# FOCUSED SITE INVESTIGATION (WITH RISK-BASED ASSESSMENT)

**Met-Tek, Inc.**

15651 SE 125th Court
Clackamas, Oregon
ECSI ID 2024

**Prepared for:**

**Met-Tek, Inc.**
15651 SE 125th Court
Clackamas, Oregon

**Issued on:**

April 21, 2023

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Project No. 435-14001-02

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*This*

# Focused Site Investigation
## (with Risk-Based Assessment)

*Report for:*

**Met-Tek, Inc.**
15651 SE 125th Court
Clackamas, Oregon
ECSI ID 2024

*Has been prepared for the sole benefit and use of our Client:*

**Met-Tek, Inc.**
15651 SE 125th Court
Clackamas, Oregon

*and its assignees*

*Issued* April 21, 2023 *by:*

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| | |
|---|---|
| ACM | asbestos containing material |
| AST | above-ground storage tank |
| bgs | below ground surface |
| CFSLs | Clean Fill Screening Levels |
| Client | George Raimer of Met-Tek, Inc. |
| CMMP | Contaminated Media Management Plan |
| COIs | constituents of interest |
| COPCs | constituents of potential concern |
| CRWD | Clackamas River Water District |
| DPT | direct-push technology |
| DRO | diesel-range organics |
| DU | decision unit |
| ECSI | Environmental Cleanup Site Information |
| ENW | EVREN Northwest, Inc. |
| EPA | US Environmental Protection Agency |
| EPC | exposure point concentration |
| F&BI | Friedman and Bruya, Inc. |
| FSI | Focused Site Investigation |
| GRO | gasoline-range organics |
| HCID | Hydrocarbon Identification |
| IS | incremental sample |
| ISM | incremental sampling methodology |
| L/m | liters per minute |
| LOF | Locality of Facility |
| Met-Tek | Met-Tek, Inc. |
| µg/L | micrograms per Liter |
| mg/L | milligrams per Liter |
| mg/Kg | milligrams per Kilogram |
| MRL | method reporting limit |
| OAR | Oregon Administrative Rule |
| ODEQ | Oregon Department of Environmental Quality |
| OWRD | Oregon Water Resources Department |
| OWS | oil/water separator |
| PAHs | polynuclear aromatic hydrocarbons |
| PCBs | polychlorinated biphenyls |
| PE | polyethylene |
| PEMCO | Petroleum Equipment Maintenance Company |
| PGE | Portland General Electric |
| PID | photoionization detector |
| ppm | parts per million |
| QA/QC | Quality Assurance / Quality Control |
| RBCs | risk-based concentrations |
| RBDM | *Risk-Based Decision Making for the Remediation of Contaminated Sites* guidance document |
| RCRA | Resource Conservation and Recovery Act |
| RRO | residual (oil)-range organics |
| SLRBCs | Screening Level Risk-Based Concentrations |
| TCLP | Toxicity Characteristic Leaching Procedure |
| TPH | Total Petroleum Hydrocarbons |
| UCL | upper confidence limit |
| VOCs | volatile organic constituents |

# 1.0 Introduction

On behalf of Met-Tek, Inc. (Met-Tek, Client), EVREN Northwest, Inc. (ENW) performed a Focused Site Investigation (FSI) at the Met-Tek facility located at 15651 SE 125th Court in Clackamas, Oregon (subject site; see Figures 1 and 2). Met-Tek has occupied the industrial property since 1974 and provides heat-treating services and quenching of metal parts. The subject property was listed in Oregon Department of Environmental Quality's (ODEQ's) Environmental Cleanup Site Information (ECSI) database as ECSI Site #2024 following discovery of suspected petroleum impacts beneath the site in the early 1990s.

Field activities described in this FSI were conducted in June 2016 and June 2020. In addition to presenting the methods and findings of soil, sediment and reconnaissance ground water sampling, this report presents results of a risk-based assessment.

# 2.0 Background

In 2014, ENW conducted a review of the subject site's ODEQ ESCI file, which provided the following understanding of the site's background.

- Since 1974, Met-Tek has occupied the subject property performing heat-treating and quenching of metal parts. Historically, quenching tanks were located within the existing main production building, however, most of the quenching tanks have been removed or are no longer being used. The subsurface pit in which several quenching tanks were located is still present (Furnace Pit, see Figure 2); however, only furnaces are located in this pit. Due to the shallow depth to first-occurring ground water (as shallow as three (3) feet below ground surface [bgs]) ground water that periodically collects in the pit is pumped to the on-site oil/water separator, which then discharges to the sanitary sewer.
- In 1981, Met-Tek discontinued a heat-treating process that involved the use of sodium cyanide. Since that time, the heat quenching process has used high temperature furnaces. Almost all the quenching is currently done in these furnaces.
- In the early 1990s, the subject property was listed on ODEQ's ECSI database as ECSI Site #2024 following discovery of suspected petroleum impacts beneath the site.
- In November 1992, a Preliminary Site Assessment was conducted by Dames and Moore. The possible occurrence of hydrocarbon impacts was reported in an area of broken and stained asphalt in the parking area at the east side of the main production building. In addition, oil was suspected to be leaking into the subsurface from several large oil-filled quenching tanks located within a concrete vault inside the production building (current Furnace Pit, see Figure 2).

- In April 1993, Petroleum Equipment Maintenance Company (PEMCO) installed ten (10) temporary soil borings, collected soil samples at depths ranging from 0.5 to 9 feet bgs, and analyzed the soil samples for total petroleum hydrocarbons (TPH). TPH was detected[1] in eight of the 10 borings at up to 10,000 milligrams per Kilogram (mg/Kg). The greatest impacts were in the asphalt parking area on the west side of the main production building and around the oil quenching tank pit located inside the building (current Furnace Pit, see Figure 2). Some TPH detections occurred below the water table at depths up to 9.5 feet bgs.
- In February 1994, Portland General Electric (PGE) reported that an on-site transformer had leaked about 100 gallons of oil containing PCBs (polychlorinated biphenyls) onto the ground. This spill incident is referred to by ODEQ as Spill File #NWR-94-047. PGE removed 50 cubic yards of soil containing above 1,000 parts per million (ppm) TPH and 13 ppm PCBs. PGE also pumped and disposed of water that had collected in the vault excavation. Confirmation sampling conducted by PGE following soil removal in May 1994 confirmed that TPH concentrations were below 1000 ppm, with no PCBs detected. A pocket of contaminated soil, estimated to be 1.8 cubic yards, was left in place beneath the cable vault, due to the difficulty of removing the vault and attached electrical supply cables. In addition, no PCBs or TPH were detected in a water sample from the excavation. In February 1995, PGE removed six (6) cubic yards of impacted soil from beneath the bottom of the cable vault. Confirmation sampling of excavation sidewalls detected no PCBs. TPH concentrations were 74 ppm (4 feet below the bottom of the vault) and 46 ppm (4 feet, 10 inches below the bottom of the vault). Several thousand gallons of water were treated through PGE's oil/water separator (OWS) and Met-Tek's OWS aligned in series. Water samples collected following the last stage of PGE's OWS showed no detectable TPH.
- In February 1997, ODEQ responded to a complaint alleging that heat-treating oils had been disposed of on-site, draining into the storm water retention pond at the facility at that time. ODEQ observed evidence of oil in the pond.
- In a letter dated February 25, 1998, Met-Tek responded to ODEQ detailing actions taken by the company to address some of the issues. Reported actions taken by Met-Tek included:
    - Met-Tek installed a concrete berm to prevent the adjacent site's storm water from flooding Met-Tek's OWS and storm-water retention pond. Such flooding had caused an upset of Met-Tek's OWS, thereby causing an oil sheen in the storm water pond.
    - Surface water was also collected and analyzed for metals; however, sediment could not be sampled due to high water levels. Among the metals detected, total zinc was reported at 2,210 micrograms per Liter (µg/L).

After reviewing the ODEQ file documents, ENW provided Met-Tek the following recommendations:

[1] Using EPA Method 418.1.

1. Further characterize and delineate areas with known impacts of TPH, including subsurface soils at: 1) the OWS; 2) parts washer and water tank; 3) former quenching oil pit inside the building (current Furnace Pit); and 4) the ammonia above-ground storage tank (AST) in the southwest corner of the building;
2. Characterize sediment in the now former storm water pond;
3. Assess surface soil conditions in the western portion of the site where soil is not covered by hardscape (buildings or asphalt paving);
4. Assess ground water conditions in areas with known impacts of TPH, e.g., near the location of the on-site now former storm water retention pond, and near the locations of the subsurface pits; and
5. Characterize soils in the soil piles near the northwest and southwest corners of the property.

This work is described in this FSI report.

## 2.1 History of Ownership of Met-Tek, Inc.

The current ownership of Met-Tek, Inc. had no connection to the Company prior to October 27, 2000. Gerald O. Shriner, Jr. purchased the Common Stock of the Company pursuant to a Stock Sale and Stock Redemption Agreement effective October 27, 2000. Prior to October 27, 2000, the late George W. Raimer was the sole shareholder. Mr. Shriner is and has been the sole shareholder since October 27, 2000. Mr. Shriner understands that environmental compliance issues that occurred prior to October 27, 2000 are the responsibility of Met-Tek Inc. and wants to assure ODEQ that Met-Tek, Inc. is committed to resolving all compliance issues with the Agency.

# 3.0 Scope of Work

The purpose of this investigation was to assess, through sampling and laboratory analysis, soil and ground water in each of the above identified areas of suspected impacts for the presence or absence of regulated hazardous substances and/or petroleum products. The objective of the investigation was to collect sufficient data to determine whether hazardous substances, if present, could pose a human health risk or ongoing cleanup liability. ENW understands the data may also be used in support of regulatory closure of the facility.

ENW completed the following Scope of Work for this project:

- Arranged for a private utility locate, as well as a public locate, at the site prior to drilling.
- Completed nine borings (EB01 through EB09) across the site at up to 11 feet bgs and performed soil and reconnaissance ground water sampling.
- Conducted sampling utilizing incremental sampling methodology (ISM) in three areas or decision units (DUs) at the site, including:
    - DU01 – surface soil across the west scrap yard.

- DU02 – surface soil across the central scrap yard, east of DU01.
- DU03 – sediment in the now former storm water pond.

- Conducted sampling utilizing a small excavator and ISM at two soil piles (SP01 and SP02) located near the southwest and northwest corners of the site, respectively.
- Submitted incremental samples (IS) and discrete soil and reconnaissance ground water samples to an independent laboratory for selected chemical analyses.
- Evaluated analytical results with respect to the ODEQ's Soil Matrix Cleanup standards and Risk-Based Decision-Making (RBDM) guidance documents.
- Prepared this report documenting the work conducted with findings and presenting recommendations for next steps to obtain regulatory site closure.

## 4.0 Site Setting

**Description and Location.** The subject site consists of two tax lots, identified as follows by the Clackamas County Assessor's Office:

**Table 4-1. Property Identification**

| Street Address | Tax Lot | Current Occupancy/Use | Size (Acres) |
|---|---|---|---|
| 15651 SE 125th Court | 22E11C 01102 | Industrial | 0.85 |
| No situs | 22E11C 01103 | Industrial/storage | 1.07 |

The site is located at 15651 SE 125th Court in unincorporated Clackamas County, Oregon in an industrial complex north of Highway 212 just east of the city limits (see Figure 1 for a Site Vicinity Map). Properties surrounding the industrial complex are primarily utilized for light industrial usages. Surrounding businesses include United Site Services and Knez Building Material.

The approximate location of buildings, structures, on-site wells, and other pertinent information are provided on the Site Plan on Figure 2. The east half of the subject site is developed with a main manufacturing building with offices and paved parking areas. A maintenance shed and water-based quench tank are attached to the north side of the main building. Along the west side of the building is a 3,000-gallon liquid nitrogen AST, two (2) 1,000-gallon ammonia ASTs, closed-loop oil coolers, and temporary quenching oil holding tanks. Production operations are largely contained inside the main building where low- and high-heat furnaces and oil quenching tanks are used to process heat-treated metals.

To the west and northwest of the main building are a former storm water pond and Quonset storage hut. The storm-water retention pond in the northwest corner of the site received storm water from an oil/water separator until early 2023 when it was replaced with a flow-through planter.

**Topography and Geography.** The site and surrounding area are in the southeastern part of the Portland Basin within the area known as the Boring Volcanic Field. The site vicinity lies on a relatively level alluvial terrace of the ancient Clackamas River at an elevation of approximately 130 to 150 feet above mean sea level. The valley floor near the Clackamas River slopes gently westward toward the confluence of the Clackamas and Willamette rivers near Clackamas. The relatively level terraced landscape in the site vicinity is bordered by surrounding volcanic buttes and hill clusters rising to 650 feet above river level.

The Clackamas River is the nearest major surface water body to the site at 0.85 miles to the south. The Clackamas River flows southwest toward its confluence with the Willamette River approximately 4.5 miles southwest of the site. An intermittent stream flows east-west just beyond the northern site property line flowing westward approximately 1.25 miles then south to its confluence with the Clackamas River approximately 2.4 miles southwest of the site. A second intermittent stream is located approximately 0.75 miles east of the site and flows south to its confluence with the Clackamas River, approximately the same distance from the site.

**Geologic Setting.** The predominant lithologic surface unit in the site vicinity is the volcanically-derived sandy gravels with cobbles (Qal) formed within stream channels and on adjacent flood plains, which are generally 5 to 15 feet in thickness.[2] Some alluvium may be overlain or interbedded with up to five feet of sand to silt alluvial flat deposits from the upper portions of the Columbia River Basin. Underlying the sandy gravel deposits are conglomerates of the Troutdale Formation, which are underlain by flood basalts of the Columbia River Basalt Group. Boring lava (Pliocene to Pleistocene) vents form the resistant buttes in the site vicinity (i.e., Mt. Talbert and Mt. Scott).

A well driller's log for a water well installed at the subject property records indurated cobbles and boulders typical of the upper Troutdale formation extending to 60 feet beneath the subject property. At least 10 feet of black sand underlies the cemented gravel and cobbles, according to well driller's notes.

Lithology encountered during soil boring activities by ENW was alluvial deposits consisting of gravels, sands, silts, and clays. Most areas of the site appear to have a relatively thin surface layer of sand or silt overlying near-surface gravels. Boring logs for the site are included in Appendix A.

**Hydrogeologic Setting.** The Troutdale Formation gravels provide the primary aquifer in the site vicinity. Some regional supply wells have also been installed in the underlying Columbia River Basalts. The regional ground water gradient is generally to the west to southwest. Saturated conditions are encountered on the subject site at depths ranging from approximately 2.8 to 7.7 feet bgs during recent assessments. A review of well logs in the area indicates little evidence of consistent confining units within the upper productive aquifers of the Troutdale Formation. Based on this information, it appears that the water-bearing zone acts as a single hydraulic unit. For the purposes of this report, it is assumed that shallow ground-water flow generally mimics surface water flow (i.e., from topographic highs to topographic lows). However, multiple factors can affect the direction of ground-water flow in subsurface layers including, but not limited to,

[2] Schlicker, Herbert G., Finlayson, C. modified from Trimble, 1963. Geologic Map of the Lake Oswego and Gladstone Quadrangles, Oregon, Geology and Geologic Hazards of Northwestern Clackamas County, Oregon, State of Oregon Department of Geology and Mineral Industries; Bulletin 99; photo revised 1970 and 1976.

sediment/rock type, subsurface utility lines, buried river valleys and stream beds, folds, fractures, and faults. The direction of ground-water flow in the subject area is generally expected to be to the north-northwest, towards and intermittent drainage along the northern property margin, based on the local topography.

# 5.0 Methods

Field activities for this project were performed on June 14, 2016 and June 12, 2020. Field activities were photographed and are presented in a photographic log included in Appendix B. The analytical results are described in Section 6.

## 5.1 Utility Locate

Pacific Northwest Locating (Portland, Oregon) was contracted to perform a private locate at the site. Each of the nine boring locations was cleared of public and private utilities. In addition, ENW requested the public utility locate service to identify subsurface utilities and improvements so that no damage to property or work hazards to project staff would occur.

## 5.2 Discrete Soil and Reconnaissance Ground Water Sampling of Soil Borings (EB01 through EB09)

On June 14, 2016, ENW contracted with Cascade Drilling, Inc. to advance nine (9) soil borings using a Geoprobe® tracked direct-push technology (DPT) drilling rig. Boring locations are shown on Figure 3 and described below in Table 5-1. Soil materials recovered from the DPT drill rods were inspected continuously for lithological identification and field screened for the presence of impacts. The cuttings were logged with special attention to description of lithology, color, moisture, foreign clasts, physical properties and odor. Field screening included visual and olfactory inspection, and periodically measuring vapor headspace using a photoionization detector (PID). Soil lithology, field screening results, and other observations were recorded by an Oregon registered geologist onto boring logs included in Appendix A.

Soil borings were completed to approximately five (5) feet below the observed ground water table (i.e., approximately 10 to 15 feet bgs). During each sampling interval, select portions of the soil core were retained for possible laboratory analysis. If no observational or PID evidence of soil impacts were noted, soil samples were collected at or just above the soil-ground water interface; otherwise, the most highly impacted sample was selected for analysis. Samples selected for laboratory analysis were immediately transferred with fresh Nitrile gloves to laboratory-supplied containers. The containers were immediately sealed with minimal interior headspace. Selected soil samples were also collected according to the prescribed procedures of the US Environmental Protection Agency (EPA) Method 5035A for analysis of VOCs (volatile organic constituents).

Upon reaching the total depth of the soil boring, the DPT drill string was removed, and a temporary well casing was installed in the open borehole in preparation for ground water sampling. Reconnaissance ground

water samples were collected from all borings except EB02, which because of its close proximity to EB01 and EB03, was deemed unnecessary. Approximately two (2) to three (3) gallons of ground water were purged from each boring using a low-flow peristaltic pump and dedicated polyethylene (PE) tubing to "purge" the standing water from the borehole, and to draw representative ground water into the temporary well. Following purging, ground water samples were collected from clean, dedicated PE tubing connected to a peristaltic pump set at its lowest setting (0.3 to 0.5 liters per minute [L/m]). The flow rate was minimized to reduce off-gassing of volatile constituents. Samples were transferred into laboratory-supplied containers with appropriate preservative, uniquely labeled, documented onto a chain-of-custody record, and placed in a cooler on artificial ice pending transport to the laboratory. Samples were labeled with a distinct designation, including the date, time, project number, and sampler's name. Labelling convention for soil samples used "EB" as a prefix and a number (e.g., EB01, EB02, etc.) to identify boring location appending with a second number indicating the sample's depth [e.g., EB01/9 would indicate a sample collected at 9 feet bgs in boring EB01]. Ground water samples are identified with "GW" after the boring designation followed by the depth in feet of the bottom of the temporary well screen where the sample was collected. Therefore, a ground water sample collected from a well screen set from 10 to 15 feet bgs in boring EB01 would be designated EB01/GW15.

Soil boring construction notices (i.e., start cards) and reports (i.e., well logs) were prepared and submitted to the Oregon Water Resources Department (OWRD) as required by Oregon Administrative Rules [OAR] 690-240. On June 14, 2016, (same day), each of the soil borings were abandoned with bentonite chips and sealed at the ground surface using soil, concrete, or an asphalt patch to match the existing surface material.

As a note, reconnaissance ground water samples by nature are typically more turbid than ground water samples collected from a developed monitoring well. As such, constituent concentrations are usually biased high in comparison to ground water samples collected from properly developed wells at equivalent locations.

**Table 5-1. Boring Locations**

| Boring ID | Date Sampled | Depth Soil Sampled (feet) | Temporary Well-Point Screened Interval (feet) | Location |
|---|---|---|---|---|
| EB01 | 6/14/16 | 8.5 | 10-15' | Adjacent (south) to the storm-water pond |
| EB02 | 6/14/16 | 9 | 10-15' | Between the storm-water pond and the oil/water separator |
| EB03 | 6/14/16 | 5 | 10-15' | Adjacent (south) to the oil/water separator |
| EB04 | 6/14/16 | 7 | 10-15' | Adjacent (north) of the parts wash/quench tank |
| EB05 | 6/14/16 | 11 | 10-15' | East side of the northern (older) portion of the building |
| EB06 | 6/14/16 | 11 | 10-15' | South side of the building. |
| EB07 | 6/14/16 | 9.5 | 10-15' | Adjacent to (south) of the ammonia ASTs |
| EB08 | 6/14/16 | 9 | 10-15' | Adjacent to (north) of the former quenching pit |
| EB09 | 6/14/16 | 9 | 10-15' | Adjacent to (south) of the former quenching pit |

## 5.3 ISM Sampling (DU01 through DU03 and Soil Piles SP01 and SP02)

Surface soil in the storage yard (western portion of the site) and pond sediments were assessed using ISM. Additionally, ISM was used to characterize two soil piles. ISM is a structured composite sampling and processing protocol that provides a reasonably unbiased estimate of the mean contaminant concentration in a volume of soil targeted for sampling. ISM provides representative samples of specific soil volumes defined as decision units, or DUs, by collecting numerous increments of soil (typically 30 to 100 increments) that are combined, processed, and subsampled according to specific protocols. ISM sampling has the advantage of reducing heterogeneity in soil (both micro- and macro-scale) to provide an average concentration within the target sample area.

For the purposes of this investigation, the subject property was divided into five (5) DUs corresponding to each of the five areas described above. The decision units were arbitrarily identified as:

- DU01 (western portion of yard),
- DU02 (central portion of yard).
- DU03 (pond sediments),
- SP01 (soil stockpile in southwest corner of site), and
- SP02 (soil stockpile in northwest corner of site).

Decision units DU01 through DU03 and soil piles SP01 and SP02 locations are illustrated on Figure 3. Each DU was determined to have unique constituents of interest (COIs) based on the reported activity at each location. The locations, sample IDs, and depth sampled at each DU are described in Table 5-2.

**5-2. Decision Units**

| Boring ID | Date Sampled | Depth Soil Sampled (feet) | Location |
|---|---|---|---|
| DU01-160614-0.5 | 6/14/16 | 0.5 | Yard area west of all site buildings and pond |
| DU01/160614-0.5-REP01 | 6/14/16 | 0.5 | QC replicate of DU01 |
| DU01/160614-0.5-REP02 | 6/14/16 | 0.5 | |
| DU02/160614-0.5 | 6/14/16 | 0.5 | Area around and north of the Quonset hut (storage building), not including the pond. |
| DU03/160614-0.5 | 6/14/16 | 0.5 | Pond sediments |
| SP01-200612-IS | 6/12/2020 | Depth integrated | Soil stockpile in southwest corner of site |
| SP01-200612-IS-REP01 | 6/12/2020 | | QC replicate of SP01 |
| SP01-200612-IS-REP02 | 6/12/2020 | | |
| SP02-200612-IS | 6/12/2020 | | Soil stockpile in northwest corner of site |

### 5.3.1 DU01 and DU02 (Yard Area, Western Portion of Site)

Incremental sampling of DU01 and DU02 was performed on June 14, 2016 by dividing each DU into a grid pattern with 50 grids and marking with flags. Grid locations were distributed evenly to ensure that the entire DU population was equally represented in the final incremental sample. Incremental samples were collected at a depth of approximately 0.5 feet bgs from the center node of each increment grid (grid-center systematic sampling) using a decontaminated one-inch inside diameter stainless-steel push probe, resulting in fifty equal-volume increment samples from each DU. The increments were placed into a dedicated one-gallon laboratory-prepared glass sample jar, labelled with a distinctive designation, including the date, time, project number, and sampler's name, and then immediately placed in cooled storage until delivered to the laboratory under chain-of-custody protocols.

### 5.3.2 DU03 (Former Storm Water Pond)

Incremental sampling of the pond (DU03) was performed on June 14, 2016 by collecting samples from near-shore sediments using a decontaminated stainless-steel push probe fitted with an extension. Wearing hip-waders, the sampling technician was only able to access the perimeter of the pond where the water depth did not exceed the height of the waders. A total of ten (10) increments were collected from approximately equally spaced locations around the pond perimeter. Sediment increments were placed into a plastic bag and combined into one large sealable bag, homogenized, and then placed into two (2) 8-ounce jars for shipment to the laboratory.

### 5.3.3 SP01 and SP02 (Soil Stockpiles)

On June 16, 2020, ten (10) test pits were advanced at equally spaced locations in each soil stockpile location using a mini excavator, and three (3) depth integrated sample increments were collected from the bottom, middle and upper portion of each test pit, respectively. Thusly, a total of 30 depth-integrated samples were collected from each soil stockpile and placed into dedicated one-gallon laboratory-prepared glass sample jars, labelled with a distinctive designation, including the date, time, project number, and sampler's name,

and then immediately placed in cooled storage until delivered to the laboratory under chain-of-custody protocols.

### 5.3.4 Incremental Sample Naming Protocols

Incremental samples were labeled using the naming convention "DUX-160614-0.5-IS", where "X" represents the DU number and 0.5 represents the sample depth in feet. A similar protocol was used for naming soil stockpile incremental samples, e.g., "SPX-200612-IS", where "X" represents the soil pile number. Sampling personnel wore fresh Nitrile gloves, and all sampling equipment was decontaminated between DUs to prevent cross-contamination.

### 5.3.5 Incremental Sample Replicates

In addition to the incremental samples collected from DU01 through DU03 and SP01 and SP02, two replicate samples were collected from DU01 and SP01, respectively, for quality control purposes (explained further in Section 6.5.1). Replicate samples were collected from the center node of each grid within several inches of the primary incremental sample. The replicates were labeled with "REP01 and "REP02" appended to the sample identification.

## 5.4 ISM Laboratory Subsampling Protocol

Prior to analysis, the incremental samples were processed by Friedman and Bruya, Inc. (F&BI) of Seattle, Washington, according to ISM. In the processing protocol, each 50-, 30- or 10-increment sample was air dried, sieved, sub-sampled and composited for sample aliquots, one for metals analysis and one for TPH-HCID by Method NWTPH-HCID and follow-up constituent analyses of select samples, e.g., VOCs, polynuclear aromatic hydrocarbons (PAHs), and PCBs, all conducted by F&BI.

## 5.5 Analytical Methods

Soil, ground water, and sediment samples were analyzed by F&BI of Seattle, Washington. Laboratory analytical reports are included in Appendix C. Table 5-3 presents analytical methods used during this assessment.

**Table 5-3. Analytical Methods**

| Analytical Method | Constituents | Soil and Ground Water |
|---|---|---|
| NWTPH-HCID | Total petroleum hydrocarbon identification (HCID): gasoline-range organics (GRO), diesel-range organics (DRO) and residual (oil)-range organics (RRO) | All soil, sediment and ground water samples |
| NWTPH-Gx | Quantitative analysis for GRO | Selected samples if GRO suggested present by HCID |
| NWTPH-Dx | Quantitative analysis for DRO and RRO | Selected samples if DRO and/or RRO suggested present by HCID |
| EPA 8082A | Polychlorinated Biphenyls (PCBs) | Selected samples if RRO suggested present by HCID |
| EPA 8270D SIM | Polynuclear Aromatic Hydrocarbons (PAHs) | Selected samples if DRO and/or suggested present by HCID |
| EPA 6020/200.8 | Resource Conservation and Recovery Act (RCRA) 8 metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver | Selected samples if RRO suggested present by HCID |
| EPA 1311 | Toxicity Characteristic Leaching Procedure (TCLP)` metals: lead | Selected samples if elevated concentrations of metals detected |
| EPA 8260B | Volatile Organic Constituents (VOCs) | Sediment and reconnaissance ground water samples |
| Polarized Light Microscopy | Bulk Asbestos Fibers Analysis | DU samples (soil stockpiles) |

## 5.6 Waste Management and Disposal

Soil cuttings and purge and "decon" water generated during the investigation were drummed and left onsite pending analytical results.

## 5.7 Cleanup Standards and Other Numeric Criteria

Oregon's environmental cleanup rules (Oregon Administrative Rules [OAR] 340-122) establish the standards and procedures for the protection of current and future public health, safety and welfare, and the environment in the event of a release or threat of a release of a hazardous substance. In the event of a release of a hazardous substance, remedial actions shall be implemented to achieve:

- Acceptable risk levels defined in OAR 340-122-0115, as demonstrated by a residual risk assessment; or
- Numeric cleanup standards developed as part of an approved generic remedy identified or developed by the Department under OAR 340-122-0047, if applicable; or
- For areas where hazardous substances occur naturally (e.g., metals, etc.), the background level of the hazardous substances, if higher than those levels specified above.

Acceptable risk levels may be evaluated through conducting a site-specific risk assessment that calculates exposure point concentrations (EPCs) for specific exposure pathway receptor-scenarios or use generic for hazardous substances under ODEQ's Risk-Based Decision Making (RBDM) guideline to streamline the risk assessment process (see below).

### 5.7.1 Cleanup Standards

The assessment and remediation of hazardous substances in Oregon are conducted according to OAR 340, Division 122, *Hazardous Substance Remedial Action Rules*. The following cleanup standards and numeric criteria may be applied in evaluating site assessment results.

**Soil Matrix.** Under the Soil Matrix Cleanup Option [Oregon Administrative Rules (OARs) 340-122-0320 through 0360] cleanup standards are determined by assigning site-specific values to environmental parameters (e.g., soil type, depth to ground water, etc.). For purposes of risk-based evaluations of soil, Soil Matrix Cleanup Levels are often used for screening purposes, where potentially significant levels of petroleum contamination may be present if concentrations of total petroleum hydrocarbons in soil exceed their respective soil matrix cleanup level or soil matrix level I for conservative screening purposes and may require remedial action. Concentrations of total petroleum hydrocarbons lower than their corresponding Soil Matrix Cleanup Level or Soil Matrix Level I if a cleanup level has not been determined, usually do not require any additional cleanup or risk management.

**ODEQ Risk-Based Concentrations.** ODEQ has compiled default risk-based screening reference levels [*Risk-Based Decision Making for the Remediation of Contaminated Sites* (RBDM) guidance document] for common exposure-pathway receptor-scenarios that may be utilized in lieu of site-specific risk calculations (OAR 340-122-0115). In particular, the pre-calculated risk-based concentration (RBC) represents the concentration of a contaminant of interest (COI) in the impacted medium (e.g., soil, ground water, or air) that potentially represents an unacceptable risk level.

The published RBCs represent a conservative default concentration of a COI in an impacted medium (e.g., soil, ground water, soil gas, or air). When COI concentrations on a site exceed the RBC, unacceptable human health impacts are possible.

- For carcinogens, the regulatory standard is represented by an excess cancer risk of one in one million ($1x10^{6}$), and
- For non-carcinogens, this is represented by a Hazard Index of 1.

RBC exceedances typically trigger further investigation and potentially a human health risk assessment. Therefore, RBCs can be applied at sites as generic, conservative cleanup standards and are routinely used by ODEQ to determine if a site requires additional action. Site-specific parameters used in the equations to develop the RBCs are often adjusted to match actual conditions in developing site-specific cleanup levels. RBCs are generally used to evaluate sampling analytical results as follows:

- ODEQ's lowest RBC for all pathways for residential receptors is used as an initial 'conservative' screening of a constituent. If a constituent's concentration exceeds its screening-level RBC (SLRBC), it requires further evaluation. Otherwise, the constituent is considered unlikely to pose unacceptable risk to any human receptor.

- Because ODEQ Generic RBCs are based on several conservative assumptions (e.g., duration and type of exposure), exceeding an SLRBC does not necessarily indicate that additional investigation or remediation is required. Rather, the exceedance of a SLRBC may indicate that additional investigation and evaluation, including consideration of site-specific information (e.g., current, and future land uses), may be necessary to determine if remediation or other actions are necessary. In many cases, it is not possible to determine whether unacceptable risks to human health and the environment are present, and require further action, until a risk assessment, including evaluation of current and reasonably likely land and water uses, is complete.

- In general, ODEQ considers chemical concentrations less than SLRBCs to be protective of human health.

Should constituents be identified that also exceed their generic, but exposure pathway- and receptor-specific RBCs, then the appropriateness of additional site-specific methods allowed under the RBDM guidance document will be evaluated (e.g., the development of site-specific RBCs, sampling of soil gas and/or vapor, etc.).

**Other Numeric Criteria.** In addition to the above risk-based cleanup standards, concentrations were also compared to the following numeric criteria to determine if possible enrichment was occurring, and/or determine if there may be offsite soil disposal restrictions.

- ***Background Metals.*** Analytical data were compared with background concentrations established by the ODEQ[3]. ODEQ does not require cleanup for metals concentrations below default background concentrations.
- **National Emission Standards for Hazardous Air Pollutants (NESHAP).** NESHAP has defined "asbestos-containing materials," or ACMs, as products that contain one percent (1%) or more asbestos by weight.

## 6.0 Findings (Analytical Results)

This section describes the analytical results of sampling conducted during the FSI.

Copies of F&BI's laboratory report is presented in Appendix C. With the exception of the following, a review of the laboratory report indicates samples were analyzed within appropriate quality assurance/quality control (QA/QC) procedures and specified holding times.

- Sample DU03-160614-0.5 was not received in a 5035-sampling container.
- The NWTPH-Gx, NWTPH-Dx, and 8270D SIM analyses were requested outside of the holding time.

The data were flagged accordingly; however, based on discussion with the laboratory these exceptions are not anticipated to substantially affect the results. The laboratory report presents analytical data for all constituents as well as QA/QC data.

Laboratory results are presented in tables behind the text. In Tables 1 through 5 many of the constituents were not detected above the analytical method reporting limits (MRLs); however, some MRLs exceeded SLRBCs, default background concentrations, and/or CFSLs. ODEQ guidance states that a "non-detect" is considered adequate confirmation that a constituent is not present as long as standard analytical method detection limits are met. Therefore, constituents not detected above the indicated method detection limits are considered to meet the screening levels for the purposes of this investigation.

[3] ODEQ. March 20, 2013, Fact Sheet: Background Levels of Metals in Soils for Cleanups.

## 6.1 Subsurface Soil Results

All soil samples collected from the soil/ground water interface in borings EB01 through EB09 were analyzed for petroleum hydrocarbons by method NWTPH-HCID. Results are summarized in Table 1 and 3. Petroleum hydrocarbons were not present above MRLs in any of the soil samples. Based on these results, further analysis was not performed.

## 6.2 ISM Surface Soil Results

Incremental samples DU01 and DU02 collected from scrap yards in the western and central parts of the site, respectively, were submitted for HCID analysis by method NWTPH-HCID and total metals by EPA Method 200.8. Laboratory analysis reported the following results (see Tables 1 and 2):

- Petroleum hydrocarbons were not detected in either sample.
- Total cadmium was detected in sample DU01-160614-0.5 and DU01-160614-0.5-REP02 above its regional default background concentration of 1.6 mg/Kg, suggesting possible enrichment. However, the detected concentrations (between 2.7 mg/Kg and 1.91 mg/Kg) are well below ODEQ's most-stringent SLRBC for cadmium of 78 mg/Kg.
- Total lead was detected in DU01 and DU02 above its regional default background concentration, suggesting possible enrichment in this area of the property. The highest total lead concentration detected in DU01 was 47.3 mg/Kg. The total lead concentration detected in DU02 was 94.9 mg/Kg.

