



INTERIM REMEDIAL ACTION MEASURES: PETROLEUM-IMPACTED SOIL REMOVAL AND IN-SITU CHEMICAL OXIDATION



Ollison Property

23737 SW Newland Road
Wilsonville, Oregon

Agency Information

ODEQ LUST File Number 03-19-0934

Prepared for:

Estate of David Ollison Attn: Sandy Wehrman

23737 SW Newland Road
Wilsonville, OR 97070

Issued on:

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Project No. 114-19002-02

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This

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Report for:

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Wilsonville, Oregon

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

Estate of David Ollison

Attn: Sandy Wehrman

23737 SW Newland Road
Wilsonville, OR 97070

and its assignees

Issued February 20, 2024 by:



EXP. 2/1/2025



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List of Acronyms and Abbreviations

amsl	above mean sea level	PCS	petroleum-contaminated soil
bgs	below ground surface	PID	photoionization detector
BTOC	below top of casing	ppmv	parts per million by volume
CFSL	clean fill screening level	RBC	risk-based concentration
Client	Estate of David Ollison	RBDM	ODEQ's <i>Risk-Based Decision Making for the Remediation of Contaminated Sites</i> guidance document
COI	constituent of interest		
COPC	constituent of potential concern		
CRBG	Columbia River Basalt Group	RM	river mile
cy	cubic yard	RRFF-5	Rural Residential Farm / Forest 5 Acres (zoning)
DO	dissolved oxygen		
DRO	diesel-range organics	RRO	residual (oil)-range organics
ENW	EVREN Northwest, Inc.	SAP	Sampling and Analysis Plan
EPA	US Environmental Protection Agency	sf	square feet
F&BI	Friedman & Bruya, Inc.	SLRBCs	screening-level risk-based concentrations
FSI	Focused Site Investigation	SOW	scope of work
ft/ft	vertical feet per lineal foot	T1, T2, T3	Tank 1, Tank 2, and Tank 3, respectively
GRO	gasoline-range organics		
HASP	Health and Safety Plan	Tgsb	Tertiary Sentinel Bluffs Member flows of the Grande Ronde Basalt of the Yakima Basalt Subgroup of CRBG
IRAP	Interim Remedial Action Plan		
ISCO	in-situ chemical oxidation	UAI	Universal Applicators, Inc.
LUST	Leaking Underground Storage Tank	UST	underground storage tank
μS/cm	microSiemens per centimeter	VI	vapor intrusion
mg/Kg	milligrams per Kilogram	VOC	volatile organic constituent
mg/L	milligrams per Liter	WAM	Waste Authorization Manager
mV	millivolt		
MRL	method reporting limit		
NTA	NTA Contracting, Inc.		
OAR	Oregon Administrative Rule		
ODEQ	Oregon Department of Environmental Quality		
ORC	Oxygen Release Compound		
ORP	oxidation-reduction potential		
OWRD-GRID	Oregon Water Resources Department – Groundwater Resource Information Database		
PAH	polynuclear aromatic hydrocarbon		

1.0 Introduction

At the request of the Estate of David Ollison (Client), EVREN Northwest, Inc. (ENW) prepared this report documenting the cleanup of petroleum-contaminated soil (PCS) associated with three previously decommissioned underground storage tanks (USTs) and at the subject site (*Ollison Property*, 23737 SW Newland Road, Wilsonville, Oregon; see Figures 1 and 2). Work was performed according to the December 27, 2022, *Interim Remedial Action Plan*¹ (IRAP) which was approved by the Oregon Department of Environmental Quality (ODEQ) on January 18, 2023.²

Site work was conducted during August and September 2023 and is documented by photographs presented in Appendix A. This report describes the methods and findings of soil excavation and offsite disposal, removal of a UST previously decommissioned in place, soil over-burden assessment, and in-situ soil treatment.

2.0 Scope of Work

ENW completed the following scope of work (SOW) for this project, consistent with the ODEQ-approved IRAP.¹

- Removed asphalt pavement over excavation site EX01 and transported it to a facility for recycling/disposal.
- Used field screening methods to segregate clean overburden soils into temporary stockpiles, which were later assessed and used as backfill.
- Excavated accessible PCS in excavations EX01 and EX02 for off-site disposal at Waste Management's Hillsboro Landfill under Waste Authorization Manager (WAM) Profile no. 134514OR.
- Removed one 675-gallon UST (Tank 2 [T2]) within EX01, which had previously been abandoned in place, to facilitate PCS removal.
- Mobilized a Baker Tank to the site in case dewatering of the excavations was needed to facilitate soil removal and in-situ chemical oxidation (ISCO).
- Collected excavation margin samples from EX01 and EX02 to confirm removal of impacted subsurface soils and characterize residual impacted soil.
- Submitted soil samples to an independent analytical laboratory under chain-of-custody protocols for appropriate analysis.

¹ ENW, December 27, 2022. *Interim Remedial Action Plan*, Ollison Estate, 23737 SW Newland Road, Wilsonville, Oregon, Agency Information: ODEQ LUST File Number 03-19-0934.

² January 18, 2023. In an email Kevin Dana of ODEQ said he reviewed the Interim Remedial Action Plan, the plan looked good, and he did not have any comments or concerns.

- In-situ chemical oxidation:
 - Applied and wetted 11,130 pounds of Regenesis PersulfOx® plus 1,520 pounds of Oxygen Release Compound (ORC®) to EX01.
 - Applied and wetted 495.9 pounds of PersulfOx®, 150 pounds of ORC®, 120 pounds of RegenOX® Part A, and 150 pounds of RegenOX® Part B to EX02.
- Finished backfilling the excavations with ¾-minus gravel and clean overburden and compacted the fill.
- Arranged for proper disposal of all waste materials, e.g., soil, UST, decontamination water, and solid waste, i.e., wood pallets and spent personal protection equipment.
- Evaluated analytical results with respect to ODEQ UST cleanup standards and guidance documents.
- Monitored post-soil removal and post-ISCO application ground water elevations and parameters, which are presented and discussed in this report.
 - Measured depth to water in all monitoring wells and calculated water level elevations relative to an arbitrary datum. Developed a potentiometric map for the shallow ground water aquifer.
 - Purged five monitoring wells until measured field parameters stabilized.

Ground water sampling and analytical results will be presented in a Ground Water Monitoring Report under separate cover.

- Prepared this report documenting the work conducted and presenting recommendations.

3.0 Site Description

The subject site is in a rural residential zoning district in unincorporated Clackamas County 3.8 miles northeast of Wilsonville, Oregon, and 2 miles east of Interstate 5. The subject site is a rectangular 4.74-acre parcel of land on the west side of SW Newland Road developed with a residence, a detached garage/shop building and greenhouses. A “new” water well installed in 2019, replacing an “old” well, and currently provides domestic water to the property. Surrounding land use is a mix of low-density residential and agricultural use.

The subject property is zoned Rural Residential Farm / Forest 5 Acres (RRFF-5), which is intended to:

- Provide areas for rural living where this type of development is compatible with the continuation of farm and forest uses.
- To conserve the natural scenic beauty of the County.
- To protect the watersheds of existing or potential major sources of municipal or domestic water supply from encroachment by uses that would affect the quantity or quality of water produced, protect wildlife habitats, and other such uses associated with the forest.
- To avoid the potential hazards of damage from fire, pollution, and conflict caused by urbanization.

Primary uses are one single family dwelling, residential home as defined in Section 202, or manufactured dwelling subject to the provisions of Section 824. Accessory uses include home occupations, accessory buildings incidental to the primary uses, produce stands, sign, a guest house, bed and breakfast homestays, and family daycare providers. Conditional uses include churches, schools, daycare facilities, cemeteries, service and recreational uses, operations conducted for the exploration, mining, and processing of geothermal resources, aggregate, and other mineral resources, sanitary landfills and debris fills bed and breakfast residences and inns, composting facilities, wireless telecommunication facilities, kennels, aircraft land uses, commercial recreational uses, and commercial of processing activities that are in conjunction with timber and farm uses. Prohibited uses include structures and uses of land not specially mentioned in section 309, outdoor advertising displays, any proposed division of land resulting in the creation of one or more parcels of land of less than 5 acres, and residential subdivisions in future urban areas.³

Geographic Setting. The subject site lies at the northwestern end of Pete’s Mountain, which is an uplifted block north of the Canby Fault Zone. Situated in the SW ¼ of the SE ¼ of section 31, Township 2 South, Range 1 East of the Willamette Meridian, the site lies on the north slope of a local ridge at elevations ranging from approximately 470 feet above mean sea level (amsl) in the northeast corner to an elevation of 520 feet amsl at the southwest corner of the site (Figure 1, Canby, Oregon 7.5’ quadrangle). The subject property slopes generally to the northeast, and surrounding topography is hilly with local elevations rising moderately to 839 feet amsl to the east-southeast, around 570 feet to the south, and dropping northeastward down to 100 feet amsl to the Tualatin River.

Geologic Setting. The site is in the Portland Basin. The Portland Basin is a low-lying area between the Oregon Cascade Range to the east and the Portland Hills and Tualatin Mountains to the west, and the Chehalem Mountains / Pete’s Mountain to the south. The Columbia and Willamette Rivers are the principal rivers within the basin. The Portland Basin is underlain by fluvial and flood deposits of the Columbia River and Willamette River and their tributaries. Though flood lava flows of the Columbia River Basalt Group (CRBG) are the basement rocks in the basin, such flows have been uplifted to form topographic highs such as the Chehalem Mountains and its eastern extension Pete’s Mountain.

During the middle Miocene (approximately 17 to 6 million years ago), numerous tholeiitic flood lava flows were erupted from long linear fissure systems in northeastern Oregon, eastern Washington, and western Idaho. Many individual flood lava flows were of sufficient size and volume to have reached western Oregon through a gap in the Cascade Range, and some flows spread into the central Willamette Valley and even reached the Pacific Ocean. The site is mapped as Sentinel Bluffs Member (Tgsb) flows of the Grande Ronde Basalt of the Yakima Basalt Subgroup of CRBG.⁴ Tgsb flows consist of blocky to columnar-jointed and locally entablature/colonnade jointed light- to dark-gray basalt with vesicular flow tops. Weathered basalt surfaces are greenish gray to pale gray. Finely to medium crystalline in hand sample, intersertal, in places plagioclase-phyric with sparse, small (<0.5 cm [0.2 inch]) tabular plagioclase

³ Clackamas County Zoning and Development Ordinance, Section 309 Rural Residential Farm/Forest 5 Acres (RRFF-5); chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://dochub.clackamas.us/documents/drupal/a9d33a65-67c4-4ffd-be9a-bdb39f685896#:~:text=The%20RRFF%2D5%20zone%20is,and%20are%20easily%20accessible%20to

⁴ Wells, R.E. and others, 2020. *Geologic Map of the Greater Portland Metropolitan and Surrounding Region, Oregon and Washington*: U.S. Geological Society Scientific Investigations Map 3443, Map Scale 1:63,360.

phenocrysts. Tgsb can be distinguished from younger Frenchman Springs flows and older Grande Ronde units on the combined basis of stratigraphic position, higher MgO (magnesium oxide) and low TiO₂ (titanium dioxide) composition, lithology, and paleomagnetic directions. Unit thickness is variable, ranging from 10-25 m (32-82 ft). Weathering is variable and believed to be related to individual basalt flows, in which some exposures are altered to red clay (laterite) to depths of 9 m (30 feet), and occasionally as deep as 18-53 m (60-175 ft), while others are only slightly weathered at the surface. The basalt is mantled with colluvium and a weathered soil horizon.

Subsurface conditions encountered in soil borings completed during ENW's *Focused Site Investigation* (FSI)⁵ and during this soil removal action consisted of basalt fragments and multi-colored interstitial fine-grained sediments. These materials are consistent with the upper weathered zone of the underlying Tbsg. Borings encountered silts, sands and basalt with orange, red, yellow, and brown clayey weathered materials, including weathered and fractured basalt rock to the maximum depth explored of 8.3 m (27.5 ft) below ground surface (bgs). Sediments are interpreted as highly weathered Tgsb which underlie the area.

The driller's log obtained from the Oregon Water Resources Department (OWRD) Groundwater Resource Information Database for the 440-ft deep old on-site domestic well (CLAC 19644) installed in August 1994 identified 13 feet of brown clay followed by 30 feet of gray-brown decomposed basalt underlain by soft to hard gray and gray-brown basalt to the maximum depth drilled of 440 feet bgs. The old well was abandoned in June 2023 (CLAC 78034).⁶ The driller's log for the 420-ft deep new domestic well (CLAC 74697) installed in January 2019 identified a similar lithology with 13 ft of brown clay, followed by 15 ft of brown weathered basalt underlain by gray-brown and green fractured and broken basalt with intermittent porous brown and red basalt (interflow) zones.

Lines of section A-A', B-B', and C-C' are shown in Figure 3 and are included in Appendix B.

Surface Water. The nearest surface water to the subject property is the headwaters of an unnamed creek several hundred feet to the west. The creek flows northward to the Tualatin River, which eventually joins the Willamette River at its confluence near the town of Willamette between river mile (RM) 28 and 29. The next closest surface water is the headwaters of Newland Creek, which flows southward to its confluence with the Willamette River near RM 36. The Willamette River flows generally north to where it discharges to the Columbia River at RM 101.

Ground Water. The regional ground aquifer from which local wells derive their water occurs at depths below 300 feet. According to the Oregon Water Resources Department Groundwater Resource Information Database (OWRD-GRID), ground water in the old onsite water well (CLAC_19644) was obtained from a fractured basalt layer at 400- to 435-ft bgs. The old on-site well was abandoned in June 2023 (CLAC_78034). Driller's notes from a log for the new on-site well (CLAC_74697) describe the productive aquifer from 329 to 420 feet bgs within a fractured porous basalt layer. Static water was reported at 329 feet at the time of drilling.

⁵ ENW, May 11, 2022. *Focused Site Investigation*, Ollison Property, 23737 SW Newland Road, Wilsonville, Oregon, Agency Information: ODEQ LUST File Number 03-19-0934, Prepared for: Estate of David Ollison, Attn: Sandy Wehrman, 23737 SW Newland Road, Wilsonville, OR 97070.

⁶ ENW, July 17, 2023. *Water Well Abandonment (CLAC 78034)*, Ollison Estate, 23737 SW Newland Road, Wilsonville, Oregon, Prepared for: Estate of David Ollison, 23737 SW Newland Road, Wilsonville, OR 97070.

During the FSI,⁵ ENW encountered a shallow water-bearing unit within the near-surface weathered basalt zone. Saturated soils were encountered at between 4-10 ft bgs with ground water stabilizing in temporary well points at depths ranging from 15-27 ft bgs. Depth to ground water in the old domestic well was measured at 291 ft bgs. Evidence of vadose zone petroleum impacts was observed in borings B01, B01', B04, B09, and B10 at or near the soil/water interface (depths of 8.5-18.5 feet bgs). Ground water flow direction within the shallow ground water aquifer was presumed at the time to mirror surface topography and flow generally to the north-northeast.

In March 2023, five ground water monitoring wells (MW01 through MW05) were installed, developed, surveyed, and monitored in accordance with the IRAP. Monitoring well locations are shown in Figure 3. Monitoring well construction details are presented in Table 3-1.

Table 3-1. Monitoring Well Construction

Monitoring Well Identification	Dated Installed	Start Card No.	OWRD Well Tag ID	Total Depth Drilled (Feet bgs)	Slot Size (inches)	Slotted PVC Screen Interval (feet bgs)	Top of Casing Elevation (feet)
MW01	3/2/2023	1060275	L103392	30	0.040	15 - 30	518.62
MW02	3/2/2023	1060276	L103393	25	0.040	10 - 25	515.38
MW03	3/2/2023	1060277	L103394	25	0.040	10 - 25	510.29
MW04	3/2/2023	1060278	L104850	30	0.040	15 - 30	515.24
MW05	3/2/2023	1060279	L149144	25	0.040	10 - 25	507.94

ID = identification

OWRD = Oregon Water Resources Department

PVC = polyvinyl chloride

ENW performed hydraulic testing at the subject site on three separate occasions between March 15 and March 28, 2023. Monitoring well installation and hydraulic testing results are presented in ENW's April 7, 2023, *Technical Memorandum: March 2023 Ground Water Monitoring Well Installation Report*.⁷ March 2023 ground water monitoring results are presented in ENW's *First Quarter 2023 Ground Water Monitoring Report*,⁸ and June 2023 ground water monitoring results are presented in ENW's *Second 2023 Ground Water Monitoring Report*.⁹ Well installation, hydraulic (slug) testing, and monitoring results are summarized below:

- First water was encountered at depths ranging from 20-25 ft bgs. Ground water stabilized at depths ranging from 6.40 ft below top of casing (BTOC) in MW02 to 27.55 ft BTOC in MW01.

⁷ ENW, April 7, 2023. *Technical Memorandum: March 2023 Ground Water Monitoring Well Installation Report*, Ollison Estate, 23737 SW Newland Road, Wilsonville, Oregon, Prepared for: Estate of David Ollison, 23737 SW Newland Road, Wilsonville, OR 97070.

⁸ ENW, May 24, 2023. *First Quarter 2023 Ground Water Monitoring Report*, Ollison Estate, 23737 SW Newland Road, Wilsonville, Oregon, Prepared for: Estate of David Ollison, 23737 SW Newland Road, Wilsonville, OR 97070.

⁹ ENW, July 31, 2023. *Second Quarter 2023 Ground Water Monitoring Report*, Ollison Estate, 23737 SW Newland Road, Wilsonville, Oregon, Prepared for: Estate of David Ollison, 23737 SW Newland Road, Wilsonville, OR 97070.

- ENW developed the monitoring wells on March 8, 2023, through a process of surging the pumping. A total of approximately 70 gallons of development water was pumped from all five wells.
- The monitoring wells were professionally surveyed by Axis Mapping and Surveying Company of Bend, Oregon on March 9, 2023. relative to a National Geodetic Survey benchmark (Designation 2S1E32C60SE) with an elevation of 485.24 ft amsl.
- The results of slug testing suggest relatively variable hydraulic conductivity values ranged from 1.25E-06 to 2.44E-05 m/s (4.1E-06 to 8.0E-05 ft/s) for MW02 through MW05, with an average of 1.37E-05 m/s (4.5E-05 ft/s) on the selected falling head and rising head tests. These values are generally considered low permeability and are considered typical of the fine-grained silts and sands and weathered basalt of the uppermost aquifer in the subject area.
- During the March 10, 2023, monitoring event, depth to ground water ranged from 11.87-27.55 ft BTOC. A ground water potentiometric plot of water level data, excluding ambiguous data from MW01, suggested a north to northeastward ground water flow direction at a hydraulic gradient of 0.126 vertical feet per lineal foot (ft/ft).
- During the June 6, 2023, monitoring event, depth to ground water ranged from 16.09-23.12 ft BTOC. A ground water potentiometric plot of water level data, excluding ambiguous data from MW01, suggested a northward ground water flow direction at a gradient of 0.18 ft/ft.
- The estimated velocity of ground water flow in the uppermost water-bearing zone at the subject site is 8.53E-06 m/s (2.8E-5 ft/s) and 3.35E-5 m/s (1.1E-4 ft/s), which were calculated based on average hydraulic conductivity of 1.37E-5 m/s (4.5E-05 ft/s), gradient of 0.126 ft/ft, and range of effective porosity or specific yield of 0.05 to 0.2.

4.0 Overview of Environmental History

The environmental history of the site including the following key elements is presented in ENW's IRAP.¹ Activities occurring after the IRAP are summarized in this section.

- **1960s.** Two gasoline USTs and one diesel UST likely were installed in the building compound at the site when the residence was constructed.
- **November 2018.** A release of petroleum hydrocarbons was suspected when Sanetel Pumps, Inc. encountered petroleum odors in an old unused well (CLAC 19644) at the site. Gasoline-range organics (GRO), diesel-range organics (DRO), and residual (oil)-range organics (RRO) above ODEQ's respective screening level risk-based concentrations (SLRBCs) in a water sample from this old well.
- **August to September 2019.** Universal Applicators, Inc. (UAI) decommissioned by removal one 300-gallon fuel UST (T3), decommissioned in place one 675-gallon fuel UST (T2), and by removal one 675-gallon heating oil UST (T1). A total of approximately 14 tons of PCS were removed from T3 and T1 excavations during the decommissioning process. Residual GRO and DRO were only detected in confirmation samples from T3. UAI reported a release to ODEQ on September 20,

2019, who assigned the site Leaking Underground Storage Tank File No. 03-19-0934. Characterization data was summarized in an Initial (Twenty Day) Report submitted to ODEQ.

