: <u>FOURD</u>  PROJECT No. <u>8832</u>					SAMPLING METHOD: <u>Macrocore 5'</u> DRILLING METHOD: <u>Direct Push</u> EQUIPMENT TYPE: <u>Truck-rig 6600</u> DRILLER: <u>Marcus Johnson</u> DRILLING CONTRACTOR: <u>PS&amp;W</u>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">DRILL START</td> <td style="text-align: center;">DRILL FINISH</td> </tr> <tr> <td style="text-align: center;">Time: <u>12:09</u></td> <td style="text-align: center;">Time: <u>15:10</u></td> </tr> <tr> <td style="text-align: center;">Date: <u>6-5-15</u></td> <td style="text-align: center;">Date: <u>6-5-15</u></td> </tr> </table>		DRILL START	DRILL FINISH	Time: <u>12:09</u>	Time: <u>15:10</u>	Date: <u>6-5-15</u>	Date: <u>6-5-15</u>
DRILL START	DRILL FINISH													
Time: <u>12:09</u>	Time: <u>15:10</u>													
Date: <u>6-5-15</u>	Date: <u>6-5-15</u>													

WELL CONSTRUCTION DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB RESULT	DRILL INTERVAL SPT (blows/6-5 feet)	SAMPLE RECOVERY	DEPTH (feet bgs)	GROUNDWATER	STRATA (USCS)	SOIL DESCRIPTION	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>046 0.8' - 1.2')</p> <p>047 1.2' - 1.8')</p> <p>048 1.2' - 1.32')</p> <p>049 1.5' - 1.9.5')</p> </div> <div style="width: 5%;"> <p>40 RIBER</p> <p>SCHEDULE</p> </div> </div>	046G	1226	0.7ppm				1		ml	(0.0'-0.2' bgs) Asphalt	
							2			(0.2'-1.2' bgs) SILT w some gravel, brown, moist, soft, non plastic, no OSD, Gravel-fine to coarse, subangular.	
							3				
							4				
							5				
		047G	1237	0.5ppm				6		ml	(5.0'-6.0' bgs) SILT w some gravel, AA, moist, no OSD
							7		(6.0'-6.3' bgs) Asphalt w some silt		
							8				
							9				
							10				
		048G	1247	-				11		sp	(4.3'-9.0' bgs) SAND w some silt, brown to 8.8' bgs, then gray, moist, loose fine grained, poorly graded, no OSD
							12		(10.0'-13.2' bgs) SAND w some silt moist w/ wet interval		
							13		(12.4'-12.5' bgs, gray, loose, fine grained, poorly graded, wood fragments @ 12.8' bgs, no OSD		
							14				
							15				
		049	1258	1.1ppm				16		ml	(15.0'-19.5' bgs) SILT w trace of sand, gray, soft, moist, non plastic, no OSD, wood fragment @ 18.9 bgs
							17				
							18				
							19				
							20				

N 113225.07  
E 1084083.64



# HAHN AND ASSOCIATES, INC.

434 NW Sixth Avenue  
Portland, Oregon 97209  
(503) 796-0717

## MONITORING WELL NUMBER

MW - 2 - 40

Well #: BHR078

Start Card #:

Page 2 of 2

### PROJECT:

POURED

HAI LOGGER: BPH

NOT = AE 32209

SAMPLING METHOD: Macro Core 5'

DRILLING METHOD: Direct Push

EQUIPMENT TYPE GeoProbe 6600

DRILLER: Marcus Johnson

DRILLING CONTRACTOR: PS & W

DRILL  
START

DRILL  
FINISH

Time:  
12:09

Time:  
15:10

Date:  
6-5-15

Date:  
6-5-15

PROJECT No. 8832

WELL CONSTRUCTION DETAILS		SAMPLE NUMBER *	TIME	HEADSPACE (ppm)	LAB RESULT	DRILL MATERIAL SPT (blows/0.5 foot)	SAMPLE RECOVERY	DEPTH (feet bgs)	GROUNDWATER	STRATA (USCS)	BORING DIAMETER:	CASING DIAMETER:	SURFACE ELEVATION:	TOP OF CASING ELEVATION:
GRANULAR BENTONITE	PVC SCHEDULE 40 RISER							21		ML	(20.0' - 23.5' bgs) SILT w/ trace of sand, gray, soft, moist, non plastic, no OSD			
		↑	050	13:05	1.1 ppm			22						
		↓						23						
								24						
								25						
								26			(25.0' - 27.0' bgs) SILT & trace of sand, AA, no OSD			
								27						
								28			(27.0' - 27.8' bgs) silty sand, gray, wet, moist, loose, fine grained, poorly graded, no OSD			
								29						
				051	13:16	1.0 ppm			30				(27.8' - 30.0' bgs) silt, brown w/ light brown mottling, med hard, low plasticity, moist, no OSD	
10/20 COARSE SILICA SAND		↑						31		ML	(30.0' - 34.5' bgs) SILT, AA, moist, <sup>wet linear</sup> gray, brown to 32.0' then becoming greenish gray, no OSD, hard.			
		↓	052	13:20	1.3 ppm			32						
								33						
								34						
								35						
								36						
								37						
								38						
								39						
								40					(35.0' - 35.3' bgs) gravelly sand, brown, wet, medium grained, poorly graded, no OSD, gravel - coarse grained, sub rounded	
									ML	(35.3' - 39.5' bgs) SILT, hard, very moist, low plasticity, dark brown to 38.5' then gray, no OSD				
								END BORING @ 40.0' bgs						

Screen Interval = 29.5 - 39.5' bgs SET  
PVC (prepack) w/ 0.01" slot 27-37'  
30' schedule 40 PVC riser 29.5-39.5'

1 bags of 10-20 silica sand  
2 bags of concrete  
1.5 bags of granular bentonite

File: MW Log flush

1 - flush mount monument  
1 - locking cap

(07/03)

# HAHN AND ASSOCIATES, INC.

434 NW Sixth Avenue

Portland, Oregon 97209

(503) 796-0717

PROJECT:

POURED

PROJECT No. 8832

## MONITORING WELL NUMBER

MW - 3 - 35

Well #: BHR077

Start Card #:

Page 1 of 2

HAI LOGGER: BAN

NOI =

SAMPLING METHOD: Mac core - 5'

DRILLING METHOD: Geoprobe

EQUIPMENT TYPE Truck rig 6600

DRILLER: Marcus Johnson

DRILLING CONTRACTOR: PS & W

DRILL  
START

DRILL  
FINISH

Time:  
8:56

Time:  
12:05

Date:

6-5-15

Date:

6-5-15

WELL CONSTRUCTION DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB RESULT	DRILL INTERVAL SPT (blows/0-5 feet)	SAMPLE RECOVERY	DEPTH (feet bgs)	GROUNDWATER	STRATA (USCS)	BORING DIAMETER: CASING DIAMETER: SURFACE ELEVATION: TOP OF CASING ELEVATION:
40 2-4)	0409	915	0.2 ppm				1			(0.0'-0.3' bgs) Asphalt
							2			(0.3'-1.0' bgs) gravelly SAND, brown, moist, loose, fine to medium grained, mod graded no OSD, some gravel (coarse) + brick fragments
							3			
							4		SP	
							5			
41 6-8)	0416	922	0.0 ppm				6			(5.0'-9.0' bgs) SAND, brown, moist, loose, medium grained, poorly graded, no OSD
							7			
							8			
							9			
							10			
42 11-13)	0429	9:31	0.2 ppm				11			(10.0'-15.0' bgs) SAND, brown, moist, loose, medium to coarse grain, moderately graded, no OSD
							12		SP	
							13			
							14			
							15			
43 6-16)	043	937	0.4 ppm				16			(15.0'-20.0' bgs) SAND, AA w/ trace of gravel, moist, no OSD.
							17			
							18			
							19			
							20			

N 112907.61

E 1084059.08

<b>HAHN AND ASSOCIATES, INC.</b> 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717 PROJECT: <b>PURIFIED</b>						<b>MONITORING WELL NUMBER</b> <b>MW - 3 - 35</b> Well #: <b>BHR077</b> Start Card #: <b>NUT =</b> HAI LOGGER: <b>BMH</b> SAMPLING METHOD: <b>macrocore 5'</b> DRILLING METHOD: <b>Direct Push</b> EQUIPMENT TYPE: <b>Truck-rig 6600</b> DRILLER: <b>Mary Johnson</b> DRILLING CONTRACTOR: <b>PSW</b>						Page <b>2</b> of <b>2</b>	
PROJECT No. <b>8832</b>						DRILL START Time: <b>8:56</b> Date: <b>6-5-15</b>		DRILL FINISH Time: <b>12:05</b> Date: <b>6-5-15</b>					
WELL CONSTRUCTION DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB RESULT	DRILL INTERVAL SPT (feet 1/2-5 feet)	SAMPLE RECOVERY	DEPTH (feet bgs)	GROUNDWATER	STRATA (USCS)	BORING DIAMETER: CASING DIAMETER: SURFACE ELEVATION: TOP OF CASING ELEVATION: SOIL DESCRIPTION			
144 21-23' 45 25-27.8' 10/20 COARSE SILICA SAND SCH 40 PVC RISER	044	9:43	0.1 ppm		21		21			(20.0' - 23.2' bgs) SAND, brown, moist, loose, medium grained, poorly graded, fine grained sand 21.2' - 21.3' bgs, no OSD  (25.0' - 27.8' bgs) SAND, AA, wet, no OSD, some fine grained sand 27.0' - 27.8' bgs  END BORING @ 30.0' bgs Screen 0.01" slot 25-35' bgs pre pack 35' PVC sch 40 riser 1 monument w/ well cap 1 bag of sand 1.5 bags of granular bentonite 1.5 bags of concrete			
							22						
							23						
							24						
							25						
							26						
							27						
							28						
							29						
							30						
							31						
							32						
							33						
							34						
							35						
							36						
							37						
							38						
							39						
							40						



# HAHN AND ASSOCIATES, INC.

434 NW Sixth Avenue  
Portland, Oregon 97209  
(503) 796-0717

## MONITORING WELL NUMBER

MW - 4 - 34

Well #: B4079

Start Card #:

Page 1 of 2

### PROJECT:

PAVRED

HAI LOGGER: BSM

SAMPLING METHOD: 5 macrocore

DRILLING METHOD: Direct Push

EQUIPMENT TYPE: GeoProbe 6600

DRILLER: Marcus Johnson / James Metten

DRILLING CONTRACTOR: PS&W

DRILL

START

DRILL

FINISH

Time:

8:00

Time:

11:30

Date:

6-9-15

Date:

6-9-15

PROJECT No. 8832

WELL CONSTRUCTION DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB RESULT	SPT (blows/0.5 foot)	SAMPLE RECOVERY	DEPTH (feet bgs)	GROUNDWATER	STRATA (USCS)	BORING DIAMETER:	CASING DIAMETER:	SURFACE ELEVATION:	TOP OF CASING ELEVATION:	SOIL DESCRIPTION
MDN BONE							1							(0.0'-0.3' bgs) ASPHALT
							2							(0.2'-3.5' bgs) gravelly SAND w/ some silt, brown, loose, moist, fine grain, poorly graded, no OSD
	0606	828	0.3 ppm				3							
							4							
							5							
							6							(5.0'-6.7' bgs) gravelly SAND w/ some silt, AA, moist, no OSD
	0616	835	0.2 ppm				7							(6.7'-6.8' bgs) BRICK FRAGMENTS
							8							(6.8'-6.9' bgs) WOOD FRAGMENTS
							9							(6.9'-8.8' bgs) SAND, gray, moist, loose, fine to medium grained, moderately graded, no OSD, slight gray sheen.
							10							
							11							
	0626	842	0.3 ppm				12							(10.0'-12.5' bgs) SAND, AA, moist, no OSD, large wood fragment
							13							12.1'-12.5' bgs w/ sand
							14							
							15							
	063	848	0.2 ppm				16							(15.0'-17.0' bgs) SAND, AA, moist, no OSD
							17							
							18							
							19							
							20							

N 113028.59  
E 1083963.78



# HAHN AND ASSOCIATES, INC.

434 NW Sixth Avenue  
Portland, Oregon 97209  
(503) 796-0717

PROJECT:

POURED

PROJECT No. P832

## MONITORING WELL NUMBER

MW-4-34

Well #: BH079

Start Card #:

Page 2 of 2

HAI LOGGER: BAH

SAMPLING METHOD: 5' MacroPore

DRILLING METHOD: Direct Push

EQUIPMENT TYPE Geoprobe G, 600

DRILLER: Marcus Johnson/James McHone

DRILLING CONTRACTOR: PS & W

DRILL

START

Time: 8:00

Date: 6-9-15

DRILL

FINISH

Time: 11:30

Date: 6-9-15

WELL CONSTRUCTION DETAILS	SAMPLE NUMBER	TIME	HEADSPACE (ppm)	LAB RESULT	SPT (blows/0.5 foot)	SAMPLE RECOVERY	DEPTH (feet bgs)	GROUNDWATER	STRATA (USCS)	BORING DIAMETER:	CASING DIAMETER:	SURFACE ELEVATION:	TOP OF CASING ELEVATION:	SOIL DESCRIPTION
10/20 COVERED SILICA SAND														(20.0'-22.0' bgs) SAND, brown, loose, moist, fine to medium grained, poorly graded, no OSD
	064	856	0.2 ppm				21		SP					(20.0'-22.0' bgs) SAND, brown, loose, moist, fine to medium grained, poorly graded, no OSD
							22							(21.5'-22.2' bgs) SAND, AA
							23							(22.2'-22.4' bgs) SAND, brown, moist, fine grained, poorly graded, mod loose, no OSD
							24							(22.4'-23.0' bgs) SAND, mod grain, AA, no OSD
							25							(23.0'-23.7' bgs) SAND, gray, moist, fine grained, poorly graded, no OSD
	065	914	3.2 ppm				26		SP					(25.0'-29.0' bgs) SAND, gray, wet, fine grained, poorly graded, no OSD, petroleum odor, rainbow sheen, gummy, dark gray
							27							END BERTING @ 32.0' bgs
							28							- no visible petroleum
							29							Screen 0.01" slot (pre pack)
							30							1 bag of 10/20 silica sand
							31							1.5 bags of granular white
							32							1.5 bags of concrete
							33		SP					1 monum (flush-mount)
	066	940	0.7 ppm				34							1 locking cap
							35							10' prepack 0.01" slot well screen
							36							END @ 34.5' bgs
							37							(30-35.0' bgs) SAND w/ trace of silt, gray, loose, fine grained, poorly graded, wet, no OSD
							38							Some wood fragments
							39							Some wood chips @ 32.0' bgs
							40							

<b>HAHN AND ASSOCIATES, INC.</b> 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717				<b>MONITORING WELL NUMBER</b> <b>MW - 5-35</b> Well #: <u>BHR099</u> Start Card #: _____ HAI LOGGER: <u>Ben Uhl</u> NCI = _____				Page <u>1</u> of <u>2</u>							
<b>PROJECT:</b> <div style="text-align: center; font-size: 1.2em;">POURED</div>				<b>SAMPLING METHOD:</b> <u>5' macrocore</u> <b>DRILLING METHOD:</b> <u>Direct Push</u> <b>EQUIPMENT TYPE:</b> <u>AMS Track-rig</u> <b>DRILLER:</b> <u>Marans Johnson</u> <b>DRILLING CONTRACTOR:</b> <u>PS-W</u>				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">DRILL START</td> <td style="text-align: center;">DRILL FINISH</td> </tr> <tr> <td style="text-align: center;">Time: <u>8:01</u></td> <td style="text-align: center;">Time: _____</td> </tr> <tr> <td style="text-align: center;">Date: <u>5-28-15</u></td> <td style="text-align: center;">Date: <u>5-28-15</u></td> </tr> </table>		DRILL START	DRILL FINISH	Time: <u>8:01</u>	Time: _____	Date: <u>5-28-15</u>	Date: <u>5-28-15</u>
DRILL START	DRILL FINISH														
Time: <u>8:01</u>	Time: _____														
Date: <u>5-28-15</u>	Date: <u>5-28-15</u>														
<b>PROJECT No.</b> <u>8832</u>															

WELL CONSTRUCTION DETAILS	SAMPLE NUMBER *	TIME	HEADSPACE (ppm)	LAB RESULT	SPT (blows/0.5 foot)	SAMPLE RECOVERY	DEPTH (feet bgs)	GROUNDWATER	STRATA (USCS)	BORING DIAMETER: CASING DIAMETER: SURFACE ELEVATION: TOP OF CASING ELEVATION: SOIL DESCRIPTION	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>20 1-5')</p> <p>21 1-8')</p> <p>22 1-11 80% CLAS</p> <p>23 1-18')</p> </div> <div style="width: 50%; border-left: 1px solid black; padding-left: 5px;"> <p>Concrete</p> <p>GRANULAR BELENITE</p> <p>40 PVC RUBER</p> <p>SEHEDULE</p> </div> </div>							1		SP	(0.0' - 4.0' bgs.) SAND w/ some gravel, multiple zones of asphalt, had to core prior to macrocore to 4.0' bgs.	
							2				
								3			
								4			
	C209	902	-				5				(4.0' - 5.0' bgs.) SAND brown, moist, medium grained, poorly graded, no OSD
							6				
	0206	906	0.5				7				(5.0' - 8.0' bgs.) SAND, As Above, no OSD, mild gray sheen
							8				
							9				
	0229	912	-				10				(10.0' - 11.0' bgs.) SAND, As Above, no OSD
							11				
							12				
							13				
							14				
							15				
	023	917	0.2				16				(15.0' - 18.0' bgs.) SAND, As Above, moist, no OSD
							17				
							18				
							19				
							20				

DTW = 26.

PTB - 34.60 ground surface

N 113192.74  
E 1083410.67

HAHN AND ASSOCIATES, INC. 434 NW Sixth Avenue Portland, Oregon 97209 (503) 796-0717 PROJECT: <b>PCVRED</b> PROJECT No. <b>8832</b>					<b>MONITORING WELL NUMBER</b> MW - <b>5-35</b> Well #: <b>BH 2099</b> Start Card #: <b>NONE</b> HAI LOGGER: <b>Ben Lile</b> SAMPLING METHOD: <b>5' manual core</b> DRILLING METHOD: <b>Direct Push</b> EQUIPMENT TYPE: <b>Amis Track-rig 9500-VTR</b> DRILLER: <b>Marcus Johnson</b> DRILLING CONTRACTOR: <b>PS &amp; W</b>					Page <b>2</b> of <b>2</b> DRILL START Time: <b>8:01</b> Date: <b>5-28-15</b>		DRILL FINISH Time: _____ Date: <b>5-28-15</b>	
WELL CONSTRUCTION DETAILS SAMPLE NUMBER TIME HEADSPACE (ppm) LAB RESULT SPT (blows/0.5 foot) SAMPLE RECOVERY DEPTH (feet bgs) GROUNDWATER STRATA (USCS)					BORING DIAMETER: CASING DIAMETER: SURFACE ELEVATION: TOP OF CASING ELEVATION: SOIL DESCRIPTION								
24 @ 4-23) c-22) 25 @ 6-28) 10/20 SILICA SAND Granular Bentonite Bentonite PVC SR-4013					(20.0' - 22.2' bgs) SAND, brown, moist, loose, fine grained, poorly graded, no OSD, trace of med gravel. (22.2' - 23.0' bgs) WOOD w/ some silt, no OSD (23.0' - 24.8' bgs) SAND, As Above, moist, no OSD, getting slightly coarser w/ depth. (25.0' - 26.0' bgs) SAND, AA, moist, no OSD (26.0' - 29.0' bgs) SAND w/ some silt, gray, loose, very moist - wet, fine grained, poorly graded, no OSD (30.0' - 35.0' bgs) SAND, gray, wet, fine grained, poorly graded, no OSD, less wet 33.5' - 35.0' bgs. END BORING @ 35.0' bgs Granular Bentonite 1 BAGS OF 10/20 SILICA SAND 1.5 BAGS OF 3/8" HOLE PELLETS 1.5 BAGS OF CONCRETE 2-SFT sections → 1 → Pre-Pack SS screen 0.01" slot 30 feet of riser (PVC-sch 40) 1 Flush inlet manometer								
024 9:27 0.7 025 9:35 0.4					21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40								

## Monitoring Well Development Logs



Well Number: MW-1-37

Page 1 of 1

Date: 6-9-2015

<b>Project Information</b>
Project Name: POVRED
FAI Project Number: 8832
<b>General Information</b>
Field Team: Ben Uhl
Purge Method: Peristaltic Pump
Pump Intake Depth (ft btc):
Flow-Through Cell: No
Decontamination Method: Disposable Tubing and Alconox and DI Water for Water Level Probe

Well Volume Calculation			Stick-up or <u>Flush</u> : (circle one)		
Well Depth (ft bgs)	Well Depth (ft btc)	DTW (ft btc)	Water Column (ft)	Convert Factor (gal/ft)	One Well Volume (gal)
37.5	37.0	23.0	14.0	0.17	2.38

3/4"=0.023 gal/ft      (2")=0.17 gal/ft      4"=0.66 gal/ft      6"=1.5 gal/ft

**General Information:**  
Purge Water Disposition: 55-gallon Steel Drum  
Field Conditions: SUNNY, T 80's F

Comments: Initial purge - peristaltic pump on fastest rate ( $\text{H}_2\text{O}$  dropped 1.0'). Slowed down rate & water coming back in simulating low flow sampling.

[illegible]

Note: bgs= below ground surface    btc=below top of casing    DTW=depth to water    gpm=gallons per minute

Clarity: VC=very cloudy Cl=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

\* NO sleep or order to purge water.

FINAL DTB (TOC) 37.03'

15.47 - Add another (2nd) peristaltic pump tubing line, twice the discharge.

Well Number: MW-2-40

Date: 6-10-15

Well Volume Calculation		Stick-up or (Flush) (circle one)	
Well Depth (ft bgs)	Well Depth (ft btc)	DTW (ft btc)	Water Column (ft)
40.45	40.10	24.38	15.72
Convert Factor (gal/ft)		One Well Volume (gal)	
2.7		13.5	
3/4"=0.023 gal/ft		(2")=0.17 gal/ft	
4"=0.66 gal/ft		6"=1.5 gal/ft	
General Information:			
Purge Water Disposition: 55-gallon Steel Drum			
Field Conditions: sunny, 80's F			

[illegible]

Note: bgs= below ground surface    btc=below top of casing    DTW=depth to water    gpm=gallons per minute  
Clarity: VC=very cloudy    Cl=cloudy    SC=slightly cloudy    AC=almost clear    C=clear    CC=crystal clear

→ will need to sample well w/ submersible bladder pump due to water level drop & possibly due to turbidity.

# Well Development Field Log

Well Number: MW-3-35

Page 1 of 1

Date: 6-10-15

## Project Information

Project Name: POVRED  
HAI Project Number: 8832

## General Information

Field Team: Ben Uhl  
Purge Method: Peristaltic Pump ✓  
Pump Intake Depth (ft bgs): 34.5' bgs  
Flow-Through Cell: No  
Decontamination Method: Disposable Tubing and Alconox  
and DI Water for Water Level Probe

## Well Volume Calculation

Stick-up or Flush (circle one)

Well Depth (ft bgs)	Well Depth (ft btc)	DTW (ft btc)	Water Column (ft)	Convert Factor (gal/ft)	One Well Volume (gal)
35.2	34.9	24.60	10.3	0.17	1.8

3/4"=0.023 gal/ft (2)=0.17 gal/ft 4"=0.66 gal/ft 6"=1.5 gal/ft

## General Information

Purge Water Disposition: 55-gallon Steel Drum

Field Conditions: sunny, 80's F

Comments: NO SHEEN OR ABNORMAL ORP TO PURGEWATER

Well Purge Data		Total Volume to Purge (gal) =								
Time	Volume Purged (gallons)	Purge Rate (gpm)	DTW (ft btc)	Conductivity (uS/cm)	Temp. (°C)	pH	ORP (mV)	D.O. (mg/L)	Turbidity (NTUs)	Clarity/Color/Remarks
	Pump On	11:42	24.60 <sup>Initial</sup>							
11:45	1.0		24.70	1,557	17.8	6.71	-	-	>999	VC
11:51	2.0		24.72	1,388	16.8	6.54	-	-	219	CL
11:55	3.0		24.73	1,372	16.6	6.73	-	-	75.4	AC
11:59	4.0		24.75	1,227	15.3	6.55	-	-	15.8	CC
12:04	5.0		24.75	1,212	16.3	6.56	-	-	7.64	CC
12:07	6.0		24.75	1,146	16.5	6.52	-	-	5.66	CC
12:12	7.0		24.75	1,143	16.5	6.54	-	-	3.90	CC
12:17	8.0		24.75	1,101	16.4	6.52	-	-	3.75	CC
12:21	9.0		24.75	1,081	16.6	6.59	-	-	2.72	CC
12:26	10.0		24.75	1,071	16.6	6.55	-	-	2.91	CC
12:31	10.0		24.75	1,053	16.5	6.53	-	-	-	CC
	Pump Off	12:32	24.75 <sup>Final</sup>							

Note: bgs= below ground surface btc=below top of casing DTW=depth to water gpm=gallons per minute  
Clarity: VC=very cloudy CL=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

FINAL DTW (TOC) = 34.9'



# Well Development Field Log

Well Number: MW-4-34

Page 1 of 1

Date: 6-10-15

<b>Project Information</b>
Project Name: POVRED
HAI Project Number: 8832
<b>General Information</b>
Field Team: Ben Uhl
Purge Method: Peristaltic Pump ✓
Pump Intake Depth (ft bgs): ~34.5' bgs
Flow-Through Cell: No
Decontamination Method: Disposable Tubing and Alconox and DI Water for Water Level Probe

Well Volume Calculation			Stick-up or <u>Flush</u> (circle one)		
Well Depth (ft bgs)	Well Depth (ft btc)	DTW (ft btc)	Water Column (ft)	Convert Factor (gal/ft)	One Well Volume (gal)
35	34.4	25.16	9.3	0.17	1.5

3/4"=0.023 gal/ft      2"=0.17 gal/ft      4"=0.66 gal/ft      6"=1.5 gal/ft

<b>General Information</b>
Purge Water Disposition: 55-gallon Steel Drum
Field Conditions: sunny & 80°s F

Comments: NO VISIBLE SHEEN TO PURGEWATER, NO OIL IN WELL WHEN CHECKING WITH OIL/WATER INTERFACE PROBE

Well Purge Data		Total Volume to Purge (gal) ±								
Time	Volume Purged (gallons)	Purge Rate (gpm)	DTW (ft btc)	Conductivity (uS/cm)	Temp. (°C)	pH	ORP (mV)	D.O. (mg/L)	Turbidity (NTUs)	Clarity/Color/Remarks
	Pump On 9:53		25.10 <sup>Initial</sup>	1,161						
9:55	0.3		27.06	569 <sup>SD</sup>	18.5	6.49	—	—	>999	VC
10:11	2.0		26.79	1,180	18.1	6.37	—	—	154	SC
10:27	3.0		26.90	1,167	19.3	6.49	—	—	65.5	AC
10:38	4.0		27.00	1,186	18.0	6.46	—	—	27.9	C
10:47	5.0		27.05	1,131	19.0	6.45 <sup>SD</sup>	—	—	13.2	CC
10:56	6.0		27.05	1,180	18.7	6.47	—	—	13.4	CC, slow rate
11:06	7.0		27.18	1,181	18.3	6.46	—	—	7.08	CC
11:11	7.5		27.18	1,175	18.7	6.51	—	—	7.85	CC
	Pump Off 11:12		27.18 <sup>Final</sup>							

Note: bgs= below ground surface btc=below top of casing DTW=depth to water gpm=gallons per minute  
Clarity: VC=very cloudy Cl=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

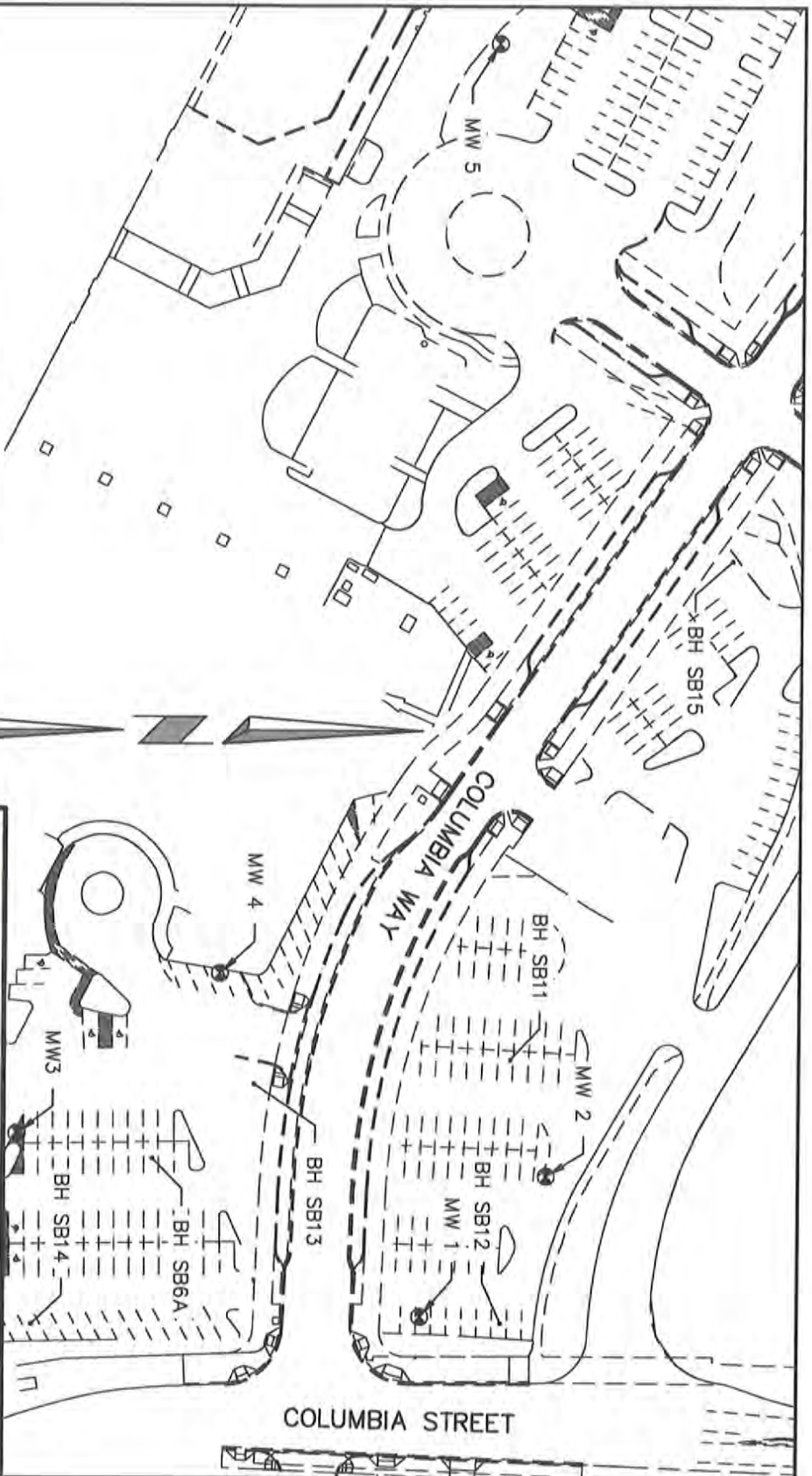
FINAL DTB (TOC) = 34.4' ✓



## Survey Documentation

# EXHIBIT MAP OF TERMINAL 1 MONITOR WELLS AND BORE HOLES

JUNE 24, 2015



**HJD**  
**DESIGN GROUP**

engineers landscape architects planners surveyors

www.hjdg.com

314 W 15th Street  
Vancouver, WA 98660-2927  
360.695.3488  
360.695.8767 fax

DRAWN BY: RFS	SCALE: 1"=100'	6/24/2015
CHECKED BY: TLG	JOB NO.: 3736-03	SHEET 1 OF 1



PORT OF VANCOUVER TERMINAL 1 MONITORING WELLS AND BORE HOLE LOCATIONS				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
7000	113198.14	1084171.26	28.91	BH SB12
7001	113225.07	1084083.64	31.53	MW 2
7003	113203.13	1084014.50	32.25	BH SB11
7005	113334.42	1083718.18	29.94	BH SB15
7006	113192.74	1083410.67	32.10	MW 5
7007	113028.59	1083963.78	31.34	MW 4
7008	113049.63	1084029.65	31.34	BH SB13
7009	112988.89	1084073.93	31.42	BH SB6A
7011	112907.61	1084059.08	30.50	MW 3
7012	112916.93	1084172.56	30.37	BH SB14
7014	113149.96	1084167.48	29.06	MW 1

## **Appendix B**

### Groundwater Sampling Field Records



# Water Level Measurement Field Log

Site: Terminal 1 (Red Lion - POV, USA Property)

Address: 100 Columbia Street

City, State: Vancouver, WA

HAI Project No.: 8832

Date: 6-16-2015

Measured by: Ben Uhl

Device / Method: Solinst Water Level Meter

Well	Time Opened	Water Level (ft btc)	Time	Water Level (ft btc)	Time	Water Level (ft btc)
MW-1-37	8:46		9:12	23.20		
MW-2-40	8:41		9:10	26.14		
MW-3-35	8:51		9:18	24.20		
MW-4-34	8:48		9:15	25.40		
MW-5-35	8:35		9:02	26.00		

ft btc = feet below top of casing

\* No observable pressure in wells upon removing well cap.

\* Piezo water level probe between measurements w/ Alconox + DI water

# Low-Flow Well Sampling Field Log

Well Number: MW-1-37

Page 1 of 1

Date: 6-16-15

<b>Project Information:</b>
Project Name: POVRED
HAI Project Number: 8832
<b>Sampling Information:</b>
Field Team: Ben Uhl
Purge Method: LOW FLOW
Pump Intake Depth (ft btc): 34' bgs
Flow-Through Cell: Yes
Sampling Method: Peristaltic Pump
Decontamination Method:
Disposable Tubing
Purge Water Disposition: On-site drums
Field Conditions: SUNNY, 80°S F
<b>Comments:</b>

<b>Well Information</b>		Stick-up or (Flush) (circle one)	
Well Diameter (in)	Drilled Well Depth (ft bgs) (ft btc)	Top of Screen (ft bgs) (ft btc)	Screen Interval (ft bgs)
2"			27-37
<b>Purge Volume</b> (Only applicable if pump intake is above top of screen)			
Top Screen (ft btc)	Pump Intake (ft btc)	Top Screen - Pump Intake (ft)	Convert Factor (L/ft) Minimum Purge Volume (Liters)

3/4"=0.022 G/ft 2"=0.166 G/ft 4"=0.66 G/ft 6"=1.5 G/ft

<b>Sample Containers</b>				Filtered?
Number	Type	Preservative	Analytical Parameters	
3	VOAS	HCL	NUTPH-CX VOCS	N
2	250mL AMB	NON	PAHS	N
2	1L AMB	HCL	NUTPH-DX	N
1	500mL HOPE	HNO <sub>3</sub>	Total Metals	N
1	500mL HOPE	HNO <sub>3</sub>	Diss. Metals	Y
1	1L AMB	NON	Extra volume	N

00 total

Well Purge Data										
Time	Volume Purged (Gallons)	Purge Rate (Gpm)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity/Color/Remarks
	Pump On	12:48	Initial 23.76	-	±3%	±10%	±0.1	±10mv	±10%	<= Stabilization Criteria
12:51	INT		23.81	17.6	760	0.61	6.82	-240.7	860	VC
12:55	0.2		23.55	17.1	706	0.36	6.73	-206.5	57.4	AC
12:59	0.5		23.55	17.2	630	0.28	6.73	-182.5	59.1	AC
13:03	1.0		23.55	17.0	607	0.25	6.73	-174.5	31.6	C
13:07	1.3		23.55	17.0	555	0.24	6.75	-168.1	36.6	C
13:11	1.7		23.55	17.7	530	0.22	6.74	-166.1	28.4	C
13:15	2.0		23.55	17.4	530	0.21	6.77	-163.7	35.7	C
13:19	2.3		23.55	17.4	526	0.21	6.77	-162.2	29.2	C
Start Sampling			13:20							
End Sampling			13:45							
			Final 23.55							
				Sample Number:	8832-150616-102 = REC					
					-103 = DUP					

Note: bgs= below ground surface btc=below top of casing DTW=depth to water Gpm=Gallons per minute  
Clarity: VC=very cloudy Cl=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

# Low-Flow Well Sampling Field Log

Well Number: MW-2-40

Page 1 of 1

Date: 6-16-15/6-17-15

<b>Project Information</b>
Project Name: POVRED
HAI Project Number: 8832
<b>Sampling Information</b>
Field Team: Ben Uhl
Purge Method: Standard
Pump Intake Depth (ft btc): NA - bailer
Flow-Through Cell: Yes
Sampling Method: 6-17 (Stainless Steel bladder pump)
Decontamination Method: Alconox PI new bladder or pump
Disposable bailer pump
Purge Water Disposition: On-site drums
Field Conditions:
Comments: Bailed dry 6-16-15 w/ samples collected 6-17-15 via stainless steel bladder pump w/ new disposable bladder.

<b>Well Information</b>				Stick-up or Flush (circle one):
Well Diameter (in)	Drilled Well Depth (ft bgs) (ft btc)		Top of Screen (ft bgs) (ft btc)	
2"	39.5	39.10		
Screen Interval (ft bgs): 30-40				
Purge Volume (Only applicable if pump intake is above top of screen)				
Top Screen (ft btc)	Pump Intake (ft btc)	Top Screen - Pump Intake (ft)	Convert Factor (L/ft)	Minimum Purge Volume (Liters) gallons
			0.163	2.12
$3/4" = 0.022 \text{ G/ft}$ $(2") = 0.166 \text{ G/ft}$ $4" = 0.66 \text{ G/ft}$ $6" = 1.5 \text{ G/ft}$				

Sample Containers				Filtered?
Number	Type	Preservative	Analytical Parameters	
3	VOAS	HCL	NWTPH-Cx/VOCS	N
2	250mL Amb	NON	PAHS	N
1	1L Amb	HCL	NWTPH-Dx	N
1	500mL HDPE	HNO <sub>3</sub>	Total Metals	N
1	500mL HDPE	HNO <sub>3</sub>	DISS. Metals	Y
1	1L Amb	NON	Extra Volume	Y
(2) to fail				

Well Purge Data										
Time	Volume Purged (Gallons)	Purge Rate (Gpm)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity/Color/Remarks
	Pump On		Initial 26.05	-	±3%	±10%	±0.1	±10mv	±10%	<= Stabilization Criteria
1443	1.1			17.7	994	-	6.74	-	-	AC
1453	2.5		DRY	17.7	1,011	-	6.63	-	-	AC
11:30			33.97							
Start Sampling collected 6/17/15 11:45										
End Sampling 12:10 Sample Number: 8832-150617-107										
			Final DRY							

Note: bgs= below ground surface btc=below top of casing DTW=depth to water Gpm=Gallons per minute  
Clarity: VC=very cloudy Cl=cloudy SC=slightly cloudy AC=almost clear C=clear CC=crystal clear

$$39.10 - 26.05 = 13.05 \times 0.163 = 2.12 \text{ gallons} = 1 \text{ volume}$$

$$39.10 - 33.97 = 5.13 \times 0.163 = 0.8 \text{ gallons}$$



# Low-Flow Well Sampling Field Log

Well Number: MW-3-35

Page 1 of 1

Date: 6-16-15

## Project Information:

Project Name: POVRED

HAI Project Number: 8832

## Sampling Information:

Field Team: Ben Uhl

Purge Method: LOW FLOW

Pump Intake Depth (ft btc): 34'

Flow-Through Cell: Yes

Sampling Method: Peristaltic Pump

Decontamination Method:

Purge Water Disposition: On-site drums

Field Conditions: overcast, 70°s F

## Comments:

## Well Information

Well Diameter (in)	Drilled Well Depth		Top of Screen		Screen Interval (ft bgs)
	(ft bgs)	(ft btc)	(ft bgs)	(ft btc)	
2"		34.88			25-35'

Purge Volume (Only applicable if pump intake is above top of screen)

Top Screen (ft btc)	Pump Intake (ft btc)	Top Screen - Pump Intake (ft)	Convert Factor (L/ft)	Minimum Purge Volume (Liters)

3/4"=0.022 G/ft

(2)"=0.166 G/ft

4"=0.66 G/ft

6"=1.5 G/ft

## Sample Containers

Number	Type	Preservative	Analytical Parameters	Filtered?
3	VOAS	HCL	NUTPH-CX/VOCS	N
2	250 AMB	NOW	PANS	N
2	1LAMB	HCL	NUTPH-DX	N
1	500mL HDPE	HNO3	TOTAL METS	N
1	500mL HDPE	HNO3	DISS METALS	Y
701	1LAMB	NOW	EXTRA VOLUME	N

(10) TOTAL

## Well Purge Data

Time	Volume Purged (Gallons)	Purge Rate (Gpm)	DTW (ft btc)	Temp. (°C)	Conductivity (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Clarity/Color/Remarks
	Pump On 9:54		Initial 24.20	-	±3%	±10%	±0.1	±10mv	±10%	<= Stabilization Criteria
9:57	INT		24.22	17.8	1,493	2.34	6.13	-102.1	480	VC
10:01	0.2		24.22	15.7	1,082	0.42	6.28	-124.3	8.6	CC
10:06	0.5		24.22	15.8	1,125	0.33	6.26	-115.0	25.0	C
10:11	1.0		24.22	15.9	1,096	0.28	6.25	-111.1	15.8	C
10:15	1.3		24.22	15.7	1,099	0.27	6.25	-109.8	12.4	C
10:19	1.6		24.22	15.8	1,087	0.27	6.25	-108.9	9.4	CC



## Page 1 of 1

Date: 6-16-15

Sample Containers				Filtered?
Number	Type	Preservative	Analytical Parameters	
3	VOAS	HCL	NWTPH-Cx/VOCs	N
2	250mL LAB B	NON	PAHS	N
2	1LAMB	HCL	NWTPH-Ox	N
1	500mL HOPE	HNO <sub>3</sub>	TOTAL METS.	N
1	500mL HOPE	HNO <sub>3</sub>	DISS. METS.	Y
1	1LAMB	NON	Extra Volume	N

Note: bgs= below ground surface    btc=below top of casing    DTW=depth to water    Gpm=Gallons per minute  
Clarity: VC=very cloudy    Cl=cloudy    SC=slightly cloudy    AC=almost clear    C=clear    CC=crystal clear

## Page 1 of 1

34  
1741-5-2535

4/16/15 - 4/17/15

Sample Containers				Filtered?
Number	Type	Preservative	Analytical Parameters	
3	VOAS	HCL	NWTPH-CX/VOCS	N
2	250mL AMB	NON	PAHS	N
2	1L AMB	HCL	NWTPH-DX	N
1	500mL HDPE	HNO <sub>3</sub>	TOTAL METALS	N
1	500mL HDPE	HNO <sub>3</sub>	DISS. METALS	Y
1	1L AMB	NON	Ext. V. / m	N

Note: bgs= below ground surface    btc=below top of casing    DTW=depth to water    Gpm=Gallons per minute  
Clarity: VC=very cloudy    Cl=cloudy    SC=slightly cloudy    AC=almost clear    C=clear    CC=crystal clear

$$34.60 - 34.20 = 12.40 \times 0.163 = 2 \text{ gallons} = 1 \text{ vol.}$$

## **Appendix C**

WasteXpress Profile Documentation and Non-Hazardous Waste Manifest



## REQUEST FOR WASTE PROFILING AND DISPOSAL APPROVAL

Pg 1 of 1

P.O. Box 31100 Portland OR 97231 Call 503-224-3206 Fax 503-228-9168

Company / Generator Name: Hahn and Associates ~ Port of VancouverBusiness Address: 100 Columbia Street, City: Vancouver, State: WA Zip Code: Telephone: 503-796-0717 Fax:  Contact Person / Title: Ben Uhl (Field Manager)

Waste Name:	IDW soil	IDW water	
Waste Generation Process:	IDW	IDW	
Flashpoint:	≤140 °F <input checked="" type="checkbox"/> >140 °F	≤140 °F <input checked="" type="checkbox"/> >140 °F	≤140 °F    >140 °F
pH:	≤2    2.1-7 <input checked="" type="checkbox"/> 7-12    ≥12.5	≤2    3-7 <input checked="" type="checkbox"/> 7-12    ≥12.5	≤2    3-7    7-12    ≥12.5
Heavy Metals:	Yes <input checked="" type="checkbox"/> No	Yes <input checked="" type="checkbox"/> No	Yes    No
RCRA VOCs:	Yes <input checked="" type="checkbox"/> No	Yes <input checked="" type="checkbox"/> No	Yes    No
Viscosity:	Liquid    Liquid/Solid <input checked="" type="checkbox"/> Solid	<input checked="" type="checkbox"/> Liquid    Liquid/Solid    Solid	Liquid    Liquid/Solid    Solid
Composition:	See analytical % % % % %	See analytical	% % % % %
Analytical or MSDS on File:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes    No	Yes    No
Hazardous Waste:	Yes <input checked="" type="checkbox"/> No	Yes <input checked="" type="checkbox"/> No	Yes    No
Waste Codes:	None	None	
WA State Codes:	None	None	
Shipping Container Type:	55 gallon drums	55 gallon drums	
Volume:	2 -5 drums	2-5 drums	
UN Number (If Applicable):	N/A	N/A	
Profile Number:	IRM-1	IRM-1	

**I EPA ID (if registered)****II. CEG Certification (sign if applicable)**

State and Federal hazardous waste regulations define a Conditionally Exempt Generator (CEG) as a hazardous waste generator that generates, in one month, no more than 100 kilograms (220 pounds or approximately 25 gals) of hazardous waste, 2.2 pounds of acutely hazardous waste, or 220 pounds of spill cleanup debris containing hazardous waste. Additionally, to be a Conditionally Exempt Generator a generator must not at any time accumulate more than 2200 pounds (approximately 250 gals) of hazardous waste on site. Generators that do not meet these requirements are no longer defined as Conditionally Exempt Generators and must comply with regulations for small quantity or large quantity generators.

Under penalty of law and for the purposes of receiving the benefits of WasteXpress's Conditionally Exempt Generator hazardous waste collection service, I certify my organization complies with all requirements for conditionally exempt generator status. I understand that only the types and quantities of waste(s) listed on the Work Order/Quote and approved by WasteXpress may be disposed through this service. Additionally, I acknowledge CEG waste being shipped to the International Resource Management will be repackaged, consolidated and shipped on a manifest along with other CEG generators to a permitted recycler, subtitle C/D landfill or TSDF per the 40 CFR for proper reclamation or waste disposal.

Signature

Date

I hereby certify that all information submitted above and attached contains true and accurate descriptions of this waste. I hereby authorize WasteXpress to proceed with submitting waste profiles, wastestream surveys and or waste approval forms on my behalf to secure necessary approvals to dispose of this waste at a hazardous waste treatment, storage, disposal facility (TSDF) or other facility that is permitted and able to manage this waste. This authorization does not obligate me in any way to direct any volume of this waste to any disposal at this time, but may be decided once waste disposal approval has been obtained. I agree to notify WasteXpress if there is any change in the waste stream information as submitted for approval. I also certify that if waste samples were obtained, they were collected according to EPA acceptable methods and the sample(s) were analyzed by a qualified certified laboratory and that the appropriate chain of custody was used.

Signature

Date

Printed Name

Title



# NON-HAZARDOUS WASTE MANIFEST

(Form designed for use on elite (12 pitch) typewriter)

## NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

QESQ6

Manifest Document No.

22727

2. Page 1 of 1

3. Generator's Name and Mailing Address  
Hahn and Associates - Port of Vancouver  
100 Columbia St  
Vancouver, WA

4. Generator's Phone (503) 224-3206

5. Transporter 1 Company Name

WasteXpress

6. US EPA ID Number

1 ORQ 000023150

A. State Transporter's ID 881002

B. Transporter 1 Phone 503-224-3206

C. State Transporter's ID

D. Transporter 2 Phone

E. State Facility's ID

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address

IRM  
11618 N. Lombard  
Portland, OR 97203

10. US EPA ID Number

1 ORQ000011643

F. Facility's Phone

(503) 224-3206

11. WASTE DESCRIPTION

a. Non-Hazardous liquids, N.O.S., (Purge/Decon Water)

12. Containers

No. Type

13. Total Quantity

14. Unit Wt./Vol.

2 DM

90

G

b. Non-Hazardous Solids, N.O.S., (Soil)

2 DM

550

P

c.

d.

G. Additional Descriptions for Materials Listed Above

a) IRM-1 WX1-2

b) IRM-1 WX34

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name

Signature

Date

Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date

Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name

Signature

Date

Month Day Year

Dustin Stocker on behalf of IRM

Dustin Stock

8/27/15



NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER

FACILITY

## **Appendix D**

### Laboratory Report and Chain-of-Custody Documentation – Soil Samples

Tuesday, June 30, 2015

Ben Uhl  
Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209

RE: POVRED / 8832

Enclosed are the results of analyses for work order A5E0838, which was received by the laboratory on 5/28/2015 at 12:00:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

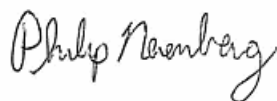
Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**  
Project Number: 8832  
Project Manager: Ben UhlReported:  
06/30/15 13:10

## ANALYTICAL REPORT FOR SAMPLES

## SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
8832-150527-001	A5E0838-01	Soil	05/27/15 09:55	05/28/15 12:00
8832-150527-002	A5E0838-02	Soil	05/27/15 10:07	05/28/15 12:00
8832-150527-003	A5E0838-03	Soil	05/27/15 10:20	05/28/15 12:00
8832-150527-004	A5E0838-04	Soil	05/27/15 10:29	05/28/15 12:00
8832-150527-005	A5E0838-05	Soil	05/27/15 10:44	05/28/15 12:00
8832-150527-006	A5E0838-06	Soil	05/27/15 10:54	05/28/15 12:00
8832-150527-007	A5E0838-07	Soil	05/27/15 11:31	05/28/15 12:00
8832-150527-008	A5E0838-08	Soil	05/27/15 11:41	05/28/15 12:00
8832-150527-009	A5E0838-09	Soil	05/27/15 11:53	05/28/15 12:00
8832-150527-010	A5E0838-10	Soil	05/27/15 12:01	05/28/15 12:00
8832-150527-011	A5E0838-11	Soil	05/27/15 12:08	05/28/15 12:00
8832-150527-012	A5E0838-12	Soil	05/27/15 12:19	05/28/15 12:00
8832-150527-013	A5E0838-13	Soil	05/27/15 12:53	05/28/15 12:00
8832-150527-014	A5E0838-14	Soil	05/27/15 14:31	05/28/15 12:00
8832-150527-015	A5E0838-15	Soil	05/27/15 14:39	05/28/15 12:00
8832-150527-016	A5E0838-16	Soil	05/27/15 14:54	05/28/15 12:00
8832-150527-018	A5E0838-18	Soil	05/27/15 15:24	05/28/15 12:00

Apex Laboratories



Philip Nerenberg, Lab Director

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Hahn and Associates

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

Reported:  
06/30/15 13:10

## ANALYTICAL CASE NARRATIVE

---

### Work Order: A5E0838

Amended Report Revision 1

This report supersedes all previously dated reports

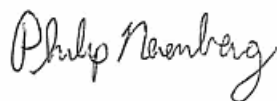
8270 SIM PAH Result Change

The results for Benzo(b)Fluoranthene and Benzo(k)Fluoranthene are now reported individually in place of a combined Benzo(b+k)Fluoranthene value. Results are estimated.

Mark Zehr  
Organics Manager  
06/08/2015

---

Apex Laboratories



Philip Nerenberg, Lab Director

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Hahn and Associates

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: POVRED

Project Number: 8832

Project Manager: Ben Uhl

Reported:

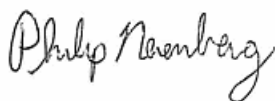
06/30/15 13:10

## ANALYTICAL SAMPLE RESULTS

## Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-001 (A5E0838-01RE1)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060121</b>			
Diesel	ND	42.7	85.3	mg/kg dry	4	06/04/15 11:46	NWTPH-Dx	
Oil	475	85.3	171	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-002 (A5E0838-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060121</b>			
Diesel	ND	8.50	25.0	mg/kg dry	1	06/03/15 20:26	NWTPH-Dx	
Oil	ND	17.0	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-003 (A5E0838-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060121</b>			
Diesel	ND	9.01	25.0	mg/kg dry	1	06/03/15 20:45	NWTPH-Dx	
Oil	ND	18.0	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-007 (A5E0838-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060121</b>			
Diesel	18.9	10.7	25.0	mg/kg dry	1	06/03/15 21:05	NWTPH-Dx	J
Oil	39.0	21.3	50.0	"	"	"	"	J
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-009 (A5E0838-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060121</b>			
Diesel	10.4	9.01	25.0	mg/kg dry	1	06/03/15 21:45	NWTPH-Dx	J
Oil	19.4	18.0	50.0	"	"	"	"	J
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-014 (A5E0838-14)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060121</b>			
Diesel	ND	10.5	25.0	mg/kg dry	1	06/03/15 22:24	NWTPH-Dx	
Oil	213	21.1	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-015 (A5E0838-15)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060121</b>			
Diesel	ND	176	352	mg/kg dry	20	06/03/15 23:04	NWTPH-Dx	
Oil	1060	352	704	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: %</i>		<i>Limits: 50-150 %</i>		"	"	S-01
<b>8832-150527-016 (A5E0838-16)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060121</b>			
Diesel	ND	8.59	25.0	mg/kg dry	1	06/03/15 23:43	NWTPH-Dx	
Oil	ND	17.2	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		"	"	"

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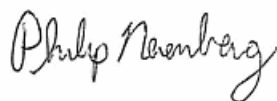
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**ANALYTICAL SAMPLE RESULTS****Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-018 (A5E0838-18)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060121</b>			
<b>Diesel</b>	<b>97.4</b>	11.1	25.0	mg/kg dry	1	06/04/15 00:03	NWTPH-Dx	F-17
<b>Oil</b>	<b>22.2</b>	22.2	50.0	"	"	"	"	J
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 98 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

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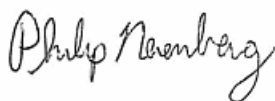
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## ANALYTICAL SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-001 (A5E0838-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
Gasoline Range Organics	ND	2.97	5.94	mg/kg dry	50	05/30/15 15:12	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		1	"	"
<i>1,4-Difluorobenzene (Sur)</i>		<i>101 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-002 (A5E0838-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
Gasoline Range Organics	ND	3.34	6.68	mg/kg dry	50	05/30/15 16:04	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		1	"	"
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-007 (A5E0838-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
Gasoline Range Organics	ND	3.58	7.16	mg/kg dry	50	05/30/15 16:29	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 108 %</i>		<i>Limits: 50-150 %</i>		1	"	"
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-014 (A5E0838-14)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
Gasoline Range Organics	ND	3.53	7.06	mg/kg dry	50	05/30/15 16:55	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 105 %</i>		<i>Limits: 50-150 %</i>		1	"	"
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-015 (A5E0838-15)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
Gasoline Range Organics	ND	3.29	6.59	mg/kg dry	50	05/30/15 17:21	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		1	"	"
<i>1,4-Difluorobenzene (Sur)</i>		<i>97 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-016 (A5E0838-16)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
Gasoline Range Organics	ND	3.08	6.17	mg/kg dry	50	05/30/15 17:47	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		1	"	"
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150527-018 (A5E0838-18)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
Gasoline Range Organics	ND	4.37	8.75	mg/kg dry	50	05/30/15 18:13	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 105 %</i>		<i>Limits: 50-150 %</i>		1	"	"
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>Limits: 50-150 %</i>		"	"	"

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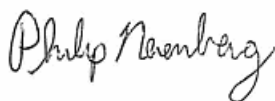
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-001 (A5E0838-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
Acetone	ND	594	1190	ug/kg dry	50	05/30/15 15:12	5035/8260B	
Benzene	ND	7.42	14.8	"	"	"	"	
Bromobenzene	ND	14.8	29.7	"	"	"	"	
Bromochloromethane	ND	29.7	59.4	"	"	"	"	
Bromodichloromethane	ND	29.7	59.4	"	"	"	"	
Bromoform	ND	29.7	59.4	"	"	"	"	
Bromomethane	ND	594	594	"	"	"	"	
2-Butanone (MEK)	ND	297	594	"	"	"	"	
n-Butylbenzene	ND	29.7	59.4	"	"	"	"	
sec-Butylbenzene	ND	29.7	59.4	"	"	"	"	
tert-Butylbenzene	ND	29.7	59.4	"	"	"	"	
Carbon tetrachloride	ND	14.8	29.7	"	"	"	"	
Chlorobenzene	ND	14.8	29.7	"	"	"	"	
Chloroethane	ND	297	594	"	"	"	"	
Chloroform	ND	29.7	59.4	"	"	"	"	
Chloromethane	ND	148	297	"	"	"	"	
2-Chlorotoluene	ND	29.7	59.4	"	"	"	"	
4-Chlorotoluene	ND	29.7	59.4	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	148	297	"	"	"	"	
Dibromochloromethane	ND	59.4	119	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	14.8	29.7	"	"	"	"	
Dibromomethane	ND	29.7	59.4	"	"	"	"	
1,2-Dichlorobenzene	ND	14.8	29.7	"	"	"	"	
1,3-Dichlorobenzene	ND	14.8	29.7	"	"	"	"	
1,4-Dichlorobenzene	ND	14.8	29.7	"	"	"	"	
Dichlorodifluoromethane	ND	59.4	119	"	"	"	"	
1,1-Dichloroethane	ND	14.8	29.7	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	14.8	29.7	"	"	"	"	
1,1-Dichloroethene	ND	14.8	29.7	"	"	"	"	
cis-1,2-Dichloroethene	ND	14.8	29.7	"	"	"	"	
trans-1,2-Dichloroethene	ND	14.8	29.7	"	"	"	"	
1,2-Dichloropropane	ND	14.8	29.7	"	"	"	"	
1,3-Dichloropropane	ND	29.7	59.4	"	"	"	"	
2,2-Dichloropropane	ND	29.7	59.4	"	"	"	"	
1,1-Dichloropropene	ND	29.7	59.4	"	"	"	"	

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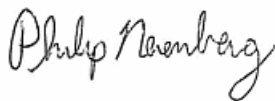
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-001 (A5E0838-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
cis-1,3-Dichloropropene	ND	29.7	59.4	ug/kg dry	50	"	5035/8260B	
trans-1,3-Dichloropropene	ND	29.7	59.4	"	"	"	"	
Ethylbenzene	ND	14.8	29.7	"	"	"	"	
Hexachlorobutadiene	ND	59.4	119	"	"	"	"	
2-Hexanone	ND	297	594	"	"	"	"	
Isopropylbenzene	ND	29.7	59.4	"	"	"	"	
4-Isopropyltoluene	ND	29.7	59.4	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	297	594	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	29.7	59.4	"	"	"	"	
Methylene chloride	ND	148	297	"	"	"	"	
Naphthalene	ND	59.4	119	"	"	"	"	
n-Propylbenzene	ND	14.8	29.7	"	"	"	"	
Styrene	ND	29.7	59.4	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	29.7	59.4	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	14.8	29.7	"	"	"	"	
Tetrachloroethene (PCE)	ND	14.8	29.7	"	"	"	"	
Toluene	ND	29.7	59.4	"	"	"	"	
1,2,3-Trichlorobenzene	ND	148	297	"	"	"	"	
1,2,4-Trichlorobenzene	ND	148	297	"	"	"	"	
1,1,1-Trichloroethane	ND	29.7	59.4	"	"	"	"	
1,1,2-Trichloroethane	ND	14.8	29.7	"	"	"	"	
Trichloroethene (TCE)	ND	14.8	29.7	"	"	"	"	
Trichlorofluoromethane	ND	59.4	119	"	"	"	"	
1,2,3-Trichloropropane	ND	29.7	59.4	"	"	"	"	
1,2,4-Trimethylbenzene	ND	29.7	59.4	"	"	"	"	
1,3,5-Trimethylbenzene	ND	29.7	59.4	"	"	"	"	
Vinyl chloride	ND	14.8	29.7	"	"	"	"	
m,p-Xylene	ND	29.7	59.4	"	"	"	"	
o-Xylene	ND	14.8	29.7	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 101 %</i>	<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>101 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>97 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>99 %</i>	<i>Limits: 70-130 %</i>	"	"	"	

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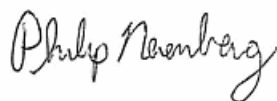
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-007 (A5E0838-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
Acetone	ND	716	1430	ug/kg dry	50	05/30/15 16:29	5035/8260B	
Benzene	ND	8.95	17.9	"	"	"	"	
Bromobenzene	ND	17.9	35.8	"	"	"	"	
Bromochloromethane	ND	35.8	71.6	"	"	"	"	
Bromodichloromethane	ND	35.8	71.6	"	"	"	"	
Bromoform	ND	35.8	71.6	"	"	"	"	
Bromomethane	ND	716	716	"	"	"	"	
2-Butanone (MEK)	ND	358	716	"	"	"	"	
n-Butylbenzene	ND	35.8	71.6	"	"	"	"	
sec-Butylbenzene	ND	35.8	71.6	"	"	"	"	
tert-Butylbenzene	ND	35.8	71.6	"	"	"	"	
Carbon tetrachloride	ND	17.9	35.8	"	"	"	"	
Chlorobenzene	ND	17.9	35.8	"	"	"	"	
Chloroethane	ND	358	716	"	"	"	"	
Chloroform	ND	35.8	71.6	"	"	"	"	
Chloromethane	ND	179	358	"	"	"	"	
2-Chlorotoluene	ND	35.8	71.6	"	"	"	"	
4-Chlorotoluene	ND	35.8	71.6	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	179	358	"	"	"	"	
Dibromochloromethane	ND	71.6	143	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	17.9	35.8	"	"	"	"	
Dibromomethane	ND	35.8	71.6	"	"	"	"	
1,2-Dichlorobenzene	ND	17.9	35.8	"	"	"	"	
1,3-Dichlorobenzene	ND	17.9	35.8	"	"	"	"	
1,4-Dichlorobenzene	ND	17.9	35.8	"	"	"	"	
Dichlorodifluoromethane	ND	71.6	143	"	"	"	"	
1,1-Dichloroethane	ND	17.9	35.8	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	17.9	35.8	"	"	"	"	
1,1-Dichloroethene	ND	17.9	35.8	"	"	"	"	
cis-1,2-Dichloroethene	ND	17.9	35.8	"	"	"	"	
trans-1,2-Dichloroethene	ND	17.9	35.8	"	"	"	"	
1,2-Dichloropropane	ND	17.9	35.8	"	"	"	"	
1,3-Dichloropropane	ND	35.8	71.6	"	"	"	"	
2,2-Dichloropropane	ND	35.8	71.6	"	"	"	"	
1,1-Dichloropropene	ND	35.8	71.6	"	"	"	"	

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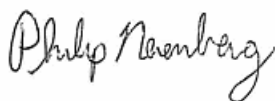
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-007 (A5E0838-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
cis-1,3-Dichloropropene	ND	35.8	71.6	ug/kg dry	50	"	5035/8260B	
trans-1,3-Dichloropropene	ND	35.8	71.6	"	"	"	"	
Ethylbenzene	ND	17.9	35.8	"	"	"	"	
Hexachlorobutadiene	ND	71.6	143	"	"	"	"	
2-Hexanone	ND	358	716	"	"	"	"	
Isopropylbenzene	ND	35.8	71.6	"	"	"	"	
4-Isopropyltoluene	ND	35.8	71.6	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	358	716	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	35.8	71.6	"	"	"	"	
Methylene chloride	ND	179	358	"	"	"	"	
Naphthalene	ND	71.6	143	"	"	"	"	
n-Propylbenzene	ND	17.9	35.8	"	"	"	"	
Styrene	ND	35.8	71.6	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	35.8	71.6	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	17.9	35.8	"	"	"	"	
Tetrachloroethene (PCE)	ND	17.9	35.8	"	"	"	"	
Toluene	ND	35.8	71.6	"	"	"	"	
1,2,3-Trichlorobenzene	ND	179	358	"	"	"	"	
1,2,4-Trichlorobenzene	ND	179	358	"	"	"	"	
1,1,1-Trichloroethane	ND	35.8	71.6	"	"	"	"	
1,1,2-Trichloroethane	ND	17.9	35.8	"	"	"	"	
Trichloroethene (TCE)	ND	17.9	35.8	"	"	"	"	
Trichlorofluoromethane	ND	71.6	143	"	"	"	"	
1,2,3-Trichloropropane	ND	35.8	71.6	"	"	"	"	
1,2,4-Trimethylbenzene	ND	35.8	71.6	"	"	"	"	
1,3,5-Trimethylbenzene	ND	35.8	71.6	"	"	"	"	
Vinyl chloride	ND	17.9	35.8	"	"	"	"	
m,p-Xylene	ND	35.8	71.6	"	"	"	"	
o-Xylene	ND	17.9	35.8	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 100 %</i>	<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>99 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>95 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>99 %</i>	<i>Limits: 70-130 %</i>	"	"	"	