## 6.3 Former Storm Water Pond Sediment Results

Pond sediment incremental sample DU03 was analyzed for TPH by NWTPH-HCID and further quantified by NWTPH-Dx. This sample was further analyzed for total RCRA metals by EPA Method 200.8, PAHs by EPA Method 8270D SIM, and PCBs by EPA Method 8082A. Results in Tables 1 and 2 indicate the following:

- DRO was detected at 1,900 mg/Kg; however, the detection was interpreted by the laboratory as overlap from RRO. RRO was detected at a concentration of 3,200 mg/Kg.
- The PAHs fluoranthene and pyrene were detected at 0.082 mg/Kg and 0.17 mg/Kg, respectively. Both concentrations are well below their respective SLRBCs of 2,400 mg/Kg and 1,800 mg/Kg and their respective CFSLs of 29 mg/Kg and 1,700 mg/Kg.
- Arsenic, barium chromium, and lead were detected in DU03; however, all concentrations were below regional default background concentrations and ODEQ CFSLs.
- PCBs as Aroclors were not detected in the sediment sample.

## 6.4 Soil Stockpile Results

### 6.4.1 Petroleum Hydrocarbons

Soil pile incremental samples SP01 and SP02 were analyzed for TPH by HCID. Given the identification of RRO in SP01, SP01 and its replicates were further quantified by NWTPH-Dx. Results in Tables 1 and 2 indicate the following:

- DRO was detected in SP01 and its replicates at concentrations ranging from 59 mg/Kg to 68 mg/Kg, which was interpreted by the laboratory as overlap from RRO. RRO was detected at concentrations ranging from 890 mg/Kg to 930 mg/Kg. All petroleum detections were below their respective SLRBCs.
- TPH was not detected in SP02.

### 6.4.2 Metal

Given the identification of RRO in SP01 and SP02, both samples (and the SP01 replicates) were further analyzed for RCRA metals by EPA Method 200.8.

- Total lead was detected in SP01 and its replicates above its regional default background concentration, CFSL, and SLRBC. Total lead was highest in SP01-200612-IS-REP02, at 100 mg/Kg, which warranted leachability testing (Section 6.4.3).
- Total cadmium was detected in SP01 and its replicates above its regional default background concentration and CFSL, suggesting possible enrichment. However, total cadmium did not exceed its SLRBC.
- Arsenic was detected in SP01 above its SLRBC, but below its regional default background concentration, suggesting it has not been enriched in soils at SP01.
- The remaining metals detected in SP01 and its replicates (barium, and chromium) were less than their respective regional default background concentrations.
- Arsenic was detected in SP02 above its SLRBC, but below its regional default background concentration, suggesting it has not been enriched in soils at SP02.
- Barium, chromium, and lead were identified in SP02 at concentrations less than their respective ODEQ SLRBCs, regional default background concentrations, or CFSLs.
- None of the other metals were detected at or above MRLs in SP02.

### 6.4.3 Semi-volatile Organic Constituents

Given the identification of RRO in SP01, SP01 and its replicates were further analyzed for PAHs by EPA Method 8270D SIM, and PCBs by EPA Method 8082A.

- PAHs were not detected above laboratory method reporting limits (MRLs) in SP01 or its replicates.

- PCBs were detected in SP01 and its replicates at concentrations ranging from 0.112 mg/Kg to 0.61 mg/Kg. The highest detected concentration of PCBs (0.61 mg/Kg) exceeded its ODEQ SLRBC.

### 6.4.4 Leachability Analysis

Since total lead was detected at up to 100 mg/Kg in sample SP01-200612-IS-REP02, this sample was analyzed by TCLP by EPA Method 1311 for leachable lead (Table 5).

- Leachable lead was not detected in the sample above the laboratory MRL of 0.05 milligrams per liter (mg/L). This suggests that the soil in SP01 is not characteristic of hazardous waste is removed from the property.

### 6.4.5 Asbestos Analysis

SP01 and SP02 were submitted for bulk asbestos fibers analysis by polarized light microscopy (Table 8).

- Asbestos fibers identified as chrysotile and amosite were detected at 10% and 8%, respectively, in a sample of discarded building material from SP01. Laboratory analysis identified this as a beige crumbly material. As asbestos was detected above 1%, this material is considered an ACM (asbestos containing material). Asbestos was not identified in two other layers of this discarded material. Asbestos was not detected in brittle discarded building materials sampled from SP02.

## 6.5 Reconnaissance Ground Water Results

Reconnaissance ground water samples from nine (9) temporary wells EB01 and EB03 through EB09 were analyzed for total petroleum hydrocarbons by NWTPH-HCID and full list VOCs by EPA Method 8260C. Based on presence of heavy oil range hydrocarbons in sample EB03, this sample was further analyzed for PAHs by EPA Method 8270SIM and PCBs by EPA 8082A. Results of reconnaissance ground-water samples are summarized in Table 4:

- GRO was detected by NWTPH-HCID in the ground water sample “EB08/GW15”, located north of the former quenching tank (Furnace Pit) inside the main building; however, quantification by NWTPH-Gx indicated GRO to be below the laboratory MRL of 100 µg/L.
- DRO was detected in the ground water sample “EB03/GW10,” located downgradient of the OWS next to the pond at 1,800 µg/L; however, it was quantified by the laboratory as resembling weathered RRO. RRO was detected in the sample at 2,600 µg/L, exceeding its SLRBC 300 µg/L.
- Total xylenes were detected in ground water sample “EB04/GW10,” located next to the parts washer and quench tank on the north side of the production building; however, at a concentration below its SLRBC. No other VOCs were detected in the nine (9) ground water samples analyzed by EPA Method 8260C.
- PCBs by EPA Method 8082A and PAHs by EPA Method 8270D SIM were below the laboratory MRLs in sample EB03/GW10.

- Dissolved arsenic was detected in ground water sample "EB03/GW10" at 5.6 µg/L, exceeding its SLRBC and default background concentration for natural waters in Oregon. Remaining metals were either not detected or were below their respective risk-based screening levels. The extent of dissolved arsenic impacts is unknown; however, given that the sample was collected as a reconnaissance ground water sample, not a monitoring well, and the fact that arsenic was not detected in any soil samples at concentrations suggestive of enrichment, it is likely this exceedance is an artifact of sampling.

### 6.5.1 Replicate Sample Variance (Quality Assurance/Quality Control)

Replicate samples were collected from DU01 and SP01 indicated an acceptable variance for select metals, SVOCs, and petroleum hydrocarbons of 3% to 32% of the calculated mean, suggesting generally acceptable variance between sample and replicate data. The greatest variance was in DU01, specifically for total cadmium and lead (only constituents with variance greater than 25%).

**Table 6-1. Detected Analytes for DU01**

| Analyte | Arsenic | Barium | Cadmium | Chromium (III) | Lead |
|---|---|---|---|---|---|
| DUs | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| DU01-160614-0.5 | 3.53 | 91 | 2.7 | 45.5 | 47.3 |
| DU01/160614-0.5-REP01 | 3.68 | 85.4 | 1.44 | 70.9 | 33.4 |
| DU01/160614-0.5-REP02 | 3.67 | 98.9 | 1.91 | 50 | 43.1 |
| Mean | 3.63 | 91.8 | 2.017 | 55.5 | 41.3 |
| Standard Deviation | 0.084 | 6.783 | 0.637 | 0.637 | 13.6 |
| CV = SD / mean | 0.023 | 0.074 | 0.316 | 0.011 | 0.328 |

**Table 6-2. Detected Analytes for SP01**

| Analyte | DRO | Arsenic | Barium | Cadmium | Chromium (III) | Lead | PCBs | RRO |
|---|---|---|---|---|---|---|---|---|
| DUs | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| SP01-200612-IS | --- | 2.79 | 298 | 2.06 | 42.5 | 77.8 | 0.61 | 900 |
| SP01-200612-IS-REP01 | 2.80 | 2.80 | 285 | 1.87 | 44.0 | 88.5 | 0.124 | 890 |
| SP01-200612-IS-REP02 | 2.91 | 2.91 | 329 | 2.22 | 45.3 | 100 | 0.112 | 930 |
| Mean | 2.86 | 2.83 | 304.00 | 2.05 | 43.93 | 88.77 | 0.28 | 906.67 |
| Standard Deviation | 0.078 | 0.067 | 22.605 | 0.175 | 1.401 | 11.102 | 0.284 | 20.817 |
| CV = SD / mean | 0.027 | 0.023 | 0.074 | 0.085 | 0.032 | 0.125 | 1.008 | 0.023 |

## 7.0 Risk Assessment

Where Soil Matrix Cleanup standards are not met or where ground water impacts are present, the State of Oregon requires that the impacts are evaluated using a risk-based approach described in ODEQ's *Risk-Based Decision Making for the Remediation of Contaminated Sites* (RBDM) guidance document. The *RBDM* guidance document and its supplemental updates periodically provided by the agency provide pre-calculated risk-based concentrations (RBCs) which were developed as screening levels for suspect sites, based on Oregon's unacceptable additional risk criteria for cancer occurrence and for non-carcinogenic health impacts. The State of Oregon considers acceptable additional risk of cancer from contact with

carcinogenic constituents at less than one in one million incidences, or for non-carcinogenic constituents, the constituent threshold concentration at which health impacts would occur.

This section conducts a risk-based assessment for residual impacted media at the site, based on analytical data collected during the site activities described above.

## 7.1 Identification of Constituents of Interest

Constituents of interest (COIs) associated with the release are as follows:

- GRO
- DRO
- RRO
- VOCs
- PAHs
- PCBs
- Metals: arsenic, barium, cadmium, chromium, lead, mercury, and silver
- Asbestos (see Section 8)

This Risk Assessment will follow the conservative approach of using the highest detected concentration of each constituent for each medium.

## 7.2 Identification of Constituents of Potential Concern

COIs were initially compared to conservative SLRBCs to identify constituents of potential concern (COPCs) in each media. The residential SLRBCs in ODEQ's updated RBC tables were initially used since this approach is the most conservative method in assessing potential risk to human health. The lowest residential SLRBC is used in the screening process regardless of whether a pathway is complete or not.

Several of the constituents of Tables 1 through 4 were not detected above their respective method reporting limits (MRLs); however, those detection limits that exceeded the RBCs were indicated with a "(Y)" in the final column. ODEQ guidance states that in general, if a contaminant is not detected by the department-specified analytical methods and if standard method detection limits are met, that this is considered acceptable proof that the contaminant is not present in that medium. Therefore, these constituents will not be further addressed in the risk assessment.

### 7.2.1 Soil

The comparison of laboratory results for all soil samples representative of residual soil on site to ODEQ's SLRBCs is provided in Table 1.

**Surface Soil.** The comparison of laboratory results for surface soil samples representative of residual surface soil on site to ODEQ's SLRBCs is provided in Table 2.

- Lead, PCBs, DRO, and RRO in residual on site soil were identified above their respective SLRBCs. Therefore, lead, PCBs, DRO, and RRO are retained as COPCs in surface soils.

**Subsurface Soil.** The comparison of laboratory results for subsurface soil samples representative of residual subsurface soil on site to ODEQ's SLRBCs is provided in Table 3.

- No constituents in residual on site subsurface soil were identified above their respective SLRBCs. Therefore, no constituents are retained as COPCs in subsurface soils.

### 7.2.2 Reconnaissance Ground Water

Reconnaissance ground water data from June 2016 was used for comparison with ODEQ's SLRBCs. The comparison of laboratory results for reconnaissance ground water samples to ODEQ's SLRBCs is provided in Table 4.

- The maximum concentrations of arsenic, DRO, and RRO were above their respective SLRBCs in one or more reconnaissance ground water samples. Therefore arsenic, DRO, and RRO are retained as COPCs in ground water.

## 7.3 Conceptual Site Model

### 7.3.1 Media of Concern

Surface soil and reconnaissance ground water are considered media of concern, based on the findings of Section 8.2, above.

### 7.3.2 Identification of Current and Reasonably Likely Future Land Use

The Clackamas County Planning Department was contacted for information regarding future land use and development in the area of the subject site. According to Loraine Gonzales of the Clackamas County Planning Department, the area of the subject property is currently zoned for light industrial use (LI). The primary uses of property zoned LI, as stated in the Clackamas County Zoning and Development Ordinance, dated May 3, 2001, is for business parks, warehouses and distribution facilities, manufacturing and other compatible business and industrial uses, as determined by the Planning Director. According to Ms. Gonzales, the county currently has no plans to change the zoning of the property in the vicinity of the subject property.

North of the subject property (over 500 feet and at a much higher topographic elevation) is an area currently zoned R-8.5, single-family homes 8,500 square feet minimum lot size. Due to the distance from the subject property and its presumed upgradient location, this area should not be impacted by the subject property.

The subject property is located along Highway 212, in an area of primarily commercial and light industrial development. The subject property is bordered to the south by a building supply warehouse, open storage yards to the west, and to the north and east by warehouses. Further to the north is a sloped and wooded hillside on top of which is a large residential development.

### 7.3.3 Current and Reasonably Likely Ground Water Use

To determine the use of ground water in the subject vicinity, ENW reviewed well log and abandonment records from the OWRD. According to resources available from OWRD, 31 wells are on record as located within the same Township/Section/Range as the subject property. Of the 31 wells, 11 are monitoring wells

(i.e., not water wells) registered to a nearby cleanup site. Three additional records were for well abandonments. Of the remaining 17 well records, 15 were identified as domestic water wells, 1 well is used for irrigation, one well is used for community use, and one is indicated as an industrial well.

One domestic well is located 0.3 miles southeast of the subject property (CLAC4048). According to well log information, it was installed in 1958 and withdraws water from two sets of perforations located 95 to 100' and 115 to 130' bgs. No other off-site wells are registered within one-half mile of the site.

The subject site has one water well that was installed in 1992 to a depth of 70 feet bgs. According to well log (CLAC17856) and a representative of Met-Tek, a pump was installed in the well and the well was tested at the time of drilling, but neither the original owner of the well (George Raimer) nor Met-Tek has ever used the well. The Met-Tek representative stated he had no plans on using the well in the future.

**Current Ground Water Uses**. The Clackamas River Water District (CRWD) was contacted regarding ground water use in the vicinity of the subject property. According to the CRWD all properties in the area are connected to city drinking water with the exception of a private residence approximately 0.75 miles east of the subject site along 142nd Avenue. The CRWD also reported that Dravon Medical, located approximately 0.75 miles west of the site has a ground water well that is used to supply cooling water to the site (the well is not used to supply drinking water and the facility received drinking water from the CRWD). The CRWD was not aware of any other ground water wells used near the subject property, including the Wright well southeast of the subject property.

The CRWD acquires water from the Clackamas River. CRWD city master water plans and the municipal water supply system information indicated that a water main runs down Highway 212 and is the primary water supply source in the vicinity of the subject property, with the only alternative being ground water. Because the area is already developed, no master water plan for the area was identified. Any improvements to the system from this point forward would be driven and financed by the property owner and not by CRWD. General upkeep and maintenance are provided under a capital improvement plan.

### 7.3.4 Ground Water Use Findings

Based on conversations with the County and CRWD, records on file with the ODWR, all drinking water within 0.5-mile radius cross and downgradient of the subject property is supplied by the CRWD. No information was collected that would indicate that ground water in this vicinity will be used for anything other than industrial or irrigation purposes.

### 7.3.5 Applicable Receptors

As the site is currently zoned for industrial use and is currently being used for industrial use purposes, and since no changes in land use zoning or development is expected, the current and likely future use of the subject site is occupational. Therefore, the occupational worker is retained as a current and reasonably likely human receptor.

Site contaminants in soil and ground water are located within a range of depths considered to be a potential exposure risk to construction workers and excavation workers. Construction workers and excavation workers were therefore also retained as possible receptors as well.

According to Table 602-1 of the Clackamas County zoning ordinance, the LI zoning designation excludes residential use, does not allow for dwelling units accessory to a permitted use, nor does it allow residential care homes/facilities, therefore future potential residents were excluded as possible receptors.

### 7.3.6 Pathways of Concern

An exposure pathway is the course a constituent takes from a source to an exposed population. Exposure pathways include four elements: (1) the source of contamination; (2) the means by which a constituent will be released, retained, or travel in a given medium (e.g., air or ground water); (3) a point of potential contact with a receptor; and (4) the means by which contact will occur (e.g., inhalation, ingestion). If any of these elements are missing, the pathway is considered incomplete. Table 8-1 presents a summary of the pathway analysis for human receptors.

**Table 8-1. Summary of Pathway Analysis for Human Receptors**

| Potentially Exposed Population | Exposure Route, Medium and Exposure Point | Pathway Considered | Reason for Selection or Exclusion |
|---|---|---|---|
| **Surface Soils** | | | |
| Current and Future Occupational Workers | Direct ingestion, inhalation and dermal contact with soil | YES | COPCs are present in surface soil. |
| | Inhalation of volatiles in interior and/or exterior air | YES | COPCs in surface soil are volatile. |
| | Leaching of contaminants from soil into ground water followed by ingestion | NO | There is no likely current or future beneficial use of shallow ground water within the LOF. |
| Construction Workers | Direct ingestion, inhalation and dermal contact with soil | YES | COPCs are present in surface soil. |
| Trench Workers | Direct ingestion, inhalation of dusts and volatiles and dermal contact with soil | YES | COPCs are present in surface soil. |
| **Ground Water** | | | |
| Current and Future Occupational Workers | Ingestion & Inhalation from Tapwater | YES | A water well is present at the subject site. |
| | Direct contact with chemicals in ground water | NO | The shallow ground water table is deep, therefore limiting direct contact. |
| | Volatile inhalation | YES | COPCs in ground water may volatilize and migrate upward into indoor or outdoor air. |
| Construction Workers | Direct contact with chemicals in ground water | YES | Construction workers may come into direct contact with shallow ground water |
| Trench Workers | | YES | Excavation workers may come into direct contact with shallow ground water |

## 7.4 Conceptual Model

Based on the above discussion, a conceptual site model has been developed for the site, depicting all exposure pathways evaluated and retained for evaluation of human health risk. The conceptual site model is presented in Figure 4.

## 7.5 Locality of Facility

The Locality of Facility (LOF) is defined as any point where a human or an ecological receptor is reasonably likely to come into contact with facility-related hazardous substances. The LOF includes the current extent of contamination but also takes into account the likelihood of the contamination migrating over time.

Based on the Conceptual Exposure Model presented in Section 7.4 for the Met-Tek site and based on consideration of the limited nature of impacts and the unlikely and limited potential for the known low level of site contaminants from the property to migrate off-site, *the* LOF is proposed as the facility property boundaries. More specifically as shown on Figure 3, the LOF is described as follows:

- **To the south:** Consistent with the south property boundary.
- **To the west:** Consistent with the west property boundary
- **To the north:** Consistent with the north property boundary.
- **To the east:** Consistent with the east property boundary.

## 7.6 Further Evaluation of Constituents of Potential Concern

### 7.6.1 Surface Soil

Since lead, PCBs, DRO, and RRO were identified by the initial screening as COPCs in surface soil, the COPCs are further evaluated by comparing RBCs for complete exposure pathways for applicable receptors to determine if they are constituents of concern (COCs) at the site (Table 6). Based on this further evaluation:

- PCBs were identified as a COC when compared to complete exposure pathways for applicable receptors. PCBs were only detected in surface soil samples collected from SP01.

None of the other COPCs were identified as COCs when compared to complete exposure pathways for applicable receptors.

### 7.6.2 Reconnaissance Ground Water

Since arsenic, DRO, and RRO were identified by the initial screening as COPCs in ground water, the COPCs are further evaluated by comparing RBCs for complete exposure pathways for applicable receptors to determine if they are constituents of concern (COCs) at the site (Table 7). Based on this further evaluation:

- Arsenic, DRO, and RRO were identified as COCs through the *Ingestion & Inhalation from Tapwater* exposure pathway for occupational receptors when compared to complete exposure pathways for applicable receptors. These detections were limited to a single boring located at the oil/water separator location.

### 7.6.3 Scoping Level Ecological Risk Assessment

ODEQ regulations (OAR 340-122-244(3)) generally do not require screening for potential ecological impact if the Site is devoid of ecologically important species and habitat and if the following conditions can be demonstrated:

1. Surface water has not been affected by the release, based on previous assessment by others of pond surface water;
2. Contaminated ground water does not, and is not, reasonably likely to discharge to surface waters or otherwise reach the surface in a manner that might result in contact with ecological receptors; and
3. Contaminated groundwater does not and is not reasonably likely to come into contact with aquatic sediments (OAR 340-122-0244(3)).

Use of the site for foraging is limited for all species given the commercial land use, impermeable ground cover on site, and no available habitat on or adjacent to the site. No sensitive environments exist on or immediately adjacent to the site. The lack of receptors strongly suggests ecological risks are unlikely due to site-related COPCs in ground water. Therefore, since conditions 1 through 3 listed above appear to be true for the Site and given the industrial use of exposed surfaces on the subject site, ENW concludes that ecological screening is not warranted.

### 7.6.4 Hot Spot

**Determination of Hot Spot Based on Concentration.** The Oregon cleanup rules require the remedial investigation to evaluate hot spots of contamination for media of concern [Oregon Administrative Rule (OAR) 340-122-080(7)]. The calculation of "highly concentrated" hot spot levels for human exposures is based on a 100-fold multiplier of the acceptable risk levels for carcinogens and a 10-fold multiplier of the acceptable risk level for non-carcinogens, or where COPCs are reasonably likely to migrate such that a hot spot would be created in another medium, or COPCs are not reliably able to be contained.

**Surface Soil**

- The maximum concentration of lead detected in surface soil was 100 mg/Kg. The lowest applicable RBC for lead is 800 mg/Kg. Since lead is currently classified as a noncarcinogen, the calculated hotspot concentration for lead is 8,000 mg/Kg. Based on this, lead concentrations in surface soil do not present a possible hot spot on the subject site.
- The maximum concentration of PCBs detected in surface soil was 0.61 mg/Kg. The lowest applicable RBC for PCBs is 0.59 mg/Kg. Since PCBs are currently classified as a carcinogen, the calculated hotspot concentration for PCBs is 59 mg/Kg. Based on this, PCB concentrations in surface soil do not present a possible hot spot on the subject site. It should be noted that surface soil with concentrations of PCBs exceeding occupational RBCs were subsequently removed from the site (see Section 9.0) and therefore are no longer present on the subject site.
- The maximum concentration of DRO detected in surface soil was 1,900 mg/Kg. The lowest applicable RBC for DRO is 4,600 mg/Kg. Since DRO is currently classified as a noncarcinogen, the calculated hotspot concentration for DRO is 46,000 mg/Kg. Based on this, DRO concentrations in surface soil do not present a possible hot spot on the subject site.

- The maximum concentration of RRO detected in surface soil was 3,200 mg/Kg. The lowest applicable RBC for RRO is 11,000 mg/Kg. Since RRO is currently classified as a noncarcinogen, the calculated hotspot concentration for RRO is 110,000 mg/Kg. Based on this, RRO concentrations in surface soil do not present a possible hot spot on the subject site.

**Reconnaissance Ground Water**

- The maximum concentration of arsenic detected in reconnaissance ground water was 5.6 µg/L. The lowest applicable RBC for arsenic is 0.31 µg/L. Since arsenic is currently classified as a carcinogen, the calculated hotspot concentration for arsenic is 31 µg/L. Based on this, arsenic concentrations in reconnaissance ground water do not present a possible hot spot on the subject site.
- The maximum concentration of DRO detected in reconnaissance ground water was 1,800 µg/L. The lowest applicable RBC for DRO is 430 µg/L. Since DRO is currently classified as a noncarcinogen, the calculated hotspot concentration for DRO is 4,300 µg/L. Based on this, DRO concentrations in reconnaissance ground water do not present a possible hot spot on the subject site.
- The maximum concentration of RRO detected in reconnaissance ground water was 2,600 µg/L. The lowest applicable RBC for RRO is 1,300 µg/L. Since RRO is currently classified as a noncarcinogen, the calculated hotspot concentration for RRO is 13,000 µg/L. Based on this, RRO concentrations in reconnaissance ground water do not present a possible hot spot on the subject site.

**Determination of Hot Spot Based on Mobility.** Mobility refers to the transport or migration of hazardous substances from their present location. Typical routes of migration include:

- Advection
- Volatilization
- Chemical degradation

The assessment of "highly mobile" hot spots is required only in instances when it is reasonably likely that significant migration routes exist at a site.

- The beneficial water use determination confirms there is no domestic uses of water within a reasonable search distance from the site and that capture zone from municipal wells likely down-gradient from the subject site likely capture water from a deeper water-bearing unit.

### 7.6.5 Uncertainty Analysis

An uncertainty analysis is a discussion of uncertainties in risk estimates and their impacts in terms of underestimating or overestimating calculated potential risks. There are inherent uncertainties in the risk characterization process. These uncertainties are associated with:

- The validity of adding risks or hazard quotients for multiple chemicals.
- The validity of adding risks or hazard quotients across pathways.
- Lack of reliable toxicological data.

- The validity of the critical underlying assumption in the dose-response model for carcinogens (linearized multistage model) that there is no threshold for carcinogenesis.
- The probability of adverse effects in a human population that is highly variable genetically and in age, activity level and lifestyle.

**Uncertainty Based on Data Gaps**. A sampling program was developed to target areas of likely impact, based on historical site uses. Therefore, soil samples were not collected from all areas of the subject site. However, since this justified sampling program targeted areas where impacts were likely present, the statistical distribution of detected constituents would be biased high, if detected. It is not practical to sample all areas of the site, given the inaccessibility of many of these areas due to the presence of site structures. Therefore, the uncertainty in contaminant distribution would not likely change the findings of this assessment.

## 8.0 Asbestos Containing Materials within Soil Stockpile SP01

Asbestos is a mineral fiber that has been used commonly in a variety of building construction materials for insulation and as a fire-retardant. The National Emission Standards for Hazardous Air Pollutants (NESHAP) has defined "asbestos-containing materials," or ACMs, as products that contain more than one percent (1%) asbestos by weight. Since 1978, the U.S. Environmental Protection Agency (EPA) has banned the use of many asbestos products. Today, asbestos is most commonly found in older buildings, in pipe and furnace insulation materials, asbestos shingles, millboard, textured paints and other coating materials, and floor tiles. Exposure to asbestos fiber can lead to negative health effects including lung cancer, mesothelioma, and death.

Elevated concentrations of airborne asbestos can occur after asbestos-containing materials are disturbed. Improper attempts to remove these materials can release asbestos fibers into the air. As such ODEQ requires a licensed asbestos abatement company to perform the abatement, via removal and proper disposal, of asbestos-impacted soil in stockpile SP01. Capping of the asbestos-impacted soil on site is not permitted, due to concerns regarding disturbance of the asbestos-impacted soil during capping activities.

## 9.0 Focused Removal Action – Soil Stockpile SP01

Based on the presence of friable ACM and PCB-impacted soil exceeding its occupational RBCs within soil stockpile SP01, ENW recommended removal of impacted stockpiled soil SP01 to an appropriate landfill facility by an ODEQ-licensed abatement contractor in accordance with state regulations regarding the handling and disposal of friable asbestos materials.

On November 8, 2022, ENW contracted with Rose City Contracting, Inc. of Wilsonville, Oregon to provide asbestos abatement and soil removal services. Drop boxes double lined with 10 milliliter thick poly sheeting were utilized with "burrito" wrapping supplies to package the waste in bulk for disposal at the Asbestos cell

of WM's Hillsboro Landfill facility in Hillsboro, Oregon. Confirmation soil samples were collected to confirm complete removal of soil stockpile SP01. All work was documented under separate cover.[4]

## 10.0 Recommendations

Given that site operations have changed significantly and historical operations that lead to impacts to various media have either been modified or removed, these recommendations address residual impacts from these historical operations. The information presented in this report demonstrates that impacts to ground water and surface soil potentially present an unacceptable risk to the following pathways:

- Residual concentrations of arsenic, DRO, and RRO in reconnaissance ground water exceed their respective ODEQ RBCs for the *Ingestion & Inhalation from Tapwater* exposure pathway for occupational receptors.

Based on this assessment of risk, following actions are recommended to mitigate the potential risk presented by these exposure pathways:

- Restrict the use of ground water on site from being used for domestic purposes through an institutional control, and
- Preparation of a Contaminated Media Management Plan (CMMP), which would include a Health and Safety Plan, in order to ensure appropriate future management and handling of residual impacted media.

It is intended that this report be submitted to the ODEQ along with a request for regulatory closure of the site, assuming implementation of the aforementioned recommendations. The property owner is required to keep a copy of this report for a minimum of ten (10) years; however, we recommend this report is kept as part of the permanent property records.

## 11.0 Limitations

The scope of this report is limited to observations made during on-site work; interviews with knowledgeable sources; and review of readily available published and unpublished reports and literature. As a result, these conclusions are based on information supplied by others as well as interpretations by qualified parties.

The focus of the work does not extend to the presence of the following conditions:

1. Naturally occurring toxic or hazardous substances in the subsurface soils, geology and water,
2. Toxicity of substances common in current habitable environments, such as stored chemicals, products, building materials and consumables,
3. Contaminants or contaminant concentrations that are not a concern now but may be under future regulatory standards,

[4] ENW. December 7th, 2022. Soil Stockpile Removal Report.

4. Unpredictable events that may occur after ENW's site work, such as illegal dumping or accidental spillage.

There is no practice that is thorough enough to absolutely identify the presence of all hazardous substances that may be present at a given site. ENW's investigation has been focused only on the potential for contamination that was specifically identified in the Scope of Work. Therefore, if contamination other than that specifically mentioned is present and not identified as part of a limited Scope of Work, ENW's environmental investigation shall not be construed as a guaranteed absence of such materials. ENW has endeavored to collect representative analytical samples for the locations and depths indicated in this report. However, no sampling program can thoroughly identify all variations in contaminant distribution.

We have performed our services for this project in accordance with our agreement and understanding with the Client. This document and the information contained herein have been prepared solely for the use of the client.

ENW performed this study under a limited scope of services per our agreement. ENW assumes no responsibility for conditions that we did not specifically evaluate or conditions that were not generally recognized as environmentally unacceptable at the time this report was prepared.

# *Tables*

**Table 1 - Summary of Analytical Data, Soil**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location ID | | EB01 | EB02 | EB03 | EB04 | EB05 | EB06 | EB07 | EB08 | EB09 | DU01 | | | DU02 |
| Sample ID | | EB01/8.5 | EB02/9 | EB03/5 | EB04/7 | EB05/11 | EB06/11 | EB07/9.5 | EB08/9 | EB09/9 | DU01-160614-0.5 | DU01/160614-0.5-REP01 | DU01-160614-0.5-REP02 | DU02/160614-0.5 |
| Date Sampled | | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 |
| Depth Sampled (feet) | | 8.5 | 9 | 5 | 7 | 11 | 11 | 9.5 | 9 | 9 | 0.5 | 0.5 | 0.5 | 0.5 |
| Sampled By | | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW |
| Location | | South of the pond | Southeast of the pond | South of the oil/water separator | North of a parts washer/quench tank | East of the older portion of the building | South and downgradient of the building | Southwest of SW building corner | North of the former quenching pit | South and downgradient of former quencing pit | West side of boneyard | | | East side of boneyard |
| Constituent of Interest | Note | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) |
| **Volatile Organic Constituents** | | | | | | | | | | | | | | |
| Benzene | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon tetrachloride | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorodibromomethane (dibromochloromethane) | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane (ethyl chloride) | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichloromethane | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| EDB (1,2-dibromoethane) | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| EDC (1,2-dichloroethane) | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MTBE (methyl t-butyl ether) | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| iso-Propylbenzene (cumene) | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene (PCE) | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | NA, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane (Freon 11) | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl chloride | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylenes | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Metals** | | | | | | | | | | | | | | |
| Arsenic | c, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.53 | 3.68 | 3.67 | 2.91 |
| Barium | nc, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | 91 | 85.4 | 98.9 | 89.3 |
| Cadmium | nc, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.7 | 1.44 | 1.91 | 1.52 |
| Chromium (III) | nc, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | 45.5 | 70.9 | 50.0 | 34.5 |
| Lead | NA, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | **47.3** | **33.4** | **43.1** | **94.9** |
| Mercury | nc, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) |
| Silver | nc, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) |

**Table 1 - Summary of Analytical Data, Soil**

| Location ID | | EB01 | EB02 | EB03 | EB04 | EB05 | EB06 | EB07 | EB08 | EB09 | DU01 | | | DU02 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | EB01/8.5 | EB02/9 | EB03/5 | EB04/7 | EB05/11 | EB06/11 | EB07/9.5 | EB08/9 | EB09/9 | DU01-160614-0.5 | DU01/160614-0.5-REP01 | DU01-160614-0.5-REP02 | DU02/160614-0.5 |
| Date Sampled | | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 |
| Depth Sampled (feet) | | 8.5 | 9 | 5 | 7 | 11 | 11 | 9.5 | 9 | 9 | 0.5 | 0.5 | 0.5 | 0.5 |
| Sampled By | | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW |
| Location | | South of the pond | Southeast of the pond | South of the oil/water separator | North of a parts washer/quench tank | East of the older portion of the building | South and downgradient of the building | Southwest of SW building corner | North of the former quenching pit | South and downgradient of former quencing pit | West side of boneyard | | | East side of boneyard |
| Constituent of Interest | Note | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) |
| **Semivolatile Organic Constituents** | | | | | | | | | | | | | | |
| Polychlorinated biphenyls (Total PCBs) | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | |
| Acenaphthene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benz[a]anthracene | c, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo[a]pyrene (BaP equivalents) | c, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo[b]fluoranthene | c, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo[k]fluoranthene | c, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | c, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenz[a,h]anthracene | c, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | nc, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno[1,2,3-cd]pyrene | c, nv | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | nc, v | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Petroleum Hydrocarbons** | | | | | | | | | | | | | | |
| Generic Gasoline (GRO) | nc, v | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) |
| Generic Diesel / Heating Oil (DRO) | nc, v | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) |
| Generic Mineral Insulating Oil (RRO) | nc, nv | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) |

Notes:
mg/Kg = milligram per kilogram or parts per million (ppm).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
NE = not established.
NP = not present at or above the laboratory method reporting limit shown (HCID analysis).
— = not analyzed or not applicable.
c = carcinogenic
nc = noncarcinogenic
v = volatile
nv = nonvolatile
GRO = gasoline-range organics.
DRO = diesel-range organics.
RRO = residual-range organics.

**Shaded** concentrations exceed screening level risk-based concentrations and background concentrations, as applicable.

[1] Lowest Risk-Based Concentration for soil (screening level assumes residential use, from ODEQ RBCs dated May 2018).

