EVREN NORTHWEST INC.
environmental & natural resource consultants

FOCUSED PHASE II ENVIRONMENTAL SITE ASSESSMENT

VACANT PROPERTY

5403 and 5413 SE 122nd Avenue
Portland, Oregon

Prepared for:

Northwest Housing Alternatives
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Issued on:

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EVREN NORTHWEST, INC.
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This

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and its assignees

Issued November 1, 2021 *by:*

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List of Acronyms and Abbreviations

ASTM	American Society for Testing and Materials
bgs	below ground surface
CFSLs	clean fill screening levels
Client	Northwest Housing Alternatives
CMMP	contaminated media management plan
COIs	contaminants of Interest
COPCs	Constituents of Potential Concern
DRO	diesel-range organics
DU	decision unit
ENW	EVREN Northwest, Inc.
EPA	US Environmental Protection Agency
ESA	Environmental Site Assessment
F&BI	Freidman and Bruya, Inc.
GPR	ground penetrating radar
HCID	Hydrocarbon Identification
HDR	High Dynamic Range
ISM	Incremental Sampling Methodology
ITRC	Interstate Technology & Regulatory Council
mg/Kg	milligrams per kilogram
mg/L	milligrams per liter
mL	milliliter
MRL	method reporting limit
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
OWRD	Oregon Water Resources Department
OWSC	Oregon Water Science Center
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PID	photoionization detector
ppmv	parts per million by volume
RBC	risk-based concentration
RBDM	ODEQ's *Risk-Based Decision Making for the Remediation of Contaminated Sites* guidance document
RCRA	Resource Conservation Recovery Act
REC	recognized environmental condition
RRO	residual (oil)-range organics
SLRBCs	screening-level risk-based concentrations
SOW	scope of work
TCLP	toxicity characteristic leachate procedure
USGS	U.S. Geological Society
UST	underground storage tank
VOA	volatile organic analysis
VOC	volatile organic compound

1.0 Introduction

At the request of Northwest Housing Alternatives (Client), EVREN Northwest, Inc. (ENW) conducted this Focused Phase II Environmental Site Assessment (ESA) at the vacant property located at 5403 and 5413 SE 122nd Avenue in Portland, Oregon 97236 (subject property, see Figure 1 for Site Vicinity Map). This work supports ongoing environmental due diligence being conducted on behalf of Northwest Housing Alternatives, which is considering redeveloping the site. ENW's recent Phase I ESA at the subject property identified one or more environmental concerns in connection with the subject property. [1]

Mr. Nikolai Ursin of Northwest Housing Alternatives has requested ENW to perform the Phase II ESA to further assess the environmental concerns identified at the subject property. The Phase II ESA was performed in accordance with ENW's letter proposal prepared for Mr. Ursin on September 21, 2021. This report summarizes potential environmental concerns identified in connection with the site, and describes this Phase II ESA scope of work, findings, and conclusions.

2.0 Background

ENW conducted the Phase I ESA in August 2021, pursuant to the scope and limitations of American Society of Testing and Materials (ASTM) Standard Practice E 1527-13. [1]

The findings of the Phase I ESA indicated the subject property was historically used for residential and possibly commercial purposes from at least the 1940s through 2006. The subject property has been vacant since 2006. A geotechnical investigation in July 2021 reported the present of brick fragments and other construction/demolition debris in test pits advanced at the subject property. During a site reconnaissance survey in August 2021, ENW observed stained soils at the subject property. A mixed soil and wood chip pile and a smaller soil pile were also present.

Based on the Phase I ESA findings, ENW identified the following *recognized environmental conditions* (RECs) in connection with the subject property

- *A 2005 City Directory listing for 5395 SE 122nd Avenue was listed as Integrity Auto Inc, which, when mapped, is possibly associated with the subject site. Additionally, historical aerial photographs indicate the storage of several vehicles in the northern portion of the site. During [ENW's] site reconnaissance, several areas of stained soils were observed in the northeast* [area of the site]*. ENW recommends further investigation into the historical automobile practices on site, including an investigation into* [the area of] *stained soils of the northeast* [part of the site]*.*
- *During [the] site reconnaissance, a soil pile and mixed soil and wood chip pile were observed in the northeast area of the site. The sources of these soil piles are unknown and have the potential to have originated from an area of impacted materials. As such, ENW recommends further investigation into the soil piles on site.*

[1] ENW 2020. *Phase I Environmental Site Assessment, Vacant Property, 5403 and 5413 SE 122nd Avenue, Portland, Oregon*. August 23, 2021.

- *Records regarding how the former buildings on site were heated were not found, and based on the date of initial construction, it is possible that heating oil was used. Furthermore, a pipe was observed on the southwest part of the site. While of unknown use, there is a possibility that the pipe could be associated with a heating oil tank. ENW recommends a geophysical survey to assess for the possible presence of subsurface features of possible environmental concern (i.e., underground heating oil tanks, dry wells, etc.) on site.*
- *A geotechnical report from July 2021 indicated the presence of undocumented fill on site. Undocumented fill may contain hazardous constituents. As such, ENW recommends further investigation of the nature of fill soils on site.*

ENW presented a scope of work to Mr. Ursin to further assess the potential environmental conditions at the subject property. Mr. Ursin approved the Phase II ESA scope of work (SOW) via electronic mail on October 11, 2021. **This report is for the exclusive use of the Client and its legal counsels.**

2.1 Purpose

The purpose of this Focused P2ESA was to further investigate, through sampling and laboratory analysis, whether regulated hazardous substances and/or petroleum hydrocarbons are present at the subject property. ENW understands this information will support decision making prior to redevelopment of the subject property.

2.2 Scope of Work

ENW directed or completed the following Scope of Work (SOW) for this project:

- Performed a geophysical survey to identify buried features of potential environmental concern, and to clear sampling locations of underground utilities.
- Collected a composite soil sample from a stockpile of unknown origin.
- Collected surface soil samples from accessible areas of the site using incremental sampling methodology (ISM) developed by the Interstate Technology & Regulatory Council (ITRC; 2012). [2]
- Submitted samples to an independent laboratory for analysis of contaminants of Interest (COIs).
- Evaluated sample results against human health screening levels and other numeric criteria developed by the Oregon Department of Environmental Quality (ODEQ).
- Completed this report describing the above activities and findings.

[2] ITRC, 2012. Incremental Sampling Methodology, Technical and Regulatory Guidance: Prepared by the Interstate Technology & Regulatory Council Incremental Sampling Methodology Team. February 2012.

3.0 Site Description

3.1 Site and Vicinity General Description

The subject property occupies tax lots 9300 and 9401 of Multnomah County tax map 1S2E15AD, located in the northeast quarter of the southeast quarter of Section 15, Township 1 South, Range 2 East of the Willamette Meridian. The rectangular shaped subject property covers 0.59 acres and was vacant, undeveloped land at the time of this investigation. The City of Portland has zoned the subject property for mixed-use commercial development. Nearby and surrounding properties are a mix of residential and commercial land use. A site plan showing primary features of the site is presented as Figure 2.

3.2 Geographic Setting

The subject site is located within the U.S. Geological Survey Gladstone, OR 7.5-minute quadrangle, at an approximate elevation of 212 feet above mean sea level (see Figure 1). The subject property is generally level and the surrounding area slopes to the northwest.

3.3 Geology and Soils

The site is located within the Portland Basin of Oregon and southern Washington. The Portland Basin is located between the Cascade Range on the east and the Portland Hills on the west. The Portland Basin is underlain by fluvial and flood deposits of the Columbia River and Willamette River and their tributaries, and glacial outburst flood deposits of the late Pleistocene Missoula Floods which have been mapped at up to 400 feet elevation above mean sea level. Isolated monogenetic volcanic centers of late Miocene through Pleistocene age are scattered through the Portland area, including several local topographic prominences to the west, south, and east of the site, including Kelly Butte, a topographic prominence to the southwest of the site.

During the late Pleistocene (approximately 12,000 years ago), numerous catastrophic floods swept into the Portland Basin through the Columbia River Gorge to the east. The floods deposited great thicknesses of sediments within the basin. The subject site is located on coarse-grained facies of the catastrophic flood deposits. These sediments are typically composed of pebble to boulder gravel within a silt and coarse sand matrix in this area. These coarse sediments are poorly sorted and moderately to well rounded.[3]

Surface Water and Ground Water. Surface drainage in the surrounding areas is expected to mirror the northwest sloping local surface topography. There are no natural surface waters on site. The nearest surface water body is Johnson Creek located approximately three-quarter mile to the south. Johnson Creek continues along a generally westward path to its confluence with the Willamette River, six miles to the west.

According to the U.S. Geological Society (USGS) Oregon Water Science Center (OWSC), depth to ground water at the subject site is expected to be approximately 23 feet below ground surface. Ground water

[3] Madin, I.P., 1990, *Earthquake-Hazard Geology Maps of the Portland Metropolitan Area, Oregon: Text and Map Explanation*: Oregon Department of Geology and Mineral Industries Open-File Report 0-90-2, 21 pages plus 8 maps.

was not encountered in soil borings advanced to 20 feet below ground surface (bgs) during a recent geotechnical investigation of the subject property.

There were no records of water wells, geotechnical borings, or ground water monitoring wells at the subject property in databases maintained by the State of Oregon Water Resources Department (OWRD).

The direction of ground water flow in the subject area is generally expected to be to the northwest, based on the local and regional topography. However, multiple factors can affect the direction of ground-water flow in subsurface including, but not limited to, sediment/rock type, subsurface utility lines, buried river valleys, and stream beds, folds, fractures, and faults.

4.0 Methods

ENW developed and conducted the Scope of Work with the following objectives:

- To perform all work conducted at the subject site in a safe manner for technical personnel.
- To perform all work efficiently and cost-effectively, without interfering or otherwise affecting with the condition and operation of the property.
- To document information and data generated under this Scope of Work that is valid for the intended use.

Photographs documenting this assessment are included in Appendix A.

4.1 Preparation Activities

ENW performed the following activities prior to conducting site characterization activities:

Field Work Preparation. In-house Sampling and Analysis and Health and Safety Plans were prepared for the project.