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Project Manager: Ben Uhl

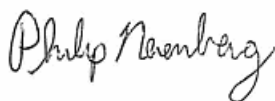
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-014 (A5E0838-14)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
Acetone	ND	706	1410	ug/kg dry	50	05/30/15 16:55	5035/8260B	
Benzene	ND	8.83	17.7	"	"	"	"	
Bromobenzene	ND	17.7	35.3	"	"	"	"	
Bromochloromethane	ND	35.3	70.6	"	"	"	"	
Bromodichloromethane	ND	35.3	70.6	"	"	"	"	
Bromoform	ND	35.3	70.6	"	"	"	"	
Bromomethane	ND	706	706	"	"	"	"	
2-Butanone (MEK)	ND	353	706	"	"	"	"	
n-Butylbenzene	ND	35.3	70.6	"	"	"	"	
sec-Butylbenzene	ND	35.3	70.6	"	"	"	"	
tert-Butylbenzene	ND	35.3	70.6	"	"	"	"	
Carbon tetrachloride	ND	17.7	35.3	"	"	"	"	
Chlorobenzene	ND	17.7	35.3	"	"	"	"	
Chloroethane	ND	353	706	"	"	"	"	
Chloroform	ND	35.3	70.6	"	"	"	"	
Chloromethane	ND	177	353	"	"	"	"	
2-Chlorotoluene	ND	35.3	70.6	"	"	"	"	
4-Chlorotoluene	ND	35.3	70.6	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	177	353	"	"	"	"	
Dibromochloromethane	ND	70.6	141	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	17.7	35.3	"	"	"	"	
Dibromomethane	ND	35.3	70.6	"	"	"	"	
1,2-Dichlorobenzene	ND	17.7	35.3	"	"	"	"	
1,3-Dichlorobenzene	ND	17.7	35.3	"	"	"	"	
1,4-Dichlorobenzene	ND	17.7	35.3	"	"	"	"	
Dichlorodifluoromethane	ND	70.6	141	"	"	"	"	
1,1-Dichloroethane	ND	17.7	35.3	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	17.7	35.3	"	"	"	"	
1,1-Dichloroethene	ND	17.7	35.3	"	"	"	"	
cis-1,2-Dichloroethene	ND	17.7	35.3	"	"	"	"	
trans-1,2-Dichloroethene	ND	17.7	35.3	"	"	"	"	
1,2-Dichloropropane	ND	17.7	35.3	"	"	"	"	
1,3-Dichloropropane	ND	35.3	70.6	"	"	"	"	
2,2-Dichloropropane	ND	35.3	70.6	"	"	"	"	
1,1-Dichloropropene	ND	35.3	70.6	"	"	"	"	

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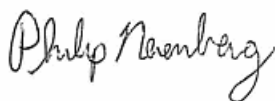
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-014 (A5E0838-14)</b>			<b>Matrix: Soil</b>		<b>Batch: 5050901</b>			
cis-1,3-Dichloropropene	ND	35.3	70.6	ug/kg dry	50	"	5035/8260B	
trans-1,3-Dichloropropene	ND	35.3	70.6	"	"	"	"	
Ethylbenzene	ND	17.7	35.3	"	"	"	"	
Hexachlorobutadiene	ND	70.6	141	"	"	"	"	
2-Hexanone	ND	353	706	"	"	"	"	
Isopropylbenzene	ND	35.3	70.6	"	"	"	"	
4-Isopropyltoluene	ND	35.3	70.6	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	353	706	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	35.3	70.6	"	"	"	"	
Methylene chloride	ND	177	353	"	"	"	"	
Naphthalene	ND	70.6	141	"	"	"	"	
n-Propylbenzene	ND	17.7	35.3	"	"	"	"	
Styrene	ND	35.3	70.6	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	35.3	70.6	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	17.7	35.3	"	"	"	"	
Tetrachloroethene (PCE)	ND	17.7	35.3	"	"	"	"	
Toluene	ND	35.3	70.6	"	"	"	"	
1,2,3-Trichlorobenzene	ND	177	353	"	"	"	"	
1,2,4-Trichlorobenzene	ND	177	353	"	"	"	"	
1,1,1-Trichloroethane	ND	35.3	70.6	"	"	"	"	
1,1,2-Trichloroethane	ND	17.7	35.3	"	"	"	"	
Trichloroethene (TCE)	ND	17.7	35.3	"	"	"	"	
Trichlorofluoromethane	ND	70.6	141	"	"	"	"	
1,2,3-Trichloropropane	ND	35.3	70.6	"	"	"	"	
1,2,4-Trimethylbenzene	ND	35.3	70.6	"	"	"	"	
1,3,5-Trimethylbenzene	ND	35.3	70.6	"	"	"	"	
Vinyl chloride	ND	17.7	35.3	"	"	"	"	
m,p-Xylene	ND	35.3	70.6	"	"	"	"	
o-Xylene	ND	17.7	35.3	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 99 %</i>	<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>98 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>95 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>101 %</i>	<i>Limits: 70-130 %</i>	"	"	"	

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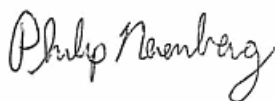
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**ANALYTICAL SAMPLE RESULTS****Polychlorinated Biphenyls by EPA 8082A**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-001 (A5E0838-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060256</b>			<b>C-07</b>
Aroclor 1016	ND	5.67	11.3	ug/kg dry	1	06/09/15 18:14	EPA 8082A	
Aroclor 1221	ND	5.67	11.3	"	"	"	"	
Aroclor 1232	ND	5.67	11.3	"	"	"	"	
Aroclor 1242	ND	5.67	11.3	"	"	"	"	
Aroclor 1248	ND	5.67	11.3	"	"	"	"	
Aroclor 1254	ND	5.67	11.3	"	"	"	"	
<b>Aroclor 1260</b>	<b>14.9</b>	5.67	11.3	"	"	"	"	P-09
<i>Surrogate: Decachlorobiphenyl (Surr)</i>			<i>Recovery: 90 %</i>	<i>Limits: 72-126 %</i>	"	"	"	
<b>8832-150527-015 (A5E0838-15RE1)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060256</b>			<b>C-07</b>
Aroclor 1016	ND	5.20	10.4	ug/kg dry	1	06/10/15 12:36	EPA 8082A	
Aroclor 1221	ND	5.20	10.4	"	"	"	"	
Aroclor 1232	ND	5.20	10.4	"	"	"	"	
Aroclor 1242	ND	5.20	10.4	"	"	"	"	
Aroclor 1248	ND	5.20	10.4	"	"	"	"	
Aroclor 1254	ND	5.20	10.4	"	"	"	"	
Aroclor 1260	ND	5.20	10.4	"	"	"	"	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>			<i>Recovery: 97 %</i>	<i>Limits: 72-126 %</i>	"	"	"	

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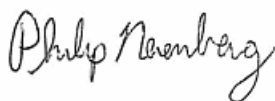
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## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-001 (A5E0838-01RE1)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060014</b>			
Acenaphthene	ND	26.9	53.8	ug/kg dry	5	06/03/15 16:24	EPA 8270D (SIM)	
Acenaphthylene	ND	26.9	53.8	"	"	"	"	
Anthracene	ND	26.9	53.8	"	"	"	"	
<b>Benz(a)anthracene</b>	<b>57.9</b>	26.9	53.8	"	"	"	"	
<b>Benzo(a)pyrene</b>	<b>76.8</b>	26.9	53.8	"	"	"	"	
<b>Benzo(b)fluoranthene</b>	<b>92.8</b>	26.9	53.8	"	"	"	"	AMENDED, M-02
<b>Benzo(k)fluoranthene</b>	<b>32.5</b>	26.9	53.8	"	"	"	"	J, AMENDED
<b>Benzo(g,h,i)perylene</b>	<b>159</b>	26.9	53.8	"	"	"	"	
<b>Chrysene</b>	<b>57.8</b>	26.9	53.8	"	"	"	"	
<b>Dibenz(a,h)anthracene</b>	<b>29.5</b>	26.9	53.8	"	"	"	"	J
Dibenzofuran	ND	26.9	53.8	"	"	"	"	
<b>Fluoranthene</b>	<b>62.1</b>	26.9	53.8	"	"	"	"	
Fluorene	ND	26.9	53.8	"	"	"	"	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>91.2</b>	26.9	53.8	"	"	"	"	
1-Methylnaphthalene	ND	26.9	53.8	"	"	"	"	
2-Methylnaphthalene	ND	26.9	53.8	"	"	"	"	
Naphthalene	ND	26.9	53.8	"	"	"	"	
<b>Phenanthrene</b>	<b>34.7</b>	26.9	53.8	"	"	"	"	J
<b>Pyrene</b>	<b>62.7</b>	26.9	53.8	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 69 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>73 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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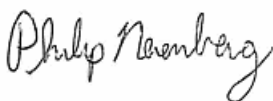
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## ANALYTICAL SAMPLE RESULTS

### Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-003 (A5E0838-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060014</b>			
Acenaphthene	ND	4.82	9.64	ug/kg dry	1	06/02/15 19:12	EPA 8270D (SIM)	
Acenaphthylene	ND	4.82	9.64	"	"	"	"	
Anthracene	ND	4.82	9.64	"	"	"	"	
Benz(a)anthracene	ND	4.82	9.64	"	"	"	"	
Benzo(a)pyrene	ND	4.82	9.64	"	"	"	"	
Benzo(b)fluoranthene	ND	4.82	9.64	"	"	"	"	
Benzo(k)fluoranthene	ND	4.82	9.64	"	"	"	"	
Benzo(g,h,i)perylene	ND	4.82	9.64	"	"	"	"	
Chrysene	ND	4.82	9.64	"	"	"	"	
Dibenz(a,h)anthracene	ND	4.82	9.64	"	"	"	"	
Dibenzofuran	ND	4.82	9.64	"	"	"	"	
<b>Fluoranthene</b>	<b>10.8</b>	4.82	9.64	"	"	"	"	
Fluorene	ND	4.82	9.64	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	4.82	9.64	"	"	"	"	
1-Methylnaphthalene	ND	4.82	9.64	"	"	"	"	
2-Methylnaphthalene	ND	4.82	9.64	"	"	"	"	
Naphthalene	ND	4.82	9.64	"	"	"	"	
<b>Phenanthrene</b>	<b>16.2</b>	4.82	9.64	"	"	"	"	
Pyrene	ND	4.82	9.64	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 72 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>79 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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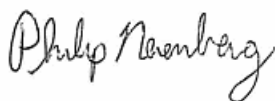
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## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-007 (A5E0838-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060014</b>			
Acenaphthene	ND	5.27	10.5	ug/kg dry	1	06/02/15 19:39	EPA 8270D (SIM)	
Acenaphthylene	ND	5.27	10.5	"	"	"	"	
Anthracene	ND	5.27	10.5	"	"	"	"	
<b>Benz(a)anthracene</b>	<b>39.8</b>	5.27	10.5	"	"	"	"	
<b>Benzo(a)pyrene</b>	<b>71.7</b>	5.27	10.5	"	"	"	"	
<b>Benzo(b)fluoranthene</b>	<b>93.7</b>	5.27	10.5	"	"	"	"	AMENDED,
<b>Benzo(k)fluoranthene</b>	<b>31.3</b>	5.27	10.5	"	"	"	"	M-02,
<b>Benzo(g,h,i)perylene</b>	<b>86.5</b>	5.27	10.5	"	"	"	"	AMENDED
<b>Chrysene</b>	<b>50.4</b>	5.27	10.5	"	"	"	"	
<b>Dibenz(a,h)anthracene</b>	<b>11.7</b>	5.27	10.5	"	"	"	"	
Dibenzofuran	ND	5.27	10.5	"	"	"	"	
<b>Fluoranthene</b>	<b>37.6</b>	5.27	10.5	"	"	"	"	
Fluorene	ND	5.27	10.5	"	"	"	"	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>83.8</b>	5.27	10.5	"	"	"	"	
1-Methylnaphthalene	ND	5.27	10.5	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>5.63</b>	5.27	10.5	"	"	"	"	J
Naphthalene	ND	5.27	10.5	"	"	"	"	
<b>Phenanthrene</b>	<b>19.4</b>	5.27	10.5	"	"	"	"	
<b>Pyrene</b>	<b>45.3</b>	5.27	10.5	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>		<i>Recovery: 49 %</i>		<i>Limits: 44-115 %</i>		"	"	"
<i>p-Terphenyl-d14 (Surr)</i>		<i>69 %</i>		<i>Limits: 54-127 %</i>		"	"	"

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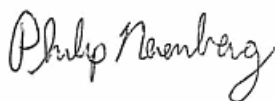
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## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-009 (A5E0838-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060014</b>			
Acenaphthene	ND	4.98	9.97	ug/kg dry	1	06/02/15 20:06	EPA 8270D (SIM)	
Acenaphthylene	ND	4.98	9.97	"	"	"	"	
Anthracene	ND	4.98	9.97	"	"	"	"	
<b>Benz(a)anthracene</b>	<b>24.4</b>	4.98	9.97	"	"	"	"	
<b>Benzo(a)pyrene</b>	<b>38.7</b>	4.98	9.97	"	"	"	"	
<b>Benzo(b)fluoranthene</b>	<b>48.9</b>	4.98	9.97	"	"	"	"	AMENDED, M-02
<b>Benzo(k)fluoranthene</b>	<b>19.2</b>	4.98	9.97	"	"	"	"	AMENDED, M-02
<b>Benzo(g,h,i)perylene</b>	<b>31.3</b>	4.98	9.97	"	"	"	"	
<b>Chrysene</b>	<b>34.4</b>	4.98	9.97	"	"	"	"	
<b>Dibenz(a,h)anthracene</b>	<b>6.39</b>	4.98	9.97	"	"	"	"	J
Dibenzofuran	ND	4.98	9.97	"	"	"	"	
<b>Fluoranthene</b>	<b>40.2</b>	4.98	9.97	"	"	"	"	
Fluorene	ND	4.98	9.97	"	"	"	"	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>33.5</b>	4.98	9.97	"	"	"	"	
1-Methylnaphthalene	ND	4.98	9.97	"	"	"	"	
2-Methylnaphthalene	ND	4.98	9.97	"	"	"	"	
<b>Naphthalene</b>	<b>7.24</b>	4.98	9.97	"	"	"	"	J
<b>Phenanthrene</b>	<b>22.2</b>	4.98	9.97	"	"	"	"	
<b>Pyrene</b>	<b>35.7</b>	4.98	9.97	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 72 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>77 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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Project Number: 8832

Project Manager: Ben Uhl

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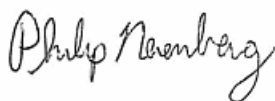
06/30/15 13:10

## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-014 (A5E0838-14)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060014</b>			
Acenaphthene	31.0	27.7	55.5	ug/kg dry	5	06/02/15 20:32	EPA 8270D (SIM)	J
Acenaphthylene	ND	27.7	55.5	"	"	"	"	
Anthracene	47.8	27.7	55.5	"	"	"	"	J
Benz(a)anthracene	92.7	27.7	55.5	"	"	"	"	
Benzo(a)pyrene	77.8	27.7	55.5	"	"	"	"	
Benzo(b)fluoranthene	45.8	27.7	55.5	"	"	"	"	J, AMENDED, M-02 AMENDED
Benzo(k)fluoranthene	ND	27.7	55.5	"	"	"	"	
Benzo(g,h,i)perylene	54.6	27.7	55.5	"	"	"	"	J
Chrysene	154	27.7	55.5	"	"	"	"	
Dibenz(a,h)anthracene	ND	27.7	55.5	"	"	"	"	
Dibenzofuran	ND	27.7	55.5	"	"	"	"	
Fluoranthene	47.0	27.7	55.5	"	"	"	"	J
Fluorene	41.9	27.7	55.5	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	29.7	27.7	55.5	"	"	"	"	J
1-Methylnaphthalene	78.5	27.7	55.5	"	"	"	"	
2-Methylnaphthalene	91.3	27.7	55.5	"	"	"	"	
Naphthalene	ND	27.7	55.5	"	"	"	"	
Phenanthrene	182	27.7	55.5	"	"	"	"	
Pyrene	210	27.7	55.5	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			Recovery: 69 %	Limits: 44-115 %	"	"	"	
p-Terphenyl-d14 (Surr)			80 %	Limits: 54-127 %	"	"	"	

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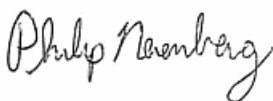
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## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-015 (A5E0838-15RE1)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060014</b>			
Acenaphthene	ND	26.7	53.4	ug/kg dry	5	06/03/15 16:51	EPA 8270D (SIM)	
Acenaphthylene	ND	26.7	53.4	"	"	"	"	
Anthracene	ND	26.7	53.4	"	"	"	"	
<b>Benz(a)anthracene</b>	<b>35.2</b>	26.7	53.4	"	"	"	"	J
<b>Benzo(a)pyrene</b>	<b>31.4</b>	26.7	53.4	"	"	"	"	J
<b>Benzo(b)fluoranthene</b>	<b>30.7</b>	26.7	53.4	"	"	"	"	J, AMENDED
Benzo(k)fluoranthene	ND	26.7	53.4	"	"	"	"	AMENDED
<b>Benzo(g,h,i)perylene</b>	<b>34.5</b>	26.7	53.4	"	"	"	"	J
<b>Chrysene</b>	<b>55.5</b>	26.7	53.4	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	26.7	53.4	"	"	"	"	
Dibenzofuran	ND	26.7	53.4	"	"	"	"	
Fluoranthene	ND	26.7	53.4	"	"	"	"	
Fluorene	ND	26.7	53.4	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	26.7	53.4	"	"	"	"	
1-Methylnaphthalene	ND	26.7	53.4	"	"	"	"	
2-Methylnaphthalene	ND	26.7	53.4	"	"	"	"	
Naphthalene	ND	26.7	53.4	"	"	"	"	
Phenanthrene	ND	26.7	53.4	"	"	"	"	
<b>Pyrene</b>	<b>32.9</b>	26.7	53.4	"	"	"	"	J
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 65 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>72 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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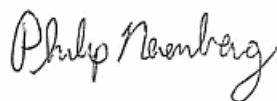
**Reported:**

06/30/15 13:10

**ANALYTICAL SAMPLE RESULTS****Trivalent Chromium (Calculation based on Total and Hexavalent Chromium)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-003 (A5E0838-03)</b>			<b>Matrix: Soil</b>		<b>Batch: [CALC]</b>			
Trivalent Chromium (Cr3+)	3.26	---	2.31	mg/kg dry	10	06/04/15 12:35	[Calc]	

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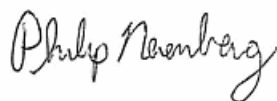
**Reported:**

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**ANALYTICAL SAMPLE RESULTS****Total Hexavalent Chromium by EPA 7196A**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-003 (A5E0838-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060046</b>			
Hexavalent Chromium	ND	1.18	2.31	mg/kg dry	1	06/02/15 12:40	EPA 7196A	

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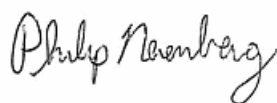
06/30/15 13:10

## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150527-001 (A5E0838-01)			Matrix: Soil					
Batch: 5060129								
Antimony	0.772	0.623	1.25	mg/kg dry	10	06/04/15 12:30	EPA 6020A	J
Arsenic	3.23	0.623	1.25	"	"	"	"	
Beryllium	0.399	0.125	0.249	"	"	"	"	
Cadmium	0.897	0.125	0.249	"	"	"	"	
Chromium	10.4	0.623	1.25	"	"	"	"	
Copper	87.8	0.623	1.25	"	"	"	"	
Lead	821	0.125	0.249	"	"	"	"	
Nickel	10.8	0.623	1.25	"	"	"	"	
Selenium	ND	0.623	1.25	"	"	"	"	
Silver	0.361	0.125	0.249	"	"	"	"	
Thallium	ND	0.125	0.249	"	"	"	"	
Zinc	220	2.49	4.98	"	"	"	"	
8832-150527-001 (A5E0838-01RE1)			Matrix: Soil					
Batch: 5060129								
Mercury	3.61	0.498	0.997	mg/kg dry	100	06/04/15 15:40	EPA 6020A	
8832-150527-002 (A5E0838-02)			Matrix: Soil					
Batch: 5060129								
Lead	2.34	0.108	0.216	mg/kg dry	10	06/04/15 12:33	EPA 6020A	
Mercury	ND	0.0432	0.0864	"	"	"	"	
8832-150527-003 (A5E0838-03)			Matrix: Soil					
Batch: 5060129								
Antimony	ND	0.565	1.13	mg/kg dry	10	06/04/15 12:35	EPA 6020A	
Arsenic	1.51	0.565	1.13	"	"	"	"	
Beryllium	ND	0.113	0.226	"	"	"	"	
Cadmium	0.204	0.113	0.226	"	"	"	"	J
Chromium	3.26	0.565	1.13	"	"	"	"	
Copper	6.99	0.565	1.13	"	"	"	"	
Lead	4.13	0.113	0.226	"	"	"	"	
Mercury	ND	0.0452	0.0904	"	"	"	"	
Nickel	5.56	0.565	1.13	"	"	"	"	
Selenium	ND	0.565	1.13	"	"	"	"	
Silver	ND	0.113	0.226	"	"	"	"	
Thallium	ND	0.113	0.226	"	"	"	"	
Zinc	29.5	2.26	4.52	"	"	"	"	

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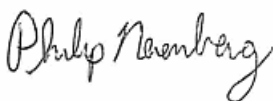
## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-004 (A5E0838-04) Matrix: Soil</b>								
Batch: 5060129								
Lead	31.3	0.143	0.285	mg/kg dry	10	06/04/15 12:38	EPA 6020A	
<b>8832-150527-005 (A5E0838-05) Matrix: Soil</b>								
Batch: 5060129								
Lead	35.0	0.147	0.293	mg/kg dry	10	06/04/15 12:59	EPA 6020A	
<b>8832-150527-006 (A5E0838-06) Matrix: Soil</b>								
Batch: 5060129								
Lead	30.8	0.143	0.286	mg/kg dry	10	06/04/15 13:02	EPA 6020A	
<b>8832-150527-007 (A5E0838-07) Matrix: Soil</b>								
Batch: 5060129								
Antimony	4.82	0.608	1.22	mg/kg dry	10	06/04/15 13:05	EPA 6020A	
Arsenic	2.37	0.608	1.22	"	"	"	"	
Beryllium	0.840	0.122	0.243	"	"	"	"	
Cadmium	0.535	0.122	0.243	"	"	"	"	
Chromium	11.1	0.608	1.22	"	"	"	"	
Copper	30.0	0.608	1.22	"	"	"	"	
Lead	121	0.122	0.243	"	"	"	"	
Mercury	0.0920	0.0487	0.0974	"	"	"	"	J
Nickel	18.6	0.608	1.22	"	"	"	"	
Selenium	ND	0.608	1.22	"	"	"	"	
Silver	ND	0.122	0.243	"	"	"	"	
Thallium	0.134	0.122	0.243	"	"	"	"	J
Zinc	80.0	2.43	4.87	"	"	"	"	
<b>8832-150527-008 (A5E0838-08) Matrix: Soil</b>								
Batch: 5060129								
Antimony	ND	0.595	1.19	mg/kg dry	10	06/04/15 13:08	EPA 6020A	
Arsenic	2.25	0.595	1.19	"	"	"	"	
Beryllium	0.904	0.119	0.238	"	"	"	"	
Cadmium	0.559	0.119	0.238	"	"	"	"	
Chromium	10.2	0.595	1.19	"	"	"	"	
Copper	21.7	0.595	1.19	"	"	"	"	
Lead	15.0	0.119	0.238	"	"	"	"	
Mercury	ND	0.0476	0.0952	"	"	"	"	
Nickel	12.8	0.595	1.19	"	"	"	"	
Selenium	ND	0.595	1.19	"	"	"	"	

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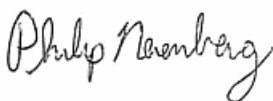
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## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-008 (A5E0838-08) Matrix: Soil</b>								
Silver	ND	0.119	0.238	mg/kg dry	10	"	EPA 6020A	
Thallium	0.155	0.119	0.238	"	"	"	"	J
Zinc	59.5	2.38	4.76	"	"	"	"	
<b>8832-150527-009 (A5E0838-09) Matrix: Soil</b>								
Batch: 5060129								
Lead	37.2	0.120	0.240	mg/kg dry	10	06/04/15 13:11	EPA 6020A	
<b>8832-150527-010 (A5E0838-10) Matrix: Soil</b>								
Batch: 5060129								
Lead	2.73	0.109	0.219	mg/kg dry	10	06/04/15 13:14	EPA 6020A	
<b>8832-150527-011 (A5E0838-11) Matrix: Soil</b>								
Batch: 5060129								
Lead	41.5	0.145	0.291	mg/kg dry	10	06/04/15 13:17	EPA 6020A	
<b>8832-150527-012 (A5E0838-12) Matrix: Soil</b>								
Batch: 5060129								
Lead	24.7	0.142	0.285	mg/kg dry	10	06/04/15 13:20	EPA 6020A	
<b>8832-150527-013 (A5E0838-13) Matrix: Soil</b>								
Batch: 5060129								
Lead	15.6	0.158	0.316	mg/kg dry	10	06/04/15 13:23	EPA 6020A	
<b>8832-150527-014 (A5E0838-14) Matrix: Soil</b>								
Batch: 5060129								
Antimony	ND	0.578	1.16	mg/kg dry	10	06/04/15 13:40	EPA 6020A	
Arsenic	1.48	0.578	1.16	"	"	"	"	
Beryllium	0.625	0.116	0.231	"	"	"	"	
Cadmium	0.474	0.116	0.231	"	"	"	"	
Chromium	9.67	0.578	1.16	"	"	"	"	
Copper	24.5	0.578	1.16	"	"	"	"	
Lead	19.4	0.116	0.231	"	"	"	"	
Mercury	ND	0.0463	0.0925	"	"	"	"	
Nickel	10.4	0.578	1.16	"	"	"	"	
Selenium	ND	0.578	1.16	"	"	"	"	
Silver	ND	0.116	0.231	"	"	"	"	
Thallium	0.116	0.116	0.231	"	"	"	"	J
Zinc	62.3	2.31	4.63	"	"	"	"	
<b>8832-150527-015 (A5E0838-15) Matrix: Soil</b>								

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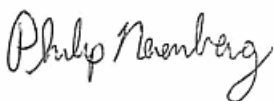
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## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150527-015 (A5E0838-15)			Matrix: Soil					
Batch: 5060129								
Antimony	ND	0.571	1.14	mg/kg dry	10	06/04/15 14:25	EPA 6020A	
Arsenic	1.70	0.571	1.14	"	"	"	"	
Beryllium	0.663	0.114	0.229	"	"	"	"	
Cadmium	0.571	0.114	0.229	"	"	"	"	
Chromium	9.20	0.571	1.14	"	"	"	"	
Copper	27.2	0.571	1.14	"	"	"	"	
Lead	37.2	0.114	0.229	"	"	"	"	
Mercury	ND	0.0457	0.0914	"	"	"	"	
Nickel	12.0	0.571	1.14	"	"	"	"	
Selenium	ND	0.571	1.14	"	"	"	"	
Silver	ND	0.114	0.229	"	"	"	"	
Thallium	0.137	0.114	0.229	"	"	"	"	J
Zinc	72.2	2.29	4.57	"	"	"	"	
8832-150527-016 (A5E0838-16)			Matrix: Soil					
Batch: 5060129								
Lead	2.43	0.111	0.222	mg/kg dry	10	06/04/15 14:28	EPA 6020A	
8832-150527-018 (A5E0838-18)			Matrix: Soil					
Batch: 5060129								
Lead	36.1	0.143	0.285	mg/kg dry	10	06/04/15 14:30	EPA 6020A	

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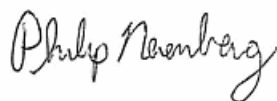
**Reported:**

06/30/15 13:10

**ANALYTICAL SAMPLE RESULTS****TCLP Extraction by EPA 1311**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-001 (A5E0838-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060338</b>			
TCLP Extraction	PREP			N/A	1	06/10/15 17:33	EPA 1311	

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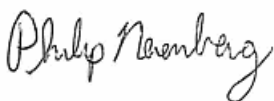
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Project Manager: Ben Uhl**Reported:**  
06/30/15 13:10**ANALYTICAL SAMPLE RESULTS****TCLP Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150527-001 (A5E0838-01)			Matrix: Soil					
Batch: 5060372								
Lead	4.38	0.0250	0.0500	mg/L	5	06/11/15 13:05	1311/6020A	
Mercury	ND	0.00250	0.00400	"	"	"	"	

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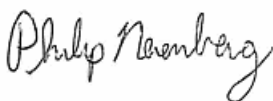
06/30/15 13:10

## ANALYTICAL SAMPLE RESULTS

## Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-001 (A5E0838-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	88.2	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-002 (A5E0838-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	95.3	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-003 (A5E0838-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	94.7	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-004 (A5E0838-04)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	77.4	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-005 (A5E0838-05)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	72.7	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-006 (A5E0838-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	73.9	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-007 (A5E0838-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	86.5	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-008 (A5E0838-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	89.4	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-009 (A5E0838-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	91.6	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-010 (A5E0838-10)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	94.5	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-011 (A5E0838-11)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	71.5	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-012 (A5E0838-12)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	68.3	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-013 (A5E0838-13)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	68.7	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-014 (A5E0838-14)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	86.8	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-015 (A5E0838-15)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	88.2	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150527-016 (A5E0838-16)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	94.3	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38

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Project Number: 8832

Project Manager: Ben Uhl

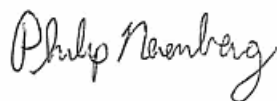
**Reported:**

06/30/15 13:10

**ANALYTICAL SAMPLE RESULTS****Percent Dry Weight**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150527-018 (A5E0838-18)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	71.4	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38

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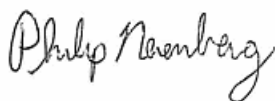
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

06/30/15 13:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060121 - EPA 3546						Soil						
Blank (5060121-BLK1)						Prepared: 06/03/15 13:02		Analyzed: 06/03/15 19:46				
NWTPH-Dx												
Diesel	ND	7.14	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	14.3	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 102 %		Limits: 50-150 %		Dilution: 1x						
LCS (5060121-BS1)						Prepared: 06/03/15 13:02		Analyzed: 06/03/15 20:06				
NWTPH-Dx												
Diesel	119	10.0	25.0	mg/kg wet	1	125	---	95	76-115%	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 102 %		Limits: 50-150 %		Dilution: 1x						
Duplicate (5060121-DUP2)						Prepared: 06/03/15 13:02		Analyzed: 06/04/15 00:23				
QC Source Sample: 8832-150527-018 (A5E0838-18)												
NWTPH-Dx												
Diesel	101	10.7	25.0	mg/kg dry	1	---	97.4	---	---	4	30%	F-17
Oil	22.7	21.5	50.0	"	"	---	22.2	---	---	2	30%	J
Surr: o-Terphenyl (Surr)		Recovery: 88 %		Limits: 50-150 %		Dilution: 1x						

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Project Manager: Ben Uhl**Reported:**  
06/30/15 13:10**QUALITY CONTROL (QC) SAMPLE RESULTS****Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5050901 - EPA 5035A						Soil						
Blank (5050901-BLK1)						Prepared: 05/30/15 12:00		Analyzed: 05/30/15 14:44				
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	1.67	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 108 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		99 %		50-150 %		"						
LCS (5050901-BS2)						Prepared: 05/30/15 12:00		Analyzed: 05/30/15 14:19				
NWTPH-Gx (MS)												
Gasoline Range Organics	24.0	2.50	5.00	mg/kg wet	50	25.0	---	96	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 106 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		109 %		50-150 %		"						
Duplicate (5050901-DUP1)						Prepared: 05/27/15 09:55		Analyzed: 05/30/15 15:38				
QC Source Sample: 8832-150527-001 (A5E0838-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	3.05	6.11	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 107 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		101 %		50-150 %		"						

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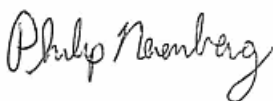
**Reported:**

06/30/15 13:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5050901 - EPA 5035A						Soil						
Blank (5050901-BLK1)						Prepared: 05/30/15 12:00    Analyzed: 05/30/15 14:44						
5035/8260B												
Acetone	ND	333	667	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Bromobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromoform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromomethane	ND	333	333	"	"	---	---	---	---	---	---	
2-Butanone (MEK)	ND	167	333	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chloroethane	ND	167	333	"	"	---	---	---	---	---	---	
Chloroform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Chloromethane	ND	83.3	167	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloroprop ane	ND	83.3	167	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dibromomethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	

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Project Number: 8832

Project Manager: Ben Uhl

Reported:

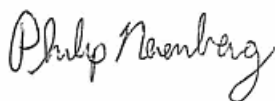
06/30/15 13:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5050901 - EPA 5035A</b>						<b>Soil</b>						
<b>Blank (5050901-BLK1)</b>						Prepared: 05/30/15 12:00 Analyzed: 05/30/15 14:44						
cis-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
2-Hexanone	ND	167	333	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	167	333	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Methylene chloride	ND	83.3	167	"	"	---	---	---	---	---	---	
Naphthalene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Styrene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Toluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	

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Project Number: 8832

Project Manager: Ben Uhl

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06/30/15 13:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5050901 - EPA 5035A</b>						<b>Soil</b>						
<b>Blank (5050901-BLK1)</b>						Prepared: 05/30/15 12:00 Analyzed: 05/30/15 14:44						
1,2,4-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
o-Xylene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
<i>Surr: Dibromofluoromethane (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 70-130 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Surr)</i>		<i>102 %</i>		<i>70-130 %</i>		<i>"</i>						
<i>Toluene-d8 (Surr)</i>		<i>94 %</i>		<i>70-130 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>70-130 %</i>		<i>"</i>						

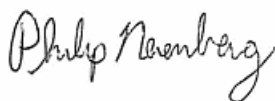
**LCS (5050901-BS1)**

Prepared: 05/30/15 12:00 Analyzed: 05/30/15 13:51

**5035/8260B**

Acetone	2240	500	1000	ug/kg wet	50	2000	---	112	65-135%	---	---	
Benzene	1060	6.25	12.5	"	"	1000	---	106	"	---	---	
Bromobenzene	959	12.5	25.0	"	"	"	---	96	"	---	---	
Bromochloromethane	1200	25.0	50.0	"	"	"	---	120	"	---	---	
Bromodichloromethane	950	25.0	50.0	"	"	"	---	95	"	---	---	
Bromoform	909	25.0	50.0	"	"	"	---	91	"	---	---	
Bromomethane	1250	500	500	"	"	"	---	125	"	---	---	
2-Butanone (MEK)	2280	250	500	"	"	2000	---	114	"	---	---	
n-Butylbenzene	812	25.0	50.0	"	"	1000	---	81	"	---	---	
sec-Butylbenzene	834	25.0	50.0	"	"	"	---	83	"	---	---	
tert-Butylbenzene	838	25.0	50.0	"	"	"	---	84	"	---	---	
Carbon tetrachloride	978	12.5	25.0	"	"	"	---	98	"	---	---	
Chlorobenzene	954	12.5	25.0	"	"	"	---	95	"	---	---	
Chloroethane	1170	250	500	"	"	"	---	117	"	---	---	
Chloroform	1080	25.0	50.0	"	"	"	---	108	"	---	---	
Chloromethane	974	125	250	"	"	"	---	97	"	---	---	
2-Chlorotoluene	940	25.0	50.0	"	"	"	---	94	"	---	---	
4-Chlorotoluene	861	25.0	50.0	"	"	"	---	86	"	---	---	
1,2-Dibromo-3-chloroprop ane	820	125	250	"	"	"	---	82	"	---	---	

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Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

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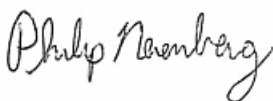
## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5050901 - EPA 5035A</b>						<b>Soil</b>						
<b>LCS (5050901-BS1)</b>						Prepared: 05/30/15 12:00 Analyzed: 05/30/15 13:51						
Dibromochloromethane	970	50.0	100	ug/kg wet	"	"	---	97	"	---	---	
1,2-Dibromoethane (EDB)	981	12.5	25.0	"	"	"	---	98	"	---	---	
Dibromomethane	1070	25.0	50.0	"	"	"	---	107	"	---	---	
1,2-Dichlorobenzene	948	12.5	25.0	"	"	"	---	95	"	---	---	
1,3-Dichlorobenzene	928	12.5	25.0	"	"	"	---	93	"	---	---	
1,4-Dichlorobenzene	895	12.5	25.0	"	"	"	---	90	"	---	---	
Dichlorodifluoromethane	873	50.0	100	"	"	"	---	87	"	---	---	
1,1-Dichloroethane	1090	12.5	25.0	"	"	"	---	109	"	---	---	
1,2-Dichloroethane (EDC)	1030	12.5	25.0	"	"	"	---	103	"	---	---	
1,1-Dichloroethene	1090	12.5	25.0	"	"	"	---	109	"	---	---	
cis-1,2-Dichloroethene	1100	12.5	25.0	"	"	"	---	110	"	---	---	
trans-1,2-Dichloroethene	1150	12.5	25.0	"	"	"	---	115	"	---	---	
1,2-Dichloropropane	1040	12.5	25.0	"	"	"	---	104	"	---	---	
1,3-Dichloropropane	1000	25.0	50.0	"	"	"	---	100	"	---	---	
2,2-Dichloropropane	1040	25.0	50.0	"	"	"	---	104	"	---	---	
1,1-Dichloropropene	1120	25.0	50.0	"	"	"	---	112	"	---	---	
cis-1,3-Dichloropropene	1020	25.0	50.0	"	"	"	---	102	"	---	---	
trans-1,3-Dichloropropene	994	25.0	50.0	"	"	"	---	99	"	---	---	
Ethylbenzene	936	12.5	25.0	"	"	"	---	94	"	---	---	
Hexachlorobutadiene	890	50.0	100	"	"	"	---	89	"	---	---	
2-Hexanone	2020	250	500	"	"	2000	---	101	"	---	---	
Isopropylbenzene	914	25.0	50.0	"	"	1000	---	91	"	---	---	
4-Isopropyltoluene	814	25.0	50.0	"	"	"	---	81	"	---	---	
4-Methyl-2-pentanone (MiBK)	2000	250	500	"	"	2000	---	100	"	---	---	
Methyl tert-butyl ether (MTBE)	1100	25.0	50.0	"	"	1000	---	110	"	---	---	
Methylene chloride	1020	125	250	"	"	"	---	102	"	---	---	
Naphthalene	882	50.0	100	"	"	"	---	88	"	---	---	
n-Propylbenzene	890	12.5	25.0	"	"	"	---	89	"	---	---	
Styrene	984	25.0	50.0	"	"	"	---	98	"	---	---	
1,1,1,2-Tetrachloroethane	965	25.0	50.0	"	"	"	---	96	"	---	---	

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

**Reported:**

06/30/15 13:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5050901 - EPA 5035A</b>						<b>Soil</b>						
<b>LCS (5050901-BS1)</b>						Prepared: 05/30/15 12:00 Analyzed: 05/30/15 13:51						
1,1,2,2-Tetrachloroethane	998	12.5	25.0	"	"	"	---	100	"	---	---	
Tetrachloroethene (PCE)	1020	12.5	25.0	"	"	"	---	102	"	---	---	
Toluene	934	25.0	50.0	"	"	"	---	93	"	---	---	
1,2,3-Trichlorobenzene	787	125	250	"	"	"	---	79	"	---	---	
1,2,4-Trichlorobenzene	801	125	250	"	"	"	---	80	"	---	---	
1,1,1-Trichloroethane	968	25.0	50.0	"	"	"	---	97	"	---	---	
1,1,2-Trichloroethane	952	12.5	25.0	"	"	"	---	95	"	---	---	
Trichloroethene (TCE)	1030	12.5	25.0	"	"	"	---	103	"	---	---	
Trichlorofluoromethane	936	50.0	100	"	"	"	---	94	"	---	---	
1,2,3-Trichloropropane	856	25.0	50.0	"	"	"	---	86	"	---	---	
1,2,4-Trimethylbenzene	890	25.0	50.0	"	"	"	---	89	"	---	---	
1,3,5-Trimethylbenzene	870	25.0	50.0	"	"	"	---	87	"	---	---	
Vinyl chloride	1250	12.5	25.0	"	"	"	---	125	"	---	---	
m,p-Xylene	1840	25.0	50.0	"	"	2000	---	92	"	---	---	
o-Xylene	938	12.5	25.0	"	"	1000	---	94	"	---	---	

<i>Surr: Dibromofluoromethane (Surr)</i>	<i>Recovery: 104 %</i>	<i>Limits: 70-130 %</i>	<i>Dilution: 1x</i>
<i>1,4-Difluorobenzene (Surr)</i>	<i>102 %</i>	<i>70-130 %</i>	<i>"</i>
<i>Toluene-d8 (Surr)</i>	<i>96 %</i>	<i>70-130 %</i>	<i>"</i>
<i>4-Bromofluorobenzene (Surr)</i>	<i>101 %</i>	<i>70-130 %</i>	<i>"</i>

**Duplicate (5050901-DUP1)**

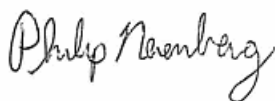
Prepared: 05/27/15 09:55 Analyzed: 05/30/15 15:38

**QC Source Sample: 8832-150527-001 (ASE0838-01)****5035/8260B**

Acetone	ND	611	1220	ug/kg dry	50	---	ND	---	---	---	30%
Benzene	ND	7.64	15.3	"	"	---	ND	---	---	---	30%
Bromobenzene	ND	15.3	30.5	"	"	---	ND	---	---	---	30%
Bromochloromethane	ND	30.5	61.1	"	"	---	ND	---	---	---	30%
Bromodichloromethane	ND	30.5	61.1	"	"	---	ND	---	---	---	30%
Bromoform	ND	30.5	61.1	"	"	---	ND	---	---	---	30%
Bromomethane	ND	611	611	"	"	---	ND	---	---	---	30%
2-Butanone (MEK)	ND	305	611	"	"	---	ND	---	---	---	30%
n-Butylbenzene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

**Reported:**

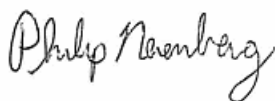
06/30/15 13:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5050901 - EPA 5035A						Soil						
Duplicate (5050901-DUP1)						Prepared: 05/27/15 09:55		Analyzed: 05/30/15 15:38				
QC Source Sample: 8832-150527-001 (A5E0838-01)												
sec-Butylbenzene	ND	30.5	61.1	ug/kg dry	"	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
Chlorobenzene	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
Chloroethane	ND	305	611	"	"	---	ND	---	---	---	30%	
Chloroform	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
Chloromethane	ND	153	305	"	"	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloroprop ane	ND	153	305	"	"	---	ND	---	---	---	30%	
Dibromochloromethane	ND	61.1	122	"	"	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
Dibromomethane	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	61.1	122	"	"	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
Ethylbenzene	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

**Reported:**

06/30/15 13:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5050901 - EPA 5035A						Soil						
Duplicate (5050901-DUP1)						Prepared: 05/27/15 09:55		Analyzed: 05/30/15 15:38				
QC Source Sample: 8832-150527-001 (A5E0838-01)												
Hexachlorobutadiene	ND	61.1	122	ug/kg dry	"	---	ND	---	---	---	30%	
2-Hexanone	ND	305	611	"	"	---	ND	---	---	---	30%	
Isopropylbenzene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	305	611	"	"	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
Methylene chloride	ND	153	305	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	61.1	122	"	"	---	ND	---	---	---	30%	
n-Propylbenzene	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
Styrene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
Toluene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	153	305	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	153	305	"	"	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	61.1	122	"	"	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
Vinyl chloride	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	
m,p-Xylene	ND	30.5	61.1	"	"	---	ND	---	---	---	30%	
o-Xylene	ND	15.3	30.5	"	"	---	ND	---	---	---	30%	

Surr: Dibromofluoromethane (Surr)

Recovery: 101 % Limits: 70-130 %

Dilution: 1x

1,4-Difluorobenzene (Surr)

101 % 70-130 %

"

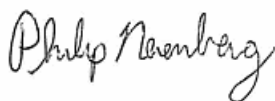
Toluene-d8 (Surr)

95 % 70-130 %

"

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Philip Nerenberg, Lab Director



**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

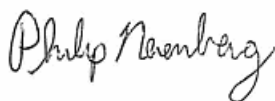
06/30/15 13:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5050901 - EPA 5035A							Soil					
Duplicate (5050901-DUP1)						Prepared: 05/27/15 09:55    Analyzed: 05/30/15 15:38						
QC Source Sample: 8832-150527-001 (A5E0838-01)												
Surr: 4-Bromofluorobenzene (Surr)		Recovery: 99 %		Limits: 70-130 %		Dilution: 1x						
Matrix Spike (5050901-MS1)						Prepared: 05/27/15 15:24    Analyzed: 05/30/15 18:39						
QC Source Sample: 8832-150527-018 (A5E0838-18)												
5035/8260B												
Acetone	3970	875	1750	ug/kg dry	50	3500	ND	114	65-135%	---	---	
Benzene	1980	10.9	21.9	"	"	1750	ND	113	"	---	---	
Bromobenzene	1720	21.9	43.7	"	"	"	ND	98	"	---	---	
Bromochloromethane	2160	43.7	87.5	"	"	"	ND	123	"	---	---	
Bromodichloromethane	1780	43.7	87.5	"	"	"	ND	102	"	---	---	
Bromoform	1690	43.7	87.5	"	"	"	ND	97	"	---	---	
Bromomethane	2280	875	875	"	"	"	ND	130	"	---	---	
2-Butanone (MEK)	3860	437	875	"	"	3500	ND	110	"	---	---	
n-Butylbenzene	1490	43.7	87.5	"	"	1750	ND	85	"	---	---	
sec-Butylbenzene	1510	43.7	87.5	"	"	"	ND	86	"	---	---	
tert-Butylbenzene	1520	43.7	87.5	"	"	"	ND	87	"	---	---	
Carbon tetrachloride	1920	21.9	43.7	"	"	"	ND	110	"	---	---	
Chlorobenzene	1800	21.9	43.7	"	"	"	ND	103	"	---	---	
Chloroethane	1910	437	875	"	"	"	ND	109	"	---	---	
Chloroform	2060	43.7	87.5	"	"	"	ND	118	"	---	---	
Chloromethane	1880	219	437	"	"	"	ND	108	"	---	---	
2-Chlorotoluene	1710	43.7	87.5	"	"	"	ND	98	"	---	---	
4-Chlorotoluene	1550	43.7	87.5	"	"	"	ND	88	"	---	---	
1,2-Dibromo-3-chloroprop ane	1470	219	437	"	"	"	ND	84	"	---	---	
Dibromochloromethane	1800	87.5	175	"	"	"	ND	103	"	---	---	
1,2-Dibromoethane (EDB)	1800	21.9	43.7	"	"	"	ND	103	"	---	---	
Dibromomethane	1970	43.7	87.5	"	"	"	ND	113	"	---	---	
1,2-Dichlorobenzene	1720	21.9	43.7	"	"	"	ND	98	"	---	---	
1,3-Dichlorobenzene	1690	21.9	43.7	"	"	"	ND	97	"	---	---	
1,4-Dichlorobenzene	1690	21.9	43.7	"	"	"	ND	97	"	---	---	

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Philip Nerenberg, Lab Director

**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

**Reported:**

06/30/15 13:10

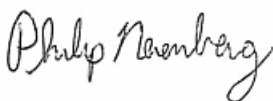
## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5050901 - EPA 5035A							Soil					
Matrix Spike (5050901-MS1)							Prepared: 05/27/15 15:24 Analyzed: 05/30/15 18:39					
QC Source Sample: 8832-150527-018 (A5E0838-18)												
Dichlorodifluoromethane	1640	87.5	175	ug/kg dry	"	"	ND	94	"	---	---	
1,1-Dichloroethane	2030	21.9	43.7	"	"	"	ND	116	"	---	---	
1,2-Dichloroethane (EDC)	1860	21.9	43.7	"	"	"	ND	107	"	---	---	
1,1-Dichloroethene	2100	21.9	43.7	"	"	"	ND	120	"	---	---	
cis-1,2-Dichloroethene	2010	21.9	43.7	"	"	"	ND	115	"	---	---	
trans-1,2-Dichloroethene	2100	21.9	43.7	"	"	"	ND	120	"	---	---	
1,2-Dichloropropane	1990	21.9	43.7	"	"	"	ND	114	"	---	---	
1,3-Dichloropropane	1890	43.7	87.5	"	"	"	ND	108	"	---	---	
2,2-Dichloropropane	1850	43.7	87.5	"	"	"	ND	106	"	---	---	
1,1-Dichloropropene	2100	43.7	87.5	"	"	"	ND	120	"	---	---	
cis-1,3-Dichloropropene	1850	43.7	87.5	"	"	"	ND	106	"	---	---	
trans-1,3-Dichloropropene	1840	43.7	87.5	"	"	"	ND	105	"	---	---	
Ethylbenzene	1770	21.9	43.7	"	"	"	ND	101	"	---	---	
Hexachlorobutadiene	1720	87.5	175	"	"	"	ND	99	"	---	---	
2-Hexanone	3590	437	875	"	"	3500	ND	103	"	---	---	
Isopropylbenzene	1740	43.7	87.5	"	"	1750	ND	100	"	---	---	
4-Isopropyltoluene	1510	43.7	87.5	"	"	"	ND	86	"	---	---	
4-Methyl-2-pentanone (MiBK)	3550	437	875	"	"	3500	ND	101	"	---	---	
Methyl tert-butyl ether (MTBE)	1950	43.7	87.5	"	"	1750	ND	111	"	---	---	
Methylene chloride	1890	219	437	"	"	"	ND	108	"	---	---	
Naphthalene	1880	87.5	175	"	"	"	217	95	"	---	---	
n-Propylbenzene	1620	21.9	43.7	"	"	"	ND	93	"	---	---	
Styrene	1770	43.7	87.5	"	"	"	ND	101	"	---	---	
1,1,1,2-Tetrachloroethane	1900	43.7	87.5	"	"	"	ND	109	"	---	---	
1,1,2,2-Tetrachloroethane	1680	21.9	43.7	"	"	"	ND	96	"	---	---	
Tetrachloroethene (PCE)	1990	21.9	43.7	"	"	"	ND	114	"	---	---	
Toluene	1740	43.7	87.5	"	"	"	ND	99	"	---	---	
1,2,3-Trichlorobenzene	1520	219	437	"	"	"	ND	87	"	---	---	
1,2,4-Trichlorobenzene	1530	219	437	"	"	"	ND	88	"	---	---	

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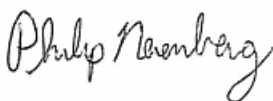


Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**  
06/30/15 13:10**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5050901 - EPA 5035A						Soil						
Matrix Spike (5050901-MS1)						Prepared: 05/27/15 15:24		Analyzed: 05/30/15 18:39				
QC Source Sample: 8832-150527-018 (A5E0838-18)												
1,1,1-Trichloroethane	1860	43.7	87.5	"	"	"	ND	107	"	---	---	
1,1,2-Trichloroethane	1820	21.9	43.7	"	"	"	ND	104	"	---	---	
Trichloroethene (TCE)	2000	21.9	43.7	"	"	"	ND	114	"	---	---	
Trichlorofluoromethane	2050	87.5	175	"	"	"	ND	117	"	---	---	
1,2,3-Trichloropropane	1480	43.7	87.5	"	"	"	ND	85	"	---	---	
1,2,4-Trimethylbenzene	1620	43.7	87.5	"	"	"	ND	93	"	---	---	
1,3,5-Trimethylbenzene	1590	43.7	87.5	"	"	"	ND	91	"	---	---	
Vinyl chloride	2360	21.9	43.7	"	"	"	ND	135	"	---	---	
m,p-Xylene	3510	43.7	87.5	"	"	3500	ND	100	"	---	---	
o-Xylene	1800	21.9	43.7	"	"	1750	ND	103	"	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery: 102 %		Limits: 70-130 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)		100 %		70-130 %		"						
Toluene-d8 (Surr)		97 %		70-130 %		"						
4-Bromofluorobenzene (Surr)		98 %		70-130 %		"						

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## Hahn and Associates

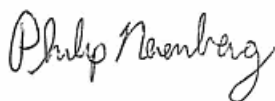
434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben UhlReported:  
06/30/15 13:10

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060256 - EPA 3546						Soil						
Blank (5060256-BLK1)				Prepared: 06/08/15 13:01				Analyzed: 06/09/15 17:38				C-07
EPA 8082A												
Aroclor 1016	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		Recovery: 93 %		Limits: 72-126 %		Dilution: 1x						
LCS (5060256-BS1)				Prepared: 06/08/15 13:01				Analyzed: 06/09/15 17:56				C-07
EPA 8082A												
Aroclor 1016	210	5.00	10.0	ug/kg wet	1	250	---	84	47-134%	---	---	
Aroclor 1260	252	5.00	10.0	"	"	"	---	101	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		Recovery: 97 %		Limits: 72-126 %		Dilution: 1x						
Duplicate (5060256-DUP1)				Prepared: 06/08/15 13:01				Analyzed: 06/09/15 18:50				C-07
QC Source Sample: 8832-150527-001 (A5E0838-01)												
EPA 8082A												
Aroclor 1016	ND	5.49	11.0	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	5.49	11.0	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	5.49	11.0	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	5.49	11.0	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	5.49	11.0	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	5.49	11.0	"	"	---	ND	---	---	---	30%	
Aroclor 1260	14.4	5.49	11.0	"	"	---	14.9	---	---	3	30%	P-09
Surr: Decachlorobiphenyl (Surr)		Recovery: 90 %		Limits: 72-126 %		Dilution: 1x						

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434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**  
Project Number: 8832  
Project Manager: Ben UhlReported:  
06/30/15 13:10

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060014 - EPA 3546						Soil						
Blank (5060014-BLK1)						Prepared: 06/01/15 10:23    Analyzed: 06/01/15 18:53						
EPA 8270D (SIM)												
Acenaphthene	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	9.09	18.2	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Chrysene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Fluorene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Naphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Phenanthrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	

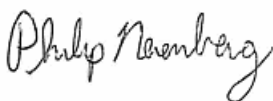
Surr: 2-Fluorobiphenyl (Surr)  
p-Terphenyl-d14 (Surr)Recovery: 73 % Limits: 44-115 %  
77 % 54-127 %Dilution: 1x  
"**LCS (5060014-BS1)**

Prepared: 06/01/15 10:23 Analyzed: 06/01/15 19:20

<b>EPA 8270D (SIM)</b>												
Acenaphthene	636	5.00	10.0	ug/kg wet	1	800	---	79	40-122%	---	---	
Acenaphthylene	619	5.00	10.0	"	"	"	---	77	32-132%	---	---	
Anthracene	681	5.00	10.0	"	"	"	---	85	47-123%	---	---	
Benz(a)anthracene	634	5.00	10.0	"	"	"	---	79	49-126%	---	---	
Benzo(a)pyrene	706	5.00	10.0	"	"	"	---	88	45-129%	---	---	
Benzo(b)fluoranthene	657	5.00	10.0	"	"	"	---	82	45-132%	---	---	

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

Reported:

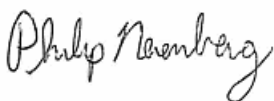
06/30/15 13:10

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060014 - EPA 3546</b>						<b>Soil</b>						
<b>LCS (5060014-BS1)</b>						Prepared: 06/01/15 10:23 Analyzed: 06/01/15 19:20						
Benzo(k)fluoranthene	690	5.00	10.0	"	"	"	---	86	47-132%	---	---	
Benzo(b+k)fluoranthene(s)	1340	10.0	20.0	"	"	1600	---	84	45-132%	---	---	
Benzo(g,h,i)perylene	615	5.00	10.0	"	"	800	---	77	43-134%	---	---	
Chrysene	680	5.00	10.0	"	"	"	---	85	50-124%	---	---	
Dibenz(a,h)anthracene	708	5.00	10.0	"	"	"	---	88	45-134%	---	---	
Dibenzofuran	626	5.00	10.0	"	"	"	---	78	44-120%	---	---	
Fluoranthene	585	5.00	10.0	"	"	"	---	73	50-127%	---	---	
Fluorene	644	5.00	10.0	"	"	"	---	80	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	632	5.00	10.0	"	"	"	---	79	45-133%	---	---	
1-Methylnaphthalene	556	5.00	10.0	"	"	"	---	69	40-120%	---	---	
2-Methylnaphthalene	588	5.00	10.0	"	"	"	---	74	38-122%	---	---	
Naphthalene	579	5.00	10.0	"	"	"	---	72	35-123%	---	---	
Phenanthrene	646	5.00	10.0	"	"	"	---	81	50-121%	---	---	
Pyrene	589	5.00	10.0	"	"	"	---	74	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 74 %		Limits: 44-115 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		74 %		54-127 %		"						

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## Hahn and Associates

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Project Manager: Ben Uhl

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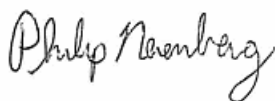
06/30/15 13:10

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Hexavalent Chromium by EPA 7196A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060046 - Method Prep: Non-Aq						Soil						
Blank (5060046-BLK1)						Prepared: 06/02/15 07:40		Analyzed: 06/02/15 12:40				
EPA 7196A												
Hexavalent Chromium	ND	1.15	2.25	mg/kg wet	1	---	---	---	---	---	---	
LCS (5060046-BS1)						Prepared: 06/02/15 07:40		Analyzed: 06/02/15 12:40				
EPA 7196A												
Hexavalent Chromium	21.1	1.15	2.25	mg/kg wet	1	20.0	---	105	80-120%	---	---	
Duplicate (5060046-DUP1)						Prepared: 06/02/15 07:40		Analyzed: 06/02/15 12:40				
QC Source Sample: 8832-150527-003 (A5E0838-03)												
EPA 7196A												
Hexavalent Chromium	ND	1.21	2.36	mg/kg dry	1	---	ND	---	---	---	20%	
Matrix Spike (5060046-MS1)						Prepared: 06/02/15 07:40		Analyzed: 06/02/15 12:40				
QC Source Sample: 8832-150527-003 (A5E0838-03)												
EPA 7196A												
Hexavalent Chromium	41.0	1.20	2.36	mg/kg dry	1	41.9	ND	98	75-125%	---	---	
Post Spike (5060046-PS1)						Prepared: 06/02/15 07:40		Analyzed: 06/02/15 12:40				
QC Source Sample: 8832-150527-003 (A5E0838-03)												
EPA 7196A												
Hexavalent Chromium	0.426			mg/L	1	0.398	0.00498	106	85-115%		---	

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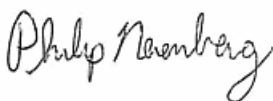
Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**  
Project Number: 8832  
Project Manager: Ben UhlReported:  
06/30/15 13:10

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060129 - EPA 3051A						Soil						
Blank (5060129-BLK1)						Prepared: 06/03/15 15:42    Analyzed: 06/04/15 12:24						
EPA 6020A												
Antimony	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (5060129-BS1)						Prepared: 06/03/15 15:42    Analyzed: 06/04/15 12:27						
EPA 6020A												
Antimony	25.0	0.500	1.00	mg/kg wet	10	25.0	---	100	80-120%	---	---	
Arsenic	50.7	0.500	1.00	"	"	50.0	---	101	"	---	---	
Beryllium	25.9	0.100	0.200	"	"	25.0	---	104	"	---	---	
Cadmium	50.4	0.100	0.200	"	"	50.0	---	101	"	---	---	
Chromium	50.0	0.500	1.00	"	"	"	---	100	"	---	---	
Copper	51.6	0.500	1.00	"	"	"	---	103	"	---	---	
Lead	50.7	0.100	0.200	"	"	"	---	101	"	---	---	
Mercury	0.959	0.0400	0.0800	"	"	1.00	---	96	"	---	---	
Nickel	50.1	0.500	1.00	"	"	50.0	---	100	"	---	---	
Selenium	27.8	0.500	1.00	"	"	25.0	---	111	"	---	---	
Silver	24.8	0.100	0.200	"	"	"	---	99	"	---	---	
Thallium	25.4	0.100	0.200	"	"	"	---	102	"	---	---	
Zinc	53.7	2.00	4.00	"	"	50.0	---	107	"	---	---	
Duplicate (5060129-DUP1)						Prepared: 06/03/15 15:42    Analyzed: 06/04/15 12:41						

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Project Manager: Ben Uhl**Reported:**

06/30/15 13:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060129 - EPA 3051A							Soil					
Duplicate (5060129-DUP1)					Prepared: 06/03/15 15:42		Analyzed: 06/04/15 12:41					
QC Source Sample: 8832-150527-004 (A5E0838-04)												
EPA 6020A												
Antimony	ND	0.713	1.43	mg/kg dry	10	---	ND	---	---	---	40%	
Arsenic	7.53	0.713	1.43	"	"	---	8.01	---	---	6	40%	
Beryllium	0.357	0.143	0.285	"	"	---	0.371	---	---	4	40%	
Cadmium	1.28	0.143	0.285	"	"	---	1.07	---	---	18	40%	
Chromium	11.9	0.713	1.43	"	"	---	13.1	---	---	10	40%	
Copper	22.3	0.713	1.43	"	"	---	23.4	---	---	5	40%	
Lead	31.0	0.143	0.285	"	"	---	31.3	---	---	0.7	40%	
Mercury	ND	0.0570	0.114	"	"	---	ND	---	---	---	40%	
Nickel	12.1	0.713	1.43	"	"	---	12.7	---	---	5	40%	
Selenium	ND	0.713	1.43	"	"	---	ND	---	---	---	40%	
Silver	ND	0.143	0.285	"	"	---	ND	---	---	---	40%	
Thallium	ND	0.143	0.285	"	"	---	ND	---	---	---	40%	
Zinc	182	2.85	5.70	"	"	---	181	---	---	0.3	40%	

**Matrix Spike (5060129-MS1)**

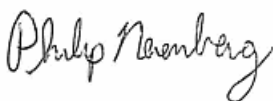
Prepared: 06/03/15 15:42 Analyzed: 06/04/15 12:53

QC Source Sample: 8832-150527-004 (A5E0838-04)

## EPA 6020A

Antimony	30.8	0.710	1.42	mg/kg dry	10	35.5	ND	87	75-125%	---	---
Arsenic	77.7	0.710	1.42	"	"	71.0	8.01	98	"	---	---
Beryllium	38.0	0.142	0.284	"	"	35.5	0.371	106	"	---	---
Cadmium	74.3	0.142	0.284	"	"	71.0	1.07	103	"	---	---
Chromium	82.2	0.710	1.42	"	"	"	13.1	97	"	---	---
Copper	92.9	0.710	1.42	"	"	"	23.4	98	"	---	---
Lead	102	0.142	0.284	"	"	"	31.3	100	"	---	---
Mercury	1.41	0.0568	0.114	"	"	1.42	ND	100	"	---	---
Nickel	82.2	0.710	1.42	"	"	71.0	12.7	98	"	---	---
Selenium	38.9	0.710	1.42	"	"	35.5	ND	110	"	---	---
Silver	35.6	0.142	0.284	"	"	"	ND	100	"	---	---
Thallium	36.5	0.142	0.284	"	"	"	ND	103	"	---	---

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<b>Hahn and Associates</b> 434 NW 6th Ave. Suite 203 Portland, OR 97209	Project: <b>POVRED</b> Project Number: 8832 Project Manager: Ben Uhl	<b>Reported:</b> 06/30/15 13:10
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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060129 - EPA 3051A						Soil						
Matrix Spike (5060129-MS1)					Prepared: 06/03/15 15:42    Analyzed: 06/04/15 12:53							
QC Source Sample: 8832-150527-004 (A5E0838-04)												
Zinc	252	2.84	5.68	mg/kg dry	"	71.0	181	100	"	---	---	

Philip Nerenberg



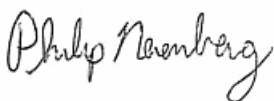
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

06/30/15 13:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****TCLP Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060372 - EPA 1311/3015						Soil						
Blank (5060372-BLK1)						Prepared: 06/11/15 10:33		Analyzed: 06/11/15 12:59				
1311/6020A												
Lead	ND	0.0250	0.0500	mg/L	5	---	---	---	---	---	---	TCLP
Mercury	ND	0.00250	0.00400	"	"	---	---	---	---	---	---	TCLP
LCS (5060372-BS1)						Prepared: 06/11/15 10:33		Analyzed: 06/11/15 13:02				
1311/6020A												
Lead	2.51	0.0250	0.0500	mg/L	5	2.50	---	100	80-120%	---	---	TCLP
Mercury	0.0482	0.00250	0.00400	"	"	0.0500	---	96	"	---	---	TCLP

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Philip Nerenberg, Lab Director

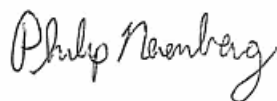
*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**  
06/30/15 13:10**QUALITY CONTROL (QC) SAMPLE RESULTS****Percent Dry Weight**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060023 - Total Solids (Dry Weight)							Soil					
Duplicate (5060023-DUPB)					Prepared: 06/01/15 20:30		Analyzed: 06/02/15 09:11					
QC Source Sample: 8832-150527-001 (A5E0838-01)												
EPA 8000C												
% Solids	88.7	1.00	1.00	% by Weight	1	---	88.2	---	---	0.6	20%	Q-38
Duplicate (5060023-DUPC)					Prepared: 06/01/15 20:30		Analyzed: 06/02/15 09:11					
QC Source Sample: 8832-150527-009 (A5E0838-09)												
EPA 8000C												
% Solids	91.8	1.00	1.00	% by Weight	1	---	91.6	---	---	0.2	20%	Q-38
Duplicate (5060023-DUPD)					Prepared: 06/01/15 20:30		Analyzed: 06/02/15 09:11					
QC Source Sample: 8832-150527-018 (A5E0838-18)												
EPA 8000C												
% Solids	71.7	1.00	1.00	% by Weight	1	---	71.4	---	---	0.4	20%	Q-38

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

**Reported:**

06/30/15 13:10

**SAMPLE PREPARATION INFORMATION****Diesel and/or Oil Hydrocarbons by NWTPH-Dx****Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060121</b>							
A5E0838-01RE1	Soil	NWTPH-Dx	05/27/15 09:55	06/03/15 13:02	10.63g/5mL	10g/5mL	0.94
A5E0838-02	Soil	NWTPH-Dx	05/27/15 10:07	06/03/15 13:02	12.34g/5mL	10g/5mL	0.81
A5E0838-03	Soil	NWTPH-Dx	05/27/15 10:20	06/03/15 13:02	11.72g/5mL	10g/5mL	0.85
A5E0838-07	Soil	NWTPH-Dx	05/27/15 11:31	06/03/15 13:02	10.85g/5mL	10g/5mL	0.92
A5E0838-09	Soil	NWTPH-Dx	05/27/15 11:53	06/03/15 13:02	12.12g/5mL	10g/5mL	0.83
A5E0838-14	Soil	NWTPH-Dx	05/27/15 14:31	06/03/15 13:02	10.94g/5mL	10g/5mL	0.91
A5E0838-15	Soil	NWTPH-Dx	05/27/15 14:39	06/03/15 13:02	12.88g/5mL	10g/5mL	0.78
A5E0838-16	Soil	NWTPH-Dx	05/27/15 14:54	06/03/15 13:02	12.34g/5mL	10g/5mL	0.81
A5E0838-18	Soil	NWTPH-Dx	05/27/15 15:24	06/03/15 13:02	12.62g/5mL	10g/5mL	0.79

**Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx****Prep: EPA 5035A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5050901</b>							
A5E0838-01	Soil	NWTPH-Gx (MS)	05/27/15 09:55	05/27/15 09:55	5.38g/5mL	10g/10mL	0.93
A5E0838-02	Soil	NWTPH-Gx (MS)	05/27/15 10:07	05/27/15 10:07	4.08g/5mL	10g/10mL	1.23
A5E0838-07	Soil	NWTPH-Gx (MS)	05/27/15 11:31	05/27/15 11:31	4.53g/5mL	10g/10mL	1.10
A5E0838-14	Soil	NWTPH-Gx (MS)	05/27/15 14:31	05/27/15 14:31	4.57g/5mL	10g/10mL	1.09
A5E0838-15	Soil	NWTPH-Gx (MS)	05/27/15 14:39	05/27/15 14:39	4.79g/5mL	10g/10mL	1.04
A5E0838-16	Soil	NWTPH-Gx (MS)	05/27/15 14:54	05/27/15 14:54	4.52g/5mL	10g/10mL	1.11
A5E0838-18	Soil	NWTPH-Gx (MS)	05/27/15 15:24	05/27/15 15:24	5.19g/5mL	10g/10mL	0.96

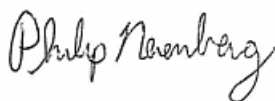
**Volatile Organic Compounds by EPA 8260B****Prep: EPA 5035A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5050901</b>							
A5E0838-01	Soil	5035/8260B	05/27/15 09:55	05/27/15 09:55	5.38g/5mL	10g/10mL	0.93
A5E0838-07	Soil	5035/8260B	05/27/15 11:31	05/27/15 11:31	4.53g/5mL	10g/10mL	1.10
A5E0838-14	Soil	5035/8260B	05/27/15 14:31	05/27/15 14:31	4.57g/5mL	10g/10mL	1.09

**Polychlorinated Biphenyls by EPA 8082A****Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
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Philip Nerenberg, Lab Director

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

**Reported:**

06/30/15 13:10

**SAMPLE PREPARATION INFORMATION****Polychlorinated Biphenyls by EPA 8082A**

Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<b>Batch: 5060256</b>							
A5E0838-01	Soil	EPA 8082A	05/27/15 09:55	06/08/15 13:01	10g/5mL	10g/5mL	1.00
A5E0838-15RE1	Soil	EPA 8082A	05/27/15 14:39	06/08/15 13:01	10.91g/5mL	10g/5mL	0.92

**Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM****Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060014</b>							
A5E0838-01RE1	Soil	EPA 8270D (SIM)	05/27/15 09:55	06/01/15 16:15	10.53g/5mL	10g/5mL	0.95
A5E0838-03	Soil	EPA 8270D (SIM)	05/27/15 10:20	06/01/15 16:15	10.95g/5mL	10g/5mL	0.91
A5E0838-07	Soil	EPA 8270D (SIM)	05/27/15 11:31	06/01/15 16:15	10.97g/5mL	10g/5mL	0.91
A5E0838-09	Soil	EPA 8270D (SIM)	05/27/15 11:53	06/01/15 16:15	10.95g/5mL	10g/5mL	0.91
A5E0838-14	Soil	EPA 8270D (SIM)	05/27/15 14:31	06/01/15 16:15	10.38g/5mL	10g/5mL	0.96
A5E0838-15RE1	Soil	EPA 8270D (SIM)	05/27/15 14:39	06/01/15 16:15	10.62g/5mL	10g/5mL	0.94

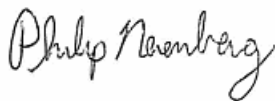
**Total Hexavalent Chromium by EPA 7196A****Prep: Method Prep: Non-Ag**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060046</b>							
A5E0838-03	Soil	EPA 7196A	05/27/15 10:20	06/02/15 07:40	2.5661g/111mL	2.5g/111mL	0.97

**Total Metals by EPA 6020 (ICPMS)****Prep: EPA 3051A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060129</b>							
A5E0838-01	Soil	EPA 6020A	05/27/15 09:55	06/03/15 15:42	0.455g/50mL	0.5g/50mL	1.10
A5E0838-01RE1	Soil	EPA 6020A	05/27/15 09:55	06/03/15 15:42	0.455g/50mL	0.5g/50mL	1.10
A5E0838-02	Soil	EPA 6020A	05/27/15 10:07	06/03/15 15:42	0.486g/50mL	0.5g/50mL	1.03
A5E0838-03	Soil	EPA 6020A	05/27/15 10:20	06/03/15 15:42	0.467g/50mL	0.5g/50mL	1.07
A5E0838-04	Soil	EPA 6020A	05/27/15 10:29	06/03/15 15:42	0.453g/50mL	0.5g/50mL	1.10
A5E0838-05	Soil	EPA 6020A	05/27/15 10:44	06/03/15 15:42	0.469g/50mL	0.5g/50mL	1.07
A5E0838-06	Soil	EPA 6020A	05/27/15 10:54	06/03/15 15:42	0.473g/50mL	0.5g/50mL	1.06
A5E0838-07	Soil	EPA 6020A	05/27/15 11:31	06/03/15 15:42	0.475g/50mL	0.5g/50mL	1.05
A5E0838-08	Soil	EPA 6020A	05/27/15 11:41	06/03/15 15:42	0.47g/50mL	0.5g/50mL	1.06
A5E0838-09	Soil	EPA 6020A	05/27/15 11:53	06/03/15 15:42	0.454g/50mL	0.5g/50mL	1.10

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

**Reported:**

06/30/15 13:10

**SAMPLE PREPARATION INFORMATION****Total Metals by EPA 6020 (ICPMS)****Prep: EPA 3051A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A5E0838-10	Soil	EPA 6020A	05/27/15 12:01	06/03/15 15:42	0.484g/50mL	0.5g/50mL	1.03
A5E0838-11	Soil	EPA 6020A	05/27/15 12:08	06/03/15 15:42	0.481g/50mL	0.5g/50mL	1.04
A5E0838-12	Soil	EPA 6020A	05/27/15 12:19	06/03/15 15:42	0.514g/50mL	0.5g/50mL	0.97
A5E0838-13	Soil	EPA 6020A	05/27/15 12:53	06/03/15 15:42	0.461g/50mL	0.5g/50mL	1.08
A5E0838-14	Soil	EPA 6020A	05/27/15 14:31	06/03/15 15:42	0.498g/50mL	0.5g/50mL	1.00
A5E0838-15	Soil	EPA 6020A	05/27/15 14:39	06/03/15 15:42	0.496g/50mL	0.5g/50mL	1.01
A5E0838-16	Soil	EPA 6020A	05/27/15 14:54	06/03/15 15:42	0.478g/50mL	0.5g/50mL	1.05
A5E0838-18	Soil	EPA 6020A	05/27/15 15:24	06/03/15 15:42	0.491g/50mL	0.5g/50mL	1.02

**TCLP Extraction by EPA 1311****Prep: EPA 1311 (TCLP)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060338</b>							
A5E0838-01	Soil	EPA 1311	05/27/15 09:55	06/10/15 17:33	100g/2000mL	100g/2000mL	NA

**TCLP Metals by EPA 6020 (ICPMS)****Prep: EPA 1311/3015**

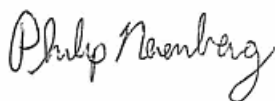
Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060372</b>							
A5E0838-01	Soil	1311/6020A	05/27/15 09:55	06/11/15 10:33	5mL/50mL	5mL/50mL	1.00

**Percent Dry Weight****Prep: Total Solids (Dry Weight)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060023</b>							
A5E0838-01	Soil	EPA 8000C	05/27/15 09:55	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-02	Soil	EPA 8000C	05/27/15 10:07	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-03	Soil	EPA 8000C	05/27/15 10:20	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-04	Soil	EPA 8000C	05/27/15 10:29	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-05	Soil	EPA 8000C	05/27/15 10:44	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-06	Soil	EPA 8000C	05/27/15 10:54	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-07	Soil	EPA 8000C	05/27/15 11:31	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-08	Soil	EPA 8000C	05/27/15 11:41	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA

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Philip Nerenberg, Lab Director

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

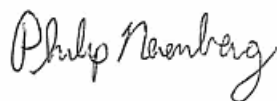
**Reported:**

06/30/15 13:10

**SAMPLE PREPARATION INFORMATION****Percent Dry Weight****Prep: Total Solids (Dry Weight)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A5E0838-09	Soil	EPA 8000C	05/27/15 11:53	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-10	Soil	EPA 8000C	05/27/15 12:01	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-11	Soil	EPA 8000C	05/27/15 12:08	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-12	Soil	EPA 8000C	05/27/15 12:19	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-13	Soil	EPA 8000C	05/27/15 12:53	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-14	Soil	EPA 8000C	05/27/15 14:31	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-15	Soil	EPA 8000C	05/27/15 14:39	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-16	Soil	EPA 8000C	05/27/15 14:54	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA
A5E0838-18	Soil	EPA 8000C	05/27/15 15:24	06/01/15 20:30	1N/A/1N/A	1N/A/1N/A	NA

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Philip Nerenberg, Lab Director

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**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

**Reported:**  
06/30/15 13:10

## Notes and Definitions

### Qualifiers:

AMENDED Result for this sample or analyte has been amended from the original report. See Case Narrative for details.