(Y) indicates analyte not detected, but detection limit is above screening concentration.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.
BKG = constituent exceeded its SLRBC; however, was not detected above default backgound concentrations in soil
Note, B(a)P equivelents is calcuculated using Toxicity Equivelent Factors for all carcinogenic PAHs, per ODEQ guidance.

**Table 1 - Summary of Analytical Data, Soil**

| Location ID | | DU03 | SP01-IS | | | SP02-IS | Maximum Soil Concentration (remaining soil) | Soil Matrix Cleanup Level | ODEQs Screening-Level Risk-Based Concentrations SLRBCs[1] (Soil) | Background Concentrations (Regional Default) | Exceeds ODEQs Screening-Level SLRBCs (Soil) and/or Soil Matrix Cleanup Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | DU03/160614-0.5 | SP01-200612-IS | SP01-200612-IS-REP01 | SP01-200612-IS-REP02 | SP02-200612-IS | | | | | |
| Date Sampled | | 6/14/2016 | 6/12/2020 | 6/12/2020 | 6/12/2020 | 6/12/2020 | | | | | |
| Depth Sampled (feet) | | 0.5 | --- | --- | --- | --- | | | | | |
| Sampled By | | ENW | ENW | ENW | ENW | ENW | | | | | |
| Location | | Pond sediments | Soil pile at SW corner of site | Soil pile at SW corner of site | Soil pile at SW corner of site | Soil pile at NW corner of site | | | | South Willamette Valley | TRUE OR Y FALSE OR N |
| Constituent of Interest | Note | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | | | | |
| **Volatile Organic Constituents** | | | | | | | | | | | |
| Benzene | c, v | <0.03 (ND) | --- | --- | --- | --- | <0.03 (ND) | NE | 0.023 | --- | (Y) |
| Bromodichloromethane | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.002 | --- | (Y) |
| Bromoform | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.046 | --- | (Y) |
| Bromomethane | nc, v | <0.5 (ND) | --- | --- | --- | --- | <0.5 (ND) | NE | 0.083 | --- | (Y) |
| Carbon tetrachloride | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.013 | --- | (Y) |
| Chlorobenzene | nc, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 5.8 | --- | N |
| Chlorodibromomethane (dibromochloromethane) | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.0024 | --- | (Y) |
| Chloroethane (ethyl chloride) | nc, v | <0.5 (ND) | --- | --- | --- | --- | <0.5 (ND) | NE | 310 | --- | N |
| Chloroform | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.0034 | --- | (Y) |
| Chloromethane | nc, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 2.2 | --- | N |
| 1,2-Dichlorobenzene | nc, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 36 | --- | N |
| 1,4-Dichlorobenzene | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.057 | --- | N |
| 1,1-Dichloroethane | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.044 | --- | (Y) |
| 1,1-Dichloroethene | nc, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 6.7 | --- | N |
| cis-1,2-Dichloroethene | nc, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.63 | --- | N |
| trans-1,2-Dichloroethene | nc, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 7.0 | --- | N |
| Dichloromethane | c, v | <0.5 (ND) | --- | --- | --- | --- | <0.5 (ND) | NE | 0.14 | --- | (Y) |
| EDB (1,2-dibromoethane) | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.00012 | --- | (Y) |
| EDC (1,2-dichloroethane) | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.0028 | --- | (Y) |
| Ethylbenzene | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.22 | --- | N |
| MTBE (methyl t-butyl ether) | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.11 | --- | N |
| Naphthalene | c, v | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 0.077 | --- | N |
| iso-Propylbenzene (cumene) | nc, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 96 | --- | N |
| Tetrachloroethene (PCE) | c, v | <0.025 (ND) | --- | --- | --- | --- | <0.025 (ND) | NE | 0.46 | --- | N |
| Toluene | nc, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 83 | --- | N |
| 1,1,1-Trichloroethane | nc, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 190 | --- | N |
| 1,1,2-Trichloroethane | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.0063 | --- | (Y) |
| Trichloroethene | NA, v | <0.02 (ND) | --- | --- | --- | --- | <0.02 (ND) | NE | 0.013 | --- | (Y) |
| Trichlorofluoromethane (Freon 11) | nc, v | <0.5 (ND) | --- | --- | --- | --- | <0.5 (ND) | NE | 61 | --- | N |
| 1,2,4-Trimethylbenzene | nc, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 10 | --- | N |
| 1,3,5-Trimethylbenzene | nc, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 11 | --- | N |
| Vinyl chloride | c, v | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.00057 | --- | (Y) |
| Xylenes | nc, v | <0.15 (ND) | --- | --- | --- | --- | <0.15 (ND) | NE | 23 | --- | N |
| **Metals** | | | | | | | | | | | |
| Arsenic | c, nv | 2.55 | 2.79 | 2.80 | 2.91 | 1.75 | 3.68 | NE | 0.43 | 18 | BKG |
| Barium | nc, nv | 240 | 298 | 285 | 329 | 189 | 329 | NE | 15000 | 730 | N |
| Cadmium | nc, nv | <1 (ND) | 2.06 | 1.87 | 2.22 | <1 (ND) | 2.7 | NE | 78 | 1.6 | N |
| Chromium (III) | nc, nv | 42.4 | 42.5 | 44.0 | 45.3 | 27.3 | 70.9 | NE | 120000 | 100 | N |
| Lead | NA, nv | 16.9 | **77.8** | **88.5** | **100** | 20.4 | **100** | NE | 30 | 28 | Y |
| Mercury | nc, nv | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | NE | 23 | 0.07 | N |
| Silver | nc, nv | <1 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | NE | 390 | 0.33 | N |

**Table 1 - Summary of Analytical Data, Soil**

| Location ID | | DU03 | SP01-IS | | | SP02-IS | Maximum Soil Concentration (remaining soil) | Soil Matrix Cleanup Level | ODEQs Screening-Level Risk-Based Concentrations SLRBCs[1] (Soil) | Background Concentrations (Regional Default) | Exceeds ODEQs Screening-Level SLRBCs (Soil) and/or Soil Matrix Cleanup Level |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | DU03/160614-0.5 | SP01-200612-IS | SP01-200612-IS-REP01 | SP01-200612-IS-REP02 | SP02-200612-IS | | | | | |
| Date Sampled | | 6/14/2016 | 6/12/2020 | 6/12/2020 | 6/12/2020 | 6/12/2020 | | | | | |
| Depth Sampled (feet) | | 0.5 | --- | --- | --- | --- | | | | | |
| Sampled By | | ENW | ENW | ENW | ENW | ENW | | | | | |
| Location | | Pond sediments | Soil pile at SW corner of site | Soil pile at SW corner of site | Soil pile at SW corner of site | Soil pile at NW corner of site | | | | South Willamette Valley | TRUE OR Y FALSE OR N |
| Constituent of Interest | Note | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | | | | |
| **Semivolatile Organic Constituents** | | | | | | | | | | | |
| Polychlorinated biphenyls (Total PCBs) | c, v | <0.2 (ND) | **0.61** | 0.124 | 0.112 | --- | **0.61** | NE | 0.23 | --- | Y |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | |
| Acenaphthene | nc, v | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 770 | --- | N |
| Anthracene | nc, v | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 8200 | --- | N |
| Benz[a]anthracene | c, v | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 1.1 | --- | N |
| Benzo[a]pyrene (BaP equivalents) | c, nv | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 0.11 | --- | N |
| Benzo[b]fluoranthene | c, nv | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 1.1 | --- | N |
| Benzo[k]fluoranthene | c, nv | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 11 | --- | N |
| Chrysene | c, nv | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 110 | --- | N |
| Dibenz[a,h]anthracene | c, nv | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 0.11 | --- | N |
| Fluoranthene | nc, nv | 0.082 | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | 0.082 | NE | 2400 | --- | N |
| Fluorene | nc, v | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 770 | --- | N |
| Indeno[1,2,3-cd]pyrene | c, nv | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 1.1 | --- | N |
| Pyrene | nc, v | 0.17 | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | 0.17 | NE | 1800 | --- | N |
| **Total Petroleum Hydrocarbons** | | | | | | | | | | | |
| Generic Gasoline (GRO) | nc, v | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | 80 | 31 | --- | N |
| Generic Diesel / Heating Oil (DRO) | nc, v | **1900 x** | 68 x | 62 x | 59 x | <50 (NP) | **1900 x** | 500 | 1100 | --- | Y |
| Generic Mineral Insulating Oil (RRO) | nc, nv | **3200** | 900 | 890 | 930 | <250 (NP) | **3200** | | 2800 | --- | Y |

Notes:
mg/Kg = milligram per kilogram or parts per million (ppm).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
NE = not established.
NP = not present at or above the laboratory method reporting limit shown (HCID analysis).
— = not analyzed or not applicable.
c = carcinogenic
nc = noncarcinogenic
v = volatile
nv = nonvolatile
GRO = gasoline-range organics.
DRO = diesel-range organics.
RRO = residual-range organics.

**Shaded** concentrations exceed screening level risk-based concentrations and background concentrations, as applicable.

[1] Lowest Risk-Based Concentration for soil (screening level assumes residential use, from ODEQ RBCs dated May 2018).

(Y) indicates analyte not detected, but detection limit is above screening concentration.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.
BKG = constituent exceeded its SLRBC; however, was not detected above default backgound concentrations in soil
Note, B(a)P equivelents is calcuculated using Toxicity Equivelent Factors for all carcinogenic PAHs, per ODEQ guidance.

**Table 2 - Summary of Analytical Data, Surface Soil**

| Location ID | | DU01 | | | DU02 | DU03 | SP01-IS | | | SP02-IS | Maximum Soil Concentration (remaining soil) | Soil Matrix Cleanup Level | ODEQs Screening-Level Risk-Based Concentrations SLRBCs[1] (Soil) | Background Concentrations (Regional Default) | Exceeds ODEQs Screening-Level SLRBCs (Soil) and/or Soil Matrix Cleanup Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | DU01-160614-0.5 | DU01/160614-0.5-REP01 | DU01-160614-0.5-REP02 | DU02/160614-0.5 | DU03/160614-0.5 | SP01-200612-IS | SP01-200612-IS-REP01 | SP01-200612-IS-REP02 | SP02-200612-IS | | | | | |
| Date Sampled | | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/12/2020 | 6/12/2020 | 6/12/2020 | 6/12/2020 | | | | | |
| Depth Sampled (feet) | | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | --- | --- | --- | --- | | | | | |
| Sampled By | | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | | | | | |
| Location | | West side of boneyard | | | East side of boneyard | Pond sediments | Soil pile at SW corner of site | Soil pile at SW corner of site | Soil pile at SW corner of site | Soil pile at NW corner of site | | | | South Willamette Valley | TRUE OR Y FALSE OR N |
| Constituent of Interest | Note | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | | | | |
| **Volatile Organic Constituents** | | | | | | | | | | | | | | | |
| Benzene | c, v | --- | --- | --- | --- | <0.03 (ND) | --- | --- | --- | --- | <0.03 (ND) | NE | 0.023 | --- | (Y) |
| Bromodichloromethane | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.002 | --- | (Y) |
| Bromoform | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.046 | --- | (Y) |
| Bromomethane | nc, v | --- | --- | --- | --- | <0.5 (ND) | --- | --- | --- | --- | <0.5 (ND) | NE | 0.083 | --- | (Y) |
| Carbon tetrachloride | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.013 | --- | (Y) |
| Chlorobenzene | nc, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 5.8 | --- | N |
| Chlorodibromomethane (dibromochloromethane) | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.0024 | --- | (Y) |
| Chloroethane (ethyl chloride) | nc, v | --- | --- | --- | --- | <0.5 (ND) | --- | --- | --- | --- | <0.5 (ND) | NE | 310 | --- | N |
| Chloroform | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.0034 | --- | (Y) |
| Chloromethane | nc, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 2.2 | --- | N |
| 1,2-Dichlorobenzene | nc, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 36 | --- | N |
| 1,4-Dichlorobenzene | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.057 | --- | N |
| 1,1-Dichloroethane | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.044 | --- | (Y) |
| 1,1-Dichloroethene | nc, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 6.7 | --- | N |
| cis-1,2-Dichloroethene | nc, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.63 | --- | N |
| trans-1,2-Dichloroethene | nc, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 7.0 | --- | N |
| Dichloromethane | c, v | --- | --- | --- | --- | <0.5 (ND) | --- | --- | --- | --- | <0.5 (ND) | NE | 0.14 | --- | (Y) |
| EDB (1,2-dibromoethane) | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.00012 | --- | (Y) |
| EDC (1,2-dichloroethane) | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.0028 | --- | (Y) |
| Ethylbenzene | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.22 | --- | N |
| MTBE (methyl t-butyl ether) | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.11 | --- | N |
| Naphthalene | c, v | --- | --- | --- | --- | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 0.077 | --- | N |
| iso-Propylbenzene (cumene) | nc, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 96 | --- | N |
| Tetrachloroethene (PCE) | c, v | --- | --- | --- | --- | <0.025 (ND) | --- | --- | --- | --- | <0.025 (ND) | NE | 0.46 | --- | N |
| Toluene | nc, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 83 | --- | N |
| 1,1,1-Trichloroethane | nc, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 190 | --- | N |
| 1,1,2-Trichloroethane | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.0063 | --- | (Y) |
| Trichloroethene | NA, v | --- | --- | --- | --- | <0.02 (ND) | --- | --- | --- | --- | <0.02 (ND) | NE | 0.013 | --- | (Y) |
| Trichlorofluoromethane (Freon 11) | nc, v | --- | --- | --- | --- | <0.5 (ND) | --- | --- | --- | --- | <0.5 (ND) | NE | 61 | --- | N |
| 1,2,4-Trimethylbenzene | nc, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 10 | --- | N |
| 1,3,5-Trimethylbenzene | nc, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 11 | --- | N |
| Vinyl chloride | c, v | --- | --- | --- | --- | <0.05 (ND) | --- | --- | --- | --- | <0.05 (ND) | NE | 0.00057 | --- | (Y) |
| Xylenes | nc, v | --- | --- | --- | --- | <0.15 (ND) | --- | --- | --- | --- | <0.15 (ND) | NE | 23 | --- | N |
| **Metals** | | | | | | | | | | | | | | | |
| Arsenic | c, nv | 3.53 | 3.68 | 3.67 | 2.91 | 2.55 | 2.79 | 2.80 | 2.91 | 1.75 | 3.68 | NE | 0.43 | 18 | BKG |
| Barium | nc, nv | 91 | 85.4 | 98.9 | 89.3 | 240 | 298 | 285 | 329 | 189 | 329 | NE | 15000 | 730 | N |
| Cadmium | nc, nv | 2.7 | 1.44 | 1.91 | 1.52 | <1 (ND) | 2.06 | 1.87 | 2.22 | <1 (ND) | 2.7 | NE | 78 | 1.6 | N |
| Chromium (III) | nc, nv | 45.5 | 70.9 | 50.0 | 34.5 | 42.4 | 42.5 | 44.0 | 45.3 | 27.3 | 70.9 | NE | 120000 | 100 | N |
| Lead | NA, nv | **47.3** | **33.4** | **43.1** | **94.9** | 16.9 | **77.8** | **88.5** | **100** | 20.4 | **100** | NE | 30 | 28 | **Y** |
| Mercury | nc, nv | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | NE | 23 | 0.07 | N |
| Silver | nc, nv | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | NE | 390 | 0.33 | N |

**Table 2 - Summary of Analytical Data, Surface Soil**

| Location ID | | DU01 | | | DU02 | DU03 | SP01-IS | | | SP02-IS | Maximum Soil Concentration (remaining soil) | Soil Matrix Cleanup Level | ODEQs Screening-Level Risk-Based Concentrations SLRBCs[1] (Soil) | Background Concentrations (Regional Default) | Exceeds ODEQs Screening-Level SLRBCs (Soil) and/or Soil Matrix Cleanup Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | DU01-160614-0.5 | DU01/160614-0.5-REP01 | DU01-160614-0.5-REP02 | DU02/160614-0.5 | DU03/160614-0.5 | SP01-200612-IS | SP01-200612-IS-REP01 | SP01-200612-IS-REP02 | SP02-200612-IS | | | | | |
| Date Sampled | | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/12/2020 | 6/12/2020 | 6/12/2020 | 6/12/2020 | | | | | |
| Depth Sampled (feet) | | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | --- | --- | --- | --- | | | | | |
| Sampled By | | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | | | | | |
| Location | | West side of boneyard | | | East side of boneyard | Pond sediments | Soil pile at SW corner of site | Soil pile at SW corner of site | Soil pile at SW corner of site | Soil pile at NW corner of site | | | | South Willamette Valley | TRUE OR Y FALSE OR N |
| Constituent of Interest | Note | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | | | | |
| **Semivolatile Organic Constituents** | | | | | | | | | | | | | | | |
| Polychlorinated biphenyls (Total PCBs) | c, v | **---** | **---** | **---** | **---** | <0.2 (ND) | **0.61** | 0.124 | 0.112 | --- | **0.61** | NE | 0.23 | --- | Y |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | | |
| Acenaphthene | nc, v | --- | --- | --- | --- | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 770 | --- | N |
| Anthracene | nc, v | --- | --- | --- | --- | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 8200 | --- | N |
| Benz[a]anthracene | c, v | --- | --- | --- | --- | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 1.1 | --- | N |
| Benzo[a]pyrene (BaP equivalents) | c, nv | --- | --- | --- | --- | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 0.11 | --- | N |
| Benzo[b]fluoranthene | c, nv | --- | --- | --- | --- | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 1.1 | --- | N |
| Benzo[k]fluoranthene | c, nv | --- | --- | --- | --- | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 11 | --- | N |
| Chrysene | c, nv | --- | --- | --- | --- | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 110 | --- | N |
| Dibenz[a,h]anthracene | c, nv | --- | --- | --- | --- | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 0.11 | --- | N |
| Fluoranthene | nc, nv | --- | --- | --- | --- | 0.082 | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | 0.082 | NE | 2400 | --- | N |
| Fluorene | nc, v | --- | --- | --- | --- | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 770 | --- | N |
| Indeno[1,2,3-cd]pyrene | c, nv | --- | --- | --- | --- | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | <0.05 (ND) | NE | 1.1 | --- | N |
| Pyrene | nc, v | --- | --- | --- | --- | 0.17 | <0.05 (ND) | <0.05 (ND) | <0.05 (ND) | --- | 0.17 | NE | 1800 | --- | N |
| **Total Petroleum Hydrocarbons** | | | | | | | | | | | | | | | |
| Generic Gasoline (GRO) | nc, v | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | 80 | 31 | --- | N |
| Generic Diesel / Heating Oil (DRO) | nc, v | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | **1900 x** | 68 x | 62 x | 59 x | <50 (NP) | **1900 x** | 500 | 1100 | --- | Y |
| Generic Mineral Insulating Oil (RRO) | nc, nv | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | **3200** | 900 | 890 | 930 | <250 (NP) | **3200** | | 2800 | --- | Y |

Notes:
mg/Kg = milligram per kilogram or parts per million (ppm).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
NE = not established.
NP = not present at or above the laboratory method reporting limit shown (HCID analysis).
— = not analyzed or not applicable.
c = carcinogenic
nc = noncarcinogenic
v = volatile
nv = nonvolatile
GRO = gasoline-range organics.
DRO = diesel-range organics.
RRO = residual-range organics.

**Shaded** concentrations exceed screening level risk-based concentrations and background concentrations, as applicable.

[1] Lowest Risk-Based Concentration for soil (screening level assumes residential use, from ODEQ RBCs dated May 2018).

(Y) indicates analyte not detected, but detection limit is above screening concentration.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.
BKG = constituent exceeded its SLRBC; however, was not detected above default backgound concentrations in soil
Note, B(a)P equivelents is calcuculated using Toxicity Equivelent Factors for all carcinogenic PAHs, per ODEQ guidance.

**Table 3 - Summary of Analytical Data, Subsurface Soil**

| Location ID | | EB01 | EB02 | EB03 | EB04 | EB05 | EB06 | EB07 | EB08 | EB09 | Maximum Soil Concentration (remaining soil) | Soil Matrix Cleanup Level | ODEQs Screening-Level Risk-Based Concentrations SLRBCs[1] (Soil) | Background Concentrations (Regional Default) | Exceeds ODEQs Screening-Level SLRBCs (Soil) and/or Soil Matrix Cleanup Level |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | EB01/8.5 | EB02/9 | EB03/5 | EB04/7 | EB05/11 | EB06/11 | EB07/9.5 | EB08/9 | EB09/9 | | | | | |
| Date Sampled | | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | 6/14/2016 | | | | | |
| Depth Sampled (feet) | | 8.5 | 9 | 5 | 7 | 11 | 11 | 9.5 | 9 | 9 | | | | | |
| Sampled By | | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | | | | | |
| Location | | South of the pond | Southeast of the pond | South of the oil/water separator | North of a parts washer/quench tank | East of the older portion of the building | South and downgradient of the building | Southwest of SW building corner | North of the former quenching pit | South and downgradient of former quencing pit | | | | South Willamette Valley | TRUE OR Y FALSE OR N |
| Constituent of Interest | Note | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | mg/Kg (ppm) | | | | |
| **Total Petroleum Hydrocarbons** | | | | | | | | | | | | | | | |
| Generic Gasoline (GRO) | nc, v | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | <20 (NP) | 80 | 31 | --- | N |
| Generic Diesel / Heating Oil (DRO) | nc, v | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | <50 (NP) | 500 | 1100 | --- | N |
| Generic Mineral Insulating Oil (RRO) | nc, nv | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | <250 (NP) | | 2800 | --- | N |

Notes:

mg/Kg = milligram per kilogram or parts per million (ppm).

<# (ND) = not detected at or above the laboratory method reporting limit shown.

NE = not established.

NP = not present at or above the laboratory method reporting limit shown (HCID analysis).

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

GRO = gasoline-range organics.

DRO = diesel-range organics.

RRO = residual-range organics.

**Shaded** concentrations exceed screening level risk-based concentrations and background concentrations, as applicable.

[1] Lowest Risk-Based Concentration for soil (screening level assumes residential use, from ODEQ RBCs dated May 2018).

(Y) indicates analyte not detected, but detection limit is above screening concentration.

x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

BKG = constituent exceeded its SLRBC; however, was not detected above default backgound concentrations in soil

Note, B(a)P equivelents is calcuculated using Toxicity Equivelent Factors for all carcinogenic PAHs, per ODEQ guidance.

**Table 4 - Summary of Analytical Data, Reconnaissance Ground Water**

| Location ID | | EB01 | EB03 | EB04 | EB05 | EB06 | EB07 | EB08 | EB09 | Maximum Ground Water Concentration | ODEQs Screening-level Risk-Based Concentrations (SLRBCs) [1] | Background Concentrations (metals) | Exceeds Background Concentrations (metals)? | COPC? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | EB01/GW15 | EB03/GW10 | EB04/GW10 | EB05/GW15 | EB06/GW15 | EB07/GW15 | EB08/GW15 | EB09/GW15 | | | | | |
| Date Sampled | | 6/14/16 | 6/14/16 | 6/14/16 | 6/14/16 | 6/14/16 | 6/14/16 | 6/14/16 | 6/14/16 | | | | | |
| Depth Sampled (feet) | | 10-15 | 5-10 | 5-10 | 10-15 | 10-15 | 10-15 | 10-15 | 10-15 | | | | | |
| Sampled By | | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | | | | | |
| Location | | South of the pond | South of the oil/water separator | North of parts washer/quench tank | East of the older portion of the building | South and downgradient of the building | Southwest of SW building corner | North of the former quenching pit | South and downgradient of former quenching pit | | | | TRUE OR Y FALSE OR N | TRUE OR Y FALSE OR N |
| Constituent of Interest | Note | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | | | | |
| **Volatile Organic Constituents** | | | | | | | | | | | | | | |
| Benzene | c, v | <0.35 (ND) | <0.35 (ND) | <0.35 (ND) | <0.35 (ND) | <0.35 (ND) | <0.35 (ND) | <0.35 (ND) | <0.35 (ND) | <0.35 (ND) | 0.46 | NE | N | N |
| Bromodichloromethane | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 0.13 | NE | N | (Y) |
| Bromoform | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 3.3 | NE | N | N |
| Bromomethane | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 7.5 | NE | N | N |
| Carbon tetrachloride | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 0.46 | NE | N | (Y) |
| Chlorobenzene | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 77 | NE | N | N |
| Chlorodibromomethane (dibromochloromethane) | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 0.17 | NE | N | (Y) |
| Chloroethane (ethyl chloride) | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 21000 | NE | N | N |
| Chloroform | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 0.22 | NE | N | (Y) |
| Chloromethane | nc, v | <10 (ND) | <10 (ND) | <10 (ND) | <10 (ND) | <10 (ND) | <10 (ND) | <10 (ND) | <10 (ND) | <10 (ND) | 190 | NE | N | N |
| 1,2-Dichlorobenzene | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 300 | NE | N | N |
| 1,4-Dichlorobenzene | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 0.48 | NE | N | (Y) |
| 1,1-Dichloroethane | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 2.8 | NE | N | N |
| 1,1-Dichloroethene | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 280 | NE | N | N |
| cis-1,2-Dichloroethene | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 36 | NE | N | N |
| trans-1,2-Dichloroethene | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 360 | NE | N | N |
| Dichloromethane | c, v | <5 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | <5 (ND) | 11 | NE | N | N |
| EDB (1,2-dibromoethane) | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 0.0075 | NE | N | (Y) |
| EDC (1,2-dichloroethane) | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 0.17 | NE | N | (Y) |
| Ethylbenzene | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 1.5 | NE | N | N |
| MTBE (methyl t-butyl ether) | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 14 | NE | N | N |
| Naphthalene | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 0.17 | NE | N | Y |
| iso-Propylbenzene (cumene) | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 440 | NE | N | N |
| Tetrachloroethene (PCE) | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 12 | NE | N | N |
| Toluene | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 1100 | NE | N | N |
| 1,1,1-Trichloroethane | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 8000 | NE | N | N |
| 1,1,2-Trichloroethane | c, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 0.28 | NE | N | (Y) |
| Trichloroethene | NA, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 0.49 | NE | N | (Y) |
| Trichlorofluoromethane (Freon 11) | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 1100 | NE | N | N |
| 2,4,6-Trichlorophenol | c, nv | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 4.4 | NE | N | N |
| 1,2,4-Trimethylbenzene | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 54 | NE | N | N |
| 1,3,5-Trimethylbenzene | nc, v | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | <1 (ND) | 59 | NE | N | N |
| Vinyl chloride | c, v | <0.2 (ND) | <0.2 (ND) | <0.2 (ND) | <0.2 (ND) | <0.2 (ND) | <0.2 (ND) | <0.2 (ND) | <0.2 (ND) | <0.2 (ND) | 0.027 | NE | N | (Y) |
| Xylenes | nc, v | <2 (ND) | <2 (ND) | 4.5 | <2 (ND) | <2 (ND) | <2 (ND) | <2 (ND) | <2 (ND) | 4.5 | 190 | NE | N | N |
| **Metals** | | | | | | | | | | | | | | |
| Arsenic | c, nv | --- | **5.60** | --- | --- | --- | --- | --- | --- | **5.60** | 0.052 | 2 | Y | **Y** |
| Barium | nc, nv | --- | 260 | --- | --- | --- | --- | --- | --- | 260 | 4000 | NE | N | N |
| Cadmium | nc, nv | --- | <1 (ND) | --- | --- | --- | --- | --- | --- | <1 (ND) | 20 | 1 | N | N |
| Chromium (III) | nc, nv | --- | 3.81 | --- | --- | --- | --- | --- | --- | 3.81 | 30000 | 1 | Y | N |
| Lead | NA, nv | --- | 1.23 | --- | --- | --- | --- | --- | --- | 1.23 | 15 | 13.3 | N | N |
| Mercury | nc, nv | --- | <1 (ND) | --- | --- | --- | --- | --- | --- | <1 (ND) | 6 | 0.1 | (Y) | N |
| Silver | nc, nv | --- | <1 (ND) | --- | --- | --- | --- | --- | --- | <1 (ND) | 100 | 1 | N | N |

**Table 4 - Summary of Analytical Data, Reconnaissance Ground Water**

| Location ID | | EB01 | EB03 | EB04 | EB05 | EB06 | EB07 | EB08 | EB09 | Maximum Ground Water Concentration | ODEQs Screening-level Risk-Based Concentrations (SLRBCs) [1] | Background Concentrations (metals) | Exceeds Background Concentrations (metals)? | COPC? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | | EB01/GW15 | EB03/GW10 | EB04/GW10 | EB05/GW15 | EB06/GW15 | EB07/GW15 | EB08/GW15 | EB09/GW15 | | | | | |
| Date Sampled | | 6/14/16 | 6/14/16 | 6/14/16 | 6/14/16 | 6/14/16 | 6/14/16 | 6/14/16 | 6/14/16 | | | | | |
| Depth Sampled (feet) | | 10-15 | 5-10 | 5-10 | 10-15 | 10-15 | 10-15 | 10-15 | 10-15 | | | | | |
| Sampled By | | ENW | ENW | ENW | ENW | ENW | ENW | ENW | ENW | | | | | |
| Location | | South of the pond | South of the oil/water separator | North of parts washer/quench tank | East of the older portion of the building | South and downgradient of the building | Southwest of SW building corner | North of the former quenching pit | South and downgradient of former quenching pit | | | | TRUE OR Y FALSE OR N | TRUE OR Y FALSE OR N |
| Constituent of Interest | Note | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | µg/L (ppb) | | | | |
| **Semivolatile Organic Constituents** | | | | | | | | | | | | | | |
| Polychlorinated biphenyls (Total PCBs) | c, v | --- | <0.1 (ND) | --- | --- | --- | --- | --- | --- | <0.1 (ND) | 0.006 | NE | N | (Y) |
| Polycyclic Aromatic Hydrocarbons | | | | | | | | | | | | | | |
| Acenaphthene | nc, v | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | 510 | NE | N | N |
| Anthracene | nc, v | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | >S | NE | N | N |
| Benz[a]anthracene | c, v | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | 0.03 | NE | N | N |
| Benzo[a]pyrene (BaP equivalents) | c, nv | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | 0.025 | NE | N | (Y) |
| Benzo[b]fluoranthene | c, nv | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | 0.25 | NE | N | N |
| Benzo[k]fluoranthene | c, nv | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | 2.5 | NE | N | N |
| Chrysene | c, nv | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | >S | NE | N | N |
| Dibenz[a,h]anthracene | c, nv | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | 0.025 | NE | N | (Y) |
| Fluoranthene | nc, nv | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | >S | NE | N | N |
| Fluorene | nc, v | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | 280 | NE | N | N |
| Indeno[1,2,3-cd]pyrene | c, nv | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | >S | NE | N | N |
| Pyrene | nc, v | --- | <0.03 (ND) | --- | --- | --- | --- | --- | --- | <0.03 (ND) | >S | NE | N | N |
| **Total Petroleum Hydrocarbons** | | | | | | | | | | | | | | |
| Generic Gasoline (GRO) | nc, v | <200 (NP) | <200 (NP) | <200 (NP) | <200 (NP) | <200 (NP) | <200 (NP) | <100 (ND) | <200 (NP) | <200 (NP) | 110 | NE | N | (Y) |
| Generic Diesel / Heating Oil (DRO) | nc, v | <500 (NP) | **1800 x** | <500 (NP) | <500 (NP) | <500 (NP) | <500 (NP) | <500 (NP) | <500 (NP) | 1800 x | 100 | NE | N | **Y** |
| Generic Mineral Insulating Oil (RRO) | nc, nv | <500 (NP) | **2600** | <500 (NP) | <500 (NP) | <500 (NP) | <500 (NP) | <500 (NP) | <500 (NP) | 2600 | 300 | NE | N | **Y** |

Notes:
ug/L = micrograms per Liter or parts per billion (ppb).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
NE = not established.
NP = not present at or above the laboratory method reporting limit shown (HCID analysis).

[1] Lowest Risk-Based Concentration for ground water (screening level assumes residential use, from ODEQ RBCs dated May 2018).

— = not analyzed or not applicable.
c = carcinogenic
nc = noncarcinogenic
v = volatile
nv = nonvolatile
GRO = gasoline-range organics.
DRO = diesel-range organics.
RRO = residual-range organics.
BKG = constituent exceeded its SLRBC; however, was not detected above default backgound concentrations in soil

**Shaded** concentrations exceed screening level risk-based concentrations and background concentrations, as applicable.

**Bolded** concentrations exceed screening level risk-based concentrations and background concentrations, as applicable.

(Y) indicates analyte not detected, but detection limit is above screening concentration.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.
Note, B(a)P equivelents is calcuculated using Toxicity Equivelent Factors for all carcinogenic PAHs, per ODEQ guidance.

# Table 5 - Summary of Analytical Data, Leachable Lead

| | | | |
|---|---|---|---|
| Location ID | | SP01-IS | RCRA[1] Toxicity Characteristic |
| Sample ID | | SP01-200612-IS-REP02 | |
| Date Sampled | | 6/12/2020 | |
| Sampled By | | ENW | |
| Location | | Soil pile at SW corner of site | |
| Constituent of Interest | Note | mg/L (ppm) | mg/L (ppm) |
| **Metals** | | | |
| Lead | NA, nv | <0.05 (ND) | 5 |

Notes:

[1] Resource Conservation and Recovery Act, 1976

mg/L = milligram per Liter or parts per million (ppm).

<# (ND) = not detected at or above the laboratory method reporting limit shown.

nv = nonvolatile

NA = not applicable

Table 6. Further Evaluation of COPCs in Surface Soil

| Contaminated Medium | | SURFACE SOIL mg/Kg (ppm) | | | | | | | | | | Maximum Detected Concentration | Lowest Applicable RBC (Soil) | Constituent of Concern (COC)? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure Pathway | | Soil Ingestion, Dermal Contact, and Inhalation $RBC_{ss}$ | | | | | | Volatilization to Outdoor Air $RBC_{so}$ | | Vapor Intrusion into Buildings $RBC_{si}$ | | | | |
| Receptor Scenario | | Occupational | | Construction Worker | | Excavation Worker | | Occupational | | Occupational | | | | |
| Direct or Indirect Pathway (see notes) | | DC | | DC | | DC | | IVS | | IVS | | | | |
| Contaminant of Concern | Note | | Note | | Note | | Note | | Note | | Note | mg/Kg (ppm) | mg/Kg (ppm) | Y/N |
| **Metals** | | | | | | | | | | | | | | |
| Lead | NA, nv | 800 | L | 800 | L | 800 | L | - | NV | - | NV | 100 | 800 | N |
| **Semivolatile Organic Constituents** | | | | | | | | | | | | | | |
| Polychlorinated biphenyls (Total PCBs) | c, v | 0.59 | | 4.9 | >Csat | 140 | >Csat | 1600 | >Csat | 1600 | >Csat | 0.61 | 0.59 | Y |
| **Total Petroleum Hydrocarbons** | | | | | | | | | | | | | | |
| Generic Diesel / Heating Oil (DRO) | nc, v | 14000 | | 4600 | | - | >Max | - | >Max | - | >Max | 1900 x | 4600 | N |
| Generic Mineral Insulating Oil (RRO) | nc, nv | 36000 | | 11000 | | - | >Max | - | >Max | - | >Max | 3200 | 11000 | N |

Notes:

— = not analyzed or not applicable.

mg/Kg = milligrams per Kilogram or parts per million (ppm)

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

DRO = diesel-range organics.