- **November 2019 to January 2020.** UAI retained ENW to collaborate in response to ODEQ's November 19, 2019, letter request for further investigation to address data gaps, i.e., investigating the full extent of soil and ground water impacts at the site.
- **December 2021 and February 2022.** ENW installed 11 soil borings and collected soil and reconnaissance ground water samples to delineate the vertical and lateral extent of residual soil contamination associated with T1 and T3.⁵
 - Soil sampling data confirmed that impacts were relatively confined to the immediate area of tank T3 and beneath former heating oil tank T1 located next to the residence. Soil impacts extended to the shallow ground water table, which was encountered in borings at approximately 15 to 24 feet bgs.
 - Reconnaissance ground water sampling confirmed the presence of a plume of GRO- and DRO-related impacts next to T3, which extends north-northwest. Primarily DRO-related impacts were confirmed next to T1, which extends northeastward.
 - Concerning potential deeper aquifer impacts, GRO exceeding ODEQ's SLRBC were detected in a water sample from the old well (CLAC 19644); however, no petroleum hydrocarbons or related constituents were detected in a water sample from the new well (CLAC 74697).
 - Based on soil data, potentially unacceptable human health risks were suggested under the soil vapor intrusion into buildings pathway for a residential receptor, soil ingestion, dermal contact, and inhalation pathway for a construction worker, and leaching to ground water for a residential receptor and occupational worker.
 - Based on reconnaissance ground water data, potentially unacceptable human health risks were suggested under ingestion and inhalation from tap water pathway for residential and occupational well users, vapor intrusion into buildings for current and future residential occupants, and ground water in an excavation for future construction/excavation workers.
- **February 2023.** Given the FSI⁵ results and to address potential risks to human receptors, ENW developed an IRAP¹ in accordance with applicable Oregon Administrative Rules (OAR 340-122-0010 through -0115) and *ODEQ UST Cleanup Manual*¹⁰ and cleanup guidance.¹¹ IRAP tasks included:
 - Baseline ground water monitoring following installation of five ground water monitoring wells.
 - Immediate remedial measures as follows:
 - Excavating accessible PCS and disposing of these materials offsite at a permitted landfill.

¹⁰ <http://www.deq.state.or.us/lq/pubs/docs/tanks/USTCleanupManual.pdf>

¹¹ <http://www.deq.state.or.us/pubs/reports.htm#cuguidance>

- Applying chemical oxidant following soil removal to provide initial ground-water treatment and oxygen release compound while backfilling excavations to create ongoing remediation of residual petroleum-impacted soil and ground water.
 - Submitting progress reports summarizing work completed during the remedial action phase of work.
 - Preparing a comprehensive report documenting Immediate Remedial Measures site work.
- Ongoing post-interim action monitoring and possible additional interim actions, including initiating quarterly ground water monitoring and reporting, and providing recommendations for additional remedial actions (if needed / appropriate).
- Conducting a Residual Risk Assessment, including:
 - Reassessing the magnitude and extent of known residual impacts in soil and ground water.
 - Results of a beneficial land and water use survey.
 - Results of a residual risk assessment.
 - When appropriate, based on site conditions, requesting regulatory site closure.
- **March 2023.** Installation⁷ and monitoring⁸ of MW01 through MW05 during the first quarter 2023 detected dissolved GRO, DRO and related volatile organic constituents (VOCs) in shallow ground water beneath the site. The highest dissolved constituent concentrations were detected in MW02 (immediately down gradient of T2 and T3), followed by MW03 and MW04 (further down gradient and cross gradient) and MW05. This latter well had the highest DRO in ground water (as a note, MW05 is more proximate to the former heating oil UST T1). All five monitoring wells contained one or more dissolved constituents at concentrations exceeding SLRBCs. Ground-water plume morphology suggests an elongated ground water plume extending from T2/T3 north-northeastward toward MW03.
- **June 2023.** Monitoring⁹ of MW01 through MW05 during the second quarter 2023 detected dissolved GRO, DRO and related VOCs in shallow ground water beneath the site at concentrations exceeding ODEQ's SLRBCs. Again, the highest dissolved constituent concentrations were detected in MW02, followed by MW03 and MW04. Four of the five monitoring wells contained one or more dissolved constituents at concentrations exceeding generic SLRBCs. Because there is no known source of DRO near wells MW02 through MW04, ENW believes the presence of DRO in wells MW02 through MW04 is due to organic interference and overlap from weathered gasoline. During this sampling event there were no detections of GRO, DRO, or GRO- or DRO-related constituents in upgradient monitoring well MW01. Based on these results, the down gradient extent of the ground water plume lies at some point north of MW03 and northeast of MW05 and appears to be contained on site.

Based on these and previous results, ENW recommended:

- Performance of planned remedial excavations and application of post-excavation in-situ oxidization, as outlined in the IRAP.

- Post-remediation ground water monitoring for at least one year to determine long-term trends in residual ground-water concentrations and parameters, and to monitor effectiveness of interim remedial actions.

5.0 Approach

5.1 Objectives

The remedial action objectives for the site were to:

- 1) Reduce the concentrations of constituents of potential concern in shallow subsurface soil.
- 2) Reduce potential migration of contaminants onsite (via ground water or soil gas).
- 3) Utilize ISCO to reduce residual contaminant concentrations in shallow ground water at the source areas.

Additional objectives for the work were:

- To perform the work efficiently and cost-effectively, minimizing interference with farm operation. To this end a systematic approach was used to excavate PCS.
- To perform the work in a safe manner for technical personnel and site residents / farm employees.
- To document information and data generated in a professional manner that is valid for the intended use.

Photographs documenting ENW's field approach described in this section are presented in the photolog in Appendix A.

5.2 Roles and Responsibilities

UAI subcontracted ENW to provide on-site oversight to direct the extent and depth of excavation, collect samples as appropriate, arrange for waste disposal, and direct placement of in-situ treatment materials and excavation backfill.

- UAI and NTA Contracting, Inc. (NTA), of Portland, Oregon, as excavation contractors for the project. NTA subcontracted various trucking companies to transport PCS to the disposal facility.
- Regensis[®] supplied and recommended quantities of in-situ treatment products, i.e., PersulfOx[®], ORC-Advanced[®], and RegenOX[®] Part A and B to be applied to the base of the excavations.
- PCS was disposed of at Waste Management's Hillsboro Landfill in Hillsboro, Oregon, under UAI's WAM Profile #134514OR.
- Laboratory analytical services were provided by Friedman & Bruya, Inc. (F&BI) of Seattle, Washington.

5.3 Overview of Removal Process

Work began with NTA removing asphaltic concrete pavement and disposing/recycling of the debris at Knife River's Coffee Lake facility in Sherwood, Oregon. "Clean" overburden soil was removed, stockpiled

on plastic sheeting along the southern site border and west of the shop building, and later sampled and analyzed to confirm it was acceptable for backfilling the excavations. PCS was excavated and direct loaded into trucks and transported to Hillsboro Landfill for disposal under WAM profile #134514OR. Field headspace tests using a photoionization detector (PID) were conducted on removed soils to guide the direction and depth of excavation. Soil samples were collected as appropriate to direct work, to provide laboratory results for material disposal profiles and to provide sample data at excavation margins. The first application of in-situ soil treatment products was placed in the base of each excavation, wetted, and covered with a 12-inch layer of clean aggregate. The second application of in-situ treatment products was placed on the aggregate layer and wetted prior to backfilling the remaining excavation with compacted layers of crushed rock and clean overburden soil.

A Baker tank was staged on site for dewatering of the excavations if necessary. While ground water was encountered at depth in both excavations, the ground water level dropped as the excavations deepened. Thus, it was not necessary to dewater either excavation.

5.4 Preparation Activities

ENW conducted or coordinated the following activities per the approved IRAP.¹

Plan Preparation. Internal Sampling and Analysis Plan (SAP) and a Health and Safety Plan (HASP) were prepared for the project.

ODEQ Notification. ENW notified ODEQ in advance of the soil removal action and in-situ remediation.

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 excavation locations.

Acquired Approved Soil Profile. PCS was disposed of at Hillsboro Landfill under WAM Profile #134514OR acquired by UAI.

Planning. ENW scheduled and coordinated with NTA to begin site work.

5.5 PCS Excavation

PCS excavation was directed by ENW and performed by NTA using a tracked excavator. Work was conducted following the guidelines outlined in the *IRAP*,¹ including:

- All activities were conducted according to the methods and procedures outlined in the *HASP*,¹² the *IRAP* and internal SAPs.
- Asphaltic concrete pavement at EX01 was removed, loaded into a truck, and transported to Knife River's Coffee Lake facility for recycling/disposal.
- Apparent clean overburden soil (based on field inspection) was segregated (stockpiled) on sheet plastic at the site pending results of composite characterization sampling.

¹² ENW, April 10, 2023. *Health and Safety Plan*, 23737 Newland Road, Wilsonville, Oregon 97070, ODEQ LUST File No. 03-19-0934, Prepared for: Estate of David Ollison, Attn: Sandy Wehrman, 23737 SW Newland Road, Wilsonville, Oregon, 97070.

- Whenever possible, during excavation PCS was immediately loaded into trucks for transport to the receiving landfill.
- Work conducted each day was documented, including the lateral and vertical extent of progressive excavation, field inspection results (lithology, field headspace measurements with a PID, sheen testing, odor, olfactory evidence, etc.), the disposition of soils, samples collected, soil stockpiles created and loads of PCS hauled offsite.
- Soil samples were collected by ENW and submitted to the laboratory for analysis (further described below).

The progressive details and findings of soil excavation are presented in Section 6.

5.6 Soil Assessment and Confirmation

Field Screening. In general, PCS was readily apparent based on visual appearance (e.g., green or gray staining, sheen, petroleum odor). Field headspace screening of soil samples collected from the floor and sidewalls of EX01 and EX02 was conducted to guide the excavation of PCS. Field headspace was measured by placing an aliquot of soil to be tested in a resealable plastic bag and inserting the tip of a PID into the bag and reading headspace volatiles in parts per million by volume (ppmv). PID readings are shown on Table 1.

Confirmation Soil Sampling. Confirmation grab soil samples were collected from the excavation margins (sidewalls) and floor of EX01 and EX02.

- **EX01:** eight (8) sets of depth discrete upper, middle, and lower¹³ excavation sidewall samples; one depth discrete middle sidewall sample; and seven (7) discrete floor samples collected at depths ranging from 20 to 23 ft bgs.
- **EX02:** four (4) depth discrete sidewall samples collected at 15.5 to 16 ft bgs, which are 2 to 2.5 feet above the excavation floor, and one floor sample collected at 18 ft bgs.

Confirmation soil samples were collected consistent with Oregon regulations and ODEQ guidance regarding locations and number of samples to demonstrate that an area meets cleanup criteria. Typically, one set of sidewall samples were collected every 20 linear feet for sidewall.

Overburden Stockpile Sampling. Composite sampling methodology was used to sample the following overburden soil stockpiles as follows:

- **EX01 Upper Stockpile:** The EX01 upper stockpile was located between the south side of the holly orchard and south property line. Comp01 consisted of 20 subsamples from random locations throughout the east half of the approximately 160 cubic yard (cy) stockpile; and Comp02 consisted of 20 subsamples from random locations throughout the west half of the stockpile.
- **EX01 Lower Stockpile:** The EX01 lower soil stockpile was located between the east side of the holly orchard and west side of the shop building. Comp03 consisted of 20 subsamples from

¹³ Upper sidewall samples were collected at 7 to 12 ft bgs or one-third the height of the impacted soil zone, the lower sidewall samples were collected 2 to 4.5 ft above the excavation floor, and middle sidewall samples were collected at 14 ft bgs, which is approximately one-half the distance between the upper sidewall sample and lower sidewall sample depths.

random locations throughout the south half of the approximately 130 cy stockpile; and COMP04 consisted of 20 subsamples from random locations throughout the north half of the stockpile.

- **EX02 Stockpile:** Comp05 consisted of eight (8) subsamples from random locations throughout the approximately 25 cy stockpile.

Soil Sampling Methodology. All soil samples were collected under the supervision of an ENW licensed geologist using current industry-standard protocol. When used, stainless steel sampling tools were decontaminated with a sequential wash of Alconox-water, ½ Alconox-water (diluted), and distilled water before and after each sample.

- Grab samples were collected with a decontaminated stainless-steel sampling tool or from the excavator bucket at a position not in contact with the bucket.
- Composite samples were collected at random locations throughout the top, middle, and bottom of the soil piles. The subsamples were placed together in a stainless-steel mixing bowl, mixed and then a composite sample was collected from this material.

Soil samples were transferred with fresh Nitrile gloves into sample containers provided by the laboratory. The containers were filled to minimize headspace before immediate sealing. The jar was then labeled with a distinctive designation, the date, time, project number, and sampler's name, and then immediately placed in cooled storage until they were delivered to the laboratory. Chain-of-custody protocols were implemented. Soil analytical data are presented in Table 2.

5.7 Post-Excavation and Post-ISCO Application Ground Water Monitoring

Ground Water Elevation and Flow Direction. On October 3, 2023, ENW opened the monitoring wells to allow water levels to equilibrate to ambient barometric pressure. Once equilibrated, depth-to-water measurements were measured relative to the surveyed markings at the top-of-casing of each monitoring well. Ground water elevations were calculated by subtracting the depth-to-water measurement from the surveyed top-of-casing elevation. Water level data are presented in Table 3 (attached following text) and recorded onto field sample data sheets included in Appendix C.

Well Purging and Field-Measured Parameters. Monitoring wells MW01 through MW05 were purged and sampled using low-flow sampling methods. Prior to sampling, approximately 3-4 liters (0.80-1.05 gal) of ground water were purged from each well using a low-flow peristaltic pump and dedicated polyethylene tubing. To monitor purging progress, an In-Situ water quality meter was used to measure water quality parameters. Purging was discontinued when water quality parameters stabilized. Field parameter data are presented in Table 4 (attached following text) and recorded onto FSDS forms included in Appendix C.

All purge water was placed in a steel drum (sealed and labeled) and left on-site pending receipt of analytical results. Investigation-derived waste will be appropriately disposed of based on laboratory results.

5.8 Laboratory Analysis

All water and soil samples were analyzed by F&BI of Seattle, Washington according to the analytical plan presented in Table 5-1. Laboratory analytical reports and chain-of-custody forms are included in Appendix D.

Table 5-1. Analytical Plan

Analytical Method	Constituents	Soil
NWTPH-Gx	Northwest Total Petroleum Hydrocarbons – Gasoline-Range Organics (GRO)	All soil samples
NWTPH-Dx	Northwest Total Petroleum Hydrocarbons – Diesel-Range Organics (DRO) and Residual-Range Organics (RRO)	All soil samples
US Environmental Protection Agency (EPA) 8260D	GRO-Related Volatile Organic Constituents (VOCs)	Selected soil samples with the greatest concentration of GRO
EPA 8270E SIM	Polynuclear Aromatic Hydrocarbons (PAHs)	Selected soil samples with the greatest concentration of DRO
EPA 6020B	Total lead	Selected soil sample with the greatest concentration of GRO

5.9 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 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).

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 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. A completed soil matrix scoresheet provided in Appendix F shows a calculated score of 37, which corresponds to a Level 2 soil matrix cleanup site.

ODEQ Risk-Based Concentrations (RBCs). ODEQ has compiled default risk-based screening reference levels (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 RBC represents the concentration of a constituent 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 (1×10^{-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 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 ODEQ.^{[1],[2]} ODEQ does not require cleanup for metals concentrations below default background concentrations. Background concentrations are used for screening data for metals in soil as part of the risk assessment.

5.10 In-Situ Chemical Oxidation and Enhancement of Natural Attenuation

ENW determined that treatment of residual PCS by ISCO would be an effective form of enhancing natural attenuation based on site characteristics. Therefore, prior to backfilling a strong chemical oxidant (PersulfOx[®]) was added to the soil of the excavation floor to oxidize high-concentration residual impacts in ground water. At the same time, an oxygen release compound (ORC-Advanced[®]) was mixed with this oxidant to provide a long-term zone of oxidation to enhance natural attenuation of residual impacts in shallow ground water. Both products were obtained from Regenesys, the manufacturer.

Chemical application was conducted twice, in a phased approach, to allow for a portion of the excavation to be backfilled. Application details are presented in Section 6.

5.11 Waste Disposal

Wastes were disposed as follows during this SOW:

- The in-place decommissioned UST was removed from the site and taken to Metro Metals Northwest, Inc., of Portland, Oregon for recycling.
- A total of 1,286.32 tons PCS was transported to Hillsboro Landfill for disposal under WAM Profile #134514OR issued to UAI by Waste Management, Inc.
- Well purge water awaits disposal.

Disposal receipts are included in Appendix G.

6.0 Site Work Results

Site work was completed between August 30, 2023, and September 25, 2023. This section discusses work conducted in general chronological order. Please reference:

- Figure 3 for locations: former USTs, sampling locations, lines of section, and excavation margins.
- Figure 4 for a ground water potentiometric surface plot.
- Appendix A for a photolog chronicling the site work.
- Table 1 for a summary of soil sample information including name, date sampled, depth, field headspace (PID) reading, and locations.

^[1] ODEQ, March 2013, Development of Oregon Background Metals Concentrations in Soil: Technical Report, Land Quality Division Cleanup Program.

^[2] ODEQ, October 28, 2002, Default Background Concentrations for metals, Memo from Toxicology Workgroup to DEQ Cleanup, Table 1 – Oregon DEQ Suggested Default Background Concentrations for Inorganic Contaminants in Various Environmental Media.

- Table 2 for a summary of soil analytical data.
- Table 3 for a summary of ground water elevations.
- Table 4 for a summary of water quality parameters.

6.1 Soil Excavation

6.1.1 Excavation EX01

In general, the top five feet of soil did not contain PCS based on field screening. This clean overburden was set aside in 'clean' soil "Upper" and "Lower" stockpiles until confirmed through sampling.

August 30, 2023. Following the removal of asphaltic concrete pavement, NTA began to excavate clean overburden above the approximate location of the former 300-gallon UST (T3). Stained soils were encountered at 6 ft bgs, though no volatile hydrocarbons were detected through field headspace tests with a PID; the maximum headspace reading was 0.2 ppmv. Removed overburden soil was loaded into dump trucks and transported a short distance to the "Upper" stockpile located in the narrow strip of land between the holly orchard and the south property line. The Upper stockpile was underlain by plastic sheeting prior to placing removed soil. Asphalt debris was transported to Knife River's Coffee Lake facility in Sherwood. Two buried power conduits were encountered when excavating near the southwest corner of the house. The power to these lines was shut off.

August 31, 2023. NTA loaded dump trucks with PCS encountered at 5.5 ft bgs and deeper at the southeast corner of EX01. Throughout the day, eight truckloads (95.79 tons) of PCS were transported to Hillsboro Landfill for disposal under WAM profile #134514OR. Field headspace volatile readings ranged from 1.6 to 79 ppmv. Shallower impacts, i.e., 4 feet bgs, were encountered above T2, which was eventually exposed. NTA removed two trees along the east part of the south excavation wall to access and remove T2, which was filled with gravel when decommissioned in place. At the end of the day, EX01 was 20 ft-wide by 11 ft-long by 10.5 ft-deep.

September 1, 2023. NTA continued to excavate PCS below T2 at the southeast corner of EX01. to the north toward the barn. Field headspace detections ranged from 790 ppmv at 10 ft bgs to 42 ppmv at 15 ft bgs, at which depth partially decomposed porphyritic basalt was encountered. GS01 and GS02 were collected along the south wall at 14 ft and 12 ft bgs, respectively, where field headspace of the former sample was 27.1 ppmv. Field headspace along the east end of the north wall ranged from 39 ppmv at 8 ft to 2,700 ppmv at 18 ft bgs, at which depth ground water was encountered. Depth to ground water in monitoring wells MW02 and MW04 were 17.10 ft below top of casing (BTOC) and 18.05 ft BTOC, respectively. Throughout the day 12 truckloads (149.33 tons) of PCS were transported to Hillsboro Landfill for disposal. EX01 was approximately 16 ft wide by 27 ft long by 15 ft deep.

September 5, 2023. NTA continued to excavate PCS from the floor of EX01, which was loaded into trucks and transported to Hillsboro Landfill. After PCS was out of reach of the excavator, NTA began removing asphalt pavement and clean overburden to expand EX01 westward to create a bench where the excavator could sit to remove PCS from the floor and east side of EX01. Field headspace was >5,000 ppmv on the east wall, 52.7 ppmv at 17 ft bgs at the soil/water interface at the base of the south wall where GS03 was collected, and 28 ppmv at 10 ft bgs, 162 ppmv at 14 ft bgs, and 201 ppmv at 18 ft bgs at the center part of the north wall where GS04, GS05, and GS06, respectively, were collected. Clean overburden was

transferred to one of the on-site stockpiles. Throughout the day, 19 truckloads (255.03 tons) of PCS were disposed of at Hillsboro Landfill. Ground water seepage was observed at the base of EX01 at 18 ft bgs.

September 6, 2023. Given high field headspace detection on the east wall (>5,000 ppmv), NTA removed asphalt pavement to expand EX01 20 feet eastward. Field screening determined that clean overburden continued down to 3 ft bgs along the east bench. Clean overburden was placed in the Lower stockpile on plastic sheeting. Six inches of ground water was observed at a depth of 18 ft-10 in the northeast corner of EX01. No PCS was transported to Hillsboro Landfill on this date.

September 7, 2023. NTA excavated PCS underlying the east bench where field headspace readings:

- beneath former T3 were 3,347 ppmv,
- just north of former T3 ranged from >5,000 ppmv at 6-8 ft bgs to 600 ppmv at 9 ft bgs, and
- 10-20 ft north of former T3 ranged from 60 ppmv at 7-10.5 ft bgs to 440 ppmv at 13 ft bgs.

NTA alternately loaded PCS onto trucks from the east side of EX01 and the bench on the west side of EX01. Nine truckloads (119.52 tons) of PCS were transported to Hillsboro Landfill for disposal throughout the day. Confirmation samples GS07-GS09 were collected at the southeast corner of EX01 at 9 ft, 14 ft, and 17 ft bgs, respectively. GS10 was collected at the northeast corner of EX01 at 10 ft bgs, GS11 from the east floor at 20 ft bgs, and GS12-GS14 were collected midway along the east wall at 18 ft, 14 ft, and 10 ft bgs, respectively. EX01 was roughly 110 ft-long (east-west) by 75 ft-wide (north-south) by up to 20 ft-deep.