- C-07 Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
- F-17 No fuel pattern detected. The Diesel result represents carbon range C12 to C24, and the Oil result represents >C24 to C40.
- J Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- M-02 Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
- P-09 Due to weathering and/or the presence of an unknown mixture of PCB Congeners, the pattern does not match the standard used for calibration. Results are Estimated and based on the closest matching Aroclor.
- Q-38 Oven outside of control limits during drying step.
- S-01 Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
- TCLP This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 5060338.

### Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to 1/2 the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.  
  
For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.  
  
Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

**Reported:**  
06/30/15 13:10

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

\*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

## Hahn and Associates

434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

Reported:

06/30/15 13:10

A5E0838

HAHN AND ASSOCIATES, INC. Environmental Management 434 NW 6th Avenue, Suite 203 - Portland OR 97209 (503) 795-0717 - Fax (503) 227-0266		Laboratory Apex Labs Tigard, Oregon		CHAIN OF CUSTODY														
Lab Project No.		Chain of Custody No.		8832-0														
Project Manager: Rob Eide		Liquid with Sediment Sample		Samples Received at 4C (Y or N)														
Project No: 8832		Test Name		Appropriate Containers Used (Y or N)														
Project Name: POVRED		Multi-Phase Sample		Provide Verbal Results (Y or N)														
Collected by: Ben Uhl		Test One (Initials)		Provide Preliminary Fax Results														
Sample Number Profile: 8832-140527-		Test Frequency		Date														
Port of Vancouver Pricing		Analysis to be performed																
6 Day TAT																		
Invoice to Port of Vancouver (Matt Graves)																		
Results to Ben Uhl and Rob Eide at Hahn and Associates, Inc.																		
There will likely be follow-ups requested																		
DATA CONCERN EDD -> Allison Geier																		
Lab ID	Sample #	Date	Time	Sample Description	Col	Wet	Other	Number of Containers	MAPIH-Cy	MAPIH-Ga	PFAS Total Results by EPA 8210/8215	Total Lead by EPA 8210/8215	Pb by EPA 8210/8215	VOCs by EPA 8210/8215	PCBs by EPA 8210/8215	Chlorine III	Chlorine VI	Remarks
001	27-May-15	8:55		SB-014 (1 - 2.5') (2' - Grab)	x													
002	27-May-15	10:07		(5 - 7') (5' - Grab)	x													
003	27-May-15	10:20		(11.5 - 13.0') (12.5' - Grab)	x													
004	27-May-15	10:29		(16.5 - 18.5')	x													
005	27-May-15	10:44		(21 - 23')	x													
006	27-May-15	10:54		(25 - 27')	x													
007	27-May-15	11:31		SB-006A (0.5 - 2.5') (1.5' - Grab)	x													
008	27-May-15	11:41		(5 - 7') (5.5' - Grab)	x													
009	27-May-15	11:53		(10 - 11.5') (10.5' - Grab)	x													
010	27-May-15	12:01		(16 - 18')	x													
011	27-May-15	12:08		(21 - 23')	x													
012	27-May-15	12:19		(26 - 28')	x													
013	27-May-15	12:53		(31 - 33')	x													
014	27-May-15	14:31		SB-013 (1 - 2.5') (1.5' - Grab)	x													
015	27-May-15	14:30		(5.5 - 7.5') (6.5' - Grab)	x													
016	27-May-15	14:54		(11 - 13') (12' - Grab)	x													
017	27-May-15	15:08		(16 - 18')	x													
018	27-May-15	15:24		(21 - 23')	x													
019	27-May-15	15:36		(26 - 28')	x													
Prepared by: Ben Uhl Date: 5/28/15 Time: 12:00 Company: HAHN & ASSOC																		
Reviewed by: J. Sutton Date: 5/28/15 Time: 12:00 Company: Apex																		
Received by: Date: Time: Company:																		

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Philip Nerenberg

Philip Nerenberg, Lab Director

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Friday, July 31, 2015

Rob Ede  
Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209

RE: POVRED / 8832

Enclosed are the results of analyses for work order A5E0866, which was received by the laboratory on 5/29/2015 at 12:45:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

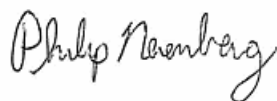
Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**  
Project Number: 8832  
Project Manager: Rob EdeReported:  
07/31/15 17:10

## ANALYTICAL REPORT FOR SAMPLES

## SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
8832-150528-020	A5E0866-01	Soil	05/28/15 09:02	05/29/15 12:45
8832-150528-021	A5E0866-02	Soil	05/28/15 09:06	05/29/15 12:45
8832-150528-023	A5E0866-04	Soil	05/28/15 09:17	05/29/15 12:45
8832-150528-024	A5E0866-05	Soil	05/28/15 09:27	05/29/15 12:45
8832-150528-025	A5E0866-06	Soil	05/28/15 09:35	05/29/15 12:45
8832-150528-026	A5E0866-07	Soil	05/28/15 13:17	05/29/15 12:45
8832-150528-027	A5E0866-08	Soil	05/28/15 13:28	05/29/15 12:45
8832-150528-028	A5E0866-09	Soil	05/28/15 13:35	05/29/15 12:45

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Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

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## ANALYTICAL CASE NARRATIVE

### Work Order: A5E0866

Amended Report Revision 1:

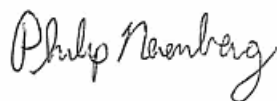
Added 8270SIM PAH method

This report supersedes all previous reports.

Per the client's request and approval the out of hold 8270 SIM PAH was added to sample 8832-150528-028, Apex WO # A5E0866-09.

Philip Nerenberg  
Lab Director  
7/22/15

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Project: POVRED

Project Number: 8832

Project Manager: Rob Ede

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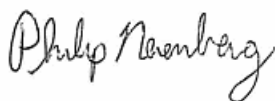
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## ANALYTICAL SAMPLE RESULTS

## Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-020 (A5E0866-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060159</b>			
Diesel	ND	8.84	25.0	mg/kg dry	1	06/04/15 21:26	NWTPH-Dx	
Oil	<b>43.0</b>	17.7	50.0	"	"	"	"	J
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 91 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<b>8832-150528-021 (A5E0866-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060159</b>			
Diesel	ND	9.88	25.0	mg/kg dry	1	06/04/15 22:06	NWTPH-Dx	
Oil	ND	19.8	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 92 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<b>8832-150528-026 (A5E0866-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060159</b>			
Diesel	ND	106	211	mg/kg dry	10	06/04/15 22:26	NWTPH-Dx	
Oil	<b>1160</b>	211	423	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 98 %</i>	<i>Limits: 50-150 %</i>	"	"	"	S-05
<b>8832-150528-027 (A5E0866-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060159</b>			
Diesel	ND	53.3	107	mg/kg dry	5	06/04/15 23:06	NWTPH-Dx	
Oil	<b>634</b>	107	213	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 92 %</i>	<i>Limits: 50-150 %</i>	"	"	"	S-05
<b>8832-150528-028 (A5E0866-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060159</b>			
Diesel	ND	10.6	25.0	mg/kg dry	1	06/04/15 23:45	NWTPH-Dx	
Oil	<b>23.5</b>	21.1	50.0	"	"	"	"	J
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 88 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

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Portland, OR 97209

Project: POVRED

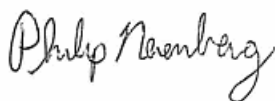
Project Number: 8832  
Project Manager: Rob EdeReported:  
07/31/15 17:10

## ANALYTICAL SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-020 (A5E0866-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060026</b>			
Gasoline Range Organics	ND	6.61	6.61	mg/kg dry	50	06/01/15 19:48	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 89 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>91 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<b>8832-150528-021 (A5E0866-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060026</b>			
Gasoline Range Organics	ND	3.34	6.68	mg/kg dry	50	06/01/15 20:13	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 88 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>92 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<b>8832-150528-026 (A5E0866-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060026</b>			
Gasoline Range Organics	ND	4.02	8.04	mg/kg dry	50	06/01/15 20:38	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 88 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>91 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<b>8832-150528-027 (A5E0866-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060026</b>			
Gasoline Range Organics	ND	4.05	8.11	mg/kg dry	50	06/01/15 21:03	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 90 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>93 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

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Project Number: 8832

Project Manager: Rob Ede

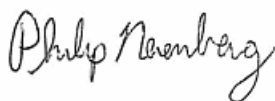
Reported:

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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-020 (A5E0866-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060026</b>			
Acetone	ND	661	1320	ug/kg dry	50	06/01/15 19:48	5035/8260B	
Benzene	ND	8.27	16.5	"	"	"	"	
Bromobenzene	ND	16.5	33.1	"	"	"	"	
Bromochloromethane	ND	33.1	66.1	"	"	"	"	
Bromodichloromethane	ND	33.1	66.1	"	"	"	"	
Bromoform	ND	33.1	66.1	"	"	"	"	
Bromomethane	ND	661	661	"	"	"	"	
2-Butanone (MEK)	ND	331	661	"	"	"	"	
n-Butylbenzene	ND	33.1	66.1	"	"	"	"	
sec-Butylbenzene	ND	33.1	66.1	"	"	"	"	
tert-Butylbenzene	ND	33.1	66.1	"	"	"	"	
Carbon tetrachloride	ND	16.5	33.1	"	"	"	"	
Chlorobenzene	ND	16.5	33.1	"	"	"	"	
Chloroethane	ND	331	661	"	"	"	"	
Chloroform	ND	33.1	66.1	"	"	"	"	
Chloromethane	ND	165	331	"	"	"	"	
2-Chlorotoluene	ND	33.1	66.1	"	"	"	"	
4-Chlorotoluene	ND	33.1	66.1	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	165	331	"	"	"	"	
Dibromochloromethane	ND	66.1	132	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	16.5	33.1	"	"	"	"	
Dibromomethane	ND	33.1	66.1	"	"	"	"	
1,2-Dichlorobenzene	ND	16.5	33.1	"	"	"	"	
1,3-Dichlorobenzene	ND	16.5	33.1	"	"	"	"	
1,4-Dichlorobenzene	ND	16.5	33.1	"	"	"	"	
Dichlorodifluoromethane	ND	66.1	132	"	"	"	"	
1,1-Dichloroethane	ND	16.5	33.1	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	16.5	33.1	"	"	"	"	
1,1-Dichloroethene	ND	16.5	33.1	"	"	"	"	
cis-1,2-Dichloroethene	ND	16.5	33.1	"	"	"	"	
trans-1,2-Dichloroethene	ND	16.5	33.1	"	"	"	"	
1,2-Dichloropropane	ND	16.5	33.1	"	"	"	"	
1,3-Dichloropropane	ND	33.1	66.1	"	"	"	"	
2,2-Dichloropropane	ND	33.1	66.1	"	"	"	"	
1,1-Dichloropropene	ND	33.1	66.1	"	"	"	"	

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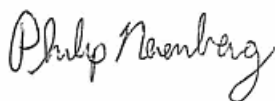
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-020 (A5E0866-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060026</b>			
cis-1,3-Dichloropropene	ND	33.1	66.1	ug/kg dry	50	"	5035/8260B	
trans-1,3-Dichloropropene	ND	33.1	66.1	"	"	"	"	
Ethylbenzene	ND	16.5	33.1	"	"	"	"	
Hexachlorobutadiene	ND	66.1	132	"	"	"	"	
2-Hexanone	ND	331	661	"	"	"	"	
Isopropylbenzene	ND	33.1	66.1	"	"	"	"	
4-Isopropyltoluene	ND	33.1	66.1	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	331	661	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	33.1	66.1	"	"	"	"	
Methylene chloride	ND	165	331	"	"	"	"	
Naphthalene	ND	66.1	132	"	"	"	"	
n-Propylbenzene	ND	16.5	33.1	"	"	"	"	
Styrene	ND	33.1	66.1	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	16.5	33.1	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	16.5	33.1	"	"	"	"	
Tetrachloroethene (PCE)	ND	16.5	33.1	"	"	"	"	
Toluene	ND	33.1	66.1	"	"	"	"	
1,2,3-Trichlorobenzene	ND	165	331	"	"	"	"	
1,2,4-Trichlorobenzene	ND	165	331	"	"	"	"	
1,1,1-Trichloroethane	ND	16.5	33.1	"	"	"	"	
1,1,2-Trichloroethane	ND	16.5	33.1	"	"	"	"	
Trichloroethene (TCE)	ND	16.5	33.1	"	"	"	"	
Trichlorofluoromethane	ND	66.1	132	"	"	"	"	
1,2,3-Trichloropropane	ND	33.1	66.1	"	"	"	"	
1,2,4-Trimethylbenzene	ND	33.1	66.1	"	"	"	"	
1,3,5-Trimethylbenzene	ND	33.1	66.1	"	"	"	"	
Vinyl chloride	ND	16.5	33.1	"	"	"	"	
m,p-Xylene	ND	33.1	66.1	"	"	"	"	
o-Xylene	ND	16.5	33.1	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 93 %</i>	<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>97 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>102 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>101 %</i>	<i>Limits: 70-130 %</i>	"	"	"	

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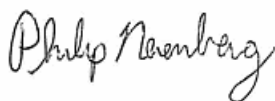
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-026 (A5E0866-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060026</b>			
Acetone	ND	804	1610	ug/kg dry	50	06/01/15 20:38	5035/8260B	
Benzene	ND	10.1	20.1	"	"	"	"	
Bromobenzene	ND	20.1	40.2	"	"	"	"	
Bromochloromethane	ND	40.2	80.4	"	"	"	"	
Bromodichloromethane	ND	40.2	80.4	"	"	"	"	
Bromoform	ND	40.2	80.4	"	"	"	"	
Bromomethane	ND	804	804	"	"	"	"	
2-Butanone (MEK)	ND	402	804	"	"	"	"	
n-Butylbenzene	ND	40.2	80.4	"	"	"	"	
sec-Butylbenzene	ND	40.2	80.4	"	"	"	"	
tert-Butylbenzene	ND	40.2	80.4	"	"	"	"	
Carbon tetrachloride	ND	20.1	40.2	"	"	"	"	
Chlorobenzene	ND	20.1	40.2	"	"	"	"	
Chloroethane	ND	402	804	"	"	"	"	
Chloroform	ND	40.2	80.4	"	"	"	"	
Chloromethane	ND	201	402	"	"	"	"	
2-Chlorotoluene	ND	40.2	80.4	"	"	"	"	
4-Chlorotoluene	ND	40.2	80.4	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	201	402	"	"	"	"	
Dibromochloromethane	ND	80.4	161	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	20.1	40.2	"	"	"	"	
Dibromomethane	ND	40.2	80.4	"	"	"	"	
1,2-Dichlorobenzene	ND	20.1	40.2	"	"	"	"	
1,3-Dichlorobenzene	ND	20.1	40.2	"	"	"	"	
1,4-Dichlorobenzene	ND	20.1	40.2	"	"	"	"	
Dichlorodifluoromethane	ND	80.4	161	"	"	"	"	
1,1-Dichloroethane	ND	20.1	40.2	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	20.1	40.2	"	"	"	"	
1,1-Dichloroethene	ND	20.1	40.2	"	"	"	"	
cis-1,2-Dichloroethene	ND	20.1	40.2	"	"	"	"	
trans-1,2-Dichloroethene	ND	20.1	40.2	"	"	"	"	
1,2-Dichloropropane	ND	20.1	40.2	"	"	"	"	
1,3-Dichloropropane	ND	40.2	80.4	"	"	"	"	
2,2-Dichloropropane	ND	40.2	80.4	"	"	"	"	
1,1-Dichloropropene	ND	40.2	80.4	"	"	"	"	

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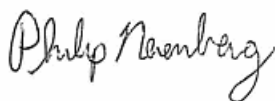
07/31/15 17:10

**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-026 (A5E0866-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060026</b>			
cis-1,3-Dichloropropene	ND	40.2	80.4	ug/kg dry	50	"	5035/8260B	
trans-1,3-Dichloropropene	ND	40.2	80.4	"	"	"	"	
Ethylbenzene	ND	20.1	40.2	"	"	"	"	
Hexachlorobutadiene	ND	80.4	161	"	"	"	"	
2-Hexanone	ND	402	804	"	"	"	"	
Isopropylbenzene	ND	40.2	80.4	"	"	"	"	
4-Isopropyltoluene	ND	40.2	80.4	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	402	804	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	40.2	80.4	"	"	"	"	
Methylene chloride	ND	201	402	"	"	"	"	
Naphthalene	ND	80.4	161	"	"	"	"	
n-Propylbenzene	ND	20.1	40.2	"	"	"	"	
Styrene	ND	40.2	80.4	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	20.1	40.2	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	20.1	40.2	"	"	"	"	
Tetrachloroethene (PCE)	ND	20.1	40.2	"	"	"	"	
Toluene	ND	40.2	80.4	"	"	"	"	
1,2,3-Trichlorobenzene	ND	201	402	"	"	"	"	
1,2,4-Trichlorobenzene	ND	201	402	"	"	"	"	
1,1,1-Trichloroethane	ND	20.1	40.2	"	"	"	"	
1,1,2-Trichloroethane	ND	20.1	40.2	"	"	"	"	
Trichloroethene (TCE)	ND	20.1	40.2	"	"	"	"	
Trichlorofluoromethane	ND	80.4	161	"	"	"	"	
1,2,3-Trichloropropane	ND	40.2	80.4	"	"	"	"	
1,2,4-Trimethylbenzene	ND	40.2	80.4	"	"	"	"	
1,3,5-Trimethylbenzene	ND	40.2	80.4	"	"	"	"	
Vinyl chloride	ND	20.1	40.2	"	"	"	"	
m,p-Xylene	ND	40.2	80.4	"	"	"	"	
o-Xylene	ND	20.1	40.2	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 96 %</i>	<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>97 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>101 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>102 %</i>	<i>Limits: 70-130 %</i>	"	"	"	

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Project Number: 8832

Project Manager: Rob Ede

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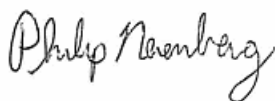
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## ANALYTICAL SAMPLE RESULTS

## Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-026 (A5E0866-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060358</b>			<b>C-07</b>
Aroclor 1016	ND	5.68	11.4	ug/kg dry	1	06/11/15 16:01	EPA 8082A	
Aroclor 1221	ND	5.68	11.4	"	"	"	"	
Aroclor 1232	ND	5.68	11.4	"	"	"	"	
Aroclor 1242	ND	5.68	11.4	"	"	"	"	
Aroclor 1248	ND	5.68	11.4	"	"	"	"	
Aroclor 1254	ND	5.68	11.4	"	"	"	"	
Aroclor 1260	ND	5.68	11.4	"	"	"	"	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>			<i>Recovery: 80 %</i>	<i>Limits: 72-126 %</i>	"	"	"	

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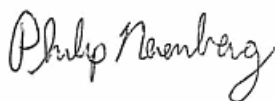
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## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-020 (A5E0866-01RE1)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060014</b>			
Acenaphthene	ND	5.27	10.5	ug/kg dry	1	06/03/15 15:30	EPA 8270D (SIM)	
Acenaphthylene	ND	5.27	10.5	"	"	"	"	
Anthracene	ND	5.27	10.5	"	"	"	"	
<b>Benz(a)anthracene</b>	<b>5.37</b>	5.27	10.5	"	"	"	"	J
Benzo(a)pyrene	ND	5.27	10.5	"	"	"	"	
<b>Benzo(b)fluoranthene</b>	<b>5.46</b>	5.27	10.5	"	"	"	"	J
Benzo(k)fluoranthene	ND	5.27	10.5	"	"	"	"	
Benzo(g,h,i)perylene	ND	5.27	10.5	"	"	"	"	
<b>Chrysene</b>	<b>9.29</b>	5.27	10.5	"	"	"	"	J
Dibenz(a,h)anthracene	ND	5.27	10.5	"	"	"	"	
Dibenzofuran	ND	5.27	10.5	"	"	"	"	
<b>Fluoranthene</b>	<b>7.94</b>	5.27	10.5	"	"	"	"	J
Fluorene	ND	5.27	10.5	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	5.27	10.5	"	"	"	"	
1-Methylnaphthalene	ND	5.27	10.5	"	"	"	"	
2-Methylnaphthalene	ND	5.27	10.5	"	"	"	"	
Naphthalene	ND	5.27	10.5	"	"	"	"	
Phenanthrene	ND	5.27	10.5	"	"	"	"	
<b>Pyrene</b>	<b>9.02</b>	5.27	10.5	"	"	"	"	J
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 74 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>77 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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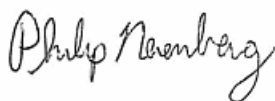
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## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-026 (A5E0866-07RE1)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060014</b>			
Acenaphthene	ND	28.1	56.2	ug/kg dry	5	06/03/15 15:57	EPA 8270D (SIM)	
Acenaphthylene	ND	28.1	56.2	"	"	"	"	
Anthracene	ND	28.1	56.2	"	"	"	"	
<b>Benz(a)anthracene</b>	<b>32.8</b>	28.1	56.2	"	"	"	"	J
<b>Benzo(a)pyrene</b>	<b>34.6</b>	28.1	56.2	"	"	"	"	J
<b>Benzo(b)fluoranthene</b>	<b>38.5</b>	28.1	56.2	"	"	"	"	J
Benzo(k)fluoranthene	ND	28.1	56.2	"	"	"	"	
<b>Benzo(g,h,i)perylene</b>	<b>60.8</b>	28.1	56.2	"	"	"	"	
<b>Chrysene</b>	<b>29.7</b>	28.1	56.2	"	"	"	"	J
Dibenz(a,h)anthracene	ND	28.1	56.2	"	"	"	"	
Dibenzofuran	ND	28.1	56.2	"	"	"	"	
Fluoranthene	ND	28.1	56.2	"	"	"	"	
Fluorene	ND	28.1	56.2	"	"	"	"	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>30.9</b>	28.1	56.2	"	"	"	"	J
1-Methylnaphthalene	ND	28.1	56.2	"	"	"	"	
2-Methylnaphthalene	ND	28.1	56.2	"	"	"	"	
Naphthalene	ND	28.1	56.2	"	"	"	"	
Phenanthrene	ND	28.1	56.2	"	"	"	"	
<b>Pyrene</b>	<b>31.0</b>	28.1	56.2	"	"	"	"	J
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 80 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>80 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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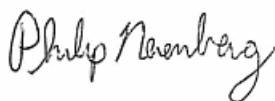
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## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-027 (A5E0866-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060327</b>			
Acenaphthene	ND	30.6	61.2	ug/kg dry	5	06/11/15 18:58	EPA 8270D (SIM)	
Acenaphthylene	ND	30.6	61.2	"	"	"	"	
Anthracene	ND	30.6	61.2	"	"	"	"	
<b>Benz(a)anthracene</b>	<b>83.8</b>	30.6	61.2	"	"	"	"	
<b>Benzo(a)pyrene</b>	<b>134</b>	30.6	61.2	"	"	"	"	
<b>Benzo(b)fluoranthene</b>	<b>235</b>	30.6	61.2	"	"	"	"	M-02
<b>Benzo(k)fluoranthene</b>	<b>85.3</b>	30.6	61.2	"	"	"	"	M-02
<b>Benzo(g,h,i)perylene</b>	<b>167</b>	30.6	61.2	"	"	"	"	
<b>Chrysene</b>	<b>154</b>	30.6	61.2	"	"	"	"	
<b>Dibenz(a,h)anthracene</b>	<b>35.9</b>	30.6	61.2	"	"	"	"	J
Dibenzofuran	ND	30.6	61.2	"	"	"	"	
<b>Fluoranthene</b>	<b>181</b>	30.6	61.2	"	"	"	"	
Fluorene	ND	30.6	61.2	"	"	"	"	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>168</b>	30.6	61.2	"	"	"	"	
1-Methylnaphthalene	ND	30.6	61.2	"	"	"	"	
2-Methylnaphthalene	ND	30.6	61.2	"	"	"	"	
Naphthalene	ND	30.6	61.2	"	"	"	"	
<b>Phenanthrene</b>	<b>69.3</b>	30.6	61.2	"	"	"	"	
<b>Pyrene</b>	<b>193</b>	30.6	61.2	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 76 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>90 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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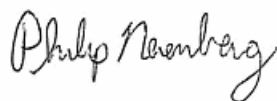
**Reported:**

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**ANALYTICAL SAMPLE RESULTS****Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-028 (A5E0866-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5070656</b>			<b>H-06</b>
Acenaphthene	ND	5.64	11.3	ug/kg dry	1	07/24/15 13:40	EPA 8270D (SIM)	
Acenaphthylene	ND	5.64	11.3	"	"	"	"	
Anthracene	ND	5.64	11.3	"	"	"	"	
Benz(a)anthracene	ND	5.64	11.3	"	"	"	"	
Benzo(a)pyrene	ND	5.64	11.3	"	"	"	"	
Benzo(b)fluoranthene	ND	5.64	11.3	"	"	"	"	
Benzo(k)fluoranthene	ND	5.64	11.3	"	"	"	"	
Benzo(g,h,i)perylene	ND	5.64	11.3	"	"	"	"	
Chrysene	ND	5.64	11.3	"	"	"	"	
Dibenz(a,h)anthracene	ND	5.64	11.3	"	"	"	"	
Dibenzofuran	ND	5.64	11.3	"	"	"	"	
Fluoranthene	ND	5.64	11.3	"	"	"	"	
Fluorene	ND	5.64	11.3	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	5.64	11.3	"	"	"	"	
1-Methylnaphthalene	ND	5.64	11.3	"	"	"	"	
2-Methylnaphthalene	ND	5.64	11.3	"	"	"	"	
Naphthalene	ND	5.64	11.3	"	"	"	"	
Phenanthrene	ND	5.64	11.3	"	"	"	"	
Pyrene	ND	5.64	11.3	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 83 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>89 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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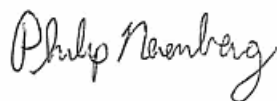
**Reported:**

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**ANALYTICAL SAMPLE RESULTS****Total Hexavalent Chromium by EPA 7196A**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-025 (A5E0866-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060314</b>			
Hexavalent Chromium	2.18	1.45	2.83	mg/kg dry	1	06/11/15 13:28	EPA 7196A	J

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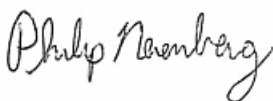
07/31/15 17:10

## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-020 (A5E0866-01) Matrix: Soil</b>								
Batch: 5060129								
Antimony	ND	0.526	1.05	mg/kg dry	10	06/04/15 14:33	EPA 6020A	
Arsenic	1.70	0.526	1.05	"	"	"	"	
Beryllium	0.105	0.105	0.210	"	"	"	"	J
Cadmium	0.189	0.105	0.210	"	"	"	"	J
Chromium	3.62	0.526	1.05	"	"	"	"	
Copper	7.57	0.526	1.05	"	"	"	"	
Lead	3.57	0.105	0.210	"	"	"	"	
Mercury	ND	0.0421	0.0842	"	"	"	"	
Nickel	5.04	0.526	1.05	"	"	"	"	
Selenium	ND	0.526	1.05	"	"	"	"	
Silver	ND	0.105	0.210	"	"	"	"	
Thallium	ND	0.105	0.210	"	"	"	"	
Zinc	22.7	2.10	4.21	"	"	"	"	
<b>8832-150528-021 (A5E0866-02) Matrix: Soil</b>								
Batch: 5060129								
Antimony	ND	0.559	1.12	mg/kg dry	10	06/04/15 14:36	EPA 6020A	
Arsenic	1.31	0.559	1.12	"	"	"	"	
Beryllium	0.134	0.112	0.223	"	"	"	"	J
Cadmium	0.235	0.112	0.223	"	"	"	"	
Chromium	4.60	0.559	1.12	"	"	"	"	
Copper	6.46	0.559	1.12	"	"	"	"	
Lead	2.59	0.112	0.223	"	"	"	"	
Mercury	ND	0.0447	0.0894	"	"	"	"	
Nickel	6.06	0.559	1.12	"	"	"	"	
Selenium	ND	0.559	1.12	"	"	"	"	
Silver	ND	0.112	0.223	"	"	"	"	
Thallium	ND	0.112	0.223	"	"	"	"	
Zinc	30.4	2.23	4.47	"	"	"	"	
<b>8832-150528-023 (A5E0866-04) Matrix: Soil</b>								
Batch: 5060169								
Arsenic	1.12	0.559	1.12	mg/kg dry	10	06/04/15 20:05	EPA 6020A	
Cadmium	ND	0.112	0.224	"	"	"	"	
Chromium	2.28	0.559	1.12	"	"	"	"	
Lead	2.83	0.112	0.224	"	"	"	"	

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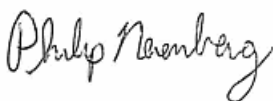
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## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-023 (A5E0866-04) Matrix: Soil</b>								
Thallium	ND	0.112	0.224	mg/kg dry	10	"	EPA 6020A	
<b>8832-150528-024 (A5E0866-05) Matrix: Soil</b>								
Batch: 5060169								
Arsenic	1.08	0.570	1.14	mg/kg dry	10	06/04/15 20:16	EPA 6020A	J
Cadmium	0.137	0.114	0.228	"	"	"	"	J
Chromium	2.78	0.570	1.14	"	"	"	"	
Lead	3.45	0.114	0.228	"	"	"	"	
Thallium	ND	0.114	0.228	"	"	"	"	
<b>8832-150528-025 (A5E0866-06) Matrix: Soil</b>								
Batch: 5060019								
Arsenic	13.2	0.640	1.28	mg/kg dry	10	06/01/15 22:12	EPA 6020A	
Chromium	11.1	0.640	1.28	"	"	"	"	
Lead	45.5	0.128	0.256	"	"	"	"	
Thallium	ND	0.128	0.256	"	"	"	"	
<b>8832-150528-025 (A5E0866-06RE1) Matrix: Soil</b>								
Batch: 5060019								
Cadmium	1.36	0.128	0.256	mg/kg dry	10	06/02/15 17:31	EPA 6020A	
<b>8832-150528-026 (A5E0866-07) Matrix: Soil</b>								
Batch: 5060019								
Antimony	ND	0.587	1.17	mg/kg dry	10	06/01/15 22:15	EPA 6020A	
Arsenic	2.08	0.587	1.17	"	"	"	"	
Beryllium	0.587	0.117	0.235	"	"	"	"	
Chromium	9.13	0.587	1.17	"	"	"	"	
Copper	25.1	0.587	2.35	"	"	"	"	
Lead	56.7	0.117	0.235	"	"	"	"	
Mercury	0.110	0.0470	0.0939	"	"	"	"	
Nickel	10.9	0.587	1.17	"	"	"	"	
Selenium	ND	0.587	2.35	"	"	"	"	
Thallium	0.117	0.117	0.235	"	"	"	"	J
Zinc	78.5	2.35	4.70	"	"	"	"	B
<b>8832-150528-026 (A5E0866-07RE1) Matrix: Soil</b>								
Batch: 5060019								
Cadmium	0.517	0.117	0.235	mg/kg dry	10	06/02/15 17:34	EPA 6020A	
Silver	0.129	0.117	0.235	"	"	"	"	J

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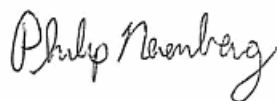
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**ANALYTICAL SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150528-027 (A5E0866-08)			Matrix: Soil					
Batch: 5060019								
Lead	772	0.134	0.268	mg/kg dry	10	06/01/15 22:18	EPA 6020A	
8832-150528-028 (A5E0866-09)			Matrix: Soil					
Batch: 5060019								
Lead	27.1	0.137	0.273	mg/kg dry	10	06/01/15 22:21	EPA 6020A	

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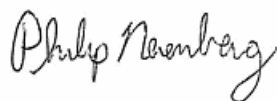
**Reported:**

07/31/15 17:10

**ANALYTICAL SAMPLE RESULTS****TCLP Extraction by EPA 1311**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-027 (A5E0866-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060387</b>			
TCLP Extraction	PREP			N/A	1	06/11/15 17:55	EPA 1311	

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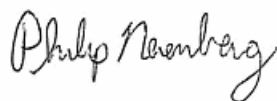
**Reported:**

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**ANALYTICAL SAMPLE RESULTS****TCLP Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150528-027 (A5E0866-08)			Matrix: Soil					
Batch: 5060421								
Lead	1.19	0.0250	0.0500	mg/L	5	06/12/15 15:32	1311/6020A	

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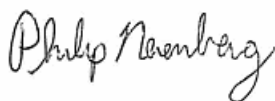
Reported:

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## ANALYTICAL SAMPLE RESULTS

Percent Dry Weight								
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150528-020 (A5E0866-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	94.3	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150528-021 (A5E0866-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	94.8	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150528-023 (A5E0866-04)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	93.5	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150528-024 (A5E0866-05)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	94.2	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150528-025 (A5E0866-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	78.4	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150528-026 (A5E0866-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	87.1	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150528-027 (A5E0866-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	81.4	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38
<b>8832-150528-028 (A5E0866-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060023</b>			
% Solids	75.6	1.00	1.00	% by Weight	1	06/02/15 09:11	EPA 8000C	Q-38

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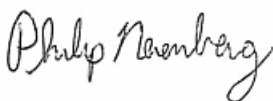
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**QUALITY CONTROL (QC) SAMPLE RESULTS****Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060159 - EPA 3546						Soil						
Blank (5060159-BLK1)						Prepared: 06/04/15 10:11		Analyzed: 06/04/15 20:47				
NWTPH-Dx												
Diesel	ND	7.69	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	15.4	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 96 %		Limits: 50-150 %		Dilution: 1x						
LCS (5060159-BS1)						Prepared: 06/04/15 10:11		Analyzed: 06/04/15 21:06				
NWTPH-Dx												
Diesel	111	10.0	25.0	mg/kg wet	1	125	---	89	76-115%	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 99 %		Limits: 50-150 %		Dilution: 1x						

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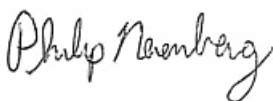
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Project Manager: Rob Ede**Reported:**

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**QUALITY CONTROL (QC) SAMPLE RESULTS****Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060026 - EPA 5035A						Soil						
Blank (5060026-BLK1)						Prepared: 06/01/15 13:00		Analyzed: 06/01/15 18:07				
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	1.67	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 94 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		93 %		50-150 %		"						
LCS (5060026-BS2)						Prepared: 06/01/15 13:00		Analyzed: 06/01/15 16:59				
NWTPH-Gx (MS)												
Gasoline Range Organics	21.6	2.50	5.00	mg/kg wet	50	25.0	---	86	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 91 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		95 %		50-150 %		"						

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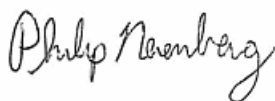
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**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060026 - EPA 5035A						Soil						
Blank (5060026-BLK1)						Prepared: 06/01/15 13:00		Analyzed: 06/01/15 18:07				
5035/8260B												
Acetone	ND	333	667	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Bromobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromoform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromomethane	ND	333	333	"	"	---	---	---	---	---	---	
2-Butanone (MEK)	ND	167	333	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chloroethane	ND	167	333	"	"	---	---	---	---	---	---	
Chloroform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Chloromethane	ND	83.3	167	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloroprop ane	ND	83.3	167	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dibromomethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	

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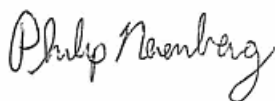
07/31/15 17:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060026 - EPA 5035A</b>						<b>Soil</b>						
<b>Blank (5060026-BLK1)</b>						Prepared: 06/01/15 13:00 Analyzed: 06/01/15 18:07						
cis-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
2-Hexanone	ND	167	333	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	167	333	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Methylene chloride	ND	83.3	167	"	"	---	---	---	---	---	---	
Naphthalene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Styrene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Toluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	

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Project Manager: Rob Ede

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**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060026 - EPA 5035A</b>						<b>Soil</b>						
<b>Blank (5060026-BLK1)</b>						Prepared: 06/01/15 13:00 Analyzed: 06/01/15 18:07						
1,2,4-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
o-Xylene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
<i>Surr: Dibromofluoromethane (Surr)</i>			<i>Recovery: 98 %</i>	<i>Limits: 70-130 %</i>	<i>Dilution: 1x</i>							
<i>1,4-Difluorobenzene (Surr)</i>			<i>97 %</i>	<i>70-130 %</i>	<i>"</i>							
<i>Toluene-d8 (Surr)</i>			<i>99 %</i>	<i>70-130 %</i>	<i>"</i>							
<i>4-Bromofluorobenzene (Surr)</i>			<i>102 %</i>	<i>70-130 %</i>	<i>"</i>							

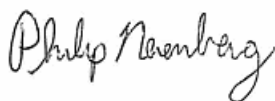
**LCS (5060026-BS1)**

Prepared: 06/01/15 13:00 Analyzed: 06/01/15 16:33

**5035/8260B**

Acetone	1760	500	1000	ug/kg wet	50	2000	---	88	65-135%	---	---
Benzene	960	6.25	12.5	"	"	1000	---	96	"	---	---
Bromobenzene	1010	12.5	25.0	"	"	"	---	101	"	---	---
Bromochloromethane	970	25.0	50.0	"	"	"	---	97	"	---	---
Bromodichloromethane	1020	25.0	50.0	"	"	"	---	102	"	---	---
Bromoform	1130	25.0	50.0	"	"	"	---	113	"	---	---
Bromomethane	912	500	500	"	"	"	---	91	"	---	---
2-Butanone (MEK)	1750	250	500	"	"	2000	---	88	"	---	---
n-Butylbenzene	1010	25.0	50.0	"	"	1000	---	101	"	---	---
sec-Butylbenzene	1010	25.0	50.0	"	"	"	---	101	"	---	---
tert-Butylbenzene	1010	25.0	50.0	"	"	"	---	101	"	---	---
Carbon tetrachloride	1040	12.5	25.0	"	"	"	---	104	"	---	---
Chlorobenzene	1020	12.5	25.0	"	"	"	---	102	"	---	---
Chloroethane	962	250	500	"	"	"	---	96	"	---	---
Chloroform	988	25.0	50.0	"	"	"	---	99	"	---	---
Chloromethane	818	125	250	"	"	"	---	82	"	---	---
2-Chlorotoluene	1000	25.0	50.0	"	"	"	---	100	"	---	---
4-Chlorotoluene	1010	25.0	50.0	"	"	"	---	101	"	---	---
1,2-Dibromo-3-chloroprop ane	920	125	250	"	"	"	---	92	"	---	---

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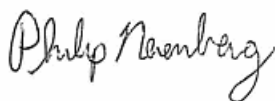
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**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060026 - EPA 5035A</b>						<b>Soil</b>						
<b>LCS (5060026-BS1)</b>						Prepared: 06/01/15 13:00 Analyzed: 06/01/15 16:33						
Dibromochloromethane	1080	50.0	100	ug/kg wet	"	"	---	108	"	---	---	
1,2-Dibromoethane (EDB)	1050	12.5	25.0	"	"	"	---	105	"	---	---	
Dibromomethane	964	25.0	50.0	"	"	"	---	96	"	---	---	
1,2-Dichlorobenzene	1020	12.5	25.0	"	"	"	---	102	"	---	---	
1,3-Dichlorobenzene	1020	12.5	25.0	"	"	"	---	102	"	---	---	
1,4-Dichlorobenzene	995	12.5	25.0	"	"	"	---	100	"	---	---	
Dichlorodifluoromethane	893	50.0	100	"	"	"	---	89	"	---	---	
1,1-Dichloroethane	928	12.5	25.0	"	"	"	---	93	"	---	---	
1,2-Dichloroethane (EDC)	972	12.5	25.0	"	"	"	---	97	"	---	---	
1,1-Dichloroethene	936	12.5	25.0	"	"	"	---	94	"	---	---	
cis-1,2-Dichloroethene	926	12.5	25.0	"	"	"	---	93	"	---	---	
trans-1,2-Dichloroethene	910	12.5	25.0	"	"	"	---	91	"	---	---	
1,2-Dichloropropane	940	12.5	25.0	"	"	"	---	94	"	---	---	
1,3-Dichloropropane	1030	25.0	50.0	"	"	"	---	103	"	---	---	
2,2-Dichloropropane	1130	25.0	50.0	"	"	"	---	113	"	---	---	
1,1-Dichloropropene	966	25.0	50.0	"	"	"	---	97	"	---	---	
cis-1,3-Dichloropropene	1020	25.0	50.0	"	"	"	---	102	"	---	---	
trans-1,3-Dichloropropene	1070	25.0	50.0	"	"	"	---	107	"	---	---	
Ethylbenzene	1020	12.5	25.0	"	"	"	---	102	"	---	---	
Hexachlorobutadiene	1010	50.0	100	"	"	"	---	101	"	---	---	
2-Hexanone	1790	250	500	"	"	2000	---	89	"	---	---	
Isopropylbenzene	1040	25.0	50.0	"	"	1000	---	104	"	---	---	
4-Isopropyltoluene	1040	25.0	50.0	"	"	"	---	104	"	---	---	
4-Methyl-2-pentanone (MiBK)	1840	250	500	"	"	2000	---	92	"	---	---	
Methyl tert-butyl ether (MTBE)	1030	25.0	50.0	"	"	1000	---	103	"	---	---	
Methylene chloride	952	125	250	"	"	"	---	95	"	---	---	
Naphthalene	1150	50.0	100	"	"	"	---	115	"	---	---	Q-41
n-Propylbenzene	1030	12.5	25.0	"	"	"	---	103	"	---	---	
Styrene	936	25.0	50.0	"	"	"	---	94	"	---	---	
1,1,1,2-Tetrachloroethane	1110	12.5	25.0	"	"	"	---	111	"	---	---	

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Project Number: 8832

Project Manager: Rob Ede

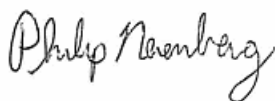
**Reported:**

07/31/15 17:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060026 - EPA 5035A</b>						<b>Soil</b>						
<b>LCS (5060026-BS1)</b>						Prepared: 06/01/15 13:00 Analyzed: 06/01/15 16:33						
1,1,2,2-Tetrachloroethane	1040	12.5	25.0	"	"	"	---	104	"	---	---	
Tetrachloroethene (PCE)	1070	12.5	25.0	"	"	"	---	107	"	---	---	
Toluene	1010	25.0	50.0	"	"	"	---	101	"	---	---	
1,2,3-Trichlorobenzene	1070	125	250	"	"	"	---	107	"	---	---	
1,2,4-Trichlorobenzene	1020	125	250	"	"	"	---	102	"	---	---	
1,1,1-Trichloroethane	985	12.5	25.0	"	"	"	---	98	"	---	---	
1,1,2-Trichloroethane	1050	12.5	25.0	"	"	"	---	105	"	---	---	
Trichloroethene (TCE)	946	12.5	25.0	"	"	"	---	95	"	---	---	
Trichlorofluoromethane	858	50.0	100	"	"	"	---	86	"	---	---	
1,2,3-Trichloropropane	994	25.0	50.0	"	"	"	---	99	"	---	---	
1,2,4-Trimethylbenzene	1040	25.0	50.0	"	"	"	---	104	"	---	---	
1,3,5-Trimethylbenzene	1030	25.0	50.0	"	"	"	---	103	"	---	---	
Vinyl chloride	908	12.5	25.0	"	"	"	---	91	"	---	---	
m,p-Xylene	2140	25.0	50.0	"	"	2000	---	107	"	---	---	
o-Xylene	1090	12.5	25.0	"	"	1000	---	109	"	---	---	
<i>Surr: Dibromofluoromethane (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 70-130 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Surr)</i>		<i>96 %</i>		<i>70-130 %</i>		<i>"</i>						
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>70-130 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>70-130 %</i>		<i>"</i>						

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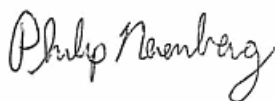
**Reported:**

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**QUALITY CONTROL (QC) SAMPLE RESULTS****Polychlorinated Biphenyls by EPA 8082A**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060358 - EPA 3546						Soil						
Blank (5060358-BLK1)			Prepared: 06/11/15 07:10				Analyzed: 06/11/15 15:25				C-07	
EPA 8082A												
Aroclor 1016	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		Recovery: 90 %		Limits: 72-126 %		Dilution: 1x						
LCS (5060358-BS1)			Prepared: 06/11/15 07:10				Analyzed: 06/11/15 15:43				C-07	
EPA 8082A												
Aroclor 1016	164	5.00	10.0	ug/kg wet	1	250	---	66	47-134%	---	---	
Aroclor 1260	231	5.00	10.0	"	"	"	---	92	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		Recovery: 98 %		Limits: 72-126 %		Dilution: 1x						
Duplicate (5060358-DUP1)			Prepared: 06/11/15 07:10				Analyzed: 06/11/15 16:37				C-07	
QC Source Sample: 8832-150528-026 (A5E0866-07)												
EPA 8082A												
Aroclor 1016	ND	5.72	11.4	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	5.72	11.4	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	5.72	11.4	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	5.72	11.4	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	5.72	11.4	"	"	---	ND	---	---	---	30%	
Aroclor 1254	ND	5.72	11.4	"	"	---	ND	---	---	---	30%	
Aroclor 1260	ND	5.72	11.4	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)		Recovery: 74 %		Limits: 72-126 %		Dilution: 1x						

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## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060014 - EPA 3546						Soil						
Blank (5060014-BLK1)				Prepared: 06/01/15 10:23    Analyzed: 06/01/15 18:53								
EPA 8270D (SIM)												
Acenaphthene	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	9.09	18.2	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Chrysene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Fluorene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Naphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Phenanthrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	

Surr: 2-Fluorobiphenyl (Surr)

p-Terphenyl-d14 (Surr)

Recovery: 73 %

77 %

Limits: 44-115 %

54-127 %

Dilution: 1x

"

## LCS (5060014-BS1)

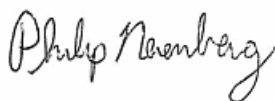
Prepared: 06/01/15 10:23 Analyzed: 06/01/15 19:20

## EPA 8270D (SIM)

Acenaphthene	636	5.00	10.0	ug/kg wet	1	800	---	79	40-122%	---	---
Acenaphthylene	619	5.00	10.0	"	"	"	---	77	32-132%	---	---
Anthracene	681	5.00	10.0	"	"	"	---	85	47-123%	---	---
Benz(a)anthracene	634	5.00	10.0	"	"	"	---	79	49-126%	---	---
Benzo(a)pyrene	706	5.00	10.0	"	"	"	---	88	45-129%	---	---
Benzo(b)fluoranthene	657	5.00	10.0	"	"	"	---	82	45-132%	---	---

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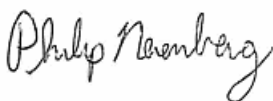
07/31/15 17:10

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060014 - EPA 3546</b>						<b>Soil</b>						
<b>LCS (5060014-BS1)</b>						Prepared: 06/01/15 10:23 Analyzed: 06/01/15 19:20						
Benzo(k)fluoranthene	690	5.00	10.0	"	"	"	---	86	47-132%	---	---	
Benzo(b+k)fluoranthene(s)	1340	10.0	20.0	"	"	1600	---	84	45-132%	---	---	
Benzo(g,h,i)perylene	615	5.00	10.0	"	"	800	---	77	43-134%	---	---	
Chrysene	680	5.00	10.0	"	"	"	---	85	50-124%	---	---	
Dibenz(a,h)anthracene	708	5.00	10.0	"	"	"	---	88	45-134%	---	---	
Dibenzofuran	626	5.00	10.0	"	"	"	---	78	44-120%	---	---	
Fluoranthene	585	5.00	10.0	"	"	"	---	73	50-127%	---	---	
Fluorene	644	5.00	10.0	"	"	"	---	80	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	632	5.00	10.0	"	"	"	---	79	45-133%	---	---	
1-Methylnaphthalene	556	5.00	10.0	"	"	"	---	69	40-120%	---	---	
2-Methylnaphthalene	588	5.00	10.0	"	"	"	---	74	38-122%	---	---	
Naphthalene	579	5.00	10.0	"	"	"	---	72	35-123%	---	---	
Phenanthrene	646	5.00	10.0	"	"	"	---	81	50-121%	---	---	
Pyrene	589	5.00	10.0	"	"	"	---	74	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 74 %		Limits: 44-115 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		74 %		54-127 %		"						

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Project Number: 8832  
Project Manager: Rob EdeReported:  
07/31/15 17:10

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060327 - EPA 3546						Soil						
Blank (5060327-BLK1)						Prepared: 06/10/15 10:18    Analyzed: 06/11/15 15:25						
EPA 8270D (SIM)												
Acenaphthene	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	9.09	18.2	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Chrysene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Fluorene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Naphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Phenanthrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	

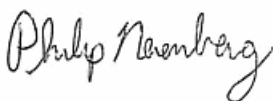
Surr: 2-Fluorobiphenyl (Surr)  
p-Terphenyl-d14 (Surr)Recovery: 81 % Limits: 44-115 %  
87 % 54-127 %Dilution: 1x  
"**LCS (5060327-BS1)**

Prepared: 06/10/15 10:18 Analyzed: 06/11/15 15:52

<b>EPA 8270D (SIM)</b>												
Acenaphthene	729	5.00	10.0	ug/kg wet	1	800	---	91	40-122%	---	---	
Acenaphthylene	720	5.00	10.0	"	"	"	---	90	32-132%	---	---	
Anthracene	804	5.00	10.0	"	"	"	---	100	47-123%	---	---	
Benz(a)anthracene	750	5.00	10.0	"	"	"	---	94	49-126%	---	---	
Benzo(a)pyrene	808	5.00	10.0	"	"	"	---	101	45-129%	---	---	
Benzo(b)fluoranthene	751	5.00	10.0	"	"	"	---	94	45-132%	---	---	

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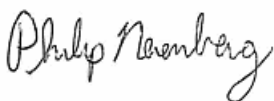
07/31/15 17:10

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060327 - EPA 3546</b>						<b>Soil</b>						
<b>LCS (5060327-BS1)</b>						Prepared: 06/10/15 10:18 Analyzed: 06/11/15 15:52						
Benzo(k)fluoranthene	783	5.00	10.0	"	"	"	---	98	47-132%	---	---	
Benzo(b+k)fluoranthene(s)	1530	10.0	20.0	"	"	1600	---	95	45-132%	---	---	
Benzo(g,h,i)perylene	747	5.00	10.0	"	"	800	---	93	43-134%	---	---	
Chrysene	765	5.00	10.0	"	"	"	---	96	50-124%	---	---	
Dibenz(a,h)anthracene	826	5.00	10.0	"	"	"	---	103	45-134%	---	---	
Dibenzofuran	742	5.00	10.0	"	"	"	---	93	44-120%	---	---	
Fluoranthene	747	5.00	10.0	"	"	"	---	93	50-127%	---	---	
Fluorene	750	5.00	10.0	"	"	"	---	94	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	764	5.00	10.0	"	"	"	---	96	45-133%	---	---	
1-Methylnaphthalene	690	5.00	10.0	"	"	"	---	86	40-120%	---	---	
2-Methylnaphthalene	737	5.00	10.0	"	"	"	---	92	38-122%	---	---	
Naphthalene	710	5.00	10.0	"	"	"	---	89	35-123%	---	---	
Phenanthrene	746	5.00	10.0	"	"	"	---	93	50-121%	---	---	
Pyrene	749	5.00	10.0	"	"	"	---	94	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 85 %		Limits: 44-115 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		88 %		54-127 %		"						

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**QUALITY CONTROL (QC) SAMPLE RESULTS****Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5070656 - EPA 3546						Soil						
Blank (5070656-BLK1)				Prepared: 07/24/15 06:55    Analyzed: 07/24/15 12:45								
EPA 8270D (SIM)												
Acenaphthene	ND	3.85	7.69	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Anthracene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	7.69	15.4	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Chrysene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Fluoranthene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Fluorene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Naphthalene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Phenanthrene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Pyrene	ND	3.85	7.69	"	"	---	---	---	---	---	---	

Surr: 2-Fluorobiphenyl (Surr)

p-Terphenyl-d14 (Surr)

Recovery: 86 %

97 %

Limits: 44-115 %

54-127 %

Dilution: 1x

"

**LCS (5070656-BS1)**

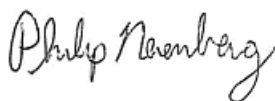
Prepared: 07/24/15 06:55 Analyzed: 07/24/15 13:13

**EPA 8270D (SIM)**

Acenaphthene	754	5.00	10.0	ug/kg wet	1	800	---	94	40-122%	---	---
Acenaphthylene	745	5.00	10.0	"	"	"	---	93	32-132%	---	---
Anthracene	815	5.00	10.0	"	"	"	---	102	47-123%	---	---
Benz(a)anthracene	734	5.00	10.0	"	"	"	---	92	49-126%	---	---
Benzo(a)pyrene	831	5.00	10.0	"	"	"	---	104	45-129%	---	---
Benzo(b)fluoranthene	764	5.00	10.0	"	"	"	---	96	45-132%	---	---

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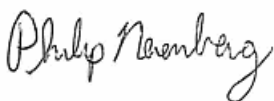
**Reported:**

07/31/15 17:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5070656 - EPA 3546</b>						<b>Soil</b>						
<b>LCS (5070656-BS1)</b>						Prepared: 07/24/15 06:55 Analyzed: 07/24/15 13:13						
Benzo(k)fluoranthene	778	5.00	10.0	"	"	"	---	97	47-132%	---	---	
Benzo(b+k)fluoranthene(s)	1520	10.0	20.0	"	"	1600	---	95	45-132%	---	---	
Benzo(g,h,i)perylene	717	5.00	10.0	"	"	800	---	90	43-134%	---	---	
Chrysene	756	5.00	10.0	"	"	"	---	94	50-124%	---	---	
Dibenz(a,h)anthracene	778	5.00	10.0	"	"	"	---	97	45-134%	---	---	
Dibenzofuran	801	5.00	10.0	"	"	"	---	100	44-120%	---	---	
Fluoranthene	766	5.00	10.0	"	"	"	---	96	50-127%	---	---	
Fluorene	762	5.00	10.0	"	"	"	---	95	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	719	5.00	10.0	"	"	"	---	90	45-133%	---	---	
1-Methylnaphthalene	698	5.00	10.0	"	"	"	---	87	40-120%	---	---	
2-Methylnaphthalene	790	5.00	10.0	"	"	"	---	99	38-122%	---	---	
Naphthalene	726	5.00	10.0	"	"	"	---	91	35-123%	---	---	
Phenanthrene	762	5.00	10.0	"	"	"	---	95	50-121%	---	---	
Pyrene	769	5.00	10.0	"	"	"	---	96	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 89 %		Limits: 44-115 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		94 %		54-127 %		"						

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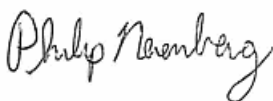
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Project Number: 8832  
Project Manager: Rob EdeReported:  
07/31/15 17:10

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Hexavalent Chromium by EPA 7196A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060314 - Method Prep: Non-Aq						Soil						
Blank (5060314-BLK1)						Prepared: 06/10/15 07:16		Analyzed: 06/11/15 13:28				
EPA 7196A												
Hexavalent Chromium	ND	1.15	2.25	mg/kg wet	1	---	---	---	---	---	---	
LCS (5060314-BS1)						Prepared: 06/10/15 07:16		Analyzed: 06/11/15 13:28				
EPA 7196A												
Hexavalent Chromium	19.9	1.15	2.25	mg/kg wet	1	20.0	---	100	80-120%	---	---	
Duplicate (5060314-DUP1)						Prepared: 06/10/15 07:16		Analyzed: 06/11/15 13:28				
QC Source Sample: 8832-150528-025 (A5E0866-06)												
EPA 7196A												
Hexavalent Chromium	ND	1.44	2.82	mg/kg dry	1	---	2.18	---	---	***	20%	
Matrix Spike (5060314-MS1)						Prepared: 06/10/15 07:16		Analyzed: 06/11/15 13:28				
QC Source Sample: 8832-150528-025 (A5E0866-06)												
EPA 7196A												
Hexavalent Chromium	6.26	1.42	2.78	mg/kg dry	1	49.5	2.18	8	75-125%	---	---	A-01
Post Spike (5060314-PS1)						Prepared: 06/10/15 07:16		Analyzed: 06/11/15 13:28				
QC Source Sample: 8832-150528-025 (A5E0866-06)												
EPA 7196A												
Hexavalent Chromium	0.404			mg/L	1	0.398	0.0388	92	85-115%		---	

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**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060019 - EPA 3051A						Soil						
Blank (5060019-BLK1)						Prepared: 06/01/15 11:55    Analyzed: 06/01/15 18:34						
EPA 6020A												
Antimony	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	6.42	2.00	4.00	"	"	---	---	---	---	---	---	B

**LCS (5060019-BS1)**

Prepared: 06/01/15 11:55 Analyzed: 06/01/15 18:37

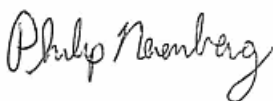
<b>EPA 6020A</b>												
Antimony	25.4	0.500	1.00	mg/kg wet	10	25.0	---	102	80-120%	---	---	
Arsenic	52.4	0.500	1.00	"	"	50.0	---	105	"	---	---	
Beryllium	25.8	0.100	0.200	"	"	25.0	---	103	"	---	---	
Cadmium	51.2	0.100	0.200	"	"	50.0	---	102	"	---	---	
Chromium	51.1	0.500	1.00	"	"	"	---	102	"	---	---	
Copper	53.6	0.500	1.00	"	"	"	---	107	"	---	---	
Lead	52.0	0.100	0.200	"	"	"	---	104	"	---	---	
Mercury	1.00	0.0400	0.0800	"	"	1.00	---	100	"	---	---	
Nickel	52.8	0.500	1.00	"	"	50.0	---	106	"	---	---	
Selenium	28.9	0.500	1.00	"	"	25.0	---	116	"	---	---	
Silver	25.0	0.100	0.200	"	"	"	---	100	"	---	---	
Thallium	26.3	0.100	0.200	"	"	"	---	105	"	---	---	