RRO = residual-range organics.

(Y) indicates analyte not detected, but detection limit is above scre

J = inidicates the internal standard associated with the analyte is out of control limits; the reported concentration is an estimate.

y = the pattern of peaks is not indicative of motor oil.

<Csat = This soil RBC exceeds the limit of three-phase equilibrium partitioning.

<Max = The constituent RBC for this pathway is greater than 100,000 mg/kg. The Department believes it is highly unlikely that such concentrations will ever be encountered.

x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

Table 7. Further Evaluation of COPCs, Reconnaissance Ground Water

| Contaminated Medium | | GROUND WATER µg/L (ppb) | | | | | | | | Maximum Detected Concentration | Lowest Applicable RBC (Ground Water)[1] | Constituent of Concern (COC)? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure Pathway | | Ingestion & Inhalation from Tapwater $RBC_{tw}$ | | Volatilization to Outdoor Air $RBC_{wo}$ | | Vapor Intrusion into Buildings $RBC_{wi}$ | | GW in Excavation $RBC_{we}$ | | | | |
| Receptor Scenario | | Occupational | | Occupational | | Occupational | | Construction & Excavation Worker | | | | |
| Direct or Indirect Pathway (see notes) | | DS | | IVW | | IVW | | DS | | | | |
| Contaminant of Concern | Note | | Note | | Note | | Note | | Note | µg/L (ppb) | µg/L (ppb) | Y/N |
| **Metals** | | | | | | | | | | | | |
| Arsenic | c, nv | 0.31 | | - | NV | - | NV | 6300 | | 5.6 | 0.31 | Y |
| **Total Petroleum Hydrocarbons** | | | | | | | | | | | | |
| Generic Diesel / Heating Oil (DRO) | nc, v | 430 | | - | >S | - | >S | - | >S | 1800 x | 430 | Y |
| Generic Mineral Insulating Oil (RRO) | nc, nv | 1300 | | - | >S | - | >S | - | >S | 2600 | 1300 | Y |

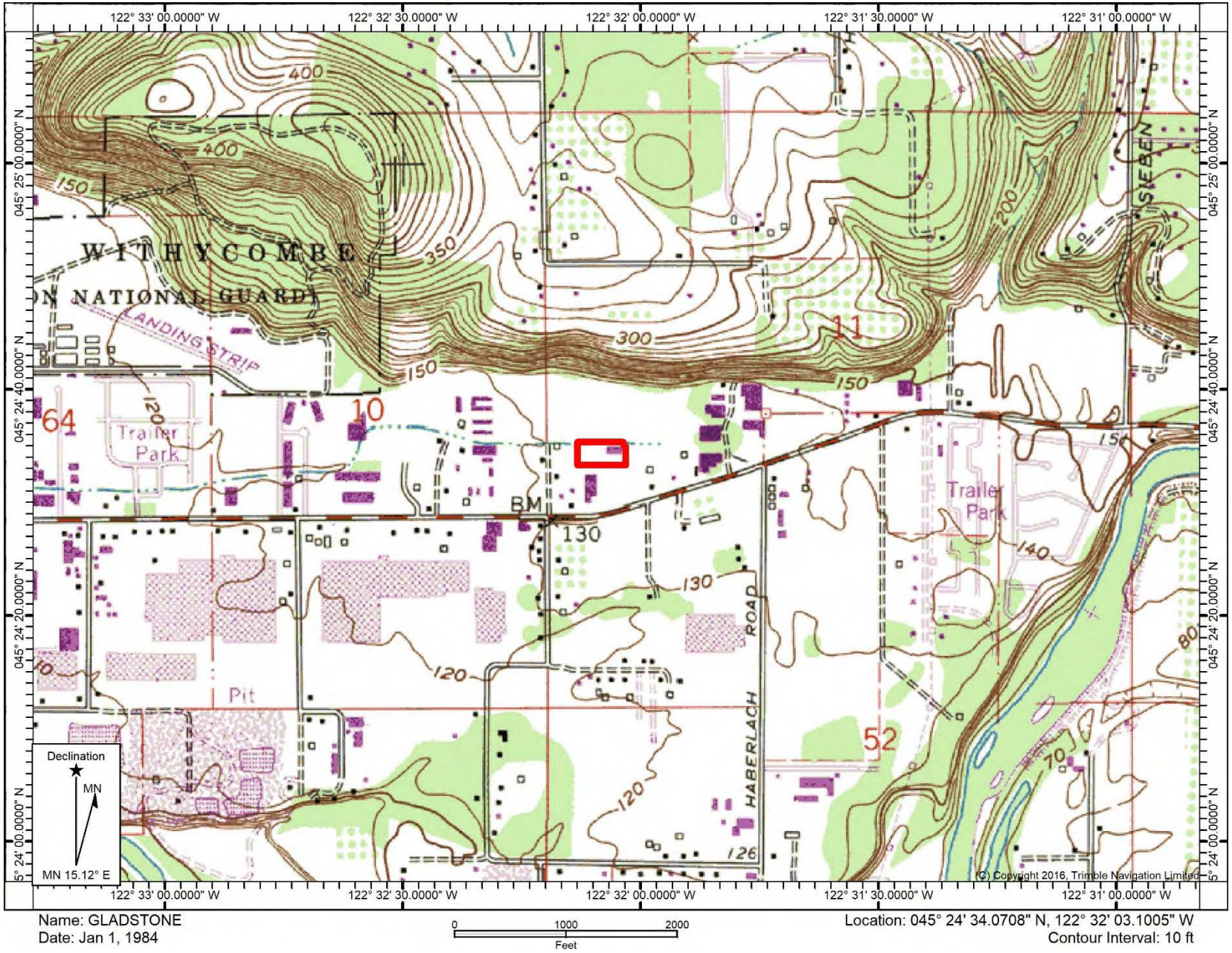
Notes:
— = not analyzed or not applicable.
ug/L = micrograms per Liter or parts per billion (ppb).
c = carcinogenic
nc = noncarcinogenic
v = volatile
nv = nonvolatile
DRO = diesel-range organics.
RRO = residual-range organics.
<S = This ground-water RBC exceeds the solubility limit.

Table 8. Summary of Asbestos Sampling, Soil Pile

| Sample | Date Sampled | Description | Appearance | Asbestos Detection |
|---|---|---|---|---|
| **Soil Pile 1** | | | | |
| SP01-200612-IS (Layer 1 of 3) | 6/12/2020 | Beige crumbly material | Non-Fibrous Materials: Binder/Filler, Fine Particles, Glass Beads; Other Fibrous Materials: Cellulose 10% | Chrysotile 10%, Amosite 8% |
| SP01-200612-IS (Layer 2 of 3) | 6/12/2020 | Black brittle material | Non-Fibrous Materials: Binder/Filler, Fine Grains | ND |
| SP01-200612-IS (Layer 3 of 3) | 6/12/2020 | Orange/white brittle material | Non-Fibrous Materials: Binder/Filler, Fine Grains | ND |
| **Soil Pile 2** | | | | |
| SP02-200612-IS (Layer 1 of 2) | 6/12/2020 | Red brittle material | Non-Fibrous Materials: Binder/Filler, Fine Grains | ND |
| SP02-200612-IS (Layer 2 of 2) | 6/12/2020 | Orange/white brittle material with debris | Non-Fibrous Materials: Binder/Filler, Fine Grains, Organic Debris, Fine Particles; Other Fibrous Materials: Cellulose 3% | ND |

ND = not detected

pink cells = asbestos detected at or above 1%, considered an asbestos containing material (ACM)




| | | | | |
|---|---|---|---|---|
| EVREN NORTHWEST | Date Drawn: 7/2/2020<br>CAD File Name: 435-14001fig1sv_map<br>Drawn By: CLR<br>Approved By: LDG | Met-Tek<br>15651 SE 125th Court<br>Clackamas, Oregon | **Site Vicinity Map** | Project No.<br>435-14001-02<br>Figure No.<br>**1** |

| DRAWING NUMBER | APPROVED BY | CHECKED BY | DRAWN BY |
|---|---|---|---|
| 435-14001(v05) | L. GREEN 02/21/2023 | E. BRUGGEMAN 12/07/2022 | H. ROMER 12/07/2022 |

INTERMITTENT STREAM (COW CREEK)

SP02

POND

MH

OIL WATER SEPARATOR

MH MH MH

CB01

CB02

PROPANE AST

FURNACE

QUENCH TANK (H20)

LOW HEAT FURNACES

WATER COOLER

ORIGINAL BUILDING

OIL COOLERS (CLOSED SYSTEM)

FURNACE PIT

HIGH HEAT FURNACES

OFFICES

CB03

SP01 (REMOVED)

QUENCH TANK (OIL)

NEW ADDITION

QUONSET HUT (STORAGE)

CB06

H2O TANK

A1 FURNACE

LIQUID NITROGEN AST 3,000 GAL

VACUUM FURNACE

HYDROGEN GENERATOR

NG

STORAGE CONTAINER

CB04

FURNACE OVEN

CARDBOARD

AMMONIA AST 1000 GAL (X2)

CB05

SE 125TH COURT

SE KNEZ WAY

LEGEND:

- SUBJECT BUILDINGS
- SUBJECT PROPERTY BOUNDARIES
- GRAVEL/ SOIL
- ASPHALT
- NG NATURAL GAS METER
- ML MONITORING LOCATION
- CATCH BASIN
- SANITARY SEWER PIPE
- STORM SYSTEM
- RD ROOF DOWNSPOUT
- AST ABOVE GROUND STORAGE TANK
- SK SPILL KIT
- MH SANITARY SEWER MANHOLE
- MH STORM SEWER MANHOLE
- ABOVE GROUND STORAGE TANK
- SLOPE
- 1-FOOT CONTOUR

SPILL KIT CONTENTS

- ABSORBENT BROOMS
- ABSORBENT TOWELS
- CATCH BASIN BLOCKER
- GLOVES
- GARBAGE BAGS

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2017 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT. SHAPE, SIZE, OR ORIENTATION
4. CONTOURS DERIVED FROM 2014 DOGAMI LIDAR

APPROXIMATE SCALE

0 35 70 FEET

N

EVREN NORTHWEST INC.
environmental natural resource consultants
PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 2

SITE PLAN

MET-TEK
15651 SE 125TH COURT
CLACKAMAS, OREGON

| DRAWN BY | CHECKED BY | APPROVED BY | DRAWING NUMBER |
|---|---|---|---|
| H. ROMER 12/06/2022 | E. BRUGGEMAN 12/07/2022 | L. GREEN 04/20/2023 | 435-14001(v04) |

INTERMITTENT STREAM (COW CREEK)

SE 125TH COURT

DU01

DU02

DU03

SP02

SP01
(REMOVED)

POND

QUONSET HUT
(STORAGE)

ORIGINAL BUILDING

NEW ADDITION

EB01

EB02

EB03

EB04

EB05

EB06

EB07

EB08

EB09

01

02

03

04

05

06

07

08

09

10

LEGEND:

- SUBJECT BUILDINGS
- SUBJECT PROPERTY BOUNDARIES
- GRAVEL/ SOIL
- ASPHALT
- SOIL PILES
- DECISION UNIT DU04 FORMER SOIL PILE SP01 LOCATION
- PEMCO SAMPLE LOCATION 1993
- ENW TEMPORARY BORING LOCATION (2016)
- TEST PITS
- LOCALITY OF FACILITY

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2017 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT. SHAPE, SIZE, OR ORIENTATION

APPROXIMATE SCALE

0 30 60 FEET

N

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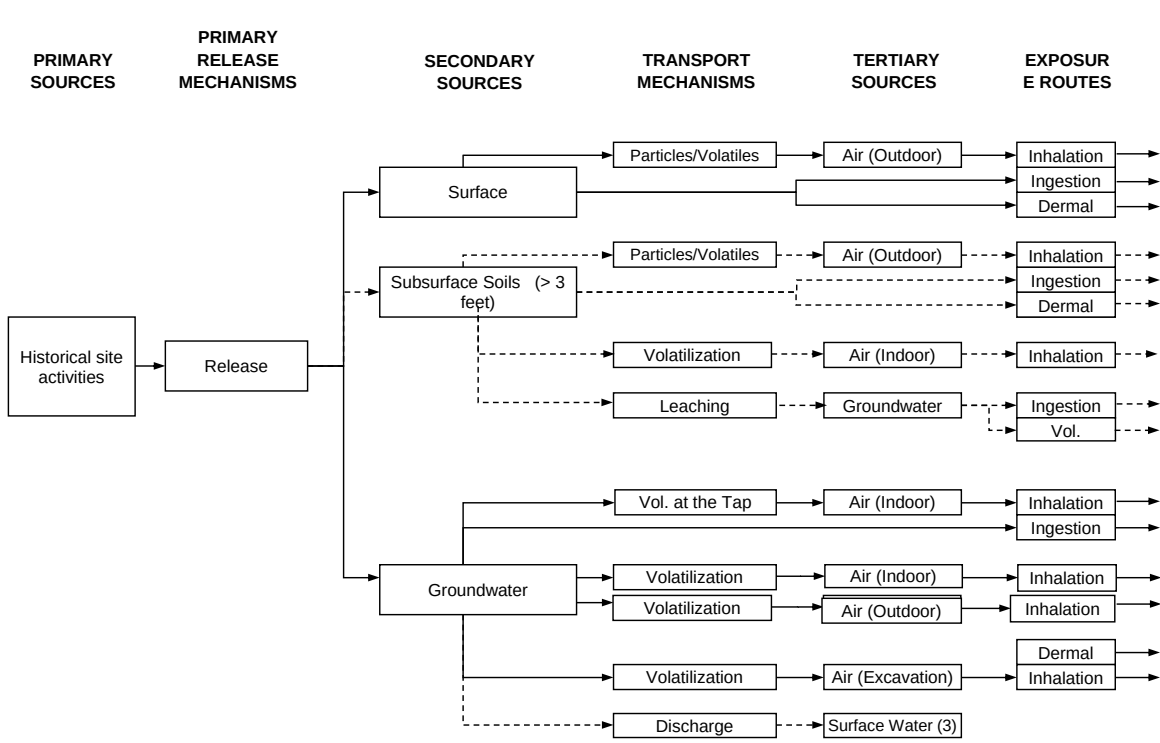
FIGURE 3

SAMPLE LOCATION DIAGRAM

MET-TEK
15651 SE 125TH COURT
CLACKAMAS, OREGON

Figure 4. Conceptual Site Model (Human Health)




| POTENTIAL RECEPTORS | | | | | |
|---|---|---|---|---|---|
| Residential (1) | | Occupational | | Construction & Excavation (2) | |
| Current | Future | Current | Future | Current | Future |
| - | - | + | + | + | + |
| - | - | + | + | + | + |
| - | - | + | + | + | + |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| - | - | - | - | - | - |
| - | - | + | + | + | + |
| - | - | + | + | + | + |
| - | - | + | + | + | + |
| - | - | + | + | + | + |
| - | - | - | - | + | + |
| - | - | + | + | + | + |

**Notes:**

**+** This route is a primary source of exposure.

**-** There is no exposure by this route.

*Appendix A*

# Soil Boring Logs

EVREN Northwest, Inc.

# DRILL LOG

| PROJECT | PROJECT NO. | BORING NO. |
|---|---|---|
| Met-Tek | 435-14001-02 | EB01 |

| SITE | BEGUN | COMPLETED | HOLE SIZE | ANGLE FROM HORIZ. |
|---|---|---|---|---|
| 15651 SE 125th Court, Clackamas, Oregon | 6/14/2016 | 6/14/2016 | 2 inches | 90 |

| COORDINATES | DEPTH GROUND WATER | DATE SL | STATIC LEVEL | FIRST WATER | GROUND ELEVATION |
|---|---|---|---|---|---|
| | | | | | |

| DRILLER | CORE RECOVERY | # SAMPLES | # CORE BOXES | DEPTH TOP OF ROCK |
|---|---|---|---|---|
| Cascade Drilling | | | | |

| DRILL MAKE AND MODEL | LOGGED BY: | DEPTH BOTTOM OF HOLE |
|---|---|---|
| Geoprobe 7720DT Track | B. Lary | 15 |

| DEPTH | STRATA ELEVATION/ DEPTH | GRAPHIC LOG | DESCRIPTION | SAMPLE DATA: SAMPLE NO. | SAMPLE DATA: SAMPLE TYPE | SAMPLE DATA: CORE RECOVERY | SAMPLE DATA: MW Const./ Completion | PID/OVM | REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS. |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | Gravel FILL | | | | | | |
| | | | Brown and gray, dense, moist to dry, sandy GRAVEL (GM) with some silt, subangular, well-graded. | | | 40 | | | |
| 5 | | | Grades to black, green, gray, less silt. | | | 95 | | 0.2 | |
| | | | Wet | EB01/8.5 | Grab | | | 0.3 | |
| 10 | | | | | | 60 | | | |
| 15 | | | End of boring; backfilled with hydrated bentonite chips. | EB01/ GW15 | | | | 0.1 | Screen: 10-15' bgs<br>DTW: 6.9' bgs<br>Purge: 5.5 L<br>Purge: 1 gallon |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |

EVREN Northwest, Inc.

# DRILL LOG

| PROJECT | PROJECT NO. | BORING NO. |
|---|---|---|
| Met-Tek | 435-14001-02 | EB02 |

| SITE | BEGUN | COMPLETED | HOLE SIZE | ANGLE FROM HORIZ. |
|---|---|---|---|---|
| 15651 SE 125th Court, Clackamas, Oregon | 6/14/2016 | 6/14/2016 | 2 inches | 90 |

| COORDINATES | DEPTH GROUND WATER | DATE SL | STATIC LEVEL | FIRST WATER | GROUND ELEVATION |
|---|---|---|---|---|---|
| | | | | | |

| DRILLER | CORE RECOVERY | # SAMPLES | # CORE BOXES | DEPTH TOP OF ROCK |
|---|---|---|---|---|
| Cascade Drilling | | | | |

| DRILL MAKE AND MODEL | LOGGED BY: | DEPTH BOTTOM OF HOLE |
|---|---|---|
| Geoprobe 7720DT Track | B. Lary | 15 |

| DEPTH | STRATA ELEVATION/ DEPTH | GRAPHIC LOG | DESCRIPTION | SAMPLE DATA: SAMPLE NO. | SAMPLE DATA: SAMPLE TYPE | SAMPLE DATA: CORE RECOVERY | SAMPLE DATA: MW Const./ Completion | PID/OVM | REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS. |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | Gravel FILL and some topsoil. | | | | | | |
| | | | Dark gray and brown, stiff, dry, SILT (ML) with some clay. | EB02/2.5 | grab | 60 | | 0.2 | |
| 5 | | | Gray, tan, brown, black, medium dense, dry, sandy GRAVEL (GW/GM)with trace silt. | | | | | 0.2 | |
| | | | Grades to black, green, gray, less silt. | | | 80 | | | |
| | | | Wet | EB02/9 | Grab | | | 0.2 | |
| 10 | | | Sandy GRAVEL (GM) with some si lt. Interbedded dry layers. | | | 100 | | | |
| | | | | | | | | | Screen: 8-13' bgs<br>DTW: 0 feet. |
| 15 | | | End of boring; backfilled with hydrated bentonite chips. | | | | | 0.2 | Screen: 10-15<br>DTW: 0 feet<br>No GW Sample |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |

EVREN Northwest, Inc.

# DRILL LOG

| PROJECT | PROJECT NO. | BORING NO. |
|---|---|---|
| Met-Tek | 435-14001-02 | EB03 |

| SITE | BEGUN | COMPLETED | HOLE SIZE | ANGLE FROM HORIZ. |
|---|---|---|---|---|
| 15651 SE 125th Court, Clackamas, Oregon | 6/14/16 | 6/14/16 | 2 inches | 90 |

| COORDINATES | DEPTH GROUND WATER | DATE SL | STATIC LEVEL | FIRST WATER | GROUND ELEVATION |
|---|---|---|---|---|---|
| | | | | | |

| DRILLER | CORE RECOVERY | # SAMPLES | # CORE BOXES | DEPTH TOP OF ROCK |
|---|---|---|---|---|
| Cascade Drilling | | | | |

| DRILL MAKE AND MODEL | LOGGED BY: | DEPTH BOTTOM OF HOLE |
|---|---|---|
| Geoprobe 7720DT Track | B. Lary | 10 |

| DEPTH | STRATA ELEVATION/ DEPTH | GRAPHIC LOG | DESCRIPTION | SAMPLE DATA: SAMPLE NO. | SAMPLE DATA: SAMPLE TYPE | SAMPLE DATA: CORE RECOVERY | SAMPLE DATA: MW Const./ Completion | PID/OVM | REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS. |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | Soil and Gravel | | | | | | |
| | | | Brown, gray, medium stiff, dry, SILT (ML) with some clay and gravel. | | | 50 | | | |
| 5 | | | Slight petroleum odor. | EB03/5 | grab | | | 0.3 | Screen: 5-10<br>DTW: 2.8' bgs<br>Purge: 5.5 L |
| | | | Dark gray, loose, very wet, gravelly SAND (GM) with some silt. | EB03/ GW10 | | 30 | | | |
| 10 | | | End of boring; backfill with hydrated bentonite chips. | | | | | 0.4 | |
| 15 | | | | | | | | | |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |

EVREN Northwest, Inc.

# DRILL LOG

| PROJECT | PROJECT NO. | BORING NO. |
|---|---|---|
| Met-Tek | 435-14001-02 | EB04 |

| SITE | BEGUN | COMPLETED | HOLE SIZE | ANGLE FROM HORIZ. |
|---|---|---|---|---|
| 15651 SE 125th Court, Clackamas, Oregon | 6/14/16 | 6/14/16 | 2 inches | 90 |

| COORDINATES | DEPTH GROUND WATER | DATE SL | STATIC LEVEL | FIRST WATER | GROUND ELEVATION |
|---|---|---|---|---|---|
| | | | | | |

| DRILLER | CORE RECOVERY | # SAMPLES | # CORE BOXES | DEPTH TOP OF ROCK |
|---|---|---|---|---|
| Cascade Drilling | | | | |

| DRILL MAKE AND MODEL | LOGGED BY: | DEPTH BOTTOM OF HOLE |
|---|---|---|
| Geoprobe 7720DT Tracked | B. Lary | 10 |

| DEPTH | STRATA ELEVATION/ DEPTH | GRAPHIC LOG | DESCRIPTION | SAMPLE DATA: SAMPLE NO. | SAMPLE DATA: SAMPLE TYPE | SAMPLE DATA: CORE RECOVERY | SAMPLE DATA: MW Const./ Completion | PID/OVM | REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS. |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | Asphalt over GRAVEL FILL. | | | | | | |
| | | | Dark brown, stiff, dry SILT (ML), trace fine gravel. | | | 60 | | | |
| | | | Grades to medium brown medium stiff and moist. | | | | | | |
| | | | Increase moister | | | | | | |
| 5 | | | Dark brown, medium dense, wet, silty SAND (SM) to SAND. | EB04/5 | grab | | | 0.2 | Screen: 5-10' bgs<br>DTW: 3.2'bgs<br>Purge: 4.5L |
| | | | Brown and gray, dense, moist to wet, sandy GRAVEL (GM). | EB04/ GW10 | | 75 | | | |
| 10 | | | End of boring; backfill with hydrated bentonite chips. | | | | | 0.1 | |
| 15 | | | | | | | | | |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |

EVREN Northwest, Inc.

# DRILL LOG

| PROJECT | PROJECT NO. | BORING NO. |
|---|---|---|
| Met-Tek | 435-14001-02 | EB05 |

| SITE | BEGUN | COMPLETED | HOLE SIZE | ANGLE FROM HORIZ. |
|---|---|---|---|---|
| 15651 SE 125th Court, Clackamas, Oregon | 6/14/2016 | 6/14/2016 | 2 inches | 90 |

| COORDINATES | DEPTH GROUND WATER | DATE SL | STATIC LEVEL | FIRST WATER | GROUND ELEVATION |
|---|---|---|---|---|---|
| | | | | | |

| DRILLER | CORE RECOVERY | # SAMPLES | # CORE BOXES | DEPTH TOP OF ROCK |
|---|---|---|---|---|
| Cascade Drilling | | | | |

| DRILL MAKE AND MODEL | LOGGED BY: | DEPTH BOTTOM OF HOLE |
|---|---|---|
| Geoprobe 7720DT Track | B. Lary | 15 |

| DEPTH | STRATA ELEVATION/ DEPTH | GRAPHIC LOG | DESCRIPTION | SAMPLE DATA: SAMPLE NO. | SAMPLE DATA: SAMPLE TYPE | SAMPLE DATA: CORE RECOVERY | SAMPLE DATA: MW Const./ Completion | PID/OVM | REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS. |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | Asphalt and gravel FILL. | | | | | | |
| | | | Brown and dark gray, stiff, moist to dry, SILT (ML). | EB05/2.5 | grab | 30 | | 0.7 | |
| 5 | | | Brown, soft, very moist sandy SILT (SM) with some fine gravel. | | | 20 | | 0.0 | |
| 10 | | | Wet | EB05/11 | grab | 100 | | 0.4 | |
| | | | Brown and gray, medium dense, wet, sandy GRAVEL (GW), subangular to subrounded, well-graded. | EB05/ GW15 | | | | | Screen: 10-15' bgs<br>DTW: 4.9' bgs<br>Purge: 3.5 L |
| 15 | | | End of boring; backfilled with hydrated bentonite chips. | | | | | 0.2 | |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |

EVREN Northwest, Inc.

# DRILL LOG

| PROJECT | PROJECT NO. | BORING NO. |
|---|---|---|
| Met-Tek | 435-14001-02 | EB06 |

| SITE | BEGUN | COMPLETED | HOLE SIZE | ANGLE FROM HORIZ. |
|---|---|---|---|---|
| 15651 SE 125th Court, Clackamas, Oregon | 6/14/16 | 6/14/16 | 2 inches | 90 |

| COORDINATES | DEPTH GROUND WATER | DATE SL | STATIC LEVEL | FIRST WATER | GROUND ELEVATION |
|---|---|---|---|---|---|
| | | | | | |

| DRILLER | CORE RECOVERY | # SAMPLES | # CORE BOXES | DEPTH TOP OF ROCK |
|---|---|---|---|---|
| Cascade Drilling | | | | |

| DRILL MAKE AND MODEL | LOGGED BY: | DEPTH BOTTOM OF HOLE |
|---|---|---|
| Geoprobe 7720DT tracked | B. Lary | 15 |

| DEPTH | STRATA ELEVATION/ DEPTH | GRAPHIC LOG | DESCRIPTION | SAMPLE DATA: SAMPLE NO. | SAMPLE DATA: SAMPLE TYPE | SAMPLE DATA: CORE RECOVERY | SAMPLE DATA: MW Const./ Completion | PID/OVM | REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS. |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | Asphalt and base gravel. | | | | | | |
| | | | Gray, brown, medium dense, sandy GRAVEL (GM) with some silt. | EB06/2 | grab | 50 | | | |
| | | | 3 inch gray SILT with gravel lens. | | | | | | |
| 5 | | | | | | | | 0.4 | |
| | | | Slightly moist to dry | | | 75 | | | |
| | | | Subangular to subrounded | | | | | | |
| 10 | | | Gray and wet. | | | | | 0.7 | |
| | | | Grades to light brown. | EB06/11 | grab | | | 0.1 | |
| | | | | EB06/ GW15 | | 90 | | | Screen: 10-15' bgs<br>DTW: 5.1' bgs.<br>Purge: 4.5 L |
| 15 | | | End of boring; backfill with hydrated bentonite chips. | | | | | 0.2 | |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |

EVREN Northwest, Inc.

| DRILL LOG | PROJECT | PROJECT NO. | BORING NO. |
|---|---|---|---|
| | Met-Tek | 435-14001-02 | EB07 |

| SITE | BEGUN | COMPLETED | HOLE SIZE | ANGLE FROM HORIZ. |
|---|---|---|---|---|
| 15651 SE 125th Court, Clackamas, Oregon | 6/14/16 | 6/14/16 | 2 inches | 90 |

| COORDINATES | DEPTH GROUND WATER | DATE SL | STATIC LEVEL | FIRST WATER | GROUND ELEVATION |
|---|---|---|---|---|---|
| | | | | | |

| DRILLER | CORE RECOVERY | # SAMPLES | # CORE BOXES | DEPTH TOP OF ROCK |
|---|---|---|---|---|
| Cascade Drilling | | | | |

| DRILL MAKE AND MODEL | LOGGED BY: | DEPTH BOTTOM OF HOLE |
|---|---|---|
| Geoprobe 7720DT Tracked | B. Lary | 15 |

| DEPTH | STRATA ELEVATION/ DEPTH | GRAPHIC LOG | DESCRIPTION | SAMPLE DATA: SAMPLE NO. | SAMPLE DATA: SAMPLE TYPE | SAMPLE DATA: CORE RECOVERY | SAMPLE DATA: MW Const./ Completion | PID/OVM | REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS. |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | Asphalt over GRAVEL FILL. | | | | | | |
| | | | Dark gray, stiff, dry SILT (ML), trace fine gravel. | EB07/2 | grab | 60 | | 0.0 | |
| 5 | | | Grades to brown, loose, moist silty fine SAND (SM) with trace gravel. | | | | | 0.1 | |
| | | | Brown and gray, dense, dry, sandy GRAVEL (GM) with some silt, subangular to subrounded, well-graded. | | | 75 | | | |
| 10 | | | Last 3-4 inches were moist. | EB07/9.5 | grab | | | 0.3 | Screen: 10-15' bgs<br>DTW: 4.8'bgs<br>Purge: 6 L |
| | | | Wet. | EB07/ GW15 | | | | | |
| | | | Interbedded siltier layers with wet sandy gravel wet layers. | | | 80 | | | |
| 15 | | | End of boring; backfill with hydrated bentonite chips. | | | | | 0.2 | |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |

EVREN Northwest, Inc.

# DRILL LOG

| PROJECT | PROJECT NO. | BORING NO. |
|---|---|---|
| Met-Tek | 435-14001-02 | EB08 |

| SITE | BEGUN | COMPLETED | HOLE SIZE | ANGLE FROM HORIZ. |
|---|---|---|---|---|
| 15651 SE 125th Court, Clackamas, Oregon | 6/14/16 | 6/14/16 | 2 inches | 90 |

| COORDINATES | DEPTH GROUND WATER | DATE SL | STATIC LEVEL | FIRST WATER | GROUND ELEVATION |
|---|---|---|---|---|---|
| | | | | | |

| DRILLER | CORE RECOVERY | # SAMPLES | # CORE BOXES | DEPTH TOP OF ROCK |
|---|---|---|---|---|
| Cascade Drilling | | | | |

| DRILL MAKE AND MODEL | LOGGED BY: | DEPTH BOTTOM OF HOLE |
|---|---|---|
| Geoprobe 7720 DT | B. Lary | 15 |

| DEPTH | STRATA ELEVATION/ DEPTH | GRAPHIC LOG | DESCRIPTION | SAMPLE DATA: SAMPLE NO. | SAMPLE DATA: SAMPLE TYPE | SAMPLE DATA: CORE RECOVERY | SAMPLE DATA: MW Const./ Completion | PID/OVM | REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS. |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | Concrete (4 inches) over brown fine sand (FILL). | | | | | | |
| | | | Brown, medium dense, dry, well-graded SAND (SW) with trace fine gravel. | | | 50 | | | |
| 5 | | | Brown, soft, moist SILT (ML). | | | | | 0.4 | |
| | | | Brown, medium dense, dry, SAND (SW). 2 inches layer of wet fine gravel with some sand. Grades to moist, interbedded silt layers. | | | 70 | | | |
| | | | | B08/9 | grab | | | | |
| 10 | | | Brown, dense, wet, gravelly SAND/Sandy GRAVEL (GP) flowing sands | EB08/ GW15 | | 90 | | 0.5 | Screen: 10-15 ' bgs DTW: 7.7' bgs Purge: <1L |
| 15 | | | End of boring; backfilled with hydrated bentonite chips. | | | | | 0.5 | |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |

EVREN Northwest, Inc.

# DRILL LOG

| PROJECT | PROJECT NO. | BORING NO. |
|---|---|---|
| Met-Tek | 435-14001-02 | EB09 |

| SITE | BEGUN | COMPLETED | HOLE SIZE | ANGLE FROM HORIZ. |
|---|---|---|---|---|
| 15651 SE 125th Court, Clackamas, Oregon | 6/14/16 | 6/14/16 | 2 inches | 90 |

| COORDINATES | DEPTH GROUND WATER | DATE SL | STATIC LEVEL | FIRST WATER | GROUND ELEVATION |
|---|---|---|---|---|---|
| | | | | | |

| DRILLER | CORE RECOVERY | # SAMPLES | # CORE BOXES | DEPTH TOP OF ROCK |
|---|---|---|---|---|
| Cascade Drilling | | | | |

| DRILL MAKE AND MODEL | LOGGED BY: | DEPTH BOTTOM OF HOLE |
|---|---|---|
| Geoprobe 7720 DT | B. Lary | 15 |

| DEPTH | STRATA ELEVATION/ DEPTH | GRAPHIC LOG | DESCRIPTION | SAMPLE DATA: SAMPLE NO. | SAMPLE DATA: SAMPLE TYPE | SAMPLE DATA: CORE RECOVERY | SAMPLE DATA: MW Const./ Completion | PID/OVM | REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS. |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | Concrete (4 inches) over brown fine sand (FILL). | | | | | | |
| | | | Dark brown, stiff, dry SILT (ML). | | | 60 | | | |
| | | | Grades to medium brown. | | | | | | |
| 5 | | | Brown, medium stiff, moist, fine sandy SILT (SM). | | | | | 0.1 | |
| | | | Grades to mottled gray and brown, medium dense, moist, silty fine SAND (SM). | | | 80 | | | |
| | | | Trace to some subrounded gravel, slightly coarser sand. | B09/9 | grab | | | | |
| 10 | | | Very moist to wet. | | | | | 0.2 | Screen: 10-15 ' bgs<br>DTW: 4.3' bgs<br>Purge: 4 L |
| | | | Brown, loose, wet sandy GRAVELS (GM) with some silt. | EB09/ GW15 | | 100 | | | |
| 15 | | | End of boring; backfilled with hydrated bentonite chips. | | | | | 0.1 | |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |

*Appendix B*

# Site Photographs

View looking west during drilling of EB01. The fence surrounds the onsite pond (out of sight) to the right.