One Call Notification. Prior to any subsurface site work, a call was placed with One Call Utility Notification Service to identify and locate all public utilities near each of the proposed sampling locations.

4.2 Geophysical Survey

The geophysical survey and interpretation of the geophysical data was performed on October 4, 2021, by Geopotential, Inc. of Clackamas, Oregon under ENW's oversight. The survey was performed to:

1) identify the presence or absence of abandoned heating oil underground storage tanks (USTs) and/or other features of potential environmental concern; and,
2) clear sampling locations of underground utilities.

The survey utilized geophysical instruments to identify subsurface magnetic "anomalies." Geophysical anomalies result from contrasts of geophysical signatures of subsurface materials but can also result from interference with surface and overhead features. Geophysical characteristics result from a variety of factors (e.g., density, distribution, porosity, fill placement, contrasts in soil composition, intergranular fluid composition and saturation, contaminant impacts, etc.), as well as buried artifacts, and similar anomalies

may be produced by different sources. Except where investigated by excavation, all anomalies and interpretations should be considered (somewhat) speculative.

Multiple instrument types were used during the survey to maximize recognition of contrasting subsurface materials. These included:

Aqua-Tronics Electronic Tracer - electromagnetic sensing equipment designed to identify subsurface anomalies. In the inductive mode, the equipment is used to sense metallic objects in the subsurface. A conductive mode allows for tracing electrical conduit and metallic pipelines.

Schonstedt Gradiometer (Magnetometer) – used as a complement to the Aqua-Tronics instrument, the magnetometer senses horizontal variations in the local magnetic field caused by buried ferrous metal objects such as USTs, drums, pipes, and debris-filled trenches. (Magnetic surveys can only detect ferrous metal objects. Interference caused by observed surface metal objects limits the accuracy of the survey. The anomalies produced by fences, power lines, cars, and buildings can easily mask an anomaly caused by an underground target.)

Mala High Dynamic Range (HDR) Ground Penetrating Radar (GPR) - GPR uses short impulses of high-frequency radio waves directed into the ground to acquire information about the subsurface. GPR can be used to accurately locate both metallic and non-metallic objects (e.g., USTs, utilities, and drums) from a few inches below the surface to depths of up to 30 feet. GPR may also be effective at delineating trenches and excavations.

Magnetic anomalies were marked with white paint on the ground and designated sequentially beginning with "MA01." Hand tools and a small excavator operated by ENW were used to investigate the source of magnetic or GPR signals suspected of posing an environmental concern.

4.3 Surface Soil Investigation

To assess surface soil conditions in areas of concern, ENW employed ISM,[4] a structured composite sampling protocol used to obtain a reliable estimate of the average contaminant concentration across a selected volume of soil (i.e., decision unit [DU]).

Sampling was conducted across accessible areas of exposed soil at the site. The accessible area sampled, identified as decision unit DU01 is presented on the Sample Location Diagram on Figure 3.

In accordance with ISM sampling protocol, ENW collected fifty equal-volume incremental samples from the DU using a decontaminated, stainless-steel hand auger. Increment locations were collected in a systematic random fashion (i.e., grid-like pattern) across the DU. Each incremental soil sample consisted of an approximate 40-gram soil sample collected from the upper six (6) inches of soil. During sample collection, gravel (>1/8-inch diameter) and debris (roots, twigs, bark) were removed prior to weighing and collection.

Soil increments from the DU were combined into a laboratory-provided one-gallon glass sample jar using clean nitrile gloves. The sample jar was sealed with a Teflon-lined lid, uniquely labelled, and preserved on ice pending transport to the laboratory. The sample was transported on the same day to the laboratory following chain-of-custody procedures.

[4] The ISM protocol is explained in detail in a February 2012 guidance document issued by the Interstate Technology Regulatory Council.

4.4 Discrete Surface Soil Sampling

ENW assessed surface soil staining in the northeast portion of the subject property using conventional discrete sampling methods on October 4, 2021. To assess "worse-case" surface soil conditions, up to four grab surface soil samples were collected from the area of stained surface soils and each grab sample was field-screened for the presence of soil impacts. The sample exhibiting the highest level of impacts based on photoionization detector (PID) reading and olfactory response was retained for laboratory analysis. From the location of highest impacts, a second soil sample was collected from approximately 6 inches beneath the zone of surface soil impact to assess the vertical extent of impact. Soils retained for laboratory analysis were placed into laboratory-supplied glass sample jars using clean Nitrile-gloved hands. A portion of the grab sample was retained for volatile organic compounds (VOCs) in accordance with Environmental Protection Agency (EPA) Method 5035. Samples for VOC analysis in were placed in 40 milliliter (mL) volatile organic analysis (VOA) containers with appropriate preservatives. Samples were uniquely labeled and preserved with artificial ice pending delivery to the laboratory.

4.5 Composite Stockpile Sampling

On October 4, 2021, ENW field personnel collected a composite sample of stockpiled soil materials at the site using conventional composite sampling methods. At the time of sampling, the stockpile contained approximately one (1) cubic yard of soil and fibrous or woody debris having the appearance of garden bed soil. Using a decontaminated, stainless-steel hand auger, six (6) grab samples were collected from the stockpile and composited in a Ziploc bag. The sample was gently homogenized and the homogenate was placed in a laboratory-supplied 8-ounce sample jar and sealed with a Teflon-lined lid. A portion of the sample was retained for VOC analysis by EPA method 5035 as described above. The samples were placed in a cooler with artificial ice pending delivery to the laboratory.

4.6 Laboratory Sub-sampling, Compositing, and Analytical Methods

Soil samples for this investigation were delivered to Friedman & Bruya, Inc. (F&BI) of Seattle, Washington for analysis under formal chain-of-custody protocol. Prior to analysis, F&BI processed the ISM samples in accordance with ITRC protocols (air dried, sieved, subsampled, and composited).

Samples were analyzed for select constituents using the analytical methods presented in Table 4-1. Copies of the F&BI and Fremont laboratory analytical reports and chain-of-custody documentation are provided in Appendix B.

Table 4-1. Analytical Methods

Analytical Method	Constituents	Soil
NWTPH-HCID	Northwest Total petroleum hydrocarbon identification (TPH-HCID)	All surface soil samples
NWTPH-Dx	Northwest Total petroleum hydrocarbon quantification analysis for diesel- and residual (oil)-range organics (DRO and RRO, respectively)	Soil samples with HCID suggesting the presence of DRO and/or RRO.
EPA 8260B	Volatile Organic Compounds (VOCs)	Select Surface Soil
EPA 8270E	Polynuclear aromatic hydrocarbons (PAHs)	Select DU and surface soil samples
EPA 6020B	Resource Conservation and Recovery Act (RCRA) 8 Total Metals (As, Ba, Cd, Cr, Pb, Hg, Se, Au)	All soil samples
EPA 8082 (GC-ECD)	Polychlorinated biphenyls (PCBs)	Select samples containing RRO

4.7 Cleanup Standards and Other Numeric Criteria

4.7.1 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.). The Soil Matrix Cleanup Score Sheet and Checklist for the site are presented in Appendix C. The score calculated for the site is 39, indicating that Soil Matrix Level 2 cleanup standards would apply to the site if closed under Soil Matrix Rules. 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 and may require remedial action. Concentrations of total petroleum hydrocarbons lower than their corresponding Soil Matrix Cleanup Level usually do not require any additional cleanup or risk management.

Risk-Based Cleanup. Risk-based cleanup standards are derived in accordance with ODEQ's *Risk-Based Decision Making for the Remediation of Contaminated Sites* (RBDM) guidance document for:

- Underground storage tanks regulated under the Cleanup Rules for Leaking Petroleum Underground Storage Tank Systems (OAR 340-122-0205 through 340-122-0360).
- Other sources of contamination regulated under the Hazardous Substance Remedial Action Rules (OAR 340-122-0010 through 340-122-0115).

Risk-based concentrations (RBCs) are based on Oregon 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, below the constituent threshold concentration at which health impacts would occur. 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.
- Those constituents identified by initial screening as exceeding their SLRBC should be further evaluated through a risk-based assessment, which evaluates site-specific exposure pathways and receptors against generic ODEQ-provided RBCs.

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[5]. ODEQ does not require cleanup for metals concentrations below default background concentrations.
- ***Clean Fill Screening Levels.*** Analytical data for organics were compared to clean fill screening levels (CFSLs) for upland sites established by the ODEQ[6]. ODEQ does not require materials in which contaminant concentrations are less than or equal to CFSLs to be regulated as a solid waste. Rather, these materials may be placed at upland locations that are far enough away from a surface water body, or where there are sufficient controls to avoid erosion into surface water. CFSLs are used to determine if impacts to soil may require future management and are not used for risk screening.

In reviewing Table 1, there are instances where a constituent was not detected but the detection limit is greater than the screening level. ODEQ guidance states that in general, such cases will be considered acceptable proof that the contaminant is not present in that medium. These instances are noted with a "(Y)" in the final column of the table.

5.0 Findings

The findings of this Focused Phase II ESA are presented in this section. The results of laboratory analysis of the incremental surface soil sample, stockpile sample, and the ISM sample from DU01 are summarized in Table 1 (following the Tables Tab after text). Site photographs of field activities are included in Appendix A. Copies of the F&BI Laboratory Reports are included in Appendix B.

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

[6] ODEQ. July 2014. Clean Fill Determinations: Internal Management Directive, last updated February 21, 2019, by Heather Kuoppamaki.