**LCS (5060019-BS2)**

Prepared: 06/01/15 11:55 Analyzed: 06/02/15 17:28

<b>EPA 6020A</b>												
------------------	--	--	--	--	--	--	--	--	--	--	--	--

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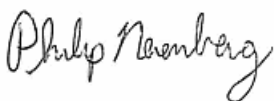
**Reported:**

07/31/15 17:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060019 - EPA 3051A						Soil						
LCS (5060019-BS2)						Prepared: 06/01/15 11:55		Analyzed: 06/02/15 17:28				
Zinc	59.6	2.00	4.00	mg/kg wet	10	50.0	---	119	80-120%	---	---	B, Q-16
Matrix Spike (5060019-MS2)						Prepared: 06/01/15 11:55		Analyzed: 06/01/15 22:24				
QC Source Sample: 8832-150528-028 (A5E0866-09)												
EPA 6020A												
Antimony	26.3	0.676	1.35	mg/kg dry	10	33.8	ND	78	75-125%	---	---	
Arsenic	71.9	0.676	1.35	"	"	67.7	3.10	102	"	---	---	
Beryllium	34.7	0.135	0.271	"	"	33.8	0.629	101	"	---	---	
Chromium	83.0	0.676	1.35	"	"	67.7	16.1	99	"	---	---	
Copper	94.9	0.676	2.71	"	"	"	27.0	100	"	---	---	
Lead	93.9	0.135	0.271	"	"	"	27.1	99	"	---	---	
Mercury	1.53	0.0541	0.108	"	"	1.35	0.100	106	"	---	---	
Nickel	84.3	0.676	1.35	"	"	67.7	17.4	99	"	---	---	
Selenium	36.2	0.676	2.71	"	"	33.8	ND	107	"	---	---	
Thallium	33.9	0.135	0.271	"	"	"	0.137	100	"	---	---	
Zinc	141	2.71	5.41	"	"	67.7	71.8	102	"	---	---	B
Matrix Spike (5060019-MS3)						Prepared: 06/01/15 11:55		Analyzed: 06/02/15 17:40				
QC Source Sample: 8832-150528-028 (A5E0866-09RE1)												
EPA 6020A												
Cadmium	68.5	0.135	0.271	mg/kg dry	10	67.7	0.396	101	75-125%	---	---	Q-16
Silver	33.6	0.135	0.271	"	"	33.8	ND	99	"	---	---	Q-16

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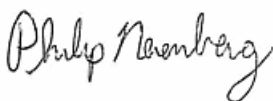
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Project Number: 8832  
Project Manager: Rob EdeReported:  
07/31/15 17:10

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060129 - EPA 3051A						Soil						
Blank (5060129-BLK1)						Prepared: 06/03/15 15:42    Analyzed: 06/04/15 12:24						
EPA 6020A												
Antimony	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (5060129-BS1)						Prepared: 06/03/15 15:42    Analyzed: 06/04/15 12:27						
EPA 6020A												
Antimony	25.0	0.500	1.00	mg/kg wet	10	25.0	---	100	80-120%	---	---	
Arsenic	50.7	0.500	1.00	"	"	50.0	---	101	"	---	---	
Beryllium	25.9	0.100	0.200	"	"	25.0	---	104	"	---	---	
Cadmium	50.4	0.100	0.200	"	"	50.0	---	101	"	---	---	
Chromium	50.0	0.500	1.00	"	"	"	---	100	"	---	---	
Copper	51.6	0.500	1.00	"	"	"	---	103	"	---	---	
Lead	50.7	0.100	0.200	"	"	"	---	101	"	---	---	
Mercury	0.959	0.0400	0.0800	"	"	1.00	---	96	"	---	---	
Nickel	50.1	0.500	1.00	"	"	50.0	---	100	"	---	---	
Selenium	27.8	0.500	1.00	"	"	25.0	---	111	"	---	---	
Silver	24.8	0.100	0.200	"	"	"	---	99	"	---	---	
Thallium	25.4	0.100	0.200	"	"	"	---	102	"	---	---	
Zinc	53.7	2.00	4.00	"	"	50.0	---	107	"	---	---	
Matrix Spike (5060129-MS2)						Prepared: 06/03/15 15:42    Analyzed: 06/04/15 14:39						

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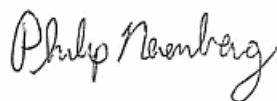
07/31/15 17:10

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060129 - EPA 3051A						Soil						
Matrix Spike (5060129-MS2)						Prepared: 06/03/15 15:42		Analyzed: 06/04/15 14:39				
QC Source Sample: 8832-150528-021 (A5E0866-02)												
EPA 6020A												
Antimony	27.3	0.582	1.16	mg/kg dry	10	29.1	ND	94	75-125%	---	---	
Arsenic	59.3	0.582	1.16	"	"	58.2	1.31	100	"	---	---	
Beryllium	29.3	0.116	0.233	"	"	29.1	0.134	100	"	---	---	
Cadmium	59.9	0.116	0.233	"	"	58.2	0.235	102	"	---	---	
Chromium	62.9	0.582	1.16	"	"	"	4.60	100	"	---	---	
Copper	67.3	0.582	1.16	"	"	"	6.46	105	"	---	---	
Lead	60.5	0.116	0.233	"	"	"	2.59	99	"	---	---	
Mercury	1.06	0.0466	0.0931	"	"	1.16	ND	91	"	---	---	
Nickel	64.4	0.582	1.16	"	"	58.2	6.06	100	"	---	---	
Selenium	33.3	0.582	1.16	"	"	29.1	ND	115	"	---	---	
Silver	29.3	0.116	0.233	"	"	"	ND	101	"	---	---	
Thallium	29.2	0.116	0.233	"	"	"	ND	101	"	---	---	
Zinc	89.0	2.33	4.66	"	"	58.2	30.4	101	"	---	---	

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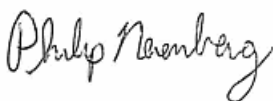
**Reported:**

07/31/15 17:10

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060169 - EPA 3051A						Soil						
Blank (5060169-BLK1)						Prepared: 06/04/15 11:31		Analyzed: 06/04/15 19:47				
EPA 6020A												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
LCS (5060169-BS1)						Prepared: 06/04/15 11:31		Analyzed: 06/04/15 19:50				
EPA 6020A												
Arsenic	48.9	0.500	1.00	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Cadmium	50.5	0.100	0.200	"	"	"	---	101	"	---	---	
Chromium	49.6	0.500	1.00	"	"	"	---	99	"	---	---	
Lead	50.6	0.100	0.200	"	"	"	---	101	"	---	---	
Thallium	26.4	0.100	0.200	"	"	25.0	---	106	"	---	---	
Duplicate (5060169-DUP1)						Prepared: 06/04/15 11:31		Analyzed: 06/04/15 20:08				
QC Source Sample: 8832-150528-023 (A5E0866-04)												
EPA 6020A												
Arsenic	1.29	0.545	1.09	mg/kg dry	10	---	1.12	---	---	14	40%	
Cadmium	0.207	0.109	0.218	"	"	---	ND	---	---		40%	J
Chromium	2.59	0.545	1.09	"	"	---	2.28	---	---	13	40%	
Lead	2.95	0.109	0.218	"	"	---	2.83	---	---	4	40%	
Thallium	ND	0.109	0.218	"	"	---	ND	---	---	---	40%	
Matrix Spike (5060169-MS1)						Prepared: 06/04/15 11:31		Analyzed: 06/04/15 20:10				
QC Source Sample: 8832-150528-023 (A5E0866-04)												
EPA 6020A												
Arsenic	56.0	0.576	1.15	mg/kg dry	10	57.7	1.12	95	75-125%	---	---	
Cadmium	58.0	0.115	0.230	"	"	"	ND	101	"	---	---	
Chromium	58.2	0.576	1.15	"	"	"	2.28	97	"	---	---	
Lead	59.3	0.115	0.230	"	"	"	2.83	98	"	---	---	
Thallium	29.0	0.115	0.230	"	"	28.8	ND	101	"	---	---	

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Project: **POVRED**  
Project Number: 8832  
Project Manager: Rob Ede

Reported:  
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QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060421 - EPA 1311/3015						Soil						
Blank (5060421-BLK1)						Prepared: 06/12/15 10:46		Analyzed: 06/12/15 13:30				
1311/6020A												
Lead	ND	0.0250	0.0500	mg/L	5	---	---	---	---	---	---	TCLP
LCS (5060421-BS1)						Prepared: 06/12/15 10:46		Analyzed: 06/12/15 13:42				
1311/6020A												
Lead	2.53	0.0250	0.0500	mg/L	5	2.50	---	101	80-120%	---	---	TCLP
Matrix Spike (5060421-MS1)						Prepared: 06/12/15 10:46		Analyzed: 06/12/15 15:35				
QC Source Sample: 8832-150528-027 (A5E0866-08)												
1311/6020A												
Lead	3.74	0.0250	0.0500	mg/L	5	2.50	1.19	102	50-150%	---	---	

Philip Nerenberg

Hahn and Associates

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

Reported:

07/31/15 17:10

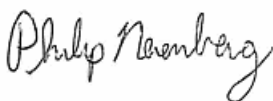
## QUALITY CONTROL (QC) SAMPLE RESULTS

### Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060023 - Total Solids (Dry Weight)</b>							<b>Soil</b>					

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

07/31/15 17:10

**SAMPLE PREPARATION INFORMATION****Diesel and/or Oil Hydrocarbons by NWTPH-Dx****Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060159</b>							
A5E0866-01	Soil	NWTPH-Dx	05/28/15 09:02	06/04/15 10:11	11.99g/5mL	10g/5mL	0.83
A5E0866-02	Soil	NWTPH-Dx	05/28/15 09:06	06/04/15 10:11	10.68g/5mL	10g/5mL	0.94
A5E0866-07	Soil	NWTPH-Dx	05/28/15 13:17	06/04/15 10:11	10.86g/5mL	10g/5mL	0.92
A5E0866-08	Soil	NWTPH-Dx	05/28/15 13:28	06/04/15 10:11	11.53g/5mL	10g/5mL	0.87
A5E0866-09	Soil	NWTPH-Dx	05/28/15 13:35	06/04/15 10:11	12.52g/5mL	10g/5mL	0.80

**Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx****Prep: EPA 5035A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060026</b>							
A5E0866-01	Soil	NWTPH-Gx (MS)	05/28/15 09:02	05/28/15 09:02	4.2g/5mL	10g/10mL	1.19
A5E0866-02	Soil	NWTPH-Gx (MS)	05/28/15 09:06	05/28/15 09:06	4.12g/5mL	10g/10mL	1.21
A5E0866-07	Soil	NWTPH-Gx (MS)	05/28/15 13:17	05/28/15 13:17	3.93g/5mL	10g/10mL	1.27
A5E0866-08	Soil	NWTPH-Gx (MS)	05/28/15 13:28	05/28/15 13:28	4.41g/5mL	10g/10mL	1.13

**Volatile Organic Compounds by EPA 8260B****Prep: EPA 5035A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060026</b>							
A5E0866-01	Soil	5035/8260B	05/28/15 09:02	05/28/15 09:02	4.2g/5mL	10g/10mL	1.19
A5E0866-07	Soil	5035/8260B	05/28/15 13:17	05/28/15 13:17	3.93g/5mL	10g/10mL	1.27

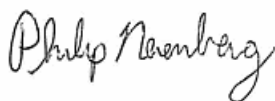
**Polychlorinated Biphenyls by EPA 8082A****Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060358</b>							
A5E0866-07	Soil	EPA 8082A	05/28/15 13:17	06/11/15 07:10	10.11g/5mL	10g/5mL	0.99

**Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM****Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060014</b>							

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

07/31/15 17:10

**SAMPLE PREPARATION INFORMATION****Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM****Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A5E0866-01RE1	Soil	EPA 8270D (SIM)	05/28/15 09:02	06/01/15 14:23	10.06g/5mL	10g/5mL	0.99
A5E0866-07RE1	Soil	EPA 8270D (SIM)	05/28/15 13:17	06/01/15 14:23	10.21g/5mL	10g/5mL	0.98
<b>Batch: 5060327</b>							
A5E0866-08	Soil	EPA 8270D (SIM)	05/28/15 13:28	06/10/15 10:18	10.03g/5mL	10g/5mL	1.00
<b>Batch: 5070656</b>							
A5E0866-09	Soil	EPA 8270D (SIM)	05/28/15 13:35	07/24/15 06:58	11.72g/5mL	10g/5mL	0.85

**Total Hexavalent Chromium by EPA 7196A****Prep: Method Prep: Non-Ag**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A5E0866-06	Soil	EPA 7196A	05/28/15 09:35	06/10/15 07:16	2.533g/111mL	2.5g/111mL	0.99

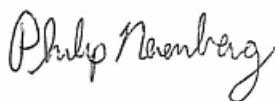
**Total Metals by EPA 6020 (ICPMS)****Prep: EPA 3051A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060019</b>							
A5E0866-06	Soil	EPA 6020A	05/28/15 09:35	06/01/15 11:55	0.498g/50mL	0.5g/50mL	1.00
A5E0866-06RE1	Soil	EPA 6020A	05/28/15 09:35	06/01/15 11:55	0.498g/50mL	0.5g/50mL	1.00
A5E0866-07	Soil	EPA 6020A	05/28/15 13:17	06/01/15 11:55	0.489g/50mL	0.5g/50mL	1.02
A5E0866-07RE1	Soil	EPA 6020A	05/28/15 13:17	06/01/15 11:55	0.489g/50mL	0.5g/50mL	1.02
A5E0866-08	Soil	EPA 6020A	05/28/15 13:28	06/01/15 11:55	0.459g/50mL	0.5g/50mL	1.09
A5E0866-09	Soil	EPA 6020A	05/28/15 13:35	06/01/15 11:55	0.484g/50mL	0.5g/50mL	1.03
<b>Batch: 5060129</b>							
A5E0866-01	Soil	EPA 6020A	05/28/15 09:02	06/03/15 15:42	0.504g/50mL	0.5g/50mL	0.99
A5E0866-02	Soil	EPA 6020A	05/28/15 09:06	06/03/15 15:42	0.472g/50mL	0.5g/50mL	1.06
<b>Batch: 5060169</b>							
A5E0866-04	Soil	EPA 6020A	05/28/15 09:17	06/04/15 11:31	0.478g/50mL	0.5g/50mL	1.05
A5E0866-05	Soil	EPA 6020A	05/28/15 09:27	06/04/15 11:31	0.466g/50mL	0.5g/50mL	1.07

**TCLP Extraction by EPA 1311****Prep: EPA 1311 (TCLP)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

07/31/15 17:10

**SAMPLE PREPARATION INFORMATION****TCLP Extraction by EPA 1311****Prep: EPA 1311 (TCLP)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5060387							
A5E0866-08	Soil	EPA 1311	05/28/15 13:28	06/11/15 17:55	100g/2000mL	100g/2000mL	NA

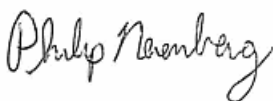
**TCLP Metals by EPA 6020 (ICPMS)****Prep: EPA 1311/3015**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5060421							
A5E0866-08	Soil	1311/6020A	05/28/15 13:28	06/12/15 10:46	5mL/50mL	5mL/50mL	1.00

**Percent Dry Weight****Prep: Total Solids (Dry Weight)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5060023							
A5E0866-01	Soil	EPA 8000C	05/28/15 09:02	06/01/15 13:17	1N/A/1N/A	1N/A/1N/A	NA
A5E0866-02	Soil	EPA 8000C	05/28/15 09:06	06/01/15 13:17	1N/A/1N/A	1N/A/1N/A	NA
A5E0866-04	Soil	EPA 8000C	05/28/15 09:17	06/01/15 13:17	1N/A/1N/A	1N/A/1N/A	NA
A5E0866-05	Soil	EPA 8000C	05/28/15 09:27	06/01/15 13:17	1N/A/1N/A	1N/A/1N/A	NA
A5E0866-06	Soil	EPA 8000C	05/28/15 09:35	06/01/15 13:17	1N/A/1N/A	1N/A/1N/A	NA
A5E0866-07	Soil	EPA 8000C	05/28/15 13:17	06/01/15 13:17	1N/A/1N/A	1N/A/1N/A	NA
A5E0866-08	Soil	EPA 8000C	05/28/15 13:28	06/01/15 13:17	1N/A/1N/A	1N/A/1N/A	NA
A5E0866-09	Soil	EPA 8000C	05/28/15 13:35	06/01/15 13:17	1N/A/1N/A	1N/A/1N/A	NA

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**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

**Reported:**  
07/31/15 17:10

## Notes and Definitions

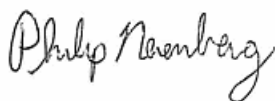
### Qualifiers:

- A-01 MS failed low, but post spike passed. Ran a 10x dilution on MS and it passed.
- B Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
- C-07 Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
- H-06 This sample was received, or the analysis requested, outside the recommended holding time.
- J Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- M-02 Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
- Q-16 Reanalysis of an original Batch QC sample.
- Q-38 Oven outside of control limits during drying step.
- Q-41 Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- S-05 Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
- TCLP This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 5060387.

### Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.  
  
For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.  
  
Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

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Philip Nerenberg, Lab Director

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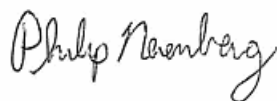
Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

**Reported:**  
07/31/15 17:10

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

\*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).



**Reported:**  
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Friday, July 31, 2015

Rob Ede  
Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209

RE: POVRED / 8832

Enclosed are the results of analyses for work order A5F0282, which was received by the laboratory on 6/8/2015 at 3:56:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

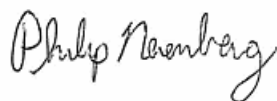
Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**  
Project Number: 8832  
Project Manager: Rob EdeReported:  
07/31/15 17:00

## ANALYTICAL REPORT FOR SAMPLES

## SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
8832-150605-040	A5F0282-01	Soil	06/05/15 09:15	06/08/15 15:56
8832-150605-041	A5F0282-02	Soil	06/05/15 09:22	06/08/15 15:56
8832-150605-042	A5F0282-03	Soil	06/05/15 09:31	06/08/15 15:56
8832-150605-043	A5F0282-04	Soil	06/05/15 09:37	06/08/15 15:56
8832-150605-045	A5F0282-06	Soil	06/05/15 09:51	06/08/15 15:56
8832-150605-046	A5F0282-07	Soil	06/05/15 12:26	06/08/15 15:56
8832-150605-047	A5F0282-08	Soil	06/05/15 12:37	06/08/15 15:56
8832-150605-048	A5F0282-09	Soil	06/05/15 12:47	06/08/15 15:56
8832-150605-049	A5F0282-10	Soil	06/05/15 12:58	06/08/15 15:56
8832-150605-050	A5F0282-11	Soil	06/05/15 13:05	06/08/15 15:56
8832-150605-051	A5F0282-12	Soil	06/05/15 13:16	06/08/15 15:56
8832-150605-053	A5F0282-14	Soil	06/05/15 15:23	06/08/15 15:56
8832-150608-054	A5F0282-15	Soil	06/08/15 08:33	06/08/15 15:56
8832-150608-055	A5F0282-16	Soil	06/08/15 08:43	06/08/15 15:56
8832-150608-056	A5F0282-17	Soil	06/08/15 08:54	06/08/15 15:56
8832-150608-057	A5F0282-18	Soil	06/08/15 09:02	06/08/15 15:56

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Philip Nerenberg, Lab Director

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Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

Reported:  
07/31/15 17:00

## ANALYTICAL CASE NARRATIVE

### Work Order: A5F0282

Amended Report Revision 1:

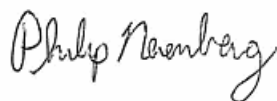
Added 8270SIM PAH method

This report supersedes all previous reports.

Per the client's request and approval the out of hold 8270 SIM PAH was added to sample 8832-150605-045, Apex WO # A5F0282-06.

Philip Nerenberg  
Lab Director  
7/22/15

Apex Laboratories



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Philip Nerenberg, Lab Director



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Project: POVRED

Project Number: 8832

Project Manager: Rob Ede

Reported:

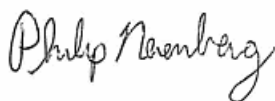
07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

## Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-040 (A5F0282-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060336</b>			
Diesel	ND	9.62	25.0	mg/kg dry	1	06/11/15 00:09	NWTPH-Dx	
Oil	ND	19.2	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150605-041 (A5F0282-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060336</b>			
Diesel	ND	9.56	25.0	mg/kg dry	1	06/11/15 00:48	NWTPH-Dx	
Oil	ND	19.1	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150605-042 (A5F0282-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060336</b>			
Diesel	ND	9.66	25.0	mg/kg dry	1	06/11/15 01:08	NWTPH-Dx	
Oil	ND	19.3	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150605-046 (A5F0282-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060336</b>			
<b>Diesel</b>	<b>16.9</b>	9.15	25.0	mg/kg dry	1	06/10/15 23:29	NWTPH-Dx	J
<b>Oil</b>	<b>36.3</b>	18.3	50.0	"	"	"	"	J
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 66 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150605-047 (A5F0282-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060336</b>			
Diesel	ND	11.8	25.0	mg/kg dry	1	06/11/15 00:09	NWTPH-Dx	
Oil	ND	23.6	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 85 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150605-048 (A5F0282-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060336</b>			
<b>Diesel</b>	<b>12.5</b>	11.3	25.0	mg/kg dry	1	06/11/15 00:29	NWTPH-Dx	J
<b>Oil</b>	<b>23.6</b>	22.6	50.0	"	"	"	"	J
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150608-054 (A5F0282-15)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060336</b>			
Diesel	ND	8.96	25.0	mg/kg dry	1	06/11/15 00:48	NWTPH-Dx	
Oil	ND	17.9	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150608-055 (A5F0282-16)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060336</b>			
Diesel	ND	10.5	25.0	mg/kg dry	1	06/11/15 01:08	NWTPH-Dx	
Oil	ND	20.9	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 50-150 %</i>		"	"	"

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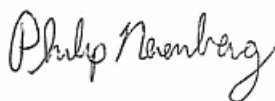
Project Number: 8832  
Project Manager: Rob EdeReported:  
07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-040 (A5F0282-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060370</b>			
Gasoline Range Organics	ND	3.32	6.64	mg/kg dry	50	06/11/15 15:38	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 108 %		Limits: 50-150 %	1	"	"	
1,4-Difluorobenzene (Sur)		95 %		Limits: 50-150 %	"	"	"	
<b>8832-150605-046 (A5F0282-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060370</b>			
Gasoline Range Organics	ND	3.01	6.02	mg/kg dry	50	06/11/15 16:04	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 111 %		Limits: 50-150 %	1	"	"	
1,4-Difluorobenzene (Sur)		95 %		Limits: 50-150 %	"	"	"	
<b>8832-150608-054 (A5F0282-15)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060370</b>			
Gasoline Range Organics	ND	2.85	5.70	mg/kg dry	50	06/11/15 16:32	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 109 %		Limits: 50-150 %	1	"	"	
1,4-Difluorobenzene (Sur)		95 %		Limits: 50-150 %	"	"	"	

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Project Number: 8832

Project Manager: Rob Ede

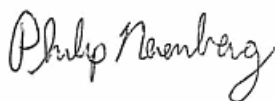
**Reported:**

07/31/15 17:00

**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-040 (A5F0282-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060370</b>			
Acetone	ND	664	1330	ug/kg dry	50	06/11/15 15:38	5035/8260B	
Benzene	ND	8.30	16.6	"	"	"	"	
Bromobenzene	ND	16.6	33.2	"	"	"	"	
Bromochloromethane	ND	33.2	66.4	"	"	"	"	
Bromodichloromethane	ND	33.2	66.4	"	"	"	"	
Bromoform	ND	33.2	66.4	"	"	"	"	
Bromomethane	ND	664	664	"	"	"	"	
2-Butanone (MEK)	ND	332	664	"	"	"	"	
n-Butylbenzene	ND	33.2	66.4	"	"	"	"	
sec-Butylbenzene	ND	33.2	66.4	"	"	"	"	
tert-Butylbenzene	ND	33.2	66.4	"	"	"	"	
Carbon tetrachloride	ND	16.6	33.2	"	"	"	"	
Chlorobenzene	ND	16.6	33.2	"	"	"	"	
Chloroethane	ND	332	664	"	"	"	"	
Chloroform	ND	33.2	66.4	"	"	"	"	
Chloromethane	ND	166	332	"	"	"	"	
2-Chlorotoluene	ND	33.2	66.4	"	"	"	"	
4-Chlorotoluene	ND	33.2	66.4	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	166	332	"	"	"	"	
Dibromochloromethane	ND	66.4	133	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	16.6	33.2	"	"	"	"	
Dibromomethane	ND	33.2	66.4	"	"	"	"	
1,2-Dichlorobenzene	ND	16.6	33.2	"	"	"	"	
1,3-Dichlorobenzene	ND	16.6	33.2	"	"	"	"	
1,4-Dichlorobenzene	ND	16.6	33.2	"	"	"	"	
Dichlorodifluoromethane	ND	66.4	133	"	"	"	"	
1,1-Dichloroethane	ND	16.6	33.2	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	16.6	33.2	"	"	"	"	
1,1-Dichloroethene	ND	16.6	33.2	"	"	"	"	
cis-1,2-Dichloroethene	ND	16.6	33.2	"	"	"	"	
trans-1,2-Dichloroethene	ND	16.6	33.2	"	"	"	"	
1,2-Dichloropropane	ND	16.6	33.2	"	"	"	"	
1,3-Dichloropropane	ND	33.2	66.4	"	"	"	"	
2,2-Dichloropropane	ND	33.2	66.4	"	"	"	"	
1,1-Dichloropropene	ND	33.2	66.4	"	"	"	"	

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Project Manager: Rob Ede

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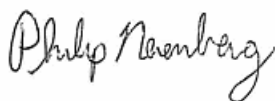
07/31/15 17:00

**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-040 (A5F0282-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060370</b>			
cis-1,3-Dichloropropene	ND	33.2	66.4	ug/kg dry	50	"	5035/8260B	
trans-1,3-Dichloropropene	ND	33.2	66.4	"	"	"	"	
Ethylbenzene	ND	16.6	33.2	"	"	"	"	
Hexachlorobutadiene	ND	66.4	133	"	"	"	"	
2-Hexanone	ND	332	664	"	"	"	"	
Isopropylbenzene	ND	33.2	66.4	"	"	"	"	
4-Isopropyltoluene	ND	33.2	66.4	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	332	664	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	33.2	66.4	"	"	"	"	
Methylene chloride	ND	166	332	"	"	"	"	
Naphthalene	ND	66.4	133	"	"	"	"	
n-Propylbenzene	ND	16.6	33.2	"	"	"	"	
Styrene	ND	33.2	66.4	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	16.6	33.2	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	16.6	33.2	"	"	"	"	
Tetrachloroethene (PCE)	ND	16.6	33.2	"	"	"	"	
Toluene	ND	33.2	66.4	"	"	"	"	
1,2,3-Trichlorobenzene	ND	166	332	"	"	"	"	
1,2,4-Trichlorobenzene	ND	166	332	"	"	"	"	
1,1,1-Trichloroethane	ND	16.6	33.2	"	"	"	"	
1,1,2-Trichloroethane	ND	16.6	33.2	"	"	"	"	
Trichloroethene (TCE)	ND	16.6	33.2	"	"	"	"	
Trichlorofluoromethane	ND	66.4	133	"	"	"	"	
1,2,3-Trichloropropane	ND	33.2	66.4	"	"	"	"	
1,2,4-Trimethylbenzene	ND	33.2	66.4	"	"	"	"	
1,3,5-Trimethylbenzene	ND	33.2	66.4	"	"	"	"	
Vinyl chloride	ND	16.6	33.2	"	"	"	"	
m,p-Xylene	ND	33.2	66.4	"	"	"	"	
o-Xylene	ND	16.6	33.2	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 102 %</i>	<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>97 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>95 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>104 %</i>	<i>Limits: 70-130 %</i>	"	"	"	

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Project Manager: Rob Ede

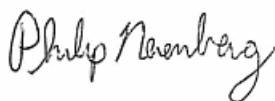
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-046 (A5F0282-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060370</b>			
Acetone	ND	602	1200	ug/kg dry	50	06/11/15 16:04	5035/8260B	
Benzene	ND	7.53	15.1	"	"	"	"	
Bromobenzene	ND	15.1	30.1	"	"	"	"	
Bromochloromethane	ND	30.1	60.2	"	"	"	"	
Bromodichloromethane	ND	30.1	60.2	"	"	"	"	
Bromoform	ND	30.1	60.2	"	"	"	"	
Bromomethane	ND	602	602	"	"	"	"	
2-Butanone (MEK)	ND	301	602	"	"	"	"	
n-Butylbenzene	ND	30.1	60.2	"	"	"	"	
sec-Butylbenzene	ND	30.1	60.2	"	"	"	"	
tert-Butylbenzene	ND	30.1	60.2	"	"	"	"	
Carbon tetrachloride	ND	15.1	30.1	"	"	"	"	
Chlorobenzene	ND	15.1	30.1	"	"	"	"	
Chloroethane	ND	301	602	"	"	"	"	
Chloroform	ND	30.1	60.2	"	"	"	"	
Chloromethane	ND	151	301	"	"	"	"	
2-Chlorotoluene	ND	30.1	60.2	"	"	"	"	
4-Chlorotoluene	ND	30.1	60.2	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	151	301	"	"	"	"	
Dibromochloromethane	ND	60.2	120	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	15.1	30.1	"	"	"	"	
Dibromomethane	ND	30.1	60.2	"	"	"	"	
1,2-Dichlorobenzene	ND	15.1	30.1	"	"	"	"	
1,3-Dichlorobenzene	ND	15.1	30.1	"	"	"	"	
1,4-Dichlorobenzene	ND	15.1	30.1	"	"	"	"	
Dichlorodifluoromethane	ND	60.2	120	"	"	"	"	
1,1-Dichloroethane	ND	15.1	30.1	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	15.1	30.1	"	"	"	"	
1,1-Dichloroethene	ND	15.1	30.1	"	"	"	"	
cis-1,2-Dichloroethene	ND	15.1	30.1	"	"	"	"	
trans-1,2-Dichloroethene	ND	15.1	30.1	"	"	"	"	
1,2-Dichloropropane	ND	15.1	30.1	"	"	"	"	
1,3-Dichloropropane	ND	30.1	60.2	"	"	"	"	
2,2-Dichloropropane	ND	30.1	60.2	"	"	"	"	
1,1-Dichloropropene	ND	30.1	60.2	"	"	"	"	

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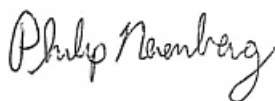
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-046 (A5F0282-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060370</b>			
cis-1,3-Dichloropropene	ND	30.1	60.2	ug/kg dry	50	"	5035/8260B	
trans-1,3-Dichloropropene	ND	30.1	60.2	"	"	"	"	
Ethylbenzene	ND	15.1	30.1	"	"	"	"	
Hexachlorobutadiene	ND	60.2	120	"	"	"	"	
2-Hexanone	ND	301	602	"	"	"	"	
Isopropylbenzene	ND	30.1	60.2	"	"	"	"	
4-Isopropyltoluene	ND	30.1	60.2	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	301	602	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	30.1	60.2	"	"	"	"	
Methylene chloride	ND	151	301	"	"	"	"	
Naphthalene	ND	60.2	120	"	"	"	"	
n-Propylbenzene	ND	15.1	30.1	"	"	"	"	
Styrene	ND	30.1	60.2	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	15.1	30.1	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	15.1	30.1	"	"	"	"	
Tetrachloroethene (PCE)	ND	15.1	30.1	"	"	"	"	
Toluene	ND	30.1	60.2	"	"	"	"	
1,2,3-Trichlorobenzene	ND	151	301	"	"	"	"	
1,2,4-Trichlorobenzene	ND	151	301	"	"	"	"	
1,1,1-Trichloroethane	ND	15.1	30.1	"	"	"	"	
1,1,2-Trichloroethane	ND	15.1	30.1	"	"	"	"	
Trichloroethene (TCE)	ND	15.1	30.1	"	"	"	"	
Trichlorofluoromethane	ND	60.2	120	"	"	"	"	
1,2,3-Trichloropropane	ND	30.1	60.2	"	"	"	"	
1,2,4-Trimethylbenzene	ND	30.1	60.2	"	"	"	"	
1,3,5-Trimethylbenzene	ND	30.1	60.2	"	"	"	"	
Vinyl chloride	ND	15.1	30.1	"	"	"	"	
m,p-Xylene	ND	30.1	60.2	"	"	"	"	
o-Xylene	ND	15.1	30.1	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 101 %</i>	<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>96 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>94 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>101 %</i>	<i>Limits: 70-130 %</i>	"	"	"	

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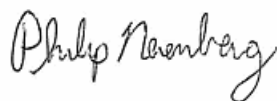
**Reported:**

07/31/15 17:00

**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150608-054 (A5F0282-15)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060370</b>			
Acetone	ND	570	1140	ug/kg dry	50	06/11/15 16:32	5035/8260B	
Benzene	ND	7.13	14.3	"	"	"	"	
Bromobenzene	ND	14.3	28.5	"	"	"	"	
Bromochloromethane	ND	28.5	57.0	"	"	"	"	
Bromodichloromethane	ND	28.5	57.0	"	"	"	"	
Bromoform	ND	28.5	57.0	"	"	"	"	
Bromomethane	ND	570	570	"	"	"	"	
2-Butanone (MEK)	ND	285	570	"	"	"	"	
n-Butylbenzene	ND	28.5	57.0	"	"	"	"	
sec-Butylbenzene	ND	28.5	57.0	"	"	"	"	
tert-Butylbenzene	ND	28.5	57.0	"	"	"	"	
Carbon tetrachloride	ND	14.3	28.5	"	"	"	"	
Chlorobenzene	ND	14.3	28.5	"	"	"	"	
Chloroethane	ND	285	570	"	"	"	"	
Chloroform	ND	28.5	57.0	"	"	"	"	
Chloromethane	ND	143	285	"	"	"	"	
2-Chlorotoluene	ND	28.5	57.0	"	"	"	"	
4-Chlorotoluene	ND	28.5	57.0	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	143	285	"	"	"	"	
Dibromochloromethane	ND	57.0	114	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	14.3	28.5	"	"	"	"	
Dibromomethane	ND	28.5	57.0	"	"	"	"	
1,2-Dichlorobenzene	ND	14.3	28.5	"	"	"	"	
1,3-Dichlorobenzene	ND	14.3	28.5	"	"	"	"	
1,4-Dichlorobenzene	ND	14.3	28.5	"	"	"	"	
Dichlorodifluoromethane	ND	57.0	114	"	"	"	"	
1,1-Dichloroethane	ND	14.3	28.5	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	14.3	28.5	"	"	"	"	
1,1-Dichloroethene	ND	14.3	28.5	"	"	"	"	
cis-1,2-Dichloroethene	ND	14.3	28.5	"	"	"	"	
trans-1,2-Dichloroethene	ND	14.3	28.5	"	"	"	"	
1,2-Dichloropropane	ND	14.3	28.5	"	"	"	"	
1,3-Dichloropropane	ND	28.5	57.0	"	"	"	"	
2,2-Dichloropropane	ND	28.5	57.0	"	"	"	"	
1,1-Dichloropropene	ND	28.5	57.0	"	"	"	"	

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Project Number: 8832

Project Manager: Rob Ede

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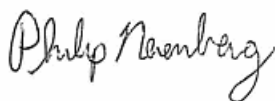
07/31/15 17:00

**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150608-054 (A5F0282-15)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060370</b>			
cis-1,3-Dichloropropene	ND	28.5	57.0	ug/kg dry	50	"	5035/8260B	
trans-1,3-Dichloropropene	ND	28.5	57.0	"	"	"	"	
Ethylbenzene	ND	14.3	28.5	"	"	"	"	
Hexachlorobutadiene	ND	57.0	114	"	"	"	"	
2-Hexanone	ND	285	570	"	"	"	"	
Isopropylbenzene	ND	28.5	57.0	"	"	"	"	
4-Isopropyltoluene	ND	28.5	57.0	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	285	570	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	28.5	57.0	"	"	"	"	
Methylene chloride	ND	143	285	"	"	"	"	
Naphthalene	ND	57.0	114	"	"	"	"	
n-Propylbenzene	ND	14.3	28.5	"	"	"	"	
Styrene	ND	28.5	57.0	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	14.3	28.5	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	14.3	28.5	"	"	"	"	
Tetrachloroethene (PCE)	ND	14.3	28.5	"	"	"	"	
Toluene	ND	28.5	57.0	"	"	"	"	
1,2,3-Trichlorobenzene	ND	143	285	"	"	"	"	
1,2,4-Trichlorobenzene	ND	143	285	"	"	"	"	
1,1,1-Trichloroethane	ND	14.3	28.5	"	"	"	"	
1,1,2-Trichloroethane	ND	14.3	28.5	"	"	"	"	
Trichloroethene (TCE)	ND	14.3	28.5	"	"	"	"	
Trichlorofluoromethane	ND	57.0	114	"	"	"	"	
1,2,3-Trichloropropane	ND	28.5	57.0	"	"	"	"	
1,2,4-Trimethylbenzene	ND	28.5	57.0	"	"	"	"	
1,3,5-Trimethylbenzene	ND	28.5	57.0	"	"	"	"	
Vinyl chloride	ND	14.3	28.5	"	"	"	"	
m,p-Xylene	ND	28.5	57.0	"	"	"	"	
o-Xylene	ND	14.3	28.5	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 102 %</i>	<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>96 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>95 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>102 %</i>	<i>Limits: 70-130 %</i>	"	"	"	

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434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

Reported:

07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

### Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-040 (A5F0282-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060327</b>			
Acenaphthene	ND	5.28	10.6	ug/kg dry	1	06/12/15 14:05	EPA 8270D (SIM)	
Acenaphthylene	ND	5.28	10.6	"	"	"	"	
Anthracene	ND	5.28	10.6	"	"	"	"	
Benz(a)anthracene	ND	5.28	10.6	"	"	"	"	
Benzo(a)pyrene	ND	5.28	10.6	"	"	"	"	
Benzo(b)fluoranthene	ND	5.28	10.6	"	"	"	"	
Benzo(k)fluoranthene	ND	5.28	10.6	"	"	"	"	
Benzo(g,h,i)perylene	ND	5.28	10.6	"	"	"	"	
Chrysene	ND	5.28	10.6	"	"	"	"	
Dibenz(a,h)anthracene	ND	5.28	10.6	"	"	"	"	
Dibenzofuran	ND	5.28	10.6	"	"	"	"	
Fluoranthene	ND	5.28	10.6	"	"	"	"	
Fluorene	ND	5.28	10.6	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	5.28	10.6	"	"	"	"	
1-Methylnaphthalene	ND	5.28	10.6	"	"	"	"	
2-Methylnaphthalene	ND	5.28	10.6	"	"	"	"	
Naphthalene	ND	5.28	10.6	"	"	"	"	
Phenanthrene	ND	5.28	10.6	"	"	"	"	
Pyrene	ND	5.28	10.6	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>		<i>Recovery: 83 %</i>		<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>		<i>98 %</i>		<i>Limits: 54-127 %</i>	"	"	"	

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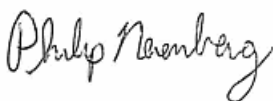
07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-045 (A5F0282-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 5070656</b>			<b>H-06</b>
Acenaphthene	ND	5.02	10.0	ug/kg dry	1	07/24/15 14:09	EPA 8270D (SIM)	
Acenaphthylene	ND	5.02	10.0	"	"	"	"	
Anthracene	ND	5.02	10.0	"	"	"	"	
Benz(a)anthracene	ND	5.02	10.0	"	"	"	"	
Benzo(a)pyrene	ND	5.02	10.0	"	"	"	"	
Benzo(b)fluoranthene	ND	5.02	10.0	"	"	"	"	
Benzo(k)fluoranthene	ND	5.02	10.0	"	"	"	"	
Benzo(g,h,i)perylene	ND	5.02	10.0	"	"	"	"	
Chrysene	ND	5.02	10.0	"	"	"	"	
Dibenz(a,h)anthracene	ND	5.02	10.0	"	"	"	"	
Dibenzofuran	ND	5.02	10.0	"	"	"	"	
Fluoranthene	ND	5.02	10.0	"	"	"	"	
Fluorene	ND	5.02	10.0	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	5.02	10.0	"	"	"	"	
1-Methylnaphthalene	ND	5.02	10.0	"	"	"	"	
2-Methylnaphthalene	ND	5.02	10.0	"	"	"	"	
<b>Naphthalene</b>	<b>13.1</b>	5.02	10.0	"	"	"	"	
Phenanthrene	ND	5.02	10.0	"	"	"	"	
Pyrene	ND	5.02	10.0	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 87 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>97 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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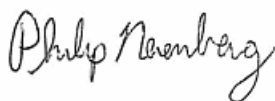
07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-046 (A5F0282-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060327</b>			
Acenaphthene	ND	72.9	72.9	ug/kg dry	1	06/12/15 14:32	EPA 8270D (SIM)	R-02
Acenaphthylene	ND	62.6	62.6	"	"	"	"	R-02
Anthracene	ND	71.7	71.7	"	"	"	"	R-02
<b>Benz(a)anthracene</b>	<b>75.9</b>	5.69	11.4	"	"	"	"	M-02
<b>Benzo(a)pyrene</b>	<b>27.9</b>	5.69	11.4	"	"	"	"	
<b>Benzo(b)fluoranthene</b>	<b>43.4</b>	5.69	11.4	"	"	"	"	M-02
<b>Benzo(k)fluoranthene</b>	<b>12.7</b>	5.69	11.4	"	"	"	"	M-02
<b>Benzo(g,h,i)perylene</b>	<b>69.4</b>	5.69	11.4	"	"	"	"	
<b>Chrysene</b>	<b>70.0</b>	5.69	11.4	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	5.69	11.4	"	"	"	"	
Dibenzofuran	ND	47.8	47.8	"	"	"	"	R-02
<b>Fluoranthene</b>	<b>160</b>	5.69	11.4	"	"	"	"	
<b>Fluorene</b>	<b>212</b>	5.69	11.4	"	"	"	"	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>15.6</b>	5.69	11.4	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>3300</b>	5.69	11.4	"	"	"	"	
<b>Naphthalene</b>	<b>4110</b>	5.69	11.4	"	"	"	"	
<b>Phenanthrene</b>	<b>435</b>	5.69	11.4	"	"	"	"	
<b>Pyrene</b>	<b>297</b>	5.69	11.4	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 85 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>88 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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Project Manager: Rob Ede

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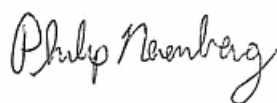
07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-046 (A5F0282-07RE1)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060327</b>			
2-Methylnaphthalene	6770	114	228	ug/kg dry	20	06/15/15 16:14	EPA 8270D (SIM)	
<b>8832-150608-054 (A5F0282-15)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060327</b>			
Acenaphthene	ND	5.18	10.4	ug/kg dry	1	06/12/15 14:59	EPA 8270D (SIM)	
Acenaphthylene	69.9	5.18	10.4	"	"	"	"	
Anthracene	26.5	5.18	10.4	"	"	"	"	
Benz(a)anthracene	218	5.18	10.4	"	"	"	"	
Benzo(a)pyrene	340	5.18	10.4	"	"	"	"	
Benzo(b)fluoranthene	363	5.18	10.4	"	"	"	"	M-02
Benzo(k)fluoranthene	127	5.18	10.4	"	"	"	"	M-02
Benzo(g,h,i)perylene	208	5.18	10.4	"	"	"	"	
Chrysene	278	5.18	10.4	"	"	"	"	
Dibenz(a,h)anthracene	47.2	5.18	10.4	"	"	"	"	
Dibenzofuran	ND	5.18	10.4	"	"	"	"	
Fluoranthene	348	5.18	10.4	"	"	"	"	
Fluorene	ND	10.4	10.4	"	"	"	"	
Indeno(1,2,3-cd)pyrene	220	5.18	10.4	"	"	"	"	
1-Methylnaphthalene	ND	5.18	10.4	"	"	"	"	
2-Methylnaphthalene	ND	5.18	10.4	"	"	"	"	
Naphthalene	7.60	5.18	10.4	"	"	"	"	J
Phenanthrene	104	5.18	10.4	"	"	"	"	
Pyrene	443	5.18	10.4	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)		Recovery: 82 %		Limits: 44-115 %	"	"	"	
p-Terphenyl-d14 (Surr)		89 %		Limits: 54-127 %	"	"	"	

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Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

Reported:  
07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

### Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150608-055 (A5F0282-16)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060327</b>			
Acenaphthene	ND	5.49	11.0	ug/kg dry	1	06/12/15 15:25	EPA 8270D (SIM)	
Acenaphthylene	ND	5.49	11.0	"	"	"	"	
Anthracene	ND	5.49	11.0	"	"	"	"	
<b>Benz(a)anthracene</b>	<b>6.95</b>	5.49	11.0	"	"	"	"	J
Benzo(a)pyrene	ND	5.49	11.0	"	"	"	"	
<b>Benzo(b)fluoranthene</b>	<b>6.06</b>	5.49	11.0	"	"	"	"	J
Benzo(k)fluoranthene	ND	5.49	11.0	"	"	"	"	
Benzo(g,h,i)perylene	ND	5.49	11.0	"	"	"	"	
<b>Chrysene</b>	<b>5.51</b>	5.49	11.0	"	"	"	"	J
Dibenz(a,h)anthracene	ND	5.49	11.0	"	"	"	"	
Dibenzofuran	ND	5.49	11.0	"	"	"	"	
<b>Fluoranthene</b>	<b>7.83</b>	5.49	11.0	"	"	"	"	J
Fluorene	ND	5.49	11.0	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	5.49	11.0	"	"	"	"	
1-Methylnaphthalene	ND	5.49	11.0	"	"	"	"	
2-Methylnaphthalene	ND	5.49	11.0	"	"	"	"	
Naphthalene	ND	5.49	11.0	"	"	"	"	
Phenanthrene	ND	5.49	11.0	"	"	"	"	
<b>Pyrene</b>	<b>9.74</b>	5.49	11.0	"	"	"	"	J
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>		<i>Recovery: 77 %</i>		<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>		<i>90 %</i>		<i>Limits: 54-127 %</i>	"	"	"	

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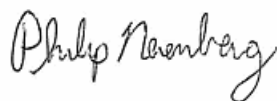
**Reported:**

07/31/15 17:00

**ANALYTICAL SAMPLE RESULTS****Trivalent Chromium (Calculation based on Total and Hexavalent Chromium)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-053 (A5F0282-14)</b>			<b>Matrix: Soil</b>		<b>Batch: [CALC]</b>			
Trivalent Chromium (Cr3+)	19.0	---	2.84	mg/kg dry	10	06/11/15 13:28	[Calc]	

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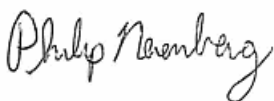
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Project Number: 8832  
Project Manager: Rob EdeReported:  
07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

## Total Hexavalent Chromium by EPA 7196A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-042 (A5F0282-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060314</b>			
Hexavalent Chromium	ND	1.19	2.33	mg/kg dry	1	06/11/15 13:28	EPA 7196A	
<b>8832-150605-048 (A5F0282-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060314</b>			
Hexavalent Chromium	1.42	1.41	2.76	mg/kg dry	1	06/11/15 13:28	EPA 7196A	J
<b>8832-150605-053 (A5F0282-14)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060314</b>			
Hexavalent Chromium	2.02	1.45	2.84	mg/kg dry	1	06/11/15 13:28	EPA 7196A	J

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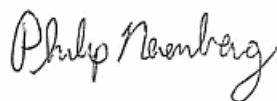
07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-040 (A5F0282-01) Matrix: Soil</b>								
Batch: 5060302								
Antimony	ND	0.576	1.15	mg/kg dry	10	06/10/15 13:46	EPA 6020A	
Arsenic	1.11	0.576	1.15	"	"	"	"	J
Beryllium	0.161	0.115	0.231	"	"	"	"	J
Cadmium	0.219	0.115	0.231	"	"	"	"	J
Chromium	3.57	0.576	1.15	"	"	"	"	
Copper	8.15	0.576	1.15	"	"	"	"	
Lead	4.85	0.115	0.231	"	"	"	"	
Mercury	ND	0.0461	0.0922	"	"	"	"	
Nickel	6.22	0.576	1.15	"	"	"	"	
Selenium	ND	0.576	1.15	"	"	"	"	
Silver	0.127	0.115	0.231	"	"	"	"	J
Thallium	ND	0.115	0.231	"	"	"	"	
Zinc	31.0	2.31	4.61	"	"	"	"	
<b>8832-150605-041 (A5F0282-02) Matrix: Soil</b>								
Batch: 5060302								
Lead	2.35	0.115	0.230	mg/kg dry	10	06/10/15 13:49	EPA 6020A	
<b>8832-150605-042 (A5F0282-03) Matrix: Soil</b>								
Batch: 5060302								
Antimony	ND	0.582	1.16	mg/kg dry	10	06/10/15 13:52	EPA 6020A	
Arsenic	1.39	0.582	1.16	"	"	"	"	
Beryllium	0.128	0.116	0.233	"	"	"	"	J
Cadmium	0.256	0.116	0.233	"	"	"	"	
Copper	6.09	0.582	1.16	"	"	"	"	
Lead	3.77	0.116	0.233	"	"	"	"	
Mercury	ND	0.0466	0.0931	"	"	"	"	
Nickel	6.77	0.582	1.16	"	"	"	"	
Selenium	ND	0.582	1.16	"	"	"	"	
Silver	ND	0.116	0.233	"	"	"	"	
Thallium	ND	0.116	0.233	"	"	"	"	
Zinc	34.7	2.33	4.66	"	"	"	"	
<b>8832-150605-043 (A5F0282-04) Matrix: Soil</b>								
Batch: 5060302								
Lead	7.15	0.113	0.226	mg/kg dry	10	06/10/15 13:55	EPA 6020A	
<b>8832-150605-046 (A5F0282-07) Matrix: Soil</b>								

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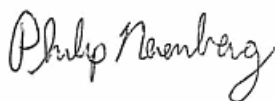
07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-046 (A5F0282-07) Matrix: Soil</b>								
Batch: 5060302								
Antimony	ND	0.616	1.23	mg/kg dry	10	06/10/15 13:58	EPA 6020A	
Arsenic	1.96	0.616	1.23	"	"	"	"	
Beryllium	0.677	0.123	0.246	"	"	"	"	
Cadmium	0.628	0.123	0.246	"	"	"	"	
Chromium	18.3	0.616	1.23	"	"	"	"	
Copper	26.5	0.616	1.23	"	"	"	"	
Lead	545	0.123	0.246	"	"	"	"	
Mercury	0.241	0.0492	0.0985	"	"	"	"	
Nickel	10.7	0.616	1.23	"	"	"	"	
Selenium	ND	0.616	1.23	"	"	"	"	
Silver	0.172	0.123	0.246	"	"	"	"	J
Thallium	ND	0.123	0.246	"	"	"	"	
Zinc	195	2.46	4.92	"	"	"	"	
<b>8832-150605-047 (A5F0282-08) Matrix: Soil</b>								
Batch: 5060302								
Lead	9.05	0.129	0.257	mg/kg dry	10	06/10/15 14:01	EPA 6020A	
<b>8832-150605-048 (A5F0282-09) Matrix: Soil</b>								
Batch: 5060302								
Antimony	ND	0.680	1.36	mg/kg dry	10	06/10/15 14:04	EPA 6020A	
Arsenic	4.16	0.680	1.36	"	"	"	"	
Beryllium	0.516	0.136	0.272	"	"	"	"	
Cadmium	0.598	0.136	0.272	"	"	"	"	
Chromium	13.5	0.680	1.36	"	"	"	"	
Copper	26.1	0.680	1.36	"	"	"	"	
Lead	29.4	0.136	0.272	"	"	"	"	
Mercury	0.0637	0.0544	0.109	"	"	"	"	J
Nickel	14.4	0.680	1.36	"	"	"	"	
Selenium	ND	0.680	1.36	"	"	"	"	
Silver	ND	0.136	0.272	"	"	"	"	
Thallium	ND	0.136	0.272	"	"	"	"	
Zinc	62.9	2.72	5.44	"	"	"	"	
<b>8832-150605-049 (A5F0282-10) Matrix: Soil</b>								
Batch: 5060302								
Lead	9.37	0.133	0.266	mg/kg dry	10	06/10/15 14:07	EPA 6020A	

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Project: POVRED

Project Number: 8832  
Project Manager: Rob EdeReported:  
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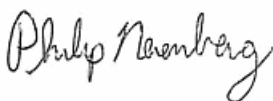
## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-050 (A5F0282-11) Matrix: Soil</b>								
Batch: 5060302								
<b>Lead</b>	<b>8.46</b>	0.147	0.294	mg/kg dry	10	06/10/15 14:09	EPA 6020A	
<b>8832-150605-051 (A5F0282-12) Matrix: Soil</b>								
Batch: 5060302								
<b>Lead</b>	<b>8.63</b>	0.142	0.283	mg/kg dry	10	06/10/15 14:24	EPA 6020A	
<b>8832-150605-053 (A5F0282-14) Matrix: Soil</b>								
Batch: 5060302								
<b>Chromium</b>	<b>21.0</b>	0.667	1.33	mg/kg dry	10	06/10/15 14:27	EPA 6020A	
<b>8832-150608-054 (A5F0282-15) Matrix: Soil</b>								
Batch: 5060302								
Antimony	ND	0.531	1.06	mg/kg dry	10	06/10/15 14:30	EPA 6020A	
<b>Arsenic</b>	<b>1.02</b>	0.531	1.06	"	"	"	"	J
Beryllium	ND	0.106	0.213	"	"	"	"	
<b>Cadmium</b>	<b>0.191</b>	0.106	0.213	"	"	"	"	J
<b>Chromium</b>	<b>3.06</b>	0.531	1.06	"	"	"	"	
<b>Copper</b>	<b>5.15</b>	0.531	1.06	"	"	"	"	
<b>Lead</b>	<b>2.56</b>	0.106	0.213	"	"	"	"	
Mercury	ND	0.0425	0.0850	"	"	"	"	
<b>Nickel</b>	<b>4.73</b>	0.531	1.06	"	"	"	"	
Selenium	ND	0.531	1.06	"	"	"	"	
Silver	ND	0.106	0.213	"	"	"	"	
Thallium	ND	0.106	0.213	"	"	"	"	
<b>Zinc</b>	<b>27.1</b>	2.13	4.25	"	"	"	"	
<b>8832-150608-055 (A5F0282-16) Matrix: Soil</b>								
Batch: 5060302								
<b>Lead</b>	<b>5.67</b>	0.121	0.242	mg/kg dry	10	06/10/15 14:39	EPA 6020A	
<b>8832-150608-056 (A5F0282-17) Matrix: Soil</b>								
Batch: 5060424								
Antimony	ND	0.686	1.37	mg/kg dry	10	06/15/15 13:45	EPA 6020A	
<b>Arsenic</b>	<b>4.28</b>	0.686	1.37	"	"	"	"	
<b>Cadmium</b>	<b>0.467</b>	0.137	0.274	"	"	"	"	
<b>Chromium</b>	<b>20.1</b>	0.686	1.37	"	"	"	"	
<b>Copper</b>	<b>25.5</b>	0.686	1.37	"	"	"	"	
<b>Lead</b>	<b>8.08</b>	0.137	0.274	"	"	"	"	
<b>Mercury</b>	<b>0.0571</b>	0.0549	0.110	"	"	"	"	J

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Project Number: 8832

Project Manager: Rob Ede

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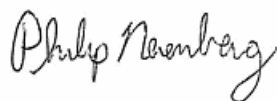
07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150608-056 (A5F0282-17)			Matrix: Soil					
Nickel	20.0	0.686	5.49	mg/kg dry	10	"	EPA 6020A	J
Selenium	1.02	0.686	2.74	"	"	"	"	
Silver	ND	0.137	0.274	"	"	"	"	J
Thallium	0.151	0.137	0.274	"	"	"	"	
Zinc	55.0	2.74	5.49	"	"	"	"	
8832-150608-056 (A5F0282-17RE1)			Matrix: Soil					
Batch: 5060424								
Beryllium	2.21	0.137	0.274	mg/kg dry	10	06/15/15 16:13	EPA 6020A	
8832-150608-057 (A5F0282-18)			Matrix: Soil					
Batch: 5060424								
Lead	9.16	0.135	0.269	mg/kg dry	10	06/15/15 13:48	EPA 6020A	

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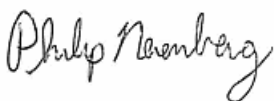
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**ANALYTICAL SAMPLE RESULTS****TCLP Extraction by EPA 1311**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-046 (A5F0282-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5070120</b>			
TCLP Extraction	PREP			N/A	1	07/06/15 16:23	EPA 1311	H-10, Q-44

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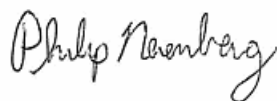
**Reported:**

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**ANALYTICAL SAMPLE RESULTS****TCLP Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150605-046 (A5F0282-07)			Matrix: Soil					
Batch: 5070136								
Lead	0.118	0.0250	0.0500	mg/L	5	07/08/15 00:33	1311/6020A	Q-44

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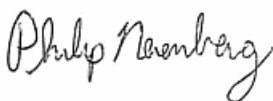
07/31/15 17:00

## ANALYTICAL SAMPLE RESULTS

## Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-040 (A5F0282-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	94.1	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150605-041 (A5F0282-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	95.0	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150605-042 (A5F0282-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	94.2	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150605-043 (A5F0282-04)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	93.6	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150605-045 (A5F0282-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 5070634</b>			
% Solids	80.0	1.00	1.00	% by Weight	1	07/24/15 08:40	EPA 8000C	
<b>8832-150605-046 (A5F0282-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	86.6	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150605-047 (A5F0282-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	82.6	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150605-048 (A5F0282-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	76.8	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150605-049 (A5F0282-10)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	72.7	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150605-050 (A5F0282-11)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	73.7	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150605-051 (A5F0282-12)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	73.0	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150605-053 (A5F0282-14)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	78.1	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150608-054 (A5F0282-15)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	94.3	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150608-055 (A5F0282-16)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	90.3	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150608-056 (A5F0282-17)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	76.7	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	
<b>8832-150608-057 (A5F0282-18)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060331</b>			
% Solids	75.7	1.00	1.00	% by Weight	1	06/11/15 08:00	EPA 8000C	

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Project: **POVRED**  
Project Number: 8832  
Project Manager: Rob Ede

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight							
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Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
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Portland, OR 97209Project: **POVRED**  
Project Number: 8832  
Project Manager: Rob EdeReported:  
07/31/15 17:00

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060336 - EPA 3546						Soil						
Blank (5060336-BLK1)						Prepared: 06/10/15 12:59		Analyzed: 06/10/15 23:29				
NWTPH-Dx												
Diesel	ND	7.69	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	15.4	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 96 %		Limits: 50-150 %		Dilution: 1x						
LCS (5060336-BS1)						Prepared: 06/10/15 12:59		Analyzed: 06/10/15 23:49				
NWTPH-Dx												
Diesel	107	10.0	25.0	mg/kg wet	1	125	---	85	76-115%	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 104 %		Limits: 50-150 %		Dilution: 1x						
Duplicate (5060336-DUP1)						Prepared: 06/10/15 12:59		Analyzed: 06/11/15 00:29				
QC Source Sample: 8832-150605-040 (A5F0282-01)												
NWTPH-Dx												
Diesel	ND	10.4	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	20.8	50.0	"	"	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		Recovery: 98 %		Limits: 50-150 %		Dilution: 1x						

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Project Number: 8832

Project Manager: Rob Ede

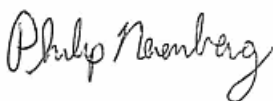
**Reported:**

07/31/15 17:00

**QUALITY CONTROL (QC) SAMPLE RESULTS****Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060370 - EPA 5035A						Soil						
Blank (5060370-BLK1)						Prepared: 06/11/15 10:43		Analyzed: 06/11/15 12:59				
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	1.67	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 103 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		93 %		50-150 %		"						
LCS (5060370-BS2)						Prepared: 06/11/15 10:43		Analyzed: 06/11/15 12:33				
NWTPH-Gx (MS)												
Gasoline Range Organics	22.8	2.50	5.00	mg/kg wet	50	25.0	---	91	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 93 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		97 %		50-150 %		"						

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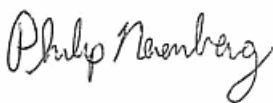
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Project Number: 8832  
Project Manager: Rob EdeReported:  
07/31/15 17:00

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060370 - EPA 5035A						Soil						
Blank (5060370-BLK1)						Prepared: 06/11/15 10:43    Analyzed: 06/11/15 12:59						
5035/8260B												
Acetone	ND	333	667	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Bromobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromoform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromomethane	ND	333	333	"	"	---	---	---	---	---	---	
2-Butanone (MEK)	ND	167	333	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chloroethane	ND	167	333	"	"	---	---	---	---	---	---	
Chloroform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Chloromethane	ND	83.3	167	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloroprop ane	ND	83.3	167	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dibromomethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	

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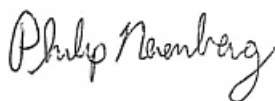
07/31/15 17:00

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060370 - EPA 5035A</b>						<b>Soil</b>						
<b>Blank (5060370-BLK1)</b>						Prepared: 06/11/15 10:43 Analyzed: 06/11/15 12:59						
cis-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
2-Hexanone	ND	167	333	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	167	333	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Methylene chloride	ND	83.3	167	"	"	---	---	---	---	---	---	
Naphthalene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Styrene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Toluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	

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Project Number: 8832

Project Manager: Rob Ede

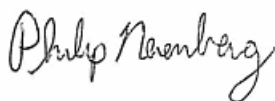
**Reported:**

07/31/15 17:00

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060370 - EPA 5035A						Soil						
Blank (5060370-BLK1)				Prepared: 06/11/15 10:43		Analyzed: 06/11/15 12:59						
1,2,4-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
o-Xylene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery: 99 %		Limits: 70-130 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)		94 %		70-130 %		"						
Toluene-d8 (Surr)		95 %		70-130 %		"						
4-Bromofluorobenzene (Surr)		103 %		70-130 %		"						
LCS (5060370-BS1)						Prepared: 06/11/15 10:43		Analyzed: 06/11/15 12:08				
5035/8260B												
Acetone	1860	500	1000	ug/kg wet	50	2000	---	93	65-135%	---	---	
Benzene	973	6.25	12.5	"	"	1000	---	97	"	---	---	
Bromobenzene	1020	12.5	25.0	"	"	"	---	102	"	---	---	
Bromochloromethane	1010	25.0	50.0	"	"	"	---	101	"	---	---	
Bromodichloromethane	1110	25.0	50.0	"	"	"	---	111	"	---	---	
Bromoform	1260	25.0	50.0	"	"	"	---	126	"	---	---	Q-41
Bromomethane	1090	500	500	"	"	"	---	109	"	---	---	Q-41
2-Butanone (MEK)	1750	250	500	"	"	2000	---	88	"	---	---	
n-Butylbenzene	1050	25.0	50.0	"	"	1000	---	105	"	---	---	
sec-Butylbenzene	1050	25.0	50.0	"	"	"	---	105	"	---	---	
tert-Butylbenzene	1100	25.0	50.0	"	"	"	---	110	"	---	---	
Carbon tetrachloride	1290	12.5	25.0	"	"	"	---	129	"	---	---	Q-41
Chlorobenzene	1040	12.5	25.0	"	"	"	---	104	"	---	---	
Chloroethane	1450	250	500	"	"	"	---	145	"	---	---	Q-41
Chloroform	1120	25.0	50.0	"	"	"	---	112	"	---	---	
Chloromethane	750	125	250	"	"	"	---	75	"	---	---	
2-Chlorotoluene	1010	25.0	50.0	"	"	"	---	101	"	---	---	
4-Chlorotoluene	1060	25.0	50.0	"	"	"	---	106	"	---	---	
1,2-Dibromo-3-chloroprop ane	962	125	250	"	"	"	---	96	"	---	---	

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Project Manager: Rob Ede

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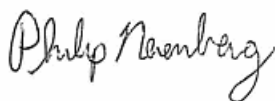
07/31/15 17:00

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060370 - EPA 5035A</b>						<b>Soil</b>						
<b>LCS (5060370-BS1)</b>						Prepared: 06/11/15 10:43 Analyzed: 06/11/15 12:08						
Dibromochloromethane	1200	50.0	100	ug/kg wet	"	"	---	120	"	---	---	
1,2-Dibromoethane (EDB)	1080	12.5	25.0	"	"	"	---	108	"	---	---	
Dibromomethane	992	25.0	50.0	"	"	"	---	99	"	---	---	
1,2-Dichlorobenzene	1020	12.5	25.0	"	"	"	---	102	"	---	---	
1,3-Dichlorobenzene	1040	12.5	25.0	"	"	"	---	104	"	---	---	
1,4-Dichlorobenzene	1010	12.5	25.0	"	"	"	---	101	"	---	---	
Dichlorodifluoromethane	892	50.0	100	"	"	"	---	89	"	---	---	
1,1-Dichloroethane	1020	12.5	25.0	"	"	"	---	102	"	---	---	
1,2-Dichloroethane (EDC)	1150	12.5	25.0	"	"	"	---	115	"	---	---	
1,1-Dichloroethene	1070	12.5	25.0	"	"	"	---	107	"	---	---	
cis-1,2-Dichloroethene	1010	12.5	25.0	"	"	"	---	101	"	---	---	
trans-1,2-Dichloroethene	1010	12.5	25.0	"	"	"	---	101	"	---	---	
1,2-Dichloropropane	907	12.5	25.0	"	"	"	---	91	"	---	---	
1,3-Dichloropropane	1050	25.0	50.0	"	"	"	---	105	"	---	---	
2,2-Dichloropropane	1320	25.0	50.0	"	"	"	---	132	"	---	---	Q-41
1,1-Dichloropropene	1050	25.0	50.0	"	"	"	---	105	"	---	---	
cis-1,3-Dichloropropene	1080	25.0	50.0	"	"	"	---	108	"	---	---	
trans-1,3-Dichloropropene	1190	25.0	50.0	"	"	"	---	119	"	---	---	
Ethylbenzene	1070	12.5	25.0	"	"	"	---	107	"	---	---	
Hexachlorobutadiene	1090	50.0	100	"	"	"	---	109	"	---	---	
2-Hexanone	1820	250	500	"	"	2000	---	91	"	---	---	
Isopropylbenzene	1090	25.0	50.0	"	"	1000	---	109	"	---	---	
4-Isopropyltoluene	1080	25.0	50.0	"	"	"	---	108	"	---	---	
4-Methyl-2-pentanone (MiBK)	1920	250	500	"	"	2000	---	96	"	---	---	
Methyl tert-butyl ether (MTBE)	1110	25.0	50.0	"	"	1000	---	111	"	---	---	
Methylene chloride	982	125	250	"	"	"	---	98	"	---	---	
Naphthalene	1130	50.0	100	"	"	"	---	113	"	---	---	
n-Propylbenzene	1040	12.5	25.0	"	"	"	---	104	"	---	---	
Styrene	960	25.0	50.0	"	"	"	---	96	"	---	---	
1,1,1,2-Tetrachloroethane	1220	12.5	25.0	"	"	"	---	122	"	---	---	Q-41