View looking east during drilling of EB07. EB06 was sited at the orange traffic delineator to the east of EB07 (right of center).

Core from EB07: wet soils in the upper core were from the soil horizon where the temporary well screen was set for sampling.

View of the ground water sampling apparatus at EB06.

| | | | |
|---|---|---|---|
| EVREN NORTHWEST INC environmental natural resource consultants | Met-Tek, Inc.<br>15651 SE 125th Court<br>Clackamas, Oregon | **Site Photographs** | Project No.<br>435-14001-02<br>Appendix<br>**B** |


View looking west at the scrap yard designated DU01 where old equipment was stored. The turn-around is in the left of photo.


A subsample of approximately 40 grams was collected from 50 locations within each DU (decision unit).


An incremental sample and two replicates were collected within DU01. Replicates were collected 1 ft. away from the initial sample.


The ground surface within the scrap yard was covered in concrete chucks, rock, trash and vegetative debris. Vegetation was sparse.

| | | | |
|---|---|---|---|
| EVREN NORTHWEST INC environmental natural resource consultants | Met-Tek, Inc.<br>15651 SE 125th Court<br>Clackamas, Oregon | **Site Photographs** | Project No.<br>435-14001-02<br>Appendix<br>**B** |


A pile of what appeared to be furnace brick was found in the northern portion of DU01.


View west during pond sediment sampling at DU03. Pond access was difficult due to dense vegetation around the pond's perimeter.


Worker using a decontaminated stainless-steel sediment push probe fitted with a long extension handle to sample pond sediment within DU03. The water was too deep to sample from the pond's center. A total of 10 sample increments were collected, composited and submitted for analytical testing.

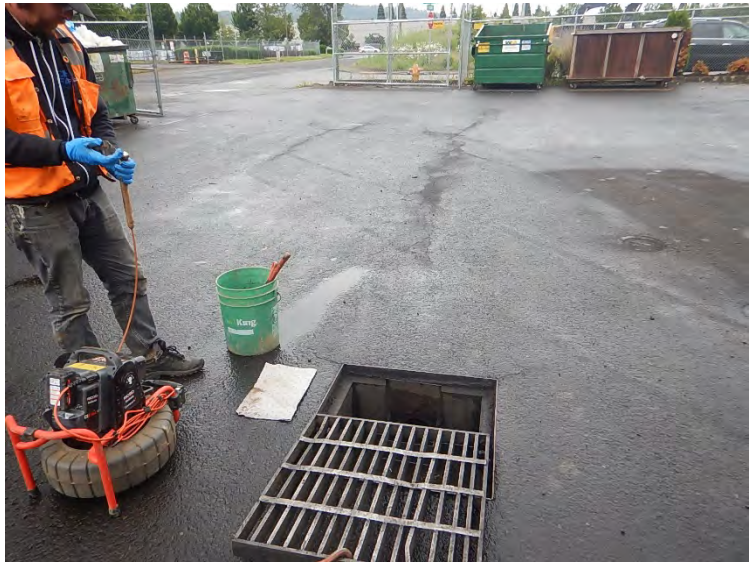
A mini excavator was used to collect an incremental sample from soil pile SP01 located near the southwest corner of the site.

View west toward the cul-de-sac at SE Knez Way while collecting sample increments from the top of SP01.

View west of soil pile SP02 located near the northwest corner of the site.

Closeup view of the top of SP02.

| | | | |
|---|---|---|---|
| EVREN NORTHWEST INC environmental natural resource consultants | Met-Tek, Inc.<br>15651 SE 125th Court<br>Clackamas, Oregon | **Site Photographs** | Project No.<br>435-14001-02<br>Appendix<br>**B** |



Technician using a SeeSnake to confirm routing of storm lines from the three-storm water catch basins at the site.

Grate removed from a catch basin prior to being assessed.

| | | | |
|---|---|---|---|
| EVREN NORTHWEST INC environmental natural resource consultants | Met-Tek, Inc.<br>15651 SE 125th Court<br>Clackamas, Oregon | **Site Photographs** | Project No.<br>435-14001-02<br>Appendix<br>**B** |

# *Appendix C*

## Laboratory Analytical Results

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

July 5, 2016

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on June 16, 2016 from the 435-14001-02, F&BI 606285 project. There are 23 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Neil Woller, Paul Trone
ENW0705R.DOC

## CASE NARRATIVE

This case narrative encompasses samples received on June 16, 2016 by Friedman & Bruya, Inc. from the Evren Northwest 435-14001-02, F&BI 606285 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | Evren Northwest |
|---|---|
| 606285-01 | EB01/8.5 |
| 606285-02 | EB02/2.5 |
| 606285-03 | EB02/9 |
| 606285-04 | EB03/5 |
| 606285-05 | EB04/5 |
| 606285-06 | EB04/7 |
| 606285-07 | EB05/2.5 |
| 606285-08 | EB05/11 |
| 606285-09 | EB06/2 |
| 606285-10 | EB06/11 |
| 606285-11 | EB07/2 |
| 606285-12 | EB07/9.5 |
| 606285-13 | EB09/9 |
| 606285-14 | EB08/9 |
| 606285-15 | DU01-160614-0.5 |
| 606285-16 | DU01-160614-0.5-REP01 |
| 606285-17 | DU01-160614-0.5-REP02 |
| 606285-18 | DU02-160614-0.5 |
| 606285-19 | DU03-160614-0.5 |

Sample DU03-160614-0.5 was not received in a 5035 sampling container. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 07/05/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606285
Date Extracted: 06/16/16 and 06/23/16
Date Analyzed: 06/17/16 and 06/23/16

## RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
## Results Reported as Not Detected (ND) or Detected (D)

**THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT**

| Sample ID<br>Laboratory ID | Gasoline | Diesel | Heavy Oil | Surrogate (% Recovery)<br>(Limit 53-144) |
|---|---|---|---|---|
| EB01/8.5<br>606285-01 | ND | ND | ND | 92 |
| EB02/9<br>606285-03 | ND | ND | ND | 92 |
| EB03/5<br>606285-04 | ND | ND | ND | 98 |
| EB04/7<br>606285-06 | ND | ND | ND | 95 |
| EB05/11<br>606285-08 | ND | ND | ND | 99 |
| EB06/11<br>606285-10 | ND | ND | ND | 97 |
| EB07/9.5<br>606285-12 | ND | ND | ND | 93 |
| EB09/9<br>606285-13 | ND | ND | ND | 98 |
| EB08/9<br>606285-14 | ND | ND | ND | 95 |
| DU01-160614-0.5<br>606285-15 | ND | ND | ND | 82 |

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 07/05/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606285
Date Extracted: 06/16/16 and 06/23/16
Date Analyzed: 06/17/16 and 06/23/16

## RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
## Results Reported as Not Detected (ND) or Detected (D)

**THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT**

| Sample ID<br>Laboratory ID | Gasoline | Diesel | Heavy Oil | Surrogate (% Recovery)<br>(Limit 53-144) |
|---|---|---|---|---|
| DU01-160614-0.5-REP01<br>606285-16 | ND | ND | ND | 92 |
| DU01-160614-0.5-REP02<br>606285-17 | ND | ND | ND | 81 |
| DU02-160614-0.5<br>606285-18 | ND | ND | ND | 80 |
| DU03-160614-0.5<br>606285-19 A+B | ND | ND | D | 101 |
| Method Blank<br>06-1226 MB | ND | ND | ND | 102 |
| Method Blank<br>06-1274 MB2 | ND | ND | ND | 98 |

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 07/05/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606285
Date Extracted: 06/22/16
Date Analyzed: 06/22/16

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND RESIDUAL RANGE USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

| Sample ID<br>Laboratory ID | Diesel Range<br>($C_{10}$-$C_{25}$) | Residual Range<br>($C_{25}$-$C_{36}$) | Surrogate<br>(% Recovery)<br>(Limit 48-168) |
|---|---|---|---|
| DU03-160614-0.5<br>606285-19 comp | 1,900 x | 3,200 | 94 |
| Method Blank<br>06-1273 MB | <50 | <250 | 102 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | DU01-160614-0.5 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/29/16 | Lab ID: | 606285-15 and 606285-15 x2 |
| Date Analyzed: | 06/29/16 and 06/30/16 | Data File: | 606285-15.060 and 606285-15 x2.018 |
| Matrix: | Soil | Instrument: | ICPMS1 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | SP |

| Analyte: | Concentration mg/kg (ppm) |
|---|---|
| Arsenic | 3.53 |
| Barium | 91.0 |
| Cadmium | 2.70 |
| Chromium | 45.5 |
| Lead | 47.3 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <1 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | DU01-160614-0.5-REP01 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/29/16 | Lab ID: | 606285-16 and 606285-16 x5 |
| Date Analyzed: | 06/29/16 and 06/30/16 | Data File: | 606285-16.061 and 606285-16 x5.024 |
| Matrix: | Soil | Instrument: | ICPMS1 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | SP |

| Analyte: | Concentration mg/kg (ppm) |
|---|---|
| Arsenic | 3.68 |
| Barium | 85.4 |
| Cadmium | 1.44 |
| Chromium | 70.9 |
| Lead | 33.4 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <1 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | DU01-160614-0.5-REP02 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/29/16 | Lab ID: | 606285-17 and 606285-17 x2 |
| Date Analyzed: | 06/29/16 and 06/30/16 | Data File: | 606285-17.062 and 606285-17 x2.020 |
| Matrix: | Soil | Instrument: | ICPMS1 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | SP |

| Analyte: | Concentration mg/kg (ppm) |
|---|---|
| Arsenic | 3.67 |
| Barium | 98.9 |
| Cadmium | 1.91 |
| Chromium | 50.0 |
| Lead | 43.1 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <1 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | DU02-160614-0.5 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/29/16 | Lab ID: | 606285-18 and 606285-18 x2 |
| Date Analyzed: | 06/29/16 | Data File: | 606285-18.063 and 606285-18 x2.021 |
| Matrix: | Soil | Instrument: | ICPMS1 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | SP |

| Analyte: | Concentration mg/kg (ppm) |
|---|---|
| Arsenic | 2.91 |
| Barium | 89.3 |
| Cadmium | 1.52 |
| Chromium | 34.5 |
| Lead | 94.9 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <1 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | DU03-160614-0.5 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/29/16 | Lab ID: | 606285-19 and 606285-19 x2 |
| Date Analyzed: | 06/29/16 and 06/30/16 | Data File: | 606285-19.064 and 606285-19 x2.022 |
| Matrix: | Soil | Instrument: | ICPMS1 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | SP |

| Analyte: | Concentration mg/kg (ppm) |
|---|---|
| Arsenic | 2.55 |
| Barium | 240 |
| Cadmium | <1 |
| Chromium | 42.4 |
| Lead | 16.9 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <1 |

## Analysis For Total Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | NA | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/29/16 | Lab ID: | I6-421 mb |
| Date Analyzed: | 06/29/16 | Data File: | I6-421 mb.043 |
| Matrix: | Soil | Instrument: | ICPMS1 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | SP |

| Analyte: | Concentration mg/kg (ppm) |
|---|---|
| Arsenic | <1 |
| Barium | <1 |
| Cadmium | <1 |
| Chromium | <5 |
| Lead | <1 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <1 |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | DU03-160614-0.5 pc | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/23/16 | Lab ID: | 606285-19 1/0.5 |
| Date Analyzed: | 06/23/16 | Data File: | 062339.D |
| Matrix: | Soil | Instrument: | GCMS9 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | 89 | 113 |
| Toluene-d8 | 99 | 64 | 137 |
| 4-Bromofluorobenzene | 97 | 81 | 119 |

| Compounds: | Concentration mg/kg (ppm) | Compounds: | Concentration mg/kg (ppm) |
|---|---|---|---|
| Dichlorodifluoromethane | <0.5 | 1,3-Dichloropropane | <0.05 |
| Chloromethane | <0.5 | Tetrachloroethene | <0.025 |
| Vinyl chloride | <0.05 | Dibromochloromethane | <0.05 |
| Bromomethane | <0.5 | 1,2-Dibromoethane (EDB) | <0.05 |
| Chloroethane | <0.5 | Chlorobenzene | <0.05 |
| Trichlorofluoromethane | <0.5 | Ethylbenzene | <0.05 |
| Acetone | <0.5 | 1,1,1,2-Tetrachloroethane | <0.05 |
| 1,1-Dichloroethene | <0.05 | m,p-Xylene | <0.1 |
| Hexane | <0.25 | o-Xylene | <0.05 |
| Methylene chloride | <0.5 | Styrene | <0.05 |
| Methyl t-butyl ether (MTBE) | <0.05 | Isopropylbenzene | <0.05 |
| trans-1,2-Dichloroethene | <0.05 | Bromoform | <0.05 |
| 1,1-Dichloroethane | <0.05 | n-Propylbenzene | <0.05 |
| 2,2-Dichloropropane | <0.05 | Bromobenzene | <0.05 |
| cis-1,2-Dichloroethene | <0.05 | 1,3,5-Trimethylbenzene | <0.05 |
| Chloroform | <0.05 | 1,1,2,2-Tetrachloroethane | <0.05 |
| 2-Butanone (MEK) | <0.5 | 1,2,3-Trichloropropane | <0.05 |
| 1,2-Dichloroethane (EDC) | <0.05 | 2-Chlorotoluene | <0.05 |
| 1,1,1-Trichloroethane | <0.05 | 4-Chlorotoluene | <0.05 |
| 1,1-Dichloropropene | <0.05 | tert-Butylbenzene | <0.05 |
| Carbon tetrachloride | <0.05 | 1,2,4-Trimethylbenzene | <0.05 |
| Benzene | <0.03 | sec-Butylbenzene | <0.05 |
| Trichloroethene | <0.02 | p-Isopropyltoluene | <0.05 |
| 1,2-Dichloropropane | <0.05 | 1,3-Dichlorobenzene | <0.05 |
| Bromodichloromethane | <0.05 | 1,4-Dichlorobenzene | <0.05 |
| Dibromomethane | <0.05 | 1,2-Dichlorobenzene | <0.05 |
| 4-Methyl-2-pentanone | <0.5 | 1,2-Dibromo-3-chloropropane | <0.5 |
| cis-1,3-Dichloropropene | <0.05 | 1,2,4-Trichlorobenzene | <0.25 |
| Toluene | 0.089 | Hexachlorobutadiene | <0.25 |
| trans-1,3-Dichloropropene | <0.05 | Naphthalene | <0.05 |
| 1,1,2-Trichloroethane | <0.05 | 1,2,3-Trichlorobenzene | <0.25 |
| 2-Hexanone | <0.5 | | |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | Not Applicable | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/23/16 | Lab ID: | 06-1261 mb |
| Date Analyzed: | 06/23/16 | Data File: | 062314.D |
| Matrix: | Soil | Instrument: | GCMS9 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 89 | 113 |
| Toluene-d8 | 99 | 64 | 137 |
| 4-Bromofluorobenzene | 98 | 81 | 119 |

| Compounds: | Concentration mg/kg (ppm) | Compounds: | Concentration mg/kg (ppm) |
|---|---|---|---|
| Dichlorodifluoromethane | <0.5 | 1,3-Dichloropropane | <0.05 |
| Chloromethane | <0.5 | Tetrachloroethene | <0.025 |
| Vinyl chloride | <0.05 | Dibromochloromethane | <0.05 |
| Bromomethane | <0.5 | 1,2-Dibromoethane (EDB) | <0.05 |
| Chloroethane | <0.5 | Chlorobenzene | <0.05 |
| Trichlorofluoromethane | <0.5 | Ethylbenzene | <0.05 |
| Acetone | <0.5 | 1,1,1,2-Tetrachloroethane | <0.05 |
| 1,1-Dichloroethene | <0.05 | m,p-Xylene | <0.1 |
| Hexane | <0.25 | o-Xylene | <0.05 |
| Methylene chloride | <0.5 | Styrene | <0.05 |
| Methyl t-butyl ether (MTBE) | <0.05 | Isopropylbenzene | <0.05 |
| trans-1,2-Dichloroethene | <0.05 | Bromoform | <0.05 |
| 1,1-Dichloroethane | <0.05 | n-Propylbenzene | <0.05 |
| 2,2-Dichloropropane | <0.05 | Bromobenzene | <0.05 |
| cis-1,2-Dichloroethene | <0.05 | 1,3,5-Trimethylbenzene | <0.05 |
| Chloroform | <0.05 | 1,1,2,2-Tetrachloroethane | <0.05 |
| 2-Butanone (MEK) | <0.5 | 1,2,3-Trichloropropane | <0.05 |
| 1,2-Dichloroethane (EDC) | <0.05 | 2-Chlorotoluene | <0.05 |
| 1,1,1-Trichloroethane | <0.05 | 4-Chlorotoluene | <0.05 |
| 1,1-Dichloropropene | <0.05 | tert-Butylbenzene | <0.05 |
| Carbon tetrachloride | <0.05 | 1,2,4-Trimethylbenzene | <0.05 |
| Benzene | <0.03 | sec-Butylbenzene | <0.05 |
| Trichloroethene | <0.02 | p-Isopropyltoluene | <0.05 |
| 1,2-Dichloropropane | <0.05 | 1,3-Dichlorobenzene | <0.05 |
| Bromodichloromethane | <0.05 | 1,4-Dichlorobenzene | <0.05 |
| Dibromomethane | <0.05 | 1,2-Dichlorobenzene | <0.05 |
| 4-Methyl-2-pentanone | <0.5 | 1,2-Dibromo-3-chloropropane | <0.5 |
| cis-1,3-Dichloropropene | <0.05 | 1,2,4-Trichlorobenzene | <0.25 |
| Toluene | <0.05 | Hexachlorobutadiene | <0.25 |
| trans-1,3-Dichloropropene | <0.05 | Naphthalene | <0.05 |
| 1,1,2-Trichloroethane | <0.05 | 1,2,3-Trichlorobenzene | <0.25 |
| 2-Hexanone | <0.5 | | |

## Analysis For Semivolatile Compounds By EPA Method 8270D SIM

| | | | |
|---|---|---|---|
| Client Sample ID: | DU03-160614-0.5 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/23/16 | Lab ID: | 606285-19 1/25 |
| Date Analyzed: | 06/24/16 | Data File: | 062414.D |
| Matrix: | Soil | Instrument: | GCMS6 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | ya |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| Anthracene-d10 | 113 d | 31 | 163 |
| Benzo(a)anthracene-d12 | 115 d | 24 | 168 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Naphthalene | <0.05 |
| Acenaphthylene | <0.05 |
| Acenaphthene | <0.05 |
| Fluorene | <0.05 |
| Phenanthrene | 0.086 |
| Anthracene | <0.05 |
| Fluoranthene | 0.082 |
| Pyrene | 0.17 |
| Benz(a)anthracene | <0.05 |
| Chrysene | <0.05 |
| Benzo(a)pyrene | <0.05 |
| Benzo(b)fluoranthene | <0.05 |
| Benzo(k)fluoranthene | <0.05 |
| Indeno(1,2,3-cd)pyrene | <0.05 |
| Dibenz(a,h)anthracene | <0.05 |
| Benzo(g,h,i)perylene | <0.05 |

## Analysis For Semivolatile Compounds By EPA Method 8270D SIM

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | Not Applicable | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/23/16 | Lab ID: | 06-1278 mb 1/5 |
| Date Analyzed: | 06/23/16 | Data File: | 062307.D |
| Matrix: | Soil | Instrument: | GCMS6 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | ya |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| Anthracene-d10 | 93 | 31 | 163 |
| Benzo(a)anthracene-d12 | 97 | 24 | 168 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Naphthalene | <0.01 |
| Acenaphthylene | <0.01 |
| Acenaphthene | <0.01 |
| Fluorene | <0.01 |
| Phenanthrene | <0.01 |
| Anthracene | <0.01 |
| Fluoranthene | <0.01 |
| Pyrene | <0.01 |
| Benz(a)anthracene | <0.01 |
| Chrysene | <0.01 |
| Benzo(a)pyrene | <0.01 |
| Benzo(b)fluoranthene | <0.01 |
| Benzo(k)fluoranthene | <0.01 |
| Indeno(1,2,3-cd)pyrene | <0.01 |
| Dibenz(a,h)anthracene | <0.01 |
| Benzo(g,h,i)perylene | <0.01 |

## Analysis For PCBs By EPA Method 8082A

| | | | |
|---|---|---|---|
| Client Sample ID: | DU03-160614-0.5 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/23/16 | Lab ID: | 606285-19 1/50 |
| Date Analyzed: | 06/24/16 | Data File: | 062332.D |
| Matrix: | Soil | Instrument: | GC7 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | mp |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| TCMX | 105 d | 29 | 154 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Aroclor 1221 | <0.2 |
| Aroclor 1232 | <0.2 |
| Aroclor 1016 | <0.2 |
| Aroclor 1242 | <0.2 |
| Aroclor 1248 | <0.2 |
| Aroclor 1254 | <0.2 |
| Aroclor 1260 | <0.2 |
| Aroclor 1262 | <0.2 |
| Aroclor 1268 | <0.2 |

## Analysis For PCBs By EPA Method 8082A

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | Not Applicable | Project: | 435-14001-02, F&BI 606285 |
| Date Extracted: | 06/23/16 | Lab ID: | 06-1282 mb 1/5 |
| Date Analyzed: | 06/23/16 | Data File: | 062329.D |
| Matrix: | Soil | Instrument: | GC7 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | mp |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| TCMX | 94 | 29 | 154 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Aroclor 1221 | <0.02 |
| Aroclor 1232 | <0.02 |
| Aroclor 1016 | <0.02 |
| Aroclor 1242 | <0.02 |
| Aroclor 1248 | <0.02 |
| Aroclor 1254 | <0.02 |
| Aroclor 1260 | <0.02 |
| Aroclor 1262 | <0.02 |
| Aroclor 1268 | <0.02 |

Date of Report: 07/05/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606285

## QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 606404-01 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result (Wet Wt) | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Diesel Extended | mg/kg (ppm) | 5,000 | <50 | 106 | 105 | 73-135 | 1 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Diesel Extended | mg/kg (ppm) | 5,000 | 106 | 74-139 |

Date of Report: 07/05/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606285

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 606513-02 x2 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result (Wet wt) | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg (ppm) | 10 | 4.35 | 97 | 92 | 70-130 | 5 |
| Barium | mg/kg (ppm) | 50 | 32.1 | 92 | 81 | 70-130 | 13 |
| Cadmium | mg/kg (ppm) | 10 | <2 | 98 | 97 | 70-130 | 1 |
| Chromium | mg/kg (ppm) | 50 | <10 | 81 | 81 | 70-130 | 0 |
| Lead | mg/kg (ppm) | 50 | 28.5 | 89 | 88 | 70-130 | 1 |
| Mercury | mg/kg (ppm | 10 | <2 | 90 | 90 | 70-130 | 0 |
| Selenium | mg/kg (ppm) | 5 | <2 | 100 | 98 | 70-130 | 2 |
| Silver | mg/kg (ppm) | 10 | <2 | 96 | 92 | 70-130 | 4 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Arsenic | mg/kg (ppm) | 10 | 105 | 85-115 |
| Barium | mg/kg (ppm) | 50 | 106 | 85-115 |
| Cadmium | mg/kg (ppm) | 10 | 104 | 85-115 |
| Chromium | mg/kg (ppm) | 50 | 99 | 85-115 |
| Lead | mg/kg (ppm) | 50 | 97 | 85-115 |
| Mercury | mg/kg (ppm) | 10 | 95 | 85-115 |
| Selenium | mg/kg (ppm) | 5 | 102 | 85-115 |
| Silver | mg/kg (ppm) | 10 | 87 | 85-115 |

Date of Report: 07/05/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606285

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 606408-01 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result (Wet wt) | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | mg/kg (ppm) | 2.5 | <0.5 | 25 | 24 | 10-56 | 4 |
| Chloromethane | mg/kg (ppm) | 2.5 | <0.5 | 50 | 49 | 10-90 | 2 |
| Vinyl chloride | mg/kg (ppm) | 2.5 | <0.05 | 50 | 50 | 10-91 | 0 |
| Bromomethane | mg/kg (ppm) | 2.5 | <0.5 | 58 | 60 | 10-110 | 3 |
| Chloroethane | mg/kg (ppm) | 2.5 | <0.5 | 62 | 62 | 10-101 | 0 |
| Trichlorofluoromethane | mg/kg (ppm) | 2.5 | <0.5 | 57 | 58 | 10-95 | 2 |
| Acetone | mg/kg (ppm) | 12.5 | <0.5 | 90 | 90 | 11-141 | 0 |
| 1,1-Dichloroethene | mg/kg (ppm) | 2.5 | <0.05 | 66 | 68 | 11-103 | 3 |
| Hexane | mg/kg (ppm) | 2.5 | <0.25 | 53 | 55 | 10-95 | 4 |
| Methylene chloride | mg/kg (ppm) | 2.5 | <0.5 | 80 | 81 | 14-128 | 1 |
| Methyl t-butyl ether (MTBE) | mg/kg (ppm) | 2.5 | <0.05 | 83 | 84 | 17-134 | 1 |
| trans-1,2-Dichloroethene | mg/kg (ppm) | 2.5 | <0.05 | 75 | 76 | 13-112 | 1 |
| 1,1-Dichloroethane | mg/kg (ppm) | 2.5 | <0.05 | 77 | 78 | 23-115 | 1 |
| 2,2-Dichloropropane | mg/kg (ppm) | 2.5 | <0.05 | 89 | 89 | 18-117 | 0 |
| cis-1,2-Dichloroethene | mg/kg (ppm) | 2.5 | <0.05 | 80 | 81 | 25-120 | 1 |
| Chloroform | mg/kg (ppm) | 2.5 | <0.05 | 82 | 82 | 29-117 | 0 |
| 2-Butanone (MEK) | mg/kg (ppm) | 12.5 | <0.5 | 88 | 89 | 20-133 | 1 |
| 1,2-Dichloroethane (EDC) | mg/kg (ppm) | 2.5 | <0.05 | 87 | 88 | 22-124 | 1 |
| 1,1,1-Trichloroethane | mg/kg (ppm) | 2.5 | <0.05 | 83 | 83 | 27-112 | 0 |
| 1,1-Dichloropropene | mg/kg (ppm) | 2.5 | <0.05 | 77 | 78 | 26-107 | 1 |
| Carbon tetrachloride | mg/kg (ppm) | 2.5 | <0.05 | 83 | 84 | 22-115 | 1 |
| Benzene | mg/kg (ppm) | 2.5 | <0.03 | 77 | 77 | 26-114 | 0 |
| Trichloroethene | mg/kg (ppm) | 2.5 | <0.02 | 78 | 79 | 30-112 | 1 |
| 1,2-Dichloropropane | mg/kg (ppm) | 2.5 | <0.05 | 84 | 85 | 31-119 | 1 |
| Bromodichloromethane | mg/kg (ppm) | 2.5 | <0.05 | 86 | 87 | 31-131 | 1 |
| Dibromomethane | mg/kg (ppm) | 2.5 | <0.05 | 83 | 82 | 27-124 | 1 |
| 4-Methyl-2-pentanone | mg/kg (ppm) | 12.5 | <0.5 | 94 | 94 | 16-147 | 0 |
| cis-1,3-Dichloropropene | mg/kg (ppm) | 2.5 | <0.05 | 92 | 92 | 28-137 | 0 |
| Toluene | mg/kg (ppm) | 2.5 | <0.05 | 81 | 82 | 34-112 | 1 |
| trans-1,3-Dichloropropene | mg/kg (ppm) | 2.5 | <0.05 | 90 | 89 | 30-136 | 1 |
| 1,1,2-Trichloroethane | mg/kg (ppm) | 2.5 | <0.05 | 88 | 88 | 32-126 | 0 |
| 2-Hexanone | mg/kg (ppm) | 12.5 | <0.5 | 91 | 90 | 17-147 | 1 |
| 1,3-Dichloropropane | mg/kg (ppm) | 2.5 | <0.05 | 85 | 85 | 29-125 | 0 |
| Tetrachloroethene | mg/kg (ppm) | 2.5 | <0.025 | 81 | 82 | 25-114 | 1 |
| Dibromochloromethane | mg/kg (ppm) | 2.5 | <0.05 | 92 | 93 | 32-143 | 1 |
| 1,2-Dibromoethane (EDB) | mg/kg (ppm) | 2.5 | <0.05 | 88 | 89 | 32-126 | 1 |
| Chlorobenzene | mg/kg (ppm) | 2.5 | <0.05 | 81 | 81 | 37-113 | 0 |
| Ethylbenzene | mg/kg (ppm) | 2.5 | <0.05 | 81 | 81 | 34-115 | 0 |
| 1,1,1,2-Tetrachloroethane | mg/kg (ppm) | 2.5 | <0.05 | 93 | 93 | 35-126 | 0 |
| m,p-Xylene | mg/kg (ppm) | 5 | <0.1 | 82 | 83 | 25-125 | 1 |
| o-Xylene | mg/kg (ppm) | 2.5 | <0.05 | 84 | 84 | 27-126 | 0 |
| Styrene | mg/kg (ppm) | 2.5 | <0.05 | 86 | 86 | 39-121 | 0 |
| Isopropylbenzene | mg/kg (ppm) | 2.5 | <0.05 | 84 | 86 | 34-123 | 2 |
| Bromoform | mg/kg (ppm) | 2.5 | <0.05 | 88 | 87 | 18-155 | 1 |
| n-Propylbenzene | mg/kg (ppm) | 2.5 | <0.05 | 84 | 84 | 31-120 | 0 |
| Bromobenzene | mg/kg (ppm) | 2.5 | <0.05 | 83 | 82 | 40-115 | 1 |
| 1,3,5-Trimethylbenzene | mg/kg (ppm) | 2.5 | <0.05 | 83 | 83 | 24-130 | 0 |
| 1,1,2,2-Tetrachloroethane | mg/kg (ppm) | 2.5 | <0.05 | 88 | 88 | 27-148 | 0 |
| 1,2,3-Trichloropropane | mg/kg (ppm) | 2.5 | <0.05 | 88 | 89 | 33-123 | 1 |
| 2-Chlorotoluene | mg/kg (ppm) | 2.5 | <0.05 | 82 | 82 | 39-110 | 0 |
| 4-Chlorotoluene | mg/kg (ppm) | 2.5 | <0.05 | 85 | 84 | 39-111 | 1 |
| tert-Butylbenzene | mg/kg (ppm) | 2.5 | <0.05 | 87 | 87 | 36-116 | 0 |
| 1,2,4-Trimethylbenzene | mg/kg (ppm) | 2.5 | <0.05 | 83 | 84 | 35-116 | 1 |
| sec-Butylbenzene | mg/kg (ppm) | 2.5 | <0.05 | 85 | 86 | 33-118 | 1 |
| p-Isopropyltoluene | mg/kg (ppm) | 2.5 | <0.05 | 85 | 85 | 32-119 | 0 |
| 1,3-Dichlorobenzene | mg/kg (ppm) | 2.5 | <0.05 | 83 | 83 | 38-111 | 0 |
| 1,4-Dichlorobenzene | mg/kg (ppm) | 2.5 | <0.05 | 82 | 81 | 39-109 | 1 |
| 1,2-Dichlorobenzene | mg/kg (ppm) | 2.5 | <0.05 | 82 | 81 | 40-111 | 1 |
| 1,2-Dibromo-3-chloropropane | mg/kg (ppm) | 2.5 | <0.5 | 93 | 91 | 37-122 | 2 |
| 1,2,4-Trichlorobenzene | mg/kg (ppm) | 2.5 | <0.25 | 83 | 85 | 31-121 | 2 |
| Hexachlorobutadiene | mg/kg (ppm) | 2.5 | <0.25 | 86 | 87 | 24-128 | 1 |
| Naphthalene | mg/kg (ppm) | 2.5 | <0.05 | 87 | 88 | 24-139 | 1 |
| 1,2,3-Trichlorobenzene | mg/kg (ppm) | 2.5 | <0.25 | 82 | 82 | 35-117 | 0 |

Date of Report: 07/05/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606285