September 8, 2023. NTA continued to load PCS from the east wall, which was stockpiled on the floor of EX01 onto trucks. Six truckloads (85.85 tons) of PCS were disposed of at the Hillsboro Landfill on this date. Depth to ground water of 20.05 ft BTOC in MW02 and 21.40 ft BTOC in MW04 on this date were 2.95 ft and 3.35 ft lower compared to measurements on September 1, 2023. ENW believes ground water levels dropped around EX01 possibly due to the relief in pressure on the subsurface following the cumulative removal of an estimated 450 tons of clean soil overburden and over 700 tons of PCS from EX01. As a result, ground water never collected in the floor of EX01 other than a couple inches in a deeper sump in the northeast corner of the excavation.

September 11, 2023. NTA continued to load PCS from the east wall, which was stockpiled on the floor of EX01 onto trucks. NTA excavated additional PCS from the floor next to the south wall after a field headspace reading of 700 ppmv was detected. Field headspace readings from the south wall of EX01 ranged from 6.3 ppmv at 10 ft bgs to 211 ppmv at 18 ft bgs and headspace readings from the north wall ranged from 423 ppmv at 10 ft to 36.4 ppmv at 18 ft bgs. With the assistance of the excavator operator, ENW collected confirmation sample GS15 at 20 ft bgs at the south floor, GS16 at 20 ft bgs at the northeast floor, GS18 at 21.5 ft bgs at the north-central floor, GS19 at 23 ft bgs at the south-central floor, GS20-GS22 at 10 ft, 14 ft and 18 ft bgs at the center of the north wall, and GS23-GS25 at 10 ft, 14 ft and 18 ft bgs at the center of the south wall of EX01. Through the course of the day, 18 truckloads (246.58 tons) of PCS were disposed of at Hillsboro Landfill.

September 12, 2023. NTA excavated PCS from the west end of EX01 and loaded trucks bound for Hillsboro Landfill. Throughout the day, 16 truckloads (213.44 tons) of PCS were disposed of at the landfill. With the assistance of the excavator operator, ENW collected confirmation sample GS26 at 20 ft bgs at the west floor, GS27-GS29 at 10 ft, 14 ft, and 18 ft bgs at the west side of the north wall, GS30-GS32 at 10 ft, 14 ft, and 18 ft bgs at the west side of the south wall, and GS33 at 21 ft bgs at the west floor of EX01. This was the last set of confirmation samples collected from EX01.

September 13, 2023. ENW collected composite sample Comp01 from the east half of the Upper stockpile, Comp02 from the west half of the Upper stockpile, Comp03 from the south half of the Lower stockpile, and Comp04 from the north half of the Lower stockpile. Each composite sample consisted of 20 grab subsamples. The samples were submitted to the laboratory for analysis. Oxidants and clean backfill were placed in EX01 on this date.

EX01's final dimensions were approximately 10 to 45 ft-wide (north-south), 37 to 65 ft-long (east-west), and 20 to 25 ft-deep. The area of EX01 is approximately 2,100 square feet (sf). Approximately 390 cys of clean overburden (less asphalt pavement) were removed and temporarily stored in the Upper and Lower soil stockpiles at the site. After laboratory results of Comp01 through Comp04 confirmed no detectable petroleum hydrocarbons present, overburden soil from the Upper and Lower stockpiles was used as backfill in EX01. A total of 1,194.19 tons of PCS were removed from EX01 and disposed of at Hillsboro Landfill under WAM profile #134514OR.

6.1.2 Excavation EX02

September 20, 2023. NTA excavated EX02 at the location of former heating oil tank T1 on the west side of the house. Apparent clean overburden was placed adjacent to the north side of EX02. No field evidence of impacts was noted until blue-gray stained soils were encountered at 13 feet bgs. Such staining continued to 17 ft bgs, and at 18 ft bgs field headspace volatiles were detected at 218 ppmv. Soil moisture increased at 16 ft bgs, which compares to the ground water level of 16.40 BTOC in MW05 a few feet north of EX02. PCS was direct-loaded into trucks and transported to Hillsboro Landfill for disposal. With the assistance of the excavator operation, ENW collected confirmation soil samples GS34 at 18 ft bgs at the floor, GS35 at 16 ft bgs at the north wall, GS36 at 15.5 feet bgs at the south wall, GS37 at 16 ft bgs at the east wall, and GS38 at 16 ft bgs at the west wall of EX02. Field headspace readings ranged from 0.9 ppmv (GS38) to 218 ppmv (GS34). ENW collected composite sample Comp05 (consisted of 8 subsamples) from the overburden pile from EX02 and submitted the sample to the laboratory for analysis.

EX02's final dimensions were approximately 6 to 10 ft-wide (east-west), 14 to 19.5 ft-long (north-south), and 18 ft-deep. Its surface area was approximately 200 sf. Approximately 22 cubic yards of overburden soil were removed and stockpiled at the site pending results of laboratory analysis of Comp05. A total of 62.93 tons of PCS were removed from EX02 and disposed of at Hillsboro Landfill under WAM profile # 134514OR. Eventually, the overburden soil from EX02 was disposed of at Hillsboro Landfill (29.2 tons) after 230 milligrams per kilogram (mg/Kg) DRO was detected in Comp05.

6.2 Soil Treatment and Excavation Backfilling

PersulfOx[®] and ORC-Advanced[®] were evenly applied during backfilling of EX01 and EX02 using the following procedure:

1. **PersulfOx[®] and ORC-Advanced[®]**- prescribed quantities were evenly spread over the excavation floor prior to backfilling (or during the process of applying the first few feet of coarse ballast [2 to 4 open aggregate] over EX01). Given the large area covered by EX01, an extend-a-lift was used to hand apply (spread) PersulfOx[®] and ORC-Advanced[®] over the central portions of the excavation floor. Since EX02 covered a much smaller area, the excavator bucket was used to spread the prescribed amount of PersulfOx[®] and ORC-Advanced[®] across the excavation floor. In each case, these oxidants were thoroughly wetted with water prior to (or while) layering the first few feet of aggregate over the excavation floor.

2. **Ballast (2 to 4 open aggregate)** – 8 to 11 feet of aggregate was layered in EX01, bring the level to approximately 12 feet bgs. Eight feet of aggregate was layered in EX02 to a level of approximately 10 feet bgs.
3. **Crushed Rock (3/4-minus)** – 4 feet of ¾-minus crushed rock was added in 12-inch lifts and compacted in EX01 to a level of approximately 8 feet bgs. Eight feet of ¾-minus crushed rock was added in 12-inch lifts and compacted in EX02 to a level of approximately two feet bgs.
4. **Clean Overburden Soil** – 5 feet of clean overburden soil (from EX01) was added to EX01 in 12-inch lifts and compacted to a level of approximately 3 feet bgs. No clean overburden soil was added to EX02 at this stage.
5. **Crushed Rock (3/4-minus)** – 3 feet of ¾-minus crushed rock was added in 12-inch lifts and compacted in EX01 to a level of 3 inches below finished grade (to allow room for a 3-inch layer of asphaltic concrete paving). No additional crushed rock was added to EX02 at this stage.
6. **Clean Soil** – 2 feet of clean soil was added to EX02 to bring the excavation up to surrounding grade. Clean soil was not added to EX01 at this stage.

6.2.1 Backfilling EX01

September 13-14, 2023. EX01 was backfilled after applying 11,130.2 pounds of PersulfOx[®] and 1,520 pounds of ORC-Advanced[®] across approximately 2,100 sf. As described above, EX01 was backfilled with 8 to 11 feet of larger diameter aggregate, 4 feet of ¾-minus crushed rock compacted in lifts, 5 feet of clean overburden soil compacted in lifts, and 3 feet of crushed rock compacted in lifts to a level 3 inches below grade. The surface will be restored with a 3-inch lift of asphaltic concrete pavement.

6.2.2 Backfilling EX02

September 20-22, 2023. EX02 was backfilled after applying 495.9 pounds of PersulfOx[®] and 150 pounds of ORC-Advanced[®] across 200 sf. These oxidants were supplemented with 120 pounds of RegenOX[®] Part A and 150 pounds of RegenOX[®] Part B, which also promote ISCO of petroleum-related volatiles. As described above, EX02 was backfilled with 8 feet of larger diameter aggregate, 8 feet of ¾-minus crushed rock compacted in lifts, and 2 feet of clean soil.

6.3 Confirmation Sampling Results

In total, 37 discrete soil samples and five composite soil samples were collected and analyzed with the following results: Table 2 summarizes all soil data and Figure 3 presents GRO sampling results by location in EX01 and EX02.

6.3.1 Excavation EX01

- Confirmation sampling from the margins of the excavation detected GRO in GS16, GS18, GS19, GS26, and GS33 collected from the floor (20 to 23 ft bgs) at the central, north, and west portion or EX01 at concentrations ranging from 78 mg/Kg (GS19) to 1,100 mg/Kg (GS26), which exceed ODEQ's SLRBC of 31 mg/Kg. GRO was also detected in GS25, GS29, and GS32 (18 ft bgs) at the central and west end of the south wall and the west end of the north wall at concentrations ranging from 33 mg/Kg to 180 mg/Kg, which exceed ODEQ's SLRBC.

- The GRO-related VOCs benzene, ethylbenzene, and naphthalene in GS16 (20 ft bgs) and naphthalene in GS26 (20 ft bgs) exceeded ODEQ's SLRBCs.
- Total lead was not detected at concentrations greater than ODEQ's regional default background concentration or Clean Fill Screening Level (CFSL) of 28 mg/Kg. PAHs were either not detected or detected at concentrations less than ODEQ's SLRBCs.

6.3.2 Excavation EX02

- Confirmation sampling from the margins of the excavation detected GRO in GS34 collected from the floor (18 ft bgs) and GS36 from the south wall at concentrations of 100 mg/Kg and 43 mg/Kg, which exceed ODEQ's SLRBC.
- No GRO-related VOCs were detected above laboratory method reporting limits (MRLs).
- Total lead was less than ODEQ's regional default background concentration and CFSL.
- PAHs were either not detected or detected at concentrations less than ODEQ's SLRBCs.

6.3.3 Temporary Overburden Soil Stockpiles

- No petroleum hydrocarbons were detected above laboratory MRLs in Comp01 or Comp02 collected from EX01's Upper overburden stockpile, or in Comp03 or Comp04 collected from EX01's Lower overburden stockpile. Based on these analytical results, overburden soils in the Upper and Lower overburden stockpiles qualify as clean fill and may be used as backfill in EX01.
- DRO at 230 mg/Kg was detected in Comp05 collected from EX02's overburden stockpile. Based on these results overburden soil in EX02's stockpile does not qualify as clean fill and was thus disposed of at Hillsboro Landfill under WAM profile #134514OR.

6.4 Post-Excavation and Post-ISCO Ground Water Monitoring

Ground Water Elevation and Flow Direction. Depth to water and calculated water level elevations are presented on Table 3 (behind the Tables Tab after the text). Figure 4 presents a ground water potentiometric surface plot generated from the ground water elevations measured during the monitoring event. During the September 25, 2023, event, depth to ground water ranged from 15.05 to 26.77 feet BTOC. The ground-water elevation data from monitoring well MW01 was not included in the potentiometric plot (Figure 4) for this monitoring event since the data at this location appeared ambiguous. Based on the depth to ground water results for the other four monitoring wells, the ground-water flow direction was northeastward with a hydraulic gradient of approximately 0.06 ft/f).

Water Quality Parameters. Ground water parameters were measured during the September 25, 2023, and October 3, 2023, ground water monitoring events (Table 4).

- **pH measurements** were at or below the low range of pH of natural waters (6 to 9) in Oregon, ranging between 5.25 and 6.63 on September 25, 2023, and 2.32 and 6.24 on October 3, 2023. A drop in pH was noted in all wells, particularly in MW05, following the application of ISCO agents (See chart E-1 in Appendix E).
- **Temperatures** ranged between 14.74 to 16.14 °C September 25, 2023, and 13.91 to 16.39 °C October 3, 2023.

- **Electrical conductivity** ranged between 67 to 754 microSiemens per centimeter ($\mu\text{S}/\text{cm}$) on September 25, 2023, and 79 to 28,500 $\mu\text{S}/\text{cm}$ on October 3, 2023. With one exception, a rise in electrical conductivity was noted, particularly in MW05, following the application of ISCO agents (See chart E-2 in Appendix E). The exception was MW04, where a decreasing trend is evident.
- **Oxidation-reduction potential (ORP)** ranged from 0-73 to 123 mV (millivolt) on September 25, 2023, and 75 to 609 mV on October 3, 2023. Positive ORP readings generally suggest oxidizing conditions, which is conducive to degradation of petroleum hydrocarbons. A rise in ORP was noted, particularly in MW05, following application of ISCO agents (See chart E-3 in Appendix E). Consistent positive ORP was noted in all monitoring wells during the two post-excavation and post-ISOC application events.
- **Dissolved oxygen (DO)** ranged from 0.64 to 3.94 milligrams per liter (mg/L) on September 25, 2023, and 0.89 mg/L to 11.47 mg/L on October 3, 2023. A rise in DO was noted following the application of ISCO agents (See chart E-4 in Appendix E). During the September and October 2023 monitoring events, DO readings were above 1.0 mg/L in MW01 and MW04, and DO was less than 1.0 mg/L in MW02, MW03, and MW05. DO greater than 1.0 mg/L suggests favorable conditions for natural attenuation by native aerobic microorganisms within the contaminant plume during portions of the year.

6.5 Preliminary Risk Screening (Risk Drivers)

To better understand potential risk drivers, a preliminary risk screening was conducted using the soil confirmation sample data from this soil removal action combined with the data from previous investigations. In Table 5, the identified constituents of potential concern (COPCs) in soil 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 to determine potential drivers of risk at this property.

Risk Drivers in Soil. Table 2 identified benzene, ethylbenzene, naphthalene and GRO as COPCs in soil (constituents exceeding their respective SLRBCs). An evaluation of risk drivers for soil (Table 5) suggests that two or more COPCs in soil may pose a risk to human health through the following pathways:

- *Vapor Intrusion into Buildings* exposure pathway for residential and urban residential receptors.¹⁴
- *Leaching to Ground Water* exposure pathway for residential, urban residential, and occupational receptors.

Further Evaluation of Soil Pathways. ENW recommends a soil gas / sub-slab vapor survey to evaluate the vapor intrusion (VI) risk to current and future residents at the subject site.

The leaching to ground water followed by exposure through ingestion of ground water pathway is considered by ODEQ to be complete only if a review of current and reasonable likely future uses of ground water in the vicinity of the site determines that the impacted ground water aquifer is currently being used, or could be used in the future, for human consumption (i.e., domestic or occupational use of a water well containing contaminated ground water).

¹⁴ Pursuant to Updates to ODEQ's Vapor Intrusion approach, soil data has been eliminated for VI screening.

Domestic use of the shallow impacted aquifer at the site is deemed unlikely given the shallow aquifer's low permeability (Section 3) and inherent low productivity. Rather, domestic water used by the residents at the site is produced in a fractured porous basalt aquifer from 329 to 420 feet bgs (CLAC 74697). While GRO, DRO, and RRO exceeding ODEQ's SLRBCs were detected in a ground water sample from the old 440-ft-deep domestic well (CLAC 19644) at the site, no petroleum hydrocarbons or related constituents were detected in a water sample from the new 420-ft-deep well (CLAC 74697). This suggests that a faulty seal in the old well may have led to cross-contamination from the shallow to deeper basalt aquifer rather than vertical migration of contaminants through hundreds of feet of basalt rock. Thus, the old well was abandoned in June 2023 (CLAC 78034)⁶ per ENW's recommendation to prevent cross-contamination of the deeper basalt aquifer. Given these considerations, the risk of exposure by leaching or domestic use is likely to be low. A beneficial water use determination (to be completed as part of a Residual Risk Assessment) is required to further support an argument for exclusion of this pathway.

Please note: This soil removal and ISCO treatment SOW was completed for the purpose of reducing: the concentrations of COPCs in shallow subsurface soil, potential migration of contaminants onsite via ground water or soil gas, and residual contaminant concentrations to levels where risk-based regulatory closure can be completed without engineering controls. This SOW was not intended to evaluate risk or satisfy all regulatory requirements for site closure.

7.0 Discussion and Recommendations

The removal of PCS from EX01 and EX02 has effectively reduced concentrations of petroleum hydrocarbons and related constituents in the former release source areas (area of highest petroleum impacts). Subsequent ISCO treatment applied to each release area was intended as a proven means to enhance natural degradation of residual petroleum impacts in both soil and ground water at these locations. Post-excavation and ISCO monitoring demonstrate a response in ground water parameters, i.e., electrical conductivity, ORP, and DO, to ISCO applications. The response of ground water COI concentrations will be presented in subsequent post-remediation quarterly ground water monitoring reports, under separate cover.

Preliminary risk screening identified benzene, ethylbenzene, naphthalene and GRO as COPCs in soil. An evaluation of risk drivers suggests that two or more COPCs in soil may pose a risk to human health through the following pathways:

- *Vapor Intrusion into Buildings* exposure pathway for residential and urban residential receptors.¹⁵
- *Leaching to Ground Water* exposure pathway for residential, urban residential, and occupational receptors.

Pursuant to Updates to ODEQ's Vapor Intrusion approach, a soil gas / sub-slab vapor survey is recommended to evaluate the VI risk to current and future residents at the subject site.

Domestic use of the shallow impacted aquifer at the site is deemed unlikely given the shallow aquifer's low permeability and inherent low productivity. Rather, domestic water used by the residents at the site is produced in a fractured porous basalt aquifer from 329 to 420 feet bgs (CLAC 74697). Although GRO,

¹⁵ Pursuant to Updates to ODEQ's Vapor Intrusion approach, soil data has been eliminated for VI screening.

DRO, and RRO exceeding ODEQ's SLRBCs were detected in a ground water sample from the old 440-ft-deep domestic well on site, no petroleum hydrocarbons or related constituents were detected in a water sample from the new 420-ft-deep well. which suggests that a faulty seal in the old well may have led to cross-contamination from the shallow to deeper basalt aquifer rather than vertical migration of contaminants through hundreds of feet of basalt rock. A beneficial water use determination is recommended to further support an argument for exclusion of this pathway, as part of a residual risk assessment.

A Contaminated Media Management Plan is recommended to inform decisions related to managing, characterizing, and disposing of low concentrations of petroleum-impacted soil and ground water during future trenching, utility, or other site subsurface-related activities that could encounter these petroleum-impacted media at the subject property. This plan would also serve to notify workers of the magnitude and extent of subsurface impacts, prescribe appropriate protective equipment, and present appropriate management and disposal options during future construction projects.

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 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. 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.