5.1 Geophysical Survey

Results of the geophysical survey identified five (5) magnetic anomalies (MA01 through MA05), which are identified on Figure 3 and described as follows:

- **MA01 (metal angle iron)** was discovered beneath one of the soil/wood chip piles. No further investigation was deemed necessary.
- **MA02 (wire shelves)** was a magnetic signal under a pile of debris measuring 3' x 3.' No further investigation was deemed necessary.
- **MA03 (buried metal)** produced a signal approximately 1-foot square cased by a piece of buried metal. No further investigation was deemed warranted.
- **MA04 (Possible septic)** produced a 5' x 5' signal with a magnetic high point near a connection of concrete and steel. A probe was able to penetrate the center of the object. In general, former residential septic systems pose no significant sources of hazardous substances and/or petroleum hydrocarbons. Certain relic structures can pose impediments to site development activities. As suggested in ENW's Phase I ESA, septic systems should be properly removed/decommissioned in accordance with the local or state regulating agencies.
- **MA05 (baking pan)** was a 2' x 2' signal. A household kitchen pan was unearthed from just below the surface. No further investigation was deemed warranted.

Based on the above findings, the geophysical survey revealed no active or abandoned heating oil tanks or any other features of environmental concern at the subject property.

5.2 Soil Sample Locations and General Subsurface Conditions

A summary of surface soil, composite, and ISM samples collected during this Phase II ESA is presented on Table 5-1.

Table 5-1. Soil Sample Summary

Sample Location ID	Date Sampled	Depth Sampled (feet)	Sampled By	Location
DU01	10/4/2021	0.5	ENW	Decision Unit 1 - Accessible areas of subject site
COMP01	10/4/2021	--	ENW	Small soil stockpile in north-central portion of site
GS01	10/4/2021	0.5	ENW	Stained surface soil in NE corner of site

Field screening results of stained areas in the northeast portion of the site (subject of sample GS01) had a PID response of 144.5 parts per million by volume (ppmv), suggesting soil impacts are present in surface soils. The highest impacts were suggested near the property boundary, next to a garage on the adjoining residential property. Various chemical containers were noted nearby. Due to rocky conditions, field personnel could not delineate the vertical extent of surface impacts with available hand tools.

5.3 Laboratory Results

Laboratory analytical results are presented on Table 1 (behind the 'Table' tab following text) and described below. Pertinent findings were as follows:

Petroleum Hydrocarbons. Qualitative analysis by NWTPH-HCID detected the presence of diesel- and heavy-oil range hydrocarbons in the samples from DU01 and GS01. Both samples were further analyzed by NWTPH-Dx and results were as follows:

- DRO was detected in samples DU01 and GS01 at 26 milligrams per kilogram (mg/Kg) and 2,100 mg/Kg, respectively. F&BI noted the pattern of peaks in the samples are not indicative of the diesel fuel standard used for quantitation. The concentration in sample GS01 exceeds ODEQ's Soil Matrix Level II soil cleanup level of 500 mg/Kg and the SLRBC of 1,100 mg/Kg, based on the "direct contact" exposure pathway. DRO is GS01 also exceeds ODEQ's CFSL of 90 mg/Kg.
- RRO was detected in DU01 and GS01 at 250 mg/Kg and 58,000 mg/Kg, respectively. F&BI also noted the pattern of peaks in GS01 are not indicative of the standard used for quantitation. RRO in GS01 exceeds ODEQ's Level II Soil Matrix Cleanup level, SLRBC, and CFSL.

Total Metals. All soil samples were tested for total RCRA 8 metals (EPA Method 6020).

- Total arsenic was detected in all samples at concentrations ranging from 1.29 mg/Kg to 44.1 mg/Kg (GS01). Although all results exceed ODEQ's conservative SLRBC of 0.43 mg/Kg, only the sample from GS01 also exceeds ODEQ's published regional default background levels in soil for the Portland Basin (8.8 mg/Kg), suggesting arsenic levels in the surface soil at GS01 has been anthropogenically enriched.
- Cadmium concentrations in DU01 and GS01 exceeds ODEQ's regional default background concentration and CFSL, suggesting cadmium is enriched in soils at the site.
- Lead was detected in all samples at concentrations ranging from 9.85 mg/Kg (COMP01) to 197 mg/Kg (DU01). The results for the samples from DU01 and GS01 both exceeded the ODEQ's SLRBC (30 mg/Kg) and the published background concentration for lead in soils of the Portland Basin (28 mg/Kg), suggesting lead is possibly enriched in these areas.
- Barium, cadmium, and chromium were either not detected above the laboratory method reporting limit (MRL) or their concentrations were less than their respective SLRBCs and regional background concentrations.
- Mercury, selenium, and silver were not detected above laboratory MRLs in any of the samples.

Leachable Metals. Due to the concentration of total lead in sample DU01 was ≥ 20 times the toxicity characteristic (TC) of leachable lead, the soil sample from GS01 was further analyzed for leachability by EPA's Toxicity Characteristic Leachate Procedure (TCLP). Results are summarized in Table 2 and results suggest that leachable lead was below the TC of 5 milligrams per liter (mg/L), suggesting the lead-impacted soil is not characteristic of a RCRA hazardous waste under federal and state regulation, if excavated in the future.

DRO- and RRO-related Volatile Organic Compounds. Since diesel and heavy oil petroleum mixtures may be associated with volatile constituents, the sample from GS01 was further analyzed for VOCs by EPA Method 8260B.

- Ethylbenzene (0.56 mg/Kg) was detected at a concentration greater than its SLRBC and CFSL.
- Naphthalene (3.5 mg/Kg) exceeded its SLRBC and CFSL.
- Iso-propylbenzene at 0.44 mg/Kg, toluene at 0.33 mg/Kg, 1,2,4-trimethylbenzene at 9.7 mg/Kg, 1,3,5-trimethylbenzene at 6.3 mg/Kg, and xylenes at 15 mg/Kg were detected below their respective SLRBCs.

DRO- and RRO-related Semi-Volatile Organic Compounds. Since some DRO mixtures may contain polynuclear aromatic hydrocarbons (PAHs), and RRO petroleum mixtures may contain PCBs, samples DU01 and GS01 were further analyzed by EPA Methods 8270SIM for PAHs and 8082 for PCBs. The pertinent results are summarized below:

- PCBs as Aroclors were not detected above laboratory MRLs in either sample.
- Benzo(a)pyrene in the sample from DU01 at 0.16 mg/Kg was greater than its SLRBC of 0.11 mg/Kg.
- Benz(a)anthracene, fluoranthene, and pyrene were detected in both DU01 and GS01 at concentrations less than their respective SLRBCs.
- Anthracene, benzo(b)fluoranthene, chrysene and fluorene were detected in one or more sample locations, but were below their respective SLRBCs.

5.3.1 Quality Assurance/Quality Control Review

A review of the laboratory report indicates samples were analyzed within appropriate quality assurance/quality control procedures and specified holding times (see Appendix B for laboratory data validation form completed for this project).

6.0 Preliminary Screening for Risk Drivers

To better understand potential risk drivers and environmental liabilities posed by soil impacts at the site, a preliminary risk screening was conducted using the results (data) from this Focused Phase II ESA.

6.1 Risk Drivers in Soil

Table 1 identified DRO, RRO, ethylbenzene, naphthalene, arsenic, lead, and benzo(a)pyrene as constituents of potential concern (COPC) in soil (constituents exceeding their respective SLRBCs).

In table 3, DRO, RRO, ethylbenzene, naphthalene, arsenic, lead, and benzo(a)pyrene are further evaluated against generic default RBCs developed for several receptor populations and exposure pathway scenarios given in *Appendix A - Table of Risk-Based Concentrations* in ODEQ's RBDM guidance document. As indicated in Table 3, constituent concentrations in soil detected at the subject property could pose the following potentially unacceptable human health risks:

- ***Soil Ingestion, Dermal Contact, and Inhalation***: Activities resulting from direct contact with residual soil contamination may result in chemical intake from a variety of incidental exposure pathways. Impacted soils are generally considered an exposure risk for the residential and occupational receptors if contaminants are present in shallow soils (i.e., less than three [3] feet

BLS). Since soil analytical data shows detectable contaminants near the surface, exposure associated with incidental ingestion, inhalation, and dermal contact appears complete at the site.

- Soil impacts may pose a potential unacceptable human health risk at the site for this pathway to a potential future residential, urban residential, occupational, and/or construction worker receptor.

- ***Leaching of Soil Contaminants to Groundwater*.** Lead in soil exceeds the RBCs for this pathway for the residential, urban residential, and occupational receptors. Impact to ground water from soil contamination generally occurs indirectly as a result of contaminants leaching from a primary contaminant source. Dissolved ground water contaminants may in turn be ingested directly or volatilized to indoor and/or outdoor air. Factors affecting the leaching potential of soil include annual precipitation rate, soil porosity and other physical and chemical conditions. This pathway should be considered whenever vadose zone contamination is found overlying an aquifer that is currently used or is reasonably likely to be used for drinking water.

  - The subject property and vicinity are provided domestic water by the City of Portland municipal water supply. The absence of a well onsite further suggests ground water is unlikely being used for domestic purposes. Therefore, this pathway is ***likely incomplete***.

6.2 Soil Disposal Considerations

In addition to human health risk, Table 1 indicates one or more contaminants exceed their respective CFSL. Soil containing impacts above the CFSL may not quality as unrestricted clean fill and therefore may require special management and disposal during future construction activities. Additionally, soil containing solid waste may not qualify as unrestricted clean fill. Further testing may be required before determining proper handling and disposal consistent with local, state, and federal regulations.

7.0 Conclusions and Recommendations

The findings of the Focused Phase II ESA have led ENW to the following conclusions:

- Performance of a geophysical survey of the site did not suggest the presence any existing USTs or underground disturbances suggestive of former tanks at the subject property. One magnetic anomaly was suggestive of an abandoned septic tank and while not considered a to pose an environmental concern at this time, based historical site use, should be property decommissioned in accordance with rules and regulations promulgated by the local agencies.
- Based on soil sample results, soil impacts have been confirmed in surface soil at the subject property at the gravel surfaces across the site (DU01) and in the area of stained surface soil in the northeast part of the site (GS01). Residual soil impacts exceed generic RBCs for *Soil Ingestion, Dermal Contact, and Inhalation* pathway for a potential residential, urban residential, and/or occupational receptor and/or a future construction worker. This potential risk can be mitigated through a limited cleanup action prior to construction, and/or the development of a Contaminated Media Management Plan or a combination of the two.