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Dichlorodifluoromethane | mg/kg (ppm) | 2.5 | 52 | 10-76 |
| Chloromethane | mg/kg (ppm) | 2.5 | 71 | 34-98 |
| Vinyl chloride | mg/kg (ppm) | 2.5 | 76 | 42-107 |
| Bromomethane | mg/kg (ppm) | 2.5 | 77 | 46-113 |
| Chloroethane | mg/kg (ppm) | 2.5 | 86 | 47-115 |
| Trichlorofluoromethane | mg/kg (ppm) | 2.5 | 86 | 53-112 |
| Acetone | mg/kg (ppm) | 12.5 | 106 | 39-147 |
| 1,1-Dichloroethene | mg/kg (ppm) | 2.5 | 93 | 65-110 |
| Hexane | mg/kg (ppm) | 2.5 | 94 | 55-107 |
| Methylene chloride | mg/kg (ppm) | 2.5 | 99 | 50-127 |
| Methyl t-butyl ether (MTBE) | mg/kg (ppm) | 2.5 | 97 | 72-122 |
| trans-1,2-Dichloroethene | mg/kg (ppm) | 2.5 | 98 | 71-113 |
| 1,1-Dichloroethane | mg/kg (ppm) | 2.5 | 96 | 74-109 |
| 2,2-Dichloropropane | mg/kg (ppm) | 2.5 | 103 | 64-151 |
| cis-1,2-Dichloroethene | mg/kg (ppm) | 2.5 | 98 | 73-110 |
| Chloroform | mg/kg (ppm) | 2.5 | 96 | 76-110 |
| 2-Butanone (MEK) | mg/kg (ppm) | 12.5 | 104 | 60-121 |
| 1,2-Dichloroethane (EDC) | mg/kg (ppm) | 2.5 | 102 | 73-111 |
| 1,1,1-Trichloroethane | mg/kg (ppm) | 2.5 | 101 | 72-116 |
| 1,1-Dichloropropene | mg/kg (ppm) | 2.5 | 97 | 72-112 |
| Carbon tetrachloride | mg/kg (ppm) | 2.5 | 103 | 67-123 |
| Benzene | mg/kg (ppm) | 2.5 | 93 | 72-106 |
| Trichloroethene | mg/kg (ppm) | 2.5 | 93 | 72-107 |
| 1,2-Dichloropropane | mg/kg (ppm) | 2.5 | 101 | 74-115 |
| Bromodichloromethane | mg/kg (ppm) | 2.5 | 102 | 75-126 |
| Dibromomethane | mg/kg (ppm) | 2.5 | 98 | 76-116 |
| 4-Methyl-2-pentanone | mg/kg (ppm) | 12.5 | 111 | 80-128 |
| cis-1,3-Dichloropropene | mg/kg (ppm) | 2.5 | 108 | 71-138 |
| Toluene | mg/kg (ppm) | 2.5 | 97 | 74-111 |
| trans-1,3-Dichloropropene | mg/kg (ppm) | 2.5 | 106 | 77-135 |
| 1,1,2-Trichloroethane | mg/kg (ppm) | 2.5 | 105 | 77-116 |
| 2-Hexanone | mg/kg (ppm) | 12.5 | 104 | 70-129 |
| 1,3-Dichloropropane | mg/kg (ppm) | 2.5 | 101 | 75-115 |
| Tetrachloroethene | mg/kg (ppm) | 2.5 | 100 | 73-111 |
| Dibromochloromethane | mg/kg (ppm) | 2.5 | 109 | 64-152 |
| 1,2-Dibromoethane (EDB) | mg/kg (ppm) | 2.5 | 106 | 77-117 |
| Chlorobenzene | mg/kg (ppm) | 2.5 | 95 | 76-109 |
| Ethylbenzene | mg/kg (ppm) | 2.5 | 97 | 75-112 |
| 1,1,1,2-Tetrachloroethane | mg/kg (ppm) | 2.5 | 108 | 76-125 |
| m,p-Xylene | mg/kg (ppm) | 5 | 99 | 77-115 |
| o-Xylene | mg/kg (ppm) | 2.5 | 101 | 76-115 |
| Styrene | mg/kg (ppm) | 2.5 | 102 | 76-119 |
| Isopropylbenzene | mg/kg (ppm) | 2.5 | 102 | 76-120 |
| Bromoform | mg/kg (ppm) | 2.5 | 101 | 50-174 |
| n-Propylbenzene | mg/kg (ppm) | 2.5 | 100 | 77-115 |
| Bromobenzene | mg/kg (ppm) | 2.5 | 98 | 76-112 |
| 1,3,5-Trimethylbenzene | mg/kg (ppm) | 2.5 | 99 | 77-121 |
| 1,1,2,2-Tetrachloroethane | mg/kg (ppm) | 2.5 | 103 | 74-121 |
| 1,2,3-Trichloropropane | mg/kg (ppm) | 2.5 | 102 | 74-116 |
| 2-Chlorotoluene | mg/kg (ppm) | 2.5 | 98 | 75-113 |
| 4-Chlorotoluene | mg/kg (ppm) | 2.5 | 99 | 77-115 |
| tert-Butylbenzene | mg/kg (ppm) | 2.5 | 101 | 77-123 |
| 1,2,4-Trimethylbenzene | mg/kg (ppm) | 2.5 | 100 | 77-119 |
| sec-Butylbenzene | mg/kg (ppm) | 2.5 | 102 | 78-120 |
| p-Isopropyltoluene | mg/kg (ppm) | 2.5 | 101 | 77-120 |
| 1,3-Dichlorobenzene | mg/kg (ppm) | 2.5 | 97 | 76-112 |
| 1,4-Dichlorobenzene | mg/kg (ppm) | 2.5 | 96 | 74-109 |
| 1,2-Dichlorobenzene | mg/kg (ppm) | 2.5 | 94 | 75-114 |
| 1,2-Dibromo-3-chloropropane | mg/kg (ppm) | 2.5 | 105 | 68-122 |
| 1,2,4-Trichlorobenzene | mg/kg (ppm) | 2.5 | 94 | 75-122 |
| Hexachlorobutadiene | mg/kg (ppm) | 2.5 | 99 | 74-130 |
| Naphthalene | mg/kg (ppm) | 2.5 | 97 | 73-122 |
| 1,2,3-Trichlorobenzene | mg/kg (ppm) | 2.5 | 95 | 75-117 |

Date of Report: 07/05/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606285

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: 606360-04 1/25 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result (Wet wt) | Percent Recovery MS | Acceptance Criteria |
|---|---|---|---|---|---|
| Naphthalene | mg/kg (ppm) | 0.17 | <0.05 | 84 | 44-129 |
| Acenaphthylene | mg/kg (ppm) | 0.17 | <0.05 | 108 | 52-121 |
| Acenaphthene | mg/kg (ppm) | 0.17 | <0.05 | 91 | 51-123 |
| Fluorene | mg/kg (ppm) | 0.17 | <0.05 | 85 | 37-137 |
| Phenanthrene | mg/kg (ppm) | 0.17 | <0.05 | 86 | 34-141 |
| Anthracene | mg/kg (ppm) | 0.17 | <0.05 | 106 | 32-124 |
| Fluoranthene | mg/kg (ppm) | 0.17 | <0.05 | 102 | 16-160 |
| Pyrene | mg/kg (ppm) | 0.17 | 0.14 | 87 b | 10-180 |
| Benz(a)anthracene | mg/kg (ppm) | 0.17 | <0.05 | 95 | 23-144 |
| Chrysene | mg/kg (ppm) | 0.17 | 0.068 | 89 b | 32-149 |
| Benzo(b)fluoranthene | mg/kg (ppm) | 0.17 | <0.05 | 93 | 23-176 |
| Benzo(k)fluoranthene | mg/kg (ppm) | 0.17 | <0.05 | 93 | 42-139 |
| Benzo(a)pyrene | mg/kg (ppm) | 0.17 | <0.05 | 89 | 21-163 |
| Indeno(1,2,3-cd)pyrene | mg/kg (ppm) | 0.17 | <0.05 | 81 | 23-170 |
| Dibenz(a,h)anthracene | mg/kg (ppm) | 0.17 | <0.05 | 81 | 31-146 |
| Benzo(g,h,i)perylene | mg/kg (ppm) | 0.17 | <0.05 | 73 | 37-133 |

Laboratory Code: Laboratory Control Sample 1/5

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Percent Recovery LCSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|
| Naphthalene | mg/kg (ppm) | 0.17 | 86 | 88 | 58-121 | 2 |
| Acenaphthylene | mg/kg (ppm) | 0.17 | 93 | 94 | 54-121 | 1 |
| Acenaphthene | mg/kg (ppm) | 0.17 | 94 | 93 | 54-123 | 1 |
| Fluorene | mg/kg (ppm) | 0.17 | 88 | 90 | 56-127 | 2 |
| Phenanthrene | mg/kg (ppm) | 0.17 | 90 | 95 | 55-122 | 5 |
| Anthracene | mg/kg (ppm) | 0.17 | 86 | 90 | 50-120 | 5 |
| Fluoranthene | mg/kg (ppm) | 0.17 | 98 | 98 | 54-129 | 0 |
| Pyrene | mg/kg (ppm) | 0.17 | 85 | 87 | 53-127 | 2 |
| Benz(a)anthracene | mg/kg (ppm) | 0.17 | 94 | 96 | 51-115 | 2 |
| Chrysene | mg/kg (ppm) | 0.17 | 91 | 93 | 55-129 | 2 |
| Benzo(b)fluoranthene | mg/kg (ppm) | 0.17 | 93 | 91 | 56-123 | 2 |
| Benzo(k)fluoranthene | mg/kg (ppm) | 0.17 | 87 | 92 | 54-131 | 6 |
| Benzo(a)pyrene | mg/kg (ppm) | 0.17 | 86 | 87 | 51-118 | 1 |
| Indeno(1,2,3-cd)pyrene | mg/kg (ppm) | 0.17 | 95 | 93 | 49-148 | 2 |
| Dibenz(a,h)anthracene | mg/kg (ppm) | 0.17 | 94 | 93 | 50-141 | 1 |
| Benzo(g,h,i)perylene | mg/kg (ppm) | 0.17 | 88 | 89 | 52-131 | 1 |

Date of Report: 07/05/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606285

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 606430-03 1/50 (Matrix Spike) 1/50

| Analyte | Reporting Units | Spike Level | Sample Result (Wet Wt) | Percent Recovery MS | Control Limits |
|---|---|---|---|---|---|
| Aroclor 1016 | mg/kg (ppm) | 0.8 | <0.2 | 89 | 50-150 |
| Aroclor 1260 | mg/kg (ppm) | 0.8 | <0.2 | 88 | 50-150 |

Laboratory Code: Laboratory Control Sample 1/5

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Percent Recovery LCSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|
| Aroclor 1016 | mg/kg (ppm) | 0.8 | 86 | 91 | 55-130 | 6 |
| Aroclor 1260 | mg/kg (ppm) | 0.8 | 89 | 96 | 58-133 | 8 |

# Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

606285

# SAMPLE CHAIN OF CUSTODY

ME 06/16/16 VSI/CT/2 TATS

Page # 1 of 2

Send Report To LYNN GREEN
Company EVREN NORTHWEST
Address 40 SE 24th UNIT A
City, State, ZIP PORTLAND, OR 97214
Phone # 503-452-5561 Fax #

SAMPLERS (signature) Barb Lary
PROJECT NAME/NO. 435-1400-02
PO#
REMARKS

TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

| Sample ID | Lab ID | Date Sampled | Time Sampled | Sample Type | # of containers | TPH-Diesel | TPH-Gasoline | BTEX by 8021B | VOCs by8260 | SVOCs by 8270 | HFS | NWTPH-HCID | ECEA & METALS | | | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EB01/8.5 | 01 | 6/14/16 | 910 | SOIL | 1 | | | | | | | X | | | | | | |
| EB02/2.5 | 02 | | 940 | | 1 | | | | | | | | | | | | | |
| EB02/9 | 03 | | 945 | | | | | | | | | X | | | | | | |
| EB03/5 | 04 | | 1035 | | | | | | | | | X | | | | | | |
| EB04/5 | 05 | | 11:05 | | | | | | | | | | | | | | | |
| EB04/7 | 06 | | 11:10 | | | | | | | | | X | | | | | | |
| EB05/2.5 | 07 | | 12:15 | | | | | | | | | | | | | | | |
| EB05/11 | 08 | | 1225 | | | | | | | | | X | | | | | | |
| EB06/2 | 09 | | 1245 | | | | | | | | | | | | | | | |
| EB06/11 | 10 | | 1255 | | | | | | | | | X | | | | | | |

| SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|
| Relinquished by: Barb Lary | BARB LARY | ENW | 6/14/16 | 1900 |
| Received by: Nhan Phan | Nhan Phan | FCBI | 6/16/16 | 0740 |
| Relinquished by: | | | | |
| Received by: | | Samples received at 6 °C | | |

*Friedman & Bruya, Inc.*
*3012 16th Avenue West*
*Seattle, WA 98119-2029*
*Ph. (206) 285-8282*
*Fax (206) 283-5044*

606285

# SAMPLE CHAIN OF CUSTODY

ME 06/16/16 VSI/ST

Page 2 of 2 405

Send Report To LYNN GREEN

Company ENW

Address 40 SW 2nd UNIT A

City, State, ZIP PORTLAND, OR 97214

Phone #503-452-5561 Fax #

SAMPLERS (signature) Barb Lary

PROJECT NAME/NO. 435-14001-02

PO#

REMARKS

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

| Sample ID | Lab ID | Date Sampled | Time Sampled | Sample Type | # of containers | ANALYSES REQUESTED: TPH-Diesel | TPH-Gasoline | BTEX by 8021B | VOCs by8260 | SVOCs by 8270 | PAH's-HFPS | NWTPH-HCID | RCRA 8 METALS | MI PREP | Composite | PCBs | DF | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EB07/2 | 11 | 6/14/16 | 1315 | SOIL | 1 | | | | | | | | | | | | | ✓ - per PT ENW @ 6/16 |
| EB07/9.5 | 12 | | 1320 | | 1 | | | | | | | X | | | | | | |
| EB09/9 | 13 A-E | | 1400 | | 5 | | | | | | | X | | | | | | |
| EB08/9 | 14 A-E | | 1450 | | 5 | | | | | | | X | | | | | | * - per LL 6/22/16 |
| DU01/160614-0.5 | 15 | | 1215 | | 1 | | | | | | | X | X | ✓ | | | | |
| DU01-160614-0.5-RE00 | 16 | | 1215 | | 1 | | | | | | | X | X | ✓ | | | | |
| DU01-160614-0.5-RE02 | 17 | | 1215 | | 1 | | | | | | | X | X | ✓ | | | | |
| DU02-160614-0.5- | 18 | | 1501 | | 1 | | | | | | | X | X | ✓ | | | | |
| DU03-160614-0.5 | 20 FB | ↓ | 1735 | ↓ | 2 | | | | * | | * | X | X | | ✓ | * | * | |
| | | | | | | | | | | | | | | | | | | |

| SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|
| Relinquished by: Barb Lary | BARB LARY | ENW | 6/14/16 | 1900 |
| Received by: Nhan Phan | Nhan Phan | FedEx | 6/16/16 | 0740 |
| Relinquished by: | | | | |
| Received by: | | Samples received at 6 °C | | |

*Friedman & Bruya, Inc.*
*3012 16th Avenue West*
*Seattle, WA 98119-2029*
*Ph. (206) 285-8282*
*Fax (206) 283-5044*

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 22, 2016

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on June 16, 2016 from the 435-14001-02, F&BI 606286 project. There are 14 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Neil Woller, Paul Trone
ENW0622R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 16, 2016 by Friedman & Bruya, Inc. from the Evren Northwest 435-14001-02 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | Evren Northwest |
|---|---|
| 606286 -01 | EB01/GW15 |
| 606286 -02 | EB03/GW10 |
| 606286 -03 | EB04/GW10 |
| 606286 -04 | EB05/GW15 |
| 606286 -05 | EB06/GW15 |
| 606286 -06 | EB07/GW15 |
| 606286 -07 | EB09/GW15 |
| 606286 -08 | EB08/GW15 |

All quality control requirements were acceptable.

Date of Report: 06/22/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606286
Date Extracted: 06/16/16
Date Analyzed: 06/16/16

## RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
## Results Reported as Not Detected (ND) or Detected (D)

**THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT**

| Sample ID<br>Laboratory ID | Gasoline | Diesel | Heavy Oil | Surrogate (% Recovery)<br>(Limit 56-165) |
|---|---|---|---|---|
| EB01/GW15<br>606286-01 | ND | ND | ND | 91 |
| EB03/GW10<br>606286-02 | ND | ND | D | 87 |
| EB04/GW10<br>606286-03 | ND | ND | ND | 87 |
| EB05/GW15<br>606286-04 | ND | ND | ND | 84 |
| EB06/GW15<br>606286-05 | ND | ND | ND | 93 |
| EB07/GW15<br>606286-06 | ND | ND | ND | 95 |
| EB09/GW15<br>606286-07 | ND | ND | ND | 96 |
| EB08/GW15<br>606286-08 | D | ND | ND | 85 |
| Method Blank<br>06-1223 MB | ND | ND | ND | 107 |

ND - Material not detected at or above 0.2 mg/L gas, 0.5 mg/L diesel and 0.5 mg/L heavy oil.

# FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | EB01/GW15 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 06/16/16 | Lab ID: | 606286-01 |
| Date Analyzed: | 06/16/16 | Data File: | 061614.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 85 | 117 |
| Toluene-d8 | 100 | 91 | 108 |
| 4-Bromofluorobenzene | 100 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) | Compounds: | Concentration ug/L (ppb) |
|---|---|---|---|
| Dichlorodifluoromethane | <1 | 1,3-Dichloropropane | <1 |
| Chloromethane | <10 | Tetrachloroethene | <1 |
| Vinyl chloride | <0.2 | Dibromochloromethane | <1 |
| Bromomethane | <1 | 1,2-Dibromoethane (EDB) | <1 |
| Chloroethane | <1 | Chlorobenzene | <1 |
| Trichlorofluoromethane | <1 | Ethylbenzene | <1 |
| Acetone | <10 | 1,1,1,2-Tetrachloroethane | <1 |
| 1,1-Dichloroethene | <1 | m,p-Xylene | <2 |
| Hexane | <1 | o-Xylene | <1 |
| Methylene chloride | <5 | Styrene | <1 |
| Methyl t-butyl ether (MTBE) | <1 | Isopropylbenzene | <1 |
| trans-1,2-Dichloroethene | <1 | Bromoform | <1 |
| 1,1-Dichloroethane | <1 | n-Propylbenzene | <1 |
| 2,2-Dichloropropane | <1 | Bromobenzene | <1 |
| cis-1,2-Dichloroethene | <1 | 1,3,5-Trimethylbenzene | <1 |
| Chloroform | <1 | 1,1,2,2-Tetrachloroethane | <1 |
| 2-Butanone (MEK) | <10 | 1,2,3-Trichloropropane | <1 |
| 1,2-Dichloroethane (EDC) | <1 | 2-Chlorotoluene | <1 |
| 1,1,1-Trichloroethane | <1 | 4-Chlorotoluene | <1 |
| 1,1-Dichloropropene | <1 | tert-Butylbenzene | <1 |
| Carbon tetrachloride | <1 | 1,2,4-Trimethylbenzene | <1 |
| Benzene | <0.35 | sec-Butylbenzene | <1 |
| Trichloroethene | <1 | p-Isopropyltoluene | <1 |
| 1,2-Dichloropropane | <1 | 1,3-Dichlorobenzene | <1 |
| Bromodichloromethane | <1 | 1,4-Dichlorobenzene | <1 |
| Dibromomethane | <1 | 1,2-Dichlorobenzene | <1 |
| 4-Methyl-2-pentanone | <10 | 1,2-Dibromo-3-chloropropane | <10 |
| cis-1,3-Dichloropropene | <1 | 1,2,4-Trichlorobenzene | <1 |
| Toluene | <1 | Hexachlorobutadiene | <1 |
| trans-1,3-Dichloropropene | <1 | Naphthalene | <1 |
| 1,1,2-Trichloroethane | <1 | 1,2,3-Trichlorobenzene | <1 |
| 2-Hexanone | <10 | | |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | EB03/GW10 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 06/16/16 | Lab ID: | 606286-02 |
| Date Analyzed: | 06/16/16 | Data File: | 061615.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 85 | 117 |
| Toluene-d8 | 101 | 91 | 108 |
| 4-Bromofluorobenzene | 98 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) | Compounds: | Concentration ug/L (ppb) |
|---|---|---|---|
| Dichlorodifluoromethane | <1 | 1,3-Dichloropropane | <1 |
| Chloromethane | <10 | Tetrachloroethene | <1 |
| Vinyl chloride | <0.2 | Dibromochloromethane | <1 |
| Bromomethane | <1 | 1,2-Dibromoethane (EDB) | <1 |
| Chloroethane | <1 | Chlorobenzene | <1 |
| Trichlorofluoromethane | <1 | Ethylbenzene | <1 |
| Acetone | <10 | 1,1,1,2-Tetrachloroethane | <1 |
| 1,1-Dichloroethene | <1 | m,p-Xylene | <2 |
| Hexane | <1 | o-Xylene | <1 |
| Methylene chloride | <5 | Styrene | <1 |
| Methyl t-butyl ether (MTBE) | <1 | Isopropylbenzene | <1 |
| trans-1,2-Dichloroethene | <1 | Bromoform | <1 |
| 1,1-Dichloroethane | <1 | n-Propylbenzene | <1 |
| 2,2-Dichloropropane | <1 | Bromobenzene | <1 |
| cis-1,2-Dichloroethene | <1 | 1,3,5-Trimethylbenzene | <1 |
| Chloroform | <1 | 1,1,2,2-Tetrachloroethane | <1 |
| 2-Butanone (MEK) | <10 | 1,2,3-Trichloropropane | <1 |
| 1,2-Dichloroethane (EDC) | <1 | 2-Chlorotoluene | <1 |
| 1,1,1-Trichloroethane | <1 | 4-Chlorotoluene | <1 |
| 1,1-Dichloropropene | <1 | tert-Butylbenzene | <1 |
| Carbon tetrachloride | <1 | 1,2,4-Trimethylbenzene | <1 |
| Benzene | <0.35 | sec-Butylbenzene | <1 |
| Trichloroethene | <1 | p-Isopropyltoluene | <1 |
| 1,2-Dichloropropane | <1 | 1,3-Dichlorobenzene | <1 |
| Bromodichloromethane | <1 | 1,4-Dichlorobenzene | <1 |
| Dibromomethane | <1 | 1,2-Dichlorobenzene | <1 |
| 4-Methyl-2-pentanone | <10 | 1,2-Dibromo-3-chloropropane | <10 |
| cis-1,3-Dichloropropene | <1 | 1,2,4-Trichlorobenzene | <1 |
| Toluene | <1 | Hexachlorobutadiene | <1 |
| trans-1,3-Dichloropropene | <1 | Naphthalene | <1 |
| 1,1,2-Trichloroethane | <1 | 1,2,3-Trichlorobenzene | <1 |
| 2-Hexanone | <10 | | |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | EB04/GW10 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 06/16/16 | Lab ID: | 606286-03 |
| Date Analyzed: | 06/16/16 | Data File: | 061616.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 100 | 85 | 117 |
| Toluene-d8 | 101 | 91 | 108 |
| 4-Bromofluorobenzene | 100 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) | Compounds: | Concentration ug/L (ppb) |
|---|---|---|---|
| Dichlorodifluoromethane | <1 | 1,3-Dichloropropane | <1 |
| Chloromethane | <10 | Tetrachloroethene | <1 |
| Vinyl chloride | <0.2 | Dibromochloromethane | <1 |
| Bromomethane | <1 | 1,2-Dibromoethane (EDB) | <1 |
| Chloroethane | <1 | Chlorobenzene | <1 |
| Trichlorofluoromethane | <1 | Ethylbenzene | <1 |
| Acetone | <10 | 1,1,1,2-Tetrachloroethane | <1 |
| 1,1-Dichloroethene | <1 | m,p-Xylene | 2.8 |
| Hexane | <1 | o-Xylene | 1.7 |
| Methylene chloride | <5 | Styrene | <1 |
| Methyl t-butyl ether (MTBE) | <1 | Isopropylbenzene | <1 |
| trans-1,2-Dichloroethene | <1 | Bromoform | <1 |
| 1,1-Dichloroethane | <1 | n-Propylbenzene | <1 |
| 2,2-Dichloropropane | <1 | Bromobenzene | <1 |
| cis-1,2-Dichloroethene | <1 | 1,3,5-Trimethylbenzene | <1 |
| Chloroform | <1 | 1,1,2,2-Tetrachloroethane | <1 |
| 2-Butanone (MEK) | <10 | 1,2,3-Trichloropropane | <1 |
| 1,2-Dichloroethane (EDC) | <1 | 2-Chlorotoluene | <1 |
| 1,1,1-Trichloroethane | <1 | 4-Chlorotoluene | <1 |
| 1,1-Dichloropropene | <1 | tert-Butylbenzene | <1 |
| Carbon tetrachloride | <1 | 1,2,4-Trimethylbenzene | <1 |
| Benzene | <0.35 | sec-Butylbenzene | <1 |
| Trichloroethene | <1 | p-Isopropyltoluene | <1 |
| 1,2-Dichloropropane | <1 | 1,3-Dichlorobenzene | <1 |
| Bromodichloromethane | <1 | 1,4-Dichlorobenzene | <1 |
| Dibromomethane | <1 | 1,2-Dichlorobenzene | <1 |
| 4-Methyl-2-pentanone | <10 | 1,2-Dibromo-3-chloropropane | <10 |
| cis-1,3-Dichloropropene | <1 | 1,2,4-Trichlorobenzene | <1 |
| Toluene | <1 | Hexachlorobutadiene | <1 |
| trans-1,3-Dichloropropene | <1 | Naphthalene | <1 |
| 1,1,2-Trichloroethane | <1 | 1,2,3-Trichlorobenzene | <1 |
| 2-Hexanone | <10 | | |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | EB05/GW15 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 06/16/16 | Lab ID: | 606286-04 |
| Date Analyzed: | 06/16/16 | Data File: | 061617.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 85 | 117 |
| Toluene-d8 | 99 | 91 | 108 |
| 4-Bromofluorobenzene | 98 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) | Compounds: | Concentration ug/L (ppb) |
|---|---|---|---|
| Dichlorodifluoromethane | <1 | 1,3-Dichloropropane | <1 |
| Chloromethane | <10 | Tetrachloroethene | <1 |
| Vinyl chloride | <0.2 | Dibromochloromethane | <1 |
| Bromomethane | <1 | 1,2-Dibromoethane (EDB) | <1 |
| Chloroethane | <1 | Chlorobenzene | <1 |
| Trichlorofluoromethane | <1 | Ethylbenzene | <1 |
| Acetone | <10 | 1,1,1,2-Tetrachloroethane | <1 |
| 1,1-Dichloroethene | <1 | m,p-Xylene | <2 |
| Hexane | <1 | o-Xylene | <1 |
| Methylene chloride | <5 | Styrene | <1 |
| Methyl t-butyl ether (MTBE) | <1 | Isopropylbenzene | <1 |
| trans-1,2-Dichloroethene | <1 | Bromoform | <1 |
| 1,1-Dichloroethane | <1 | n-Propylbenzene | <1 |
| 2,2-Dichloropropane | <1 | Bromobenzene | <1 |
| cis-1,2-Dichloroethene | <1 | 1,3,5-Trimethylbenzene | <1 |
| Chloroform | <1 | 1,1,2,2-Tetrachloroethane | <1 |
| 2-Butanone (MEK) | <10 | 1,2,3-Trichloropropane | <1 |
| 1,2-Dichloroethane (EDC) | <1 | 2-Chlorotoluene | <1 |
| 1,1,1-Trichloroethane | <1 | 4-Chlorotoluene | <1 |
| 1,1-Dichloropropene | <1 | tert-Butylbenzene | <1 |
| Carbon tetrachloride | <1 | 1,2,4-Trimethylbenzene | <1 |
| Benzene | <0.35 | sec-Butylbenzene | <1 |
| Trichloroethene | <1 | p-Isopropyltoluene | <1 |
| 1,2-Dichloropropane | <1 | 1,3-Dichlorobenzene | <1 |
| Bromodichloromethane | <1 | 1,4-Dichlorobenzene | <1 |
| Dibromomethane | <1 | 1,2-Dichlorobenzene | <1 |
| 4-Methyl-2-pentanone | <10 | 1,2-Dibromo-3-chloropropane | <10 |
| cis-1,3-Dichloropropene | <1 | 1,2,4-Trichlorobenzene | <1 |
| Toluene | <1 | Hexachlorobutadiene | <1 |
| trans-1,3-Dichloropropene | <1 | Naphthalene | <1 |
| 1,1,2-Trichloroethane | <1 | 1,2,3-Trichlorobenzene | <1 |
| 2-Hexanone | <10 | | |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | EB06/GW15 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 06/16/16 | Lab ID: | 606286-05 |
| Date Analyzed: | 06/16/16 | Data File: | 061618.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 85 | 117 |
| Toluene-d8 | 101 | 91 | 108 |
| 4-Bromofluorobenzene | 100 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) | Compounds: | Concentration ug/L (ppb) |
|---|---|---|---|
| Dichlorodifluoromethane | <1 | 1,3-Dichloropropane | <1 |
| Chloromethane | <10 | Tetrachloroethene | <1 |
| Vinyl chloride | <0.2 | Dibromochloromethane | <1 |
| Bromomethane | <1 | 1,2-Dibromoethane (EDB) | <1 |
| Chloroethane | <1 | Chlorobenzene | <1 |
| Trichlorofluoromethane | <1 | Ethylbenzene | <1 |
| Acetone | <10 | 1,1,1,2-Tetrachloroethane | <1 |
| 1,1-Dichloroethene | <1 | m,p-Xylene | <2 |
| Hexane | <1 | o-Xylene | <1 |
| Methylene chloride | <5 | Styrene | <1 |
| Methyl t-butyl ether (MTBE) | <1 | Isopropylbenzene | <1 |
| trans-1,2-Dichloroethene | <1 | Bromoform | <1 |
| 1,1-Dichloroethane | <1 | n-Propylbenzene | <1 |
| 2,2-Dichloropropane | <1 | Bromobenzene | <1 |
| cis-1,2-Dichloroethene | <1 | 1,3,5-Trimethylbenzene | <1 |
| Chloroform | <1 | 1,1,2,2-Tetrachloroethane | <1 |
| 2-Butanone (MEK) | <10 | 1,2,3-Trichloropropane | <1 |
| 1,2-Dichloroethane (EDC) | <1 | 2-Chlorotoluene | <1 |
| 1,1,1-Trichloroethane | <1 | 4-Chlorotoluene | <1 |
| 1,1-Dichloropropene | <1 | tert-Butylbenzene | <1 |
| Carbon tetrachloride | <1 | 1,2,4-Trimethylbenzene | <1 |
| Benzene | <0.35 | sec-Butylbenzene | <1 |
| Trichloroethene | <1 | p-Isopropyltoluene | <1 |
| 1,2-Dichloropropane | <1 | 1,3-Dichlorobenzene | <1 |
| Bromodichloromethane | <1 | 1,4-Dichlorobenzene | <1 |
| Dibromomethane | <1 | 1,2-Dichlorobenzene | <1 |
| 4-Methyl-2-pentanone | <10 | 1,2-Dibromo-3-chloropropane | <10 |
| cis-1,3-Dichloropropene | <1 | 1,2,4-Trichlorobenzene | <1 |
| Toluene | <1 | Hexachlorobutadiene | <1 |
| trans-1,3-Dichloropropene | <1 | Naphthalene | <1 |
| 1,1,2-Trichloroethane | <1 | 1,2,3-Trichlorobenzene | <1 |
| 2-Hexanone | <10 | | |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | EB07/GW15 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 06/16/16 | Lab ID: | 606286-06 |
| Date Analyzed: | 06/16/16 | Data File: | 061619.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 85 | 117 |
| Toluene-d8 | 100 | 91 | 108 |
| 4-Bromofluorobenzene | 98 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) | Compounds: | Concentration ug/L (ppb) |
|---|---|---|---|
| Dichlorodifluoromethane | <1 | 1,3-Dichloropropane | <1 |
| Chloromethane | <10 | Tetrachloroethene | <1 |
| Vinyl chloride | <0.2 | Dibromochloromethane | <1 |
| Bromomethane | <1 | 1,2-Dibromoethane (EDB) | <1 |
| Chloroethane | <1 | Chlorobenzene | <1 |
| Trichlorofluoromethane | <1 | Ethylbenzene | <1 |
| Acetone | <10 | 1,1,1,2-Tetrachloroethane | <1 |
| 1,1-Dichloroethene | <1 | m,p-Xylene | <2 |
| Hexane | <1 | o-Xylene | <1 |
| Methylene chloride | <5 | Styrene | <1 |
| Methyl t-butyl ether (MTBE) | <1 | Isopropylbenzene | <1 |
| trans-1,2-Dichloroethene | <1 | Bromoform | <1 |
| 1,1-Dichloroethane | <1 | n-Propylbenzene | <1 |
| 2,2-Dichloropropane | <1 | Bromobenzene | <1 |
| cis-1,2-Dichloroethene | <1 | 1,3,5-Trimethylbenzene | <1 |
| Chloroform | <1 | 1,1,2,2-Tetrachloroethane | <1 |
| 2-Butanone (MEK) | <10 | 1,2,3-Trichloropropane | <1 |
| 1,2-Dichloroethane (EDC) | <1 | 2-Chlorotoluene | <1 |
| 1,1,1-Trichloroethane | <1 | 4-Chlorotoluene | <1 |
| 1,1-Dichloropropene | <1 | tert-Butylbenzene | <1 |
| Carbon tetrachloride | <1 | 1,2,4-Trimethylbenzene | <1 |
| Benzene | <0.35 | sec-Butylbenzene | <1 |
| Trichloroethene | <1 | p-Isopropyltoluene | <1 |
| 1,2-Dichloropropane | <1 | 1,3-Dichlorobenzene | <1 |
| Bromodichloromethane | <1 | 1,4-Dichlorobenzene | <1 |
| Dibromomethane | <1 | 1,2-Dichlorobenzene | <1 |
| 4-Methyl-2-pentanone | <10 | 1,2-Dibromo-3-chloropropane | <10 |
| cis-1,3-Dichloropropene | <1 | 1,2,4-Trichlorobenzene | <1 |
| Toluene | <1 | Hexachlorobutadiene | <1 |
| trans-1,3-Dichloropropene | <1 | Naphthalene | <1 |
| 1,1,2-Trichloroethane | <1 | 1,2,3-Trichlorobenzene | <1 |
| 2-Hexanone | <10 | | |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | EB09/GW15 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 06/16/16 | Lab ID: | 606286-07 |
| Date Analyzed: | 06/16/16 | Data File: | 061620.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 85 | 117 |
| Toluene-d8 | 101 | 91 | 108 |
| 4-Bromofluorobenzene | 101 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) | Compounds: | Concentration ug/L (ppb) |
|---|---|---|---|
| Dichlorodifluoromethane | <1 | 1,3-Dichloropropane | <1 |
| Chloromethane | <10 | Tetrachloroethene | <1 |
| Vinyl chloride | <0.2 | Dibromochloromethane | <1 |
| Bromomethane | <1 | 1,2-Dibromoethane (EDB) | <1 |
| Chloroethane | <1 | Chlorobenzene | <1 |
| Trichlorofluoromethane | <1 | Ethylbenzene | <1 |
| Acetone | <10 | 1,1,1,2-Tetrachloroethane | <1 |
| 1,1-Dichloroethene | <1 | m,p-Xylene | <2 |
| Hexane | <1 | o-Xylene | <1 |
| Methylene chloride | <5 | Styrene | <1 |
| Methyl t-butyl ether (MTBE) | <1 | Isopropylbenzene | <1 |
| trans-1,2-Dichloroethene | <1 | Bromoform | <1 |
| 1,1-Dichloroethane | <1 | n-Propylbenzene | <1 |
| 2,2-Dichloropropane | <1 | Bromobenzene | <1 |
| cis-1,2-Dichloroethene | <1 | 1,3,5-Trimethylbenzene | <1 |
| Chloroform | <1 | 1,1,2,2-Tetrachloroethane | <1 |
| 2-Butanone (MEK) | <10 | 1,2,3-Trichloropropane | <1 |
| 1,2-Dichloroethane (EDC) | <1 | 2-Chlorotoluene | <1 |
| 1,1,1-Trichloroethane | <1 | 4-Chlorotoluene | <1 |
| 1,1-Dichloropropene | <1 | tert-Butylbenzene | <1 |
| Carbon tetrachloride | <1 | 1,2,4-Trimethylbenzene | <1 |
| Benzene | <0.35 | sec-Butylbenzene | <1 |
| Trichloroethene | <1 | p-Isopropyltoluene | <1 |
| 1,2-Dichloropropane | <1 | 1,3-Dichlorobenzene | <1 |
| Bromodichloromethane | <1 | 1,4-Dichlorobenzene | <1 |
| Dibromomethane | <1 | 1,2-Dichlorobenzene | <1 |
| 4-Methyl-2-pentanone | <10 | 1,2-Dibromo-3-chloropropane | <10 |
| cis-1,3-Dichloropropene | <1 | 1,2,4-Trichlorobenzene | <1 |
| Toluene | <1 | Hexachlorobutadiene | <1 |
| trans-1,3-Dichloropropene | <1 | Naphthalene | <1 |
| 1,1,2-Trichloroethane | <1 | 1,2,3-Trichlorobenzene | <1 |
| 2-Hexanone | <10 | | |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | EB08/GW15 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 06/16/16 | Lab ID: | 606286-08 |
| Date Analyzed: | 06/16/16 | Data File: | 061621.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 85 | 117 |
| Toluene-d8 | 101 | 91 | 108 |
| 4-Bromofluorobenzene | 101 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) | Compounds: | Concentration ug/L (ppb) |
|---|---|---|---|
| Dichlorodifluoromethane | <1 | 1,3-Dichloropropane | <1 |
| Chloromethane | <10 | Tetrachloroethene | <1 |
| Vinyl chloride | <0.2 | Dibromochloromethane | <1 |
| Bromomethane | <1 | 1,2-Dibromoethane (EDB) | <1 |
| Chloroethane | <1 | Chlorobenzene | <1 |
| Trichlorofluoromethane | <1 | Ethylbenzene | <1 |
| Acetone | <10 | 1,1,1,2-Tetrachloroethane | <1 |
| 1,1-Dichloroethene | <1 | m,p-Xylene | <2 |
| Hexane | <1 | o-Xylene | <1 |
| Methylene chloride | <5 | Styrene | <1 |
| Methyl t-butyl ether (MTBE) | <1 | Isopropylbenzene | <1 |
| trans-1,2-Dichloroethene | <1 | Bromoform | <1 |
| 1,1-Dichloroethane | <1 | n-Propylbenzene | <1 |
| 2,2-Dichloropropane | <1 | Bromobenzene | <1 |
| cis-1,2-Dichloroethene | <1 | 1,3,5-Trimethylbenzene | <1 |
| Chloroform | <1 | 1,1,2,2-Tetrachloroethane | <1 |
| 2-Butanone (MEK) | <10 | 1,2,3-Trichloropropane | <1 |
| 1,2-Dichloroethane (EDC) | <1 | 2-Chlorotoluene | <1 |
| 1,1,1-Trichloroethane | <1 | 4-Chlorotoluene | <1 |
| 1,1-Dichloropropene | <1 | tert-Butylbenzene | <1 |
| Carbon tetrachloride | <1 | 1,2,4-Trimethylbenzene | <1 |
| Benzene | <0.35 | sec-Butylbenzene | <1 |
| Trichloroethene | <1 | p-Isopropyltoluene | <1 |
| 1,2-Dichloropropane | <1 | 1,3-Dichlorobenzene | <1 |
| Bromodichloromethane | <1 | 1,4-Dichlorobenzene | <1 |
| Dibromomethane | <1 | 1,2-Dichlorobenzene | <1 |
| 4-Methyl-2-pentanone | <10 | 1,2-Dibromo-3-chloropropane | <10 |
| cis-1,3-Dichloropropene | <1 | 1,2,4-Trichlorobenzene | <1 |
| Toluene | <1 | Hexachlorobutadiene | <1 |
| trans-1,3-Dichloropropene | <1 | Naphthalene | <1 |
| 1,1,2-Trichloroethane | <1 | 1,2,3-Trichlorobenzene | <1 |
| 2-Hexanone | <10 | | |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | Not Applicable | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 06/16/16 | Lab ID: | 06-1197 mb |
| Date Analyzed: | 06/16/16 | Data File: | 061608.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 85 | 117 |
| Toluene-d8 | 99 | 91 | 108 |
| 4-Bromofluorobenzene | 98 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) | Compounds: | Concentration ug/L (ppb) |
|---|---|---|---|
| Dichlorodifluoromethane | <1 | 1,3-Dichloropropane | <1 |
| Chloromethane | <10 | Tetrachloroethene | <1 |
| Vinyl chloride | <0.2 | Dibromochloromethane | <1 |
| Bromomethane | <1 | 1,2-Dibromoethane (EDB) | <1 |
| Chloroethane | <1 | Chlorobenzene | <1 |
| Trichlorofluoromethane | <1 | Ethylbenzene | <1 |
| Acetone | <10 | 1,1,1,2-Tetrachloroethane | <1 |
| 1,1-Dichloroethene | <1 | m,p-Xylene | <2 |
| Hexane | <1 | o-Xylene | <1 |
| Methylene chloride | <5 | Styrene | <1 |
| Methyl t-butyl ether (MTBE) | <1 | Isopropylbenzene | <1 |
| trans-1,2-Dichloroethene | <1 | Bromoform | <1 |
| 1,1-Dichloroethane | <1 | n-Propylbenzene | <1 |
| 2,2-Dichloropropane | <1 | Bromobenzene | <1 |
| cis-1,2-Dichloroethene | <1 | 1,3,5-Trimethylbenzene | <1 |
| Chloroform | <1 | 1,1,2,2-Tetrachloroethane | <1 |
| 2-Butanone (MEK) | <10 | 1,2,3-Trichloropropane | <1 |
| 1,2-Dichloroethane (EDC) | <1 | 2-Chlorotoluene | <1 |
| 1,1,1-Trichloroethane | <1 | 4-Chlorotoluene | <1 |
| 1,1-Dichloropropene | <1 | tert-Butylbenzene | <1 |
| Carbon tetrachloride | <1 | 1,2,4-Trimethylbenzene | <1 |
| Benzene | <0.35 | sec-Butylbenzene | <1 |
| Trichloroethene | <1 | p-Isopropyltoluene | <1 |
| 1,2-Dichloropropane | <1 | 1,3-Dichlorobenzene | <1 |
| Bromodichloromethane | <1 | 1,4-Dichlorobenzene | <1 |
| Dibromomethane | <1 | 1,2-Dichlorobenzene | <1 |
| 4-Methyl-2-pentanone | <10 | 1,2-Dibromo-3-chloropropane | <10 |
| cis-1,3-Dichloropropene | <1 | 1,2,4-Trichlorobenzene | <1 |
| Toluene | <1 | Hexachlorobutadiene | <1 |
| trans-1,3-Dichloropropene | <1 | Naphthalene | <1 |
| 1,1,2-Trichloroethane | <1 | 1,2,3-Trichlorobenzene | <1 |
| 2-Hexanone | <10 | | |