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Project Number: 8832

Project Manager: Rob Ede

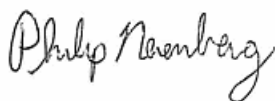
**Reported:**

07/31/15 17:00

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060370 - EPA 5035A</b>						<b>Soil</b>						
<b>LCS (5060370-BS1)</b>						Prepared: 06/11/15 10:43 Analyzed: 06/11/15 12:08						
1,1,2,2-Tetrachloroethane	992	12.5	25.0	"	"	"	---	99	"	---	---	
Tetrachloroethene (PCE)	1140	12.5	25.0	"	"	"	---	114	"	---	---	
Toluene	1030	25.0	50.0	"	"	"	---	103	"	---	---	
1,2,3-Trichlorobenzene	1070	125	250	"	"	"	---	107	"	---	---	
1,2,4-Trichlorobenzene	1030	125	250	"	"	"	---	103	"	---	---	
1,1,1-Trichloroethane	1210	12.5	25.0	"	"	"	---	121	"	---	---	
1,1,2-Trichloroethane	1050	12.5	25.0	"	"	"	---	105	"	---	---	
Trichloroethene (TCE)	1000	12.5	25.0	"	"	"	---	100	"	---	---	
Trichlorofluoromethane	1320	50.0	100	"	"	"	---	132	"	---	---	Q-41
1,2,3-Trichloropropane	1040	25.0	50.0	"	"	"	---	104	"	---	---	
1,2,4-Trimethylbenzene	1090	25.0	50.0	"	"	"	---	109	"	---	---	
1,3,5-Trimethylbenzene	1080	25.0	50.0	"	"	"	---	108	"	---	---	
Vinyl chloride	947	12.5	25.0	"	"	"	---	95	"	---	---	
m,p-Xylene	2300	25.0	50.0	"	"	2000	---	115	"	---	---	
o-Xylene	1150	12.5	25.0	"	"	1000	---	115	"	---	---	
<i>Surr: Dibromofluoromethane (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 70-130 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Surr)</i>		<i>93 %</i>		<i>70-130 %</i>		<i>"</i>						
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>70-130 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>100 %</i>		<i>70-130 %</i>		<i>"</i>						

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Project Number: 8832  
Project Manager: Rob EdeReported:  
07/31/15 17:00

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060327 - EPA 3546						Soil						
Blank (5060327-BLK1)						Prepared: 06/10/15 10:18    Analyzed: 06/11/15 15:25						
EPA 8270D (SIM)												
Acenaphthene	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	9.09	18.2	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Chrysene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Fluoranthene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Fluorene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Naphthalene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Phenanthrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	
Pyrene	ND	4.55	9.09	"	"	---	---	---	---	---	---	

Surr: 2-Fluorobiphenyl (Surr)  
p-Terphenyl-d14 (Surr)Recovery: 81 %  
87 %Limits: 44-115 %  
54-127 %Dilution: 1x  
"

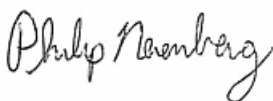
## LCS (5060327-BS1)

Prepared: 06/10/15 10:18 Analyzed: 06/11/15 15:52

<b>EPA 8270D (SIM)</b>												
Acenaphthene	729	5.00	10.0	ug/kg wet	1	800	---	91	40-122%	---	---	
Acenaphthylene	720	5.00	10.0	"	"	"	---	90	32-132%	---	---	
Anthracene	804	5.00	10.0	"	"	"	---	100	47-123%	---	---	
Benz(a)anthracene	750	5.00	10.0	"	"	"	---	94	49-126%	---	---	
Benzo(a)pyrene	808	5.00	10.0	"	"	"	---	101	45-129%	---	---	
Benzo(b)fluoranthene	751	5.00	10.0	"	"	"	---	94	45-132%	---	---	

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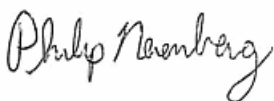
07/31/15 17:00

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060327 - EPA 3546</b>						<b>Soil</b>						
<b>LCS (5060327-BS1)</b>						Prepared: 06/10/15 10:18 Analyzed: 06/11/15 15:52						
Benzo(k)fluoranthene	783	5.00	10.0	"	"	"	---	98	47-132%	---	---	
Benzo(b+k)fluoranthene(s)	1530	10.0	20.0	"	"	1600	---	95	45-132%	---	---	
Benzo(g,h,i)perylene	747	5.00	10.0	"	"	800	---	93	43-134%	---	---	
Chrysene	765	5.00	10.0	"	"	"	---	96	50-124%	---	---	
Dibenz(a,h)anthracene	826	5.00	10.0	"	"	"	---	103	45-134%	---	---	
Dibenzofuran	742	5.00	10.0	"	"	"	---	93	44-120%	---	---	
Fluoranthene	747	5.00	10.0	"	"	"	---	93	50-127%	---	---	
Fluorene	750	5.00	10.0	"	"	"	---	94	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	764	5.00	10.0	"	"	"	---	96	45-133%	---	---	
1-Methylnaphthalene	690	5.00	10.0	"	"	"	---	86	40-120%	---	---	
2-Methylnaphthalene	737	5.00	10.0	"	"	"	---	92	38-122%	---	---	
Naphthalene	710	5.00	10.0	"	"	"	---	89	35-123%	---	---	
Phenanthrene	746	5.00	10.0	"	"	"	---	93	50-121%	---	---	
Pyrene	749	5.00	10.0	"	"	"	---	94	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 85 %		Limits: 44-115 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		88 %		54-127 %		"						

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Project Number: 8832

Project Manager: Rob Ede

Reported:

07/31/15 17:00

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5070656 - EPA 3546						Soil						
Blank (5070656-BLK1)						Prepared: 07/24/15 06:55    Analyzed: 07/24/15 12:45						
EPA 8270D (SIM)												
Acenaphthene	ND	3.85	7.69	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Anthracene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	7.69	15.4	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Chrysene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Fluoranthene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Fluorene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Naphthalene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Phenanthrene	ND	3.85	7.69	"	"	---	---	---	---	---	---	
Pyrene	ND	3.85	7.69	"	"	---	---	---	---	---	---	

Surr: 2-Fluorobiphenyl (Surr)

p-Terphenyl-d14 (Surr)

Recovery: 86 %

97 %

Limits: 44-115 %

54-127 %

Dilution: 1x

"

**LCS (5070656-BS1)**

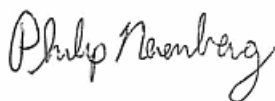
Prepared: 07/24/15 06:55 Analyzed: 07/24/15 13:13

**EPA 8270D (SIM)**

Acenaphthene	754	5.00	10.0	ug/kg wet	1	800	---	94	40-122%	---	---	
Acenaphthylene	745	5.00	10.0	"	"	"	---	93	32-132%	---	---	
Anthracene	815	5.00	10.0	"	"	"	---	102	47-123%	---	---	
Benz(a)anthracene	734	5.00	10.0	"	"	"	---	92	49-126%	---	---	
Benzo(a)pyrene	831	5.00	10.0	"	"	"	---	104	45-129%	---	---	
Benzo(b)fluoranthene	764	5.00	10.0	"	"	"	---	96	45-132%	---	---	

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

07/31/15 17:00

**QUALITY CONTROL (QC) SAMPLE RESULTS****Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5070656 - EPA 3546</b>						<b>Soil</b>						
<b>LCS (5070656-BS1)</b>						Prepared: 07/24/15 06:55 Analyzed: 07/24/15 13:13						
Benzo(k)fluoranthene	778	5.00	10.0	"	"	"	---	97	47-132%	---	---	
Benzo(b+k)fluoranthene(s)	1520	10.0	20.0	"	"	1600	---	95	45-132%	---	---	
Benzo(g,h,i)perylene	717	5.00	10.0	"	"	800	---	90	43-134%	---	---	
Chrysene	756	5.00	10.0	"	"	"	---	94	50-124%	---	---	
Dibenz(a,h)anthracene	778	5.00	10.0	"	"	"	---	97	45-134%	---	---	
Dibenzofuran	801	5.00	10.0	"	"	"	---	100	44-120%	---	---	
Fluoranthene	766	5.00	10.0	"	"	"	---	96	50-127%	---	---	
Fluorene	762	5.00	10.0	"	"	"	---	95	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	719	5.00	10.0	"	"	"	---	90	45-133%	---	---	
1-Methylnaphthalene	698	5.00	10.0	"	"	"	---	87	40-120%	---	---	
2-Methylnaphthalene	790	5.00	10.0	"	"	"	---	99	38-122%	---	---	
Naphthalene	726	5.00	10.0	"	"	"	---	91	35-123%	---	---	
Phenanthrene	762	5.00	10.0	"	"	"	---	95	50-121%	---	---	
Pyrene	769	5.00	10.0	"	"	"	---	96	47-127%	---	---	

Surr: 2-Fluorobiphenyl (Surr)

p-Terphenyl-d14 (Surr)

Recovery: 89 %

94 %

Limits: 44-115 %

54-127 %

Dilution: 1x

"

**Duplicate (5070656-DUP1)**

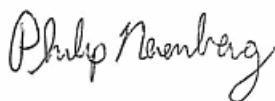
Prepared: 07/24/15 06:55 Analyzed: 07/24/15 14:38

**H-06****QC Source Sample: 8832-150605-045 (A5F0282-06)****EPA 8270D (SIM)**

Acenaphthene	ND	5.11	10.2	ug/kg dry	1	---	ND	---	---	---	30%
Acenaphthylene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%
Anthracene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%
Benz(a)anthracene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%
Benzo(a)pyrene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%
Benzo(b)fluoranthene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%
Benzo(k)fluoranthene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%
Benzo(b+k)fluoranthene(s)	ND	10.2	20.4	"	"	---	ND	---	---	---	30%
Benzo(g,h,i)perylene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%
Chrysene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%
Dibenz(a,h)anthracene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%
Dibenzofuran	ND	5.11	10.2	"	"	---	ND	---	---	---	30%

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## Hahn and Associates

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Project Number: 8832

Project Manager: Rob Ede

Reported:

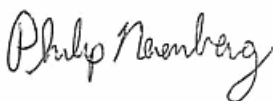
07/31/15 17:00

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5070656 - EPA 3546						Soil						
Duplicate (5070656-DUP1)						Prepared: 07/24/15 06:55		Analyzed: 07/24/15 14:38			H-06	
QC Source Sample: 8832-150605-045 (A5F0282-06)												
Fluoranthene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%	
Fluorene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%	
Naphthalene	14.0	5.11	10.2	"	"	---	13.1	---	---	7	30%	
Phenanthrene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%	
Pyrene	ND	5.11	10.2	"	"	---	ND	---	---	---	30%	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 86 %		Limits: 44-115 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		96 %		54-127 %		"						

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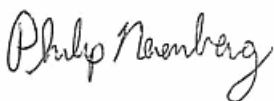
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

07/31/15 17:00

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Hexavalent Chromium by EPA 7196A**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060314 - Method Prep: Non-Aq						Soil						
Blank (5060314-BLK1)					Prepared: 06/10/15 07:16		Analyzed: 06/11/15 13:28					
EPA 7196A												
Hexavalent Chromium	ND	1.15	2.25	mg/kg wet	1	---	---	---	---	---	---	
LCS (5060314-BS1)					Prepared: 06/10/15 07:16		Analyzed: 06/11/15 13:28					
EPA 7196A												
Hexavalent Chromium	19.9	1.15	2.25	mg/kg wet	1	20.0	---	100	80-120%	---	---	
Post Spike (5060314-PS1)					Prepared: 06/10/15 07:16		Analyzed: 06/11/15 13:28					
Hexavalent Chromium	0.404			mg/L	1	0.398	0.0388	92	85-115%		---	

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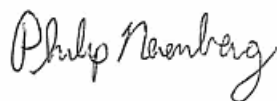
**Hahn and Associates**434 NW 6th Ave. Suite 203  
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Project Manager: Rob Ede**Reported:**

07/31/15 17:00

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060302 - EPA 3051A						Soil						
Blank (5060302-BLK1)						Prepared: 06/09/15 14:38		Analyzed: 06/10/15 13:08				
EPA 6020A												
Antimony	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (5060302-BS1)						Prepared: 06/09/15 14:38		Analyzed: 06/10/15 13:11				
EPA 6020A												
Antimony	25.9	0.500	1.00	mg/kg wet	10	25.0	---	104	80-120%	---	---	
Arsenic	51.5	0.500	1.00	"	"	50.0	---	103	"	---	---	
Beryllium	24.6	0.100	0.200	"	"	25.0	---	98	"	---	---	
Cadmium	50.9	0.100	0.200	"	"	50.0	---	102	"	---	---	
Chromium	50.6	0.500	1.00	"	"	"	---	101	"	---	---	
Copper	50.0	0.500	1.00	"	"	"	---	100	"	---	---	
Lead	50.1	0.100	0.200	"	"	"	---	100	"	---	---	
Mercury	1.02	0.0400	0.0800	"	"	1.00	---	102	"	---	---	
Nickel	49.6	0.500	1.00	"	"	50.0	---	99	"	---	---	
Selenium	26.5	0.500	1.00	"	"	25.0	---	106	"	---	---	
Silver	24.2	0.100	0.200	"	"	"	---	97	"	---	---	
Thallium	24.6	0.100	0.200	"	"	"	---	98	"	---	---	
Zinc	54.1	2.00	4.00	"	"	50.0	---	108	"	---	---	
Matrix Spike (5060302-MS2)						Prepared: 06/09/15 14:38		Analyzed: 06/10/15 14:33				

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Project Number: 8832

Project Manager: Rob Ede

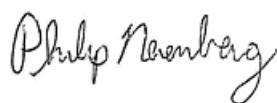
**Reported:**

07/31/15 17:00

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060302 - EPA 3051A						Soil						
Matrix Spike (5060302-MS2)						Prepared: 06/09/15 14:38		Analyzed: 06/10/15 14:33				
QC Source Sample: 8832-150608-054 (A5F0282-15)												
EPA 6020A												
Antimony	26.0	0.540	1.08	mg/kg dry	10	27.0	ND	96	75-125%	---	---	
Arsenic	56.6	0.540	1.08	"	"	54.0	1.02	103	"	---	---	
Beryllium	26.5	0.108	0.216	"	"	27.0	ND	98	"	---	---	
Cadmium	54.4	0.108	0.216	"	"	54.0	0.191	100	"	---	---	
Chromium	57.4	0.540	1.08	"	"	"	3.06	101	"	---	---	
Copper	58.0	0.540	1.08	"	"	"	5.15	98	"	---	---	
Lead	54.7	0.108	0.216	"	"	"	2.56	97	"	---	---	
Mercury	1.04	0.0432	0.0864	"	"	1.08	ND	96	"	---	---	
Nickel	57.3	0.540	1.08	"	"	54.0	4.73	97	"	---	---	
Selenium	27.7	0.540	1.08	"	"	27.0	ND	103	"	---	---	
Silver	25.9	0.108	0.216	"	"	"	ND	96	"	---	---	
Thallium	26.2	0.108	0.216	"	"	"	ND	97	"	---	---	
Zinc	81.3	2.16	4.32	"	"	54.0	27.1	100	"	---	---	
Post Spike (5060302-PS1)						Prepared: 06/09/15 14:38		Analyzed: 06/12/15 15:41				
Antimony	238			ug/L	10	249	0.896	95	80-120%		---	

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Project Number: 8832

Project Manager: Rob Ede

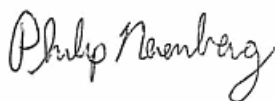
**Reported:**

07/31/15 17:00

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060424 - EPA 3051A						Soil						
Blank (5060424-BLK1)						Prepared: 06/12/15 13:54		Analyzed: 06/15/15 13:22				
EPA 6020A												
Antimony	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	4.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	2.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (5060424-BS1)						Prepared: 06/12/15 13:54		Analyzed: 06/15/15 13:25				
EPA 6020A												
Antimony	24.7	0.500	1.00	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Arsenic	52.4	0.500	1.00	"	"	50.0	---	105	"	---	---	
Beryllium	24.1	0.100	0.200	"	"	25.0	---	96	"	---	---	
Cadmium	51.2	0.100	0.200	"	"	50.0	---	102	"	---	---	
Chromium	51.0	0.500	1.00	"	"	"	---	102	"	---	---	
Copper	51.3	0.500	1.00	"	"	"	---	103	"	---	---	
Lead	49.5	0.100	0.200	"	"	"	---	99	"	---	---	
Mercury	0.957	0.0400	0.0800	"	"	1.00	---	96	"	---	---	
Nickel	50.1	0.500	4.00	"	"	50.0	---	100	"	---	---	
Selenium	27.1	0.500	2.00	"	"	25.0	---	108	"	---	---	
Silver	23.3	0.100	0.200	"	"	"	---	93	"	---	---	
Thallium	23.9	0.100	0.200	"	"	"	---	96	"	---	---	
Zinc	51.9	2.00	4.00	"	"	50.0	---	104	"	---	---	

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Project: **POVRED**  
Project Number: 8832  
Project Manager: Rob Ede

Reported:  
07/31/15 17:00

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5070136 - EPA 1311/3015						Solid						
Blank (5070136-BLK1)						Prepared: 07/07/15 09:29			Analyzed: 07/07/15 15:06			
1311/6020A												
Lead	ND	0.0250	0.0500	mg/L	5	---	---	---	---	---	---	TCLP
LCS (5070136-BS1)						Prepared: 07/07/15 09:29			Analyzed: 07/07/15 15:09			
1311/6020A												
Lead	2.58	0.0250	0.0500	mg/L	5	2.50	---	103	80-120%	---	---	TCLP

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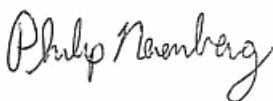
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**  
07/31/15 17:00**QUALITY CONTROL (QC) SAMPLE RESULTS****Percent Dry Weight**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060331 - Total Solids (Dry Weight)						Soil						
Duplicate (5060331-DUP2)					Prepared: 06/10/15 10:40		Analyzed: 06/11/15 08:00					
QC Source Sample: 8832-150605-049 (A5F0282-10)												
EPA 8000C												
% Solids	72.6	1.00	1.00	% by Weight	1	---	72.7	---	---	0.1	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

**Batch 5070634 - Total Solids (Dry Weight)****Soil**

No Client related Batch QC samples analyzed for this batch. See notes page for more information.



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Project Number: 8832

Project Manager: Rob Ede

**Reported:**

07/31/15 17:00

**SAMPLE PREPARATION INFORMATION****Diesel and/or Oil Hydrocarbons by NWTPH-Dx****Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060336</b>							
A5F0282-01	Soil	NWTPH-Dx	06/05/15 09:15	06/10/15 12:59	11.05g/5mL	10g/5mL	0.91
A5F0282-02	Soil	NWTPH-Dx	06/05/15 09:22	06/10/15 12:59	11.01g/5mL	10g/5mL	0.91
A5F0282-03	Soil	NWTPH-Dx	06/05/15 09:31	06/10/15 12:59	10.99g/5mL	10g/5mL	0.91
A5F0282-07	Soil	NWTPH-Dx	06/05/15 12:26	06/10/15 12:59	12.62g/5mL	10g/5mL	0.79
A5F0282-08	Soil	NWTPH-Dx	06/05/15 12:37	06/10/15 12:59	10.28g/5mL	10g/5mL	0.97
A5F0282-09	Soil	NWTPH-Dx	06/05/15 12:47	06/10/15 12:59	11.51g/5mL	10g/5mL	0.87
A5F0282-15	Soil	NWTPH-Dx	06/08/15 08:33	06/10/15 12:59	11.84g/5mL	10g/5mL	0.85
A5F0282-16	Soil	NWTPH-Dx	06/08/15 08:43	06/10/15 12:59	10.59g/5mL	10g/5mL	0.94

**Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx****Prep: EPA 5035A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060370</b>							
A5F0282-01	Soil	NWTPH-Gx (MS)	06/05/15 09:15	06/05/15 09:15	4.2g/5mL	10g/10mL	1.19
A5F0282-07	Soil	NWTPH-Gx (MS)	06/05/15 12:26	06/05/15 12:26	5.5g/5mL	10g/10mL	0.91
A5F0282-15	Soil	NWTPH-Gx (MS)	06/08/15 08:33	06/08/15 08:33	4.91g/5mL	10g/10mL	1.02

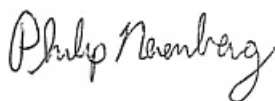
**Volatile Organic Compounds by EPA 8260B****Prep: EPA 5035A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060370</b>							
A5F0282-01	Soil	5035/8260B	06/05/15 09:15	06/05/15 09:15	4.2g/5mL	10g/10mL	1.19
A5F0282-07	Soil	5035/8260B	06/05/15 12:26	06/05/15 12:26	5.5g/5mL	10g/10mL	0.91
A5F0282-15	Soil	5035/8260B	06/08/15 08:33	06/08/15 08:33	4.91g/5mL	10g/10mL	1.02

**Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM****Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060327</b>							
A5F0282-01	Soil	EPA 8270D (SIM)	06/05/15 09:15	06/10/15 10:18	10.06g/5mL	10g/5mL	0.99
A5F0282-07	Soil	EPA 8270D (SIM)	06/05/15 12:26	06/10/15 10:18	10.14g/5mL	10g/5mL	0.99
A5F0282-07RE1	Soil	EPA 8270D (SIM)	06/05/15 12:26	06/10/15 10:18	10.14g/5mL	10g/5mL	0.99

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

07/31/15 17:00

**SAMPLE PREPARATION INFORMATION****Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM****Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A5F0282-15	Soil	EPA 8270D (SIM)	06/08/15 08:33	06/10/15 10:18	10.23g/5mL	10g/5mL	0.98
A5F0282-16	Soil	EPA 8270D (SIM)	06/08/15 08:43	06/10/15 10:18	10.09g/5mL	10g/5mL	0.99
<b>Batch: 5070656</b>							
A5F0282-06	Soil	EPA 8270D (SIM)	06/05/15 09:51	07/24/15 06:58	12.45g/5mL	10g/5mL	0.80

**Total Hexavalent Chromium by EPA 7196A****Prep: Method Prep: Non-Ag**

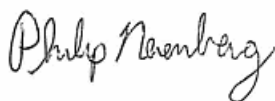
Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060314</b>							
A5F0282-03	Soil	EPA 7196A	06/05/15 09:31	06/10/15 07:16	2.5636g/111mL	2.5g/111mL	0.98
A5F0282-09	Soil	EPA 7196A	06/05/15 12:47	06/10/15 07:16	2.6491g/111mL	2.5g/111mL	0.94
A5F0282-14	Soil	EPA 7196A	06/05/15 15:23	06/10/15 07:16	2.5325g/111mL	2.5g/111mL	0.99

**Total Metals by EPA 6020 (ICPMS)****Prep: EPA 3051A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060320</b>							
A5F0282-01	Soil	EPA 6020A	06/05/15 09:15	06/09/15 14:38	0.461g/50mL	0.5g/50mL	1.08
A5F0282-02	Soil	EPA 6020A	06/05/15 09:22	06/09/15 14:38	0.457g/50mL	0.5g/50mL	1.09
A5F0282-03	Soil	EPA 6020A	06/05/15 09:31	06/09/15 14:38	0.456g/50mL	0.5g/50mL	1.10
A5F0282-04	Soil	EPA 6020A	06/05/15 09:37	06/09/15 14:38	0.473g/50mL	0.5g/50mL	1.06
A5F0282-07	Soil	EPA 6020A	06/05/15 12:26	06/09/15 14:38	0.469g/50mL	0.5g/50mL	1.07
A5F0282-08	Soil	EPA 6020A	06/05/15 12:37	06/09/15 14:38	0.471g/50mL	0.5g/50mL	1.06
A5F0282-09	Soil	EPA 6020A	06/05/15 12:47	06/09/15 14:38	0.479g/50mL	0.5g/50mL	1.04
A5F0282-10	Soil	EPA 6020A	06/05/15 12:58	06/09/15 14:38	0.518g/50mL	0.5g/50mL	0.97
A5F0282-11	Soil	EPA 6020A	06/05/15 13:05	06/09/15 14:38	0.462g/50mL	0.5g/50mL	1.08
A5F0282-12	Soil	EPA 6020A	06/05/15 13:16	06/09/15 14:38	0.484g/50mL	0.5g/50mL	1.03
A5F0282-14	Soil	EPA 6020A	06/05/15 15:23	06/09/15 14:38	0.48g/50mL	0.5g/50mL	1.04
A5F0282-15	Soil	EPA 6020A	06/08/15 08:33	06/09/15 14:38	0.499g/50mL	0.5g/50mL	1.00
A5F0282-16	Soil	EPA 6020A	06/08/15 08:43	06/09/15 14:38	0.457g/50mL	0.5g/50mL	1.09
<b>Batch: 5060424</b>							
A5F0282-17	Soil	EPA 6020A	06/08/15 08:54	06/12/15 13:58	0.475g/50mL	0.5g/50mL	1.05
A5F0282-17RE1	Soil	EPA 6020A	06/08/15 08:54	06/12/15 13:58	0.475g/50mL	0.5g/50mL	1.05
A5F0282-18	Soil	EPA 6020A	06/08/15 09:02	06/12/15 13:58	0.491g/50mL	0.5g/50mL	1.02

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Philip Nerenberg, Lab Director

Page 46 of 51

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

07/31/15 17:00

**SAMPLE PREPARATION INFORMATION****Total Metals by EPA 6020 (ICPMS)****Prep: EPA 3051A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
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**TCLP Extraction by EPA 1311****Prep: EPA 1311 (TCLP)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
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Batch: 5070120

A5F0282-07	Soil	EPA 1311	06/05/15 12:26	07/06/15 16:23	100g/2000mL	100g/2000mL	NA
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**TCLP Metals by EPA 6020 (ICPMS)****Prep: EPA 1311/3015**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
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Batch: 5070136

A5F0282-07	Soil	1311/6020A	06/05/15 12:26	07/07/15 09:29	5mL/50mL	5mL/50mL	1.00
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**Percent Dry Weight****Prep: Total Solids (Dry Weight)**

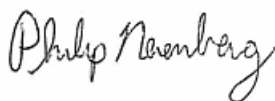
Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
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Batch: 5060331

A5F0282-01	Soil	EPA 8000C	06/05/15 09:15	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-02	Soil	EPA 8000C	06/05/15 09:22	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-03	Soil	EPA 8000C	06/05/15 09:31	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-04	Soil	EPA 8000C	06/05/15 09:37	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-07	Soil	EPA 8000C	06/05/15 12:26	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-08	Soil	EPA 8000C	06/05/15 12:37	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-09	Soil	EPA 8000C	06/05/15 12:47	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-10	Soil	EPA 8000C	06/05/15 12:58	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-11	Soil	EPA 8000C	06/05/15 13:05	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-12	Soil	EPA 8000C	06/05/15 13:16	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-14	Soil	EPA 8000C	06/05/15 15:23	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-15	Soil	EPA 8000C	06/08/15 08:33	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-16	Soil	EPA 8000C	06/08/15 08:43	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-17	Soil	EPA 8000C	06/08/15 08:54	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA
A5F0282-18	Soil	EPA 8000C	06/08/15 09:02	06/10/15 10:40	1N/A/1N/A	1N/A/1N/A	NA

Batch: 5070634

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

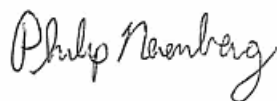
**Reported:**

07/31/15 17:00

**SAMPLE PREPARATION INFORMATION****Percent Dry Weight****Prep: Total Solids (Dry Weight)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A5F0282-06	Soil	EPA 8000C	06/05/15 09:51	07/23/15 12:38	1N/A/1N/A	1N/A/1N/A	NA

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Philip Nerenberg, Lab Director

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**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

**Reported:**  
07/31/15 17:00

## Notes and Definitions

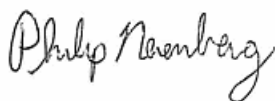
### Qualifiers:

- H-06 This sample was received, or the analysis requested, outside the recommended holding time.
- H-10 This sample was TCLP extracted (leached) outside of the recommended holding time.
- J Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- M-02 Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
- Q-41 Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- Q-44 Room temperature during the 18 hr. TCLP tumbling procedure exceeded EPA recommended temperature range by no more than +/-2 degrees C for a maximum of 7.5 hours
- R-02 The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- TCLP This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 5070120.

### Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to 1/2 the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.  
  
For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.  
  
Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

Apex Laboratories



Philip Nerenberg, Lab Director

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**Hahn and Associates**

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Portland, OR 97209

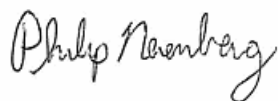
Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

**Reported:**  
07/31/15 17:00

\*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories



Philip Nerenberg, Lab Director

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## Hahn and Associates

434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

Reported:

07/31/15 17:00

8832-03

AGF0182

**HAHN AND ASSOCIATES, INC.**  
Environmental Management  
434 NW 6th Ave. Suite 203 - Portland, OR 97209  
(503) 246-0117 Fax (503) 227-2209

Laboratory: Apex Labs  
Target: Oregon  
Lab Project No.: 8832-03

Project Manager: Rob Ede  
Project No.: 8832  
Project Name: POVRED  
Collected by: Ben Uhl

Sample Number Prefix: 8832-150605- and \*8832-100608-  
• Port of Vancouver, USA Picing  
• 5-day turn around time  
• Invoice to Port of Vancouver, USA (Mail Graves)  
• Results to Ben Uhl and Rob Ede at Hahn and Associates, Inc.  
• There will likely be follow-ups requested  
• Data Concourse EDD is Allison Greiner (Eureka Project Solutions)

Sample ID	Date	Time	Location	Depth	Matrix		Liquid with Sediment Sample		Analyses to be Performed		Remarks
					Soil	Water	Test Phase	Test Substrate	Test Data	Test Results	
040	05-Jun-15	9:15	MMW-3 (2-4) (G-2)		X	X	X	X	X	X	
041	05-Jun-15	9:22	(8-9) (G-6.5)		X	X	X	X	X	X	
042	05-Jun-15	9:31	(11-13) (G-11.5)		X	X	X	X	X	X	
043	05-Jun-15	9:37	(16-18)		X	X	X	X	X	X	
044	05-Jun-15	9:43	(21-23)		X	X	X	X	X	X	
045	05-Jun-15	9:51	(25.8-27.8)		X	X	X	X	X	X	
046	05-Jun-15	12:26	MMW-2 (0.2-1.2) (G-0.6)		X	X	X	X	X	X	
047	05-Jun-15	12:37	(6.3-8.3) (G-6.6)		X	X	X	X	X	X	
048	05-Jun-15	12:47	(11.2-13.2) (G-12)		X	X	X	X	X	X	
049	05-Jun-15	12:58	(17.5-19.5)		X	X	X	X	X	X	
050	05-Jun-15	13:05	(21.5-23.5)		X	X	X	X	X	X	
051	05-Jun-15	13:16	(28-30)		X	X	X	X	X	X	
052	05-Jun-15	13:20	(32.5-34.5)		X	X	X	X	X	X	
053	05-Jun-15	15:23	SB-015 (8-10)		X	X	X	X	X	X	
*054	08-Jun-15	8:33	SB-011 (1.5-3.5) (G-2)		X	X	X	X	X	X	
*055	08-Jun-15	8:43	(7.7-9.7) (G-8.5)		X	X	X	X	X	X	
*056	08-Jun-15	8:54	(12.4-14.4) (G-13)		X	X	X	X	X	X	
*057	08-Jun-15	9:02	(18-20)		X	X	X	X	X	X	
*058	08-Jun-15	9:08	(22.7-24.7)		X	X	X	X	X	X	
*059	08-Jun-15	9:16	(28-30)		X	X	X	X	X	X	

Prepared by: Ben Uhl  
Reviewed by: Ben Uhl  
Company: HAHN & ASSOCIATES, INC.

Prepared by: [Signature]  
Reviewed by: [Signature]  
Company: [Signature]

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Monday, August 17, 2015

Rob Ede  
Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209

RE: POVRED / 8832

Enclosed are the results of analyses for work order A5F0282, which was received by the laboratory on 6/8/2015 at 3:56:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [ldomenighini@apex-labs.com](mailto:ldomenighini@apex-labs.com), or by phone at 503-718-2323.

---

DRAFT REPORT

*The results provided in this report are PRELIMINARY and are subject to change based on subsequent analysis, QC validation or final data review. Please use these results with the understanding that they may have not been finalized by the laboratory*

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DRAFT REPORT, DATA SUBJECT TO CHANGE

Page 1 of 18

Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**  
Project Number: 8832  
Project Manager: Rob Ede**Reported:**  
08/17/15 09:52

## ANALYTICAL REPORT FOR SAMPLES

## SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
8832-150605-040	A5F0282-01	Soil	06/05/15 09:15	06/08/15 15:56
8832-150605-041	A5F0282-02	Soil	06/05/15 09:22	06/08/15 15:56
8832-150605-042	A5F0282-03	Soil	06/05/15 09:31	06/08/15 15:56
8832-150605-043	A5F0282-04	Soil	06/05/15 09:37	06/08/15 15:56
8832-150605-046	A5F0282-07	Soil	06/05/15 12:26	06/08/15 15:56
8832-150605-047	A5F0282-08	Soil	06/05/15 12:37	06/08/15 15:56
8832-150605-048	A5F0282-09	Soil	06/05/15 12:47	06/08/15 15:56
8832-150605-049	A5F0282-10	Soil	06/05/15 12:58	06/08/15 15:56
8832-150605-050	A5F0282-11	Soil	06/05/15 13:05	06/08/15 15:56
8832-150605-051	A5F0282-12	Soil	06/05/15 13:16	06/08/15 15:56
8832-150605-053	A5F0282-14	Soil	06/05/15 15:23	06/08/15 15:56
8832-150608-054	A5F0282-15	Soil	06/08/15 08:33	06/08/15 15:56
8832-150608-055	A5F0282-16	Soil	06/08/15 08:43	06/08/15 15:56
8832-150608-056	A5F0282-17	Soil	06/08/15 08:54	06/08/15 15:56
8832-150608-057	A5F0282-18	Soil	06/08/15 09:02	06/08/15 15:56

DRAFT REPORT

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Hahn and Associates

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

Reported:

08/17/15 09:52

## ANALYTICAL CASE NARRATIVE

---

### Work Order: A5F0282

Amended Report Revision 1:

Added 8270SIM PAH method

This report supersedes all previous reports.

Per the client's request and approval the out of hold 8270 SIM PAH was added to sample 8832-150605-045, Apex WO # A5F0282-06.

Philip Nerenberg  
Lab Director  
7/22/15

---

DRAFT REPORT

*The results provided in this report are PRELIMINARY and are subject to change based on subsequent analysis, QC validation or final data review. Please use these results with the understanding that they may have not been finalized by the laboratory*

Hahn and Associates

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

Reported:

08/17/15 09:52

## ANALYTICAL SAMPLE RESULTS

### Trivalent Chromium (Calculation based on Total and Hexavalent Chromium)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-053 (A5F0282-14)</b>			<b>Matrix: Soil</b>		<b>Batch: [CALC]</b>			
Trivalent Chromium (Cr3+)	21.0	---	2.84	mg/kg dry	10	06/11/15 13:28	[Calc]	

DRAFT REPORT

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

08/17/15 09:52

**ANALYTICAL SAMPLE RESULTS****Total Hexavalent Chromium by EPA 7196A**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-042 (A5F0282-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060314</b>			
Hexavalent Chromium	ND	---	2.33	mg/kg dry	1	06/11/15 13:28	EPA 7196A	
<b>8832-150605-048 (A5F0282-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060314</b>			
Hexavalent Chromium	ND	---	2.76	mg/kg dry	1	06/11/15 13:28	EPA 7196A	
<b>8832-150605-053 (A5F0282-14)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060314</b>			
Hexavalent Chromium	ND	---	2.84	mg/kg dry	1	06/11/15 13:28	EPA 7196A	

DRAFT REPORT

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Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**  
Project Number: 8832  
Project Manager: Rob EdeReported:  
08/17/15 09:52

## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-040 (A5F0282-01) Matrix: Soil</b>								
Batch: 5060302								
Antimony	ND	---	1.15	mg/kg dry	10	06/10/15 13:46	EPA 6020A	
Arsenic	ND	---	1.15	"	"	"	"	
Beryllium	ND	---	0.231	"	"	"	"	
Cadmium	ND	---	0.231	"	"	"	"	
<b>Chromium</b>	<b>3.57</b>	---	1.15	"	"	"	"	
<b>Copper</b>	<b>8.15</b>	---	1.15	"	"	"	"	
<b>Lead</b>	<b>4.85</b>	---	0.231	"	"	"	"	
Mercury	ND	---	0.0922	"	"	"	"	
<b>Nickel</b>	<b>6.22</b>	---	1.15	"	"	"	"	
Selenium	ND	---	1.15	"	"	"	"	
Silver	ND	---	0.231	"	"	"	"	
Thallium	ND	---	0.231	"	"	"	"	
<b>Zinc</b>	<b>31.0</b>	---	4.61	"	"	"	"	
<b>8832-150605-041 (A5F0282-02) Matrix: Soil</b>								
Batch: 5060302								
<b>Lead</b>	<b>2.35</b>	---	0.230	mg/kg dry	10	06/10/15 13:49	EPA 6020A	
<b>8832-150605-042 (A5F0282-03) Matrix: Soil</b>								
Batch: 5060302								
Antimony	ND	---	1.16	mg/kg dry	10	06/10/15 13:52	EPA 6020A	
<b>Arsenic</b>	<b>1.39</b>	---	1.16	"	"	"	"	
Beryllium	ND	---	0.233	"	"	"	"	
<b>Cadmium</b>	<b>0.256</b>	---	0.233	"	"	"	"	
<b>Chromium</b>	<b>3.83</b>	---	1.16	"	"	"	"	
<b>Copper</b>	<b>6.09</b>	---	1.16	"	"	"	"	
<b>Lead</b>	<b>3.77</b>	---	0.233	"	"	"	"	
Mercury	ND	---	0.0931	"	"	"	"	
<b>Nickel</b>	<b>6.77</b>	---	1.16	"	"	"	"	
Selenium	ND	---	1.16	"	"	"	"	
Silver	ND	---	0.233	"	"	"	"	
Thallium	ND	---	0.233	"	"	"	"	
<b>Zinc</b>	<b>34.7</b>	---	4.66	"	"	"	"	
<b>8832-150605-043 (A5F0282-04) Matrix: Soil</b>								
Batch: 5060302								
<b>Lead</b>	<b>7.15</b>	---	0.226	mg/kg dry	10	06/10/15 13:55	EPA 6020A	

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434 NW 6th Ave. Suite 203

Project Number: 8832

Portland, OR 97209

Project Manager: Rob Ede

Reported:

08/17/15 09:52

## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-046 (A5F0282-07) Matrix: Soil</b>								
Batch: 5060302								
Antimony	ND	---	1.23	mg/kg dry	10	06/10/15 13:58	EPA 6020A	
Arsenic	1.96	---	1.23	"	"	"	"	
Beryllium	0.677	---	0.246	"	"	"	"	
Cadmium	0.628	---	0.246	"	"	"	"	
Chromium	18.3	---	1.23	"	"	"	"	
Copper	26.5	---	1.23	"	"	"	"	
Lead	545	---	0.246	"	"	"	"	
Mercury	0.241	---	0.0985	"	"	"	"	
Nickel	10.7	---	1.23	"	"	"	"	
Selenium	ND	---	1.23	"	"	"	"	
Silver	ND	---	0.246	"	"	"	"	
Thallium	ND	---	0.246	"	"	"	"	
Zinc	195	---	4.92	"	"	"	"	
<b>8832-150605-047 (A5F0282-08) Matrix: Soil</b>								
Batch: 5060302								
Lead	9.05	---	0.257	mg/kg dry	10	06/10/15 14:01	EPA 6020A	
<b>8832-150605-048 (A5F0282-09) Matrix: Soil</b>								
Batch: 5060302								
Antimony	ND	---	1.36	mg/kg dry	10	06/10/15 14:04	EPA 6020A	
Arsenic	4.16	---	1.36	"	"	"	"	
Beryllium	0.516	---	0.272	"	"	"	"	
Cadmium	0.598	---	0.272	"	"	"	"	
Chromium	13.5	---	1.36	"	"	"	"	
Copper	26.1	---	1.36	"	"	"	"	
Lead	29.4	---	0.272	"	"	"	"	
Mercury	ND	---	0.109	"	"	"	"	
Nickel	14.4	---	1.36	"	"	"	"	
Selenium	ND	---	1.36	"	"	"	"	
Silver	ND	---	0.272	"	"	"	"	
Thallium	ND	---	0.272	"	"	"	"	
Zinc	62.9	---	5.44	"	"	"	"	
<b>8832-150605-049 (A5F0282-10) Matrix: Soil</b>								
Batch: 5060302								
Lead	9.37	---	0.266	mg/kg dry	10	06/10/15 14:07	EPA 6020A	

DRAFT REPORT

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Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

08/17/15 09:52

**ANALYTICAL SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150605-050 (A5F0282-11) Matrix: Soil</b>								
Batch: 5060302								
<b>Lead</b>	<b>8.46</b>	---	0.294	mg/kg dry	10	06/10/15 14:09	EPA 6020A	
<b>8832-150605-051 (A5F0282-12) Matrix: Soil</b>								
Batch: 5060302								
<b>Lead</b>	<b>8.63</b>	---	0.283	mg/kg dry	10	06/10/15 14:24	EPA 6020A	
<b>8832-150605-053 (A5F0282-14) Matrix: Soil</b>								
Batch: 5060302								
<b>Chromium</b>	<b>21.0</b>	---	1.33	mg/kg dry	10	06/10/15 14:27	EPA 6020A	
<b>8832-150608-054 (A5F0282-15) Matrix: Soil</b>								
Batch: 5060302								
Antimony	ND	---	1.06	mg/kg dry	10	06/10/15 14:30	EPA 6020A	
Arsenic	ND	---	1.06	"	"	"	"	
Beryllium	ND	---	0.213	"	"	"	"	
Cadmium	ND	---	0.213	"	"	"	"	
<b>Chromium</b>	<b>3.06</b>	---	1.06	"	"	"	"	
<b>Copper</b>	<b>5.15</b>	---	1.06	"	"	"	"	
<b>Lead</b>	<b>2.56</b>	---	0.213	"	"	"	"	
Mercury	ND	---	0.0850	"	"	"	"	
<b>Nickel</b>	<b>4.73</b>	---	1.06	"	"	"	"	
Selenium	ND	---	1.06	"	"	"	"	
Silver	ND	---	0.213	"	"	"	"	
Thallium	ND	---	0.213	"	"	"	"	
<b>Zinc</b>	<b>27.1</b>	---	4.25	"	"	"	"	
<b>8832-150608-055 (A5F0282-16) Matrix: Soil</b>								
Batch: 5060302								
<b>Lead</b>	<b>5.67</b>	---	0.242	mg/kg dry	10	06/10/15 14:39	EPA 6020A	
<b>8832-150608-056 (A5F0282-17) Matrix: Soil</b>								
Batch: 5060424								
Antimony	ND	---	1.37	mg/kg dry	10	06/15/15 13:45	EPA 6020A	
<b>Arsenic</b>	<b>4.28</b>	---	1.37	"	"	"	"	
<b>Cadmium</b>	<b>0.467</b>	---	0.274	"	"	"	"	
<b>Chromium</b>	<b>20.1</b>	---	1.37	"	"	"	"	
<b>Copper</b>	<b>25.5</b>	---	1.37	"	"	"	"	
<b>Lead</b>	<b>8.08</b>	---	0.274	"	"	"	"	
Mercury	ND	---	0.110	"	"	"	"	

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## ANALYTICAL SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150608-056 (A5F0282-17)			Matrix: Soil					
Nickel	20.0	---	5.49	mg/kg dry	10	"	EPA 6020A	
Selenium	ND	---	2.74	"	"	"	"	
Silver	ND	---	0.274	"	"	"	"	
Thallium	ND	---	0.274	"	"	"	"	
Zinc	55.0	---	5.49	"	"	"	"	
8832-150608-056 (A5F0282-17RE1)			Matrix: Soil					
Batch: 5060424								
Beryllium	2.21	---	0.274	mg/kg dry	10	06/15/15 16:13	EPA 6020A	
8832-150608-057 (A5F0282-18)			Matrix: Soil					
Batch: 5060424								
Lead	9.16	---	0.269	mg/kg dry	10	06/15/15 13:48	EPA 6020A	

DRAFT REPORT

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08/17/15 09:52

## ANALYTICAL SAMPLE RESULTS

### TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150605-046 (A5F0282-07)			Matrix: Soil					
Batch: 5070136								
Lead	0.118	---	0.0500	mg/L	5	07/08/15 00:33	1311/6020A	Q-44

DRAFT REPORT

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Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

08/17/15 09:52

**QUALITY CONTROL (QC) SAMPLE RESULTS****DRAFT: Total Hexavalent Chromium by EPA 7196A**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060314 - Method Prep: Non-Aq							Soil					
Blank (5060314-BLK1)					Prepared: 06/10/15 07:16		Analyzed: 06/11/15 13:28					
EPA 7196A												
Hexavalent Chromium	ND	---	2.25	mg/kg wet	1	---	---	---	---	---	---	
LCS (5060314-BS1)					Prepared: 06/10/15 07:16		Analyzed: 06/11/15 13:28					
EPA 7196A												
Hexavalent Chromium	19.9	---	2.25	mg/kg wet	1	20.0	---	100	80-120%	---	---	
Post Spike (5060314-PS1)					Prepared: 06/10/15 07:16		Analyzed: 06/11/15 13:28					
Hexavalent Chromium	0.404	---		mg/L	1	0.398	0.0388	92	85-115%		---	

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08/17/15 09:52

**QUALITY CONTROL (QC) SAMPLE RESULTS****DRAFT: Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060302 - EPA 3051A						Soil						
Blank (5060302-BLK1)						Prepared: 06/09/15 14:38    Analyzed: 06/10/15 13:08						
EPA 6020A												
Antimony	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	---	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Copper	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	---	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	---	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
LCS (5060302-BS1)						Prepared: 06/09/15 14:38    Analyzed: 06/10/15 13:11						
EPA 6020A												
Antimony	25.9	---	1.00	mg/kg wet	10	25.0	---	104	80-120%	---	---	
Arsenic	51.5	---	1.00	"	"	50.0	---	103	"	---	---	
Beryllium	24.6	---	0.200	"	"	25.0	---	98	"	---	---	
Cadmium	50.9	---	0.200	"	"	50.0	---	102	"	---	---	
Chromium	50.6	---	1.00	"	"	"	---	101	"	---	---	
Copper	50.0	---	1.00	"	"	"	---	100	"	---	---	
Lead	50.1	---	0.200	"	"	"	---	100	"	---	---	
Mercury	1.02	---	0.0800	"	"	1.00	---	102	"	---	---	
Nickel	49.6	---	1.00	"	"	50.0	---	99	"	---	---	
Selenium	26.5	---	1.00	"	"	25.0	---	106	"	---	---	
Silver	24.2	---	0.200	"	"	"	---	97	"	---	---	
Thallium	24.6	---	0.200	"	"	"	---	98	"	---	---	
Zinc	54.1	---	4.00	"	"	50.0	---	108	"	---	---	
Matrix Spike (5060302-MS2)						Prepared: 06/09/15 14:38    Analyzed: 06/10/15 14:33						

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**Reported:**

08/17/15 09:52

**QUALITY CONTROL (QC) SAMPLE RESULTS****DRAFT: Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060302 - EPA 3051A						Soil						
Matrix Spike (5060302-MS2)						Prepared: 06/09/15 14:38		Analyzed: 06/10/15 14:33				
QC Source Sample: 8832-150608-054 (A5F0282-15)												
EPA 6020A												
Antimony	26.0	---	1.08	mg/kg dry	10	27.0	ND	96	75-125%	---	---	
Arsenic	56.6	---	1.08	"	"	54.0	1.02	103	"	---	---	
Beryllium	26.5	---	0.216	"	"	27.0	ND	98	"	---	---	
Cadmium	54.4	---	0.216	"	"	54.0	0.191	100	"	---	---	
Chromium	57.4	---	1.08	"	"	"	3.06	101	"	---	---	
Copper	58.0	---	1.08	"	"	"	5.15	98	"	---	---	
Lead	54.7	---	0.216	"	"	"	2.56	97	"	---	---	
Mercury	1.04	---	0.0864	"	"	1.08	ND	96	"	---	---	
Nickel	57.3	---	1.08	"	"	54.0	4.73	97	"	---	---	
Selenium	27.7	---	1.08	"	"	27.0	ND	103	"	---	---	
Silver	25.9	---	0.216	"	"	"	ND	96	"	---	---	
Thallium	26.2	---	0.216	"	"	"	ND	97	"	---	---	
Zinc	81.3	---	4.32	"	"	54.0	27.1	100	"	---	---	
Post Spike (5060302-PS1)						Prepared: 06/09/15 14:38		Analyzed: 06/12/15 15:41				
Antimony	238	---		ug/L	10	249	0.896	95	80-120%		---	

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08/17/15 09:52

**QUALITY CONTROL (QC) SAMPLE RESULTS****DRAFT: Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060424 - EPA 3051A						Soil						
Blank (5060424-BLK1)						Prepared: 06/12/15 13:54		Analyzed: 06/15/15 13:22				
EPA 6020A												
Antimony	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	---	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Copper	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	---	4.00	"	"	---	---	---	---	---	---	
Selenium	ND	---	2.00	"	"	---	---	---	---	---	---	
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	---	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
LCS (5060424-BS1)						Prepared: 06/12/15 13:54		Analyzed: 06/15/15 13:25				
EPA 6020A												
Antimony	24.7	---	1.00	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Arsenic	52.4	---	1.00	"	"	50.0	---	105	"	---	---	
Beryllium	24.1	---	0.200	"	"	25.0	---	96	"	---	---	
Cadmium	51.2	---	0.200	"	"	50.0	---	102	"	---	---	
Chromium	51.0	---	1.00	"	"	"	---	102	"	---	---	
Copper	51.3	---	1.00	"	"	"	---	103	"	---	---	
Lead	49.5	---	0.200	"	"	"	---	99	"	---	---	
Mercury	0.957	---	0.0800	"	"	1.00	---	96	"	---	---	
Nickel	50.1	---	4.00	"	"	50.0	---	100	"	---	---	
Selenium	27.1	---	2.00	"	"	25.0	---	108	"	---	---	
Silver	23.3	---	0.200	"	"	"	---	93	"	---	---	
Thallium	23.9	---	0.200	"	"	"	---	96	"	---	---	
Zinc	51.9	---	4.00	"	"	50.0	---	104	"	---	---	

**DRAFT REPORT**

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Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**  
Project Number: 8832  
Project Manager: Rob Ede

Reported:  
08/17/15 09:52

QUALITY CONTROL (QC) SAMPLE RESULTS

DRAFT: TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5070136 - EPA 1311/3015							Solid					
Blank (5070136-BLK1)						Prepared: 07/07/15 09:29			Analyzed: 07/07/15 15:06			
1311/6020A												
Lead	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	TCLP
LCS (5070136-BS1)						Prepared: 07/07/15 09:29			Analyzed: 07/07/15 15:09			
1311/6020A												
Lead	2.58	---	0.0500	mg/L	5	2.50	---	103	80-120%	---	---	TCLP

DRAFT REPORT

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

08/17/15 09:52

**SAMPLE PREPARATION INFORMATION****Total Hexavalent Chromium by EPA 7196A****Prep: Method Prep: Non-Aq**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060314</b>							
A5F0282-03	Soil	EPA 7196A	06/05/15 09:31	06/10/15 07:16	2.5636g/111mL	2.5g/111mL	0.98
A5F0282-09	Soil	EPA 7196A	06/05/15 12:47	06/10/15 07:16	2.6491g/111mL	2.5g/111mL	0.94
A5F0282-14	Soil	EPA 7196A	06/05/15 15:23	06/10/15 07:16	2.5325g/111mL	2.5g/111mL	0.99

**Total Metals by EPA 6020 (ICPMS)****Prep: EPA 3051A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060302</b>							
A5F0282-01	Soil	EPA 6020A	06/05/15 09:15	06/09/15 14:38	0.461g/50mL	0.5g/50mL	1.08
A5F0282-02	Soil	EPA 6020A	06/05/15 09:22	06/09/15 14:38	0.457g/50mL	0.5g/50mL	1.09
A5F0282-03	Soil	EPA 6020A	06/05/15 09:31	06/09/15 14:38	0.456g/50mL	0.5g/50mL	1.10
A5F0282-04	Soil	EPA 6020A	06/05/15 09:37	06/09/15 14:38	0.473g/50mL	0.5g/50mL	1.06
A5F0282-07	Soil	EPA 6020A	06/05/15 12:26	06/09/15 14:38	0.469g/50mL	0.5g/50mL	1.07
A5F0282-08	Soil	EPA 6020A	06/05/15 12:37	06/09/15 14:38	0.471g/50mL	0.5g/50mL	1.06
A5F0282-09	Soil	EPA 6020A	06/05/15 12:47	06/09/15 14:38	0.479g/50mL	0.5g/50mL	1.04
A5F0282-10	Soil	EPA 6020A	06/05/15 12:58	06/09/15 14:38	0.518g/50mL	0.5g/50mL	0.97
A5F0282-11	Soil	EPA 6020A	06/05/15 13:05	06/09/15 14:38	0.462g/50mL	0.5g/50mL	1.08
A5F0282-12	Soil	EPA 6020A	06/05/15 13:16	06/09/15 14:38	0.484g/50mL	0.5g/50mL	1.03
A5F0282-14	Soil	EPA 6020A	06/05/15 15:23	06/09/15 14:38	0.48g/50mL	0.5g/50mL	1.04
A5F0282-15	Soil	EPA 6020A	06/08/15 08:33	06/09/15 14:38	0.499g/50mL	0.5g/50mL	1.00
A5F0282-16	Soil	EPA 6020A	06/08/15 08:43	06/09/15 14:38	0.457g/50mL	0.5g/50mL	1.09
<b>Batch: 5060424</b>							
A5F0282-17	Soil	EPA 6020A	06/08/15 08:54	06/12/15 13:58	0.475g/50mL	0.5g/50mL	1.05
A5F0282-17RE1	Soil	EPA 6020A	06/08/15 08:54	06/12/15 13:58	0.475g/50mL	0.5g/50mL	1.05
A5F0282-18	Soil	EPA 6020A	06/08/15 09:02	06/12/15 13:58	0.491g/50mL	0.5g/50mL	1.02

**TCLP Metals by EPA 6020 (ICPMS)****Prep: EPA 1311/3015**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5070136</b>							
A5F0282-07	Soil	1311/6020A	06/05/15 12:26	07/07/15 09:29	5mL/50mL	5mL/50mL	1.00

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## Hahn and Associates

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

Reported:

08/17/15 09:52

## Notes and Definitions

### Qualifiers:

- Q-44 Room temperature during the 18 hr. TCLP tumbling procedure exceeded EPA recommended temperature range by no more than +/-2 degrees C for a maximum of 7.5 hours
- TCLP This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 5070120.

### Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to 1/2 the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.
- For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.
- Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- \*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

DRAFT REPORT

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**Hahn and Associates**  
434 NW 6th Ave. Suite 203  
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Project: **POVRED**  
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Project Manager: Rob Ede

**Reported:**  
08/17/15 09:52

[illegible]

DRAFT REPORT

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# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Thursday, July 9, 2015

Rob Ede  
Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209

RE: POVRED / 8832

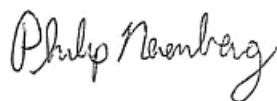
Enclosed are the results of analyses for work order A5F0362, which was received by the laboratory on 6/10/2015 at 11:40:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

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Apex Laboratories



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Philip Nerenberg, Lab Director

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Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

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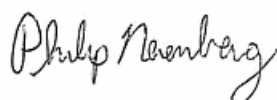
06/30/15 15:07

## ANALYTICAL REPORT FOR SAMPLES

### SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
8832-150609-060	A5F0362-01	Soil	06/09/15 08:28	06/10/15 11:40
8832-150609-061	A5F0362-02	Soil	06/09/15 08:35	06/10/15 11:40
8832-150609-062	A5F0362-03	Soil	06/09/15 08:42	06/10/15 11:40
8832-150609-063	A5F0362-04	Soil	06/09/15 08:48	06/10/15 11:40
8832-150609-064	A5F0362-05	Soil	06/09/15 08:56	06/10/15 11:40
8832-150609-065	A5F0362-06	Soil	06/09/15 09:14	06/10/15 11:40
8832-150609-066	A5F0362-07	Soil	06/09/15 09:40	06/10/15 11:40
8832-150609-067	A5F0362-08	Soil	06/09/15 12:32	06/10/15 11:40
8832-150609-068	A5F0362-09	Soil	06/09/15 12:41	06/10/15 11:40
8832-150609-069	A5F0362-10	Soil	06/09/15 12:54	06/10/15 11:40
8832-150609-070	A5F0362-11	Soil	06/09/15 13:03	06/10/15 11:40
8832-150609-071	A5F0362-12	Soil	06/09/15 13:15	06/10/15 11:40
8832-150609-072	A5F0362-13	Soil	06/09/15 13:20	06/10/15 11:40

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

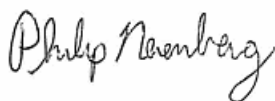
**Reported:**

06/30/15 15:07

**ANALYTICAL SAMPLE RESULTS****Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-060 (A5F0362-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060427</b>			
Diesel	ND	8.45	25.0	mg/kg dry	1	06/12/15 23:43	NWTPH-Dx	
Oil	<b>105</b>	16.9	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150609-061 (A5F0362-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060427</b>			
Diesel	ND	9.86	25.0	mg/kg dry	1	06/13/15 00:23	NWTPH-Dx	
Oil	ND	19.7	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150609-062 (A5F0362-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060427</b>			
Diesel	ND	7.87	25.0	mg/kg dry	1	06/13/15 00:42	NWTPH-Dx	
Oil	ND	15.7	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150609-065 (A5F0362-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060427</b>			
<b>Diesel</b>	<b>289</b>	11.4	25.0	mg/kg dry	1	06/13/15 01:02	NWTPH-Dx	F-11, F-15
<b>Oil</b>	<b>200</b>	22.8	50.0	"	"	"	"	F-16
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150609-066 (A5F0362-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060427</b>			
Diesel	ND	11.5	25.0	mg/kg dry	1	06/13/15 01:42	NWTPH-Dx	
Oil	<b>108</b>	22.9	50.0	"	"	"	"	F-13
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 89 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150609-067 (A5F0362-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060427</b>			
<b>Diesel</b>	<b>4080</b>	87.4	175	mg/kg dry	10	06/13/15 02:21	NWTPH-Dx	F-15
<b>Oil</b>	<b>4190</b>	175	349	"	"	"	"	F-16
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		"	"	S-05
<b>8832-150609-068 (A5F0362-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060427</b>			
Diesel	ND	10.2	25.0	mg/kg dry	1	06/13/15 03:01	NWTPH-Dx	
Oil	ND	20.3	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 87 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150609-069 (A5F0362-10)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060427</b>			
Diesel	ND	11.4	25.0	mg/kg dry	1	06/13/15 03:21	NWTPH-Dx	
Oil	ND	22.7	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		"	"	"

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Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

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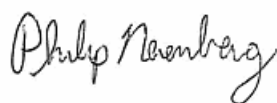
06/30/15 15:07

## ANALYTICAL SAMPLE RESULTS

### Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-070 (A5F0362-11)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060427</b>			
Diesel	ND	11.8	25.0	mg/kg dry	1	06/13/15 03:40	NWTPH-Dx	
<b>Oil</b>	<b>27.7</b>	23.6	50.0	"	"	"	"	J
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 83 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

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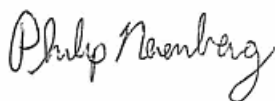
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## ANALYTICAL SAMPLE RESULTS

### Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-060 (A5F0362-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060415</b>		<b>V-16</b>	
Gasoline Range Organics	ND	2.43	4.85	mg/kg dry	50	06/12/15 15:29	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 97 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>92 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<b>8832-150609-061 (A5F0362-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060415</b>			
Gasoline Range Organics	ND	3.33	6.67	mg/kg dry	50	06/12/15 16:19	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 102 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>92 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<b>8832-150609-065 (A5F0362-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060415</b>			
Gasoline Range Organics	ND	3.86	7.73	mg/kg dry	50	06/12/15 16:45	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 104 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>92 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<b>8832-150609-067 (A5F0362-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060415</b>			
Gasoline Range Organics	<b>3020</b>	32.6	65.3	mg/kg dry	500	06/12/15 17:10	NWTPH-Gx (MS)	F-13
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 135 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>94 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<b>8832-150609-068 (A5F0362-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060415</b>			
Gasoline Range Organics	ND	6.84	6.84	mg/kg dry	50	06/12/15 17:35	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 103 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>93 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

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Philip Nerenberg, Lab Director

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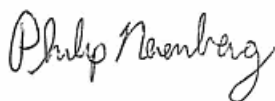
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

06/30/15 15:07

**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-060 (A5F0362-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060415</b>			<b>V-16</b>
Acetone	ND	485	971	ug/kg dry	50	06/12/15 15:29	5035/8260B	
Benzene	ND	6.07	12.1	"	"	"	"	
Bromobenzene	ND	12.1	24.3	"	"	"	"	
Bromochloromethane	ND	24.3	48.5	"	"	"	"	
Bromodichloromethane	ND	24.3	48.5	"	"	"	"	
Bromoform	ND	24.3	48.5	"	"	"	"	
Bromomethane	ND	485	485	"	"	"	"	
2-Butanone (MEK)	ND	243	485	"	"	"	"	
n-Butylbenzene	ND	24.3	48.5	"	"	"	"	
sec-Butylbenzene	ND	24.3	48.5	"	"	"	"	
tert-Butylbenzene	ND	24.3	48.5	"	"	"	"	
Carbon tetrachloride	ND	12.1	24.3	"	"	"	"	
Chlorobenzene	ND	12.1	24.3	"	"	"	"	
Chloroethane	ND	243	485	"	"	"	"	
Chloroform	ND	24.3	48.5	"	"	"	"	
Chloromethane	ND	121	243	"	"	"	"	
2-Chlorotoluene	ND	24.3	48.5	"	"	"	"	
4-Chlorotoluene	ND	24.3	48.5	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	121	243	"	"	"	"	
Dibromochloromethane	ND	48.5	97.1	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	12.1	24.3	"	"	"	"	
Dibromomethane	ND	24.3	48.5	"	"	"	"	
1,2-Dichlorobenzene	ND	12.1	24.3	"	"	"	"	
1,3-Dichlorobenzene	ND	12.1	24.3	"	"	"	"	
1,4-Dichlorobenzene	ND	12.1	24.3	"	"	"	"	
Dichlorodifluoromethane	ND	48.5	97.1	"	"	"	"	
1,1-Dichloroethane	ND	12.1	24.3	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	12.1	24.3	"	"	"	"	
1,1-Dichloroethene	ND	12.1	24.3	"	"	"	"	
cis-1,2-Dichloroethene	ND	12.1	24.3	"	"	"	"	
trans-1,2-Dichloroethene	ND	12.1	24.3	"	"	"	"	
1,2-Dichloropropane	ND	12.1	24.3	"	"	"	"	
1,3-Dichloropropane	ND	24.3	48.5	"	"	"	"	
2,2-Dichloropropane	ND	24.3	48.5	"	"	"	"	
1,1-Dichloropropene	ND	24.3	48.5	"	"	"	"	

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Project Number: 8832

Project Manager: Rob Ede

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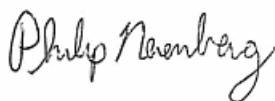
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-060 (A5F0362-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060415</b>			<b>V-16</b>
cis-1,3-Dichloropropene	ND	24.3	48.5	ug/kg dry	50	"	5035/8260B	
trans-1,3-Dichloropropene	ND	24.3	48.5	"	"	"	"	
Ethylbenzene	ND	12.1	24.3	"	"	"	"	
Hexachlorobutadiene	ND	48.5	97.1	"	"	"	"	
2-Hexanone	ND	24.3	48.5	"	"	"	"	
Isopropylbenzene	ND	24.3	48.5	"	"	"	"	
4-Isopropyltoluene	ND	24.3	48.5	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	24.3	48.5	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	24.3	48.5	"	"	"	"	
Methylene chloride	ND	12.1	24.3	"	"	"	"	
Naphthalene	ND	48.5	97.1	"	"	"	"	
n-Propylbenzene	ND	12.1	24.3	"	"	"	"	
Styrene	ND	24.3	48.5	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	12.1	24.3	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	12.1	24.3	"	"	"	"	
Tetrachloroethene (PCE)	ND	12.1	24.3	"	"	"	"	
Toluene	ND	24.3	48.5	"	"	"	"	
1,2,3-Trichlorobenzene	ND	12.1	24.3	"	"	"	"	
1,2,4-Trichlorobenzene	ND	12.1	24.3	"	"	"	"	
1,1,1-Trichloroethane	ND	12.1	24.3	"	"	"	"	
1,1,2-Trichloroethane	ND	12.1	24.3	"	"	"	"	
Trichloroethene (TCE)	ND	12.1	24.3	"	"	"	"	
Trichlorofluoromethane	ND	48.5	97.1	"	"	"	"	
1,2,3-Trichloropropane	ND	24.3	48.5	"	"	"	"	
1,2,4-Trimethylbenzene	ND	24.3	48.5	"	"	"	"	
1,3,5-Trimethylbenzene	ND	24.3	48.5	"	"	"	"	
Vinyl chloride	ND	12.1	24.3	"	"	"	"	
m,p-Xylene	ND	24.3	48.5	"	"	"	"	
o-Xylene	ND	12.1	24.3	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>		<i>97 %</i>		<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>Limits: 70-130 %</i>	"	"	"	