Based on results of this Focused Phase II ESA, ENW recommends the following:

- Since site surface soils do not qualify as unrestricted clean fill, and since there is possible risk of exposure of impacted surface soil to future construction works, ENW recommends a Contaminated Media Management Plan (CMMP) be developed prior to any construction and/or utility work on the subject property. The CMMP should describe the type and location of contamination, methods for managing contaminated media, and disposal requirements.
- Prior or during proposed site development, obvious areas of surface soil impacts should be excavated, characterized, and disposed in accordance with state and local regulations. Confirmation soil samples should be collected from the limits of the excavations to document that petroleum-impacted soil has been adequately removed and the site should be reassessed for residual risk.

We recommend this report is kept as part of the permanent property records.

8.0 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 site closure does not extend to the presence of the following conditions unless they were the express concerns of contacted personnel, report and literature authors or the work scope.

- Naturally occurring toxic or hazardous substances in the subsurface soils, geology, and water,
- Toxicity of substances common in current habitable environments, such as stored chemicals, products, building materials and consumables,
- Contaminants or contaminant concentrations that are not a concern now but may be under future regulatory standards,
- 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 have 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. It is possible, despite the use of reasonable care and interpretation, that ENW may have failed to identify regulation violations related to the presence of hazardous substances other than those specifically mentioned at the closure site. 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		DU01	COMP01	GS01	Maximum Soil Concentration (remaining soil)	Soil Matrix Cleanup Level	ODEQs Screening-Level Risk-Based Concentrations SLRBCs[1] (Soil)	Background Concentrations (Regional Default)	Clean Fill Screening Levels or Background Concentrations (as applicable)	Exceeds ODEQs Screening-Level SLRBCs (Soil) and/or Soil Matrix Cleanup Level
Sample ID		DU01-211004-IS-0.5	COMP01-211004	GS01-0.5						
Date Sampled		10/4/2021	10/4/2021	10/4/2021						
Depth Sampled (feet)		0.5	--	0.5						
Sampled By		ENW	ENW	ENW				Portland Basin		TRUE OR Y FALSE OR N
Location		Decision Unit 1 - Accessible areas of subject site	Small soil stockpile in north-central portion of site	Stained surface soil in NE corner of site						
Constituent of Interest	Note	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	---	0.023	(Y)
Bromodichloromethane	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.002	---	0.002	(Y)
Bromoform	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.046	---	0.046	(Y)
Bromomethane	nc, v	---	---	<0.5 (ND)	<0.5 (ND)	NE	0.083	---	0.083	(Y)
Carbon tetrachloride	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.013	---	0.013	(Y)
Chlorobenzene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	5.8	---	2.4	N
Chlorodibromomethane (dibromochloromethane)	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.0024	---	0.0024	(Y)
Chloroethane (ethyl chloride)	nc, v	---	---	<0.5 (ND)	<0.5 (ND)	NE	310	---	310	N
Chloroform	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.0034	---	0.0034	(Y)
Chloromethane	nc, v	---	---	<0.5 (ND)	<0.5 (ND)	NE	2.2	---	2.2	N
1,2-Dichlorobenzene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	36	---	0.92	N
1,4-Dichlorobenzene	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.057	---	0.057	N
1,1-Dichloroethane	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.044	---	0.044	(Y)
1,1-Dichloroethene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	6.7	---	6.7	N
cis-1,2-Dichloroethene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.63	---	0.63	N
trans-1,2-Dichloroethene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	7.0	---	7	N
Dichloromethane	c, v	---	---	<0.5 (ND)	<0.5 (ND)	NE	0.14	---	0.14	(Y)
EDB (1,2-dibromoethane)	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.00012	---	0.00012	(Y)
EDC (1,2-dichloroethane)	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.0028	---	0.0028	(Y)
Ethylbenzene	c, v	---	---	**0.56**	0.56	NE	0.22	---	0.22	Y
MTBE (methyl t-butyl ether)	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.11	---	0.11	N
Naphthalene	c, v	<0.05 (ND)	---	**3.5**	3.5	NE	0.077	---	0.077	Y
iso-Propylbenzene (cumene)	nc, v	---	---	0.44	0.44	NE	96	---	96	N
Tetrachloroethene (PCE)	c, v	---	---	<0.025 (ND)	<0.025 (ND)	NE	0.46	---	0.18	N
Toluene	nc, v	---	---	0.33	0.33	NE	83	---	23	N
1,1,1-Trichloroethane	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	190	---	190	N
1,1,2-Trichloroethane	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.0063	---	0.0063	(Y)
Trichloroethene	NA, v	---	---	<0.02 (ND)	<0.02 (ND)	NE	0.013	---	0.013	(Y)
Trichlorofluoromethane (Freon 11)	nc, v	---	---	<0.5 (ND)	<0.5 (ND)	NE	61	---	52	N
1,2,4-Trimethylbenzene	nc, v	---	---	9.7	9.7	NE	10	---	10	N
1,3,5-Trimethylbenzene	nc, v	---	---	6.3	6.3	NE	11	---	11	N
Vinyl chloride	c, v	---	---	<0.05 (ND)	<0.05 (ND)	NE	0.00057	---	0.00057	(Y)
Xylenes	nc, v	---	---	15.0	15	NE	23	---	1.4	N
Metals										
Arsenic	c, nv	3.48	1.29	**44.1**	44.1	NE	0.43	8.8	8.8	Y
Barium	nc, nv	254	28.4	144	254	NE	15000	790	790	N
Cadmium	nc, nv	1.02	<0.5 (ND)	0.723	1.02	NE	78	0.63	0.63	N
Chromium (III)	nc, nv	14.4	3.06	21.2	21.2	NE	120000	76	76	N
Lead	NA, nv	**197**	9.85	**55.5**	197	NE	30	28	28	Y
Mercury	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	NE	23	0.23	0.23	N
Silver	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	NE	390	0.82	0.82	N
Semivolatile Organic Constituents										
Polychlorinated biphenyls (Total PCBs)	c, v	<0.2 (ND)	---	<0.2 (ND)	<0.2 (ND)	NE	0.23	---	0.23	N
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	nc, v	<0.05 (ND)	---	0.076	0.076	NE	770	---	0.25	N
Anthracene	nc, v	<0.05 (ND)	---	0.22	0.22	NE	8200	---	6.8	N
Benz[a]anthracene	c, v	0.064	---	0.74	0.74	NE	1.1	---	0.73	N
Benzo[a]pyrene (BaP equivalents)	c, nv	**0.16**	---	<0.5 (ND)	**0.16**	NE	0.11	---	0.11	Y
Benzo[b]fluoranthene	c, nv	0.22	---	<0.5 (ND)	0.22	NE	1.1	---	1.1	N
Benzo[k]fluoranthene	c, nv	<0.05 (ND)	---	<0.5 (ND)	<0.5 (ND)	NE	11	---	11	N
Chrysene	c, nv	0.13	---	<0.5 (ND)	0.13	NE	110	---	3.1	N
Dibenz[a,h]anthracene	c, nv	<0.05 (ND)	---	<0.5 (ND)	<0.5 (ND)	NE	0.11	---	0.11	(Y)
Fluoranthene	nc, nv	0.22	---	0.32	0.32	NE	2400	---	10	N
Fluorene	nc, v	<0.05 (ND)	---	0.14	0.14	NE	770	---	3.7	N
Indeno[1,2,3-cd]pyrene	c, nv	0.079	---	<0.5 (ND)	0.079	NE	1.1	---	1.1	N
Pyrene	nc, v	0.29	---	0.81	0.81	NE	1800	---	10	N
Total Petroleum Hydrocarbons										
Generic Gasoline (GRO)	nc, v	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	80	31	---	520	N
Generic Diesel / Heating Oil (DRO)	nc, v	26 x	<50 (NP)	**2100 x, ip**	2100	500	1100	---	90	Y
Generic Mineral Insulating Oil (RRO)	nc, nv	250	<250 (NP)	**58000 x, ip**	58000		2800	---	140,000	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.

ip = recovery fell outside of control limits due to sample matrix effects

Pink shaded cells in table indicate sampled location has been subsequently removed to appropriate waste disposal/recycling location and no longer represents current conditions.

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

Table 2. Summary of Analytical Data, Leachable Metals

Location ID		DU01	RCRA[1] Toxicity Characteristic
Sample ID		DU01-211004-IS-0.5	
Date Sampled		10/4/2021	
Depth Sampled (feet)		0.5	
Sampled By		ENW	
Location		Decision Unit 1 - Accessible areas of subject site	
Constituent of Interest	Note	mg/L (ppm)	mg/L (ppm)
Metals			
Lead	NA, nv	0.03	5

Notes:

[1] Resource Conservation and Recovery Act, 1976

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

NA = not applicable

nv = nonvolatile

Table 3. Further Evaluation of COPCs in Soil (Risk Drivers)

Contaminated Medium		SOIL mg/Kg (ppm)																										Maximum Detected Concentration
Exposure Pathway		Soil Ingestion, Dermal Contact, and Inhalation RBC_{ss}										Volatilization to Outdoor Air RBC_{so}						Vapor Intrusion into Buildings RBC_{si}						Leaching to Groundwater RBC_{sw}						
Receptor Scenario		Residential		Urban Residential		Occupational		Construction Worker		Excavation Worker		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		
Direct or Indirect Pathway (see notes)		DC		DC		DC		DC		DC		IVS		IVS		IVS		IVS		IVS		IVS		IS		IS		IS		
Contaminant of Concern	Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note		Note	mg/Kg (ppm)
Volatile Organic Constituents																														
Ethylbenzene	c, v	34		110		150		1700	>Csat	49000	>Csat	36		85		160		1.3		3		17		0.22		0.94		0.9		0.56
Naphthalene	c, v	5.3		25		23		580	>Csat	16000	>Csat	6.4		15		83		6.4		15		83		0.077		0.37		0.34		3.5
Metals																														
Arsenic	c, nv	0.43		1		1.9		15		420		-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	*		*		*		44.1
Lead	NA, nv	400	L	400	L	800	L	800	L	800	L	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	30	L	30	L	30	L	197
Semivolatile Organic Constituents																														
Polycyclic Aromatic Hydrocarbons																														
Benzo[a]pyrene (BaP equivalents)	c, nv	0.11		0.25		2.1		17		490	>Csat	-	NV	-	NV	-	NV	-	NV	-	NV	-	NV	4.4		28		82	>Csat	0.16
Total Petroleum Hydrocarbons																														
Generic Diesel / Heating Oil (DRO)	nc, v	1100		2200		14000		4600		-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	9500		9500		-	>Max	2100
Generic Mineral Insulating Oil (RRO)	nc, nv	2800		5700		36000		11000		-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	-	>Max	58000

Notes:

— = not analyzed or not applicable.