Table 1 - Sample Location and Field Headspace Volatiles Summary

Sample Location ID	Date Sampled	Depth Sampled (feet)	PID Field Headspace (ppmv)	Sample Method	Location
Excavaton EX01					
GS01	9/1/2023	14	27.1	Grab From Excavator Bucket	EX01 - S wall
GS02	9/1/2023	12	--	Grab From Excavator Bucket	EX01 - S wall
GS03	9/5/2023	17	53	Grab From Excavator Bucket	EX01 - S wall
GS04	9/5/2023	10	28	Grab From Excavator Bucket	EX01 - N wall E side
GS05	9/5/2023	14	162	Grab From Excavator Bucket	EX01 - N wall E side
GS06	9/5/2023	18	210	Grab From Excavator Bucket	EX01 - N wall E side
GS07	9/7/2023	9	24.5	Grab From Excavator Bucket	EX01 - SE wall
GS08	9/7/2023	14	3	Grab From Excavator Bucket	EX01 - SE wall
GS09	9/7/2023	17	10.8	Grab From Excavator Bucket	EX01 - SE wall
GS10	9/7/2023	14	56.1	Grab From Excavator Bucket	EX01 - NE wall
GS11	9/7/2023	20	148.2	Grab From Excavator Bucket	EX01 - E floor
GS12	9/7/2023	18	1,008	Grab From Excavator Bucket	EX01 - E wall
GS13	9/7/2023	14	88.9	Grab From Excavator Bucket	EX01 - E wall
GS14	9/7/2023	10	60.1	Grab From Excavator Bucket	EX01 - E wall
GS15	9/11/2023	20	24	Grab From Excavator Bucket	EX01 - S floor
GS16	9/11/2023	20	2,500	Grab From Excavator Bucket	EX01 - NE floor
GS18	9/11/2023	21.5	>5,000	Grab From Excavator Bucket	EX01 - N central floor
GS19	9/11/2023	23	3,200	Grab From Excavator Bucket	EX01 - S central floor
GS20	9/11/2023	10	35	Grab From Excavator Bucket	EX01 N wall center
GS21	9/11/2023	14	224	Grab From Excavator Bucket	EX01 N wall center
GS22	9/11/2023	18	620	Grab From Excavator Bucket	EX01 N wall center
GS23	9/11/2023	10	25	Grab From Excavator Bucket	EX01 S wall center
GS24	9/11/2023	14	56	Grab From Excavator Bucket	EX01 S wall center
GS25	9/11/2023	18	636	Grab From Excavator Bucket	EX01 S wall center
GS26	9/12/2023	20	502.3	Grab From Excavator Bucket	EX01 - W floor
GS27	9/12/2023	10	20.8	Grab From Excavator Bucket	EX01 N wall W side
GS28	9/12/2023	14	3	Grab From Excavator Bucket	EX01 N wall W side
GS29	9/12/2023	18	7.2	Grab From Excavator Bucket	EX01 N wall W side
GS30	9/12/2023	10	0.5	Grab From Excavator Bucket	EX01 S wall W side
GS31	9/12/2023	14	7.4	Grab From Excavator Bucket	EX01 S wall W side
GS32	9/12/2023	18	167.8	Grab From Excavator Bucket	EX01 S wall W side
GS33	9/12/2023	21	21.2	Grab From Excavator Bucket	EX01 W floor
Comp01	9/13/2023	V	--	Grab From Hand Auger	20 Subsample Composite of E half of Upper Overburden Stockpile
Comp02	9/13/2023	V	--	Grab From Hand Auger	20 Subsample Composite of W half of Upper Overburden Stockpile
Comp03	9/13/2023	V	--	Grab From Hand Auger	20 Subsample Composite of S half of Lower Overburden Stockpile
Comp04	9/13/2023	V	--	Grab From Hand Auger	20 Subsample Composite of N half of Lower Overburden Stockpile
Excavaton EX02					
GS34	9/20/2023	18	218	Grab From Excavator Bucket	EX02 floor
GS35	9/20/2023	16	4	Grab From Excavator Bucket	EX02 N wall
GS36	9/20/2023	15.5	50	Grab From Excavator Bucket	EX02 S wall
GS37	9/20/2023	16	26.5	Grab From Excavator Bucket	EX02 E wall
GS38	9/20/2023	16	0.9	Grab From Excavator Bucket	EX02 W wall
Comp05	9/20/2023	V	2.1	Grab From Hand Auger	8 Subsample Composite of EX02 Overburden Stockpile
Notes. ppmv = parts per million by volume V = composite subsamples were collected at 'various' depths in the soil stockpiles, representative of the upper, middle or lower portions of the soil stockpile -- = not recorded					

Table 2 - Summary of Analytical Data, Soil

Location ID		G1		G2		HOT			B01		
Sample ID		GI-N-59	GI-S-59	N 60" G2	S 62" G2	99" HOT S	99" HOT N	7' W HOT	B01-8.5	B01-12	B01-SWI-18
Date Sampled		8/27/2019	8/27/2019	9/11/2019	9/11/2019	9/11/2019	9/11/2019	9/11/2019	12/2/2021	12/2/2021	12/2/2021
Depth Sampled (feet)		5	5	5	5.2	8.3	8.3	7	8.5	12	18
Sampled By		UAI	UAI	UAI	UAI	UAI	UAI	UAI	ENW	ENW	ENW
Location		Tank T3, North End	Tank T3, South End	Tank T2, North End	Tank T2, South End	Tank T1, South End (soil removal confirmaiton sample)	Tank T1, North End (soil removal confirmaiton sample)	Tank T1, Center (initial assessment sample)	Tank T3, North End		
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)	---	---
EDB (1,2-dibromoethane)	C, V	---	---	---	---	---	---	---	<0.05 (ND)	---	---
EDC (1,2-dichloroethane)	C, V	---	---	---	---	---	---	---	<0.05 (ND)	---	---
Ethylbenzene	C, V	---	---	---	---	---	---	---	<0.05 (ND)	---	---
MTBE (methyl t-butyl ether)	C, V	---	---	---	---	---	---	---	<0.05 (ND)	---	---
Naphthalene	C, V	---	---	---	---	---	---	---	14	---	---
iso-Propylbenzene (cumene)	nc, v	---	---	---	---	---	---	---	<0.05 (ND)	---	---
Toluene	nc, v	---	---	---	---	---	---	---	<0.05 (ND)	---	---
1,2,4-Trimethylbenzene	nc, v	---	---	---	---	---	---	---	<0.05 (ND)	---	---
1,3,5-Trimethylbenzene	nc, v	---	---	---	---	---	---	---	<0.05 (ND)	---	---
Xylenes	nc, v	---	---	---	---	---	---	---	<0.15 (ND)	---	---
Metals											
Lead	NA, nv	---	---	---	---	---	---	---	12.3	---	---
Semivolatile Organic Constituents											
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	nc, v	---	---	---	---	---	---	---	0.044	---	---
Anthracene	nc, v	---	---	---	---	---	---	---	0.054	---	---
Benz[a]anthracene	C, V	---	---	---	---	---	---	---	0.03	---	---
Benzo[a]pyrene (BaP equivalents)	C, nv	---	---	---	---	---	---	---	0.03	---	---
Benzo[b]fluoranthene	C, nv	---	---	---	---	---	---	---	<0.01 (ND)	---	---
Benzo[k]fluoranthene	C, nv	---	---	---	---	---	---	---	<0.01 (ND)	---	---
Chrysene	C, nv	---	---	---	---	---	---	---	0.013	---	---
Dibenz[a,h]anthracene	C, nv	---	---	---	---	---	---	---	0.01	---	---
Fluoranthene	nc, nv	---	---	---	---	---	---	---	0.034	---	---
Fluorene	nc, v	---	---	---	---	---	---	---	<0.01 (ND)	---	---
Indeno[1,2,3-cd]pyrene	C, nv	---	---	---	---	---	---	---	<0.01 (ND)	---	---
Pyrene	nc, v	---	---	---	---	---	---	---	0.061	---	---

Table 2 - Summary of Analytical Data, Soil

Location ID		G1		G2		HOT			B01		
Sample ID		GI-N-59	GI-S-59	N 60" G2	S 62" G2	99" HOT S	99" HOT N	7' W HOT	B01-8.5	B01-12	B01-SWI-18
Date Sampled		8/27/2019	8/27/2019	9/11/2019	9/11/2019	9/11/2019	9/11/2019	9/11/2019	12/2/2021	12/2/2021	12/2/2021
Depth Sampled (feet)		5	5	5	5.2	8.3	8.3	7	8.5	12	18
Sampled By		UAI	UAI	UAI	UAI	UAI	UAI	UAI	ENW	ENW	ENW
Location		Tank T3, North End	Tank T3, South End	Tank T2, North End	Tank T2, South End	Tank T1, South End (soil removal confirmaiton sample)	Tank T1, North End (soil removal confirmaiton sample)	Tank T1, Center (initial assessment sample)	Tank T3, North End		
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	34800	36800	<20 (NP)	<20 (NP)	---	---	---	4200	3700	28
Generic Diesel / Heating Oil (DRO)	nc, v	337	7650	<50 (NP)	<50 (NP)	<20 (ND)	<50 (ND)	5020	710	330	<50 (ND)
Generic Mineral Insulating Oil (RRO)	nc, nv	<100 (ND)	<100 (ND)	<100 (NP)	<100 (NP)	<100 (ND)	<100 (ND)	<100 (ND)	<250 (ND)	<250 (ND)	<250 (ND)

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.

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.

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

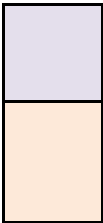


Table 2 - Summary of Analytical Data, Soil

Location ID		B01'	B02	B03'	B04	B05	B06	B07	B08		B09
Sample ID		B01'-SWI-17	B02-11	B03'-SWI-16	B04-SWI-18	B05-SWI-18	B06-SWI-21	B07-SWI-18	B08-15	B08-SWI-18.5	B09-SWI-17.5
Date Sampled		12/10/2021	12/2/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	2/14/2022	2/14/2022	2/14/2022
Depth Sampled (feet)		17	11	16	18	18	21	18	15	18.5	17.5
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		3' North of Tank T3	Tank T3, South End	14' South of Tank T3	21' West of Tank T3	28' East of Tank T3	West of Tank T1	North of Deck/House NE of Tank T1	Between Shop Building and Greenhouse - West of T2 and T3		SE Corner of Shop Building - NW of T2 and T3
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)
Volatile Organic Constituents											
Benzene	c, v		0.78	---	---	---	---	---	---	<0.02 (ND)	0.15
EDB (1,2-dibromoethane)	c, v		<0.05 (ND)	---	---	---	---	---	---	---	---
EDC (1,2-dichloroethane)	c, v		<0.05 (ND)	---	---	---	---	---	---	---	---
Ethylbenzene	c, v		7.4	---	---	---	---	---	---	<0.02 (ND)	1.2
MTBE (methyl t-butyl ether)	c, v		<0.05 (ND)	---	---	---	---	---	---	---	---
Naphthalene	c, v		1.6	---	---	---	---	---	---	---	---
iso-Propylbenzene (cumene)	nc, v		0.95	---	---	---	---	---	---	---	---
Toluene	nc, v		12	---	---	---	---	---	---	<0.02 (ND)	1.4
1,2,4-Trimethylbenzene	nc, v		21	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	nc, v		6.6	---	---	---	---	---	---	---	---
Xylenes	nc, v		43	---	---	---	---	---	---	<0.06 (ND)	8.4
Metals											
Lead	NA, nv		8.45	---	---	---	---	---	---	---	---
Semivolatile Organic Constituents											
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		---	---	---	---	---	---	---	---	---

Table 2 - Summary of Analytical Data, Soil

Location ID		B01'	B02	B03'	B04	B05	B06	B07	B08		B09
Sample ID		B01'-SWI-17	B02-11	B03'-SWI-16	B04-SWI-18	B05-SWI-18	B06-SWI-21	B07-SWI-18	B08-15	B08-SWI-18.5	B09-SWI-17.5
Date Sampled		12/10/2021	12/2/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	2/14/2022	2/14/2022	2/14/2022
Depth Sampled (feet)		17	11	16	18	18	21	18	15	18.5	17.5
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		3' North of Tank T3	Tank T3, South End	14' South of Tank T3	21' West of Tank T3	28' East of Tank T3	West of Tank T1	North of Deck/House NE of Tank T1	Between Shop Building and Greenhouse - West of T2 and T3		SE Corner of Shop Building - NW of T2 and T3
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)
Total Petroleum Hydrocarbons											
Generic Gasoline (GRO)		nc, v	1300	<20 (NP)	<5 (ND)	<50 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	140
Generic Diesel / Heating Oil (DRO)		nc, v	<50 (ND)	<50 (NP)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)
Generic Mineral Insulating Oil (RRO)		nc, nv	<250 (ND)	<250 (NP)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)

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

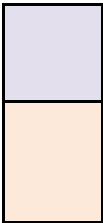


Table 2 - Summary of Analytical Data, Soil

Location ID		B10			B11	GS01	GS02	GS03	GS04	GS05	GS06
Sample ID		B10-6.5	B10-10	B10-SWI-14.5	B11-SWI-17.5	GS01-EX01-SW-14	GS02-EX01-SW-12	GS03-EX01-SW-17-SWI	GS04-EX01-NW-10	GS05-EX01-NW-14	GS06-EX01-NW-18-SWI
Date Sampled		2/14/2022	2/14/2022	2/14/2022	2/14/2022	9/1/2023	9/1/2023	9/5/2023	9/5/2023	9/5/2023	9/5/2023
Depth Sampled (feet)		6.5	10	14.5	17.5	14	12	17	10	14	18
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		South of T1			East of Shop Building - North of B09	EX01 - S wall	EX01 - S wall	EX01 - S wall	EX01 - N wall E side	EX01 - N wall E side	EX01 - N wall E side
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	<0.02 (ND)	<0.03 (ND)	<0.02 (ND)	0.93	---	---	---	---	---	---
EDB (1,2-dibromoethane)	c, v	---	<0.05 (ND)	---	---	---	---	---	---	---	---
EDC (1,2-dichloroethane)	c, v	---	<0.05 (ND)	---	---	---	---	---	---	---	---
Ethylbenzene	c, v	0.34	<0.05 (ND)	<0.02 (ND)	0.91	---	---	---	---	---	---
MTBE (methyl t-butyl ether)	c, v	---	<0.05 (ND)	---	---	---	---	---	---	---	---
Naphthalene	c, v	0.11	0.18	---	---	---	---	---	---	---	---
iso-Propylbenzene (cumene)	nc, v	---	<0.05 (ND)	---	---	---	---	---	---	---	---
Toluene	nc, v	<0.02 (ND)	<0.05 (ND)	<0.02 (ND)	0.17	---	---	---	---	---	---
1,2,4-Trimethylbenzene	nc, v	---	<0.05 (ND)	---	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	nc, v	---	0.12	---	---	---	---	---	---	---	---
Xylenes	nc, v	0.52	<0.05 (ND)	<0.06 (ND)	4.2	---	---	---	---	---	---
Metals											
Lead	NA, nv	---	---	---	---	---	---	---	---	---	---
Semivolatile Organic Constituents											
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---	---	---
Anthracene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---	---	---
Benz[a]anthracene	c, v	<0.05 (ND)	---	---	---	---	---	---	---	---	---
Benzo[a]pyrene (BaP equivalents)	c, nv	<0.05 (ND)	---	---	---	---	---	---	---	---	---
Benzo[b]fluoranthene	c, nv	<0.05 (ND)	---	---	---	---	---	---	---	---	---
Benzo[k]fluoranthene	c, nv	<0.05 (ND)	---	---	---	---	---	---	---	---	---
Chrysene	c, nv	<0.05 (ND)	---	---	---	---	---	---	---	---	---
Dibenz[a,h]anthracene	c, nv	<0.05 (ND)	---	---	---	---	---	---	---	---	---
Fluoranthene	nc, nv	<0.05 (ND)	---	---	---	---	---	---	---	---	---
Fluorene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---	---	---
Indeno[1,2,3-cd]pyrene	c, nv	<0.05 (ND)	---	---	---	---	---	---	---	---	---
Pyrene	nc, v	0.27	---	---	---	---	---	---	---	---	---

Table 2 - Summary of Analytical Data, Soil

Location ID		B10			B11	GS01	GS02	GS03	GS04	GS05	GS06
Sample ID		B10-6.5	B10-10	B10-SWI-14.5	B11-SWI-17.5	GS01-EX01-SW-14	GS02-EX01-SW-12	GS03-EX01-SW-17-SWI	GS04-EX01-NW-10	GS05-EX01-NW-14	GS06-EX01-NW-18-SWI
Date Sampled		2/14/2022	2/14/2022	2/14/2022	2/14/2022	9/1/2023	9/1/2023	9/5/2023	9/5/2023	9/5/2023	9/5/2023
Depth Sampled (feet)		6.5	10	14.5	17.5	14	12	17	10	14	18
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		South of T1			East of Shop Building - North of B09	EX01 - S wall	EX01 - S wall	EX01 - S wall	EX01 - N wall E side	EX01 - N wall E side	EX01 - N wall E side
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)
Total Petroleum Hydrocarbons											
Generic Gasoline (GRO)		nc, v	200	470	7.9	30	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	15
Generic Diesel / Heating Oil (DRO)		nc, v	4900	1800	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)
Generic Mineral Insulating Oil (RRO)		nc, nv	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)

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.

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.

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

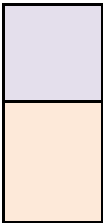


Table 2 - Summary of Analytical Data, Soil

Location ID		GS07	GS08	GS09	GS10	GS11	GS12	GS13	GS14	GS15	GS16
Sample ID		GS07-EX01-SEW-9	GS08-EX01-SEW-14	GS09-EX01-SEW-17	GS10-EX01-NEW-14	GS11-EX01-EF-20	GS12-EX01-EW-18-SWI	GS13-EX01-EW-14	GS14-EX01-EW-10	GS15-EX01-F-20	GS16-EX01-F-20
Date Sampled		9/7/2023	9/7/2023	9/7/2023	9/7/2023	9/7/2023	9/7/2023	9/7/2023	9/7/2023	9/11/2023	9/11/2023
Depth Sampled (feet)		9	14	17	14	20	18	14	10	20	20
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		EX01 - SE wall	EX01 - SE wall	EX01 - SE wall	EX01 - NE wall	EX01 - E floor	EX01 - E wall	EX01 - E wall	EX01 - E wall	EX01 - S floor	EX01 - NE floor
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	---	---	---	---	---	---	---	---	---	0.18
EDB (1,2-dibromoethane)	C, V	---	---	---	---	---	---	---	---	---	<0.05 (ND)
EDC (1,2-dichloroethane)	C, V	---	---	---	---	---	---	---	---	---	<0.05 (ND)
Ethylbenzene	C, V	---	---	---	---	---	---	---	---	---	0.48
MTBE (methyl t-butyl ether)	C, V	---	---	---	---	---	---	---	---	---	<0.05 (ND)
Naphthalene	C, V	---	---	---	---	---	---	---	---	---	0.22
iso-Propylbenzene (cumene)	nc, v	---	---	---	---	---	---	---	---	---	0.15
Toluene	nc, v	---	---	---	---	---	---	---	---	---	0.22
1,2,4-Trimethylbenzene	nc, v	---	---	---	---	---	---	---	---	---	3.8
1,3,5-Trimethylbenzene	nc, v	---	---	---	---	---	---	---	---	---	1.3
Xylenes	nc, v	---	---	---	---	---	---	---	---	---	2.8
Metals											
Lead	NA, nv	---	---	---	---	---	---	---	---	---	7.25
Semivolatile Organic Constituents											
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	---	---	---	---	---	---	---	---	---	---

Table 2 - Summary of Analytical Data, Soil

Location ID		GS07	GS08	GS09	GS10	GS11	GS12	GS13	GS14	GS15	GS16
Sample ID		GS07-EX01-SEW-9	GS08-EX01-SEW-14	GS09-EX01-SEW-17	GS10-EX01-NEW-14	GS11-EX01-EF-20	GS12-EX01-EW-18-SWI	GS13-EX01-EW-14	GS14-EX01-EW-10	GS15-EX01-F-20	GS16-EX01-F-20
Date Sampled		9/7/2023	9/7/2023	9/7/2023	9/7/2023	9/7/2023	9/7/2023	9/7/2023	9/7/2023	9/11/2023	9/11/2023
Depth Sampled (feet)		9	14	17	14	20	18	14	10	20	20
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		EX01 - SE wall	EX01 - SE wall	EX01 - SE wall	EX01 - NE wall	EX01 - E floor	EX01 - E wall	EX01 - E wall	EX01 - E wall	EX01 - S floor	EX01 - NE floor
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)
Total Petroleum Hydrocarbons											
Generic Gasoline (GRO)		nc, v	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	370
Generic Diesel / Heating Oil (DRO)		nc, v	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)
Generic Mineral Insulating Oil (RRO)		nc, nv	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)

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

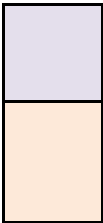


Table 2 - Summary of Analytical Data, Soil

Location ID		GS18	GS19	GS20	GS21	GS22	GS23	GS24	GS25	GS26	GS27
Sample ID		GS18-EX01-F-21.5	GS19-EX01-F-23	GS20-EX01-NW-10	GS21-EX01-NW-14	GS22-EX01-NW-18	GS23-EX01-SW-10	GS24-EX01-SW-14	GS25-EX01-SW-18	GS26-EX01-F-20	GS27-EX01-NW-10
Date Sampled		9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/12/2023	9/12/2023
Depth Sampled (feet)		21.5	23	10	14	18	10	14	18	20	10
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		EX01 - N central floor	EX01 - S central floor	EX01 N wall center	EX01 N wall center	EX01 N wall center	EX01 S wall center	EX01 S wall center	EX01 S wall center	EX01 - W floor	EX01 N wall W side
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	---	---	---	---	---	---	---	<0.05 (ND)	0.056	---
EDB (1,2-dibromoethane)	C, V	---	---	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	---
EDC (1,2-dichloroethane)	C, V	---	---	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	---
Ethylbenzene	C, V	---	---	---	---	---	---	---	<0.05 (ND)	0.2	---
MTBE (methyl t-butyl ether)	C, V	---	---	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	---
Naphthalene	C, V	---	---	---	---	---	---	---	<0.05 (ND)	0.25	---
iso-Propylbenzene (cumene)	nc, v	---	---	---	---	---	---	---	<0.05 (ND)	0.13	---
Toluene	nc, v	---	---	---	---	---	---	---	<0.05 (ND)	<0.05 (ND)	---
1,2,4-Trimethylbenzene	nc, v	---	---	---	---	---	---	---	<0.05 (ND)	3.4	---
1,3,5-Trimethylbenzene	nc, v	---	---	---	---	---	---	---	<0.05 (ND)	1.2	---
Xylenes	nc, v	---	---	---	---	---	---	---	<0.1 (ND)	0.72	---
Metals											
Lead	NA, nv	---	---	---	---	---	---	---	11	5.01	---
Semivolatile Organic Constituents											
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	---	---	---	---	---	---	---	---	---	---

Table 2 - Summary of Analytical Data, Soil

Location ID		GS18	GS19	GS20	GS21	GS22	GS23	GS24	GS25	GS26	GS27	
Sample ID		GS18-EX01-F-21.5	GS19-EX01-F-23	GS20-EX01-NW-10	GS21-EX01-NW-14	GS22-EX01-NW-18	GS23-EX01-SW-10	GS24-EX01-SW-14	GS25-EX01-SW-18	GS26-EX01-F-20	GS27-EX01-NW-10	
Date Sampled		9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/11/2023	9/12/2023	9/12/2023	
Depth Sampled (feet)		21.5	23	10	14	18	10	14	18	20	10	
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	
Location		EX01 - N central floor	EX01 - S central floor	EX01 N wall center	EX01 N wall center	EX01 N wall center	EX01 S wall center	EX01 S wall center	EX01 S wall center	EX01 - W floor	EX01 N wall W side	
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)	
Total Petroleum Hydrocarbons												
Generic Gasoline (GRO)		nc, v	150	78	<5 (ND)	27	<5 (ND)	<5 (ND)	<5 (ND)	180	1100	24
Generic Diesel / Heating Oil (DRO)		nc, v	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)
Generic Mineral Insulating Oil (RRO)		nc, nv	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)

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.