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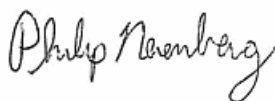
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## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-065 (A5F0362-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060415</b>			
Acetone	ND	773	1550	ug/kg dry	50	06/12/15 16:45	5035/8260B	
Benzene	ND	9.66	19.3	"	"	"	"	
Bromobenzene	ND	19.3	38.6	"	"	"	"	
Bromochloromethane	ND	38.6	77.3	"	"	"	"	
Bromodichloromethane	ND	38.6	77.3	"	"	"	"	
Bromoform	ND	38.6	77.3	"	"	"	"	
Bromomethane	ND	773	773	"	"	"	"	
2-Butanone (MEK)	ND	386	773	"	"	"	"	
n-Butylbenzene	ND	38.6	77.3	"	"	"	"	
sec-Butylbenzene	ND	38.6	77.3	"	"	"	"	
tert-Butylbenzene	ND	38.6	77.3	"	"	"	"	
Carbon tetrachloride	ND	19.3	38.6	"	"	"	"	
Chlorobenzene	ND	19.3	38.6	"	"	"	"	
Chloroethane	ND	386	773	"	"	"	"	
Chloroform	ND	38.6	77.3	"	"	"	"	
Chloromethane	ND	193	386	"	"	"	"	
2-Chlorotoluene	ND	38.6	77.3	"	"	"	"	
4-Chlorotoluene	ND	38.6	77.3	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	193	386	"	"	"	"	
Dibromochloromethane	ND	77.3	155	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	19.3	38.6	"	"	"	"	
Dibromomethane	ND	38.6	77.3	"	"	"	"	
1,2-Dichlorobenzene	ND	19.3	38.6	"	"	"	"	
1,3-Dichlorobenzene	ND	19.3	38.6	"	"	"	"	
1,4-Dichlorobenzene	ND	19.3	38.6	"	"	"	"	
Dichlorodifluoromethane	ND	77.3	155	"	"	"	"	
1,1-Dichloroethane	ND	19.3	38.6	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	19.3	38.6	"	"	"	"	
1,1-Dichloroethene	ND	19.3	38.6	"	"	"	"	
cis-1,2-Dichloroethene	ND	19.3	38.6	"	"	"	"	
trans-1,2-Dichloroethene	ND	19.3	38.6	"	"	"	"	
1,2-Dichloropropane	ND	19.3	38.6	"	"	"	"	
1,3-Dichloropropane	ND	38.6	77.3	"	"	"	"	
2,2-Dichloropropane	ND	38.6	77.3	"	"	"	"	
1,1-Dichloropropene	ND	38.6	77.3	"	"	"	"	

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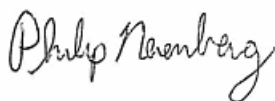
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**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-065 (A5F0362-06)</b>		<b>Matrix: Soil</b>		<b>Batch: 5060415</b>				
cis-1,3-Dichloropropene	ND	38.6	77.3	ug/kg dry	50	"	5035/8260B	
trans-1,3-Dichloropropene	ND	38.6	77.3	"	"	"	"	
Ethylbenzene	ND	19.3	38.6	"	"	"	"	
Hexachlorobutadiene	ND	77.3	155	"	"	"	"	
2-Hexanone	ND	386	773	"	"	"	"	
Isopropylbenzene	ND	38.6	77.3	"	"	"	"	
4-Isopropyltoluene	ND	38.6	77.3	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	386	773	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	38.6	77.3	"	"	"	"	
Methylene chloride	ND	193	386	"	"	"	"	
Naphthalene	ND	77.3	155	"	"	"	"	
n-Propylbenzene	ND	19.3	38.6	"	"	"	"	
Styrene	ND	38.6	77.3	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	19.3	38.6	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	19.3	38.6	"	"	"	"	
Tetrachloroethene (PCE)	ND	19.3	38.6	"	"	"	"	
Toluene	ND	38.6	77.3	"	"	"	"	
1,2,3-Trichlorobenzene	ND	193	386	"	"	"	"	
1,2,4-Trichlorobenzene	ND	193	386	"	"	"	"	
1,1,1-Trichloroethane	ND	19.3	38.6	"	"	"	"	
1,1,2-Trichloroethane	ND	19.3	38.6	"	"	"	"	
Trichloroethene (TCE)	ND	19.3	38.6	"	"	"	"	
Trichlorofluoromethane	ND	77.3	155	"	"	"	"	
1,2,3-Trichloropropane	ND	38.6	77.3	"	"	"	"	
1,2,4-Trimethylbenzene	ND	38.6	77.3	"	"	"	"	
1,3,5-Trimethylbenzene	ND	38.6	77.3	"	"	"	"	
Vinyl chloride	ND	19.3	38.6	"	"	"	"	
m,p-Xylene	ND	38.6	77.3	"	"	"	"	
o-Xylene	ND	19.3	38.6	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>		<i>96 %</i>		<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>		<i>95 %</i>		<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>		<i>103 %</i>		<i>Limits: 70-130 %</i>	"	"	"	

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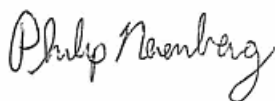
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## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-067 (A5F0362-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060415</b>			
Acetone	ND	6530	13100	ug/kg dry	500	06/12/15 17:10	5035/8260B	
Benzene	ND	81.6	163	"	"	"	"	
Bromobenzene	ND	163	326	"	"	"	"	
Bromochloromethane	ND	326	653	"	"	"	"	
Bromodichloromethane	ND	326	653	"	"	"	"	
Bromoform	ND	326	653	"	"	"	"	
Bromomethane	ND	6530	6530	"	"	"	"	
2-Butanone (MEK)	ND	3260	6530	"	"	"	"	
<b>n-Butylbenzene</b>	<b>3490</b>	326	653	"	"	"	"	M-02
<b>sec-Butylbenzene</b>	<b>1360</b>	326	653	"	"	"	"	
tert-Butylbenzene	ND	326	653	"	"	"	"	
Carbon tetrachloride	ND	163	326	"	"	"	"	
Chlorobenzene	ND	163	326	"	"	"	"	
Chloroethane	ND	3260	6530	"	"	"	"	
Chloroform	ND	326	653	"	"	"	"	
Chloromethane	ND	1630	3260	"	"	"	"	
2-Chlorotoluene	ND	326	653	"	"	"	"	
4-Chlorotoluene	ND	326	653	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	1630	3260	"	"	"	"	
Dibromochloromethane	ND	653	1310	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	163	326	"	"	"	"	
Dibromomethane	ND	326	653	"	"	"	"	
1,2-Dichlorobenzene	ND	653	653	"	"	"	"	R-02
1,3-Dichlorobenzene	ND	163	326	"	"	"	"	
1,4-Dichlorobenzene	ND	163	326	"	"	"	"	
Dichlorodifluoromethane	ND	653	1310	"	"	"	"	
1,1-Dichloroethane	ND	163	326	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	163	326	"	"	"	"	
1,1-Dichloroethene	ND	163	326	"	"	"	"	
cis-1,2-Dichloroethene	ND	163	326	"	"	"	"	
trans-1,2-Dichloroethene	ND	163	326	"	"	"	"	
1,2-Dichloropropane	ND	163	326	"	"	"	"	
1,3-Dichloropropane	ND	326	653	"	"	"	"	
2,2-Dichloropropane	ND	326	653	"	"	"	"	
1,1-Dichloropropene	ND	326	653	"	"	"	"	

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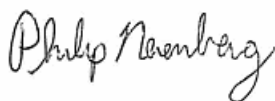
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## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-067 (A5F0362-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060415</b>			
cis-1,3-Dichloropropene	ND	326	653	ug/kg dry	500	"	5035/8260B	
trans-1,3-Dichloropropene	ND	326	653	"	"	"	"	
<b>Ethylbenzene</b>	<b>2780</b>	163	326	"	"	"	"	
Hexachlorobutadiene	ND	653	1310	"	"	"	"	
2-Hexanone	ND	3260	6530	"	"	"	"	
<b>Isopropylbenzene</b>	<b>3410</b>	326	653	"	"	"	"	
<b>4-Isopropyltoluene</b>	<b>6370</b>	326	653	"	"	"	"	M-02
4-Methyl-2-pentanone (MiBK)	ND	3260	6530	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	326	653	"	"	"	"	
Methylene chloride	ND	1630	3260	"	"	"	"	
<b>n-Propylbenzene</b>	<b>2470</b>	163	326	"	"	"	"	
Styrene	ND	326	653	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	163	326	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	783	783	"	"	"	"	R-02
Tetrachloroethene (PCE)	ND	163	326	"	"	"	"	
Toluene	ND	326	653	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1630	3260	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1630	3260	"	"	"	"	
1,1,1-Trichloroethane	ND	163	326	"	"	"	"	
1,1,2-Trichloroethane	ND	163	326	"	"	"	"	
Trichloroethene (TCE)	ND	163	326	"	"	"	"	
Trichlorofluoromethane	ND	653	1310	"	"	"	"	
1,2,3-Trichloropropane	ND	653	653	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>67200</b>	326	653	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>9990</b>	326	653	"	"	"	"	
Vinyl chloride	ND	163	326	"	"	"	"	
<b>m,p-Xylene</b>	<b>973</b>	326	653	"	"	"	"	
<b>o-Xylene</b>	<b>7370</b>	163	326	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>		<i>97 %</i>		<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>		<i>91 %</i>		<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>Limits: 70-130 %</i>	"	"	"	

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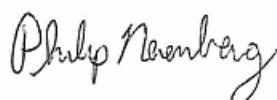
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## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-067 (A5F0362-08RE2)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060381</b>			
<b>Naphthalene</b>	<b>200000</b>	6530	13100	ug/kg dry	5000	06/15/15 22:13	5035/8260B	
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 112 %</i>	<i>Limits: 70-130 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>			<i>116 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>93 %</i>	<i>Limits: 70-130 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>93 %</i>	<i>Limits: 70-130 %</i>	"	"	"	

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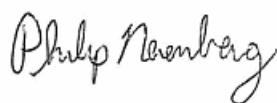
06/30/15 15:07

## ANALYTICAL SAMPLE RESULTS

### Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-067 (A5F0362-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060667</b>			<b>C-07</b>
Aroclor 1016	ND	5.12	10.2	ug/kg dry	1	06/23/15 13:53	EPA 8082A	
Aroclor 1221	ND	5.12	10.2	"	"	"	"	
Aroclor 1232	ND	5.12	10.2	"	"	"	"	
Aroclor 1242	ND	5.12	10.2	"	"	"	"	
Aroclor 1248	ND	5.12	10.2	"	"	"	"	
Aroclor 1254	ND	5.12	10.2	"	"	"	"	
Aroclor 1260	ND	11.3	11.3	"	"	"	"	R-02
<i>Surrogate: Decachlorobiphenyl (Surr)</i>			<i>Recovery: 97 %</i>	<i>Limits: 72-126 %</i>	"	"	"	<i>Q-41</i>

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Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

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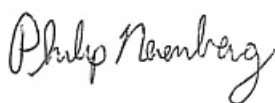
06/30/15 15:07

## ANALYTICAL SAMPLE RESULTS

### Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-060 (A5F0362-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060413</b>			
Acenaphthene	ND	4.77	9.53	ug/kg dry	1	06/15/15 18:29	EPA 8270D (SIM)	
Acenaphthylene	ND	4.77	9.53	"	"	"	"	
Anthracene	ND	4.77	9.53	"	"	"	"	
<b>Benzo(a)anthracene</b>	<b>7.44</b>	4.77	9.53	"	"	"	"	J
<b>Benzo(a)pyrene</b>	<b>7.95</b>	4.77	9.53	"	"	"	"	J
<b>Benzo(b)fluoranthene</b>	<b>11.6</b>	4.77	9.53	"	"	"	"	M-02
Benzo(k)fluoranthene	ND	4.77	9.53	"	"	"	"	
<b>Benzo(g,h,i)perylene</b>	<b>7.27</b>	4.77	9.53	"	"	"	"	J
<b>Chrysene</b>	<b>11.5</b>	4.77	9.53	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	4.77	9.53	"	"	"	"	
Dibenzofuran	ND	4.77	9.53	"	"	"	"	
<b>Fluoranthene</b>	<b>8.34</b>	4.77	9.53	"	"	"	"	J
Fluorene	ND	4.77	9.53	"	"	"	"	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>7.38</b>	4.77	9.53	"	"	"	"	J
1-Methylnaphthalene	ND	4.77	9.53	"	"	"	"	
2-Methylnaphthalene	ND	4.77	9.53	"	"	"	"	
Naphthalene	ND	4.77	9.53	"	"	"	"	
Phenanthrene	ND	4.77	9.53	"	"	"	"	
<b>Pyrene</b>	<b>9.69</b>	4.77	9.53	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 94 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>103 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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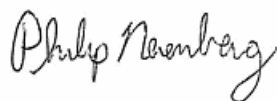
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## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-061 (A5F0362-02RE1)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060413</b>			
Acenaphthene	ND	4.61	9.22	ug/kg dry	1	06/16/15 20:00	EPA 8270D (SIM)	
Acenaphthylene	ND	4.61	9.22	"	"	"	"	
Anthracene	ND	4.61	9.22	"	"	"	"	
<b>Benz(a)anthracene</b>	<b>7.25</b>	4.61	9.22	"	"	"	"	J
<b>Benzo(a)pyrene</b>	<b>6.91</b>	4.61	9.22	"	"	"	"	J
<b>Benzo(b)fluoranthene</b>	<b>7.17</b>	4.61	9.22	"	"	"	"	J, M-02
Benzo(k)fluoranthene	ND	4.61	9.22	"	"	"	"	M-02
<b>Benzo(g,h,i)perylene</b>	<b>6.33</b>	4.61	9.22	"	"	"	"	J
<b>Chrysene</b>	<b>7.81</b>	4.61	9.22	"	"	"	"	J
Dibenz(a,h)anthracene	ND	4.61	9.22	"	"	"	"	
Dibenzofuran	ND	4.61	9.22	"	"	"	"	
<b>Fluoranthene</b>	<b>8.01</b>	4.61	9.22	"	"	"	"	J
Fluorene	ND	4.61	9.22	"	"	"	"	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>6.62</b>	4.61	9.22	"	"	"	"	J
1-Methylnaphthalene	ND	4.61	9.22	"	"	"	"	
2-Methylnaphthalene	ND	4.61	9.22	"	"	"	"	
Naphthalene	ND	4.61	9.22	"	"	"	"	
Phenanthrene	ND	4.61	9.22	"	"	"	"	
<b>Pyrene</b>	<b>9.28</b>	4.61	9.22	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 92 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>88 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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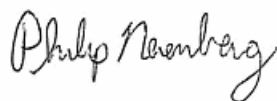
06/30/15 15:07

## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-065 (A5F0362-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060413</b>			
Acenaphthene	ND	49.8	49.8	ug/kg dry	1	06/15/15 19:23	EPA 8270D (SIM)	R-02
Acenaphthylene	ND	12.7	12.7	"	"	"	"	R-02
Anthracene	ND	26.6	26.6	"	"	"	"	R-02
<b>Benz(a)anthracene</b>	<b>35.0</b>	5.78	11.6	"	"	"	"	M-02
<b>Benzo(a)pyrene</b>	<b>18.1</b>	5.78	11.6	"	"	"	"	
<b>Benzo(b)fluoranthene</b>	<b>27.9</b>	5.78	11.6	"	"	"	"	M-02
<b>Benzo(k)fluoranthene</b>	<b>6.72</b>	5.78	11.6	"	"	"	"	J
<b>Benzo(g,h,i)perylene</b>	<b>13.6</b>	5.78	11.6	"	"	"	"	
<b>Chrysene</b>	<b>93.8</b>	5.78	11.6	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	5.78	11.6	"	"	"	"	
Dibenzofuran	ND	127	127	"	"	"	"	R-02
<b>Fluoranthene</b>	<b>84.3</b>	5.78	11.6	"	"	"	"	
<b>Fluorene</b>	<b>99.7</b>	5.78	11.6	"	"	"	"	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>10.3</b>	5.78	11.6	"	"	"	"	J
<b>1-Methylnaphthalene</b>	<b>197</b>	5.78	11.6	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>320</b>	5.78	11.6	"	"	"	"	
<b>Naphthalene</b>	<b>181</b>	5.78	11.6	"	"	"	"	
<b>Phenanthrene</b>	<b>151</b>	5.78	11.6	"	"	"	"	
<b>Pyrene</b>	<b>96.2</b>	5.78	11.6	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			Recovery: 92 %	Limits: 44-115 %	"	"	"	
p-Terphenyl-d14 (Surr)			101 %	Limits: 54-127 %	"	"	"	

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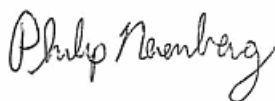
06/30/15 15:07

## ANALYTICAL SAMPLE RESULTS

### Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-067 (A5F0362-08RE1)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060413</b>			
Acenaphthene	3330	94.0	188	ug/kg dry	20	06/16/15 20:27	EPA 8270D (SIM)	
Acenaphthylene	ND	827	827	"	"	"	"	R-02
Anthracene	4580	94.0	188	"	"	"	"	
Benz(a)anthracene	2700	94.0	188	"	"	"	"	
Benzo(a)pyrene	2600	94.0	188	"	"	"	"	
Benzo(b)fluoranthene	2440	94.0	188	"	"	"	"	M-02
Benzo(k)fluoranthene	795	94.0	188	"	"	"	"	M-02
Benzo(g,h,i)perylene	2060	94.0	188	"	"	"	"	
Chrysene	4460	94.0	188	"	"	"	"	
Dibenz(a,h)anthracene	339	94.0	188	"	"	"	"	
Dibenzofuran	1040	94.0	188	"	"	"	"	
Fluoranthene	7130	94.0	188	"	"	"	"	
Fluorene	6230	94.0	188	"	"	"	"	
Indeno(1,2,3-cd)pyrene	1610	94.0	188	"	"	"	"	
1-Methylnaphthalene	23000	94.0	188	"	"	"	"	
2-Methylnaphthalene	23700	94.0	188	"	"	"	"	
Naphthalene	48400	94.0	188	"	"	"	"	
Phenanthrene	21200	94.0	188	"	"	"	"	
Pyrene	9300	94.0	188	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			Recovery: 105 %	Limits: 44-115 %	"	"	"	
p-Terphenyl-d14 (Surr)			93 %	Limits: 54-127 %	"	"	"	

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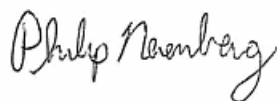
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## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-068 (A5F0362-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060413</b>			
<b>Acenaphthene</b>	<b>11.9</b>	5.20	10.4	ug/kg dry	1	06/15/15 20:16	EPA 8270D (SIM)	
Acenaphthylene	ND	5.20	10.4	"	"	"	"	
Anthracene	ND	5.20	10.4	"	"	"	"	
Benz(a)anthracene	ND	5.20	10.4	"	"	"	"	
Benzo(a)pyrene	ND	5.20	10.4	"	"	"	"	
Benzo(b)fluoranthene	ND	5.20	10.4	"	"	"	"	
Benzo(k)fluoranthene	ND	5.20	10.4	"	"	"	"	
Benzo(g,h,i)perylene	ND	5.20	10.4	"	"	"	"	
Chrysene	ND	5.20	10.4	"	"	"	"	
Dibenz(a,h)anthracene	ND	5.20	10.4	"	"	"	"	
Dibenzofuran	ND	5.20	10.4	"	"	"	"	
Fluoranthene	ND	5.20	10.4	"	"	"	"	
<b>Fluorene</b>	<b>7.37</b>	5.20	10.4	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	5.20	10.4	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>84.3</b>	5.20	10.4	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>6.25</b>	5.20	10.4	"	"	"	"	J
<b>Naphthalene</b>	<b>31.6</b>	5.20	10.4	"	"	"	"	
<b>Phenanthrene</b>	<b>6.24</b>	5.20	10.4	"	"	"	"	J
Pyrene	ND	5.20	10.4	"	"	"	"	
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>			<i>Recovery: 89 %</i>	<i>Limits: 44-115 %</i>	"	"	"	
<i>p-Terphenyl-d14 (Surr)</i>			<i>103 %</i>	<i>Limits: 54-127 %</i>	"	"	"	

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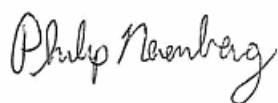
06/30/15 15:07

## ANALYTICAL SAMPLE RESULTS

### Total Hexavalent Chromium by EPA 7196A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-069 (A5F0362-10)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060485</b>			
Hexavalent Chromium	ND	1.45	2.83	mg/kg dry	1	06/16/15 13:23	EPA 7196A	

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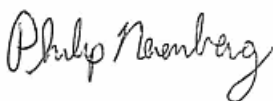
06/30/15 15:07

## ANALYTICAL SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-060 (A5F0362-01) Matrix: Soil</b>								
Batch: 5060424								
Antimony	ND	0.549	1.10	mg/kg dry	10	06/15/15 14:06	EPA 6020A	
Arsenic	1.27	0.549	1.10	"	"	"	"	
Beryllium	0.560	0.110	0.220	"	"	"	"	
Cadmium	0.725	0.110	0.220	"	"	"	"	
Chromium	7.02	0.549	1.10	"	"	"	"	
Copper	28.1	0.549	1.10	"	"	"	"	
Lead	24.2	0.110	0.220	"	"	"	"	
Mercury	ND	0.0439	0.0879	"	"	"	"	
Nickel	10.3	0.549	4.39	"	"	"	"	
Selenium	0.703	0.549	2.20	"	"	"	"	J
Silver	ND	0.110	0.220	"	"	"	"	
Thallium	0.110	0.110	0.220	"	"	"	"	J
Zinc	61.6	2.20	4.39	"	"	"	"	
<b>8832-150609-061 (A5F0362-02) Matrix: Soil</b>								
Batch: 5060496								
Lead	20.8	0.112	0.223	mg/kg dry	10	06/16/15 19:22	EPA 6020A	
<b>8832-150609-062 (A5F0362-03) Matrix: Soil</b>								
Batch: 5060496								
Lead	2.60	0.112	0.225	mg/kg dry	10	06/16/15 19:25	EPA 6020A	
<b>8832-150609-063 (A5F0362-04) Matrix: Soil</b>								
Batch: 5060496								
Lead	3.12	0.112	0.225	mg/kg dry	10	06/16/15 19:28	EPA 6020A	
<b>8832-150609-064 (A5F0362-05) Matrix: Soil</b>								
Batch: 5060496								
Lead	13.4	0.127	0.253	mg/kg dry	10	06/16/15 19:31	EPA 6020A	
<b>8832-150609-065 (A5F0362-06) Matrix: Soil</b>								
Batch: 5060496								
Antimony	ND	0.744	1.49	mg/kg dry	10	06/16/15 19:49	EPA 6020A	
Arsenic	5.25	0.744	1.49	"	"	"	"	
Beryllium	0.402	0.149	0.298	"	"	"	"	
Cadmium	0.640	0.149	1.49	"	"	"	"	J
Chromium	14.7	0.744	2.98	"	"	"	"	
Copper	29.2	0.744	1.49	"	"	"	"	
Lead	20.8	0.149	0.298	"	"	"	"	

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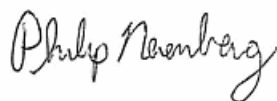
## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-065 (A5F0362-06) Matrix: Soil</b>								
Mercury	0.435	0.0595	0.119	mg/kg dry	10	"	EPA 6020A	
Nickel	14.6	0.744	5.95	"	"	"	"	
Selenium	ND	0.744	1.49	"	"	"	"	
Silver	ND	0.149	0.298	"	"	"	"	
Thallium	ND	0.149	0.298	"	"	"	"	
Zinc	89.8	2.98	5.95	"	"	"	"	
<b>8832-150609-066 (A5F0362-07) Matrix: Soil</b>								
Batch: 5060496								
Lead	16.8	0.133	0.265	mg/kg dry	10	06/16/15 19:51	EPA 6020A	
<b>8832-150609-067 (A5F0362-08) Matrix: Soil</b>								
Batch: 5060496								
Antimony	1.10	0.573	1.15	mg/kg dry	10	06/16/15 19:55	EPA 6020A	J
Arsenic	2.18	0.573	1.15	"	"	"	"	
Beryllium	0.298	0.115	0.229	"	"	"	"	
Cadmium	0.515	0.115	1.15	"	"	"	"	J
Chromium	8.91	0.573	2.29	"	"	"	"	
Copper	33.2	0.573	1.15	"	"	"	"	
Lead	119	0.115	0.229	"	"	"	"	
Mercury	0.227	0.0458	0.0916	"	"	"	"	
Nickel	16.7	0.573	4.58	"	"	"	"	
Selenium	ND	0.573	1.15	"	"	"	"	
Silver	0.137	0.115	0.229	"	"	"	"	J
Thallium	ND	0.115	0.229	"	"	"	"	
Zinc	88.1	2.29	4.58	"	"	"	"	
<b>8832-150609-068 (A5F0362-09) Matrix: Soil</b>								
Batch: 5060496								
Lead	9.73	0.133	0.267	mg/kg dry	10	06/16/15 19:57	EPA 6020A	
<b>8832-150609-069 (A5F0362-10) Matrix: Soil</b>								
Batch: 5060496								
Antimony	ND	0.654	1.31	mg/kg dry	10	06/16/15 20:00	EPA 6020A	
Arsenic	3.64	0.654	1.31	"	"	"	"	
Beryllium	0.445	0.131	0.262	"	"	"	"	
Cadmium	0.497	0.131	1.31	"	"	"	"	J
Copper	21.5	0.654	1.31	"	"	"	"	
Lead	6.64	0.131	0.262	"	"	"	"	

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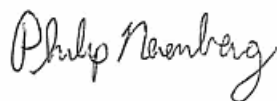
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Project Manager: Rob Ede**Reported:**

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**ANALYTICAL SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150609-069 (A5F0362-10)			Matrix: Soil					
Mercury	ND	0.0523	0.105	mg/kg dry	10	"	EPA 6020A	
Nickel	12.0	0.654	5.23	"	"	"	"	
Selenium	ND	0.654	1.31	"	"	"	"	
Silver	ND	0.131	0.262	"	"	"	"	
Thallium	ND	0.131	0.262	"	"	"	"	
Zinc	53.0	2.62	5.23	"	"	"	"	
8832-150609-070 (A5F0362-11)			Matrix: Soil					
Batch: 5060496								
Lead	16.4	0.147	0.294	mg/kg dry	10	06/16/15 20:03	EPA 6020A	
8832-150609-071 (A5F0362-12)			Matrix: Soil					
Batch: 5060496								
Lead	7.89	0.137	0.275	mg/kg dry	10	06/16/15 20:06	EPA 6020A	
8832-150609-072 (A5F0362-13)			Matrix: Soil					
Batch: 5060496								
Lead	9.53	0.154	0.309	mg/kg dry	10	06/16/15 20:09	EPA 6020A	

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Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

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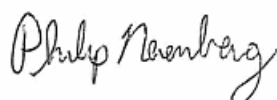
06/30/15 15:07

## ANALYTICAL SAMPLE RESULTS

### TCLP Extraction by EPA 1311

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-067 (A5F0362-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060587</b>			
TCLP Extraction	PREP			N/A	1	06/18/15 17:31	EPA 1311	

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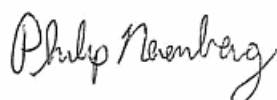
06/30/15 15:07

## ANALYTICAL SAMPLE RESULTS

### TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150609-067 (A5F0362-08)			Matrix: Soil					
Batch: 5060617								
Lead	0.147	0.0250	0.0500	mg/L	5	06/19/15 18:09	1311/6020A	

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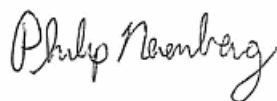
Reported:

06/30/15 15:07

## ANALYTICAL SAMPLE RESULTS

Percent Dry Weight								
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-060 (A5F0362-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	91.4	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-061 (A5F0362-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	92.7	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-062 (A5F0362-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	93.8	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-063 (A5F0362-04)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	93.6	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-064 (A5F0362-05)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	86.6	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-065 (A5F0362-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	74.0	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-066 (A5F0362-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	72.9	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-067 (A5F0362-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	92.1	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-068 (A5F0362-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	83.0	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-069 (A5F0362-10)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	78.5	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-070 (A5F0362-11)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	71.7	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-071 (A5F0362-12)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	73.2	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-072 (A5F0362-13)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	71.0	1.00	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	

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Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

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## QUALITY CONTROL (QC) SAMPLE RESULTS

### Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060427 - EPA 3546						Soil						
Blank (5060427-BLK1)						Prepared: 06/12/15 14:19		Analyzed: 06/12/15 23:43				
NWTPH-Dx												
Diesel	ND	7.14	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	14.3	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 106 %		Limits: 50-150 %		Dilution: 1x						
LCS (5060427-BS1)						Prepared: 06/12/15 14:19		Analyzed: 06/13/15 00:03				
NWTPH-Dx												
Diesel	119	10.0	25.0	mg/kg wet	1	125	---	95	76-115%	---	---	
Surr: o-Terphenyl (Surr)		Recovery: 108 %		Limits: 50-150 %		Dilution: 1x						



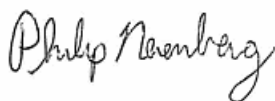
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Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

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**QUALITY CONTROL (QC) SAMPLE RESULTS****Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch 5060415 - EPA 5035A						Soil							
Blank (5060415-BLK1)						Prepared: 06/12/15 09:30		Analyzed: 06/12/15 13:04					
NWTPH-Gx (MS)													
Gasoline Range Organics	ND	1.67	3.33	mg/kg wet	50	---	---	---	---	---	---		
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 100 %		Limits: 50-150 %		Dilution: 1x							
1,4-Difluorobenzene (Sur)		92 %		50-150 %		"							
LCS (5060415-BS2)						Prepared: 06/12/15 09:30		Analyzed: 06/12/15 12:38					
NWTPH-Gx (MS)													
Gasoline Range Organics	23.5	2.50	5.00	mg/kg wet	50	25.0	---	94	70-130%	---	---		
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 101 %		Limits: 50-150 %		Dilution: 1x							
1,4-Difluorobenzene (Sur)		95 %		50-150 %		"							
Duplicate (5060415-DUP1)						Prepared: 06/11/15 12:35		Analyzed: 06/12/15 15:54					V-16
QC Source Sample: 8832-150609-060 (A5F0362-01)													
NWTPH-Gx (MS)													
Gasoline Range Organics	ND	2.48	4.97	mg/kg dry	50	---	ND	---	---	---	30%		
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 99 %		Limits: 50-150 %		Dilution: 1x							
1,4-Difluorobenzene (Sur)		93 %		50-150 %		"							

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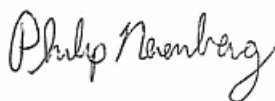
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Project Manager: Rob Ede**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060381 - EPA 5035A						Soil						
Blank (5060381-BLK1)						Prepared: 06/15/15 19:00		Analyzed: 06/15/15 21:47				
5035/8260B												
Acetone	ND	333	667	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Bromobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromoform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromomethane	ND	333	333	"	"	---	---	---	---	---	---	
2-Butanone (MEK)	ND	167	333	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chloroethane	ND	167	333	"	"	---	---	---	---	---	---	
Chloroform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Chloromethane	ND	83.3	167	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloroprop ane	ND	83.3	167	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dibromomethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	

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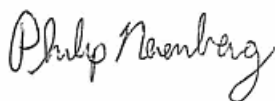
06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060381 - EPA 5035A</b>						<b>Soil</b>						
<b>Blank (5060381-BLK1)</b>						Prepared: 06/15/15 19:00 Analyzed: 06/15/15 21:47						
cis-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
2-Hexanone	ND	167	333	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	167	333	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Methylene chloride	ND	83.3	167	"	"	---	---	---	---	---	---	
Naphthalene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Styrene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Toluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	

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Project Number: 8832

Project Manager: Rob Ede

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06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060381 - EPA 5035A</b>						<b>Soil</b>						
<b>Blank (5060381-BLK1)</b>						Prepared: 06/15/15 19:00 Analyzed: 06/15/15 21:47						
1,2,4-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	16.7	16.7	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
o-Xylene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
<i>Surr: Dibromofluoromethane (Surr)</i>		<i>Recovery: 114 %</i>		<i>Limits: 70-130 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Surr)</i>		<i>114 %</i>		<i>70-130 %</i>		<i>"</i>						
<i>Toluene-d8 (Surr)</i>		<i>90 %</i>		<i>70-130 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>70-130 %</i>		<i>"</i>						

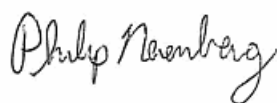
**LCS (5060381-BS1)**

Prepared: 06/15/15 19:00 Analyzed: 06/15/15 20:55

**5035/8260B**

Acetone	3280	500	1000	ug/kg wet	50	2000	---	164	65-135%	---	---	Q-41
Benzene	1310	6.25	12.5	"	"	1000	---	131	"	---	---	
Bromobenzene	1010	12.5	25.0	"	"	"	---	101	"	---	---	
Bromochloromethane	1300	25.0	50.0	"	"	"	---	130	"	---	---	
Bromodichloromethane	1120	25.0	50.0	"	"	"	---	112	"	---	---	
Bromoform	976	25.0	50.0	"	"	"	---	98	"	---	---	
Bromomethane	1480	500	500	"	"	"	---	148	"	---	---	Q-29
2-Butanone (MEK)	3080	250	500	"	"	2000	---	154	"	---	---	Q-41
n-Butylbenzene	974	25.0	50.0	"	"	1000	---	97	"	---	---	
sec-Butylbenzene	986	25.0	50.0	"	"	"	---	99	"	---	---	
tert-Butylbenzene	950	25.0	50.0	"	"	"	---	95	"	---	---	
Carbon tetrachloride	1100	12.5	25.0	"	"	"	---	110	"	---	---	
Chlorobenzene	1020	12.5	25.0	"	"	"	---	102	"	---	---	
Chloroethane	1100	250	500	"	"	"	---	110	"	---	---	
Chloroform	1210	25.0	50.0	"	"	"	---	121	"	---	---	
Chloromethane	1110	125	250	"	"	"	---	111	"	---	---	
2-Chlorotoluene	1080	25.0	50.0	"	"	"	---	108	"	---	---	
4-Chlorotoluene	974	25.0	50.0	"	"	"	---	97	"	---	---	
1,2-Dibromo-3-chloroprop ane	1150	125	250	"	"	"	---	115	"	---	---	

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Project Manager: Rob Ede

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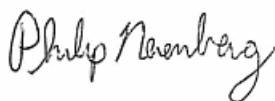
06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060381 - EPA 5035A						Soil						
LCS (5060381-BS1)			Prepared: 06/15/15 19:00		Analyzed: 06/15/15 20:55							
Dibromochloromethane	1060	50.0	100	ug/kg wet	"	"	---	106	"	---	---	
1,2-Dibromoethane (EDB)	1040	12.5	25.0	"	"	"	---	104	"	---	---	
Dibromomethane	1320	25.0	50.0	"	"	"	---	132	"	---	---	
1,2-Dichlorobenzene	1030	12.5	25.0	"	"	"	---	103	"	---	---	
1,3-Dichlorobenzene	1010	12.5	25.0	"	"	"	---	101	"	---	---	
1,4-Dichlorobenzene	976	12.5	25.0	"	"	"	---	98	"	---	---	
Dichlorodifluoromethane	942	50.0	100	"	"	"	---	94	"	---	---	
1,1-Dichloroethane	1250	12.5	25.0	"	"	"	---	125	"	---	---	
1,2-Dichloroethane (EDC)	1040	12.5	25.0	"	"	"	---	104	"	---	---	
1,1-Dichloroethene	1280	12.5	25.0	"	"	"	---	128	"	---	---	Q-41
cis-1,2-Dichloroethene	1210	12.5	25.0	"	"	"	---	121	"	---	---	
trans-1,2-Dichloroethene	1260	12.5	25.0	"	"	"	---	126	"	---	---	
1,2-Dichloropropane	1230	12.5	25.0	"	"	"	---	123	"	---	---	
1,3-Dichloropropane	1010	25.0	50.0	"	"	"	---	101	"	---	---	
2,2-Dichloropropane	1100	25.0	50.0	"	"	"	---	110	"	---	---	
1,1-Dichloropropene	1380	25.0	50.0	"	"	"	---	138	"	---	---	Q-29
cis-1,3-Dichloropropene	1030	25.0	50.0	"	"	"	---	103	"	---	---	
trans-1,3-Dichloropropene	998	25.0	50.0	"	"	"	---	100	"	---	---	
Ethylbenzene	982	12.5	25.0	"	"	"	---	98	"	---	---	
Hexachlorobutadiene	890	50.0	100	"	"	"	---	89	"	---	---	
2-Hexanone	2410	250	500	"	"	2000	---	121	"	---	---	
Isopropylbenzene	1010	25.0	50.0	"	"	1000	---	101	"	---	---	
4-Isopropyltoluene	942	25.0	50.0	"	"	"	---	94	"	---	---	
4-Methyl-2-pentanone (MiBK)	2380	250	500	"	"	2000	---	119	"	---	---	
Methyl tert-butyl ether (MTBE)	1250	25.0	50.0	"	"	1000	---	125	"	---	---	
Methylene chloride	1190	125	250	"	"	"	---	119	"	---	---	
Naphthalene	1210	50.0	100	"	"	"	---	121	"	---	---	
n-Propylbenzene	1040	12.5	25.0	"	"	"	---	104	"	---	---	
Styrene	1050	25.0	50.0	"	"	"	---	105	"	---	---	
1,1,1,2-Tetrachloroethane	990	25.0	50.0	"	"	"	---	99	"	---	---	

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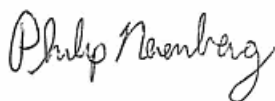


Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**  
06/30/15 15:07**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060381 - EPA 5035A</b>						<b>Soil</b>						
<b>LCS (5060381-BS1)</b>						Prepared: 06/15/15 19:00 Analyzed: 06/15/15 20:55						
1,1,2,2-Tetrachloroethane	1200	12.5	25.0	"	"	"	---	120	"	---	---	
Tetrachloroethene (PCE)	990	12.5	25.0	"	"	"	---	99	"	---	---	
Toluene	980	25.0	50.0	"	"	"	---	98	"	---	---	
1,2,3-Trichlorobenzene	940	125	250	"	"	"	---	94	"	---	---	
1,2,4-Trichlorobenzene	912	125	250	"	"	"	---	91	"	---	---	
1,1,1-Trichloroethane	1060	12.5	25.0	"	"	"	---	106	"	---	---	
1,1,2-Trichloroethane	994	12.5	25.0	"	"	"	---	99	"	---	---	
Trichloroethene (TCE)	1270	12.5	25.0	"	"	"	---	127	"	---	---	
Trichlorofluoromethane	808	50.0	100	"	"	"	---	81	"	---	---	
1,2,3-Trichloropropane	1090	25.0	50.0	"	"	"	---	109	"	---	---	
1,2,4-Trimethylbenzene	1010	25.0	50.0	"	"	"	---	101	"	---	---	
1,3,5-Trimethylbenzene	1000	25.0	50.0	"	"	"	---	100	"	---	---	
Vinyl chloride	1410	25.0	25.0	"	"	"	---	141	"	---	---	Q-29
m,p-Xylene	1910	25.0	50.0	"	"	2000	---	95	"	---	---	
o-Xylene	982	12.5	25.0	"	"	1000	---	98	"	---	---	
<b>Surr: Dibromofluoromethane (Surr)</b>												
		<b>Recovery:</b>		<b>Limits:</b>		<b>Dilution:</b>						
1,4-Difluorobenzene (Surr)		115 %		70-130 %		1x						
Toluene-d8 (Surr)		93 %		70-130 %		"						
4-Bromofluorobenzene (Surr)		97 %		70-130 %		"						

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

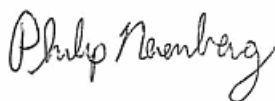
**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060415 - EPA 5035A						Soil						
Blank (5060415-BLK1)						Prepared: 06/12/15 09:30		Analyzed: 06/12/15 13:04				
5035/8260B												
Acetone	ND	333	667	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Bromobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromoform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromomethane	ND	333	333	"	"	---	---	---	---	---	---	
2-Butanone (MEK)	ND	167	333	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chloroethane	ND	167	333	"	"	---	---	---	---	---	---	
Chloroform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Chloromethane	ND	83.3	167	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloroprop ane	ND	83.3	167	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dibromomethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	

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**Hahn and Associates**

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Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

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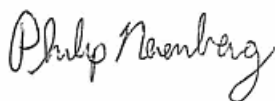
06/30/15 15:07

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060415 - EPA 5035A</b>						<b>Soil</b>						
<b>Blank (5060415-BLK1)</b>						Prepared: 06/12/15 09:30 Analyzed: 06/12/15 13:04						
cis-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
2-Hexanone	ND	167	333	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	167	333	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Methylene chloride	ND	83.3	167	"	"	---	---	---	---	---	---	
Naphthalene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Styrene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Toluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	

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**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

**Reported:**

06/30/15 15:07

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060415 - EPA 5035A</b>						<b>Soil</b>						
<b>Blank (5060415-BLK1)</b>						Prepared: 06/12/15 09:30 Analyzed: 06/12/15 13:04						
1,2,4-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
o-Xylene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
<i>Surr: Dibromofluoromethane (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 70-130 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Surr)</i>		<i>96 %</i>		<i>70-130 %</i>		<i>"</i>						
<i>Toluene-d8 (Surr)</i>		<i>96 %</i>		<i>70-130 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>102 %</i>		<i>70-130 %</i>		<i>"</i>						

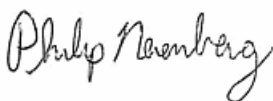
**LCS (5060415-BS1)**

Prepared: 06/12/15 09:30 Analyzed: 06/12/15 12:12

**5035/8260B**

Acetone	1820	500	1000	ug/kg wet	50	2000	---	91	65-135%	---	---	
Benzene	929	6.25	12.5	"	"	1000	---	93	"	---	---	
Bromobenzene	979	12.5	25.0	"	"	"	---	98	"	---	---	
Bromochloromethane	916	25.0	50.0	"	"	"	---	92	"	---	---	
Bromodichloromethane	1030	25.0	50.0	"	"	"	---	103	"	---	---	
Bromoform	1180	25.0	50.0	"	"	"	---	118	"	---	---	
Bromomethane	1020	500	500	"	"	"	---	102	"	---	---	
2-Butanone (MEK)	1950	250	500	"	"	2000	---	97	"	---	---	
n-Butylbenzene	996	25.0	50.0	"	"	1000	---	100	"	---	---	
sec-Butylbenzene	990	25.0	50.0	"	"	"	---	99	"	---	---	
tert-Butylbenzene	994	25.0	50.0	"	"	"	---	99	"	---	---	
Carbon tetrachloride	1040	12.5	25.0	"	"	"	---	104	"	---	---	
Chlorobenzene	980	12.5	25.0	"	"	"	---	98	"	---	---	
Chloroethane	1100	250	500	"	"	"	---	110	"	---	---	
Chloroform	962	25.0	50.0	"	"	"	---	96	"	---	---	
Chloromethane	761	125	250	"	"	"	---	76	"	---	---	
2-Chlorotoluene	962	25.0	50.0	"	"	"	---	96	"	---	---	
4-Chlorotoluene	994	25.0	50.0	"	"	"	---	99	"	---	---	
1,2-Dibromo-3-chloroprop ane	966	125	250	"	"	"	---	97	"	---	---	

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Project Number: 8832

Project Manager: Rob Ede

**Reported:**

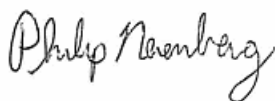
06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060415 - EPA 5035A</b>							<b>Soil</b>					
<b>LCS (5060415-BS1)</b>							Prepared: 06/12/15 09:30 Analyzed: 06/12/15 12:12					
Dibromochloromethane	1070	50.0	100	ug/kg wet	"	"	---	107	"	---	---	
1,2-Dibromoethane (EDB)	1030	12.5	25.0	"	"	"	---	103	"	---	---	
Dibromomethane	956	25.0	50.0	"	"	"	---	96	"	---	---	
1,2-Dichlorobenzene	973	12.5	25.0	"	"	"	---	97	"	---	---	
1,3-Dichlorobenzene	974	12.5	25.0	"	"	"	---	97	"	---	---	
1,4-Dichlorobenzene	950	12.5	25.0	"	"	"	---	95	"	---	---	
Dichlorodifluoromethane	796	50.0	100	"	"	"	---	80	"	---	---	
1,1-Dichloroethane	902	12.5	25.0	"	"	"	---	90	"	---	---	
1,2-Dichloroethane (EDC)	958	12.5	25.0	"	"	"	---	96	"	---	---	
1,1-Dichloroethene	926	12.5	25.0	"	"	"	---	93	"	---	---	
cis-1,2-Dichloroethene	883	12.5	25.0	"	"	"	---	88	"	---	---	
trans-1,2-Dichloroethene	891	12.5	25.0	"	"	"	---	89	"	---	---	
1,2-Dichloropropane	886	12.5	25.0	"	"	"	---	89	"	---	---	
1,3-Dichloropropane	976	25.0	50.0	"	"	"	---	98	"	---	---	
2,2-Dichloropropane	1110	25.0	50.0	"	"	"	---	111	"	---	---	
1,1-Dichloropropene	943	25.0	50.0	"	"	"	---	94	"	---	---	
cis-1,3-Dichloropropene	923	25.0	50.0	"	"	"	---	92	"	---	---	
trans-1,3-Dichloropropene	1040	25.0	50.0	"	"	"	---	104	"	---	---	
Ethylbenzene	991	12.5	25.0	"	"	"	---	99	"	---	---	
Hexachlorobutadiene	1020	50.0	100	"	"	"	---	102	"	---	---	
2-Hexanone	1870	250	500	"	"	2000	---	94	"	---	---	
Isopropylbenzene	1010	25.0	50.0	"	"	1000	---	101	"	---	---	
4-Isopropyltoluene	1030	25.0	50.0	"	"	"	---	103	"	---	---	
4-Methyl-2-pentanone (MiBK)	1880	250	500	"	"	2000	---	94	"	---	---	
Methyl tert-butyl ether (MTBE)	1040	25.0	50.0	"	"	1000	---	104	"	---	---	
Methylene chloride	934	125	250	"	"	"	---	93	"	---	---	
Naphthalene	1240	50.0	100	"	"	"	---	124	"	---	---	
n-Propylbenzene	988	12.5	25.0	"	"	"	---	99	"	---	---	
Styrene	926	25.0	50.0	"	"	"	---	93	"	---	---	
1,1,1,2-Tetrachloroethane	1090	12.5	25.0	"	"	"	---	109	"	---	---	

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060415 - EPA 5035A</b>						<b>Soil</b>						
<b>LCS (5060415-BS1)</b>						Prepared: 06/12/15 09:30 Analyzed: 06/12/15 12:12						
1,1,2,2-Tetrachloroethane	1020	12.5	25.0	"	"	"	---	102	"	---	---	
Tetrachloroethene (PCE)	951	12.5	25.0	"	"	"	---	95	"	---	---	
Toluene	916	25.0	50.0	"	"	"	---	92	"	---	---	
1,2,3-Trichlorobenzene	1080	125	250	"	"	"	---	108	"	---	---	
1,2,4-Trichlorobenzene	1030	125	250	"	"	"	---	103	"	---	---	
1,1,1-Trichloroethane	1000	12.5	25.0	"	"	"	---	100	"	---	---	
1,1,2-Trichloroethane	1020	12.5	25.0	"	"	"	---	102	"	---	---	
Trichloroethene (TCE)	916	12.5	25.0	"	"	"	---	92	"	---	---	
Trichlorofluoromethane	1050	50.0	100	"	"	"	---	105	"	---	---	
1,2,3-Trichloropropane	1020	25.0	50.0	"	"	"	---	102	"	---	---	
1,2,4-Trimethylbenzene	1030	25.0	50.0	"	"	"	---	103	"	---	---	
1,3,5-Trimethylbenzene	1020	25.0	50.0	"	"	"	---	102	"	---	---	
Vinyl chloride	878	12.5	25.0	"	"	"	---	88	"	---	---	
m,p-Xylene	2130	25.0	50.0	"	"	2000	---	106	"	---	---	
o-Xylene	1070	12.5	25.0	"	"	1000	---	107	"	---	---	

<i>Surr: Dibromofluoromethane (Surr)</i>	<i>Recovery: 96 %</i>	<i>Limits: 70-130 %</i>	<i>Dilution: 1x</i>
<i>1,4-Difluorobenzene (Surr)</i>	<i>96 %</i>	<i>70-130 %</i>	<i>"</i>
<i>Toluene-d8 (Surr)</i>	<i>95 %</i>	<i>70-130 %</i>	<i>"</i>
<i>4-Bromofluorobenzene (Surr)</i>	<i>102 %</i>	<i>70-130 %</i>	<i>"</i>

**Duplicate (5060415-DUP1)**

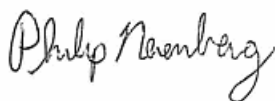
Prepared: 06/11/15 12:35 Analyzed: 06/12/15 15:54

**V-16****QC Source Sample: 8832-150609-060 (A5F0362-01)****5035/8260B**

Acetone	ND	497	993	ug/kg dry	50	---	ND	---	---	---	30%
Benzene	ND	6.21	12.4	"	"	---	ND	---	---	---	30%
Bromobenzene	ND	12.4	24.8	"	"	---	ND	---	---	---	30%
Bromochloromethane	ND	24.8	49.7	"	"	---	ND	---	---	---	30%
Bromodichloromethane	ND	24.8	49.7	"	"	---	ND	---	---	---	30%
Bromoform	ND	24.8	49.7	"	"	---	ND	---	---	---	30%
Bromomethane	ND	497	497	"	"	---	ND	---	---	---	30%
2-Butanone (MEK)	ND	248	497	"	"	---	ND	---	---	---	30%
n-Butylbenzene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

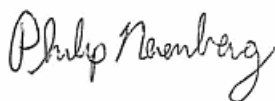
**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060415 - EPA 5035A						Soil						
Duplicate (5060415-DUP1)						Prepared: 06/11/15 12:35		Analyzed: 06/12/15 15:54			V-16	
QC Source Sample: 8832-150609-060 (A5F0362-01)												
sec-Butylbenzene	ND	24.8	49.7	ug/kg dry	"	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
Chlorobenzene	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
Chloroethane	ND	248	497	"	"	---	ND	---	---	---	30%	
Chloroform	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
Chloromethane	ND	124	248	"	"	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloroprop ane	ND	124	248	"	"	---	ND	---	---	---	30%	
Dibromochloromethane	ND	49.7	99.3	"	"	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
Dibromomethane	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	49.7	99.3	"	"	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
Ethylbenzene	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	

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Page 38 of 61

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

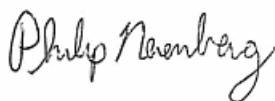
06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060415 - EPA 5035A							Soil					
Duplicate (5060415-DUP1)				Prepared: 06/11/15 12:35				Analyzed: 06/12/15 15:54				V-16
QC Source Sample: 8832-150609-060 (A5F0362-01)												
Hexachlorobutadiene	ND	49.7	99.3	ug/kg dry	"	---	ND	---	---	---	30%	
2-Hexanone	ND	248	497	"	"	---	ND	---	---	---	30%	
Isopropylbenzene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	248	497	"	"	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
Methylene chloride	ND	124	248	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	49.7	99.3	"	"	---	ND	---	---	---	30%	
n-Propylbenzene	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
Styrene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
Toluene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	124	248	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	124	248	"	"	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	49.7	99.3	"	"	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
Vinyl chloride	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
m,p-Xylene	ND	24.8	49.7	"	"	---	ND	---	---	---	30%	
o-Xylene	ND	12.4	24.8	"	"	---	ND	---	---	---	30%	
Surr: Dibromofluoromethane (Surr)		Recovery: 98 %		Limits: 70-130 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)		98 %		70-130 %		"						
Toluene-d8 (Surr)		99 %		70-130 %		"						

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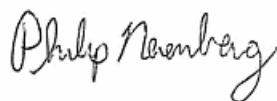
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060415 - EPA 5035A							Soil					
Duplicate (5060415-DUP1)					Prepared: 06/11/15 12:35		Analyzed: 06/12/15 15:54				V-16	
QC Source Sample: 8832-150609-060 (A5F0362-01)												
Surr: 4-Bromofluorobenzene (Surr)			Recovery: 104 %		Limits: 70-130 %		Dilution: 1x					

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Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

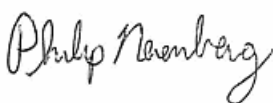
06/30/15 15:07

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060435 - EPA 5035A						Soil						
Blank (5060435-BLK1)				Prepared: 06/13/15 12:20    Analyzed: 06/13/15 14:59								
5035/8260B												
Acetone	ND	333	667	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Bromobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromoform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Bromomethane	ND	333	333	"	"	---	---	---	---	---	---	
2-Butanone (MEK)	ND	167	333	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Chloroethane	ND	167	333	"	"	---	---	---	---	---	---	
Chloroform	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Chloromethane	ND	83.3	167	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloroprop ane	ND	83.3	167	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dibromomethane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	

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Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

**Reported:**

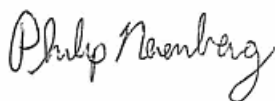
06/30/15 15:07

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060435 - EPA 5035A</b>						<b>Soil</b>						
<b>Blank (5060435-BLK1)</b>						Prepared: 06/13/15 12:20 Analyzed: 06/13/15 14:59						
cis-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
2-Hexanone	ND	167	333	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	167	333	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Methylene chloride	ND	83.3	167	"	"	---	---	---	---	---	---	
Naphthalene	ND	33.3	66.7	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Styrene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Toluene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	83.3	167	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	33.3	66.7	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	"	"	---	---	---	---	---	---	

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Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060435 - EPA 5035A</b>						<b>Soil</b>						
<b>Blank (5060435-BLK1)</b>						Prepared: 06/13/15 12:20 Analyzed: 06/13/15 14:59						
1,2,4-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	16.7	33.3	"	"	---	---	---	---	---	---	
o-Xylene	ND	8.33	16.7	"	"	---	---	---	---	---	---	
<i>Surr: Dibromofluoromethane (Surr)</i>			<i>Recovery: 98 %</i>	<i>Limits: 70-130 %</i>	<i>Dilution: 1x</i>							
<i>1,4-Difluorobenzene (Surr)</i>			<i>96 %</i>	<i>70-130 %</i>	<i>"</i>							
<i>Toluene-d8 (Surr)</i>			<i>94 %</i>	<i>70-130 %</i>	<i>"</i>							
<i>4-Bromofluorobenzene (Surr)</i>			<i>102 %</i>	<i>70-130 %</i>	<i>"</i>							

**LCS (5060435-BS1)**

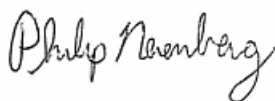
Prepared: 06/13/15 12:20 Analyzed: 06/13/15 14:07

**5035/8260B**

Acetone	2070	500	1000	ug/kg wet	50	2000	---	104	65-135%	---	---	
Benzene	1100	6.25	12.5	"	"	1000	---	110	"	---	---	
Bromobenzene	1150	12.5	25.0	"	"	"	---	115	"	---	---	
Bromochloromethane	1070	25.0	50.0	"	"	"	---	107	"	---	---	
Bromodichloromethane	1220	25.0	50.0	"	"	"	---	122	"	---	---	
Bromoform	1340	25.0	50.0	"	"	"	---	134	"	---	---	
Bromomethane	1200	500	500	"	"	"	---	120	"	---	---	
2-Butanone (MEK)	2160	250	500	"	"	2000	---	108	"	---	---	
n-Butylbenzene	1170	25.0	50.0	"	"	1000	---	117	"	---	---	
sec-Butylbenzene	1170	25.0	50.0	"	"	"	---	117	"	---	---	
tert-Butylbenzene	1190	25.0	50.0	"	"	"	---	119	"	---	---	
Carbon tetrachloride	1310	12.5	25.0	"	"	"	---	131	"	---	---	
Chlorobenzene	1120	12.5	25.0	"	"	"	---	112	"	---	---	
Chloroethane	1430	250	500	"	"	"	---	143	"	---	---	Q-29
Chloroform	1170	25.0	50.0	"	"	"	---	117	"	---	---	
Chloromethane	936	125	250	"	"	"	---	94	"	---	---	
2-Chlorotoluene	1150	25.0	50.0	"	"	"	---	115	"	---	---	
4-Chlorotoluene	1190	25.0	50.0	"	"	"	---	119	"	---	---	
1,2-Dibromo-3-chloroprop ane	1090	125	250	"	"	"	---	109	"	---	---	

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

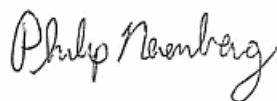
06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060435 - EPA 5035A						Soil						
LCS (5060435-BS1)			Prepared: 06/13/15 12:20		Analyzed: 06/13/15 14:07							
Dibromochloromethane	1230	50.0	100	ug/kg wet	"	"	---	123	"	---	---	Q-29
1,2-Dibromoethane (EDB)	1140	12.5	25.0	"	"	"	---	114	"	---	---	
Dibromomethane	1100	25.0	50.0	"	"	"	---	110	"	---	---	
1,2-Dichlorobenzene	1160	12.5	25.0	"	"	"	---	116	"	---	---	
1,3-Dichlorobenzene	1150	12.5	25.0	"	"	"	---	115	"	---	---	
1,4-Dichlorobenzene	1120	12.5	25.0	"	"	"	---	112	"	---	---	
Dichlorodifluoromethane	973	50.0	100	"	"	"	---	97	"	---	---	
1,1-Dichloroethane	1090	12.5	25.0	"	"	"	---	109	"	---	---	
1,2-Dichloroethane (EDC)	1140	12.5	25.0	"	"	"	---	114	"	---	---	
1,1-Dichloroethene	1140	12.5	25.0	"	"	"	---	114	"	---	---	
cis-1,2-Dichloroethene	1060	12.5	25.0	"	"	"	---	106	"	---	---	
trans-1,2-Dichloroethene	1070	12.5	25.0	"	"	"	---	107	"	---	---	
1,2-Dichloropropane	1040	12.5	25.0	"	"	"	---	104	"	---	---	
1,3-Dichloropropane	1110	25.0	50.0	"	"	"	---	111	"	---	---	
2,2-Dichloropropane	1370	25.0	50.0	"	"	"	---	137	"	---	---	
1,1-Dichloropropene	1140	25.0	50.0	"	"	"	---	114	"	---	---	
cis-1,3-Dichloropropene	1030	25.0	50.0	"	"	"	---	103	"	---	---	
trans-1,3-Dichloropropene	1180	25.0	50.0	"	"	"	---	118	"	---	---	
Ethylbenzene	1140	12.5	25.0	"	"	"	---	114	"	---	---	
Hexachlorobutadiene	1170	50.0	100	"	"	"	---	117	"	---	---	
2-Hexanone	2010	250	500	"	"	2000	---	100	"	---	---	
Isopropylbenzene	1180	25.0	50.0	"	"	1000	---	118	"	---	---	
4-Isopropyltoluene	1210	25.0	50.0	"	"	"	---	121	"	---	---	
4-Methyl-2-pentanone (MiBK)	2070	250	500	"	"	2000	---	103	"	---	---	
Methyl tert-butyl ether (MTBE)	1230	25.0	50.0	"	"	1000	---	123	"	---	---	
Methylene chloride	1100	125	250	"	"	"	---	110	"	---	---	
Naphthalene	1340	50.0	100	"	"	"	---	134	"	---	---	
n-Propylbenzene	1180	12.5	25.0	"	"	"	---	118	"	---	---	
Styrene	1070	25.0	50.0	"	"	"	---	107	"	---	---	
1,1,1,2-Tetrachloroethane	1260	12.5	25.0	"	"	"	---	126	"	---	---	

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**Hahn and Associates**

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Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

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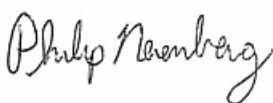
06/30/15 15:07

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060435 - EPA 5035A							Soil					
LCS (5060435-BS1)				Prepared: 06/13/15 12:20    Analyzed: 06/13/15 14:07								
1,1,2,2-Tetrachloroethane	1160	12.5	25.0	"	"	"	---	116	"	---	---	
Tetrachloroethene (PCE)	1100	12.5	25.0	"	"	"	---	110	"	---	---	
Toluene	1050	25.0	50.0	"	"	"	---	105	"	---	---	
1,2,3-Trichlorobenzene	1230	125	250	"	"	"	---	123	"	---	---	
1,2,4-Trichlorobenzene	1160	125	250	"	"	"	---	116	"	---	---	
1,1,1-Trichloroethane	1200	12.5	25.0	"	"	"	---	120	"	---	---	
1,1,2-Trichloroethane	1140	12.5	25.0	"	"	"	---	114	"	---	---	
Trichloroethene (TCE)	1100	12.5	25.0	"	"	"	---	110	"	---	---	
Trichlorofluoromethane	1330	50.0	100	"	"	"	---	133	"	---	---	
1,2,3-Trichloropropane	1160	25.0	50.0	"	"	"	---	116	"	---	---	
1,2,4-Trimethylbenzene	1220	25.0	50.0	"	"	"	---	122	"	---	---	
1,3,5-Trimethylbenzene	1210	25.0	50.0	"	"	"	---	121	"	---	---	
Vinyl chloride	1070	12.5	25.0	"	"	"	---	107	"	---	---	
m,p-Xylene	2460	25.0	50.0	"	"	2000	---	123	"	---	---	
o-Xylene	1260	12.5	25.0	"	"	1000	---	126	"	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery: 101 %		Limits: 70-130 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)		98 %		70-130 %		"						
Toluene-d8 (Surr)		94 %		70-130 %		"						
4-Bromofluorobenzene (Surr)		103 %		70-130 %		"						

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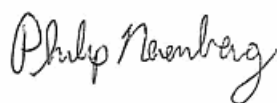
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Polychlorinated Biphenyls by EPA 8082A**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch 5060667 - EPA 3546						Soil							
Blank (5060667-BLK1)				Prepared: 06/22/15 16:04 Analyzed: 06/23/15 13:53									
EPA 8082A													
Aroclor 1016	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1221	ND	4.55	9.09	"	"	---	---	---	---	---	---		
Aroclor 1232	ND	4.55	9.09	"	"	---	---	---	---	---	---		
Aroclor 1242	ND	4.55	9.09	"	"	---	---	---	---	---	---		
Aroclor 1248	ND	4.55	9.09	"	"	---	---	---	---	---	---		
Aroclor 1254	ND	4.55	9.09	"	"	---	---	---	---	---	---		
Aroclor 1260	ND	4.55	9.09	"	"	---	---	---	---	---	---		
Surr: Decachlorobiphenyl (Surr)		Recovery: 93 %		Limits: 72-126 %		Dilution: 1x							
LCS (5060667-BS1)				Prepared: 06/22/15 16:04 Analyzed: 06/23/15 14:11									
EPA 8082A													
Aroclor 1016	179	5.00	10.0	ug/kg wet	1	250	---	72	47-134%	---	---		
Aroclor 1260	240	5.00	10.0	"	"	"	---	96	53-140%	---	---		
Surr: Decachlorobiphenyl (Surr)		Recovery: 93 %		Limits: 72-126 %		Dilution: 1x							
Duplicate (5060667-DUP1)				Prepared: 06/22/15 16:04 Analyzed: 06/23/15 14:29									C-07
QC Source Sample: 8832-150609-067 (A5F0362-08)													
EPA 8082A													
Aroclor 1016	ND	5.20	10.4	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1221	ND	5.20	10.4	"	"	---	ND	---	---	---	30%		
Aroclor 1232	ND	5.20	10.4	"	"	---	ND	---	---	---	30%		
Aroclor 1242	ND	5.20	10.4	"	"	---	ND	---	---	---	30%		
Aroclor 1248	ND	5.20	10.4	"	"	---	ND	---	---	---	30%		
Aroclor 1254	ND	5.20	10.4	"	"	---	ND	---	---	---	30%		
Aroclor 1260	ND	10.4	10.4	"	"	---	ND	---	---	---	30%		
Surr: Decachlorobiphenyl (Surr)		Recovery: 77 %		Limits: 72-126 %		Dilution: 1x							Q-41

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Project Number: 8832

Project Manager: Rob Ede

**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060413 - EPA 3546						Soil						
Blank (5060413-BLK1)						Prepared: 06/12/15 09:15    Analyzed: 06/15/15 12:39						
EPA 8270D (SIM)												
Acenaphthene	ND	4.17	8.33	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Anthracene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	8.33	16.7	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Chrysene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Fluoranthene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Fluorene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Naphthalene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Phenanthrene	ND	4.17	8.33	"	"	---	---	---	---	---	---	
Pyrene	ND	4.17	8.33	"	"	---	---	---	---	---	---	

Surr: 2-Fluorobiphenyl (Surr)

p-Terphenyl-d14 (Surr)

Recovery: 93 %

101 %

Limits: 44-115 %

54-127 %

Dilution: 1x

"

**LCS (5060413-BS1)**

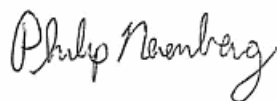
Prepared: 06/12/15 09:15 Analyzed: 06/15/15 13:06

**EPA 8270D (SIM)**

Acenaphthene	840	5.00	10.0	ug/kg wet	1	800	---	105	40-122%	---	---
Acenaphthylene	840	5.00	10.0	"	"	"	---	105	32-132%	---	---
Anthracene	873	5.00	10.0	"	"	"	---	109	47-123%	---	---
Benz(a)anthracene	830	5.00	10.0	"	"	"	---	104	49-126%	---	---
Benzo(a)pyrene	903	5.00	10.0	"	"	"	---	113	45-129%	---	---
Benzo(b)fluoranthene	900	5.00	10.0	"	"	"	---	112	45-132%	---	---