< = not detected above method reporting limit shown.

NE = not established.

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

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

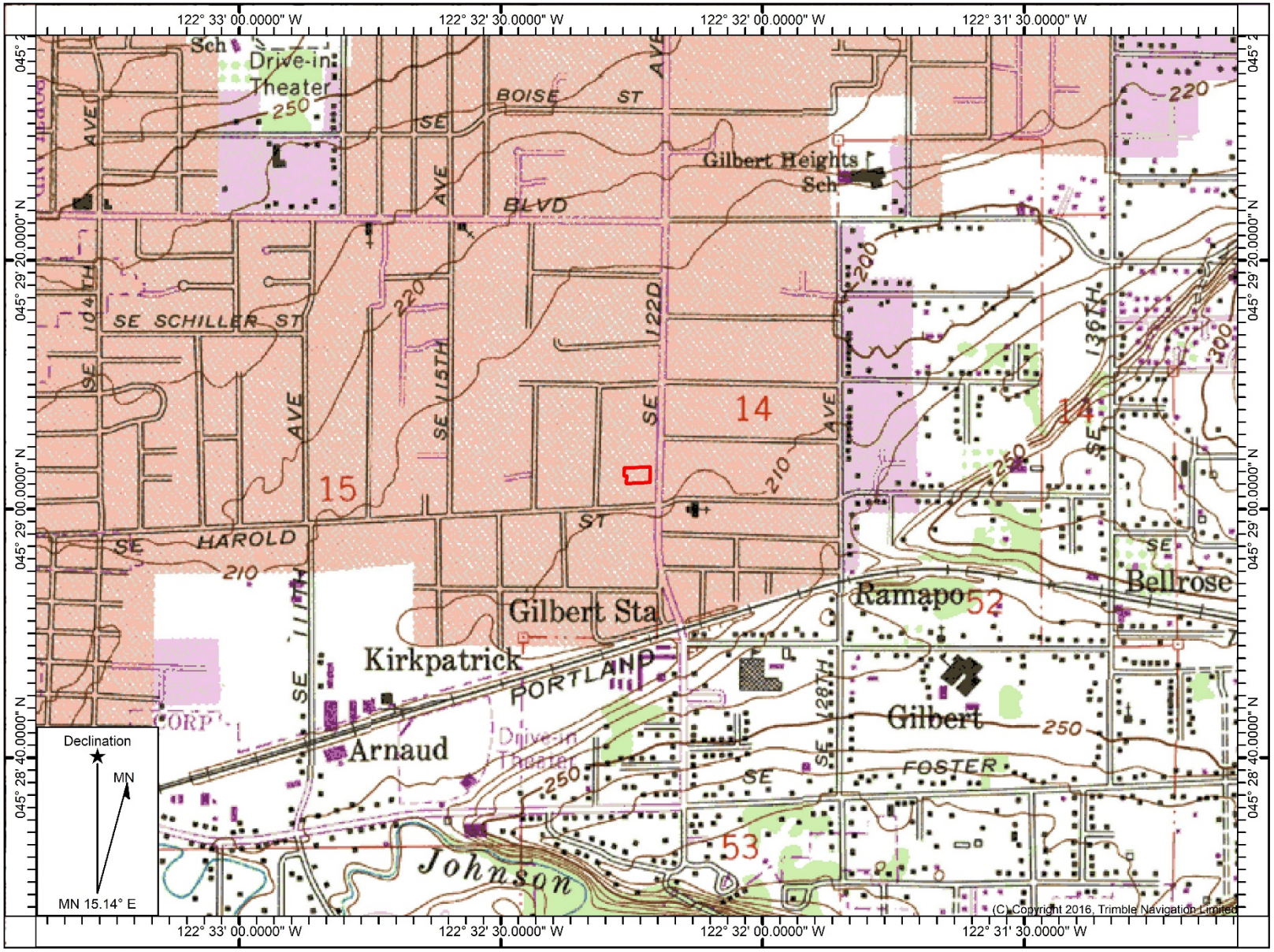
DRO = diesel-range organics.

RRO = residual-range organics.

<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.

Figures



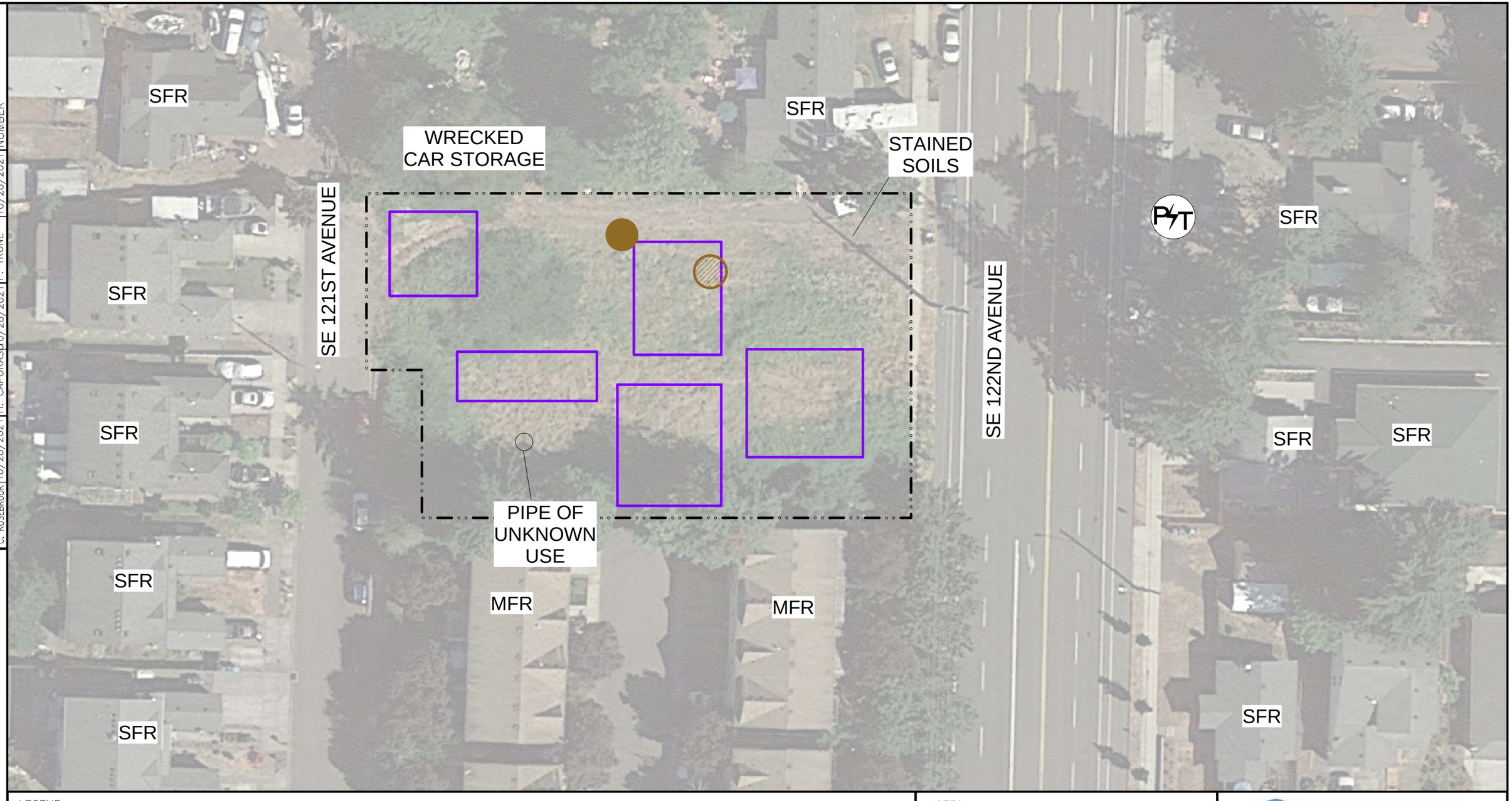
Name: GLADSTONE
Date: 09/08/21

0 1000 2000 3000
Feet

Location: 045° 29' 02.6868" N, 122° 32' 14.4398" W
Contour Interval: 10 ft

EVREN NORTHWEST INC environmental natural resource consultants	Date Drawn: 9/8/2021 CAD File Name: 1538-21003-01_fig1sv_map Drawn By: CLR Approved By: LDG	Vacant Property 5403 & 5413 SE 122nd Avenue Portland, Oregon	**Site Vicinity Map**	Project No. 1538-21003 Figure No. **1**

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
C. ROSEBROOK 10/28/2021	H. CAPORASO 10/28/2021	P. TRONE 10/28/2021	1538-21003(v01)



LEGEND:

- SUBJECT PROPERTY BOUNDARIES
- SFR — SINGLE FAMILY RESIDENCE
- MFR — MULTI FAMILY RESIDENCE
- SOIL PILE
- SOIL/WOOD CHIP PILE
- FORMER BUILDINGS PER 1948, 1963, AND 2005 HISTORICAL AERIAL PHOTOGRAPHS
- POLE TRANSFORMER

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2021 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 35 70 FEET