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.

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

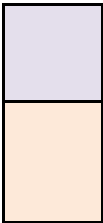


Table 2 - Summary of Analytical Data, Soil

Location ID		GS28	GS29	GS30	GS31	GS32	GS33	GS34	GS35	GS36	GS37
Sample ID		GS28-EX01-NW-14	GS29-EX01-NW-18	GS30-EX01-SW-10	GS31-EX01-SW-14	GS32-EX01-SW-18	GS33-EX01-F-21	GS34-EX02-F-18	GS35-EX02-NW-16	GS36-EX02-SW-15.5	GS37-EX02-EW-16
Date Sampled		9/12/2023	9/12/2023	9/12/2023	9/12/2023	9/12/2023	9/12/2023	9/20/2023	9/20/2023	9/20/2023	9/20/2023
Depth Sampled (feet)		14	18	10	14	18	21	18	16	15.5	16
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		EX01 N wall W side	EX01 N wall W side	EX01 S wall W side	EX01 S wall W side	EX01 S wall W side	EX01 W floor	EX02 floor	EX02 N wall	EX02 S wall	EX02 E wall
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)	---	---	---
EDB (1,2-dibromoethane)	C, V	---	---	---	---	---	---	<0.05 (ND)	---	---	---
EDC (1,2-dichloroethane)	C, V	---	---	---	---	---	---	<0.05 (ND)	---	---	---
Ethylbenzene	C, V	---	---	---	---	---	---	<0.05 (ND)	---	---	---
MTBE (methyl t-butyl ether)	C, V	---	---	---	---	---	---	<0.05 (ND)	---	---	---
Naphthalene	C, V	---	---	---	---	---	---	<0.05 (ND)	---	---	---
iso-Propylbenzene (cumene)	nc, v	---	---	---	---	---	---	<0.05 (ND)	---	---	---
Toluene	nc, v	---	---	---	---	---	---	<0.05 (ND)	---	---	---
1,2,4-Trimethylbenzene	nc, v	---	---	---	---	---	---	<0.05 (ND)	---	---	---
1,3,5-Trimethylbenzene	nc, v	---	---	---	---	---	---	<0.05 (ND)	---	---	---
Xylenes	nc, v	---	---	---	---	---	---	<0.05 (ND)	---	---	---
Metals											
Lead	NA, nv	---	---	---	---	---	---	6.19	---	---	---
Semivolatile Organic Constituents											
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	nc, v	---	---	---	---	---	---	<0.01 (ND)	---	---	---
Anthracene	nc, v	---	---	---	---	---	---	<0.01 (ND)	---	---	---
Benz[a]anthracene	C, V	---	---	---	---	---	---	<0.01 (ND)	---	---	---
Benzo[a]pyrene (BaP equivalents)	C, nv	---	---	---	---	---	---	<0.01 (ND)	---	---	---
Benzo[b]fluoranthene	C, nv	---	---	---	---	---	---	<0.01 (ND)	---	---	---
Benzo[k]fluoranthene	C, nv	---	---	---	---	---	---	<0.01 (ND)	---	---	---
Chrysene	C, nv	---	---	---	---	---	---	<0.01 (ND)	---	---	---
Dibenz[a,h]anthracene	C, nv	---	---	---	---	---	---	<0.01 (ND)	---	---	---
Fluoranthene	nc, nv	---	---	---	---	---	---	<0.01 (ND)	---	---	---
Fluorene	nc, v	---	---	---	---	---	---	<0.01 (ND)	---	---	---
Indeno[1,2,3-cd]pyrene	C, nv	---	---	---	---	---	---	<0.01 (ND)	---	---	---
Pyrene	nc, v	---	---	---	---	---	---	<0.091 jl	---	---	---

Table 2 - Summary of Analytical Data, Soil

Location ID		GS28	GS29	GS30	GS31	GS32	GS33	GS34	GS35	GS36	GS37	
Sample ID		GS28-EX01-NW-14	GS29-EX01-NW-18	GS30-EX01-SW-10	GS31-EX01-SW-14	GS32-EX01-SW-18	GS33-EX01-F-21	GS34-EX02-F-18	GS35-EX02-NW-16	GS36-EX02-SW-15.5	GS37-EX02-EW-16	
Date Sampled		9/12/2023	9/12/2023	9/12/2023	9/12/2023	9/12/2023	9/12/2023	9/20/2023	9/20/2023	9/20/2023	9/20/2023	
Depth Sampled (feet)		14	18	10	14	18	21	18	16	15.5	16	
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	
Location		EX01 N wall W side	EX01 N wall W side	EX01 S wall W side	EX01 S wall W side	EX01 S wall W side	EX01 W floor	EX02 floor	EX02 N wall	EX02 S wall	EX02 E wall	
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)	
Total Petroleum Hydrocarbons												
Generic Gasoline (GRO)		nc, v	<5 (ND)	33	<5 (ND)	<5 (ND)	140	80	100	<5 (ND)	43	12
Generic Diesel / Heating Oil (DRO)		nc, v	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	910	<50 (ND)	300	110
Generic Mineral Insulating Oil (RRO)		nc, nv	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)

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.

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.

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

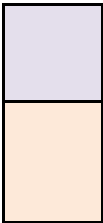


Table 2 - Summary of Analytical Data, Soil

Location ID		GS38	Comp01	Comp02	Comp03	Comp04	Comp05
Sample ID		GS38-EX02-WW-16	20 Subsample Composite of E half of Upper Overburden Stockpile	20 Subsample Composite of W half of Upper Overburden Stockpile	20 Subsample Composite of S half of Lower Overburden Stockpile	20 Subsample Composite of N half of Lower Overburden Stockpile	8 Subsample Composite of EX02 Overburden Stockpile
Date Sampled		9/20/2023	9/13/2023	9/13/2023	9/13/2023	9/13/2023	9/20/2023
Depth Sampled (feet)		16	--	--	--	--	--
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW
Location		EX02 W wall	Composite of E half of Upper Overburden Stockpile	Composite of W half of Upper Overburden Stockpile	Composite of S half of Lower Overburden Stockpile	Composite of N half of Lower Overburden Stockpile	Composite of EX02 Overburden Stockpile
Constituent of Interest		Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)
Volatile Organic Constituents							
Benzene	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		---	---	---	---	---
Toluene	nC, V		---	---	---	---	---
1,2,4-Trimethylbenzene	nC, V		---	---	---	---	---
1,3,5-Trimethylbenzene	nC, V		---	---	---	---	---
Xylenes	nC, V		---	---	---	---	---
Metals							
Lead	NA, nv		---	---	---	---	---
Semivolatile Organic Constituents							
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		---	---	---	---	---

Table 2 - Summary of Analytical Data, Soil

Location ID		GS38	Comp01	Comp02	Comp03	Comp04	Comp05
Sample ID		GS38-EX02-WW-16	20 Subsample Composite of E half of Upper Overburden Stockpile	20 Subsample Composite of W half of Upper Overburden Stockpile	20 Subsample Composite of S half of Lower Overburden Stockpile	20 Subsample Composite of N half of Lower Overburden Stockpile	8 Subsample Composite of EX02 Overburden Stockpile
Date Sampled		9/20/2023	9/13/2023	9/13/2023	9/13/2023	9/13/2023	9/20/2023
Depth Sampled (feet)		16	--	--	--	--	--
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW
Location		EX02 W wall	Composite of E half of Upper Overburden Stockpile	Composite of W half of Upper Overburden Stockpile	Composite of S half of Lower Overburden Stockpile	Composite of N half of Lower Overburden Stockpile	Composite of EX02 Overburden Stockpile
Constituent of Interest		Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)
Total Petroleum Hydrocarbons							
Generic Gasoline (GRO)		nc, v	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)
Generic Diesel / Heating Oil (DRO)		nc, v	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	230
Generic Mineral Insulating Oil (RRO)		nc, nv	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)

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

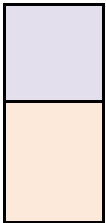


Table 2 - Summary of Analytical Data, Soil

Location ID		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						
Date Sampled						
Depth Sampled (feet)						
Sampled By						
Location						
Constituent of Interest		Note	mg/Kg (ppm)			TRUE OR Y FALSE OR N
Volatile Organic Constituents						
Benzene	c, v	0.93	NE	0.023	---	
EDB (1,2-dibromoethane)	c, v	<0.05 (ND)	NE	0.00012	---	(Y)
EDC (1,2-dichloroethane)	c, v	<0.05 (ND)	NE	0.0028	---	(Y)
Ethylbenzene	c, v	0.91	NE	0.22	---	Y
MTBE (methyl t-butyl ether)	c, v	<0.05 (ND)	NE	0.11	---	N
Naphthalene	c, v	0.25	NE	0.077	---	Y
iso-Propylbenzene (cumene)	nc, v	0.15	NE	96	---	N
Toluene	nc, v	0.22	NE	83	---	N
1,2,4-Trimethylbenzene	nc, v	3.8	NE	10	---	N
1,3,5-Trimethylbenzene	nc, v	1.3	NE	11	---	N
Xylenes	nc, v	4.2	NE	23	---	N
Metals						
Lead	NA, nv	11	NE	30	79	N
Semivolatile Organic Constituents						
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	nc, v	<0.01 (ND)	NE	770	---	N
Anthracene	nc, v	<0.01 (ND)	NE	8200	---	N
Benz[a]anthracene	c, v	<0.01 (ND)	NE	1.1	---	N
Benzo[a]pyrene (BaP equivalents)	c, nv	<0.01 (ND)	NE	0.11	---	N
Benzo[b]fluoranthene	c, nv	<0.01 (ND)	NE	1.1	---	N
Benzo[k]fluoranthene	c, nv	<0.01 (ND)	NE	11	---	N
Chrysene	c, nv	<0.01 (ND)	NE	110	---	N
Dibenz[a,h]anthracene	c, nv	<0.01 (ND)	NE	0.11	---	N
Fluoranthene	nc, nv	<0.01 (ND)	NE	2400	---	N
Fluorene	nc, v	<0.01 (ND)	NE	770	---	N
Indeno[1,2,3-cd]pyrene	c, nv	<0.01 (ND)	NE	1.1	---	N
Pyrene	nc, v	0.091 jl	NE	1800	---	N

Table 2 - Summary of Analytical Data, Soil

Location ID		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						
Date Sampled						
Depth Sampled (feet)						
Sampled By						
Location						
Portland Basin		TRUE OR Y FALSE OR N				
Constituent of Interest	Note	mg/Kg (ppm)				
Total Petroleum Hydrocarbons						
Generic Gasoline (GRO)	nc, v	1100	80	31	---	Y
Generic Diesel / Heating Oil (DRO)	nc, v	910	500	1100	---	N
Generic Mineral Insulating Oil (RRO)	nc, nv	<250 (ND)		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.

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.

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

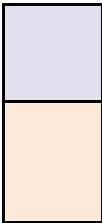


Table 3. Summary of Ground Water Elevations

Monitoring Well Designation	Date	OWRD Designation (Well Tag)	Completion Depth of Boring (feet bgs)	Monitored Depth Interval (feet bgs)	Surveyed Top of Casing (TOC) Elevation (feet AMSL) ¹	Depth to Water (DTW) (feet below TOC)	Depth to Product (DTP)	Relative Elevation (feet)	LNAPL Thickness (feet)	Notes
MW01	3/10/2023	L103392	30	15 - 30	518.62	27.55	---	491.07	---	
	6/6/2023					23.12	---	495.50	---	
	9/25/2023					26.08	---	492.54	---	
	10/3/2023					26.77	---	491.85	---	
	Minimum							491.07		
	Maximum							495.50		
MW02	3/10/2023	L103393	25	10 - 25	515.38	13.07	---	502.31	---	
	6/6/2023					18.64	---	496.74	---	
	9/1/2023					17.10	---	498.28	---	
	9/25/2023					18.96	---	496.42	---	
	10/3/2023	18.21	---	497.17	---					
	Minimum							496.42		
Maximum							502.31			
MW03	3/10/2023	L103394	25	10 - 25	510.29	11.87	---	498.42	---	
	6/6/2023					19.23	---	491.06	---	
	9/25/2023					15.74	---	494.55	---	
	10/3/2023					15.67	---	494.62	---	
	Minimum							491.06		
	Maximum							498.42		
MW04	3/10/2023	L104850	30	15 - 30	515.24	15.60	---	499.64	---	
	6/6/2023					20.91	---	494.33	---	
	9/1/2023					18.05	---	497.19	---	
	9/25/2023					17.55	---	497.69	---	
	10/3/2023	19.67	---	495.57	---					
	Minimum							494.33		
Maximum							499.64			
MW05	3/10/2023	L149144	25	10 - 25	507.94	11.92	11.91	496.03	0.01	2
	6/6/2023					16.09	---	491.85	---	
	9/25/2023					14.96	---	492.98	---	
	10/3/2023					15.05	---	492.89	---	
	Minimum							491.85		
	Maximum							496.03		
Minimum						11.87		491.06		
Maximum						27.55		502.31		

¹ Survey conducted on 03/10/2023 by Axis Mapping and Survey Co. relative to NAD 1983

². Adjusted relative ground water elevation = TOC - DTW + [(DTW-DTP)*Gasoline Density]

Gasoline density = 0.702 g/mL

AMSL = above mean sea level;

bgs = below ground surface

DTP = depth to surface of phase-separated petroleum hydrocarbon product

LNAPL = light non-aqueous phase liquid

TOC = top of casing

Table 4. Summary of Water Quality Parameters

Location	Date	Temp (°C)	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
MW01	3/10/2023	8.14	82	---	5.82	183	649
	6/6/2023	17.15	170	5.01	6.43	123	22
	9/25/2023	15.29	222	3.94	6.63	75	261
	10/3/2023	16.21	233	11.47	6.24	246	52
	Minimum (pre-cleanup)	8.14	82	5.01	5.82	123	22
	Maximum (pre-cleanup)	17.15	170	5.01	6.43	183	649
	Minimum (post-cleanup)	15.29	222	3.94	6.24	75	52
	Maximum (post-cleanup)	16.21	233	11.47	6.63	246	261
MW02	3/10/2023	10.28	147	1.07	5.60	119	107
	6/6/2023	18.19	174	0.48	5.34	20	0
	9/25/2023	16.22	142	0.64	5.80	97	1000+
	10/3/2023	15.07	177	0.93	5.55	95	35
	Minimum (pre-cleanup)	10.28	147	0.48	5.34	20	0
	Maximum (pre-cleanup)	18.19	174	1.07	5.60	119	107
	Minimum (post-cleanup)	15.07	142	0.64	5.55	95	35
	Maximum (post-cleanup)	16.22	177	0.93	5.80	97	1000
MW03	3/10/2023	9.44	138	3.75	5.63	110	15
	6/6/2023	16.59	164	0.73	6.06	-73	22
	9/25/2023	14.74	67	0.68	5.46	119	44
	10/3/2023	14.55	79	0.89	5.01	235	0
	Minimum (pre-cleanup)	9.44	138	0.73	5.63	-73	15
	Maximum (pre-cleanup)	16.59	164	3.75	6.06	110	22
	Minimum (post-cleanup)	14.55	67	0.68	5.01	119	0
	Maximum (post-cleanup)	14.74	79	0.89	5.46	235	44
MW04	3/10/2023	12.20	135	1.10	5.84	154	266
	6/6/2023	18.13	121	0.91	5.52	-12	0
	9/25/2023	16.14	96	3.01	5.32	201	55
	10/3/2023	16.39	88	2.03	5.28	206	5
	Minimum (pre-cleanup)	12.20	121	0.91	5.52	-12	0
	Maximum (pre-cleanup)	18.13	135	1.10	5.84	154	266
	Minimum (post-cleanup)	16.14	88	2.03	5.28	201	5
	Maximum (post-cleanup)	16.39	96	3.01	5.32	206	55
MW05	3/10/2023	11.37	168	1.76	5.95	92	106
	6/6/2023	14.15	118	0.97	4.99	70	8.7
	9/25/2023	14.91	754	0.68	5.25	124	53.6
	10/3/2023	13.91	28500	0.99	2.32	609	3.4
	Minimum (pre-cleanup)	11.37	118	0.97	4.99	70	9
	Maximum (pre-cleanup)	14.15	168	1.76	5.95	92	106
	Minimum (post-cleanup)	13.91	754	0.68	2.32	124	3
	Maximum (post-cleanup)	14.91	28500	0.99	5.25	609	54
Site-Wide Summary							
Minimum (pre-cleanup)		8.14	82	0.48	4.99	-73	0
Maximum (pre-cleanup)		18.19	174	5.01	6.43	183	649
Minimum (post-cleanup)		13.91	67	0.64	2.32	75	0
Maximum (post-cleanup)		16.39	28500	11.47	6.63	609	1000

°C = degrees Celsius

µS/cm = microSiemens per centimeter

mg/L = milligrams per liter

mV = millivolt

NTU = Nephelometric Turbidity Unit

Table 5 - Further Evaluation of COPCs in Soil (Risk Drivers)

Contaminated Medium			SOIL mg/Kg (ppm)											Maximum Detected Concentration	
Exposure Pathway			Vapor Intrusion into Buildings						Leaching to Groundwater						
			RBC _{si}						RBC _{sw}						
Receptor Scenario			Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational		
Direct or Indirect Pathway (see notes)			IVS		IVS		IVS		IS		IS		IS		
Contaminant of Concern		Note		Note		Note		Note		Note		Note		Note	mg/Kg (ppm)
Volatile Organic Constituents															
Benzene	c, v	0.16		0.38		2.1		0.023		0.1		0.1		0.93	
Ethylbenzene	c, v	1.3		3		17		0.22		0.94		0.9		0.91	
Naphthalene	c, v	6.4		15		83		0.077		0.37		0.34		0.25	
Total Petroleum Hydrocarbons															
Generic Gasoline (GRO)	nc, v	94		94		-	>Max	31		31		130		1100	

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

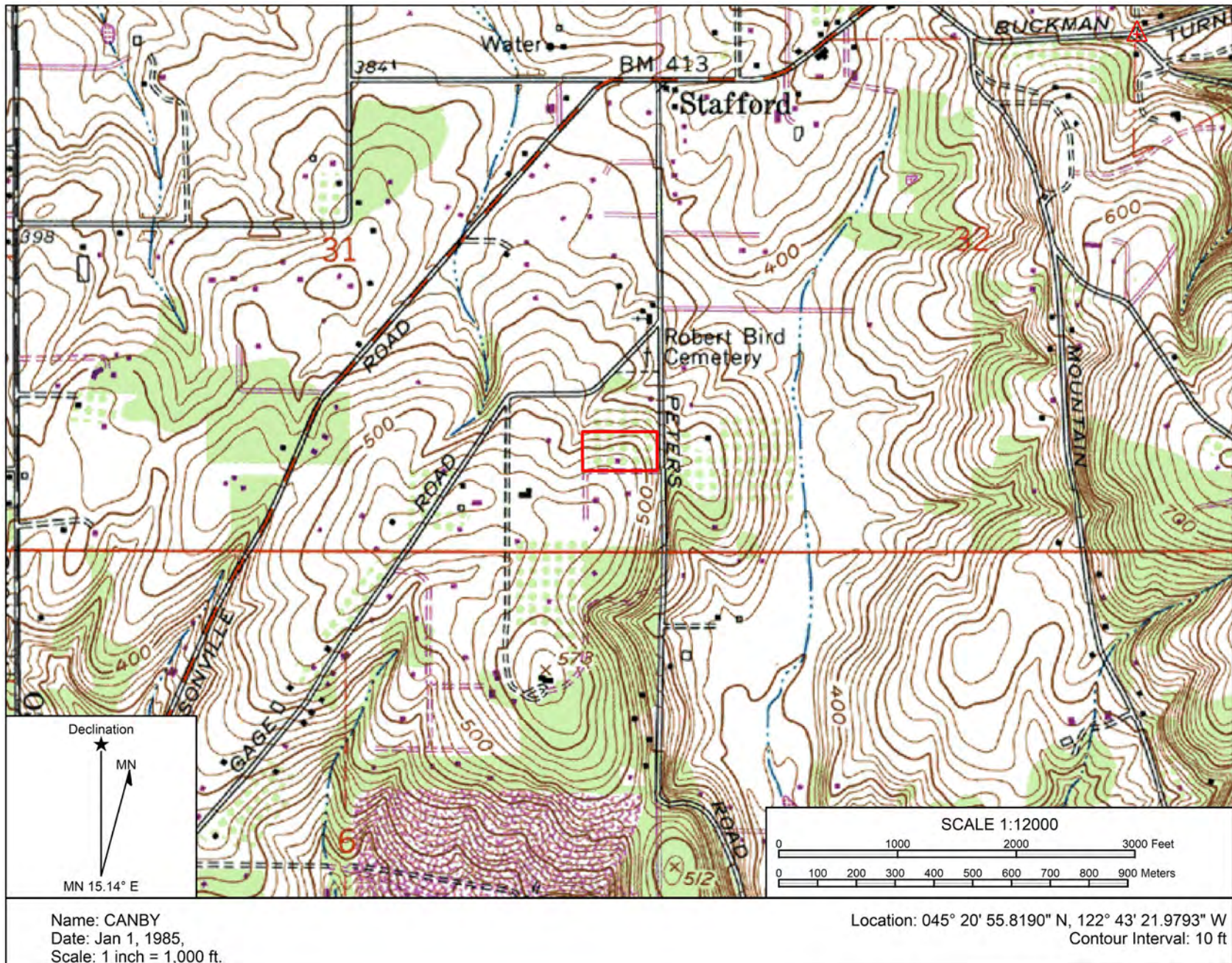
nv = nonvolatile

GRO = gasoline-range organics.