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Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

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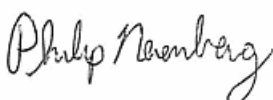
06/30/15 15:07

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060413 - EPA 3546</b>						<b>Soil</b>						
<b>LCS (5060413-BS1)</b>						Prepared: 06/12/15 09:15 Analyzed: 06/15/15 13:06						
Benzo(k)fluoranthene	944	5.00	10.0	"	"	"	---	118	47-132%	---	---	
Benzo(b+k)fluoranthene(s)	1840	10.0	20.0	"	"	1600	---	115	45-132%	---	---	
Benzo(g,h,i)perylene	856	5.00	10.0	"	"	800	---	107	43-134%	---	---	
Chrysene	883	5.00	10.0	"	"	"	---	110	50-124%	---	---	
Dibenz(a,h)anthracene	934	5.00	10.0	"	"	"	---	117	45-134%	---	---	
Dibenzofuran	899	5.00	10.0	"	"	"	---	112	44-120%	---	---	
Fluoranthene	840	5.00	10.0	"	"	"	---	105	50-127%	---	---	
Fluorene	892	5.00	10.0	"	"	"	---	112	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	821	5.00	10.0	"	"	"	---	103	45-133%	---	---	
1-Methylnaphthalene	798	5.00	10.0	"	"	"	---	100	40-120%	---	---	
2-Methylnaphthalene	841	5.00	10.0	"	"	"	---	105	38-122%	---	---	
Naphthalene	778	5.00	10.0	"	"	"	---	97	35-123%	---	---	
Phenanthrene	845	5.00	10.0	"	"	"	---	106	50-121%	---	---	
Pyrene	856	5.00	10.0	"	"	"	---	107	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		Recovery: 100 %		Limits: 44-115 %		Dilution: 1x						
p-Terphenyl-d14 (Surr)		102 %		54-127 %		"						

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Project Manager: Rob Ede

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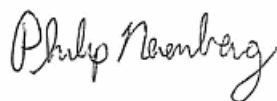
06/30/15 15:07

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Hexavalent Chromium by EPA 7196A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060485 - Method Prep: Non-Aq						Soil						
Blank (5060485-BLK1)						Prepared: 06/16/15 08:08		Analyzed: 06/16/15 13:23				
EPA 7196A												
Hexavalent Chromium	ND	1.15	2.25	mg/kg wet	1	---	---	---	---	---	---	
LCS (5060485-BS1)						Prepared: 06/16/15 08:08		Analyzed: 06/16/15 13:23				
EPA 7196A												
Hexavalent Chromium	20.1	1.15	2.25	mg/kg wet	1	20.0	---	101	80-120%	---	---	
Duplicate (5060485-DUP1)						Prepared: 06/16/15 08:08		Analyzed: 06/16/15 13:23				
QC Source Sample: 8832-150609-069 (A5F0362-10)												
EPA 7196A												
Hexavalent Chromium	ND	1.46	2.85	mg/kg dry	1	---	ND	---	---	---	20%	
Matrix Spike (5060485-MS1)						Prepared: 06/16/15 08:08		Analyzed: 06/16/15 13:23				
QC Source Sample: 8832-150609-069 (A5F0362-10)												
EPA 7196A												
Hexavalent Chromium	35.4	1.42	2.77	mg/kg dry	1	49.2	ND	72	75-125%	---	---	Q-01
Post Spike (5060485-PS1)						Prepared: 06/16/15 08:08		Analyzed: 06/16/15 13:23				
QC Source Sample: 8832-150609-069 (A5F0362-10)												
EPA 7196A												
Hexavalent Chromium	0.371			mg/L	1	0.398	0.000996	93	85-115%		---	

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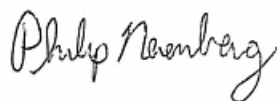
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060424 - EPA 3051A						Soil						
Blank (5060424-BLK1)						Prepared: 06/12/15 13:54		Analyzed: 06/15/15 13:22				
EPA 6020A												
Antimony	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	4.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	2.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (5060424-BS1)						Prepared: 06/12/15 13:54		Analyzed: 06/15/15 13:25				
EPA 6020A												
Antimony	24.7	0.500	1.00	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Arsenic	52.4	0.500	1.00	"	"	50.0	---	105	"	---	---	
Beryllium	24.1	0.100	0.200	"	"	25.0	---	96	"	---	---	
Cadmium	51.2	0.100	0.200	"	"	50.0	---	102	"	---	---	
Chromium	51.0	0.500	1.00	"	"	"	---	102	"	---	---	
Copper	51.3	0.500	1.00	"	"	"	---	103	"	---	---	
Lead	49.5	0.100	0.200	"	"	"	---	99	"	---	---	
Mercury	0.957	0.0400	0.0800	"	"	1.00	---	96	"	---	---	
Nickel	50.1	0.500	4.00	"	"	50.0	---	100	"	---	---	
Selenium	27.1	0.500	2.00	"	"	25.0	---	108	"	---	---	
Silver	23.3	0.100	0.200	"	"	"	---	93	"	---	---	
Thallium	23.9	0.100	0.200	"	"	"	---	96	"	---	---	
Zinc	51.9	2.00	4.00	"	"	50.0	---	104	"	---	---	

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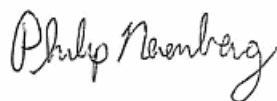
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060496 - EPA 3051A						Soil						
Blank (5060496-BLK1)						Prepared: 06/16/15 11:30		Analyzed: 06/16/15 19:16				
EPA 6020A												
Antimony	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	0.100	1.00	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	2.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	4.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (5060496-BS1)						Prepared: 06/16/15 11:30		Analyzed: 06/16/15 19:19				
EPA 6020A												
Antimony	24.9	0.500	1.00	mg/kg wet	10	25.0	---	100	80-120%	---	---	
Arsenic	50.6	0.500	1.00	"	"	50.0	---	101	"	---	---	
Beryllium	22.8	0.100	0.200	"	"	25.0	---	91	"	---	---	
Cadmium	50.5	0.100	1.00	"	"	50.0	---	101	"	---	---	
Chromium	50.8	0.500	2.00	"	"	"	---	102	"	---	---	
Copper	54.0	0.500	1.00	"	"	"	---	108	"	---	---	
Lead	50.1	0.100	0.200	"	"	"	---	100	"	---	---	
Mercury	0.946	0.0400	0.0800	"	"	1.00	---	95	"	---	---	
Nickel	51.0	0.500	4.00	"	"	50.0	---	102	"	---	---	
Selenium	27.2	0.500	1.00	"	"	25.0	---	109	"	---	---	
Silver	24.3	0.100	0.200	"	"	"	---	97	"	---	---	
Thallium	24.6	0.100	0.200	"	"	"	---	98	"	---	---	
Zinc	53.0	2.00	4.00	"	"	50.0	---	106	"	---	---	
Duplicate (5060496-DUP1)						Prepared: 06/16/15 11:30		Analyzed: 06/16/15 19:34				

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Project Manager: Rob Ede**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060496 - EPA 3051A						Soil						
Duplicate (5060496-DUP1)						Prepared: 06/16/15 11:30		Analyzed: 06/16/15 19:34				
QC Source Sample: 8832-150609-064 (A5F0362-05)												
EPA 6020A												
Antimony	ND	0.568	1.14	mg/kg dry	10	---	ND	---	---	---	40%	
Arsenic	4.09	0.568	1.14	"	"	---	4.66	---	---	13	40%	
Beryllium	0.227	0.114	0.227	"	"	---	0.177	---	---	25	40%	
Cadmium	0.352	0.114	1.14	"	"	---	0.393	---	---	11	40%	
Chromium	5.73	0.568	2.27	"	"	---	6.66	---	---	15	40%	
Copper	12.8	0.568	1.14	"	"	---	15.3	---	---	17	40%	
Lead	11.5	0.114	0.227	"	"	---	13.4	---	---	15	40%	
Mercury	ND	0.0455	0.0909	"	"	---	ND	---	---	---	40%	
Nickel	9.02	0.568	4.55	"	"	---	12.4	---	---	31	40%	
Selenium	ND	0.568	1.14	"	"	---	ND	---	---	---	40%	
Silver	ND	0.114	0.227	"	"	---	ND	---	---	---	40%	
Thallium	ND	0.114	0.227	"	"	---	ND	---	---	---	40%	
Zinc	59.5	2.27	4.55	"	"	---	74.0	---	---	22	40%	

**Matrix Spike (5060496-MS1)**

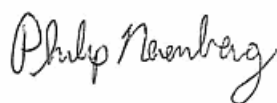
Prepared: 06/16/15 11:30 Analyzed: 06/16/15 19:37

QC Source Sample: 8832-150609-064 (A5F0362-05)

## EPA 6020A

Antimony	25.3	0.592	1.18	mg/kg dry	10	29.5	ND	85	75-125%	---	---
Arsenic	61.4	0.592	1.18	"	"	59.2	4.66	96	"	---	---
Beryllium	26.6	0.118	0.237	"	"	29.5	0.177	89	"	---	---
Cadmium	60.0	0.118	1.18	"	"	59.2	0.393	101	"	---	---
Chromium	64.8	0.592	2.37	"	"	"	6.66	98	"	---	---
Copper	75.3	0.592	1.18	"	"	"	15.3	101	"	---	---
Lead	71.4	0.118	0.237	"	"	"	13.4	98	"	---	---
Mercury	1.10	0.0473	0.0947	"	"	1.18	ND	93	"	---	---
Nickel	66.5	0.592	4.73	"	"	59.2	12.4	91	"	---	---
Selenium	30.6	0.592	1.18	"	"	29.5	ND	104	"	---	---
Silver	28.0	0.118	0.237	"	"	"	ND	95	"	---	---
Thallium	27.8	0.118	0.237	"	"	"	ND	94	"	---	---

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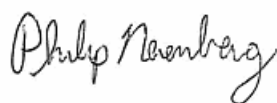
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Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

06/30/15 15:07

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060496 - EPA 3051A						Soil						
Matrix Spike (5060496-MS1)						Prepared: 06/16/15 11:30		Analyzed: 06/16/15 19:37				
QC Source Sample: 8832-150609-064 (A5F0362-05)												
Zinc	134	2.37	4.73	mg/kg dry	"	59.2	74.0	102	"	---	---	
Matrix Spike (5060496-MS2)						Prepared: 06/16/15 11:30		Analyzed: 06/16/15 20:12				
QC Source Sample: 8832-150609-072 (A5F0362-13)												
EPA 6020A												
Antimony	27.6	0.764	1.53	mg/kg dry	10	38.2	ND	72	75-125%	---	---	A-01a, Q-01
Arsenic	76.2	0.764	1.53	"	"	76.4	4.46	94	"	---	---	
Beryllium	34.9	0.153	0.306	"	"	38.2	0.803	89	"	---	---	
Cadmium	76.3	0.153	1.53	"	"	76.4	0.525	99	"	---	---	
Chromium	96.2	0.764	3.06	"	"	"	23.8	95	"	---	---	
Copper	108	0.764	1.53	"	"	"	32.8	98	"	---	---	
Lead	79.4	0.153	0.306	"	"	"	9.53	91	"	---	---	
Mercury	1.48	0.0611	0.122	"	"	1.53	ND	97	"	---	---	
Nickel	92.5	0.764	6.11	"	"	76.4	20.6	94	"	---	---	
Selenium	38.9	0.764	1.53	"	"	38.2	ND	102	"	---	---	
Silver	35.8	0.153	0.306	"	"	"	ND	94	"	---	---	
Thallium	35.1	0.153	0.306	"	"	"	0.170	91	"	---	---	
Zinc	149	3.06	6.11	"	"	76.4	78.8	91	"	---	---	

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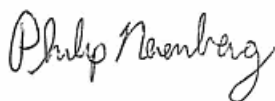
06/30/15 15:07

## QUALITY CONTROL (QC) SAMPLE RESULTS

## TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060617 - EPA 1311/3015						Solid						
Blank (5060617-BLK1)				Prepared: 06/19/15 10:26		Analyzed: 06/19/15 18:03						
1311/6020A												
Lead	ND	0.0250	0.0500	mg/L	5	---	---	---	---	---	---	TCLP
LCS (5060617-BS1)				Prepared: 06/19/15 10:26		Analyzed: 06/19/15 18:06						
1311/6020A												
Lead	2.52	0.0250	0.0500	mg/L	5	2.50	---	101	80-120%	---	---	TCLP
Matrix Spike (5060617-MS1)				Prepared: 06/19/15 10:26		Analyzed: 06/19/15 18:12						
QC Source Sample: 8832-150609-067 (A5F0362-08)												
1311/6020A												
Lead	2.65	0.0250	0.0500	mg/L	5	2.50	0.147	100	50-150%	---	---	

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Project: **POVRED**

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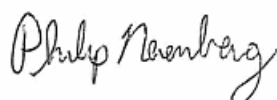
## QUALITY CONTROL (QC) SAMPLE RESULTS

### Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060420 - Total Solids (Dry Weight)							Soil					
Duplicate (5060420-DUP4)					Prepared: 06/12/15 10:45		Analyzed: 06/15/15 08:21					
QC Source Sample: 8832-150609-069 (A5F0362-10)												
EPA 8000C												
% Solids	78.4	1.00	1.00	% by Weight	1	---	78.5	---	---	0.1	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Project Number: 8832

Project Manager: Rob Ede

**Reported:**

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**SAMPLE PREPARATION INFORMATION****Diesel and/or Oil Hydrocarbons by NWTPH-Dx****Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060427</b>							
A5F0362-01	Soil	NWTPH-Dx	06/09/15 08:28	06/12/15 15:32	12.95g/5mL	10g/5mL	0.77
A5F0362-02	Soil	NWTPH-Dx	06/09/15 08:35	06/12/15 15:32	10.94g/5mL	10g/5mL	0.91
A5F0362-03	Soil	NWTPH-Dx	06/09/15 08:42	06/12/15 15:32	13.55g/5mL	10g/5mL	0.74
A5F0362-06	Soil	NWTPH-Dx	06/09/15 09:14	06/12/15 15:32	11.87g/5mL	10g/5mL	0.84
A5F0362-07	Soil	NWTPH-Dx	06/09/15 09:40	06/12/15 15:32	11.96g/5mL	10g/5mL	0.84
A5F0362-08	Soil	NWTPH-Dx	06/09/15 12:32	06/12/15 15:32	12.43g/5mL	10g/5mL	0.81
A5F0362-09	Soil	NWTPH-Dx	06/09/15 12:41	06/12/15 15:32	11.86g/5mL	10g/5mL	0.84
A5F0362-10	Soil	NWTPH-Dx	06/09/15 12:54	06/12/15 15:32	11.22g/5mL	10g/5mL	0.89
A5F0362-11	Soil	NWTPH-Dx	06/09/15 13:03	06/12/15 15:32	11.84g/5mL	10g/5mL	0.85

**Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx****Prep: EPA 5035A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060415</b>							
A5F0362-01	Soil	NWTPH-Gx (MS)	06/09/15 08:28	06/11/15 12:35	12.478g/10mL	10g/10mL	0.80
A5F0362-02	Soil	NWTPH-Gx (MS)	06/09/15 08:35	06/09/15 08:35	4.3g/5mL	10g/10mL	1.16
A5F0362-06	Soil	NWTPH-Gx (MS)	06/09/15 09:14	06/09/15 09:14	5.66g/5mL	10g/10mL	0.88
A5F0362-08	Soil	NWTPH-Gx (MS)	06/09/15 12:32	06/09/15 12:32	4.45g/5mL	10g/10mL	1.12
A5F0362-09	Soil	NWTPH-Gx (MS)	06/09/15 12:41	06/09/15 12:41	5.18g/5mL	10g/10mL	0.97

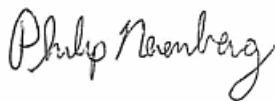
**Volatile Organic Compounds by EPA 8260B****Prep: EPA 5035A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060381</b>							
A5F0362-08RE2	Soil	5035/8260B	06/09/15 12:32	06/09/15 12:32	4.45g/5mL	10g/10mL	1.12
<b>Batch: 5060415</b>							
A5F0362-01	Soil	5035/8260B	06/09/15 08:28	06/11/15 12:35	12.478g/10mL	10g/10mL	0.80
A5F0362-06	Soil	5035/8260B	06/09/15 09:14	06/09/15 09:14	5.66g/5mL	10g/10mL	0.88
A5F0362-08	Soil	5035/8260B	06/09/15 12:32	06/09/15 12:32	4.45g/5mL	10g/10mL	1.12

**Polychlorinated Biphenyls by EPA 8082A****Prep: EPA 3546**

Sample Default RL Prep

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Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

06/30/15 15:07

## SAMPLE PREPARATION INFORMATION

### Polychlorinated Biphenyls by EPA 8082A

Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<b>Batch: 5060667</b>							
A5F0362-08	Soil	EPA 8082A	06/09/15 12:32	06/22/15 16:04	10.61g/5mL	10g/5mL	0.94

### Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

**Prep: EPA 3546**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060413</b>							
A5F0362-01	Soil	EPA 8270D (SIM)	06/09/15 08:28	06/12/15 09:15	11.48g/5mL	10g/5mL	0.87
A5F0362-02RE1	Soil	EPA 8270D (SIM)	06/09/15 08:35	06/12/15 09:15	11.7g/5mL	10g/5mL	0.86
A5F0362-06	Soil	EPA 8270D (SIM)	06/09/15 09:14	06/12/15 09:15	11.68g/5mL	10g/5mL	0.86
A5F0362-08RE1	Soil	EPA 8270D (SIM)	06/09/15 12:32	06/12/15 09:15	11.55g/5mL	10g/5mL	0.87
A5F0362-09	Soil	EPA 8270D (SIM)	06/09/15 12:41	06/12/15 09:15	11.58g/5mL	10g/5mL	0.86

### Total Hexavalent Chromium by EPA 7196A

**Prep: Method Prep: Non-Ag**

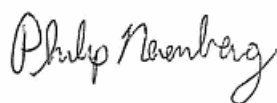
Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060485</b>							
A5F0362-10	Soil	EPA 7196A	06/09/15 12:54	06/16/15 08:08	2.5291g/111mL	2.5g/111mL	0.99

### Total Metals by EPA 6020 (ICPMS)

**Prep: EPA 3051A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060424</b>							
A5F0362-01	Soil	EPA 6020A	06/09/15 08:28	06/12/15 13:58	0.498g/50mL	0.5g/50mL	1.00
<b>Batch: 5060496</b>							
A5F0362-02	Soil	EPA 6020A	06/09/15 08:35	06/16/15 11:30	0.483g/50mL	0.5g/50mL	1.04
A5F0362-03	Soil	EPA 6020A	06/09/15 08:42	06/16/15 11:30	0.474g/50mL	0.5g/50mL	1.05
A5F0362-04	Soil	EPA 6020A	06/09/15 08:48	06/16/15 11:30	0.475g/50mL	0.5g/50mL	1.05
A5F0362-05	Soil	EPA 6020A	06/09/15 08:56	06/16/15 11:30	0.456g/50mL	0.5g/50mL	1.10
A5F0362-06	Soil	EPA 6020A	06/09/15 09:14	06/16/15 11:30	0.454g/50mL	0.5g/50mL	1.10
A5F0362-07	Soil	EPA 6020A	06/09/15 09:40	06/16/15 11:30	0.517g/50mL	0.5g/50mL	0.97
A5F0362-08	Soil	EPA 6020A	06/09/15 12:32	06/16/15 11:30	0.474g/50mL	0.5g/50mL	1.05
A5F0362-09	Soil	EPA 6020A	06/09/15 12:41	06/16/15 11:30	0.452g/50mL	0.5g/50mL	1.11
A5F0362-10	Soil	EPA 6020A	06/09/15 12:54	06/16/15 11:30	0.487g/50mL	0.5g/50mL	1.03
A5F0362-11	Soil	EPA 6020A	06/09/15 13:03	06/16/15 11:30	0.474g/50mL	0.5g/50mL	1.05

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**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

06/30/15 15:07

## SAMPLE PREPARATION INFORMATION

### Total Metals by EPA 6020 (ICPMS)

**Prep: EPA 3051A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A5F0362-12	Soil	EPA 6020A	06/09/15 13:15	06/16/15 11:30	0.497g/50mL	0.5g/50mL	1.01
A5F0362-13	Soil	EPA 6020A	06/09/15 13:20	06/16/15 11:30	0.456g/50mL	0.5g/50mL	1.10

### TCLP Extraction by EPA 1311

**Prep: EPA 1311 (TCLP)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5060587							
A5F0362-08	Soil	EPA 1311	06/09/15 12:32	06/18/15 17:31	100g/2000mL	100g/2000mL	NA

### TCLP Metals by EPA 6020 (ICPMS)

**Prep: EPA 1311/3015**

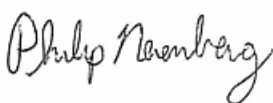
Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5060617							
A5F0362-08	Soil	1311/6020A	06/09/15 12:32	06/19/15 10:26	5mL/50mL	5mL/50mL	1.00

### Percent Dry Weight

**Prep: Total Solids (Dry Weight)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5060420							
A5F0362-01	Soil	EPA 8000C	06/09/15 08:28	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-02	Soil	EPA 8000C	06/09/15 08:35	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-03	Soil	EPA 8000C	06/09/15 08:42	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-04	Soil	EPA 8000C	06/09/15 08:48	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-05	Soil	EPA 8000C	06/09/15 08:56	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-06	Soil	EPA 8000C	06/09/15 09:14	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-07	Soil	EPA 8000C	06/09/15 09:40	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-08	Soil	EPA 8000C	06/09/15 12:32	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-09	Soil	EPA 8000C	06/09/15 12:41	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-10	Soil	EPA 8000C	06/09/15 12:54	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-11	Soil	EPA 8000C	06/09/15 13:03	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-12	Soil	EPA 8000C	06/09/15 13:15	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-13	Soil	EPA 8000C	06/09/15 13:20	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA

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Philip Nerenberg, Lab Director



**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

**Reported:**

06/30/15 15:07

## Notes and Definitions

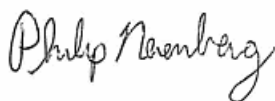
### Qualifiers:

- A-01a Serial dilution passes, PS not needed. Data is acceptable.
- C-07 Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
- F-11 The hydrocarbon pattern indicates possible weathered diesel, or a contribution from a related component.
- F-13 The chromatographic pattern does not resemble the fuel standard used for quantitation
- F-15 Results for diesel are estimated due to overlap from the reported oil result.
- F-16 Results for oil are estimated due to overlap from the reported diesel result.
- J Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- M-02 Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
- Q-01 Spike recovery and/or RPD is outside acceptance limits.
- Q-29 Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
- Q-41 Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- R-02 The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- S-05 Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
- TCLP This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 5060587.
- V-16 Sample aliquot was subsampled from the sample container in the laboratory. The subsampled aliquot was not preserved within 48 hours of sampling.

### Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.

Apex Laboratories



Philip Nerenberg, Lab Director

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Project: **POVRED**

Project Number: 8832  
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**Reported:**  
06/30/15 15:07

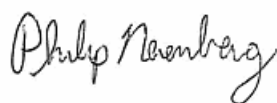
**Blank Policy** Apex assesses blank data for potential high bias down to a level equal to  $\frac{1}{2}$  the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.

For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.

Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

\*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).



**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

**Reported:**

06/30/15 15:07

[illegible]

Philip Neenberg

# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Monday, August 17, 2015

Rob Ede  
Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209

RE: POVRED / 8832

Enclosed are the results of analyses for work order A5F0362, which was received by the laboratory on 6/10/2015 at 11:40:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [ldomenighini@apex-labs.com](mailto:ldomenighini@apex-labs.com), or by phone at 503-718-2323.

---

DRAFT REPORT

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DRAFT REPORT, DATA SUBJECT TO CHANGE

Page 1 of 14

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

08/17/15 14:57

**ANALYTICAL REPORT FOR SAMPLES****SAMPLE INFORMATION**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
8832-150609-060	A5F0362-01	Soil	06/09/15 08:28	06/10/15 11:40
8832-150609-061	A5F0362-02	Soil	06/09/15 08:35	06/10/15 11:40
8832-150609-062	A5F0362-03	Soil	06/09/15 08:42	06/10/15 11:40
8832-150609-063	A5F0362-04	Soil	06/09/15 08:48	06/10/15 11:40
8832-150609-064	A5F0362-05	Soil	06/09/15 08:56	06/10/15 11:40
8832-150609-065	A5F0362-06	Soil	06/09/15 09:14	06/10/15 11:40
8832-150609-066	A5F0362-07	Soil	06/09/15 09:40	06/10/15 11:40
8832-150609-067	A5F0362-08	Soil	06/09/15 12:32	06/10/15 11:40
8832-150609-068	A5F0362-09	Soil	06/09/15 12:41	06/10/15 11:40
8832-150609-069	A5F0362-10	Soil	06/09/15 12:54	06/10/15 11:40
8832-150609-070	A5F0362-11	Soil	06/09/15 13:03	06/10/15 11:40
8832-150609-071	A5F0362-12	Soil	06/09/15 13:15	06/10/15 11:40
8832-150609-072	A5F0362-13	Soil	06/09/15 13:20	06/10/15 11:40

DRAFT REPORT

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

08/17/15 14:57

**ANALYTICAL SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-060 (A5F0362-01) Matrix: Soil</b>								
Batch: 5060424								
Antimony	ND	---	1.10	mg/kg dry	10	06/15/15 14:06	EPA 6020A	
<b>Arsenic</b>	<b>1.27</b>	---	1.10	"	"	"	"	
<b>Beryllium</b>	<b>0.560</b>	---	0.220	"	"	"	"	
<b>Cadmium</b>	<b>0.725</b>	---	0.220	"	"	"	"	
<b>Chromium</b>	<b>7.02</b>	---	1.10	"	"	"	"	
<b>Copper</b>	<b>28.1</b>	---	1.10	"	"	"	"	
<b>Lead</b>	<b>24.2</b>	---	0.220	"	"	"	"	
Mercury	ND	---	0.0879	"	"	"	"	
<b>Nickel</b>	<b>10.3</b>	---	4.39	"	"	"	"	
Selenium	ND	---	2.20	"	"	"	"	
Silver	ND	---	0.220	"	"	"	"	
Thallium	ND	---	0.220	"	"	"	"	
<b>Zinc</b>	<b>61.6</b>	---	4.39	"	"	"	"	
<b>8832-150609-061 (A5F0362-02) Matrix: Soil</b>								
Batch: 5060496								
<b>Lead</b>	<b>20.8</b>	---	0.223	mg/kg dry	10	06/16/15 19:22	EPA 6020A	
<b>8832-150609-062 (A5F0362-03) Matrix: Soil</b>								
Batch: 5060496								
<b>Lead</b>	<b>2.60</b>	---	0.225	mg/kg dry	10	06/16/15 19:25	EPA 6020A	
<b>8832-150609-063 (A5F0362-04) Matrix: Soil</b>								
Batch: 5060496								
<b>Lead</b>	<b>3.12</b>	---	0.225	mg/kg dry	10	06/16/15 19:28	EPA 6020A	
<b>8832-150609-064 (A5F0362-05) Matrix: Soil</b>								
Batch: 5060496								
<b>Lead</b>	<b>13.4</b>	---	0.253	mg/kg dry	10	06/16/15 19:31	EPA 6020A	
<b>8832-150609-065 (A5F0362-06) Matrix: Soil</b>								
Batch: 5060496								
Antimony	ND	---	1.49	mg/kg dry	10	06/16/15 19:49	EPA 6020A	
<b>Arsenic</b>	<b>5.25</b>	---	1.49	"	"	"	"	
<b>Beryllium</b>	<b>0.402</b>	---	0.298	"	"	"	"	
Cadmium	ND	---	1.49	"	"	"	"	
<b>Chromium</b>	<b>14.7</b>	---	2.98	"	"	"	"	
<b>Copper</b>	<b>29.2</b>	---	1.49	"	"	"	"	
<b>Lead</b>	<b>20.8</b>	---	0.298	"	"	"	"	

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Project Number: 8832

Project Manager: Rob Ede

**Reported:**

08/17/15 14:57

**ANALYTICAL SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150609-065 (A5F0362-06)			Matrix: Soil					
Mercury	0.435	---	0.119	mg/kg dry	10	"	EPA 6020A	
Nickel	14.6	---	5.95	"	"	"	"	
Selenium	ND	---	1.49	"	"	"	"	
Silver	ND	---	0.298	"	"	"	"	
Thallium	ND	---	0.298	"	"	"	"	
Zinc	89.8	---	5.95	"	"	"	"	
8832-150609-066 (A5F0362-07)			Matrix: Soil					
Batch: 5060496								
Lead	16.8	---	0.265	mg/kg dry	10	06/16/15 19:51	EPA 6020A	
8832-150609-067 (A5F0362-08)			Matrix: Soil					
Batch: 5060496								
Antimony	ND	---	1.15	mg/kg dry	10	06/16/15 19:55	EPA 6020A	
Arsenic	2.18	---	1.15	"	"	"	"	
Beryllium	0.298	---	0.229	"	"	"	"	
Cadmium	ND	---	1.15	"	"	"	"	
Chromium	8.91	---	2.29	"	"	"	"	
Copper	33.2	---	1.15	"	"	"	"	
Lead	119	---	0.229	"	"	"	"	
Mercury	0.227	---	0.0916	"	"	"	"	
Nickel	16.7	---	4.58	"	"	"	"	
Selenium	ND	---	1.15	"	"	"	"	
Silver	ND	---	0.229	"	"	"	"	
Thallium	ND	---	0.229	"	"	"	"	
Zinc	88.1	---	4.58	"	"	"	"	
8832-150609-068 (A5F0362-09)			Matrix: Soil					
Batch: 5060496								
Lead	9.73	---	0.267	mg/kg dry	10	06/16/15 19:57	EPA 6020A	
8832-150609-069 (A5F0362-10)			Matrix: Soil					
Batch: 5060496								
Antimony	ND	---	1.31	mg/kg dry	10	06/16/15 20:00	EPA 6020A	
Arsenic	3.64	---	1.31	"	"	"	"	
Beryllium	0.445	---	0.262	"	"	"	"	
Cadmium	ND	---	1.31	"	"	"	"	
Chromium	10.5	---	2.62	"	"	"	"	
Copper	21.5	---	1.31	"	"	"	"	

DRAFT REPORT

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Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

08/17/15 14:57

**ANALYTICAL SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150609-069 (A5F0362-10)			Matrix: Soil					
Lead	6.64	---	0.262	mg/kg dry	10	"	EPA 6020A	
Mercury	ND	---	0.105	"	"	"	"	
Nickel	12.0	---	5.23	"	"	"	"	
Selenium	ND	---	1.31	"	"	"	"	
Silver	ND	---	0.262	"	"	"	"	
Thallium	ND	---	0.262	"	"	"	"	
Zinc	53.0	---	5.23	"	"	"	"	
8832-150609-070 (A5F0362-11)			Matrix: Soil					
Batch: 5060496								
Lead	16.4	---	0.294	mg/kg dry	10	06/16/15 20:03	EPA 6020A	
8832-150609-071 (A5F0362-12)			Matrix: Soil					
Batch: 5060496								
Lead	7.89	---	0.275	mg/kg dry	10	06/16/15 20:06	EPA 6020A	
8832-150609-072 (A5F0362-13)			Matrix: Soil					
Batch: 5060496								
Lead	9.53	---	0.309	mg/kg dry	10	06/16/15 20:09	EPA 6020A	

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08/17/15 14:57

**ANALYTICAL SAMPLE RESULTS**

Percent Dry Weight								
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150609-060 (A5F0362-01)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	91.4	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-061 (A5F0362-02)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	92.7	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-062 (A5F0362-03)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	93.8	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-063 (A5F0362-04)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	93.6	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-064 (A5F0362-05)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	86.6	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-065 (A5F0362-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	74.0	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-066 (A5F0362-07)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	72.9	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-067 (A5F0362-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	92.1	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-068 (A5F0362-09)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	83.0	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-069 (A5F0362-10)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	78.5	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-070 (A5F0362-11)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	71.7	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-071 (A5F0362-12)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	73.2	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	
<b>8832-150609-072 (A5F0362-13)</b>			<b>Matrix: Soil</b>		<b>Batch: 5060420</b>			
% Solids	71.0	---	1.00	% by Weight	1	06/15/15 08:21	EPA 8000C	

DRAFT REPORT

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

08/17/15 14:57

**QUALITY CONTROL (QC) SAMPLE RESULTS****DRAFT: Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060424 - EPA 3051A						Soil						
Blank (5060424-BLK1)						Prepared: 06/12/15 13:54		Analyzed: 06/15/15 13:22				
EPA 6020A												
Antimony	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	---	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Copper	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	---	4.00	"	"	---	---	---	---	---	---	
Selenium	ND	---	2.00	"	"	---	---	---	---	---	---	
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	---	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
LCS (5060424-BS1)						Prepared: 06/12/15 13:54		Analyzed: 06/15/15 13:25				
EPA 6020A												
Antimony	24.7	---	1.00	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Arsenic	52.4	---	1.00	"	"	50.0	---	105	"	---	---	
Beryllium	24.1	---	0.200	"	"	25.0	---	96	"	---	---	
Cadmium	51.2	---	0.200	"	"	50.0	---	102	"	---	---	
Chromium	51.0	---	1.00	"	"	"	---	102	"	---	---	
Copper	51.3	---	1.00	"	"	"	---	103	"	---	---	
Lead	49.5	---	0.200	"	"	"	---	99	"	---	---	
Mercury	0.957	---	0.0800	"	"	1.00	---	96	"	---	---	
Nickel	50.1	---	4.00	"	"	50.0	---	100	"	---	---	
Selenium	27.1	---	2.00	"	"	25.0	---	108	"	---	---	
Silver	23.3	---	0.200	"	"	"	---	93	"	---	---	
Thallium	23.9	---	0.200	"	"	"	---	96	"	---	---	
Zinc	51.9	---	4.00	"	"	50.0	---	104	"	---	---	

DRAFT REPORT

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

08/17/15 14:57

**QUALITY CONTROL (QC) SAMPLE RESULTS****DRAFT: Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060496 - EPA 3051A						Soil						
Blank (5060496-BLK1)						Prepared: 06/16/15 11:30    Analyzed: 06/16/15 19:16						
EPA 6020A												
Antimony	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	---	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	---	1.00	"	"	---	---	---	---	---	---	
Chromium	ND	---	2.00	"	"	---	---	---	---	---	---	
Copper	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	---	4.00	"	"	---	---	---	---	---	---	
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	---	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
LCS (5060496-BS1)						Prepared: 06/16/15 11:30    Analyzed: 06/16/15 19:19						
EPA 6020A												
Antimony	24.9	---	1.00	mg/kg wet	10	25.0	---	100	80-120%	---	---	
Arsenic	50.6	---	1.00	"	"	50.0	---	101	"	---	---	
Beryllium	22.8	---	0.200	"	"	25.0	---	91	"	---	---	
Cadmium	50.5	---	1.00	"	"	50.0	---	101	"	---	---	
Chromium	50.8	---	2.00	"	"	"	---	102	"	---	---	
Copper	54.0	---	1.00	"	"	"	---	108	"	---	---	
Lead	50.1	---	0.200	"	"	"	---	100	"	---	---	
Mercury	0.946	---	0.0800	"	"	1.00	---	95	"	---	---	
Nickel	51.0	---	4.00	"	"	50.0	---	102	"	---	---	
Selenium	27.2	---	1.00	"	"	25.0	---	109	"	---	---	
Silver	24.3	---	0.200	"	"	"	---	97	"	---	---	
Thallium	24.6	---	0.200	"	"	"	---	98	"	---	---	
Zinc	53.0	---	4.00	"	"	50.0	---	106	"	---	---	
Duplicate (5060496-DUP1)						Prepared: 06/16/15 11:30    Analyzed: 06/16/15 19:34						

**DRAFT REPORT**

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

08/17/15 14:57

**QUALITY CONTROL (QC) SAMPLE RESULTS****DRAFT: Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060496 - EPA 3051A							Soil					
Duplicate (5060496-DUP1)					Prepared: 06/16/15 11:30		Analyzed: 06/16/15 19:34					
QC Source Sample: 8832-150609-064 (A5F0362-05)												
EPA 6020A												
Antimony	ND	---	1.14	mg/kg dry	10	---	ND	---	---	---	40%	
Arsenic	4.09	---	1.14	"	"	---	4.66	---	---	13	40%	
Beryllium	0.227	---	0.227	"	"	---	0.177	---	---	25	40%	
Cadmium	ND	---	1.14	"	"	---	0.393	---	---	***	40%	
Chromium	5.73	---	2.27	"	"	---	6.66	---	---	15	40%	
Copper	12.8	---	1.14	"	"	---	15.3	---	---	17	40%	
Lead	11.5	---	0.227	"	"	---	13.4	---	---	15	40%	
Mercury	ND	---	0.0909	"	"	---	ND	---	---	---	40%	
Nickel	9.02	---	4.55	"	"	---	12.4	---	---	31	40%	
Selenium	ND	---	1.14	"	"	---	ND	---	---	---	40%	
Silver	ND	---	0.227	"	"	---	ND	---	---	---	40%	
Thallium	ND	---	0.227	"	"	---	ND	---	---	---	40%	
Zinc	59.5	---	4.55	"	"	---	74.0	---	---	22	40%	

**Matrix Spike (5060496-MS1)**

Prepared: 06/16/15 11:30 Analyzed: 06/16/15 19:37

QC Source Sample: 8832-150609-064 (A5F0362-05)

## EPA 6020A

Antimony	25.3	---	1.18	mg/kg dry	10	29.5	ND	85	75-125%	---	---
Arsenic	61.4	---	1.18	"	"	59.2	4.66	96	"	---	---
Beryllium	26.6	---	0.237	"	"	29.5	0.177	89	"	---	---
Cadmium	60.0	---	1.18	"	"	59.2	0.393	101	"	---	---
Chromium	64.8	---	2.37	"	"	"	6.66	98	"	---	---
Copper	75.3	---	1.18	"	"	"	15.3	101	"	---	---
Lead	71.4	---	0.237	"	"	"	13.4	98	"	---	---
Mercury	1.10	---	0.0947	"	"	1.18	ND	93	"	---	---
Nickel	66.5	---	4.73	"	"	59.2	12.4	91	"	---	---
Selenium	30.6	---	1.18	"	"	29.5	ND	104	"	---	---
Silver	28.0	---	0.237	"	"	"	ND	95	"	---	---
Thallium	27.8	---	0.237	"	"	"	ND	94	"	---	---

**DRAFT REPORT**

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Rob Ede**Reported:**

08/17/15 14:57

**QUALITY CONTROL (QC) SAMPLE RESULTS****DRAFT: Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060496 - EPA 3051A						Soil						
Matrix Spike (5060496-MS1)						Prepared: 06/16/15 11:30		Analyzed: 06/16/15 19:37				
QC Source Sample: 8832-150609-064 (A5F0362-05)												
Zinc	134	---	4.73	mg/kg dry	"	59.2	74.0	102	"	---	---	
Matrix Spike (5060496-MS2)						Prepared: 06/16/15 11:30		Analyzed: 06/16/15 20:12				
QC Source Sample: 8832-150609-072 (A5F0362-13)												
EPA 6020A												
Antimony	27.6	---	1.53	mg/kg dry	10	38.2	ND	72	75-125%	---	---	A-01, Q-01
Arsenic	76.2	---	1.53	"	"	76.4	4.46	94	"	---	---	
Beryllium	34.9	---	0.306	"	"	38.2	0.803	89	"	---	---	
Cadmium	76.3	---	1.53	"	"	76.4	0.525	99	"	---	---	
Chromium	96.2	---	3.06	"	"	"	23.8	95	"	---	---	
Copper	108	---	1.53	"	"	"	32.8	98	"	---	---	
Lead	79.4	---	0.306	"	"	"	9.53	91	"	---	---	
Mercury	1.48	---	0.122	"	"	1.53	ND	97	"	---	---	
Nickel	92.5	---	6.11	"	"	76.4	20.6	94	"	---	---	
Selenium	38.9	---	1.53	"	"	38.2	ND	102	"	---	---	
Silver	35.8	---	0.306	"	"	"	ND	94	"	---	---	
Thallium	35.1	---	0.306	"	"	"	0.170	91	"	---	---	
Zinc	149	---	6.11	"	"	76.4	78.8	91	"	---	---	

DRAFT REPORT

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**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

**Reported:**

08/17/15 14:57

## QUALITY CONTROL (QC) SAMPLE RESULTS

### DRAFT: Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060420 - Total Solids (Dry Weight)							Soil					
Duplicate (5060420-DUP4)					Prepared: 06/12/15 10:45		Analyzed: 06/15/15 08:21					
QC Source Sample: 8832-150609-069 (A5F0362-10)												
EPA 8000C												
% Solids	78.4	---	1.00	% by Weight	1	---	78.5	---	---	0.1	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

DRAFT REPORT

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**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Rob Ede

**Reported:**

08/17/15 14:57

## SAMPLE PREPARATION INFORMATION

### Total Metals by EPA 6020 (ICPMS)

**Prep: EPA 3051A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060424</b>							
A5F0362-01	Soil	EPA 6020A	06/09/15 08:28	06/12/15 13:58	0.498g/50mL	0.5g/50mL	1.00
<b>Batch: 5060496</b>							
A5F0362-02	Soil	EPA 6020A	06/09/15 08:35	06/16/15 11:30	0.483g/50mL	0.5g/50mL	1.04
A5F0362-03	Soil	EPA 6020A	06/09/15 08:42	06/16/15 11:30	0.474g/50mL	0.5g/50mL	1.05
A5F0362-04	Soil	EPA 6020A	06/09/15 08:48	06/16/15 11:30	0.475g/50mL	0.5g/50mL	1.05
A5F0362-05	Soil	EPA 6020A	06/09/15 08:56	06/16/15 11:30	0.456g/50mL	0.5g/50mL	1.10
A5F0362-06	Soil	EPA 6020A	06/09/15 09:14	06/16/15 11:30	0.454g/50mL	0.5g/50mL	1.10
A5F0362-07	Soil	EPA 6020A	06/09/15 09:40	06/16/15 11:30	0.517g/50mL	0.5g/50mL	0.97
A5F0362-08	Soil	EPA 6020A	06/09/15 12:32	06/16/15 11:30	0.474g/50mL	0.5g/50mL	1.05
A5F0362-09	Soil	EPA 6020A	06/09/15 12:41	06/16/15 11:30	0.452g/50mL	0.5g/50mL	1.11
A5F0362-10	Soil	EPA 6020A	06/09/15 12:54	06/16/15 11:30	0.487g/50mL	0.5g/50mL	1.03
A5F0362-11	Soil	EPA 6020A	06/09/15 13:03	06/16/15 11:30	0.474g/50mL	0.5g/50mL	1.05
A5F0362-12	Soil	EPA 6020A	06/09/15 13:15	06/16/15 11:30	0.497g/50mL	0.5g/50mL	1.01
A5F0362-13	Soil	EPA 6020A	06/09/15 13:20	06/16/15 11:30	0.456g/50mL	0.5g/50mL	1.10

### Percent Dry Weight

**Prep: Total Solids (Dry Weight)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060420</b>							
A5F0362-01	Soil	EPA 8000C	06/09/15 08:28	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-02	Soil	EPA 8000C	06/09/15 08:35	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-03	Soil	EPA 8000C	06/09/15 08:42	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-04	Soil	EPA 8000C	06/09/15 08:48	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-05	Soil	EPA 8000C	06/09/15 08:56	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-06	Soil	EPA 8000C	06/09/15 09:14	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-07	Soil	EPA 8000C	06/09/15 09:40	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-08	Soil	EPA 8000C	06/09/15 12:32	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-09	Soil	EPA 8000C	06/09/15 12:41	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-10	Soil	EPA 8000C	06/09/15 12:54	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-11	Soil	EPA 8000C	06/09/15 13:03	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-12	Soil	EPA 8000C	06/09/15 13:15	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA
A5F0362-13	Soil	EPA 8000C	06/09/15 13:20	06/12/15 10:45	1N/A/1N/A	1N/A/1N/A	NA

DRAFT REPORT

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**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Rob Ede

**Reported:**

08/17/15 14:57

## Notes and Definitions

### Qualifiers:

- A-01 Serial dilution passes, PS not needed. Data is acceptable.
- Q-01 Spike recovery and/or RPD is outside acceptance limits.

### Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.  
  
For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.  
  
Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- \*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

DRAFT REPORT

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**Reported:**  
08/17/15 14:57

DRAFT REPORT

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## **Appendix E**

Laboratory Report and Chain-of-Custody Documentation – Groundwater Samples

# Apex Labs

12232 S.W. Garden Place  
Tigard, OR 97223  
503-718-2323 Phone  
503-718-0333 Fax

Thursday, July 9, 2015

Ben Uhl  
Hahn and Associates  
434 NW 6th Ave. Suite 203  
Portland, OR 97209

RE: POVRED / 8832

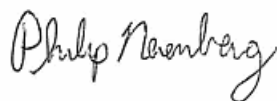
Enclosed are the results of analyses for work order A5F0543, which was received by the laboratory on 6/17/2015 at 3:05:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

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Apex Laboratories



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Philip Nerenberg, Lab Director

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

**Hahn and Associates**  
434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**  
Project Number: 8832  
Project Manager: Ben Uhl

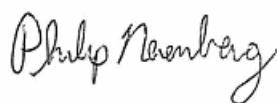
**Reported:**  
07/09/15 17:39

## ANALYTICAL REPORT FOR SAMPLES

### SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
8832-150616-100	A5F0543-01	Water	06/16/15 10:20	06/17/15 15:05
8832-150616-101	A5F0543-02	Water	06/16/15 11:35	06/17/15 15:05
8832-150616-102	A5F0543-03	Water	06/16/15 13:20	06/17/15 15:05
8832-150616-103	A5F0543-04	Water	06/16/15 13:20	06/17/15 15:05
8832-150617-104	A5F0543-05	Water	06/17/15 10:20	06/17/15 15:05
8832-150617-105	A5F0543-06	Water	06/17/15 11:00	06/17/15 15:05
8832-150617-107	A5F0543-07	Water	06/17/15 11:45	06/17/15 15:05

Apex Laboratories



Philip Nerenberg, Lab Director

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

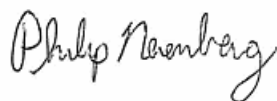
**Reported:**

07/09/15 17:39

**ANALYTICAL SAMPLE RESULTS****Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-100 (A5F0543-01)</b>		<b>Matrix: Water</b>		<b>Batch: 5060602</b>				
Diesel	<b>0.795</b>	0.106	0.213	mg/L	1	06/19/15 23:07	NWTPH-Dx	F-13
Oil	ND	0.213	0.426	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150616-101 (A5F0543-02)</b>		<b>Matrix: Water</b>		<b>Batch: 5060602</b>				
Diesel	<b>0.120</b>	0.105	0.211	mg/L	1	06/19/15 23:31	NWTPH-Dx	J
Oil	ND	0.211	0.421	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150616-102 (A5F0543-03)</b>		<b>Matrix: Water</b>		<b>Batch: 5060602</b>				
Diesel	ND	0.105	0.211	mg/L	1	06/19/15 23:55	NWTPH-Dx	
Oil	ND	0.211	0.421	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150616-103 (A5F0543-04)</b>		<b>Matrix: Water</b>		<b>Batch: 5060602</b>				
Diesel	ND	0.102	0.204	mg/L	1	06/20/15 00:20	NWTPH-Dx	
Oil	ND	0.204	0.408	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150617-104 (A5F0543-05)</b>		<b>Matrix: Water</b>		<b>Batch: 5060602</b>				
Diesel	ND	0.110	0.220	mg/L	1	06/20/15 00:44	NWTPH-Dx	
Oil	ND	0.220	0.440	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 105 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150617-105 (A5F0543-06)</b>		<b>Matrix: Water</b>		<b>Batch: 5060602</b>				
Diesel	ND	0.100	0.200	mg/L	1	06/20/15 01:09	NWTPH-Dx	
Oil	ND	0.200	0.400	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 50-150 %</i>		"	"	"
<b>8832-150617-107 (A5F0543-07)</b>		<b>Matrix: Water</b>		<b>Batch: 5060602</b>				
Diesel	<b>0.140</b>	0.0971	0.194	mg/L	1	06/20/15 01:33	NWTPH-Dx	J
Oil	ND	0.194	0.388	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		"	"	"

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Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

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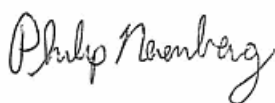
07/09/15 17:39

## ANALYTICAL SAMPLE RESULTS

### Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-100 (A5F0543-01RE1)</b>			<b>Matrix: Water</b>		<b>Batch: 5060605</b>			
Gasoline Range Organics	1.36	0.0500	0.100	mg/L	1	06/19/15 14:56	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 102 %		Limits: 50-150 %	"	"	"	
1,4-Difluorobenzene (Sur)		98 %		Limits: 50-150 %	"	"	"	
<b>8832-150616-101 (A5F0543-02RE1)</b>			<b>Matrix: Water</b>		<b>Batch: 5060605</b>			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	06/19/15 13:04	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 101 %		Limits: 50-150 %	"	"	"	
1,4-Difluorobenzene (Sur)		97 %		Limits: 50-150 %	"	"	"	
<b>8832-150616-102 (A5F0543-03RE1)</b>			<b>Matrix: Water</b>		<b>Batch: 5060605</b>			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	06/19/15 13:32	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 101 %		Limits: 50-150 %	"	"	"	
1,4-Difluorobenzene (Sur)		98 %		Limits: 50-150 %	"	"	"	
<b>8832-150617-104 (A5F0543-05RE1)</b>			<b>Matrix: Water</b>		<b>Batch: 5060605</b>			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	06/19/15 14:00	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 101 %		Limits: 50-150 %	"	"	"	
1,4-Difluorobenzene (Sur)		98 %		Limits: 50-150 %	"	"	"	
<b>8832-150617-107 (A5F0543-07RE1)</b>			<b>Matrix: Water</b>		<b>Batch: 5060605</b>			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	06/19/15 14:28	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 102 %		Limits: 50-150 %	"	"	"	
1,4-Difluorobenzene (Sur)		98 %		Limits: 50-150 %	"	"	"	

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Project Manager: Ben Uhl

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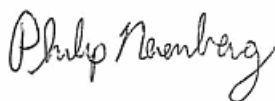
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## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-100 (A5F0543-01RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
Acetone	ND	10.0	20.0	ug/L	1	06/19/15 14:56	EPA 8260B	
Benzene	ND	0.125	0.250	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	Q-31
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.250	0.500	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	Q-30
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Project Number: 8832  
Project Manager: Ben Uhl

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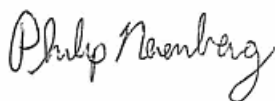
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## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-100 (A5F0543-01RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	2.50	5.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 80-120 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Surr)</i>		<i>107 %</i>		<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>		<i>104 %</i>		<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>Limits: 80-120 %</i>	"	"	"	

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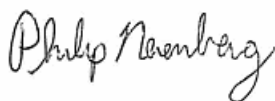
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## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-100 (A5F0543-01RE2)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
<b>Naphthalene</b>	<b>227</b>	25.0	50.0	ug/L	25	06/19/15 18:13	EPA 8260B	
<i>Surrogate: Dibromofluoromethane (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 80-120 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Surr)</i>		<i>105 %</i>		<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>Limits: 80-120 %</i>	"	"	"	
<b>8832-150616-101 (A5F0543-02RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
Acetone	ND	10.0	20.0	ug/L	1	06/19/15 13:04	EPA 8260B	
Benzene	ND	0.125	0.250	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	Q-31
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.250	0.500	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	Q-30
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	

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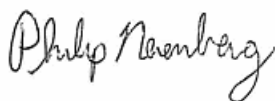
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## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-101 (A5F0543-02RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/L	1	"	EPA 8260B	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	2.50	5.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	

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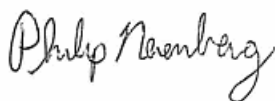
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## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-101 (A5F0543-02RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
<i>Surrogate: Dibromofluoromethane (Surr)</i>			<i>Recovery: 104 %</i>	<i>Limits: 80-120 %</i>	1	"	EPA 8260B	
<i>1,4-Difluorobenzene (Surr)</i>			<i>107 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>103 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>99 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<b>8832-150616-102 (A5F0543-03RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
Acetone	ND	10.0	20.0	ug/L	1	06/19/15 13:32	EPA 8260B	
Benzene	ND	0.125	0.250	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	Q-31
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.250	0.500	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	Q-30
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	

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Philip Nerenberg, Lab Director

Hahn and Associates

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

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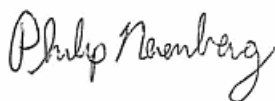
07/09/15 17:39

## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-102 (A5F0543-03RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
trans-1,2-Dichloroethene	ND	0.250	0.500	ug/L	1	"	EPA 8260B	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	2.50	5.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)		Recovery: 104 %		Limits: 80-120 %	"	"	"	

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Philip Nerenberg, Lab Director

**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

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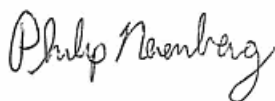
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## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-102 (A5F0543-03RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery: 107 %	Limits: 80-120 %	1	"	"	EPA 8260B	
Toluene-d8 (Surr)		103 %	Limits: 80-120 %	"	"	"	"	
4-Bromofluorobenzene (Surr)		100 %	Limits: 80-120 %	"	"	"	"	
<b>8832-150617-104 (A5F0543-05RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
Acetone	ND	10.0	20.0	ug/L	1	06/19/15 14:00	EPA 8260B	
Benzene	ND	0.125	0.250	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	Q-31
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.250	0.500	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	Q-30
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

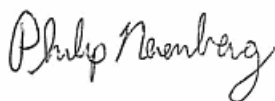
**Reported:**

07/09/15 17:39

**ANALYTICAL SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150617-104 (A5F0543-05RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	"	EPA 8260B	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	2.50	5.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)		Recovery: 103 %		Limits: 80-120 %	"	"	"	
1,4-Difluorobenzene (Surr)		107 %		Limits: 80-120 %	"	"	"	

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Philip Nerenberg, Lab Director

**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

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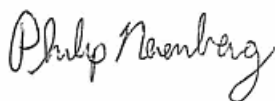
07/09/15 17:39

## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150617-104 (A5F0543-05RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
<i>Surrogate: Toluene-d8 (Surr)</i>			<i>Recovery: 103 %</i>	<i>Limits: 80-120 %</i>	1	"	EPA 8260B	
<i>4-Bromofluorobenzene (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<b>8832-150617-107 (A5F0543-07RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
<b>Acetone</b>	<b>21.0</b>	10.0	20.0	ug/L	1	06/19/15 14:28	EPA 8260B	
Benzene	ND	0.125	0.250	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	Q-31
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.250	0.500	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	Q-30
<b>Chloroform</b>	<b>0.880</b>	0.500	1.00	"	"	"	"	J
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	

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Philip Nerenberg, Lab Director

**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

**Reported:**

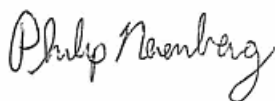
07/09/15 17:39

## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150617-107 (A5F0543-07RE1)</b>		<b>Matrix: Water</b>		<b>Batch: 5060605</b>				
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	2.50	5.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
<i>Surrogate: Dibromofluoromethane (Surr)</i>		<i>Recovery: 104 %</i>		<i>Limits: 80-120 %</i>		"	"	"
<i>1,4-Difluorobenzene (Surr)</i>		<i>107 %</i>		<i>Limits: 80-120 %</i>		"	"	"
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>Limits: 80-120 %</i>		"	"	"

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Project: **POVRED**

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Project Manager: Ben Uhl

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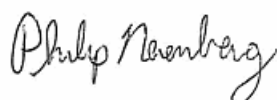
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## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150617-107 (A5F0543-07RE1)</b>			<b>Matrix: Water</b>		<b>Batch: 5060605</b>			
<i>Surrogate: 4-Bromofluorobenzene (Surr)</i>			<i>Recovery: 99 %</i>	<i>Limits: 80-120 %</i>	1	"	EPA 8260B	

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Project: POVRED

434 NW 6th Ave. Suite 203

Project Number: 8832

Portland, OR 97209

Project Manager: Ben Uhl

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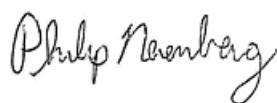
07/09/15 17:39

## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-100 (A5F0543-01)</b>			<b>Matrix: Water</b>		<b>Batch: 5060682</b>			
Acenaphthene	85.8	0.333	0.666	ug/L	20	06/23/15 16:25	EPA 8270D LVI	
Acenaphthylene	5.15	0.333	0.666	"	"	"	"	
Anthracene	0.866	0.333	0.666	"	"	"	"	
Benz(a)anthracene	ND	0.333	0.666	"	"	"	"	
Benzo(a)pyrene	ND	0.333	0.666	"	"	"	"	
Benzo(b)fluoranthene	ND	0.333	0.666	"	"	"	"	
Benzo(k)fluoranthene	ND	0.333	0.666	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.333	0.666	"	"	"	"	
Dibenzofuran	34.8	0.333	0.666	"	"	"	"	Q-29
Chrysene	ND	0.333	0.666	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.333	0.666	"	"	"	"	
Fluoranthene	2.71	0.333	0.666	"	"	"	"	
Fluorene	30.4	0.333	0.666	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.333	0.666	"	"	"	"	
1-Methylnaphthalene	26.1	0.832	1.66	"	"	"	"	
2-Methylnaphthalene	49.9	0.832	1.66	"	"	"	"	Q-29
Phenanthrene	33.2	0.832	1.66	"	"	"	"	
Pyrene	1.28	0.333	0.666	"	"	"	"	
Surrogate: Acenaphthylene-d8 (Surr)			Recovery: 62 %	Limits: 80-129 %	"	"	"	S-05
Benzo(a)pyrene-d-12 (Surr)			82 %	Limits: 80-124 %	"	"	"	S-05

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Project Number: 8832

Project Manager: Ben Uhl

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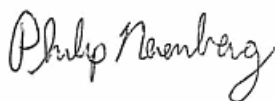
## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-100 (A5F0543-01RE1)</b>			<b>Matrix: Water</b>		<b>Batch: 5060682</b>			
Naphthalene	149	10.4	20.8	ug/L	250	06/24/15 09:54	EPA 8270D LVI	
<b>8832-150616-101 (A5F0543-02)</b>			<b>Matrix: Water</b>		<b>Batch: 5060682</b>			
Acenaphthene	0.0242	0.0173	0.0346	ug/L	1	06/23/15 17:00	EPA 8270D LVI	J
Acenaphthylene	ND	0.0173	0.0346	"	"	"	"	
Anthracene	ND	0.0173	0.0346	"	"	"	"	
Benz(a)anthracene	ND	0.0173	0.0346	"	"	"	"	
Benzo(a)pyrene	ND	0.0173	0.0346	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0173	0.0346	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0173	0.0346	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0173	0.0346	"	"	"	"	
Dibenzofuran	ND	0.0173	0.0346	"	"	"	"	
Chrysene	ND	0.0173	0.0346	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0173	0.0346	"	"	"	"	
Fluoranthene	ND	0.0173	0.0346	"	"	"	"	
Fluorene	ND	0.0173	0.0346	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0173	0.0346	"	"	"	"	
1-Methylnaphthalene	ND	0.0433	0.0866	"	"	"	"	
2-Methylnaphthalene	ND	0.0433	0.0866	"	"	"	"	
Naphthalene	0.152	0.0433	0.0866	"	"	"	"	
Phenanthrene	ND	0.0433	0.0866	"	"	"	"	
Pyrene	ND	0.0173	0.0346	"	"	"	"	
Surrogate: Acenaphthylene-d8 (Surr)		Recovery: 104 %		Limits: 80-129 %	"	"	"	
Benzo(a)pyrene-d-12 (Surr)		106 %		Limits: 80-124 %	"	"	"	

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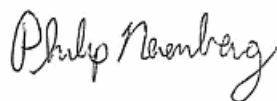


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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**  
07/09/15 17:39**ANALYTICAL SAMPLE RESULTS****Polyaromatic Hydrocarbons (PAHs) by EPA 8270D**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-102 (A5F0543-03)</b>			<b>Matrix: Water</b>		<b>Batch: 5060682</b>			
Acenaphthene	ND	0.0166	0.0332	ug/L	1	06/23/15 17:35	EPA 8270D LVI	
Acenaphthylene	ND	0.0166	0.0332	"	"	"	"	
Anthracene	ND	0.0166	0.0332	"	"	"	"	
Benz(a)anthracene	ND	0.0166	0.0332	"	"	"	"	
Benzo(a)pyrene	ND	0.0166	0.0332	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0166	0.0332	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0166	0.0332	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0166	0.0332	"	"	"	"	
Dibenzofuran	ND	0.0166	0.0332	"	"	"	"	
Chrysene	ND	0.0166	0.0332	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0166	0.0332	"	"	"	"	
Fluoranthene	ND	0.0166	0.0332	"	"	"	"	
Fluorene	ND	0.0166	0.0332	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0166	0.0332	"	"	"	"	
1-Methylnaphthalene	ND	0.0415	0.0831	"	"	"	"	
2-Methylnaphthalene	ND	0.0415	0.0831	"	"	"	"	
<b>Naphthalene</b>	<b>0.0627</b>	0.0415	0.0831	"	"	"	"	J
Phenanthrene	ND	0.0415	0.0831	"	"	"	"	
Pyrene	ND	0.0166	0.0332	"	"	"	"	
<i>Surrogate: Acenaphthylene-d8 (Surr)</i>			<i>Recovery: 100 %</i>	<i>Limits: 80-129 %</i>	"	"	"	
<i>Benzo(a)pyrene-d-12 (Surr)</i>			<i>106 %</i>	<i>Limits: 80-124 %</i>	"	"	"	

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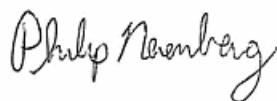
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Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**  
07/09/15 17:39**ANALYTICAL SAMPLE RESULTS****Polyaromatic Hydrocarbons (PAHs) by EPA 8270D**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150617-104 (A5F0543-05)</b>			<b>Matrix: Water</b>		<b>Batch: 5060682</b>			
Acenaphthene	ND	0.0160	0.0320	ug/L	1	06/23/15 18:10	EPA 8270D LVI	
Acenaphthylene	ND	0.0160	0.0320	"	"	"	"	
Anthracene	ND	0.0160	0.0320	"	"	"	"	
Benz(a)anthracene	ND	0.0160	0.0320	"	"	"	"	
Benzo(a)pyrene	ND	0.0160	0.0320	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0160	0.0320	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0160	0.0320	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0160	0.0320	"	"	"	"	
Dibenzofuran	ND	0.0160	0.0320	"	"	"	"	
Chrysene	ND	0.0160	0.0320	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0160	0.0320	"	"	"	"	
Fluoranthene	ND	0.0160	0.0320	"	"	"	"	
Fluorene	ND	0.0160	0.0320	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0160	0.0320	"	"	"	"	
1-Methylnaphthalene	ND	0.0400	0.0799	"	"	"	"	
2-Methylnaphthalene	ND	0.0400	0.0799	"	"	"	"	
<b>Naphthalene</b>	<b>0.169</b>	0.0400	0.0799	"	"	"	"	
Phenanthrene	ND	0.0400	0.0799	"	"	"	"	
Pyrene	ND	0.0160	0.0320	"	"	"	"	
<i>Surrogate: Acenaphthylene-d8 (Surr)</i>			<i>Recovery: 99 %</i>	<i>Limits: 80-129 %</i>	"	"	"	
<i>Benzo(a)pyrene-d-12 (Surr)</i>			<i>107 %</i>	<i>Limits: 80-124 %</i>	"	"	"	

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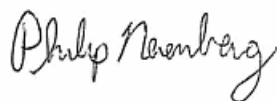
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Project Manager: Ben Uhl**Reported:**  
07/09/15 17:39**ANALYTICAL SAMPLE RESULTS****Polyaromatic Hydrocarbons (PAHs) by EPA 8270D**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150617-105 (A5F0543-06)</b>			<b>Matrix: Water</b>		<b>Batch: 5060682</b>			
Acenaphthene	ND	0.0158	0.0316	ug/L	1	06/23/15 18:45	EPA 8270D LVI	
Acenaphthylene	ND	0.0158	0.0316	"	"	"	"	
Anthracene	ND	0.0158	0.0316	"	"	"	"	
Benz(a)anthracene	ND	0.0158	0.0316	"	"	"	"	
Benzo(a)pyrene	ND	0.0158	0.0316	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0158	0.0316	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0158	0.0316	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0158	0.0316	"	"	"	"	
Dibenzofuran	ND	0.0158	0.0316	"	"	"	"	
Chrysene	ND	0.0158	0.0316	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0158	0.0316	"	"	"	"	
Fluoranthene	ND	0.0158	0.0316	"	"	"	"	
Fluorene	ND	0.0158	0.0316	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0158	0.0316	"	"	"	"	
1-Methylnaphthalene	ND	0.0395	0.0790	"	"	"	"	
2-Methylnaphthalene	ND	0.0395	0.0790	"	"	"	"	
Naphthalene	ND	0.0395	0.0790	"	"	"	"	
Phenanthrene	ND	0.0395	0.0790	"	"	"	"	
Pyrene	ND	0.0158	0.0316	"	"	"	"	
<i>Surrogate: Acenaphthylene-d8 (Surr)</i>			<i>Recovery: 99 %</i>	<i>Limits: 80-129 %</i>	"	"	"	
<i>Benzo(a)pyrene-d-12 (Surr)</i>			<i>107 %</i>	<i>Limits: 80-124 %</i>	"	"	"	

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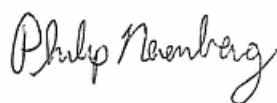
07/09/15 17:39