N

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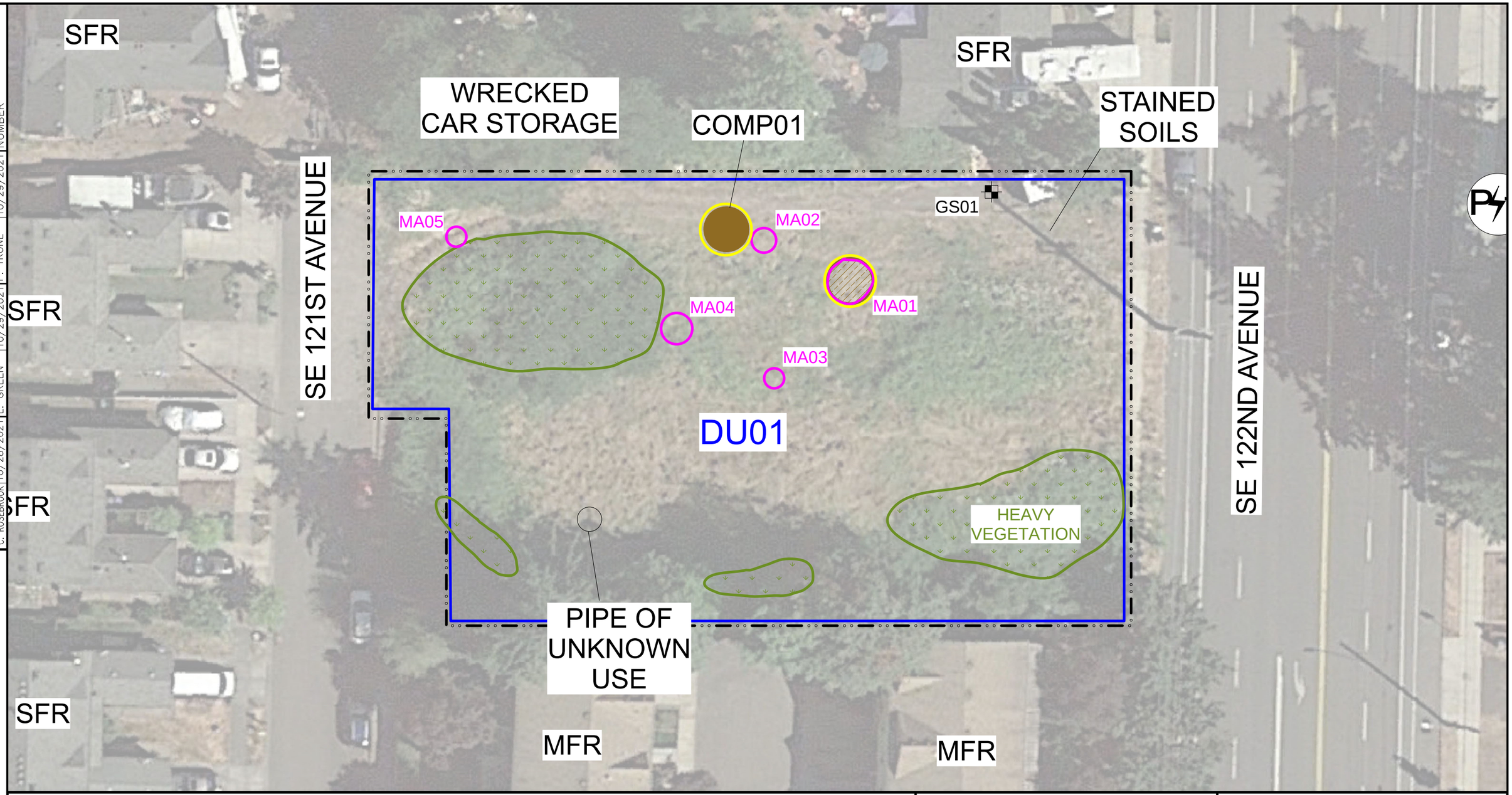
FIGURE 2

SITE PLAN

VACANT PROPERTY
5403 AND 5413 SE 122ND AVENUE
PORTLAND, OREGON

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
C. ROSEBROOK 10/28/2021	L. GREEN 10/29/2021	P. TRONE 10/29/2021	1538-21003(v01)



LEGEND:

- SUBJECT PROPERTY BOUNDARIES
- DECISION UNIT BOUNDARY
- SFR — SINGLE FAMILY RESIDENCE
- HEAVY VEGETATION
- MFR — MULTI FAMILY RESIDENCE
- MA01 — MAGNETIC ANOMALY
- SOIL PILE
- GS01 — ENW GROUND SOIL SAMPLE LOCATION
- SOIL/WOOD CHIP PILE
- COMP01 — COMPOSITE SAMPLE

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2021 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 25 50 FEET

N

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FIGURE 3

SAMPLE LOCATION DIAGRAM

VACANT PROPERTY
5403 AND 5413 SE 122ND AVENUE
PORTLAND, OREGON

Appendix A

Site Photographs

An electromagnetic scanner is use during the geophysical survey.

A Ground-Penetrating Radar device was used to scan non-metallic reflections. White paint marks were drawn around buried features of concern

Magnetic anomalies were further investigated, when possible, by exposing the buried feature(s) with a shovel.

View of stockpile SP01 of unknown origin. SP01 was subject of composite sampling during the Phase 2 ESA investigation.

EVREN NORTHWEST INC. environmental natural resource consultants	Vacant Property 11250 SE Division Street Portland, Oregon	**Site Photographs**	Project No. 1538-21003-01 Appendix **A**

View of ENW technician while collecting surface soil samples from decision unit DU01.

Decision unit DU01 covered accessible areas of the subject site.

Soil subsamples were weighed in 40g increments before being placed into a glass sample container.

All sample increments from DU01 were placed in a sample jar and uniquely labeled prior to submitting it to the laboratory.

EVREN NORTHWEST INC. environmental natural resource consultants	Vacant Property 11250 SE Division Street Portland, Oregon	**Site Photographs**	Project No. 1538-21003-01 Appendix **A**

Appendix B

Laboratory Reports

Summary: DATA VALID? ☒YES

Analytical Laboratory Data Validation Check Sheet

Project Name: Northwest Housing Alternatives Project Number: 1538-21003-02

Date of Review: 10/27/2021 Lab. Name: **F&BI** Lab Batch ID #: 110079

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	☒NA
6.) Analysis performed within holding times?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
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? See comment d, J, and ip	☒yes	☐no	☐NA
17.) Is there a spike recovery for all Laboratory Control Samples?	☒yes	☐no	☐NA
Do all LCS/LCSD spike recoveries meet accepted criteria?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
18.) Are all LCS/LCSD RPDs within acceptable limits?	☐yes	☐no	☒NA
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
Precision			
19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits?	☐yes	☒no	☐NA
If not, are all discrepancies footnoted? See comment b	☒yes	☐no	☐NA
20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits?	☐yes	☒no	☐NA
If not, are all discrepancies footnoted? See comment vo and b	☒yes	☐no	☒NA
21.) 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.

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

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

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

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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October 25, 2021

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

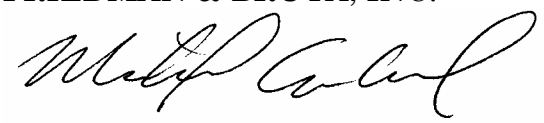
Dear Mr Green:

Included are the results from the testing of material submitted on October 5, 2021 from the 1538-21003-02, F&BI 110079 project. There are 28 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
ENW1025R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 5, 2021 by Friedman & Bruya, Inc. from the Evren Northwest 1538-21003-02, F&BI 110079 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
110079 -01	DU01-211004-IS-0.5
110079 -02	Comp01-211004
110079 -03	GS01-0.5

An 8270E internal standard failed the acceptance criteria for sample GS01-0.5. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported.

Selenium in the 6020B matrix spike duplicate failed the acceptance criteria. The laboratory control sample passed the acceptance criteria, therefore the results were due to matrix effect.

The 8260D matrix spike and matrix spike duplicate failed the relative percent difference for several compounds. The analytes were not detected therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 10/25/21
Date Received: 10/05/21
Project: 1538-21003-02, F&BI 110079
Date Extracted: 10/06/21
Date Analyzed: 10/06/21

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 Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 56-165)
DU01-211004-IS-0.5 110079-01	ND	ND	D	89
Comp01-211004 110079-02	ND	ND	ND	88
GS01-0.5 110079-03	ND	ND	D	124
Method Blank 01-2274 MB2	ND	ND	ND	83

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

Date of Report: 10/25/21
Date Received: 10/05/21
Project: 1538-21003-02, F&BI 110079
Date Extracted: 10/13/21
Date Analyzed: 10/14/21

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 Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
DU01-211004-IS-0.5 110079-01	26 x	250	95
GS01-0.5 110079-03 1/100	2,100 x	58,000	ip
Method Blank 01-2360 MB	<5	<25	109

Analysis For Total Metals By EPA Method 6020B

Client ID:	DU01-211004-IS-0.5	Client:	Evren Northwest
Date Received:	10/05/21	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/06/21	Lab ID:	110079-01
Date Analyzed:	10/06/21	Data File:	110079-01.157
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.48
Barium	254
Cadmium	1.02
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	DU01-211004-IS-0.5	Client:	Evren Northwest
Date Received:	10/05/21	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/06/21	Lab ID:	110079-01 x5
Date Analyzed:	10/07/21	Data File:	110079-01 x5.121
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	14.4
Lead	197

Analysis For Total Metals By EPA Method 6020B

Client ID:	Comp01-211004	Client:	Evren Northwest
Date Received:	10/05/21	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/06/21	Lab ID:	110079-02
Date Analyzed:	10/06/21	Data File:	110079-02.158
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.29
Barium	28.4
Cadmium	<0.5
Chromium	3.06
Lead	9.85
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	GS01-0.5	Client:	Evren Northwest
Date Received:	10/05/21	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/06/21	Lab ID:	110079-03
Date Analyzed:	10/06/21	Data File:	110079-03.179
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	44.1
Barium	144
Cadmium	0.723
Chromium	21.2
Lead	55.5
Mercury	<1
Selenium	<1
Silver	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/06/21	Lab ID:	I1-629 mb
Date Analyzed:	10/06/21	Data File:	I1-629 mb.131
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Barium	<2
Cadmium	<0.5
Chromium	<1
Lead	<1
Mercury	<1
Selenium	<1
Silver	<1