>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.

Shaded RBCs exceed receptor/pathway combination indicated, as applicable.



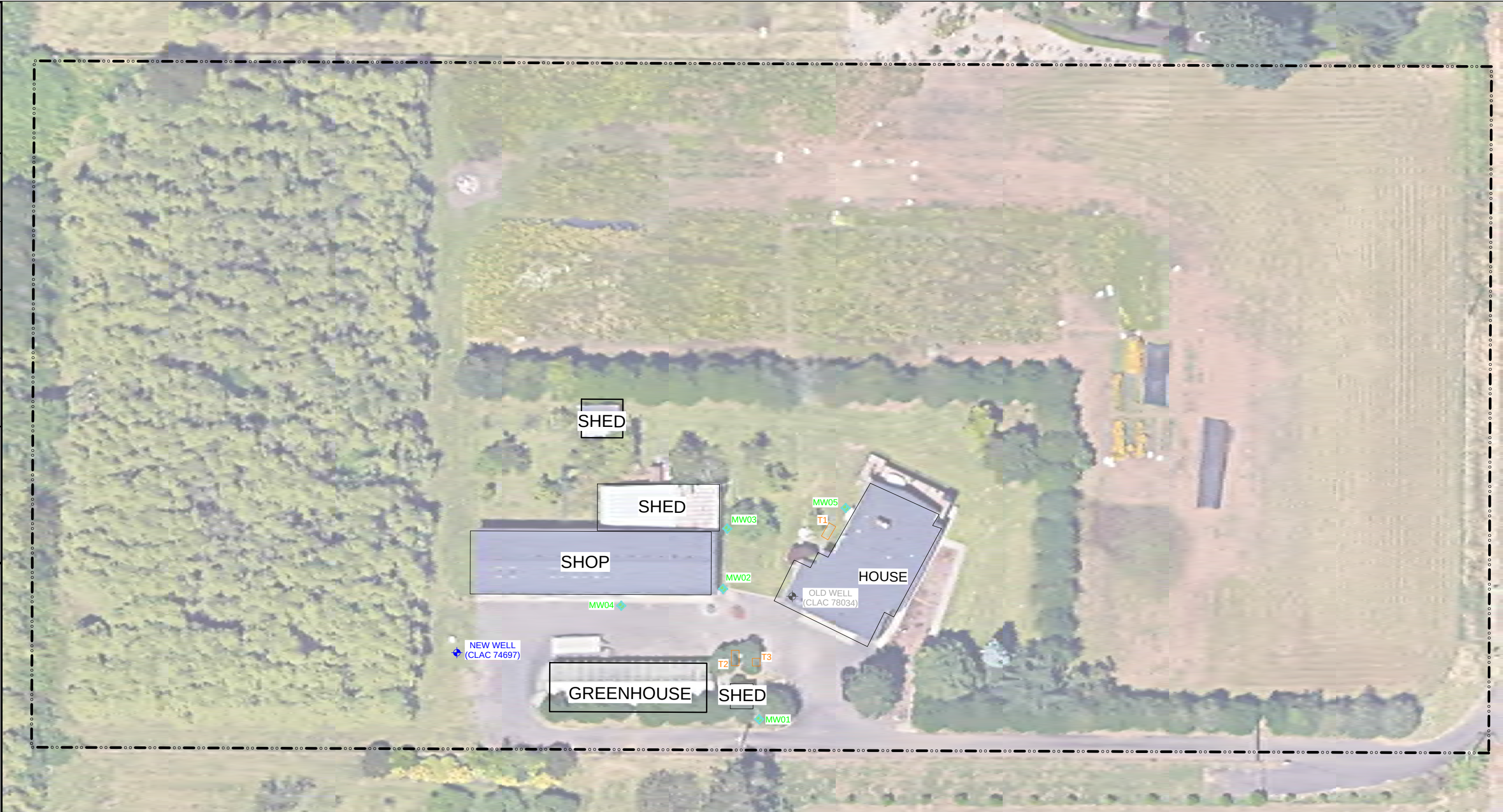


Date Drawn: 5/11/2022
CAD File Name: 114-19002-
fig1sv_map
Drawn By: CLR
Approved By: LDG

Ollison Property
23737 SW Newland Road
Wilsonville, Clackamas County, Oregon

**Site Vicinity
Map**

Project No.
114-19002
Figure No.
1

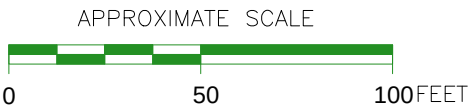


LEGEND:

- SUBJECT BUILDINGS
- SUBJECT PROPERTY BOUNDARIES
- UNDERGROUND STORAGE TANK LOCATIONS (REMOVED)
- DOMESTIC WELL
- DECOMMISSIONED DOMESTIC WELL
- MONITORING WELL LOCATION

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2022 AND BOTH UAI 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.



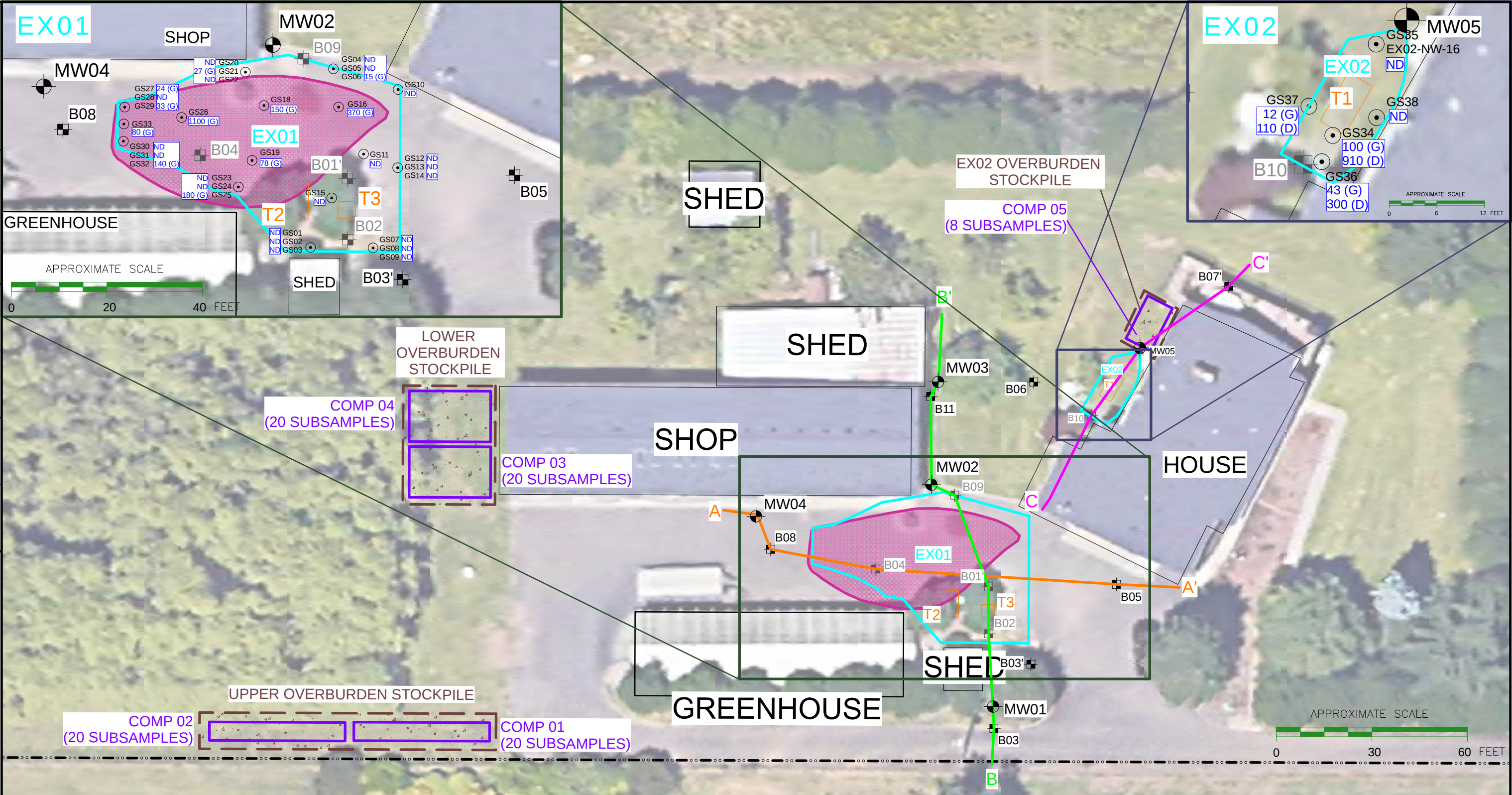
PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 2

SITE PLAN

OLLISON PROPERTY
23737 SW NEWLAND ROAD
WILSONVILLE, CLACKAMAS COUNTY, OREGON

DRAWING NUMBER 114-19002(v01)
APPROVED BY L. GREEN 02/20/2024
CHECKED BY P. TRONE 02/20/2024
DRAWN BY H. ROMER 07/05/2023



LEGEND:

- | | | | |
|--|-----------------------------|--|---|
| | SUBJECT BUILDINGS | | UNDERGROUND STORAGE TANK LOCATION (REMOVED) |
| | SUBJECT PROPERTY BOUNDARIES | | LINE OF SECTION A-A' |
| | EXCAVATION BOUNDARY | | LINE OF SECTION B-B' |
| | RESIDUAL GRO > SLRBC | | LINE OF SECTION C-C' |
| | COMPOSITE SOIL SAMPLE AREA | | ENW CONFIRMATION SOIL SAMPLE LOCATION |
| | OVERBURDEN STOCKPILE | | ENW ASSESSMENT BORING SAMPLE LOCATION |
| | | | ENW ASSESSMENT BORING SAMPLE LOCATION (REMOVED) |
| | | | MONITORING WELL LOCATION |

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2022 AND BOTH UAI 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.

ND = NOT DETECTED PETROLEUM HYDROCARBONS
(G) = CONCENTRATION IN MILLIGRAMS PER KILOGRAM (MG/KG) OF GASOLINE
(D) = CONCENTRATION IN MG/KG OF DIESEL
GRO = GASOLINE-RANGE ORGANICS



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FIGURE 3
SAMPLE LOCATION DIAGRAM

OLLISON PROPERTY
23737 SW NEWLAND ROAD
WILSONVILLE, CLACKAMAS COUNTY, OREGON

Appendix A

Site Photographs



NTA loading asphalt into WTF dump truck to be taken offsite for disposal - view southwest.



Two buried power conduits were encountered when excavating near the southwest corner of the house – view facing east.



Removing clean overburden down to 5 feet bgs, which was temporarily stockpiled at the site.



Temporary clean overburden stockpile south of the orchard along the southern site boundary – view west.



Ollison Property
23737 SW Newland Road
Wilsonville, Oregon

Site Photographs

Project No.
114-19002-02
Appendix A



Aug 31, 2023 09:04:35

Encountered petroleum-impacted soil (PCS) at 6 feet bgs at the southeast corner of the excavation – view south.



Aug 31, 2023 11:03:00

UST T2 was previously decommissioned in place by filling with gravel. Shallow petroleum impacted soil was discovered around T2.



Sep 1, 2023 09:13:22

Removing PCS below T2 at the SE excavation corner. Field headspace = 790 ppm@10', 446 ppm@13', and 42 ppm@15'.



Sep 1, 2023 09:15:17

Close-up of weathered porphyritic basalt encountered at 15 feet bgs.



Ollison Property
23737 SW Newland Road
Wilsonville, Oregon

Site Photographs

Project No.
114-19002-02
Appendix A



Confirmation grab sample GS01 collected at 14' bgs at the SW corner of EX01. GS02 collected at same position at 12' bgs.



The excavation area was enclosed with construction fencing.



North end of EX01.



NTA set up excavator on west bench to excavate east side of EX01, where PID detected >5000 ppm volatiles.



Ollison Property
23737 SW Newland Road
Wilsonville, Oregon

Site Photographs

Project No.
114-19002-02
Appendix A



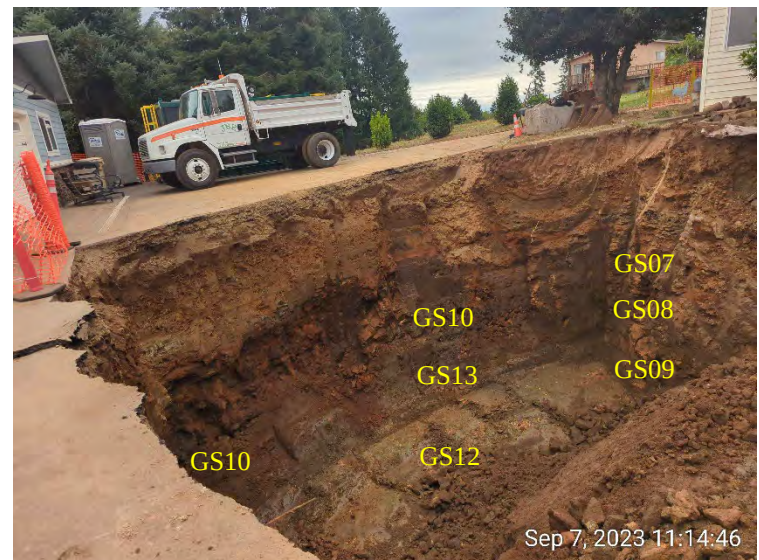
Collected GS03 at the soil/ water interface (SWI) at 17' bgs at the base of the south wall.



Field headspace volatiles were 150 ppm@9', 250 ppm@12', and 180 ppm at 17' at center of north wall (GS04, GS05, and GS06).



PCS removal along the east wall of EX01.



GS07-GS09 were collected at the SE corner at 9', 14', and 17' bgs, respectively. GS10 was collected at the NE corner at 10' bgs. GS12-GS14 were collected midway along the E wall at 18', 14', and 10', respectively.



Ollison Property
23737 SW Newland Road
Wilsonville, Oregon

Site Photographs

Project No.
114-19002-02
Appendix A



Sump excavated in the NE corner of EX01.



A few inches of water were observed in the sump, not enough to sample.



Collection of GS26@20', GS27@10', GS28@14', GS29@18', GS30@10', GS31@14', GS32@18', and GS33@21' at east end of EX01.



Application of 2,865.2 lbs of Persulfox oxidizer and 400 lbs of Oxygen Release Compound (ORC) in EX01.



Ollison Property
23737 SW Newland Road
Wilsonville, Oregon

Site Photographs

Project No.
114-19002-02
Appendix A



Spreading clean aggregate over the Persulfox and ORC layer up to 17 feet bgs.



Aggregate was brought up to a level of 12 feet below finish grade.



An additional 8,265 lbs of Persulfox and 1,120 lbs of ORC were applied over the aggregate layer, and wetted.



Compacting ¾-minus crushed rock in lifts above the larger diameter aggregate layer to a level of approximately 8 feet below finish grade.



Ollison Property
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Wilsonville, Oregon

Site Photographs

Project No.
114-19002-02
Appendix A



After analysis showed the overburden soil was clean, Stockpiled overburden soil was placed and compacted above the crushed rock.



Stockpiled clean overburden soil was brought up to a level of approximately 3 feet below finish grade.



EX01 completely backfilled with compacted crushed rock to subgrade, i.e., 3 inches below finish grade. New asphalt pavement to be installed.



Ollison Property
23737 SW Newland Road
Wilsonville, Oregon

Site Photographs

Project No.
114-19002-02
Appendix A



Excavation EX02 on the west side of the house at former location of UST T1 – view facing northeast.



Gray petroleum-stained soil was encountered in EX02 from approximately 13 to 17 feet bgs.



Following over-excavation of PCS, EX02 was approx. 14' to 15.5'-long by 6' to 10'-wide by 18'-deep.



Confirmation samples were collected from the floor (GS34), N wall (GS35), S wall (GS36), E wall (GS37), and W wall (GS38) at depths ranging from 15.5 to 18' bgs.



Ollison Property
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Site Photographs

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Appendix A



495.9 lbs of Persulfox, 150 lbs of ORC, 120 lbs of Regenox Part A, and 150 lbs of Regenox Part B were added to EX02.



Clean aggregate backfill added to EX02.



These oxidizers were mixed in a bucket and applied on the floor of EX02.



Additional PersulfoX and ORC wetted with water were interlayered with clean aggregate as EX02 was backfilled.



Ollison Property
23737 SW Newland Road
Wilsonville, Oregon

Site Photographs

Project No.
114-19002-02
Appendix A



Crushed aggregate was compacted in lifts.



Based on confirmation test data, removed overburden soil from EX02 was loaded into trucks and transported to Hillsboro Landfill for disposal September 22, 2023.



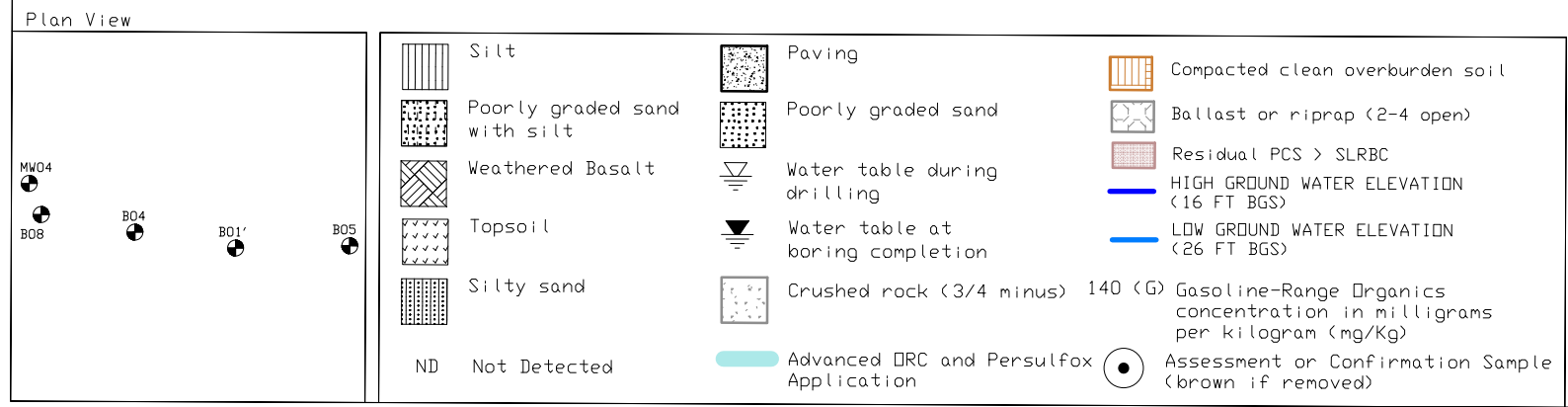
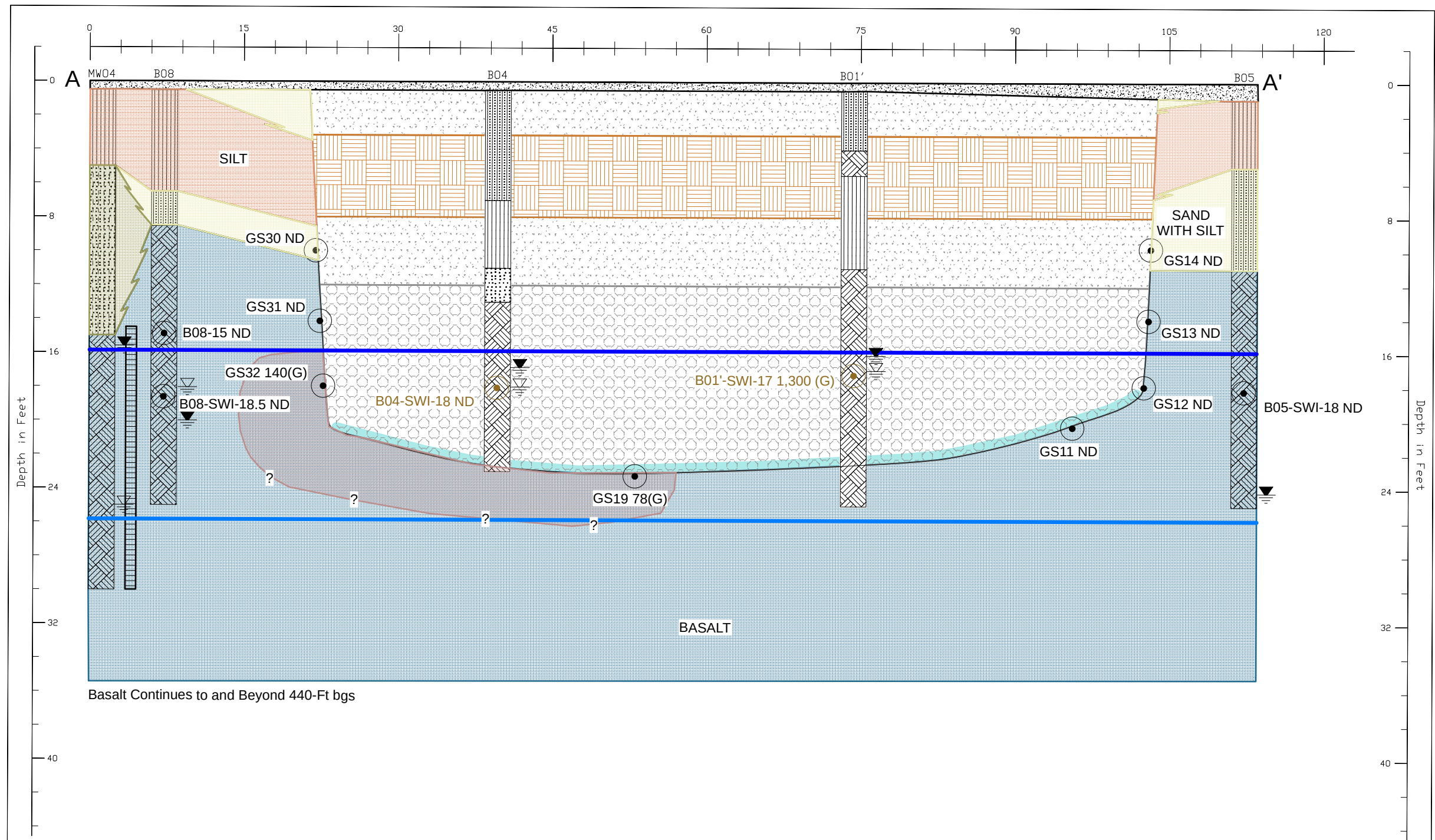
Ollison Property
23737 SW Newland Road
Wilsonville, Oregon