## ANALYTICAL SAMPLE RESULTS

## Polyaromatic Hydrocarbons (PAHs) by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150617-107 (A5F0543-07)</b>		<b>Matrix: Water</b>		<b>Batch: 5060682</b>				
Acenaphthene	ND	0.0313	0.0313	ug/L	1	06/23/15 19:21	EPA 8270D LVI	
Acenaphthylene	ND	0.0157	0.0313	"	"	"	"	
Anthracene	ND	0.0157	0.0313	"	"	"	"	
<b>Benzo(a)anthracene</b>	<b>0.0192</b>	0.0157	0.0313	"	"	"	"	J
<b>Benzo(a)pyrene</b>	<b>0.0282</b>	0.0157	0.0313	"	"	"	"	J
<b>Benzo(b)fluoranthene</b>	<b>0.0305</b>	0.0157	0.0313	"	"	"	"	J
<b>Benzo(k)fluoranthene</b>	<b>0.0168</b>	0.0157	0.0313	"	"	"	"	J
<b>Benzo(g,h,i)perylene</b>	<b>0.0219</b>	0.0157	0.0313	"	"	"	"	J
Dibenzofuran	ND	0.0157	0.0313	"	"	"	"	
<b>Chrysene</b>	<b>0.0258</b>	0.0157	0.0313	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.0157	0.0313	"	"	"	"	
<b>Fluoranthene</b>	<b>0.0360</b>	0.0157	0.0313	"	"	"	"	
<b>Fluorene</b>	<b>0.0313</b>	0.0157	0.0313	"	"	"	"	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>0.0192</b>	0.0157	0.0313	"	"	"	"	J
1-Methylnaphthalene	ND	0.0392	0.0783	"	"	"	"	
2-Methylnaphthalene	ND	0.0392	0.0783	"	"	"	"	
<b>Naphthalene</b>	<b>0.286</b>	0.0392	0.0783	"	"	"	"	
<b>Phenanthrene</b>	<b>0.0431</b>	0.0392	0.0783	"	"	"	"	J
<b>Pyrene</b>	<b>0.0392</b>	0.0157	0.0313	"	"	"	"	
Surrogate: Acenaphthylene-d8 (Surr)		Recovery: 99 %		Limits: 80-129 %	"	"	"	
Benzo(a)pyrene-d-12 (Surr)		110 %		Limits: 80-124 %	"	"	"	

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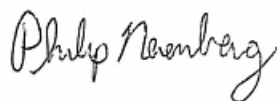
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Project Manager: Ben Uhl**Reported:**

07/09/15 17:39

**ANALYTICAL SAMPLE RESULTS****Total Hexavalent Chromium by EPA 7196A**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-100 (A5F0543-01)</b>			<b>Matrix: Water</b>		<b>Batch: 5060558</b>			
Hexavalent Chromium	ND	0.00500	0.00500	mg/L	1	06/18/15 10:17	EPA 7196A (mod)	H-06
<b>8832-150616-101 (A5F0543-02)</b>			<b>Matrix: Water</b>		<b>Batch: 5060558</b>			
Hexavalent Chromium	ND	0.00500	0.00500	mg/L	1	06/18/15 10:17	EPA 7196A (mod)	H-06
<b>8832-150616-102 (A5F0543-03)</b>			<b>Matrix: Water</b>		<b>Batch: 5060558</b>			
Hexavalent Chromium	ND	0.00500	0.00500	mg/L	1	06/18/15 10:17	EPA 7196A (mod)	H-06
<b>8832-150617-104 (A5F0543-05)</b>			<b>Matrix: Water</b>		<b>Batch: 5060558</b>			
Hexavalent Chromium	ND	0.00500	0.00500	mg/L	1	06/18/15 07:51	EPA 7196A (mod)	
<b>8832-150617-107 (A5F0543-07)</b>			<b>Matrix: Water</b>		<b>Batch: 5060558</b>			
Hexavalent Chromium	<b>0.00700</b>	0.00500	0.00500	mg/L	1	06/18/15 07:51	EPA 7196A (mod)	

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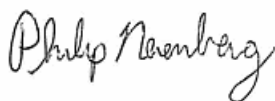
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Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

07/09/15 17:39

**ANALYTICAL SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-100 (A5F0543-01) Matrix: Water</b>								
Batch: 5060585								
Antimony	ND	0.500	1.00	ug/L	1	06/19/15 15:22	EPA 6020A	
<b>Arsenic</b>	<b>4.53</b>	0.500	1.00	"	"	"	"	
Beryllium	ND	0.100	0.200	"	"	"	"	
<b>Cadmium</b>	<b>0.100</b>	0.0400	0.200	"	"	"	"	J
Chromium	ND	0.500	1.00	"	"	"	"	
<b>Copper</b>	<b>1.71</b>	0.500	2.00	"	"	"	"	J
<b>Lead</b>	<b>0.267</b>	0.100	0.200	"	"	"	"	
Mercury	ND	0.0400	0.223	"	"	"	"	
<b>Nickel</b>	<b>8.91</b>	0.500	1.00	"	"	"	"	
<b>Selenium</b>	<b>0.978</b>	0.500	2.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Thallium	ND	0.100	0.200	"	"	"	"	
<b>8832-150616-100 (A5F0543-01RE1) Matrix: Water</b>								
Batch: 5060585								
<b>Zinc</b>	<b>12.7</b>	2.00	4.00	ug/L	1	06/19/15 16:14	EPA 6020A	
<b>8832-150616-101 (A5F0543-02) Matrix: Water</b>								
Batch: 5060585								
Antimony	ND	0.500	1.00	ug/L	1	06/19/15 15:27	EPA 6020A	
<b>Arsenic</b>	<b>5.38</b>	0.500	1.00	"	"	"	"	
Beryllium	ND	0.100	0.200	"	"	"	"	
Cadmium	ND	0.0400	0.200	"	"	"	"	
<b>Chromium</b>	<b>0.856</b>	0.500	1.00	"	"	"	"	J
<b>Copper</b>	<b>2.03</b>	0.500	2.00	"	"	"	"	
<b>Lead</b>	<b>1.52</b>	0.100	0.200	"	"	"	"	
Mercury	ND	0.0400	0.223	"	"	"	"	
<b>Nickel</b>	<b>3.91</b>	0.500	1.00	"	"	"	"	
<b>Selenium</b>	<b>0.678</b>	0.500	2.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Thallium	ND	0.100	0.200	"	"	"	"	
<b>Zinc</b>	<b>8.31</b>	2.00	4.00	"	"	"	"	
<b>8832-150616-102 (A5F0543-03) Matrix: Water</b>								
Batch: 5060585								
Antimony	ND	0.500	1.00	ug/L	1	06/19/15 15:31	EPA 6020A	
<b>Arsenic</b>	<b>3.48</b>	0.500	1.00	"	"	"	"	

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

Reported:

07/09/15 17:39

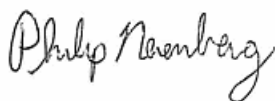
## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
<b>8832-150616-102 (A5F0543-03) Matrix: Water</b>								
Beryllium	ND	0.100	0.200	ug/L	1	"	EPA 6020A	
Cadmium	ND	0.0400	0.200	"	"	"	"	
Chromium	ND	0.500	1.00	"	"	"	"	
<b>Copper</b>	<b>0.589</b>	0.500	2.00	"	"	"	"	J
<b>Lead</b>	<b>0.100</b>	0.100	0.200	"	"	"	"	J
Mercury	ND	0.0400	0.223	"	"	"	"	
<b>Nickel</b>	<b>0.778</b>	0.500	1.00	"	"	"	"	J
<b>Selenium</b>	<b>0.667</b>	0.500	2.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Thallium	ND	0.100	0.200	"	"	"	"	
Zinc	ND	2.00	4.00	"	"	"	"	
<b>8832-150617-104 (A5F0543-05) Matrix: Water</b>								
Batch: 5060585								
Antimony	ND	0.500	1.00	ug/L	1	06/19/15 15:36	EPA 6020A	
<b>Arsenic</b>	<b>5.50</b>	0.500	1.00	"	"	"	"	
Beryllium	ND	0.100	0.200	"	"	"	"	
<b>Cadmium</b>	<b>0.189</b>	0.0400	0.200	"	"	"	"	J
<b>Chromium</b>	<b>2.31</b>	0.500	1.00	"	"	"	"	
<b>Copper</b>	<b>4.98</b>	0.500	2.00	"	"	"	"	
<b>Lead</b>	<b>4.92</b>	0.100	0.200	"	"	"	"	
Mercury	ND	0.0400	0.223	"	"	"	"	
<b>Nickel</b>	<b>10.9</b>	0.500	1.00	"	"	"	"	
Selenium	ND	0.500	2.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Thallium	ND	0.100	0.200	"	"	"	"	
<b>Zinc</b>	<b>25.5</b>	2.00	4.00	"	"	"	"	
<b>8832-150617-107 (A5F0543-07) Matrix: Water</b>								
Batch: 5060585								
<b>Antimony</b>	<b>0.989</b>	0.500	1.00	ug/L	1	06/19/15 15:41	EPA 6020A	A-02, Q-42, J
<b>Arsenic</b>	<b>14.0</b>	0.500	1.00	"	"	"	"	
<b>Beryllium</b>	<b>1.01</b>	0.100	0.200	"	"	"	"	
<b>Cadmium</b>	<b>0.689</b>	0.0400	0.200	"	"	"	"	
<b>Chromium</b>	<b>319</b>	0.500	1.00	"	"	"	"	
<b>Copper</b>	<b>140</b>	0.500	2.00	"	"	"	"	
<b>Lead</b>	<b>34.4</b>	0.100	0.200	"	"	"	"	

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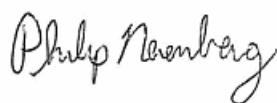
07/09/15 17:39

## ANALYTICAL SAMPLE RESULTS

### Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150617-107 (A5F0543-07)			Matrix: Water					
Nickel	52.0	0.500	1.00	ug/L	1	"	EPA 6020A	
Selenium	2.01	0.500	2.00	"	"	"	"	
Silver	0.233	0.100	0.200	"	"	"	"	
Thallium	0.233	0.100	0.200	"	"	"	"	
Zinc	103	2.00	4.00	"	"	"	"	
8832-150617-107 (A5F0543-07RE1)			Matrix: Water					
Batch: 5060585								
Mercury	0.0831	0.0400	0.0800	ug/L	1	06/22/15 18:01	EPA 6020A	

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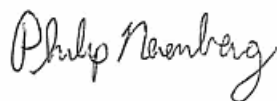
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Project Manager: Ben Uhl**Reported:**

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**ANALYTICAL SAMPLE RESULTS****Dissolved Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
8832-150616-101 (A5F0543-02)			Matrix: Water					
Batch: 5070100								
Arsenic	4.88	0.500	1.00	ug/L	1	07/06/15 14:55	EPA 6020A (Diss)	
8832-150617-104 (A5F0543-05)			Matrix: Water					
Batch: 5070100								
Arsenic	4.59	0.500	1.00	ug/L	1	07/06/15 14:58	EPA 6020A (Diss)	
8832-150617-107 (A5F0543-07)			Matrix: Water					
Batch: 5070100								
Arsenic	1.22	0.500	1.00	ug/L	1	07/06/15 15:01	EPA 6020A (Diss)	
Chromium	ND	0.500	1.00	"	"	"	"	
Lead	ND	0.100	0.200	"	"	"	"	

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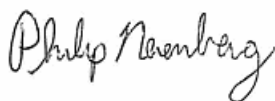
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Project Manager: Ben Uhl**Reported:**

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**QUALITY CONTROL (QC) SAMPLE RESULTS****Diesel and/or Oil Hydrocarbons by NWTPH-Dx**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch 5060602 - EPA 3510C (Fuels/Acid Ext.)							Water						
Blank (5060602-BLK1)					Prepared: 06/19/15 07:27		Analyzed: 06/19/15 22:42						
NWTPH-Dx													
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---		
Oil	ND	0.182	0.364	"	"	---	---	---	---	---	---		
Surr: o-Terphenyl (Surr)		Recovery: 95 %		Limits: 50-150 %		Dilution: 1x							
LCS (5060602-BS1)					Prepared: 06/19/15 07:27		Analyzed: 06/19/15 23:07						
NWTPH-Dx													
Diesel	0.784	0.100	0.200	mg/L	1	1.25	---	63	58-115%	---	---		
Surr: o-Terphenyl (Surr)		Recovery: 97 %		Limits: 50-150 %		Dilution: 1x							
LCS Dup (5060602-BSD1)					Prepared: 06/19/15 07:27		Analyzed: 06/19/15 23:31						Q-19
NWTPH-Dx													
Diesel	1.04	0.100	0.200	mg/L	1	1.25	---	83	58-115%	28	20%	Q-24	
Surr: o-Terphenyl (Surr)		Recovery: 108 %		Limits: 50-150 %		Dilution: 1x							

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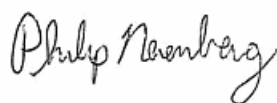
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**QUALITY CONTROL (QC) SAMPLE RESULTS****Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060590 - EPA 5030B						Water						
Blank (5060590-BLK1)						Prepared: 06/18/15 17:19		Analyzed: 06/18/15 19:40				
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 107 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		99 %		50-150 %		"						
LCS (5060590-BS2)						Prepared: 06/18/15 17:19		Analyzed: 06/18/15 19:12				
NWTPH-Gx (MS)												
Gasoline Range Organics	0.454	0.0500	0.100	mg/L	1	0.500	---	91	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 103 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		103 %		50-150 %		"						
Duplicate (5060590-DUP1)						Prepared: 06/18/15 18:19		Analyzed: 06/19/15 01:45				
QC Source Sample: 8832-150616-100 (A5F0543-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	5.00	10.0	mg/L	100	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 103 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		100 %		50-150 %		"						



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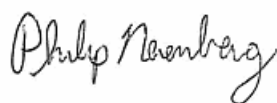
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## QUALITY CONTROL (QC) SAMPLE RESULTS

## Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060605 - EPA 5030B						Water						
Blank (5060605-BLK1)				Prepared: 06/19/15 09:19    Analyzed: 06/19/15 11:40								
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 99 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		96 %		50-150 %		"						
LCS (5060605-BS2)						Prepared: 06/19/15 09:19    Analyzed: 06/19/15 11:12						
NWTPH-Gx (MS)												
Gasoline Range Organics	0.496	0.0500	0.100	mg/L	1	0.500	---	99	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 100 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		104 %		50-150 %		"						

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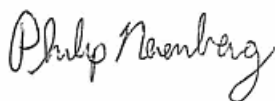
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Project Manager: Ben Uhl**Reported:**

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**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060590 - EPA 5030B						Water						
Blank (5060590-BLK1)			Prepared: 06/18/15 17:19    Analyzed: 06/18/15 19:40									
EPA 8260B												
Acetone	ND	10.0	20.0	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.125	0.250	"	"	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	"	"	---	---	---	---	---	---	Q-30
2-Butanone (MEK)	ND	5.00	10.0	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	"	"	---	---	---	---	---	---	Q-30
Chloroform	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloroprop ane	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	Q-30
1,1-Dichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	

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Project: **POVRED**

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Project Manager: Ben Uhl

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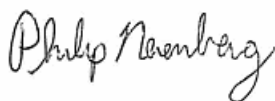
07/09/15 17:39

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060590 - EPA 5030B</b>						<b>Water</b>						
<b>Blank (5060590-BLK1)</b>						Prepared: 06/18/15 17:19 Analyzed: 06/18/15 19:40						
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/L	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,1-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Hexanone	ND	5.00	10.0	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Methylene chloride	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	

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Project Manager: Ben Uhl**Reported:**

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**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060590 - EPA 5030B</b>						<b>Water</b>						
<b>Blank (5060590-BLK1)</b>						Prepared: 06/18/15 17:19 Analyzed: 06/18/15 19:40						
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	0.250	0.500	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
<i>Surr: Dibromofluoromethane (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Surr)</i>		<i>106 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>Toluene-d8 (Surr)</i>		<i>105 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>"</i>						

**LCS (5060590-BS1)**

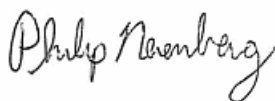
Prepared: 06/18/15 17:19 Analyzed: 06/18/15 18:44

**EPA 8260B**

Acetone	41.5	10.0	20.0	ug/L	1	40.0	---	104	70-130%	---	---	
Benzene	20.5	0.125	0.250	"	"	20.0	---	102	"	---	---	
Bromobenzene	19.2	0.250	0.500	"	"	"	---	96	"	---	---	
Bromochloromethane	19.1	0.500	1.00	"	"	"	---	96	"	---	---	
Bromodichloromethane	19.1	0.500	1.00	"	"	"	---	96	"	---	---	
Bromoform	19.7	0.500	1.00	"	"	"	---	98	"	---	---	
Bromomethane	13.0	5.00	5.00	"	"	"	---	65	"	---	---	Q-30
2-Butanone (MEK)	43.2	5.00	10.0	"	"	40.0	---	108	"	---	---	
n-Butylbenzene	20.7	0.500	1.00	"	"	20.0	---	103	"	---	---	
sec-Butylbenzene	19.6	0.500	1.00	"	"	"	---	98	"	---	---	
tert-Butylbenzene	18.7	0.500	1.00	"	"	"	---	93	"	---	---	
Carbon tetrachloride	18.9	0.250	0.500	"	"	"	---	95	"	---	---	
Chlorobenzene	20.2	0.250	0.500	"	"	"	---	101	"	---	---	
Chloroethane	13.4	5.00	5.00	"	"	"	---	67	"	---	---	Q-30
Chloroform	20.7	0.500	1.00	"	"	"	---	104	"	---	---	
Chloromethane	18.3	2.50	5.00	"	"	"	---	92	"	---	---	
2-Chlorotoluene	20.3	0.500	1.00	"	"	"	---	102	"	---	---	
4-Chlorotoluene	19.3	0.500	1.00	"	"	"	---	97	"	---	---	
1,2-Dibromo-3-chloroprop ane	19.9	2.50	5.00	"	"	"	---	99	"	---	---	

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

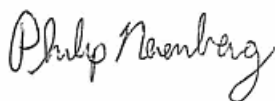
07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060590 - EPA 5030B</b>						<b>Water</b>						
<b>LCS (5060590-BS1)</b>						Prepared: 06/18/15 17:19 Analyzed: 06/18/15 18:44						
Dibromochloromethane	18.2	0.500	1.00	ug/L	"	"	---	91	"	---	---	Q-30
1,2-Dibromoethane (EDB)	20.2	0.250	0.500	"	"	"	---	101	"	---	---	
Dibromomethane	19.1	0.500	1.00	"	"	"	---	96	"	---	---	
1,2-Dichlorobenzene	19.3	0.250	0.500	"	"	"	---	97	"	---	---	
1,3-Dichlorobenzene	18.8	0.250	0.500	"	"	"	---	94	"	---	---	
1,4-Dichlorobenzene	19.7	0.250	0.500	"	"	"	---	98	"	---	---	
Dichlorodifluoromethane	13.6	0.500	1.00	"	"	"	---	68	"	---	---	
1,1-Dichloroethane	20.2	0.250	0.500	"	"	"	---	101	"	---	---	
1,2-Dichloroethane (EDC)	18.6	0.250	0.500	"	"	"	---	93	"	---	---	
1,1-Dichloroethene	18.3	0.250	0.500	"	"	"	---	91	"	---	---	
cis-1,2-Dichloroethene	20.1	0.250	0.500	"	"	"	---	100	"	---	---	Q-30
trans-1,2-Dichloroethene	20.1	0.250	0.500	"	"	"	---	101	"	---	---	
1,2-Dichloropropane	20.0	0.250	0.500	"	"	"	---	100	"	---	---	
1,3-Dichloropropane	19.6	0.500	1.00	"	"	"	---	98	"	---	---	
2,2-Dichloropropane	17.3	0.500	1.00	"	"	"	---	86	"	---	---	
1,1-Dichloropropene	19.2	0.500	1.00	"	"	"	---	96	"	---	---	
cis-1,3-Dichloropropene	17.6	0.500	1.00	"	"	"	---	88	"	---	---	
trans-1,3-Dichloropropene	17.7	0.500	1.00	"	"	"	---	89	"	---	---	
Ethylbenzene	19.8	0.250	0.500	"	"	"	---	99	"	---	---	
Hexachlorobutadiene	17.8	2.50	5.00	"	"	"	---	89	"	---	---	
2-Hexanone	40.5	5.00	10.0	"	"	40.0	---	101	"	---	---	Q-30
Isopropylbenzene	20.3	0.500	1.00	"	"	20.0	---	102	"	---	---	
4-Isopropyltoluene	19.6	0.500	1.00	"	"	"	---	98	"	---	---	
4-Methyl-2-pentanone (MiBK)	39.9	5.00	10.0	"	"	40.0	---	100	"	---	---	
Methyl tert-butyl ether (MTBE)	21.3	0.500	1.00	"	"	20.0	---	106	"	---	---	
Methylene chloride	22.7	2.50	5.00	"	"	"	---	113	"	---	---	
Naphthalene	20.5	1.00	2.00	"	"	"	---	103	"	---	---	
n-Propylbenzene	20.2	0.250	0.500	"	"	"	---	101	"	---	---	
Styrene	18.8	0.500	1.00	"	"	"	---	94	"	---	---	
1,1,1,2-Tetrachloroethane	19.5	0.250	0.500	"	"	"	---	97	"	---	---	

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060590 - EPA 5030B</b>						<b>Water</b>						
<b>LCS (5060590-BS1)</b>						Prepared: 06/18/15 17:19 Analyzed: 06/18/15 18:44						
1,1,2,2-Tetrachloroethane	22.4	0.250	0.500	"	"	"	---	112	"	---	---	
Tetrachloroethene (PCE)	18.4	0.250	0.500	"	"	"	---	92	"	---	---	
Toluene	18.8	0.500	1.00	"	"	"	---	94	"	---	---	
1,2,3-Trichlorobenzene	19.8	1.00	2.00	"	"	"	---	99	"	---	---	
1,2,4-Trichlorobenzene	18.7	1.00	2.00	"	"	"	---	93	"	---	---	
1,1,1-Trichloroethane	19.4	0.250	0.500	"	"	"	---	97	"	---	---	
1,1,2-Trichloroethane	20.6	0.250	0.500	"	"	"	---	103	"	---	---	
Trichloroethene (TCE)	19.7	0.250	0.500	"	"	"	---	99	"	---	---	
Trichlorofluoromethane	17.7	1.00	2.00	"	"	"	---	88	"	---	---	
1,2,3-Trichloropropane	20.6	0.500	1.00	"	"	"	---	103	"	---	---	
1,2,4-Trimethylbenzene	20.5	0.500	1.00	"	"	"	---	103	"	---	---	
1,3,5-Trimethylbenzene	20.2	0.500	1.00	"	"	"	---	101	"	---	---	
Vinyl chloride	21.2	0.250	0.500	"	"	"	---	106	"	---	---	
m,p-Xylene	39.8	0.500	1.00	"	"	40.0	---	100	"	---	---	
o-Xylene	19.2	0.250	0.500	"	"	20.0	---	96	"	---	---	

Surr: Dibromofluoromethane (Surr) Recovery: 105 % Limits: 80-120 % Dilution: 1x  
 1,4-Difluorobenzene (Surr) 106 % 80-120 % "  
 Toluene-d8 (Surr) 100 % 80-120 % "  
 4-Bromofluorobenzene (Surr) 96 % 80-120 % "

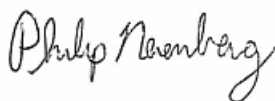
**Duplicate (5060590-DUP1)**

Prepared: 06/18/15 18:19 Analyzed: 06/19/15 01:45

**QC Source Sample: 8832-150616-100 (A5F0543-01)****EPA 8260B**

Acetone	ND	1000	2000	ug/L	100	---	ND	---	---	---	30%	
Benzene	ND	12.5	25.0	"	"	---	ND	---	---	---	30%	
Bromobenzene	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
Bromochloromethane	ND	50.0	100	"	"	---	ND	---	---	---	30%	
Bromodichloromethane	ND	50.0	100	"	"	---	ND	---	---	---	30%	
Bromoform	ND	50.0	100	"	"	---	ND	---	---	---	30%	
Bromomethane	ND	500	500	"	"	---	ND	---	---	---	30%	Q-30
2-Butanone (MEK)	ND	500	1000	"	"	---	ND	---	---	---	30%	
n-Butylbenzene	ND	50.0	100	"	"	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

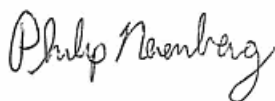
07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060590 - EPA 5030B						Water						
Duplicate (5060590-DUP1)				Prepared: 06/18/15 18:19		Analyzed: 06/19/15 01:45						
QC Source Sample: 8832-150616-100 (A5F0543-01)												
sec-Butylbenzene	ND	50.0	100	ug/L	"	---	ND	---	---	---	30%	Q-30
tert-Butylbenzene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
Chlorobenzene	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
Chloroethane	ND	500	500	"	"	---	ND	---	---	---	30%	
Chloroform	ND	50.0	100	"	"	---	ND	---	---	---	30%	
Chloromethane	ND	250	500	"	"	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	50.0	100	"	"	---	ND	---	---	---	30%	Q-30
1,2-Dibromo-3-chloroprop ane	ND	250	500	"	"	---	ND	---	---	---	30%	
Dibromochloromethane	ND	50.0	100	"	"	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
Dibromomethane	ND	50.0	100	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	50.0	100	"	"	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	50.0	100	"	"	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	50.0	100	"	"	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
Ethylbenzene	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060590 - EPA 5030B						Water						
Duplicate (5060590-DUP1)				Prepared: 06/18/15 18:19		Analyzed: 06/19/15 01:45						
QC Source Sample: 8832-150616-100 (A5F0543-01)												
Hexachlorobutadiene	ND	250	500	ug/L	"	---	ND	---	---	---	30%	
2-Hexanone	ND	500	1000	"	"	---	ND	---	---	---	30%	
Isopropylbenzene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	500	1000	"	"	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	50.0	100	"	"	---	ND	---	---	---	30%	
Methylene chloride	ND	250	500	"	"	---	ND	---	---	---	30%	
Naphthalene	116	100	200	"	"	---	117	---	---	0.9	30%	J
n-Propylbenzene	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
Styrene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
Toluene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	100	200	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	100	200	"	"	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	100	200	"	"	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	50.0	100	"	"	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
Vinyl chloride	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	
m,p-Xylene	ND	50.0	100	"	"	---	ND	---	---	---	30%	
o-Xylene	ND	25.0	50.0	"	"	---	ND	---	---	---	30%	

Surr: Dibromofluoromethane (Surr)

Recovery: 104 %

Limits: 80-120 %

Dilution: 1x

1,4-Difluorobenzene (Surr)

107 %

80-120 %

"

Toluene-d8 (Surr)

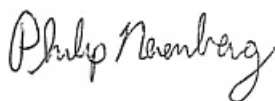
104 %

80-120 %

"

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**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

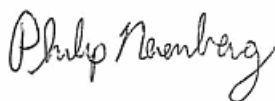
07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060590 - EPA 5030B						Water						
Duplicate (5060590-DUP1)						Prepared: 06/18/15 18:19    Analyzed: 06/19/15 01:45						
QC Source Sample: 8832-150616-100 (A5F0543-01)												
Surr: 4-Bromofluorobenzene (Surr)		Recovery: 99 %		Limits: 80-120 %		Dilution: 1x						
Matrix Spike (5060590-MS1)						Prepared: 06/18/15 18:19    Analyzed: 06/19/15 04:34						
QC Source Sample: 8832-150617-107 (A5F0543-07)												
EPA 8260B												
Acetone	378	100	200	ug/L	10	400	ND	95	70-130%	---	---	
Benzene	219	1.25	2.50	"	"	200	ND	109	"	---	---	
Bromobenzene	179	2.50	5.00	"	"	"	ND	89	"	---	---	
Bromochloromethane	202	5.00	10.0	"	"	"	ND	101	"	---	---	
Bromodichloromethane	201	5.00	10.0	"	"	"	ND	100	"	---	---	
Bromoform	187	5.00	10.0	"	"	"	ND	93	"	---	---	
Bromomethane	146	50.0	50.0	"	"	"	ND	73	"	---	---	Q-30
2-Butanone (MEK)	365	50.0	100	"	"	400	ND	91	"	---	---	
n-Butylbenzene	207	5.00	10.0	"	"	200	ND	103	"	---	---	
sec-Butylbenzene	205	5.00	10.0	"	"	"	ND	102	"	---	---	
tert-Butylbenzene	192	5.00	10.0	"	"	"	ND	96	"	---	---	
Carbon tetrachloride	198	2.50	5.00	"	"	"	ND	99	"	---	---	
Chlorobenzene	197	2.50	5.00	"	"	"	ND	99	"	---	---	
Chloroethane	221	50.0	50.0	"	"	"	ND	110	"	---	---	Q-30
Chloroform	208	5.00	10.0	"	"	"	ND	104	"	---	---	
Chloromethane	185	25.0	50.0	"	"	"	ND	93	"	---	---	
2-Chlorotoluene	191	5.00	10.0	"	"	"	ND	96	"	---	---	
4-Chlorotoluene	192	5.00	10.0	"	"	"	ND	96	"	---	---	
1,2-Dibromo-3-chloroprop ane	158	25.0	50.0	"	"	"	ND	79	"	---	---	
Dibromochloromethane	176	5.00	10.0	"	"	"	ND	88	"	---	---	
1,2-Dibromoethane (EDB)	194	2.50	5.00	"	"	"	ND	97	"	---	---	
Dibromomethane	192	5.00	10.0	"	"	"	ND	96	"	---	---	
1,2-Dichlorobenzene	193	2.50	5.00	"	"	"	ND	96	"	---	---	
1,3-Dichlorobenzene	192	2.50	5.00	"	"	"	ND	96	"	---	---	
1,4-Dichlorobenzene	199	2.50	5.00	"	"	"	ND	100	"	---	---	

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Philip Nerenberg, Lab Director

**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

**Reported:**

07/09/15 17:39

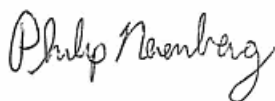
## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060590 - EPA 5030B							Water					
Matrix Spike (5060590-MS1)				Prepared: 06/18/15 18:19    Analyzed: 06/19/15 04:34								
QC Source Sample: 8832-150617-107 (A5F0543-07)												
Dichlorodifluoromethane	151	5.00	10.0	ug/L	"	"	ND	75	"	---	---	Q-30
1,1-Dichloroethane	210	2.50	5.00	"	"	"	ND	105	"	---	---	
1,2-Dichloroethane (EDC)	193	2.50	5.00	"	"	"	ND	96	"	---	---	
1,1-Dichloroethene	204	2.50	5.00	"	"	"	ND	102	"	---	---	
cis-1,2-Dichloroethene	197	2.50	5.00	"	"	"	ND	98	"	---	---	
trans-1,2-Dichloroethene	205	2.50	5.00	"	"	"	ND	103	"	---	---	Q-01
1,2-Dichloropropane	207	2.50	5.00	"	"	"	ND	103	"	---	---	
1,3-Dichloropropane	191	5.00	10.0	"	"	"	ND	96	"	---	---	
2,2-Dichloropropane	127	5.00	10.0	"	"	"	ND	64	"	---	---	
1,1-Dichloropropene	206	5.00	10.0	"	"	"	ND	103	"	---	---	
cis-1,3-Dichloropropene	158	5.00	10.0	"	"	"	ND	79	"	---	---	
trans-1,3-Dichloropropene	165	5.00	10.0	"	"	"	ND	83	"	---	---	
Ethylbenzene	198	2.50	5.00	"	"	"	ND	99	"	---	---	
Hexachlorobutadiene	166	25.0	50.0	"	"	"	ND	83	"	---	---	
2-Hexanone	315	50.0	100	"	"	400	ND	79	"	---	---	
Isopropylbenzene	207	5.00	10.0	"	"	200	ND	103	"	---	---	
4-Isopropyltoluene	198	5.00	10.0	"	"	"	ND	99	"	---	---	
4-Methyl-2-pentanone (MiBK)	320	50.0	100	"	"	400	ND	80	"	---	---	
Methyl tert-butyl ether (MTBE)	192	5.00	10.0	"	"	200	ND	96	"	---	---	
Methylene chloride	225	25.0	50.0	"	"	"	ND	112	"	---	---	
Naphthalene	171	10.0	20.0	"	"	"	ND	86	"	---	---	
n-Propylbenzene	201	2.50	5.00	"	"	"	ND	100	"	---	---	
Styrene	185	5.00	10.0	"	"	"	ND	92	"	---	---	
1,1,1,2-Tetrachloroethane	196	2.50	5.00	"	"	"	ND	98	"	---	---	
1,1,2,2-Tetrachloroethane	206	2.50	5.00	"	"	"	ND	103	"	---	---	
Tetrachloroethene (PCE)	186	2.50	5.00	"	"	"	ND	93	"	---	---	
Toluene	193	5.00	10.0	"	"	"	ND	96	"	---	---	
1,2,3-Trichlorobenzene	169	10.0	20.0	"	"	"	ND	84	"	---	---	
1,2,4-Trichlorobenzene	170	10.0	20.0	"	"	"	ND	85	"	---	---	

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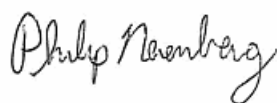
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060590 - EPA 5030B							Water					
Matrix Spike (5060590-MS1)				Prepared: 06/18/15 18:19		Analyzed: 06/19/15 04:34						
QC Source Sample: 8832-150617-107 (A5F0543-07)												
1,1,1-Trichloroethane	204	2.50	5.00	"	"	"	ND	102	"	---	---	
1,1,2-Trichloroethane	200	2.50	5.00	"	"	"	ND	100	"	---	---	
Trichloroethene (TCE)	204	2.50	5.00	"	"	"	ND	102	"	---	---	
Trichlorofluoromethane	241	10.0	20.0	"	"	"	ND	120	"	---	---	
1,2,3-Trichloropropane	182	5.00	10.0	"	"	"	ND	91	"	---	---	
1,2,4-Trimethylbenzene	201	5.00	10.0	"	"	"	ND	101	"	---	---	
1,3,5-Trimethylbenzene	199	5.00	10.0	"	"	"	ND	99	"	---	---	
Vinyl chloride	237	2.50	5.00	"	"	"	ND	118	"	---	---	
m,p-Xylene	393	5.00	10.0	"	"	400	ND	98	"	---	---	
o-Xylene	197	2.50	5.00	"	"	200	ND	99	"	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery:		104 %	Limits: 80-120 %		Dilution: 1x					
1,4-Difluorobenzene (Surr)				107 %	80-120 %		"					
Toluene-d8 (Surr)				99 %	80-120 %		"					
4-Bromofluorobenzene (Surr)				91 %	80-120 %		"					

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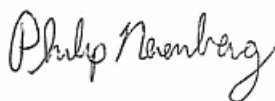
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060605 - EPA 5030B						Water						
Blank (5060605-BLK1)				Prepared: 06/19/15 09:19		Analyzed: 06/19/15 11:40						
EPA 8260B												
Acetone	ND	10.0	20.0	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.125	0.250	"	"	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	"	"	---	---	---	---	---	---	Q-31
2-Butanone (MEK)	ND	5.00	10.0	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	"	"	---	---	---	---	---	---	Q-30
Chloroform	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloroprop ane	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	

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**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

**Reported:**

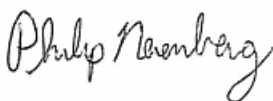
07/09/15 17:39

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060605 - EPA 5030B</b>						<b>Water</b>						
<b>Blank (5060605-BLK1)</b>						Prepared: 06/19/15 09:19 Analyzed: 06/19/15 11:40						
cis-1,2-Dichloroethene	ND	0.250	0.500	ug/L	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,1-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Hexanone	ND	5.00	10.0	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Methylene chloride	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060605 - EPA 5030B</b>						<b>Water</b>						
<b>Blank (5060605-BLK1)</b>						Prepared: 06/19/15 09:19 Analyzed: 06/19/15 11:40						
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	0.250	0.500	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
<i>Surr: Dibromofluoromethane (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Surr)</i>		<i>106 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>Toluene-d8 (Surr)</i>		<i>103 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>"</i>						

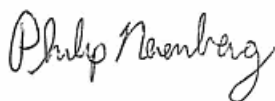
**LCS (5060605-BS1)**

Prepared: 06/19/15 09:19 Analyzed: 06/19/15 10:43

<b>EPA 8260B</b>												
Acetone	31.0	10.0	20.0	ug/L	1	40.0	---	78	70-130%	---	---	
Benzene	20.9	0.125	0.250	"	"	20.0	---	104	"	---	---	
Bromobenzene	19.2	0.250	0.500	"	"	"	---	96	"	---	---	
Bromochloromethane	18.4	0.500	1.00	"	"	"	---	92	"	---	---	
Bromodichloromethane	19.8	0.500	1.00	"	"	"	---	99	"	---	---	
Bromoform	20.3	0.500	1.00	"	"	"	---	101	"	---	---	
Bromomethane	11.6	5.00	5.00	"	"	"	---	58	"	---	---	Q-31
2-Butanone (MEK)	35.1	5.00	10.0	"	"	40.0	---	88	"	---	---	
n-Butylbenzene	21.4	0.500	1.00	"	"	20.0	---	107	"	---	---	
sec-Butylbenzene	21.0	0.500	1.00	"	"	"	---	105	"	---	---	
tert-Butylbenzene	19.6	0.500	1.00	"	"	"	---	98	"	---	---	
Carbon tetrachloride	19.2	0.250	0.500	"	"	"	---	96	"	---	---	
Chlorobenzene	20.0	0.250	0.500	"	"	"	---	100	"	---	---	
Chloroethane	13.8	5.00	5.00	"	"	"	---	69	"	---	---	Q-30
Chloroform	20.2	0.500	1.00	"	"	"	---	101	"	---	---	
Chloromethane	19.4	2.50	5.00	"	"	"	---	97	"	---	---	
2-Chlorotoluene	20.2	0.500	1.00	"	"	"	---	101	"	---	---	
4-Chlorotoluene	20.3	0.500	1.00	"	"	"	---	102	"	---	---	
1,2-Dibromo-3-chloroprop ane	18.4	2.50	5.00	"	"	"	---	92	"	---	---	

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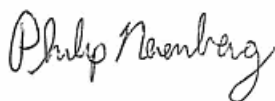
**Hahn and Associates**434 NW 6th Ave. Suite 203  
Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Volatile Organic Compounds by EPA 8260B**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060605 - EPA 5030B</b>						<b>Water</b>						
<b>LCS (5060605-BS1)</b>						Prepared: 06/19/15 09:19 Analyzed: 06/19/15 10:43						
Dibromochloromethane	19.2	0.500	1.00	ug/L	"	"	---	96	"	---	---	
1,2-Dibromoethane (EDB)	21.2	0.250	0.500	"	"	"	---	106	"	---	---	
Dibromomethane	19.2	0.500	1.00	"	"	"	---	96	"	---	---	
1,2-Dichlorobenzene	20.7	0.250	0.500	"	"	"	---	104	"	---	---	
1,3-Dichlorobenzene	20.4	0.250	0.500	"	"	"	---	102	"	---	---	
1,4-Dichlorobenzene	20.0	0.250	0.500	"	"	"	---	100	"	---	---	
Dichlorodifluoromethane	20.9	0.500	1.00	"	"	"	---	105	"	---	---	
1,1-Dichloroethane	19.7	0.250	0.500	"	"	"	---	98	"	---	---	
1,2-Dichloroethane (EDC)	18.1	0.250	0.500	"	"	"	---	90	"	---	---	
1,1-Dichloroethene	17.9	0.250	0.500	"	"	"	---	90	"	---	---	
cis-1,2-Dichloroethene	19.2	0.250	0.500	"	"	"	---	96	"	---	---	
trans-1,2-Dichloroethene	19.2	0.250	0.500	"	"	"	---	96	"	---	---	
1,2-Dichloropropane	20.1	0.250	0.500	"	"	"	---	100	"	---	---	
1,3-Dichloropropane	20.1	0.500	1.00	"	"	"	---	100	"	---	---	
2,2-Dichloropropane	18.2	0.500	1.00	"	"	"	---	91	"	---	---	
1,1-Dichloropropene	19.3	0.500	1.00	"	"	"	---	97	"	---	---	
cis-1,3-Dichloropropene	18.3	0.500	1.00	"	"	"	---	91	"	---	---	
trans-1,3-Dichloropropene	18.2	0.500	1.00	"	"	"	---	91	"	---	---	
Ethylbenzene	19.8	0.250	0.500	"	"	"	---	99	"	---	---	
Hexachlorobutadiene	19.0	2.50	5.00	"	"	"	---	95	"	---	---	
2-Hexanone	31.9	5.00	10.0	"	"	40.0	---	80	"	---	---	
Isopropylbenzene	20.7	0.500	1.00	"	"	20.0	---	103	"	---	---	
4-Isopropyltoluene	20.7	0.500	1.00	"	"	"	---	103	"	---	---	
4-Methyl-2-pentanone (MiBK)	32.0	5.00	10.0	"	"	40.0	---	80	"	---	---	
Methyl tert-butyl ether (MTBE)	19.9	0.500	1.00	"	"	20.0	---	100	"	---	---	
Methylene chloride	22.3	2.50	5.00	"	"	"	---	111	"	---	---	
Naphthalene	19.6	1.00	2.00	"	"	"	---	98	"	---	---	
n-Propylbenzene	20.4	0.250	0.500	"	"	"	---	102	"	---	---	
Styrene	19.4	0.500	1.00	"	"	"	---	97	"	---	---	
1,1,1,2-Tetrachloroethane	20.4	0.250	0.500	"	"	"	---	102	"	---	---	

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Hahn and Associates

434 NW 6th Ave. Suite 203  
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Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

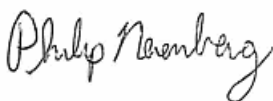
Reported:  
07/09/15 17:39

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060605 - EPA 5030B</b>						<b>Water</b>						
<b>LCS (5060605-BS1)</b>						Prepared: 06/19/15 09:19 Analyzed: 06/19/15 10:43						
1,1,2,2-Tetrachloroethane	22.0	0.250	0.500	"	"	"	---	110	"	---	---	
Tetrachloroethene (PCE)	18.8	0.250	0.500	"	"	"	---	94	"	---	---	
Toluene	19.4	0.500	1.00	"	"	"	---	97	"	---	---	
1,2,3-Trichlorobenzene	19.2	1.00	2.00	"	"	"	---	96	"	---	---	
1,2,4-Trichlorobenzene	19.8	1.00	2.00	"	"	"	---	99	"	---	---	
1,1,1-Trichloroethane	19.0	0.250	0.500	"	"	"	---	95	"	---	---	
1,1,2-Trichloroethane	21.3	0.250	0.500	"	"	"	---	107	"	---	---	
Trichloroethene (TCE)	20.0	0.250	0.500	"	"	"	---	100	"	---	---	
Trichlorofluoromethane	15.9	1.00	2.00	"	"	"	---	79	"	---	---	
1,2,3-Trichloropropane	19.6	0.500	1.00	"	"	"	---	98	"	---	---	
1,2,4-Trimethylbenzene	21.2	0.500	1.00	"	"	"	---	106	"	---	---	
1,3,5-Trimethylbenzene	20.6	0.500	1.00	"	"	"	---	103	"	---	---	
Vinyl chloride	19.3	0.250	0.500	"	"	"	---	97	"	---	---	
m,p-Xylene	38.8	0.500	1.00	"	"	40.0	---	97	"	---	---	
o-Xylene	20.1	0.250	0.500	"	"	20.0	---	101	"	---	---	
Surr: Dibromofluoromethane (Surr)		Recovery: 102 %		Limits: 80-120 %		Dilution: 1x						
1,4-Difluorobenzene (Surr)		105 %		80-120 %		"						
Toluene-d8 (Surr)		100 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		94 %		80-120 %		"						

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Portland, OR 97209Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

**Reported:**

07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Polyaromatic Hydrocarbons (PAHs) by EPA 8270D**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060682 - EPA 3511 (Bottle Extraction)						Water						
Blank (5060682-BLK1)			Prepared: 06/23/15 08:48    Analyzed: 06/23/15 15:18									
EPA 8270D LVI												
Acenaphthene	ND	0.0157	0.0315	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Anthracene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	0.0315	0.0630	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Carbazole	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Chrysene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Fluoranthene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Fluorene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0394	0.0787	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0394	0.0787	"	"	---	---	---	---	---	---	
Naphthalene	ND	0.0394	0.0787	"	"	---	---	---	---	---	---	
Phenanthrene	ND	0.0394	0.0787	"	"	---	---	---	---	---	---	
Pyrene	ND	0.0157	0.0315	"	"	---	---	---	---	---	---	
Surr: Acenaphthylene-d8 (Surr)		Recovery: 106 %		Limits: 80-129 %		Dilution: 1x						
Benzo(a)pyrene-d-12 (Surr)		107 %		80-124 %		"						

**LCS (5060682-BS1)**

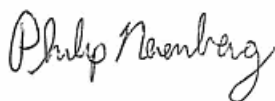
Prepared: 06/23/15 08:48 Analyzed: 06/23/15 15:50

**EPA 8270D LVI**

Acenaphthene	1.17	0.0200	0.0400	ug/L	1	1.00	---	117	70-124%	---	---
Acenaphthylene	1.31	0.0200	0.0400	"	"	"	---	131	77-145%	---	---
Anthracene	0.996	0.0200	0.0400	"	"	"	---	100	70-120%	---	---
Benz(a)anthracene	0.948	0.0200	0.0400	"	"	"	---	95	65-120%	---	---
Benzo(a)pyrene	0.910	0.0200	0.0400	"	"	"	---	91	42-130%	---	---

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Portland, OR 97209

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Project Number: 8832  
Project Manager: Ben Uhl

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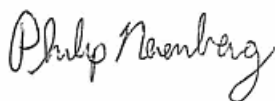
07/09/15 17:39

## QUALITY CONTROL (QC) SAMPLE RESULTS

### Polyaromatic Hydrocarbons (PAHs) by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 5060682 - EPA 3511 (Bottle Extraction)</b>						<b>Water</b>						
<b>LCS (5060682-BS1)</b>						Prepared: 06/23/15 08:48 Analyzed: 06/23/15 15:50						
Benzo(b)fluoranthene	0.898	0.0200	0.0400	"	"	"	---	90	"	---	---	
Benzo(k)fluoranthene	0.913	0.0200	0.0400	"	"	"	---	91	62-120%	---	---	
Benzo(b+k)fluoranthene(s)	1.81	0.0400	0.0800	"	"	2.00	---	90	59-120%	---	---	
Benzo(g,h,i)perylene	0.870	0.0200	0.0400	"	"	1.00	---	87	50-120%	---	---	
Carbazole	1.05	0.0200	0.0400	"	"	"	---	105	72-122%	---	---	
Dibenzofuran	1.28	0.0200	0.0400	"	"	"	---	128	53-120%	---	---	Q-29
Chrysene	0.884	0.0200	0.0400	"	"	"	---	88	59-120%	---	---	
Dibenz(a,h)anthracene	0.830	0.0200	0.0400	"	"	"	---	83	40-120%	---	---	
Fluoranthene	0.972	0.0200	0.0400	"	"	"	---	97	66-120%	---	---	
Fluorene	1.20	0.0200	0.0400	"	"	"	---	120	71-139%	---	---	
Indeno(1,2,3-cd)pyrene	0.886	0.0200	0.0400	"	"	"	---	89	57-120%	---	---	
1-Methylnaphthalene	1.19	0.0500	0.100	"	"	"	---	119	63-122%	---	---	
2-Methylnaphthalene	1.48	0.0500	0.100	"	"	"	---	148	72-143%	---	---	Q-29
Naphthalene	1.17	0.0500	0.100	"	"	"	---	117	67-132%	---	---	
Phenanthrene	0.965	0.0500	0.100	"	"	"	---	96	65-120%	---	---	
Pyrene	0.862	0.0200	0.0400	"	"	"	---	86	50-120%	---	---	
Surr: Acenaphthylene-d8 (Surr)		Recovery: 106 %		Limits: 80-129 %		Dilution: 1x						
Benzo(a)pyrene-d-12 (Surr)		108 %		80-124 %		"						

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Project Manager: Ben Uhl

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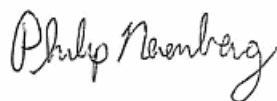
07/09/15 17:39

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Hexavalent Chromium by EPA 7196A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060558 - Method Prep: Aq							Water					
Blank (5060558-BLK1)					Prepared: 06/18/15 07:37		Analyzed: 06/18/15 07:51					
EPA 7196A (mod)												
Hexavalent Chromium	ND	0.00500	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (5060558-BS1)					Prepared: 06/18/15 07:37		Analyzed: 06/18/15 07:51					
EPA 7196A (mod)												
Hexavalent Chromium	0.0957	0.00500	0.00500	mg/L	1	0.100	---	96	85-115%	---	---	
Duplicate (5060558-DUP1)					Prepared: 06/18/15 07:37		Analyzed: 06/18/15 07:51					
QC Source Sample: 8832-150617-105 (A5F0543-06)												
EPA 7196A (mod)												
Hexavalent Chromium	ND	0.00500	0.00500	mg/L	1	---	ND	---	---	---	20%	
Matrix Spike (5060558-MS1)					Prepared: 06/18/15 07:37		Analyzed: 06/18/15 07:51					
QC Source Sample: 8832-150617-105 (A5F0543-06)												
EPA 7196A (mod)												
Hexavalent Chromium	0.0891	0.00510	0.00510	mg/L	1	0.100	ND	89	85-115%	---	---	

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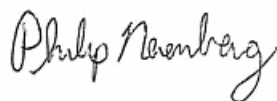
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Project Manager: Ben Uhl**Reported:**

07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060585 - EPA 3015A						Water						
Blank (5060585-BLK1)				Prepared: 06/18/15 14:48    Analyzed: 06/19/15 11:41								
EPA 6020A												
Antimony	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Cadmium	0.0556	0.0400	0.200	"	"	---	---	---	---	---	---	J
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	2.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.223	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	0.500	2.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (5060585-BS1)				Prepared: 06/18/15 14:48    Analyzed: 06/19/15 11:59								
EPA 6020A												
Antimony	28.6	0.500	1.00	ug/L	1	27.8	---	103	80-120%	---	---	Q-41
Arsenic	54.8	0.500	1.00	"	"	55.6	---	99	"	---	---	
Beryllium	27.6	0.100	0.200	"	"	27.8	---	99	"	---	---	
Cadmium	54.5	0.0400	0.200	"	"	55.6	---	98	"	---	---	
Chromium	54.2	0.500	1.00	"	"	"	---	98	"	---	---	
Copper	52.7	0.500	2.00	"	"	"	---	95	"	---	---	
Lead	53.5	0.100	0.200	"	"	"	---	96	"	---	---	
Mercury	1.06	0.0400	0.223	"	"	1.11	---	95	"	---	---	
Nickel	56.2	0.500	1.00	"	"	55.6	---	101	"	---	---	
Selenium	27.4	0.500	2.00	"	"	27.8	---	98	"	---	---	
Silver	27.0	0.100	0.200	"	"	"	---	97	"	---	---	
Thallium	27.3	0.100	0.200	"	"	"	---	98	"	---	---	
Zinc	55.5	2.00	4.00	"	"	55.6	---	100	"	---	---	
Matrix Spike (5060585-MS2)				Prepared: 06/18/15 14:48    Analyzed: 06/19/15 15:45								

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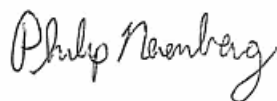
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Portland, OR 97209Project: **POVRED**Project Number: 8832  
Project Manager: Ben Uhl**Reported:**

07/09/15 17:39

**QUALITY CONTROL (QC) SAMPLE RESULTS****Total Metals by EPA 6020 (ICPMS)**

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5060585 - EPA 3015A						Water						
Matrix Spike (5060585-MS2)					Prepared: 06/18/15 14:48		Analyzed: 06/19/15 15:45					
QC Source Sample: 8832-150617-107 (A5F0543-07)												
EPA 6020A												
Antimony	17.4	0.500	1.00	ug/L	1	27.8	0.989	59	75-125%	---	---	A-02, Q-01, Q-41
Arsenic	67.7	0.500	1.00	"	"	55.6	14.0	97	"	---	---	
Beryllium	26.2	0.100	0.200	"	"	27.8	1.01	91	"	---	---	
Cadmium	56.0	0.0400	0.200	"	"	55.6	0.689	100	"	---	---	
Chromium	365	0.500	1.00	"	"	"	319	83	"	---	---	
Copper	186	0.500	2.00	"	"	"	140	83	"	---	---	
Lead	84.8	0.100	0.200	"	"	"	34.4	91	"	---	---	
Mercury	1.11	0.0400	0.223	"	"	1.11	0.0910	92	"	---	---	
Nickel	104	0.500	1.00	"	"	55.6	52.0	94	"	---	---	
Selenium	27.6	0.500	2.00	"	"	27.8	2.01	92	"	---	---	
Silver	27.0	0.100	0.200	"	"	"	0.233	96	"	---	---	
Thallium	25.8	0.100	0.200	"	"	"	0.233	92	"	---	---	
Zinc	151	2.00	4.00	"	"	55.6	103	86	"	---	---	

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Project Number: 8832

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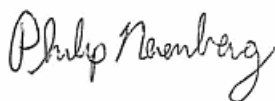
07/09/15 17:39

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5070100 - Matrix Matched Direct Inject						Water						
Blank (5070100-BLK1)						Prepared: 07/06/15 09:22		Analyzed: 07/06/15 14:38				
EPA 6020A (Diss)												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
LCS (5070100-BS1)						Prepared: 07/06/15 09:22		Analyzed: 07/06/15 14:40				
EPA 6020A (Diss)												
Arsenic	54.4	0.500	1.00	ug/L	1	55.6	---	98	80-120%	---	---	
Chromium	57.3	0.500	1.00	"	"	"	---	103	"	---	---	
Lead	56.1	0.100	0.200	"	"	"	---	101	"	---	---	
Duplicate (5070100-DUP1)						Prepared: 07/06/15 09:22		Analyzed: 07/06/15 15:04				
QC Source Sample: 8832-150617-107 (A5F0543-07)												
EPA 6020A (Diss)												
Arsenic	1.11	0.500	1.00	ug/L	1	---	1.22	---	---	10	20%	
Chromium	ND	0.500	1.00	"	"	---	ND	---	---	---	20%	
Lead	ND	0.100	0.200	"	"	---	ND	---	---	---	20%	
Matrix Spike (5070100-MS1)						Prepared: 07/06/15 09:22		Analyzed: 07/06/15 15:07				
QC Source Sample: 8832-150617-107 (A5F0543-07)												
EPA 6020A (Diss)												
Arsenic	56.3	0.500	1.00	ug/L	1	55.6	1.22	99	75-125%	---	---	
Chromium	55.7	0.500	1.00	"	"	"	ND	100	"	---	---	
Lead	52.9	0.100	0.200	"	"	"	ND	95	"	---	---	

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Project Manager: Ben Uhl**Reported:**  
07/09/15 17:39**SAMPLE PREPARATION INFORMATION****Diesel and/or Oil Hydrocarbons by NWTPH-Dx****Prep: EPA 3510C (Fuels/Acid Ext.)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060602</b>							
A5F0543-01	Water	NWTPH-Dx	06/16/15 10:20	06/19/15 12:58	940mL/5mL	1000mL/5mL	1.06
A5F0543-02	Water	NWTPH-Dx	06/16/15 11:35	06/19/15 12:58	950mL/5mL	1000mL/5mL	1.05
A5F0543-03	Water	NWTPH-Dx	06/16/15 13:20	06/19/15 12:58	950mL/5mL	1000mL/5mL	1.05
A5F0543-04	Water	NWTPH-Dx	06/16/15 13:20	06/19/15 12:58	980mL/5mL	1000mL/5mL	1.02
A5F0543-05	Water	NWTPH-Dx	06/17/15 10:20	06/19/15 12:58	910mL/5mL	1000mL/5mL	1.10
A5F0543-06	Water	NWTPH-Dx	06/17/15 11:00	06/19/15 12:58	1000mL/5mL	1000mL/5mL	1.00
A5F0543-07	Water	NWTPH-Dx	06/17/15 11:45	06/19/15 12:58	1030mL/5mL	1000mL/5mL	0.97

**Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx****Prep: EPA 5030B**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060605</b>							
A5F0543-01RE1	Water	NWTPH-Gx (MS)	06/16/15 10:20	06/19/15 12:03	5mL/5mL	5mL/5mL	1.00
A5F0543-02RE1	Water	NWTPH-Gx (MS)	06/16/15 11:35	06/19/15 12:03	5mL/5mL	5mL/5mL	1.00
A5F0543-03RE1	Water	NWTPH-Gx (MS)	06/16/15 13:20	06/19/15 12:03	5mL/5mL	5mL/5mL	1.00
A5F0543-05RE1	Water	NWTPH-Gx (MS)	06/17/15 10:20	06/19/15 12:03	5mL/5mL	5mL/5mL	1.00
A5F0543-07RE1	Water	NWTPH-Gx (MS)	06/17/15 11:45	06/19/15 12:03	5mL/5mL	5mL/5mL	1.00

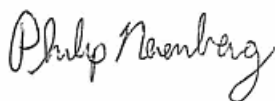
**Volatile Organic Compounds by EPA 8260B****Prep: EPA 5030B**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 5060605</b>							
A5F0543-01RE1	Water	EPA 8260B	06/16/15 10:20	06/19/15 12:03	5mL/5mL	5mL/5mL	1.00
A5F0543-01RE2	Water	EPA 8260B	06/16/15 10:20	06/19/15 12:03	5mL/5mL	5mL/5mL	1.00
A5F0543-02RE1	Water	EPA 8260B	06/16/15 11:35	06/19/15 12:03	5mL/5mL	5mL/5mL	1.00
A5F0543-03RE1	Water	EPA 8260B	06/16/15 13:20	06/19/15 12:03	5mL/5mL	5mL/5mL	1.00
A5F0543-05RE1	Water	EPA 8260B	06/17/15 10:20	06/19/15 12:03	5mL/5mL	5mL/5mL	1.00
A5F0543-07RE1	Water	EPA 8260B	06/17/15 11:45	06/19/15 12:03	5mL/5mL	5mL/5mL	1.00

**Polyaromatic Hydrocarbons (PAHs) by EPA 8270D****Prep: EPA 3511 (Bottle Extraction)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
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Philip Nerenberg, Lab Director

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**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832

Project Manager: Ben Uhl

**Reported:**

07/09/15 17:39

## SAMPLE PREPARATION INFORMATION

### Polyaromatic Hydrocarbons (PAHs) by EPA 8270D

**Prep: EPA 3511 (Bottle Extraction)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5060682							
A5F0543-01	Water	EPA 8270D LVI	06/16/15 10:20	06/23/15 08:48	120.1575mL/5mL	100mL/5mL	0.83
A5F0543-01RE1	Water	EPA 8270D LVI	06/16/15 10:20	06/23/15 08:48	120.1575mL/5mL	100mL/5mL	0.83
A5F0543-02	Water	EPA 8270D LVI	06/16/15 11:35	06/23/15 08:48	115.5375mL/5mL	100mL/5mL	0.87
A5F0543-03	Water	EPA 8270D LVI	06/16/15 13:20	06/23/15 08:48	120.3375mL/5mL	100mL/5mL	0.83
A5F0543-05	Water	EPA 8270D LVI	06/17/15 10:20	06/23/15 08:48	125.0875mL/5mL	100mL/5mL	0.80
A5F0543-06	Water	EPA 8270D LVI	06/17/15 11:00	06/23/15 08:48	126.6575mL/5mL	100mL/5mL	0.79
A5F0543-07	Water	EPA 8270D LVI	06/17/15 11:45	06/23/15 08:48	127.6875mL/5mL	100mL/5mL	0.78

### Total Hexavalent Chromium by EPA 7196A

**Prep: Method Prep: Aq**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5060558							
A5F0543-01	Water	EPA 7196A (mod)	06/16/15 10:20	06/18/15 07:37	25mL/25mL	25mL/25mL	1.00
A5F0543-02	Water	EPA 7196A (mod)	06/16/15 11:35	06/18/15 07:37	25mL/25mL	25mL/25mL	1.00
A5F0543-03	Water	EPA 7196A (mod)	06/16/15 13:20	06/18/15 07:37	25mL/25mL	25mL/25mL	1.00
A5F0543-05	Water	EPA 7196A (mod)	06/17/15 10:20	06/18/15 07:37	25mL/25mL	25mL/25mL	1.00
A5F0543-07	Water	EPA 7196A (mod)	06/17/15 11:45	06/18/15 07:37	25mL/25mL	25mL/25mL	1.00

### Total Metals by EPA 6020 (ICPMS)

**Prep: EPA 3015A**

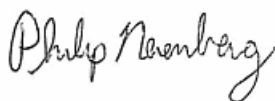
Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 5060585							
A5F0543-01	Water	EPA 6020A	06/16/15 10:20	06/18/15 14:48	45mL/50mL	45mL/50mL	1.00
A5F0543-01RE1	Water	EPA 6020A	06/16/15 10:20	06/18/15 14:48	45mL/50mL	45mL/50mL	1.00
A5F0543-02	Water	EPA 6020A	06/16/15 11:35	06/18/15 14:48	45mL/50mL	45mL/50mL	1.00
A5F0543-03	Water	EPA 6020A	06/16/15 13:20	06/18/15 14:48	45mL/50mL	45mL/50mL	1.00
A5F0543-05	Water	EPA 6020A	06/17/15 10:20	06/18/15 14:48	45mL/50mL	45mL/50mL	1.00
A5F0543-07	Water	EPA 6020A	06/17/15 11:45	06/18/15 14:48	45mL/50mL	45mL/50mL	1.00
A5F0543-07RE1	Water	EPA 6020A	06/17/15 11:45	06/18/15 14:48	45mL/50mL	45mL/50mL	1.00

### Dissolved Metals by EPA 6020 (ICPMS)

**Prep: Matrix Matched Direct Inject**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
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Philip Nerenberg, Lab Director

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**Hahn and Associates**

434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

**Reported:**

07/09/15 17:39

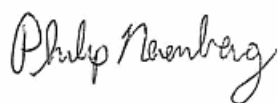
## SAMPLE PREPARATION INFORMATION

### Dissolved Metals by EPA 6020 (ICPMS)

Batch: 5070100

A5F0543-02	Water	EPA 6020A (Diss)	06/16/15 11:35	07/06/15 09:22	45mL/50mL	45mL/50mL	1.00
A5F0543-05	Water	EPA 6020A (Diss)	06/17/15 10:20	07/06/15 09:22	45mL/50mL	45mL/50mL	1.00
A5F0543-07	Water	EPA 6020A (Diss)	06/17/15 11:45	07/06/15 09:22	45mL/50mL	45mL/50mL	1.00

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## Notes and Definitions

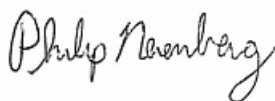
### Qualifiers:

- A-02 Serial dilution passed, PS not needed. Data is acceptable.
- F-13 The chromatographic pattern does not resemble the fuel standard used for quantitation
- H-06 This sample was received, or the analysis requested, outside the recommended holding time.
- J Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- Q-01 Spike recovery and/or RPD is outside acceptance limits.
- Q-19 Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-24 RPD for spike and spike duplicate is above established control limit. Recoveries for both spike and spike duplicate are within control limits.
- Q-29 Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
- Q-30 Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
- Q-31 Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
- Q-41 Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- Q-42 Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
- Q-51 Extracted internal standard. Recovery limits not applicable.
- S-05 Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

### Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.

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Philip Nerenberg, Lab Director

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**Hahn and Associates**

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Portland, OR 97209

Project: **POVRED**

Project Number: 8832  
Project Manager: Ben Uhl

**Reported:**  
07/09/15 17:39

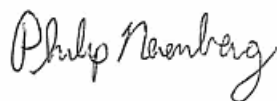
**Blank Policy** Apex assesses blank data for potential high bias down to a level equal to  $\frac{1}{2}$  the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.

For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.

Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

\*\*\* Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).



**Hahn and Associates**  
434 NW 6th Ave. Suite 203  
Portland, OR 97209

Project: **POVRED**  
Project Number: 8832  
Project Manager: Ben Uhl

Reported:  
07/09/15 17:39

A5F0543

HAHN AND ASSOCIATES, INC. Environmental Consultants 434 NW 6th Avenue, Suite 203 • Portland OR 97209 (503) 795-0717 • Fax (503) 227-2209				Apex Laboratories Tigard, OR		CHAIN OF CUSTODY Chain of Custody No. 1	
Project Manager Ben Uhl	Project No. 8832	Project Name POVRED	Collected by Ben Uhl	Liquid with Sediment Sample Test Bottle Test One (which)	Test Sediment Test Sediment	Test Bottle Shake	Samples Received at 4C (Y or N) Appropriate Containers Used (Y or N) Provide Verbal Results (Y or N) Provide Preliminary Fax Results Yes No
<b>Comments</b> Sample Number Prefix: 8832-150616- and * 8832-150617- Port of Vancouver, USA pricing. Please Invoice Matt Graves with the Port of Vancouver, USA. Copy results to Rob Ede and Ben Uhl at Hahn and Associates, Inc. 5-day turn around time. DataConcourse EDD to Allison Greiner (Eureka Project Solutions).				<b>Analyses to be Performed</b> Hexavalent Chromium by EPA 7196A Total PP Metals by EPA 6010/7000 VOCs by EPA 8260B PAHs by EPA 8270			
<b>Matrix</b> Soil Water Air Other				<b>Number of Containers</b> 10 10 10 10 10 5 8			
<b>Sample Description</b> MW-3-35 MW-4-34 MW-1-37 MW-5-34 Equipment Blank MW-2-40				<b>Remarks</b> HOLD DISSOLVED METALS HOLD DISSOLVED METALS HOLD DISSOLVED METALS HOLD DISSOLVED METALS HOLD DISSOLVED METALS HOLD DISSOLVED METALS			
Lab ID	Sample #	Date	Time				
	100	16-Jan-15	10:20				
	101	16-Jan-15	11:35				
	102	16-Jan-15	13:20				
	103	16-Jan-15	13:20				
	* 104	17-Jan-15	10:20				
	* 105	17-Jan-15	11:00				
	* 107	17-Jan-15	11:45				
Requisitioned by <u>Ben Uhl</u> Date <u>10/17/15</u> Time <u>15:05</u>				Received by <u>Ben Uhl</u> Date <u>10/17/15</u> Time <u>15:05</u>			
Requisitioned by <u>Ben Uhl</u> Company <u>Hahn and Associates, Inc.</u>				Received by <u>Ben Uhl</u> Company <u>Apex</u>			
Requisitioned by <u>Ben Uhl</u> Company <u>Hahn and Associates, Inc.</u>				Received by <u>Ben Uhl</u> Company <u>Apex</u>			

Apex Laboratories

*Philip Nerenberg*

Philip Nerenberg, Lab Director

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