Analysis for TCLP Metals By EPA Method 6020B and 1311

Client ID:	DU01-211004-IS-0.5	Client:	Evren Northwest
Date Received:	10/05/21	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/20/21	Lab ID:	110079-01
Date Analyzed:	10/21/21	Data File:	110079-01.073
Matrix:	Soil/Solid	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP

Analyte:	Concentration mg/L (ppm)	TCLP Limit
Lead	0.03	5.0

Analysis for TCLP Metals By EPA Method 6020B and 1311

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/21/21	Lab ID:	I1-669 mb
Date Analyzed:	10/21/21	Data File:	I1-669 mb.041
Matrix:	Soil/Solid	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP

Analyte:	Concentration mg/L (ppm)	TCLP Limit
Lead	<0.015	5.0

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GS01-0.5	Client:	Evren Northwest
Date Received:	10/05/21	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/12/21	Lab ID:	110079-03
Date Analyzed:	10/12/21	Data File:	101207.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	90	109
Toluene-d8	107	89	112
4-Bromofluorobenzene	100	84	115

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	0.56
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	5.1
Hexane	<0.25	o-Xylene	9.9
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.44
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	1.3
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	6.3
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	0.66
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	9.7
Benzene	<0.03	sec-Butylbenzene	0.41
Trichloroethene	<0.02	p-Isopropyltoluene	0.27
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	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.33	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	3.5
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/12/21	Lab ID:	01-2234 mb
Date Analyzed:	10/12/21	Data File:	101205.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	90	109
Toluene-d8	107	89	112
4-Bromofluorobenzene	97	84	115

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	<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)	<1	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	<1	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 8270E

Client Sample ID:	DU01-211004-IS-0.5	Client:	Evren Northwest
Date Received:	10/05/21	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/11/21	Lab ID:	110079-01 1/25
Date Analyzed:	10/12/21	Data File:	101221.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	57 d	39	103
Phenol-d6	58 d	48	109
Nitrobenzene-d5	64 d	23	138
2-Fluorobiphenyl	86 d	50	150
2,4,6-Tribromophenol	81 d	40	127
Terphenyl-d14	103 d	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
2-Methylnaphthalene	<0.05
1-Methylnaphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.092
Anthracene	<0.05
Fluoranthene	0.22
Pyrene	0.29
Benz(a)anthracene	0.064
Chrysene	0.13
Benzo(a)pyrene	0.16
Benzo(b)fluoranthene	0.22
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	0.079
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	0.10

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	GS01-0.5	Client:	Evren Northwest
Date Received:	10/05/21	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/11/21	Lab ID:	110079-03 1/25
Date Analyzed:	10/12/21	Data File:	101222.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	55 d	39	103
Phenol-d6	61 d	48	109
Nitrobenzene-d5	72 d	23	138
2-Fluorobiphenyl	80 d	50	150
2,4,6-Tribromophenol	79 d	40	127
Terphenyl-d14	206 d J	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
2-Methylnaphthalene	0.31
1-Methylnaphthalene	0.20
Acenaphthylene	<0.05
Acenaphthene	0.076
Fluorene	0.14
Phenanthrene	0.25
Anthracene	0.22
Fluoranthene	0.32
Pyrene	1.9 J
Benz(a)anthracene	0.73 J
Chrysene	0.49 J
Benzo(a)pyrene	0.32 J
Benzo(b)fluoranthene	0.40 J
Benzo(k)fluoranthene	0.21 J
Indeno(1,2,3-cd)pyrene	0.17 J
Dibenz(a,h)anthracene	<0.05 J
Benzo(g,h,i)perylene	0.50 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	GS01-0.5	Client:	Evren Northwest
Date Received:	10/05/21	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/11/21	Lab ID:	110079-03 1/250
Date Analyzed:	10/13/21	Data File:	101320.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	47 d	39	103
Phenol-d6	47 d	48	109
Nitrobenzene-d5	75 d	23	138
2-Fluorobiphenyl	80 d	50	150
2,4,6-Tribromophenol	54 d	40	127
Terphenyl-d14	95 d	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.5
2-Methylnaphthalene	<0.5
1-Methylnaphthalene	<0.5
Acenaphthylene	<0.5
Acenaphthene	<0.5
Fluorene	<0.5
Phenanthrene	<0.5
Anthracene	<0.5
Fluoranthene	<0.5
Pyrene	0.81
Benz(a)anthracene	0.74
Chrysene	<0.5
Benzo(a)pyrene	<0.5
Benzo(b)fluoranthene	<0.5
Benzo(k)fluoranthene	<0.5
Indeno(1,2,3-cd)pyrene	<0.5
Dibenz(a,h)anthracene	<0.5
Benzo(g,h,i)perylene	<0.5

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/11/21	Lab ID:	01-2349 mb 1/5
Date Analyzed:	10/11/21	Data File:	101119.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	84	39	103
Phenol-d6	92	48	109
Nitrobenzene-d5	91	23	138
2-Fluorobiphenyl	100	50	150
2,4,6-Tribromophenol	79	40	127
Terphenyl-d14	114	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<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:	DU01-211004-IS-0.5	Client:	Evren Northwest
Date Received:	10/05/21	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/13/21	Lab ID:	110079-01 1/6
Date Analyzed:	10/13/21	Data File:	101313.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	95	23	127

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:	GS01-0.5	Client:	Evren Northwest
Date Received:	10/05/21	Project:	1538-21003-02, F&BI 110079
Date Extracted:	10/13/21	Lab ID:	110079-03 1/6
Date Analyzed:	10/13/21	Data File:	101314.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	63	23	127

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:	1538-21003-02, F&BI 110079
Date Extracted:	10/13/21	Lab ID:	01-2359 mb 1/6
Date Analyzed:	10/13/21	Data File:	101308.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	109	23	127

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: 10/25/21
Date Received: 10/05/21
Project: 1538-21003-02, F&BI 110079

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL 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	mg/kg (ppm)	500	97	94	74-139	3

Date of Report: 10/25/21
Date Received: 10/05/21
Project: 1538-21003-02, F&BI 110079

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

Laboratory Code: 110079-03 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	40.4	0 b	0 b	75-125	0 b
Barium	mg/kg (ppm)	50	131	99	109	75-125	10
Cadmium	mg/kg (ppm)	10	<5	86	87	75-125	1
Chromium	mg/kg (ppm)	50	19.6	72 b	83 b	75-125	14 b
Lead	mg/kg (ppm)	50	55.5	79	92	75-125	15
Mercury	mg/kg (ppm	5	<5	86	94	75-125	9
Selenium	mg/kg (ppm)	5	<5	76	72 vo	75-125	5
Silver	mg/kg (ppm)	10	<5	82	84	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	93	80-120
Barium	mg/kg (ppm)	50	99	80-120
Cadmium	mg/kg (ppm)	10	102	80-120
Chromium	mg/kg (ppm)	50	116	80-120
Lead	mg/kg (ppm)	50	95	80-120
Mercury	mg/kg (ppm)	5	95	80-120
Selenium	mg/kg (ppm)	5	103	80-120
Silver	mg/kg (ppm)	10	101	80-120

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

Laboratory Code: 110263-11 (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	96	92	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/L (ppm)	1.0	87	80-120

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

Laboratory Code: 110165-01 (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)	1	<0.5	34	37	10-142	8
Chloromethane	mg/kg (ppm)	1	<0.5	59	71	10-126	18
Vinyl chloride	mg/kg (ppm)	1	<0.05	62	77	10-138	22 vo
Bromomethane	mg/kg (ppm)	1	<0.5	71	85	10-163	18
Chloroethane	mg/kg (ppm)	1	<0.5	72	87	10-176	19
Trichlorofluoromethane	mg/kg (ppm)	1	<0.5	70	84	10-176	18
Acetone	mg/kg (ppm)	5	<5	91	110	10-163	19
1,1-Dichloroethene	mg/kg (ppm)	1	<0.05	83	102	10-160	21 vo
Hexane	mg/kg (ppm)	1	<0.25	73	85	10-137	15
Methylene chloride	mg/kg (ppm)	1	<0.5	94	119	10-156	23 vo
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	<0.05	94	115	21-145	20
trans-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	88	106	14-137	19
1,1-Dichloroethane	mg/kg (ppm)	1	<0.05	88	109	19-140	21 vo
2,2-Dichloropropane	mg/kg (ppm)	1	<0.05	100	124	10-158	21 vo
cis-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	88	106	25-135	19
Chloroform	mg/kg (ppm)	1	<0.05	90	110	21-145	20
2-Butanone (MEK)	mg/kg (ppm)	5	<1	86	102	19-147	17
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	<0.05	89	109	12-160	20
1,1,1-Trichloroethane	mg/kg (ppm)	1	<0.05	94	117	10-156	22 vo
1,1-Dichloropropene	mg/kg (ppm)	1	<0.05	86	104	17-140	19
Carbon tetrachloride	mg/kg (ppm)	1	<0.05	93	118	9-164	24 vo
Benzene	mg/kg (ppm)	1	<0.03	87	105	29-129	19
Trichloroethene	mg/kg (ppm)	1	<0.02	91	107	21-139	16
1,2-Dichloropropane	mg/kg (ppm)	1	<0.05	89	107	30-135	18
Bromodichloromethane	mg/kg (ppm)	1	<0.05	97	120	23-155	21 vo
Dibromomethane	mg/kg (ppm)	1	<0.05	90	108	23-145	18
4-Methyl-2-pentanone	mg/kg (ppm)	5	<1	92	111	24-155	19
cis-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	94	116	28-144	21 vo
Toluene	mg/kg (ppm)	1	<0.05	74	88	35-130	17
trans-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	85	100	26-149	16
1,1,2-Trichloroethane	mg/kg (ppm)	1	<0.05	80	94	10-205	16
2-Hexanone	mg/kg (ppm)	5	<0.5	82	91	15-166	10
1,3-Dichloropropane	mg/kg (ppm)	1	<0.05	76	90	31-137	17
Tetrachloroethene	mg/kg (ppm)	1	<0.025	78	90	20-133	14
Dibromochloromethane	mg/kg (ppm)	1	<0.05	89	106	28-150	17
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	<0.05	79	92	28-142	15
Chlorobenzene	mg/kg (ppm)	1	<0.05	76	91	32-129	18
Ethylbenzene	mg/kg (ppm)	1	<0.05	75	89	32-137	17
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	80	94	31-143	16
m,p-Xylene	mg/kg (ppm)	2	<0.1	76	89	34-136	16
o-Xylene	mg/kg (ppm)	1	<0.05	76	91	33-134	18
Styrene	mg/kg (ppm)	1	<0.05	78	92	35-137	16
Isopropylbenzene	mg/kg (ppm)	1	<0.05	77	92	31-142	18
Bromoform	mg/kg (ppm)	1	<0.05	88	107	21-156	19
n-Propylbenzene	mg/kg (ppm)	1	<0.05	73	86	23-146	16
Bromobenzene	mg/kg (ppm)	1	<0.05	73	85	34-130	15
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	<0.05	73	87	18-149	17
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	73	89	28-140	20
1,2,3-Trichloropropane	mg/kg (ppm)	1	<0.05	72	87	25-144	19
2-Chlorotoluene	mg/kg (ppm)	1	<0.05	71	85	31-134	18
4-Chlorotoluene	mg/kg (ppm)	1	<0.05	72	85	31-136	17
tert-Butylbenzene	mg/kg (ppm)	1	<0.05	72	86	30-137	18
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	<0.05	72	86	10-182	18
sec-Butylbenzene	mg/kg (ppm)	1	<0.05	73	88	23-145	19
p-Isopropyltoluene	mg/kg (ppm)	1	<0.05	74	88	21-149	17
1,3-Dichlorobenzene	mg/kg (ppm)	1	<0.05	74	88	30-131	17
1,4-Dichlorobenzene	mg/kg (ppm)	1	<0.05	73	86	29-129	16
1,2-Dichlorobenzene	mg/kg (ppm)	1	<0.05	74	90	31-132	20
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	<0.5	80	98	11-161	20
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	<0.25	71	85	22-142	18
Hexachlorobutadiene	mg/kg (ppm)	1	<0.25	79	93	10-142	16
Naphthalene	mg/kg (ppm)	1	<0.05	71	89	14-157	22 vo
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	<0.25	70	87	20-144	22 vo