Date of Report: 06/22/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606286

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 606286-08 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result | Percent Recovery MS | Acceptance Criteria |
|---|---|---|---|---|---|
| Dichlorodifluoromethane | ug/L (ppb) | 50 | <1 | 104 | 55-137 |
| Chloromethane | ug/L (ppb) | 50 | <10 | 96 | 61-120 |
| Vinyl chloride | ug/L (ppb) | 50 | <0.2 | 98 | 61-139 |
| Bromomethane | ug/L (ppb) | 50 | <1 | 110 | 20-265 |
| Chloroethane | ug/L (ppb) | 50 | <1 | 99 | 55-149 |
| Trichlorofluoromethane | ug/L (ppb) | 50 | <1 | 100 | 71-128 |
| Acetone | ug/L (ppb) | 250 | <10 | 100 | 48-149 |
| 1,1-Dichloroethene | ug/L (ppb) | 50 | <1 | 94 | 71-123 |
| Hexane | ug/L (ppb) | 50 | <1 | 92 | 61-127 |
| Methylene chloride | ug/L (ppb) | 50 | <5 | 98 | 61-126 |
| Methyl t-butyl ether (MTBE) | ug/L (ppb) | 50 | <1 | 96 | 68-125 |
| trans-1,2-Dichloroethene | ug/L (ppb) | 50 | <1 | 98 | 72-122 |
| 1,1-Dichloroethane | ug/L (ppb) | 50 | <1 | 94 | 79-113 |
| 2,2-Dichloropropane | ug/L (ppb) | 50 | <1 | 119 | 58-132 |
| cis-1,2-Dichloroethene | ug/L (ppb) | 50 | <1 | 101 | 63-126 |
| Chloroform | ug/L (ppb) | 50 | <1 | 97 | 79-113 |
| 2-Butanone (MEK) | ug/L (ppb) | 250 | <10 | 97 | 69-123 |
| 1,2-Dichloroethane (EDC) | ug/L (ppb) | 50 | <1 | 86 | 70-119 |
| 1,1,1-Trichloroethane | ug/L (ppb) | 50 | <1 | 96 | 75-121 |
| 1,1-Dichloropropene | ug/L (ppb) | 50 | <1 | 94 | 67-121 |
| Carbon tetrachloride | ug/L (ppb) | 50 | <1 | 99 | 70-132 |
| Benzene | ug/L (ppb) | 50 | <0.35 | 95 | 78-108 |
| Trichloroethene | ug/L (ppb) | 50 | <1 | 95 | 75-109 |
| 1,2-Dichloropropane | ug/L (ppb) | 50 | <1 | 100 | 80-111 |
| Bromodichloromethane | ug/L (ppb) | 50 | <1 | 96 | 78-117 |
| Dibromomethane | ug/L (ppb) | 50 | <1 | 102 | 73-125 |
| 4-Methyl-2-pentanone | ug/L (ppb) | 250 | <10 | 110 | 79-123 |
| cis-1,3-Dichloropropene | ug/L (ppb) | 50 | <1 | 101 | 76-120 |
| Toluene | ug/L (ppb) | 50 | <1 | 90 | 73-117 |
| trans-1,3-Dichloropropene | ug/L (ppb) | 50 | <1 | 102 | 75-122 |
| 1,1,2-Trichloroethane | ug/L (ppb) | 50 | <1 | 97 | 81-116 |
| 2-Hexanone | ug/L (ppb) | 250 | <10 | 98 | 74-127 |
| 1,3-Dichloropropane | ug/L (ppb) | 50 | <1 | 96 | 80-113 |
| Tetrachloroethene | ug/L (ppb) | 50 | <1 | 93 | 72-113 |
| Dibromochloromethane | ug/L (ppb) | 50 | <1 | 96 | 69-129 |
| 1,2-Dibromoethane (EDB) | ug/L (ppb) | 50 | <1 | 99 | 79-120 |
| Chlorobenzene | ug/L (ppb) | 50 | <1 | 93 | 75-115 |
| Ethylbenzene | ug/L (ppb) | 50 | <1 | 94 | 71-120 |
| 1,1,1,2-Tetrachloroethane | ug/L (ppb) | 50 | <1 | 96 | 76-130 |
| m,p-Xylene | ug/L (ppb) | 100 | <2 | 97 | 63-128 |
| o-Xylene | ug/L (ppb) | 50 | <1 | 95 | 64-129 |
| Styrene | ug/L (ppb) | 50 | <1 | 99 | 56-142 |
| Isopropylbenzene | ug/L (ppb) | 50 | <1 | 98 | 77-122 |
| Bromoform | ug/L (ppb) | 50 | <1 | 85 | 49-138 |
| n-Propylbenzene | ug/L (ppb) | 50 | <1 | 96 | 74-117 |
| Bromobenzene | ug/L (ppb) | 50 | <1 | 95 | 70-121 |
| 1,3,5-Trimethylbenzene | ug/L (ppb) | 50 | <1 | 98 | 60-138 |
| 1,1,2,2-Tetrachloroethane | ug/L (ppb) | 50 | <1 | 96 | 79-120 |
| 1,2,3-Trichloropropane | ug/L (ppb) | 50 | <1 | 95 | 62-125 |
| 2-Chlorotoluene | ug/L (ppb) | 50 | <1 | 94 | 70-123 |
| 4-Chlorotoluene | ug/L (ppb) | 50 | <1 | 95 | 79-113 |
| tert-Butylbenzene | ug/L (ppb) | 50 | <1 | 99 | 78-124 |
| 1,2,4-Trimethylbenzene | ug/L (ppb) | 50 | <1 | 98 | 74-118 |
| sec-Butylbenzene | ug/L (ppb) | 50 | <1 | 98 | 77-118 |
| p-Isopropyltoluene | ug/L (ppb) | 50 | <1 | 100 | 64-132 |
| 1,3-Dichlorobenzene | ug/L (ppb) | 50 | <1 | 94 | 79-109 |
| 1,4-Dichlorobenzene | ug/L (ppb) | 50 | <1 | 94 | 78-110 |
| 1,2-Dichlorobenzene | ug/L (ppb) | 50 | <1 | 96 | 81-111 |
| 1,2-Dibromo-3-chloropropane | ug/L (ppb) | 50 | <10 | 99 | 69-129 |
| 1,2,4-Trichlorobenzene | ug/L (ppb) | 50 | <1 | 95 | 66-123 |
| Hexachlorobutadiene | ug/L (ppb) | 50 | <1 | 99 | 67-120 |
| Naphthalene | ug/L (ppb) | 50 | <1 | 102 | 62-140 |
| 1,2,3-Trichlorobenzene | ug/L (ppb) | 50 | <1 | 97 | 59-130 |

Date of Report: 06/22/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606286

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Percent Recovery LCSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | ug/L (ppb) | 50 | 103 | 105 | 54-149 | 2 |
| Chloromethane | ug/L (ppb) | 50 | 93 | 93 | 67-133 | 0 |
| Vinyl chloride | ug/L (ppb) | 50 | 98 | 99 | 70-119 | 1 |
| Bromomethane | ug/L (ppb) | 50 | 108 | 110 | 62-188 | 2 |
| Chloroethane | ug/L (ppb) | 50 | 100 | 100 | 66-149 | 0 |
| Trichlorofluoromethane | ug/L (ppb) | 50 | 102 | 103 | 70-132 | 1 |
| Acetone | ug/L (ppb) | 250 | 98 | 100 | 44-145 | 2 |
| 1,1-Dichloroethene | ug/L (ppb) | 50 | 98 | 98 | 75-119 | 0 |
| Hexane | ug/L (ppb) | 50 | 93 | 93 | 51-153 | 0 |
| Methylene chloride | ug/L (ppb) | 50 | 101 | 103 | 63-132 | 2 |
| Methyl t-butyl ether (MTBE) | ug/L (ppb) | 50 | 100 | 103 | 70-122 | 3 |
| trans-1,2-Dichloroethene | ug/L (ppb) | 50 | 100 | 102 | 76-118 | 2 |
| 1,1-Dichloroethane | ug/L (ppb) | 50 | 97 | 98 | 80-116 | 1 |
| 2,2-Dichloropropane | ug/L (ppb) | 50 | 123 | 128 | 62-141 | 4 |
| cis-1,2-Dichloroethene | ug/L (ppb) | 50 | 102 | 103 | 80-112 | 1 |
| Chloroform | ug/L (ppb) | 50 | 100 | 100 | 81-109 | 0 |
| 2-Butanone (MEK) | ug/L (ppb) | 250 | 99 | 98 | 53-140 | 1 |
| 1,2-Dichloroethane (EDC) | ug/L (ppb) | 50 | 89 | 89 | 79-109 | 0 |
| 1,1,1-Trichloroethane | ug/L (ppb) | 50 | 99 | 99 | 80-116 | 0 |
| 1,1-Dichloropropene | ug/L (ppb) | 50 | 96 | 98 | 78-112 | 2 |
| Carbon tetrachloride | ug/L (ppb) | 50 | 101 | 102 | 72-128 | 1 |
| Benzene | ug/L (ppb) | 50 | 97 | 97 | 81-108 | 0 |
| Trichloroethene | ug/L (ppb) | 50 | 97 | 100 | 77-108 | 3 |
| 1,2-Dichloropropane | ug/L (ppb) | 50 | 102 | 103 | 82-109 | 1 |
| Bromodichloromethane | ug/L (ppb) | 50 | 98 | 98 | 76-120 | 0 |
| Dibromomethane | ug/L (ppb) | 50 | 103 | 104 | 80-110 | 1 |
| 4-Methyl-2-pentanone | ug/L (ppb) | 250 | 110 | 112 | 59-142 | 2 |
| cis-1,3-Dichloropropene | ug/L (ppb) | 50 | 105 | 107 | 76-128 | 2 |
| Toluene | ug/L (ppb) | 50 | 92 | 92 | 83-108 | 0 |
| trans-1,3-Dichloropropene | ug/L (ppb) | 50 | 108 | 107 | 76-128 | 1 |
| 1,1,2-Trichloroethane | ug/L (ppb) | 50 | 98 | 97 | 82-110 | 1 |
| 2-Hexanone | ug/L (ppb) | 250 | 99 | 98 | 53-145 | 1 |
| 1,3-Dichloropropane | ug/L (ppb) | 50 | 98 | 99 | 83-110 | 1 |
| Tetrachloroethene | ug/L (ppb) | 50 | 96 | 95 | 78-109 | 1 |
| Dibromochloromethane | ug/L (ppb) | 50 | 100 | 101 | 63-140 | 1 |
| 1,2-Dibromoethane (EDB) | ug/L (ppb) | 50 | 101 | 100 | 82-118 | 1 |
| Chlorobenzene | ug/L (ppb) | 50 | 96 | 95 | 84-108 | 1 |
| Ethylbenzene | ug/L (ppb) | 50 | 96 | 96 | 83-111 | 0 |
| 1,1,1,2-Tetrachloroethane | ug/L (ppb) | 50 | 100 | 101 | 76-125 | 1 |
| m,p-Xylene | ug/L (ppb) | 100 | 100 | 99 | 84-112 | 1 |
| o-Xylene | ug/L (ppb) | 50 | 97 | 99 | 81-117 | 2 |
| Styrene | ug/L (ppb) | 50 | 103 | 103 | 83-121 | 0 |
| Isopropylbenzene | ug/L (ppb) | 50 | 100 | 101 | 81-122 | 1 |
| Bromoform | ug/L (ppb) | 50 | 93 | 93 | 40-161 | 0 |
| n-Propylbenzene | ug/L (ppb) | 50 | 96 | 98 | 81-115 | 2 |
| Bromobenzene | ug/L (ppb) | 50 | 95 | 96 | 80-113 | 1 |
| 1,3,5-Trimethylbenzene | ug/L (ppb) | 50 | 99 | 101 | 83-117 | 2 |
| 1,1,2,2-Tetrachloroethane | ug/L (ppb) | 50 | 98 | 98 | 79-118 | 0 |
| 1,2,3-Trichloropropane | ug/L (ppb) | 50 | 95 | 98 | 74-116 | 3 |
| 2-Chlorotoluene | ug/L (ppb) | 50 | 95 | 97 | 79-112 | 2 |
| 4-Chlorotoluene | ug/L (ppb) | 50 | 95 | 97 | 81-113 | 2 |
| tert-Butylbenzene | ug/L (ppb) | 50 | 99 | 101 | 81-119 | 2 |
| 1,2,4-Trimethylbenzene | ug/L (ppb) | 50 | 98 | 100 | 81-121 | 2 |
| sec-Butylbenzene | ug/L (ppb) | 50 | 97 | 99 | 83-123 | 2 |
| p-Isopropyltoluene | ug/L (ppb) | 50 | 100 | 102 | 81-122 | 2 |
| 1,3-Dichlorobenzene | ug/L (ppb) | 50 | 95 | 96 | 82-110 | 1 |
| 1,4-Dichlorobenzene | ug/L (ppb) | 50 | 94 | 95 | 81-105 | 1 |
| 1,2-Dichlorobenzene | ug/L (ppb) | 50 | 96 | 98 | 83-111 | 2 |
| 1,2-Dibromo-3-chloropropane | ug/L (ppb) | 50 | 102 | 101 | 62-133 | 1 |
| 1,2,4-Trichlorobenzene | ug/L (ppb) | 50 | 96 | 98 | 77-117 | 2 |
| Hexachlorobutadiene | ug/L (ppb) | 50 | 99 | 99 | 70-116 | 0 |
| Naphthalene | ug/L (ppb) | 50 | 102 | 105 | 72-131 | 3 |
| 1,2,3-Trichlorobenzene | ug/L (ppb) | 50 | 98 | 102 | 80-114 | 4 |

# Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

606286

# SAMPLE CHAIN OF CUSTODY

ME 06/16/16 ANA/ALG/VS

Page # 1 of 1

Send Report To LYNN GREEN

Company 40 SE 24th UNITA

Address PORTLAND OR 9721

City, State, ZIP EVERETT NW

Phone #503-452-55 Fax #

SAMPLERS (signature) Barb Lary

PROJECT NAME/NO. 435/4001-02

PO#

REMARKS

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

| Sample ID | Lab ID | Date Sampled | Time Sampled | Sample Type | # of containers | ANALYSES REQUESTED: TPH-Diesel | TPH-Gasoline | BTEX by 8021B | VOCs by8260 | SVOCs by 8270 | HFS | NWTPH HCID | | | | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EB01/GW15 | 01 A-H | 6/14/16 | 942 | GW | 9 | | | | X | | | X | | | | | | |
| EB03/GW10 | 02 A-I | | 1117 | | 9 | | | | X | | | X | | | | | | |
| EB04/GW10 | 03 A-I | | 1221 | | 9 | | | | X | | | X | | | | | | |
| EB05/GW15 | 04 A-I | | 1342 | | 6 | | | | X | | | X | | | | | | |
| EB06/GW15 | 05 A-I | | 1420 | | 9 | | | | X | | | X | | | | | | |
| EB07/GW15 | 06 A-I | | 1459 | | 9 | | | | X | | | X | | | | | | |
| EB09/GW15 | 07 A-I | | 1542 | | 9 | | | | X | | | X | | | | | | |
| EB08/GW15 | 08 A-F | ✓ | 1700 | ✓ | 6 | | | | X | | | X | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |


*Friedman & Bruya, Inc.*
*3012 16th Avenue West*
*Seattle, WA 98119-2029*
*Ph. (206) 285-8282*
*Fax (206) 283-5044*


FORMS\COC\COC.DOC

| | SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|---|
| Relinquished by: | Barb Lary | BARB LARY | ENW | 6/14/16 | 1900 |
| Received by: | | Nhan Phan | FEBT | 6/16/16 | 0740 |
| Relinquished by: | | | | | |
| Received by: | | | Samples received at 6 °C | | |

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

July 29, 2016

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the additional results from the testing of material submitted on June 16, 2016 from the 435-14001-02, F&BI 606286 project. There are 15 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Neil Woller, Paul Trone
ENW0729R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 16, 2016 by Friedman & Bruya, Inc. from the Evren Northwest 435-14001-02, F&BI 606286 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | Evren Northwest |
|---|---|
| 606286 -01 | EB01/GW15 |
| 606286 -02 | EB03/GW10 |
| 606286 -03 | EB04/GW10 |
| 606286 -04 | EB05/GW15 |
| 606286 -05 | EB06/GW15 |
| 606286 -06 | EB07/GW15 |
| 606286 -07 | EB09/GW15 |
| 606286 -08 | EB08/GW15 |

The NWTPH-Gx, NWTPH-Dx, and 8270D SIM analyses were requested outside of the holding time. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 07/29/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606286
Date Extracted: 07/22/16
Date Analyzed: 07/22/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx**

Results Reported as ug/L (ppb)

| Sample ID<br>Laboratory ID | Gasoline Range | Surrogate (% Recovery)<br>(Limit 51-134) |
|---|---|---|
| EB08/GW15 ht<br>606286-08 | <100 | 93 |
| Method Blank<br>06-1428 MB | <100 | 94 |

Date of Report: 07/29/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606286
Date Extracted: 07/19/16
Date Analyzed: 07/20/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND RESIDUAL RANGE USING METHOD NWTPH-Dx**

Results Reported as ug/L (ppb)

| Sample ID<br>Laboratory ID | Diesel Range<br>($C_{10}$-$C_{25}$) | Residual Range<br>($C_{25}$-$C_{36}$) | Surrogate<br>(% Recovery)<br>(Limit 41-152) |
|---|---|---|---|
| EB03/GW10 ht<br>606286-02 | 1,800 x | 2,600 | 91 |
| Method Blank<br>06-1449 MB2 | <50 | <250 | 79 |

## Analysis For Dissolved Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | EB03/GW10 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 07/22/16 | Lab ID: | 606286-02 |
| Date Analyzed: | 07/22/16 | Data File: | 606286-02.043 |
| Matrix: | Water | Instrument: | ICPMS1 |
| Units: | ug/L (ppb) | Operator: | AP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | 5.60 |
| Barium | 260 |
| Cadmium | <1 |
| Chromium | 3.81 |
| Lead | 1.23 |
| Mercury | <1 |
| Selenium | 1.47 |
| Silver | <1 |

## Analysis For Dissolved Metals By EPA Method 200.8

| | | | |
|---|---|---|---|
| Client ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | NA | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 07/22/16 | Lab ID: | I6-473 mb |
| Date Analyzed: | 07/22/16 | Data File: | I6-473 mb.038 |
| Matrix: | Water | Instrument: | ICPMS1 |
| Units: | ug/L (ppb) | Operator: | AP |

| Analyte: | Concentration ug/L (ppb) |
|---|---|
| Arsenic | <1 |
| Barium | <1 |
| Cadmium | <1 |
| Chromium | <1 |
| Lead | <1 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <1 |

## Analysis For Semivolatile Compounds By EPA Method 8270D SIM

| | | | |
|---|---|---|---|
| Client Sample ID: | EB03/GW10 ht | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 07/19/16 | Lab ID: | 606286-02 |
| Date Analyzed: | 07/20/16 | Data File: | 072017.D |
| Matrix: | Water | Instrument: | GCMS6 |
| Units: | ug/L (ppb) | Operator: | ya |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| Anthracene-d10 | 77 | 31 | 160 |
| Benzo(a)anthracene-d12 | 79 | 25 | 165 |

| Compounds: | Concentration ug/L (ppb) |
|---|---|
| Naphthalene | <0.03 |
| Acenaphthylene | <0.03 |
| Acenaphthene | <0.03 |
| Fluorene | <0.03 |
| Phenanthrene | <0.03 |
| Anthracene | <0.03 |
| Fluoranthene | <0.03 |
| Pyrene | <0.03 |
| Benz(a)anthracene | <0.03 |
| Chrysene | <0.03 |
| Benzo(a)pyrene | <0.03 |
| Benzo(b)fluoranthene | <0.03 |
| Benzo(k)fluoranthene | <0.03 |
| Indeno(1,2,3-cd)pyrene | <0.03 |
| Dibenz(a,h)anthracene | <0.03 |
| Benzo(g,h,i)perylene | <0.03 |

## Analysis For Semivolatile Compounds By EPA Method 8270D SIM

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | Not Applicable | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 07/19/16 | Lab ID: | 06-1454 mb |
| Date Analyzed: | 07/20/16 | Data File: | 072006.D |
| Matrix: | Water | Instrument: | GCMS6 |
| Units: | ug/L (ppb) | Operator: | ya |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| Anthracene-d10 | 94 | 31 | 160 |
| Benzo(a)anthracene-d12 | 106 | 25 | 165 |

| Compounds: | Concentration ug/L (ppb) |
|---|---|
| Naphthalene | <0.03 |
| Acenaphthylene | <0.03 |
| Acenaphthene | <0.03 |
| Fluorene | <0.03 |
| Phenanthrene | <0.03 |
| Anthracene | <0.03 |
| Fluoranthene | <0.03 |
| Pyrene | <0.03 |
| Benz(a)anthracene | <0.03 |
| Chrysene | <0.03 |
| Benzo(a)pyrene | <0.03 |
| Benzo(b)fluoranthene | <0.03 |
| Benzo(k)fluoranthene | <0.03 |
| Indeno(1,2,3-cd)pyrene | <0.03 |
| Dibenz(a,h)anthracene | <0.03 |
| Benzo(g,h,i)perylene | <0.03 |

## Analysis For PCBs By EPA Method 8082A

| | | | |
|---|---|---|---|
| Client Sample ID: | EB03/GW10 | Client: | Evren Northwest |
| Date Received: | 06/16/16 | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 07/21/16 | Lab ID: | 606286-02 |
| Date Analyzed: | 07/22/16 | Data File: | 072220.D |
| Matrix: | Water | Instrument: | GC7 |
| Units: | ug/L (ppb) | Operator: | MP |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| TCMX | 59 | 24 | 127 |

| Compounds: | Concentration ug/L (ppb) |
|---|---|
| Aroclor 1221 | <0.1 |
| Aroclor 1232 | <0.1 |
| Aroclor 1016 | <0.1 |
| Aroclor 1242 | <0.1 |
| Aroclor 1248 | <0.1 |
| Aroclor 1254 | <0.1 |
| Aroclor 1260 | <0.1 |
| Aroclor 1262 | <0.1 |
| Aroclor 1268 | <0.1 |

## Analysis For PCBs By EPA Method 8082A

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | Not Applicable | Project: | 435-14001-02, F&BI 606286 |
| Date Extracted: | 07/21/16 | Lab ID: | 06-1468 mb |
| Date Analyzed: | 07/22/16 | Data File: | 072219.D |
| Matrix: | Water | Instrument: | GC7 |
| Units: | ug/L (ppb) | Operator: | MP |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| TCMX | 71 | 24 | 127 |

| Compounds: | Concentration ug/L (ppb) |
|---|---|
| Aroclor 1221 | <0.1 |
| Aroclor 1232 | <0.1 |
| Aroclor 1016 | <0.1 |
| Aroclor 1242 | <0.1 |
| Aroclor 1248 | <0.1 |
| Aroclor 1254 | <0.1 |
| Aroclor 1260 | <0.1 |
| Aroclor 1262 | <0.1 |
| Aroclor 1268 | <0.1 |

Date of Report: 07/29/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606286

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 607370-01 (Duplicate)

| Analyte | Reporting Units | Sample Result | Duplicate Result | RPD (Limit 20) |
|---|---|---|---|---|
| Gasoline | ug/L (ppb) | <100 | <100 | nm |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Gasoline | ug/L (ppb) | 1,000 | 97 | 69-134 |

Date of Report: 07/29/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606286

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Percent Recovery LCSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|
| Diesel Extended | ug/L (ppb) | 2,500 | 83 | 81 | 58-134 | 2 |

Date of Report: 07/29/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606286

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 200.8

Laboratory Code: 606286-02 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Arsenic | ug/L (ppb) | 10 | 5.60 | 103 | 106 | 70-130 | 3 |
| Barium | ug/L (ppb) | 50 | 260 | 95 | 103 | 70-130 | 8 |
| Cadmium | ug/L (ppb) | 5 | <1 | 102 | 105 | 70-130 | 3 |
| Chromium | ug/L (ppb) | 20 | 3.81 | 93 | 90 | 70-130 | 3 |
| Lead | ug/L (ppb) | 10 | 1.23 | 77 | 77 | 70-130 | 0 |
| Mercury | ug/L (ppb) | 10 | <1 | 80 | 82 | 70-130 | 2 |
| Selenium | ug/L (ppb) | 5 | 1.47 | 94 | 93 | 70-130 | 1 |
| Silver | ug/L (ppb) | 5 | <1 | 82 | 82 | 70-130 | 0 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Arsenic | ug/L (ppb) | 10 | 108 | 85-115 |
| Barium | ug/L (ppb) | 50 | 101 | 85-115 |
| Cadmium | ug/L (ppb) | 5 | 106 | 85-115 |
| Chromium | ug/L (ppb) | 20 | 105 | 85-115 |
| Lead | ug/L (ppb) | 10 | 101 | 85-115 |
| Mercury | ug/L (ppb) | 10 | 98 | 85-115 |
| Selenium | ug/L (ppb) | 5 | 108 | 85-115 |
| Silver | ug/L (ppb) | 5 | 96 | 85-115 |

Date of Report: 07/29/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606286

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Percent Recovery LCSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|
| Naphthalene | ug/L (ppb) | 1 | 81 | 78 | 67-116 | 4 |
| Acenaphthylene | ug/L (ppb) | 1 | 86 | 86 | 65-119 | 0 |
| Acenaphthene | ug/L (ppb) | 1 | 82 | 82 | 66-118 | 0 |
| Fluorene | ug/L (ppb) | 1 | 85 | 85 | 64-125 | 0 |
| Phenanthrene | ug/L (ppb) | 1 | 83 | 83 | 67-120 | 0 |
| Anthracene | ug/L (ppb) | 1 | 86 | 84 | 65-122 | 2 |
| Fluoranthene | ug/L (ppb) | 1 | 96 | 92 | 65-127 | 4 |
| Pyrene | ug/L (ppb) | 1 | 86 | 90 | 62-130 | 5 |
| Benz(a)anthracene | ug/L (ppb) | 1 | 93 | 98 | 60-118 | 5 |
| Chrysene | ug/L (ppb) | 1 | 90 | 93 | 66-125 | 3 |
| Benzo(b)fluoranthene | ug/L (ppb) | 1 | 90 | 92 | 55-135 | 2 |
| Benzo(k)fluoranthene | ug/L (ppb) | 1 | 93 | 89 | 62-125 | 4 |
| Benzo(a)pyrene | ug/L (ppb) | 1 | 95 | 94 | 58-127 | 1 |
| Indeno(1,2,3-cd)pyrene | ug/L (ppb) | 1 | 98 | 96 | 36-142 | 2 |
| Dibenz(a,h)anthracene | ug/L (ppb) | 1 | 88 | 87 | 37-133 | 1 |
| Benzo(g,h,i)perylene | ug/L (ppb) | 1 | 91 | 91 | 34-135 | 0 |

Date of Report: 07/29/16
Date Received: 06/16/16
Project: 435-14001-02, F&BI 606286

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Percent Recovery LCSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|
| Aroclor 1016 | ug/L (ppb) | 2.5 | 67 | 73 | 37-136 | 9 |
| Aroclor 1260 | ug/L (ppb) | 2.5 | 69 | 80 | 41-135 | 15 |

# Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

606286

# SAMPLE CHAIN OF CUSTODY

HE 06/16/16 AroX/AroG/VOS

Send Report To LYNN GREEN

Company 40 SE 24th UNITA

Address PORTLAND OR 9721 / 435/4001-02

City, State, ZIP EVREN NW

Phone #503-452-5576 Fax #

SAMPLERS (signature) Barb Lary

PROJECT NAME/NO.