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	1	41	10-146
Chloromethane	mg/kg (ppm)	1	64	27-133
Vinyl chloride	mg/kg (ppm)	1	71	22-139
Bromomethane	mg/kg (ppm)	1	80	38-114
Chloroethane	mg/kg (ppm)	1	74	9-163
Trichlorofluoromethane	mg/kg (ppm)	1	80	10-196
Acetone	mg/kg (ppm)	5	104	52-141
1,1-Dichloroethene	mg/kg (ppm)	1	93	47-128
Hexane	mg/kg (ppm)	1	86	43-142
Methylene chloride	mg/kg (ppm)	1	110	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	107	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	1	99	67-129
1,1-Dichloroethane	mg/kg (ppm)	1	101	68-115
2,2-Dichloropropane	mg/kg (ppm)	1	124	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	1	103	72-127
Chloroform	mg/kg (ppm)	1	106	66-120
2-Butanone (MEK)	mg/kg (ppm)	5	99	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	102	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	1	111	62-131
1,1-Dichloropropene	mg/kg (ppm)	1	98	69-128
Carbon tetrachloride	mg/kg (ppm)	1	109	60-139
Benzene	mg/kg (ppm)	1	96	71-118
Trichloroethene	mg/kg (ppm)	1	101	63-121
1,2-Dichloropropane	mg/kg (ppm)	1	103	72-127
Bromodichloromethane	mg/kg (ppm)	1	117	57-126
Dibromomethane	mg/kg (ppm)	1	103	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	5	111	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	1	111	67-122
Toluene	mg/kg (ppm)	1	88	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	1	103	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	1	96	64-115
2-Hexanone	mg/kg (ppm)	5	95	33-152
1,3-Dichloropropane	mg/kg (ppm)	1	92	72-130
Tetrachloroethene	mg/kg (ppm)	1	90	72-114
Dibromochloromethane	mg/kg (ppm)	1	109	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	94	74-132
Chlorobenzene	mg/kg (ppm)	1	92	76-111
Ethylbenzene	mg/kg (ppm)	1	91	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	98	64-121
m,p-Xylene	mg/kg (ppm)	2	91	78-122
o-Xylene	mg/kg (ppm)	1	93	77-124
Styrene	mg/kg (ppm)	1	95	74-126
Isopropylbenzene	mg/kg (ppm)	1	94	76-127
Bromoform	mg/kg (ppm)	1	113	56-132
n-Propylbenzene	mg/kg (ppm)	1	87	74-124
Bromobenzene	mg/kg (ppm)	1	85	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	87	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	93	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	1	88	61-137
2-Chlorotoluene	mg/kg (ppm)	1	85	74-121
4-Chlorotoluene	mg/kg (ppm)	1	85	75-122
tert-Butylbenzene	mg/kg (ppm)	1	86	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	88	76-125
sec-Butylbenzene	mg/kg (ppm)	1	87	71-130
p-Isopropyltoluene	mg/kg (ppm)	1	87	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	1	89	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	1	88	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	1	90	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	108	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	88	64-135
Hexachlorobutadiene	mg/kg (ppm)	1	92	50-153
Naphthalene	mg/kg (ppm)	1	92	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	89	63-138

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 110165-03 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)	0.83	<0.01	81	79	50-150	2
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	87	86	50-150	1
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	89	87	50-150	2
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	89	88	50-150	1
Acenaphthene	mg/kg (ppm)	0.83	<0.01	86	85	50-150	1
Fluorene	mg/kg (ppm)	0.83	<0.01	93	90	50-150	3
Phenanthrene	mg/kg (ppm)	0.83	<0.01	89	88	50-150	1
Anthracene	mg/kg (ppm)	0.83	<0.01	87	86	50-150	1
Fluoranthene	mg/kg (ppm)	0.83	<0.01	89	91	50-150	2
Pyrene	mg/kg (ppm)	0.83	<0.01	93	88	50-150	6
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	97	96	50-150	1
Chrysene	mg/kg (ppm)	0.83	<0.01	94	93	50-150	1
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	97	95	50-150	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	101	96	50-150	5
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	100	95	50-150	5
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	75	73	50-150	3
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	78	74	50-150	5
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	67	63	50-150	6

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	86	61-102
2-Methylnaphthalene	mg/kg (ppm)	0.83	93	62-108
1-Methylnaphthalene	mg/kg (ppm)	0.83	93	62-108
Acenaphthylene	mg/kg (ppm)	0.83	93	61-111
Acenaphthene	mg/kg (ppm)	0.83	88	61-110
Fluorene	mg/kg (ppm)	0.83	93	62-114
Phenanthrene	mg/kg (ppm)	0.83	93	64-112
Anthracene	mg/kg (ppm)	0.83	92	63-111
Fluoranthene	mg/kg (ppm)	0.83	95	66-115
Pyrene	mg/kg (ppm)	0.83	103	65-112
Benz(a)anthracene	mg/kg (ppm)	0.83	98	64-116
Chrysene	mg/kg (ppm)	0.83	97	66-119
Benzo(a)pyrene	mg/kg (ppm)	0.83	98	62-116
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	102	61-118
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	99	65-119
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	80	64-130
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	82	67-131
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	74	67-126

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

Laboratory Code: 110189-36 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	75	81	29-125	8
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	78	83	25-137	6

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	96	55-137
Aroclor 1260	mg/kg (ppm)	0.25	96	51-150

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.

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SAMPLE CHAIN OF CUSTODY ME 10/5/21 CI2/1 ISM

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Report To Lynn Green
Company Evren Northwest
Address PO Box 14480
City, State, ZIP Portland OR 97213
Phone 503 452-5561 Email lynng@evren-nw.com

SAMPLERS (*signature*)

PROJECT NAME: 1538-21003-02

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
☒ 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 Total metals	ISM Prep	TCLP Lead		Notes
DH01-211004-15-0.5	01	10/04/21	11:40	Soil	1	●			X		●	●	X	X	(X)		● per EB
COMP01-211004	02 A-E	"	11:50	Soil	5				X				X				10/11/21 ME
GS01-0.5	03 V	"	12:05	Soil	5	●			X	●	●	●	X				(X) per EB
																	10/19/21 ME

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Dan Sayre	ENW	10/04/21	18:00
Received by:	Nhan Phan	FEBI	10/5/21	1030
Relinquished by:				
Received by:				

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

Appendix C

ODEQ Soil Matrix Scoresheet and Checklist

Soil Matrix Scoresheet

Depth to Groundwater[7] < 25 feet (10) 25 – 50 feet (7) 51 – 100 feet (4) > 100 feet (1)	7
Mean Annual Precipitation[8] > 45 inches (10) 20 – 45 inches (5) < 20 inches (1)	5
Native Soil Types[9] Coarse sands, gravels (10) Silts, fine sands (5) Clays (1)	10
Sensitivity of uppermost Aquifer[10] Sole Source (10) Current Potable (7) Future Potable (4) Non-potable (1)	7
Potential Receptors[8] Many, near (10) Medium (5) Few, far (1)	10
TOTAL SCORE =	**39**

Matrix Score	Cleanup level in ppm TPH	
	Gasoline	Diesel
Level 1: > 25 to 40 pts.	40	100
Level 2: 25 - 40 pts.	**80**	**500**
Level 3: < 25 pts.	130	1000

[7] Oregon Water Resources GRID Database

[8] U.S. Climate Data, http://www.usclimatedata.com/climate.php?location=USOR0076

[9] See Section 2.1 and Appendix B

[10] Based on ENW's current knowledge, the uppermost aquifer is potable, and not currently being used for drinking water, but the aquifer is suitable for drinking and could be used in the future.

[8] The number of people who regularly use the area within two miles is estimated at less than 3000.