PO#

REMARKS

Page # 1 of 1

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

| Sample ID | Lab ID | Date Sampled | Time Sampled | Sample Type | # of containers | ANALYSES REQUESTED: TPH-Diesel | TPH-Gasoline | BTEX by 8021B | VOCs by 8260 | SVOCs by 8270 | HFS | NWTPH-HCID | PCB | PAHs | PG - DSS | DAS or VSS RRAA - 8 | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EB01/GW15 | 01 A-H | 6/14/16 | 942 | GW | 9 | | | | X | | | X | | | | | | ✓ - per LG 7/15/16 |
| EB03/GW10 | 02 A-I | \| | 1117 | \| | 9 | ✓ | | | X | | | X | ✓ | ✓ | | ✓ | | |
| EB04/GW10 | 03 A-I | \| | 1221 | \| | 9 | | | | X | | | X | | | | | | |
| EB05/GW15 | 04 A-I | \| | 1342 | \| | 6 | | | | X | | | X | | | | | | |
| EB06/GW15 | 05 A-I | \| | 1420 | \| | 9 | | | | X | | | X | | | | | | |
| EB07/GW15 | 06 A-I | \| | 1459 | \| | 9 | | | | X | | | X | | | | | | |
| EB09/GW15 | 07 A-I | \| | 1542 | \| | 9 | | | | X | | | X | | | | | | |
| EB08/GW15 | 08 A-H | ✓ | 1700 | ✓ | 6 | | | | X | | | X | | | ✓ | | | ✓ cancel - per LG 7/18/16 MG |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |


*Friedman & Bruya, Inc.*
*3012 16th Avenue West*
*Seattle, WA 98119-2029*
*Ph. (206) 285-8282*
*Fax (206) 283-5044*


FORMS\COC\COC.DOC

| | SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|---|
| Relinquished by: | Barb Lary | BARB LARY | ENW | 6/14/16 | 1900 |
| Received by: | | Nhan Phan | FEBT | 6/16/16 | 0940 |
| Relinquished by: | | | | | |
| Received by: | | | Samples received at 6 °C | | |

**Summary: DATA VALID? ☒YES**

# Analytical Laboratory Data Validation Check Sheet

Project Name: ODonnell and Clark  Project Number: 435-14001-04

Date of Review: 06/30/2020  Lab. Name: **F&BI**  Lab Batch ID #: 006213

Chain of Custody

| | | | |
|---|---|---|---|
| 1.) Are all requested analyses reported? | ☒yes | ☐no | |
| 2.) Were the requested methods used? | ☒yes | ☐no | |
| 3.) Trip blank submitted? | ☐yes | ☒no | |
| 4.) Field blank submitted? | ☐yes | ☒no | |
| Timing | | | |
| 5.) Samples extracted within holding times? | ☒yes | ☐no | |
| If not, are all discrepancies footnoted? | ☐yes | ☐no | |
| 6.) Analysis performed within holding times? | ☒yes | ☐no | |
| If not, are all discrepancies footnoted? | ☐yes | ☐no | |
| Quality Assurance/Quality Control | | | |
| 7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs) | ☒yes | ☐no | |
| 8.) Are all reported values above either MRL or MDL? | ☒yes | ☐no | |
| 9.) Are all values between the MDL & PQL tagged as trace? | ☐yes | ☐no | ☒NA |
| 10a.) Are reporting limits raised for other reason besides high analyte conc.? | ☐yes | ☒no | |
| 10b.) If so, are they footnoted? | ☐yes | ☐no | ☒NA |
| 11.) Lab method blank completed? | ☒yes | ☐no | |
| 12.) Lab, Field, or Trip Blank(s) report detections? | ☐yes | ☒no | |

If yes, indicate blank type, chemical(s) and concentration(s): _____

| | | | |
|---|---|---|---|
| 13.) For inorganics and metals, is there one method blank for each analyte? | ☒yes | ☐no | ☐NA |
| If not, are all discrepancies footnoted? | ☐yes | ☐no | |
| 14.) For VOCs, is there one method blank for each day of analysis? | ☐yes | ☐no | ☒NA |
| If not, are all discrepancies footnoted? | ☐yes | ☐no | |
| 15.) For SVOC's, is there one method blank for each extraction batch? | ☒yes | ☐no | ☐NA |
| If not, are all discrepancies footnoted? | ☐yes | ☐no | |
| Accuracy | | | |
| 16.) Is there a surrogate spike recovery for all VOC & SVOC samples? | ☒yes | ☐no | ☐NA |
| Do all surrogate spike recoveries meet accepted criteria? | ☒yes | ☐no | |
| If not, are all discrepancies footnoted? | ☐yes | ☐no | ☐NA |
| 17.) Is there a spike recovery for all Laboratory Control Samples? | ☒yes | ☐no | ☐NA |
| Do all LCS spike recoveries meet accepted criteria? | ☒yes | ☐no | |
| Precision | | | |
| 18.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits? | ☐yes | ☒no | ☐NA |
| 19.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | ☐yes | ☒no | ☐NA |
| If not, are all discrepancies footnoted? | ☒yes | ☐no | ☐NA |
| 20.) Do all RPD calculations for Field Duplicates meet accepted criteria? | ☐yes | ☐no | ☒NA |

Comments: b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

**Initial** Review By: CR  **Final** Review By: _____

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

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June 29, 2020

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

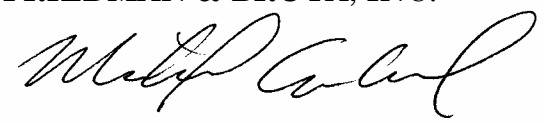
Dear Mr Green:

Included are the results from the testing of material submitted on June 13, 2020 from the 435-14001-04, F&BI 006213 project. There are 24 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Neil Woller, Paul Trone, Evan Bruggeman
ENW0629R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 13, 2020 by Friedman & Bruya, Inc. from the Evren Northwest 435-14001-04, F&BI 006213 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | Evren Northwest |
|---|---|
| 006213 -01 | SP01-200612-IS |
| 006213 -02 | SP01-200612-IS-REP01 |
| 006213 -03 | SP01-200612-IS-REP02 |
| 006213 -04 | SP02-200612-IS |

Samples SP01-200612-IS and SP02-200612-IS were sent to NVL for asbestos analysis. The report is enclosed.

All quality control requirements were acceptable.

Date of Report: 06/29/20
Date Received: 06/13/20
Project: 435-14001-04, F&BI 006213
Date Extracted: 06/15/20
Date Analyzed: 06/15/20

## RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

**THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT**

| Sample ID<br>Laboratory ID | Gasoline | Diesel | Heavy Oil | Surrogate (% Recovery)<br>(Limit 48-168) |
|---|---|---|---|---|
| SP01-200612-IS<br>006213-01 | ND | ND | D | 87 |
| SP01-200612-IS-REP01<br>006213-02 | ND | ND | D | 89 |
| SP01-200612-IS-REP02<br>006213-03 | ND | ND | D | 95 |
| SP02-200612-IS<br>006213-04 | ND | ND | ND | 89 |
| Method Blank<br>00-1402 MB | ND | ND | ND | 97 |

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 06/29/20
Date Received: 06/13/20
Project: 435-14001-04, F&BI 006213
Date Extracted: 06/17/20
Date Analyzed: 06/17/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

| Sample ID<br>Laboratory ID | Diesel Range<br>($C_{10}$-$C_{25}$) | Motor Oil Range<br>($C_{25}$-$C_{36}$) | Surrogate<br>(% Recovery)<br>(Limit 53-144) |
|---|---|---|---|
| SP01-200612-IS<br>006213-01 | 68 x | 900 | 67 |
| SP01-200612-IS-REP01<br>006213-02 | 62 x | 890 | 80 |
| SP01-200612-IS-REP02<br>006213-03 | 59 x | 930 | 81 |
| Method Blank<br>00-1409 MB | <5 | <25 | 91 |

## Analysis For Total Metals By EPA Method 6020B

| | | | |
|---|---|---|---|
| Client ID: | SP01-200612-IS | Client: | Evren Northwest |
| Date Received: | 06/13/20 | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/17/20 | Lab ID: | 006213-01 and 006213-01 x5 |
| Date Analyzed: | 06/17/20 | Data File: | 006213-01.150 and 006213-01 x5.057 |
| Matrix: | Soil | Instrument: | ICPMS2 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | SP |

| Analyte: | Concentration mg/kg (ppm) |
|---|---|
| Arsenic | 2.79 |
| Barium | 298 |
| Cadmium | 2.06 |
| Chromium | 42.5 |
| Lead | 77.8 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <5 |

## Analysis For Total Metals By EPA Method 6020B

| | | | |
|---|---|---|---|
| Client ID: | SP01-200612-IS-REP01 | Client: | Evren Northwest |
| Date Received: | 06/13/20 | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/17/20 | Lab ID: | 006213-02 and 006213-02 x5 |
| Date Analyzed: | 06/17/20 | Data File: | 006213-02.151 and 006213-02 x5.074 |
| Matrix: | Soil | Instrument: | ICPMS2 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | SP |

| Analyte: | Concentration mg/kg (ppm) |
|---|---|
| Arsenic | 2.80 |
| Barium | 285 |
| Cadmium | 1.87 |
| Chromium | 44.0 |
| Lead | 88.5 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <5 |

## Analysis For Total Metals By EPA Method 6020B

| | | | |
|---|---|---|---|
| Client ID: | SP01-200612-IS-REP02 | Client: | Evren Northwest |
| Date Received: | 06/13/20 | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/17/20 | Lab ID: | 006213-03 and 006213-03 x5 |
| Date Analyzed: | 06/17/20 | Data File: | 006213-03.152 and 006213-03 x5.076 |
| Matrix: | Soil | Instrument: | ICPMS2 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | SP |

| Analyte: | Concentration mg/kg (ppm) |
|---|---|
| Arsenic | 2.91 |
| Barium | 329 |
| Cadmium | 2.22 |
| Chromium | 45.3 |
| Lead | 100 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <5 |

## Analysis For Total Metals By EPA Method 6020B

| | | | |
|---|---|---|---|
| Client ID: | SP02-200612-IS | Client: | Evren Northwest |
| Date Received: | 06/13/20 | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/17/20 | Lab ID: | 006213-04 and 006213-04 x5 |
| Date Analyzed: | 06/17/20 | Data File: | 006213-04.153 and 006213-04 x5.077 |
| Matrix: | Soil | Instrument: | ICPMS2 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | SP |

| Analyte: | Concentration mg/kg (ppm) |
|---|---|
| Arsenic | 1.75 |
| Barium | 189 |
| Cadmium | <1 |
| Chromium | 27.3 |
| Lead | 20.4 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <5 |

## Analysis For Total Metals By EPA Method 6020B

| | | | |
|---|---|---|---|
| Client ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | NA | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/17/20 | Lab ID: | I0-351 mb |
| Date Analyzed: | 06/17/20 | Data File: | I0-351 mb.107 |
| Matrix: | Soil | Instrument: | ICPMS2 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | SP |

| Analyte: | Concentration mg/kg (ppm) |
|---|---|
| Arsenic | <1 |
| Barium | <1 |
| Cadmium | <1 |
| Chromium | <1 |
| Lead | <1 |
| Mercury | <1 |
| Selenium | <1 |
| Silver | <5 |

## Analysis for TCLP Metals By EPA Method 6020B and 1311

| | | | |
|---|---|---|---|
| Client ID: | SP01-200612-IS-REP02 | Client: | Evren Northwest |
| Date Received: | 06/13/20 | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/24/20 | Lab ID: | 006213-03 |
| Date Analyzed: | 06/26/20 | Data File: | 006213-03.077 |
| Matrix: | Soil/Solid | Instrument: | ICPMS2 |
| Units: | mg/L (ppm) | Operator: | SP |

| Analyte: | Concentration mg/L (ppm) | TCLP Limit |
|---|---|---|
| Lead | <0.05 | 5.0 |

## Analysis for TCLP Metals By EPA Method 6020B and 1311

| | | | |
|---|---|---|---|
| Client ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | NA | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/24/20 | Lab ID: | I0-367 mb |
| Date Analyzed: | 06/25/20 | Data File: | I0-367 mb.052 |
| Matrix: | Soil/Solid | Instrument: | ICPMS2 |
| Units: | mg/L (ppm) | Operator: | SP |

| Analyte: | Concentration mg/L (ppm) | TCLP Limit |
|---|---|---|
| Lead | <0.05 | 5.0 |

## Analysis For Semivolatile Compounds By EPA Method 8270E SIM

| | | | |
|---|---|---|---|
| Client Sample ID: | SP01-200612-IS | Client: | Evren Northwest |
| Date Received: | 06/13/20 | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/17/20 | Lab ID: | 006213-01 1/25 |
| Date Analyzed: | 06/17/20 | Data File: | 061706.D |
| Matrix: | Soil | Instrument: | GCMS6 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | VM |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| Anthracene-d10 | 88 d | 31 | 163 |
| Benzo(a)anthracene-d12 | 115 d | 24 | 168 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Naphthalene | <0.05 |
| Acenaphthylene | <0.05 |
| Acenaphthene | <0.05 |
| Fluorene | <0.05 |
| Phenanthrene | <0.05 |
| Anthracene | <0.05 |
| Fluoranthene | <0.05 |
| Pyrene | <0.05 |
| Benz(a)anthracene | <0.05 |
| Chrysene | <0.05 |
| Benzo(a)pyrene | <0.05 |
| Benzo(b)fluoranthene | <0.05 |
| Benzo(k)fluoranthene | <0.05 |
| Indeno(1,2,3-cd)pyrene | <0.05 |
| Dibenz(a,h)anthracene | <0.05 |
| Benzo(g,h,i)perylene | <0.05 |

## Analysis For Semivolatile Compounds By EPA Method 8270E SIM

| | | | |
|---|---|---|---|
| Client Sample ID: | SP01-200612-IS-REP01 | Client: | Evren Northwest |
| Date Received: | 06/13/20 | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/17/20 | Lab ID: | 006213-02 1/25 |
| Date Analyzed: | 06/17/20 | Data File: | 061707.D |
| Matrix: | Soil | Instrument: | GCMS6 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | VM |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| Anthracene-d10 | 80 d | 31 | 163 |
| Benzo(a)anthracene-d12 | 101 d | 24 | 168 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Naphthalene | <0.05 |
| Acenaphthylene | <0.05 |
| Acenaphthene | <0.05 |
| Fluorene | <0.05 |
| Phenanthrene | <0.05 |
| Anthracene | <0.05 |
| Fluoranthene | <0.05 |
| Pyrene | <0.05 |
| Benz(a)anthracene | <0.05 |
| Chrysene | <0.05 |
| Benzo(a)pyrene | <0.05 |
| Benzo(b)fluoranthene | <0.05 |
| Benzo(k)fluoranthene | <0.05 |
| Indeno(1,2,3-cd)pyrene | <0.05 |
| Dibenz(a,h)anthracene | <0.05 |
| Benzo(g,h,i)perylene | <0.05 |

## Analysis For Semivolatile Compounds By EPA Method 8270E SIM

| | | | |
|---|---|---|---|
| Client Sample ID: | SP01-200612-IS-REP02 | Client: | Evren Northwest |
| Date Received: | 06/13/20 | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/17/20 | Lab ID: | 006213-03 1/25 |
| Date Analyzed: | 06/17/20 | Data File: | 061708.D |
| Matrix: | Soil | Instrument: | GCMS6 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | VM |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| Anthracene-d10 | 77 d | 31 | 163 |
| Benzo(a)anthracene-d12 | 105 d | 24 | 168 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Naphthalene | <0.05 |
| Acenaphthylene | <0.05 |
| Acenaphthene | <0.05 |
| Fluorene | <0.05 |
| Phenanthrene | <0.05 |
| Anthracene | <0.05 |
| Fluoranthene | <0.05 |
| Pyrene | <0.05 |
| Benz(a)anthracene | <0.05 |
| Chrysene | <0.05 |
| Benzo(a)pyrene | <0.05 |
| Benzo(b)fluoranthene | <0.05 |
| Benzo(k)fluoranthene | <0.05 |
| Indeno(1,2,3-cd)pyrene | <0.05 |
| Dibenz(a,h)anthracene | <0.05 |
| Benzo(g,h,i)perylene | <0.05 |

## Analysis For Semivolatile Compounds By EPA Method 8270E SIM

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | Not Applicable | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/17/20 | Lab ID: | 00-1408 mb 1/5 |
| Date Analyzed: | 06/17/20 | Data File: | 061704.D |
| Matrix: | Soil | Instrument: | GCMS6 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | VM |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| Anthracene-d10 | 73 | 31 | 163 |
| Benzo(a)anthracene-d12 | 99 | 24 | 168 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Naphthalene | <0.01 |
| Acenaphthylene | <0.01 |
| Acenaphthene | <0.01 |
| Fluorene | <0.01 |
| Phenanthrene | <0.01 |
| Anthracene | <0.01 |
| Fluoranthene | <0.01 |
| Pyrene | <0.01 |
| Benz(a)anthracene | <0.01 |
| Chrysene | <0.01 |
| Benzo(a)pyrene | <0.01 |
| Benzo(b)fluoranthene | <0.01 |
| Benzo(k)fluoranthene | <0.01 |
| Indeno(1,2,3-cd)pyrene | <0.01 |
| Dibenz(a,h)anthracene | <0.01 |
| Benzo(g,h,i)perylene | <0.01 |

## Analysis For PCBs By EPA Method 8082A

| | | | |
|---|---|---|---|
| Client Sample ID: | SP01-200612-IS | Client: | Evren Northwest |
| Date Received: | 06/13/20 | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/16/20 | Lab ID: | 006213-01 1/6 |
| Date Analyzed: | 06/16/20 | Data File: | 061616.D |
| Matrix: | Soil | Instrument: | GC9 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | IJL |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| TCMX | 82 | 23 | 120 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Aroclor 1221 | <0.2 |
| Aroclor 1232 | <0.2 |
| Aroclor 1016 | <0.2 |
| Aroclor 1242 | <0.2 |
| Aroclor 1248 | 0.61 |
| Aroclor 1254 | <0.2 |
| Aroclor 1260 | <0.2 |
| Aroclor 1262 | <0.2 |
| Aroclor 1268 | <0.2 |

## Analysis For PCBs By EPA Method 8082A

| | | | |
|---|---|---|---|
| Client Sample ID: | SP01-200612-IS-REP01 | Client: | Evren Northwest |
| Date Received: | 06/13/20 | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/16/20 | Lab ID: | 006213-02 1/6 |
| Date Analyzed: | 06/16/20 | Data File: | 061617.D |
| Matrix: | Soil | Instrument: | GC9 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | IJL |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| TCMX | 87 | 23 | 120 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Aroclor 1221 | <0.02 |
| Aroclor 1232 | <0.02 |
| Aroclor 1016 | <0.02 |
| Aroclor 1242 | <0.02 |
| Aroclor 1248 | <0.02 |
| Aroclor 1254 | 0.066 |
| Aroclor 1260 | 0.058 |
| Aroclor 1262 | <0.02 |
| Aroclor 1268 | <0.02 |

## Analysis For PCBs By EPA Method 8082A

| | | | |
|---|---|---|---|
| Client Sample ID: | SP01-200612-IS-REP02 | Client: | Evren Northwest |
| Date Received: | 06/13/20 | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/16/20 | Lab ID: | 006213-03 1/6 |
| Date Analyzed: | 06/16/20 | Data File: | 061618.D |
| Matrix: | Soil | Instrument: | GC9 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | IJL |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| TCMX | 84 | 23 | 120 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Aroclor 1221 | <0.02 |
| Aroclor 1232 | <0.02 |
| Aroclor 1016 | <0.02 |
| Aroclor 1242 | <0.02 |
| Aroclor 1248 | <0.02 |
| Aroclor 1254 | 0.058 |
| Aroclor 1260 | 0.054 |
| Aroclor 1262 | <0.02 |
| Aroclor 1268 | <0.02 |

## Analysis For PCBs By EPA Method 8082A

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | Evren Northwest |
| Date Received: | Not Applicable | Project: | 435-14001-04, F&BI 006213 |
| Date Extracted: | 06/16/20 | Lab ID: | 00-1357 mb 1/6 |
| Date Analyzed: | 06/16/20 | Data File: | 061612.D |
| Matrix: | Soil | Instrument: | GC9 |
| Units: | mg/kg (ppm) Dry Weight | Operator: | IJL |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| TCMX | 86 | 23 | 120 |

| Compounds: | Concentration mg/kg (ppm) |
|---|---|
| Aroclor 1221 | <0.02 |
| Aroclor 1232 | <0.02 |
| Aroclor 1016 | <0.02 |
| Aroclor 1242 | <0.02 |
| Aroclor 1248 | <0.02 |
| Aroclor 1254 | <0.02 |
| Aroclor 1260 | <0.02 |
| Aroclor 1262 | <0.02 |
| Aroclor 1268 | <0.02 |

Date of Report: 06/29/20
Date Received: 06/13/20
Project: 435-14001-04, F&BI 006213

## QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 006213-03 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result (Wet Wt) | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Diesel Extended | mg/kg (ppm) | 500 | 580 | 83 | 77 | 64-133 | 7 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Diesel Extended | mg/kg (ppm) | 500 | 107 | 58-147 |

Date of Report: 06/29/20
Date Received: 06/13/20
Project: 435-14001-04, F&BI 006213

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 006257-01 x5 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result (Wet wt) | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg (ppm) | 10 | 14.4 | 73 b | 95 b | 75-125 | 26 b |
| Barium | mg/kg (ppm) | 50 | 76.9 | 83 | 87 | 75-125 | 5 |
| Cadmium | mg/kg (ppm) | 10 | <5 | 89 | 89 | 75-125 | 0 |
| Chromium | mg/kg (ppm) | 50 | 17.1 | 89 | 83 | 75-125 | 7 |
| Lead | mg/kg (ppm) | 50 | 20.7 | 88 | 89 | 75-125 | 1 |
| Mercury | mg/kg (ppm | 5 | <5 | 86 | 89 | 75-125 | 3 |
| Selenium | mg/kg (ppm) | 5 | <5 | 88 | 84 | 75-125 | 5 |
| Silver | mg/kg (ppm) | 10 | <5 | 81 | 83 | 75-125 | 2 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Arsenic | mg/kg (ppm) | 10 | 84 | 80-120 |
| Barium | mg/kg (ppm) | 50 | 93 | 80-120 |
| Cadmium | mg/kg (ppm) | 10 | 93 | 80-120 |
| Chromium | mg/kg (ppm) | 50 | 96 | 80-120 |
| Lead | mg/kg (ppm) | 50 | 96 | 80-120 |
| Mercury | mg/kg (ppm) | 5 | 97 | 80-120 |
| Selenium | mg/kg (ppm) | 5 | 96 | 80-120 |
| Silver | mg/kg (ppm) | 10 | 91 | 80-120 |

Date of Report: 06/29/20
Date Received: 06/13/20
Project: 435-14001-04, F&BI 006213

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TCLP METALS USING EPA METHODS 6020B AND 1311

Laboratory Code: 006376-01 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Lead | mg/L (ppm) | 1.0 | <1 | 89 | 92 | 75-125 | 3 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Lead | mg/L (ppm) | 1.0 | 92 | 80-120 |

Date of Report: 06/29/20
Date Received: 06/13/20
Project: 435-14001-04, F&BI 006213

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270E SIM

Laboratory Code: 006205-02 1/5 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result (Wet wt) | Percent Recovery MS | Percent Recovery MSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg (ppm) | 0.17 | 1.8 | 178 b | 317 b | 44-129 | 56 b |
| Acenaphthylene | mg/kg (ppm) | 0.17 | <0.01 | 100 | 111 | 52-121 | 10 |
| Acenaphthene | mg/kg (ppm) | 0.17 | 0.18 | 63 b | 74 b | 51-123 | 16 b |
| Fluorene | mg/kg (ppm) | 0.17 | 0.16 | 59 b | 69 b | 37-137 | 16 b |
| Phenanthrene | mg/kg (ppm) | 0.17 | 0.17 | 59 b | 68 b | 34-141 | 14 b |
| Anthracene | mg/kg (ppm) | 0.17 | <0.01 | 100 | 109 | 32-124 | 9 |
| Fluoranthene | mg/kg (ppm) | 0.17 | 0.038 | 69 b | 75 b | 16-160 | 8 b |
| Pyrene | mg/kg (ppm) | 0.17 | 0.25 | 171 b | 177 b | 10-180 | 3 b |
| Benz(a)anthracene | mg/kg (ppm) | 0.17 | 0.073 | 87 b | 98 b | 23-144 | 12 b |
| Chrysene | mg/kg (ppm) | 0.17 | 0.048 | 70 b | 71 b | 32-149 | 1 b |
| Benzo(b)fluoranthene | mg/kg (ppm) | 0.17 | 0.049 J | 90 b J | 86 b J | 23-176 | 5 b |
| Benzo(k)fluoranthene | mg/kg (ppm) | 0.17 | 0.011 J | 87 J | 88 J | 42-139 | 1 |
| Benzo(a)pyrene | mg/kg (ppm) | 0.17 | 0.034 J | 75 J | 80 J | 21-163 | 6 |
| Indeno(1,2,3-cd)pyrene | mg/kg (ppm) | 0.17 | 0.020 J | 52 J | 78 J | 23-170 | 40 vo |
| Dibenz(a,h)anthracene | mg/kg (ppm) | 0.17 | <0.01 J | 57 J | 69 J | 31-146 | 19 |
| Benzo(g,h,i)perylene | mg/kg (ppm) | 0.17 | 0.074 J | 45 b J | 76 b J | 37-133 | 51 b |

Laboratory Code: Laboratory Control Sample 1/5

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Naphthalene | mg/kg (ppm) | 0.17 | 75 | 58-121 |
| Acenaphthylene | mg/kg (ppm) | 0.17 | 74 | 54-121 |
| Acenaphthene | mg/kg (ppm) | 0.17 | 75 | 54-123 |
| Fluorene | mg/kg (ppm) | 0.17 | 77 | 56-127 |
| Phenanthrene | mg/kg (ppm) | 0.17 | 83 | 55-122 |
| Anthracene | mg/kg (ppm) | 0.17 | 82 | 50-120 |
| Fluoranthene | mg/kg (ppm) | 0.17 | 87 | 54-129 |
| Pyrene | mg/kg (ppm) | 0.17 | 90 | 53-127 |
| Benz(a)anthracene | mg/kg (ppm) | 0.17 | 95 | 51-115 |
| Chrysene | mg/kg (ppm) | 0.17 | 91 | 55-129 |
| Benzo(b)fluoranthene | mg/kg (ppm) | 0.17 | 80 | 56-123 |
| Benzo(k)fluoranthene | mg/kg (ppm) | 0.17 | 85 | 54-131 |
| Benzo(a)pyrene | mg/kg (ppm) | 0.17 | 71 | 51-118 |
| Indeno(1,2,3-cd)pyrene | mg/kg (ppm) | 0.17 | 68 | 49-148 |
| Dibenz(a,h)anthracene | mg/kg (ppm) | 0.17 | 78 | 50-141 |
| Benzo(g,h,i)perylene | mg/kg (ppm) | 0.17 | 79 | 52-131 |

Date of Report: 06/29/20
Date Received: 06/13/20
Project: 435-14001-04, F&BI 006213

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 006001-11 1/6 (Matrix Spike) 1/6

| Analyte | Reporting Units | Spike Level | Sample Result (Wet Wt) | Percent Recovery MS | Percent Recovery MSD | Control Limits | RPD (Limit 20) |
|---|---|---|---|---|---|---|---|
| Aroclor 1016 | mg/kg (ppm) | 0.25 | <0.02 | 70 | 74 | 44-107 | 6 |
| Aroclor 1260 | mg/kg (ppm) | 0.25 | <0.02 | 70 | 73 | 38-124 | 4 |

Laboratory Code: Laboratory Control Sample 1/6

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Acceptance Criteria |
|---|---|---|---|---|
| Aroclor 1016 | mg/kg (ppm) | 0.25 | 82 | 47-158 |
| Aroclor 1260 | mg/kg (ppm) | 0.25 | 104 | 69-147 |

# Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

June 22, 2020

Michael Erdahl
FRIEDMAN & BRUYA, INC.
3012 16th Ave. West
Seattle, WA 98119

**RE: Bulk Asbestos Fiber Analysis; NVL Batch # 2010104.00**

Client Project: 006213
Location: N-A

Dear Mr. Erdahl,

Enclosed please find test results for the 2 sample(s) submitted to our laboratory for analysis on 6/15/2020.

Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both **EPA 600/M4-82-020**, Interim Method for the Determination of Asbestos in Bulk Insulation Samples and **EPA 600/R-93/116** Method for the Determination of Asbestos in Bulk Building Materials.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by calibrated visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos.

The detection limit for the calibrated visual estimation is <1%, 400 point counts is 0.25% and 1000 point counts is 0.1%

Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

Nick Ly, Technical Director

Lab Code: 102063-0

Enc.: Sample Results

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: FRIEDMAN & BRUYA, INC.
Address: 3012 16th Ave. West
Seattle, WA 98119

**Attention: Mr. Michael Erdahl**
Project Location: N-A

**Batch #: 2010104.00**
Client Project #: 006213
Date Received: 6/15/2020
Samples Received: 2
Samples Analyzed: 2
Method: EPA/600/R-93/116
& EPA/600/M4-82-020

**Lab ID: 20071940** **Client Sample #: SP01-200612-IS**

Location: N-A

Comments: Unsure of correct layer sequence.

| | | | |
|---|---|---|---|
| **Layer 1 of 3** | **Description:** Beige crumbly material | | |
| | Non-Fibrous Materials: | Other Fibrous Materials:% | **Asbestos Type: %** |
| | Binder/Filler, Fine particles, Glass beads | Cellulose 10% | **Chrysotile 10%** |
| | | | **Amosite 8%** |
| **Layer 2 of 3** | **Description:** Black brittle material | | |
| | Non-Fibrous Materials: | Other Fibrous Materials:% | **Asbestos Type: %** |
| | Binder/Filler, Fine grains | None Detected ND | **None Detected ND** |
| **Layer 3 of 3** | **Description:** Orange/white brittle material | | |
| | Non-Fibrous Materials: | Other Fibrous Materials:% | **Asbestos Type: %** |
| | Binder/Filler, Fine grains | None Detected ND | **None Detected ND** |

**Lab ID: 20071941** **Client Sample #: SP02-200612-IS**

Location: N-A

| | | | |
|---|---|---|---|
| **Layer 1 of 2** | **Description:** Red brittle material | | |
| | Non-Fibrous Materials: | Other Fibrous Materials:% | **Asbestos Type: %** |
| | Binder/Filler, Fine grains | None Detected ND | **None Detected ND** |
| **Layer 2 of 2** | **Description:** Orange/white brittle material with debris | | |
| | Non-Fibrous Materials: | Other Fibrous Materials:% | **Asbestos Type: %** |
| | Binder/Filler, Fine grains, Organic debris | Cellulose 3% | **None Detected ND** |
| | Fine particles | | |

**Sampled by:** Client
**Analyzed by:** Tiffany Querry **Date:** 06/19/2020
**Reviewed by:** Nick Ly **Date:** 06/22/2020

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# ASBESTOS LABORATORY SERVICES

| | | | |
|---|---|---|---|
| **Company** | FRIEDMAN & BRUYA, INC. | **NVL Batch Number** | **2010104.00** |
| **Address** | 3012 16th Ave. West<br>Seattle, WA 98119 | **TAT** 5 Days **AH** No<br>**Rush TAT** | |
| **Project Manager** | Mr. Michael Erdahl | **Due Date** 6/22/2020 **Time** 2:30 PM | |
| **Phone** | (206) 285-8282 | **Email** merdahl@friedmanandbruya.com | |
| | | **Fax** (206) 283-5044 | |

**Project Name/Number:** 006213 **Project Location:** N-A

**Subcategory** PLM Bulk

**Item Code** ASB-02 EPA 600/R-93-116 Asbestos by PLM <bulk>

**Total Number of Samples** 2 Rush Samples

| | Lab ID | Sample ID | Description | A/R |
|---|---|---|---|---|
| 1 | 20071940 | SP01-200612-IS | | A |
| 2 | 20071941 | SP02-200612-IS | | A |

| | Print Name | Signature | Company | Date | Time |
|---|---|---|---|---|---|
| **Sampled by** | Client | | | | |
| **Relinquished by** | Drop Box | | | | |

| Office Use Only | Print Name | Signature | Company | Date | Time |
|---|---|---|---|---|---|
| **Received by** | Kelly AuVu | | NVL | 6/15/20 | 1430 |
| **Analyzed by** | Tiffany Querry | | NVL | 6/19/20 | |
| **Results Called by** | | | | | |
| ☐ **Faxed** ☐ **Emailed** | | | | | |

**Special Instructions:**

Date: 6/15/2020
Time: 3:26 PM
Entered By: Kelly AuVu

# SUBCONTRACT SAMPLE CHAIN OF 2010104

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER NVL

| PROJECT NAME/NO. | PO # |
|---|---|
| 006213 | A-262 |

REMARKS

Please Email Results

TURNAROUND TIME

☒ Standard TAT 5-day

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

| Sample ID | Lab ID | Date Sampled | Time Sampled | Matrix | # of jars | ANALYSES REQUESTED: Dioxins/Furans | EPH | VPH | Asbestos | | | | | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6/12/20 | | | | | | | | | | | | | | |
| SP01-200612-IS | | 6/15/20 | 1130 | brick | 1 | | | | X | | | | | | | |
| SP02-200612-IS | | ↓ | 1215 | ↓ | 1 | | | | X | | | | | | | |
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*Friedman & Bruya, Inc.*
*3012 16th Avenue West*
*Seattle, WA 98119-2029*
*Ph. (206) 285-8282*
*Fax (206) 283-5044*


| | SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|---|
| Relinquished by: | | Michael Erdahl | Friedman & Bruya | 6/15/20 | 1239 |
| Received by: | | Kelly Arthur | NVL | 6/15/2020 | 1430 DB |
| Relinquished by: | | | | | |
| Received by: | | | | | |

006213

# SAMPLE CHAIN OF CUSTODY

ME 06/13/20

Page # 1 of 1 ISM

Report To LYNN GREEN

Company EVREN NORTHWEST

Address 40 SE 24th UNIT A

City, State, ZIP PORTLAND, OR 97214

Phone 503-452-5561 Email

SAMPLERS (signature) Barb Lary

PROJECT NAME 435-14001-04

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [X] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

| Sample ID | Lab ID | Date Sampled | Time Sampled | Sample Type | # of Jars | NWTPH-Dx | NWTPH-Gx | BTEX EPA 8021 | NWTPH-HCID | VOCs EPA 8260 | PAHs EPA 8270 | PCBs EPA 8082 | RCRA 8 Metals | Asbestos | TCLP Lead | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | ANALYSES REQUESTED | | | | | | | | | | | |
| SP01-200612-1S | 01 | 6/12/20 | 1130 | SOIL | 1 | ◆ | | | X | ◆ | ◆ | ◆ | X | (X) | | | ■ per LG 6/22/20 ME (X) - per LG/ER |
| SP01-200612-1S-REP01 | 02 | | 1130 | | 1 | ◆ | | | X | ◆ | ◆ | ◆ | X | | | | 6/15/20 ME |
| SP01-200612-1S-REP02 | 03 | | 1130 | | 1 | ◆ | | | X | ◆ | ◆ | ◆ | X | | ■ | | ■ - per LG |
| SP02-200612-1S- | 04 | ↓ | 1215 | ↓ | 1 | | | | X | | | | X | (X) | | | 6/16/20 ME |
| | | | | | | | | | | | | | | | | | VOCs canceled per LG/ME 6/16/20 |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | Samples received at 12 °C |
| | | | | | | | | | | | | | | | | | |

| SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|
| Relinquished by: Barb Lary | BARB LARY | ENW | 6/12/20 | 1800 |
| Received by: | JAMES BRUYA | F&B | 6/13/20 | 1100 |
| Relinquished by: | | | | |
| Received by: | | | | |


*Friedman & Bruya, Inc.*
*3012 16th Avenue West*
*Seattle, WA 98119-2029*
*Ph. (206) 285-8282*