Site Photographs

Project No.
114-19002-02
Appendix A

Appendix B

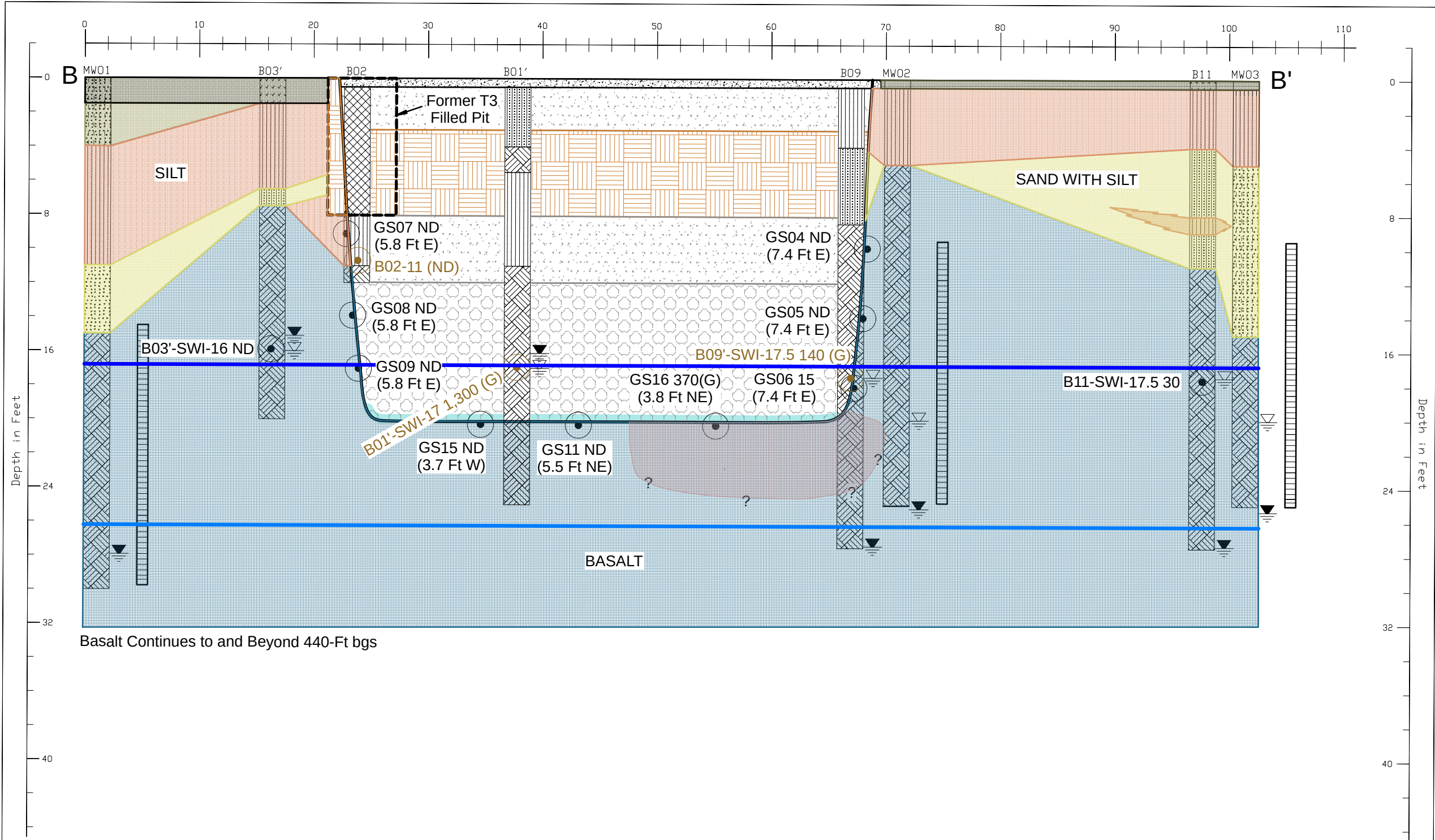
Lines of Section



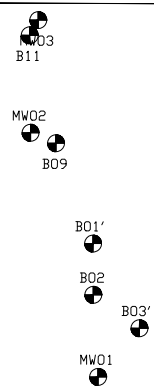
EVREN Northwest, Inc.

GENERALIZED SOIL PROFILE A-A'

HORIZONTAL SCALE: 1"=	DRAWN BY/APPROVED BY	DATE DRAWN
VERTICAL SCALE: 1"=8'	P. Trone / L. Green	10/17/2023
Interim Remedial Action Soil Removal and ISCO Treatment		
PO BOX 14488, PORTLAND, OREGON 97293 P: (503)452-5561, E: ENW@EVREN-NW.COM		FIGURE NUMBER B-1



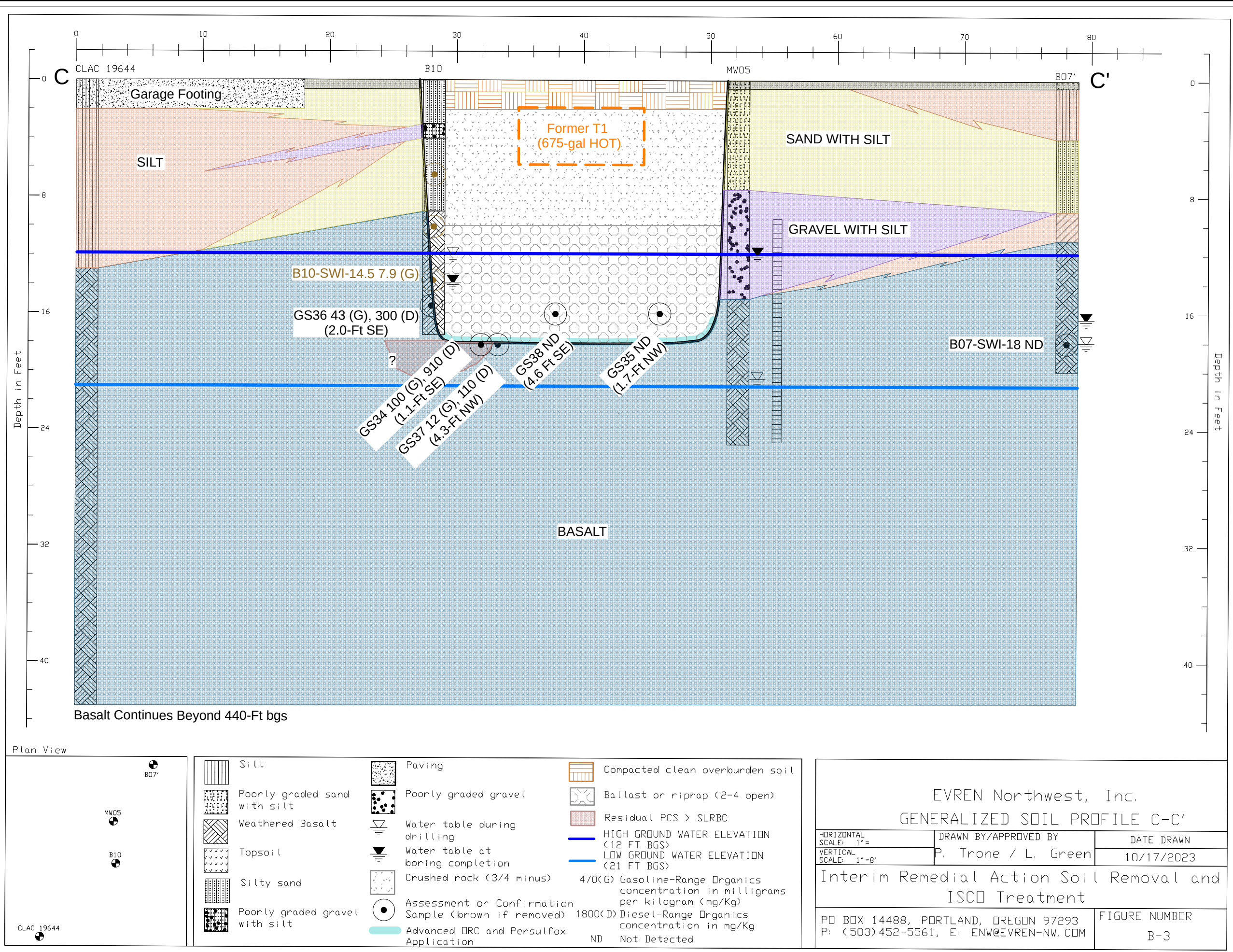
Plan View



Silt	Paving	Compacted clean overburden soil
Poorly graded sand with silt	Poorly graded sand	Ballast or riprap (2-4 open)
Weathered Basalt	Water table during drilling	Residual PCS > SLRBC
Topsoil	Water table at boring completion	HIGH GROUND WATER ELEVATION (17 FT BGS)
Silty sand	Crushed rock (3/4 minus) 370(G)	LOW GROUND WATER ELEVATION (26 FT BGS)
ND Not Detected	Advanced ORC and Persulfox Application	Gasoline-Range Organics concentration in milligrams per kilogram (mg/Kg) Assessment or Confirmation Sample (brown if removed)

EVREN Northwest, Inc.
GENERALIZED SOIL PROFILE B-B'

HORIZONTAL SCALE: 1" = 8'	DRAWN BY/APPROVED BY P. Trone / L. Green	DATE DRAWN 10/17/2023
Interim Remedial Action Soil Removal and ISCO Treatment		
PO BOX 14488, PORTLAND, OREGON 97293 P: (503)452-5561, E: ENW@EVREN-NW.COM		FIGURE NUMBER B-2



Appendix C

Field Sampling Data Sheets

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NUMBER: 114-10002-02

Date: 09-25-23

Monitoring Well ID: MW03

Start Time: 12:20

		WELL PURGING INFORMATION	
--	--	--------------------------	--

Total Purged: 3 GL

Well casing (in. diam): 2

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None
Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump ☐ Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NUMBER:

Date: _____

Monitoring Well ID:

Start Time:

Start Time: 12:54

[illegible]

Total Purged: 2.06

Purge Pumping Rate (approx. L/m):

Well casing (in. diam):

Decontamination method

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☒ Lab QA/QC ☐ Equipment Blank ☐ None
Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump ☐ Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NUMBER: 114-79007-02

Date: 09.25.27

Monitoring Well ID: MW04

Start Time: 13:21

DTW (prior to purging): 17.55

[illegible]

Total Purged: 3.0 L

Tubing: $\frac{1}{2}$ "

Purge Pumping Rate (approx. L/m): 0.15

Well casing (in. diam): 7.0

Decontamination method:

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☐ Peristaltic Pump ☐ Bladder Pump ☐ Dual Valve

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NUMBER: 114-19002-02

Date: 09-25-23

Monitoring Well ID: MW1

Start Time: 1:52:49

[illegible]

WELL PURGING INFORMATION

[illegible]

Total Purged: 3.06

Purge Pumping Rate (approx. L/m):

Well casing (in. diam): 24

Decontamination method:

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.17 gal / foot; 5/8" = 0.02 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump ☐ Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Appendix D

Laboratory Analytical Reports

Analytical Laboratory Data Validation Check Sheet

Project Name: Ollison Estate-23737 SW Newland Rd, Wilsonville

Project Number: 114-19002-02

Date of Review: 9/11/23

Lab. Name: F&BI

Lab Batch ID #: 309022

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? | ☐ 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? | ☐ yes | ☐ no | ☒ NA |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

21.) Do all RPD calculations for Field Duplicates meet accepted criteria?

☐yes ☐no ☒NA

Comments:

Gasoline was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable. (nm)

Initial Review By: AR

Final Review By: _____

Analytical Laboratory Data Validation Check Sheet

Project Name: Ollison Estate-23737 SW Newland Rd, Wilsonville

Project Number: 114-19002-02

Date of Review: 9/11/23

Lab. Name: F&BI

Lab Batch ID #: 309047

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? | ☐ 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? | ☐ yes | ☐ no | ☒ NA |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

21.) Do all RPD calculations for Field Duplicates meet accepted criteria?

☐yes ☐no ☒NA

Comments:

Gasoline was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable. (nm)

Initial Review By: AR

Final Review By: _____

Summary: DATA VALID? ☒ YES

Analytical Laboratory Data Validation Check Sheet

Project Name: Ollison Estate-23737 SW Newland Rd-Wilsonville

Project Number: 114-19002-02

Date of Review: 9/13/2023

Lab. Name: F&BI

Lab Batch ID #: 309094

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? | ☐ 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? | ☐ yes | ☐ no | ☒ NA |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 21.) Do all RPD calculations for Field Duplicates meet accepted criteria? | ☐ yes | ☐ no | ☒ NA |

Comments:

Gasoline was not detected in one or more of the NWTPH-Gx duplicate analyses; Therefore, calculation of the RPD is not applicable. (nm)

Initial Review By: LMP

Final Review By: _____

Summary: DATA VALID? ☒ YES

Analytical Laboratory Data Validation Check Sheet

Project Name: Ollison Estate-23737 SW Newland Rd-Wilsonville

Project Number: 114-19002-02

Date of Review: 9/18/2023

Lab. Name: F&BI

Lab Batch ID #: 309139

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? | ☒ yes | ☐ no | ☐ NA |
| 8260D 1,2-Dichloroethane-d4 fell outside the established control limits. (vo) | | | |
| 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? | ☒ yes | ☐ no | ☐ NA |
| 6020B lead was spiked at a level that was less than five times that present in the sample. Matrix recoveries may not be meaningful. (b) | | | |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | ☐ yes | ☒ no | ☐ NA |

If not, are all discrepancies footnoted? ☒yes ☐no ☐NA
6020B lead was spiked at a level that was less than five times that present in the sample. Matrix recoveries may not be meaningful. (b)
21.) Do all RPD calculations for Field Duplicates meet accepted criteria? ☐yes ☐no ☒NA

Comments:

Gasoline was not detected in one or more of the duplicate analyses, so calculation of the RPD is not applicable. (nm)

Initial Review By: LMP

Final Review By: _____

Analytical Laboratory Data Validation Check SheetProject Name: Ollison Estate-23737 SW Newland Rd-WilsonvilleProject Number: 114-19002-02Date of Review: 9/18/2023Lab. Name: F&BILab Batch ID #: 309174Chain 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? ☐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? ☐yes ☐no ☒NA
- 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? ☒yes ☐no ☐NA
If not, are all discrepancies footnoted? ☐yes ☐no ☒NA
- 21.) Do all RPD calculations for Field Duplicates meet accepted criteria? ☐yes ☐no ☐NA

Comments:

Gasoline was not detected in one or more of the duplicate analyses, so calculation of the RPD is not applicable. (nm)

Initial Review By: LMP

Final Review By: _____

Summary: DATA VALID? ☐ YES

Analytical Laboratory Data Validation Check Sheet

Project Name: Ollison Estate-23737 SW Newland Rd-Wilsonville

Project Number: 114-19002-02

Date of Review: 9/19/2023

Lab. Name: F&BI

Lab Batch ID #: 309161

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? | ☐ 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? | ☒ yes | ☐ no | ☐ NA |
| The 6020B lead was spiked at a level that was less than five times that present in the sample; Therefore, matrix spike recoveries may not be meaningful. (b) | | | |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | ☐ yes | ☒ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☒ yes | ☐ no | ☐ NA |

The 6020B lead was spiked at a level that was less than five times that present in the sample; Therefore, matrix spike recoveries may not be meaningful. (b)

21.) Do all RPD calculations for Field Duplicates meet accepted criteria? ☐yes ☐no ☒NA

Comments:

Gasoline was not detected in one or more of the duplicate analyses. Calculation of the RPD is not applicable. (nm)

Initial Review By: LMP

Final Review By: _____

Analytical Laboratory Data Validation Check Sheet

Project Name: Ollison Estate - 23737 SW Newland Rd, Wilsonville

Project Number: 114-19002-02

Date of Review: 10/5/23

Lab. Name: F&BI

Lab Batch ID #: 309314

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? | ☒ yes | ☐ no | ☐ NA |

For sample GS34-EX02-F-18, the value reported fell outside the control limits established for 1,2-Dichloroethane-d4. (vo)

- | | | | |
|--|---|--|-----------------------------|
| 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 |

Pyrene in the 8270E laboratory control sample exceeded the acceptance criteria. The data were flagged accordingly. (vo)

- | | | | |
|--|------------------------------|-----------------------------|--|
| 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? | ☐ yes | ☐ no | ☒ NA |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 21.) Do all RPD calculations for Field Duplicates meet accepted criteria? | ☐ yes | ☐ no | ☒ NA |

Comments:

The laboratory control sample percent recovery was out of control limits for Pyrene. The reported concentration should be considered an estimate. (jl)

Gasoline was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable. (nm)

Initial Review By: AR

Final Review By: _____

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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www.friedmanandbruya.com

April 4, 2023

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 March 23, 2023 from the 114-19002-02, F&BI 303368 project. There are 20 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
ENW0404R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 23, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 114-19002-02, F&BI 303368 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
303368 -01	Product-comp-230322
303368 -02	DRUM-COMP01-230322
303368 -03	DRUM-COMP02-230322

The benzene concentration in sample Product-comp-230322 exceeded the calibration range of the instrument. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/23
Date Received: 03/23/23
Project: 114-19002-02, F&BI 303368
Date Extracted: 03/24/23
Date Analyzed: 03/24/23

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

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 58-139)
DRUM-COMP01-230322 303368-02	<5	92
DRUM-COMP02-230322 303368-03	25	114
Method Blank 03-654 MB	<5	77

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/23
Date Received: 03/23/23
Project: 114-19002-02, F&BI 303368
Date Extracted: 03/23/23
Date Analyzed: 03/23/23

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Residual Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
DRUM-COMP01-230322 303368-02	<50	<250	96
DRUM-COMP02-230322 303368-03	<50	<250	92
Method Blank 03-791 MB	<50	<250	95

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	DRUM-COMP01-230322	Client:	Evren Northwest
Date Received:	03/23/23	Project:	114-19002-02, F&BI 303368
Date Extracted:	03/24/23	Lab ID:	303368-02
Date Analyzed:	03/24/23	Data File:	032425.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	md

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	84	120
Toluene-d8	104	73	128
4-Bromofluorobenzene	101	57	146

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		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	DRUM-COMP02-230322	Client:	Evren Northwest
Date Received:	03/23/23	Project:	114-19002-02, F&BI 303368
Date Extracted:	03/24/23	Lab ID:	303368-03
Date Analyzed:	03/24/23	Data File:	032426.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	md

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	91	73	128
4-Bromofluorobenzene	96	57	146

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	0.25
Hexane	<0.25	o-Xylene	0.11
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	0.065
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	0.16
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	0.39
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		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	114-19002-02, F&BI 303368
Date Extracted:	03/24/23	Lab ID:	03-0670 mb
Date Analyzed:	03/24/23	Data File:	032421.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	md

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	84	120
Toluene-d8	100	73	128
4-Bromofluorobenzene	98	57	146

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		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Product-comp-230322	Client:	Evren Northwest
Date Received:	03/23/23	Project:	114-19002-02, F&BI 303368
Date Extracted:	03/29/23	Lab ID:	303368-01 1/200
Date Analyzed:	03/29/23	Data File:	032932.D
Matrix:	Soil/Product	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	114	71	132
Toluene-d8	113	68	139
4-Bromofluorobenzene	94	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	49,000 ve

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	114-19002-02, F&BI 303368
Date Extracted:	03/29/23	Lab ID:	03-0686 mb 1/200
Date Analyzed:	03/29/23	Data File:	032931.D
Matrix:	Soil/Product	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	71	132
Toluene-d8	94	68	139
4-Bromofluorobenzene	100	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<70

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis for TCLP Metals By EPA Method 6020B and 1311

Client ID:	Product-comp-230322	Client:	Evren Northwest
Date Received:	03/23/23	Project:	114-19002-02, F&BI 303368
Date Extracted:	03/27/23	Lab ID:	303368-01 x0.1
Date Analyzed:	03/31/23	Data File:	303368-01 x0.1.075
Matrix:	Soil/Product	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP

Analyte:	Concentration mg/L (ppm)	TCLP Limit
Lead	<0.1	5.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis for TCLP Metals By EPA Method 6020B and 1311

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	114-19002-02, F&BI 303368
Date Extracted:	03/27/23	Lab ID:	I3-236 mb x0.1
Date Analyzed:	03/31/23	Data File:	I3-236 mb x0.1.074
Matrix:	Soil/Product	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP

Analyte:	Concentration mg/L (ppm)	TCLP Limit
Lead	<0.1	5.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Product-comp-230322	Client:	Evren Northwest
Date Received:	03/23/23	Project:	114-19002-02, F&BI 303368
Date Extracted:	03/23/23	Lab ID:	303368-01
Date Analyzed:	03/23/23	Data File:	032312.D
Matrix:	Product	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Tetrachlorometaxylene	81	50	150
Decachlorobiphenyl	123	50	150

Compounds:	Concentration mg/kg (ppm)
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Aroclor 1221	<2
Aroclor 1232	<2
Aroclor 1016	<2
Aroclor 1242	<2
Aroclor 1248	<2
Aroclor 1254	<2
Aroclor 1260	<2
Aroclor 1262	<2
Aroclor 1268	<2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	114-19002-02, F&BI 303368
Date Extracted:	03/23/23	Lab ID:	03-792 mb
Date Analyzed:	03/23/23	Data File:	032304.D
Matrix:	Product	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Tetrachlorometaxylene	90	50	150
Decachlorobiphenyl	121	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<2
Aroclor 1232	<2
Aroclor 1016	<2
Aroclor 1242	<2
Aroclor 1248	<2
Aroclor 1254	<2
Aroclor 1260	<2
Aroclor 1262	<2
Aroclor 1268	<2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/23

Date Received: 03/23/23

Project: 114-19002-02, F&BI 303368

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

Laboratory Code: 303368-02 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	100	61-153

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/23

Date Received: 03/23/23

Project: 114-19002-02, F&BI 303368

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

Laboratory Code: 303367-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	94	94	70-130	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	92	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/23

Date Received: 03/23/23

Project: 114-19002-02, F&BI 303368

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

Laboratory Code: 303405-03 (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	<0.5	18	17	10-47	6
Chloromethane	mg/kg (ppm)	2	<0.5	47	44	10-88	7
Vinyl chloride	mg/kg (ppm)	2	<0.05	51	48	10-79	6
Bromomethane	mg/kg (ppm)	2	<0.5	73	74	10-85	1
Chloroethane	mg/kg (ppm)	2	<0.5	68	64	11-106	6
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	67	63	10-85	6
Acetone	mg/kg (ppm)	10	<5	80	81	10-224	1
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	78	73	11-105	7
Hexane	mg/kg (ppm)	2	<0.25	65	59	10-106	10
Methylene chloride	mg/kg (ppm)	2	<0.5	86	76	10-139	12
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	94	87	18-131	8
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	84	77	16-122	9
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	91	83	19-125	9
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	91	89	10-184	2
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	94	87	18-129	8
Chloroform	mg/kg (ppm)	2	<0.05	91	85	18-126	7
2-Butanone (MEK)	mg/kg (ppm)	10	<1	95	79	10-190	18
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	88	81	19-138	8
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	92	84	16-126	9
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	87	82	19-129	6
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	90	85	13-125	6
Benzene	mg/kg (ppm)	2	<0.03	91	84	15-129	8
Trichloroethene	mg/kg (ppm)	2	<0.02	91	85	14-127	7
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	91	84	17-137	8
Bromodichloromethane	mg/kg (ppm)	2	<0.05	99	91	24-130	8
Dibromomethane	mg/kg (ppm)	2	<0.05	92	86	20-138	7
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	99	92	21-139	7
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	94	84	17-135	11
Toluene	mg/kg (ppm)	2	<0.05	85	78	15-129	9
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	94	84	18-130	11
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	93	84	29-128	10
2-Hexanone	mg/kg (ppm)	10	<0.5	95	86	28-142	10
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	90	83	20-135	8
Tetrachloroethene	mg/kg (ppm)	2	<0.025	94	85	20-121	10
Dibromochloromethane	mg/kg (ppm)	2	<0.05	93	84	11-138	10
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	92	83	21-130	10
Chlorobenzene	mg/kg (ppm)	2	<0.05	93	83	19-129	11
Ethylbenzene	mg/kg (ppm)	2	<0.05	91	82	23-133	10
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	94	83	16-127	12
m,p-Xylene	mg/kg (ppm)	4	<0.1	88	80	19-134	10
o-Xylene	mg/kg (ppm)	2	<0.05	90	82	20-132	9
Styrene	mg/kg (ppm)	2	<0.05	95	86	23-127	10
Isopropylbenzene	mg/kg (ppm)	2	<0.05	95	86	21-134	10
Bromoform	mg/kg (ppm)	2	<0.05	96	84	10-142	13
n-Propylbenzene	mg/kg (ppm)	2	<0.05	96	87	10-141	10
Bromobenzene	mg/kg (ppm)	2	<0.05	94	85	10-135	10
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	94	86	20-136	9
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	99	88	10-234	12
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	92	82	10-144	11
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	95	87	10-139	9
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	94	85	10-139	10
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	96	88	10-144	9
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	95	87	24-133	9
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	97	88	23-134	10
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	96	88	25-131	9
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	94	86	10-143	9
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	94	85	10-146	10
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	94	85	10-144	10
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	92	80	10-163	14
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	96	85	10-147	12
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	97	86	10-162	12
Naphthalene	mg/kg (ppm)	2	<0.05	95	85	30-138	11
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	94	83	10-173	12

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/23

Date Received: 03/23/23

Project: 114-19002-02, F&BI 303368

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)	2	50	10-93
Chloromethane	mg/kg (ppm)	2	70	34-101
Vinyl chloride	mg/kg (ppm)	2	78	47-106
Bromomethane	mg/kg (ppm)	2	87	38-123
Chloroethane	mg/kg (ppm)	2	89	44-123
Trichlorofluoromethane	mg/kg (ppm)	2	90	56-108
Acetone	mg/kg (ppm)	10	84	24-185
1,1-Dichloroethene	mg/kg (ppm)	2	99	61-118
Hexane	mg/kg (ppm)	2	99	54-142
Methylene chloride	mg/kg (ppm)	2	97	10-213
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	104	70-130
trans-1,2-Dichloroethene	mg/kg (ppm)	2	99	70-130
1,1-Dichloroethane	mg/kg (ppm)	2	104	70-130
2,2-Dichloropropane	mg/kg (ppm)	2	105	45-172
cis-1,2-Dichloroethene	mg/kg (ppm)	2	105	70-130
Chloroform	mg/kg (ppm)	2	100	70-130
2-Butanone (MEK)	mg/kg (ppm)	10	101	36-182
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	98	66-140
1,1,1-Trichloroethane	mg/kg (ppm)	2	104	70-130
1,1-Dichloropropene	mg/kg (ppm)	2	102	70-130
Carbon tetrachloride	mg/kg (ppm)	2	105	68-146
Benzene	mg/kg (ppm)	2	103	70-130
Trichloroethene	mg/kg (ppm)	2	99	53-133
1,2-Dichloropropane	mg/kg (ppm)	2	100	67-137
Bromodichloromethane	mg/kg (ppm)	2	105	70-130
Dibromomethane	mg/kg (ppm)	2	100	70-130
4-Methyl-2-pentanone	mg/kg (ppm)	10	109	70-130
cis-1,3-Dichloropropene	mg/kg (ppm)	2	101	70-130
Toluene	mg/kg (ppm)	2	96	63-127
trans-1,3-Dichloropropene	mg/kg (ppm)	2	103	70-130
1,1,2-Trichloroethane	mg/kg (ppm)	2	102	70-130
2-Hexanone	mg/kg (ppm)	10	102	65-148
1,3-Dichloropropene	mg/kg (ppm)	2	99	67-135
Tetrachloroethene	mg/kg (ppm)	2	104	59-138
Dibromochloromethane	mg/kg (ppm)	2	102	61-154
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	102	70-130
Chlorobenzene	mg/kg (ppm)	2	102	65-133
Ethylbenzene	mg/kg (ppm)	2	100	60-140
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	103	68-129
m,p-Xylene	mg/kg (ppm)	4	98	56-145
o-Xylene	mg/kg (ppm)	2	99	61-137
Styrene	mg/kg (ppm)	2	103	61-138
Isopropylbenzene	mg/kg (ppm)	2	103	52-148
Bromoform	mg/kg (ppm)	2	102	57-166
n-Propylbenzene	mg/kg (ppm)	2	107	36-162
Bromobenzene	mg/kg (ppm)	2	106	63-127
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	105	43-156
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	111	35-184
1,2,3-Trichloropropane	mg/kg (ppm)	2	104	70-130
2-Chlorotoluene	mg/kg (ppm)	2	107	50-146
4-Chlorotoluene	mg/kg (ppm)	2	105	47-150
tert-Butylbenzene	mg/kg (ppm)	2	106	41-154
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	105	42-159
sec-Butylbenzene	mg/kg (ppm)	2	106	25-175
p-Isopropyltoluene	mg/kg (ppm)	2	106	18-186
1,3-Dichlorobenzene	mg/kg (ppm)	2	105	49-149
1,4-Dichlorobenzene	mg/kg (ppm)	2	104	48-149
1,2-Dichlorobenzene	mg/kg (ppm)	2	104	58-139
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	102	70-130
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	105	39-166
Hexachlorobutadiene	mg/kg (ppm)	2	104	41-186
Naphthalene	mg/kg (ppm)	2	104	67-143
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	100	49-165

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/23

Date Received: 03/23/23

Project: 114-19002-02, F&BI 303368

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

Laboratory Code: 303427-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	10	11	106 b	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	10	109	109	70-130	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/23

Date Received: 03/23/23

Project: 114-19002-02, F&BI 303368

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

Laboratory Code: 303433-04 (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	84	85	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/L (ppm)	1.0	86	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/23

Date Received: 03/23/23

Project: 114-19002-02, F&BI 303368

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF PRODUCT SAMPLES FOR
POLYCHLORINATED BIPHENYLS AS
AROCOR 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	mg/kg (ppm)	25	105	109	69-137	4
Aroclor 1260	mg/kg (ppm)	25	114	114	78-148	0

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, biased high; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

303368
 Report To Evan Green
 Company Everen Northwest
 Address P.O. Box 14488
 City, State, ZIP Portland, OR 97293
 Phone (503) 452-5561 Email lynn@everen-nw.com

SAMPLE CHAIN OF CUSTODY

03/23/23

P/N 1

Page # 1 of 1

SAMPLERS (signature) Jordan Morris

PROJECT NAME

PO #

114-19202-02

REMARKS

INVOICE TO

Project specific RLs? - Yes / No

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	ANALYSES REQUESTED											Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TCLP Benzene	TCLP Pb			
Product-comp-230322	01 A-F	03-22-23	9:15	Product	6							X	X	X			
DRUM-COMP01-230322	02 A-E	03-22-23	9:45	Soil	5	X	X			X							
DRUM-COMP02-230322	03	03-22-23	9:55	Soil	5	X	X			X							

Samples received at 4:00

Friedman & Bruya, Inc.
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Jordan Morris</u>	Jordan Morris	Everen Northwest	03-22-23	18:00
Received by: <u>anh</u>	ANH PHAN	FSB	03/23/23	10:18
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 8, 2023

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 September 2, 2023 from the 114-19002-02, F&BI 309022 project. There are 6 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
ENW0908R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 2, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 114-19002-02, F&BI 309022 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
309022 -01	GS01-EX01-SW-14
309022 -02	GS02-EX-01-SW-12

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/08/23
Date Received: 09/02/23
Project: 114-19002-02, F&BI 309022
Date Extracted: 09/06/23
Date Analyzed: 09/06/23

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

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

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 50-150)
GS01-EX01-SW-14 309022-01	<5	121
GS02-EX-01-SW-12 309022-02	<5	127
Method Blank 03-2073 MB	<5	125

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/08/23
Date Received: 09/02/23
Project: 114-19002-02, F&BI 309022
Date Extracted: 09/05/23
Date Analyzed: 09/05/23

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
GS01-EX01-SW-14 309022-01	<50	<250	79
GS02-EX-01-SW-12 309022-02	<50	<250	80
Method Blank 03-2087 MB	<50	<250	69

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/08/23

Date Received: 09/02/23

Project: 114-19002-02, F&BI 309022

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

Laboratory Code: 309022-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	97	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/08/23

Date Received: 09/02/23

Project: 114-19002-02, F&BI 309022

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

Laboratory Code: 309022-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	92	94	64-136	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	92	78-121

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, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

309022

SAMPLE CHAIN OF CUSTODY

09/02/23

N/

Report To Lynn GreenCompany EVREN-NWAddress 40 SE 24th AveCity, State, ZIP Portland, Oregon 97214Phone 503-452-5561Email lynng@evren-nw.comSAMPLERS (signature) Page # 1 of 1

PROJECT NAME

114-19002-02

PO #

TURNAROUND TIME

☒ Standard Turnaround

RUSH

Rush charges authorized by:

REMARKS

INVOICE TO

SAMPLE DISPOSAL

Dispose after 30 days

Archive Samples

Other

Project Specific RLs - Yes / No

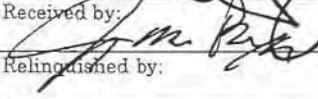
						ANALYSES REQUESTED												Notes
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082							
G501-EY01-SW-14																		
G501-SW-14	01	9/01/23	1429	Soil	1	X	X											
G502-SW-12	02	9/01/23	1435	Soil	1	X	X											
G502-EY-01-SW-12																		
IDS updated per																		
DS 9/2/23 ME																		

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Dan Sayko	ENW	09/01/23	1750
Received by: 	James Bruya	F&B	9/5	1600
Relinquished by:			9/2	
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.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 8, 2023

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 September 6, 2023 from the 114-19002-02, F&BI 309047 project. There are 6 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
ENW0908R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 6, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 114-19002-02, F&BI 309047 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
309047 -01	GS03-EX01-SW-17-SWI
309047 -02	GS04-EX01-NW-10
309047 -03	GS05-EX01-NW-14
309047 -04	GS06-EX01-NW-18-SWI

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/08/23
Date Received: 09/06/23
Project: 114-19002-02, F&BI 309047
Date Extracted: 09/06/23
Date Analyzed: 09/06/23

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

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 50-150)
GS03-EX01-SW-17-SWI 309047-01	<5	97
GS04-EX01-NW-10 309047-02	<5	94
GS05-EX01-NW-14 309047-03	<5	100
GS06-EX01-NW-18-SWI 309047-04	15	101
Method Blank 03-2073 MB	<5	125

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/08/23
Date Received: 09/06/23
Project: 114-19002-02, F&BI 309047
Date Extracted: 09/06/23
Date Analyzed: 09/06/23

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Residual Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
GS03-EX01-SW-17-SWI 309047-01	<50	<250	91
GS04-EX01-NW-10 309047-02	<50	<250	90
GS05-EX01-NW-14 309047-03	<50	<250	89
GS06-EX01-NW-18-SWI 309047-04	<50	<250	89
Method Blank 03-2092 MB2	<50	<250	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/08/23

Date Received: 09/06/23

Project: 114-19002-02, F&BI 309047

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

Laboratory Code: 309022-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	97	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/08/23

Date Received: 09/06/23

Project: 114-19002-02, F&BI 309047

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

Laboratory Code: 308347-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	650	89	83	53-141	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	86	71-126

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, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

309047

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

Phone 503-452-5561

Email lynng@evren-nw.com

SAMPLE CHAIN OF CUSTODY

09/06/23

VS-A1/N4

Page # 1 of 1

TURNAROUND TIME

Standard Turnaround

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Archive Samples

Other

SAMPLERS (signature)

PROJECT NAME

114-19002-02

PO #

REMARKS

INVOICE TO

Project Specific RLs - Yes / No

						ANALYSES REQUESTED										Notes
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					
EX01 GS03-SW-17-SW1 ✓ <i>EX01 (all samples) per EBA 9/12/23 ME</i>	01A-E	9-5-2023	11:00	Soil	5	X	X									
EX01 GS04-NW-10	02	9-5-2023	13:10		5	X	X									
EX01 GS05-NW-14	03	9-5-2023	13:45		5	X	X									
EX01 GS06-NW-18-SW1	04	9-5-2023	13:55		1	X	X									

Samples received at 2 °C

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

SIGNATURE

Relinquished by:

PRINT NAME

EVAN BRUGGERMAN

COMPANY

ENVI

DATE

9-5-2023

TIME

17:00

Received by:

ANYHPHAN

FSA

09/06/23

10:22

Relinquished by:

Received by:

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 13, 2023

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 September 8, 2023 from the 114-19002-02, F&BI 309094 project. There are 6 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
ENW0913R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 8, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 114-19002-02, F&BI 309094 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
309094 -01	GS07-EX01-SEW-9
309094 -02	GS08-EX01-SEW-14
309094 -03	GS09-EX01-SEW-17
309094 -04	GS10-EX01-NEW-14
309094 -05	GS11-EX01-EF-20
309094 -06	GS12-EX01-EW-18-SWI
309094 -07	GS13-EX01-EW-14
309094 -08	GS14-EX01-EW-10

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/13/23
Date Received: 09/08/23
Project: 114-19002-02, F&BI 309094
Date Extracted: 09/08/23
Date Analyzed: 09/08/23

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

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 50-150)
GS07-EX01-SEW-9 309094-01	<5	128
GS08-EX01-SEW-14 309094-02	<5	124
GS09-EX01-SEW-17 309094-03	<5	128
GS10-EX01-NEW-14 309094-04	<5	122
GS11-EX01-EF-20 309094-05	<5	127
GS12-EX01-EW-18-SWI 309094-06	<5	127
GS13-EX01-EW-14 309094-07	<5	122
GS14-EX01-EW-10 309094-08	<5	122
Method Blank 03-2078 MB	<5	98

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/13/23
Date Received: 09/08/23
Project: 114-19002-02, F&BI 309094
Date Extracted: 09/08/23
Date Analyzed: 09/08/23

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Residual Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
GS07-EX01-SEW-9 309094-01	<50	<250	78
GS08-EX01-SEW-14 309094-02	<50	<250	79
GS09-EX01-SEW-17 309094-03	<50	<250	77
GS10-EX01-NEW-14 309094-04	<50	<250	85
GS11-EX01-EF-20 309094-05	<50	<250	83
GS12-EX01-EW-18-SWI 309094-06	<50	<250	77
GS13-EX01-EW-14 309094-07	<50	<250	81
GS14-EX01-EW-10 309094-08	<50	<250	79
Method Blank 03-2118 MB	<50	<250	83

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/13/23

Date Received: 09/08/23

Project: 114-19002-02, F&BI 309094

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

Laboratory Code: 309059-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	105	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/13/23

Date Received: 09/08/23

Project: 114-19002-02, F&BI 309094

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

Laboratory Code: 309094-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	96	96	64-136	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	92	78-121

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, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

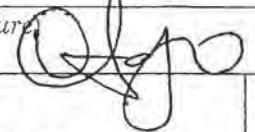
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

309094

SAMPLE CHAIN OF CUSTODY

09/08/23

N3/VS-A1

Report To Lynn GreenCompany EVREN-NWAddress 40 SE 24th AveCity, State, ZIP Portland, Oregon 97214Phone 503-452-5561Email lynng@evren-nw.comSAMPLERS (signature) 

PROJECT NAME

114-19002-02

PO #

REMARKS

Project Specific RLs - Yes / No

INVOICE TO

Page # 1 of 1

TURNAROUND TIME

☒ Standard Turnaround
☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Archive Samples

Other

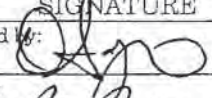
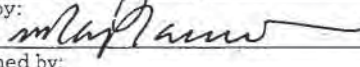
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					
G507-EX01-SEW-9	01A-E	9/07/23	9:40	Soil	5	X	X									
G508-EX01-SEW-14	02		9:54		1	X	X									
G509-EX01-SEW-17	03 A-E		10:00		5	X	X									
G510-EX01-NEW-14	04 V		10:55		5	X	X									
G511-EX01-EF-20	05		11:44		1	X	X									
G512-EX01-EW-18-SWI	06		12:35		1	X	X									-05 and 06 same day per LG 09/12/23 ME
G513-EX01-EW-14	07A-E		12:40		5	X	X									
G514-EX01-EW-10	08		13:05		1	X	X									

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Dan Salyk	ENW	9/07/23	17:30
Received by: 	Nhan Phan	FEBI	09/08/23	11:20
Relinquished by:				
Received by:		Samples received at 3 °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 18, 2023

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 September 12, 2023 from the 114-19002, F&BI 309139 project. There are 14 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
ENW0918R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 12, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 114-19002, F&BI 309139 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
309139 -01	GS15-EX01-F-20
309139 -02	GS16-EX01-F-20
309139 -03	GS18-EX01-F-21.5
309139 -04	GS19-EX01-F-23
309139 -05	GS20-EX01-NW-10
309139 -06	GS21-EX01-NW-14
309139 -07	GS22-EX01-NW-18
309139 -08	GS23-EX01-SW-10
309139 -09	GS24-EX01-SW-14
309139 -10	GS25-EX01-SW-18

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/18/23
Date Received: 09/12/23
Project: 114-19002, F&BI 309139
Date Extracted: 09/12/23
Date Analyzed: 09/12/23

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

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 50-150)
GS15-EX01-F-20 309139-01	<5	116
GS16-EX01-F-20 309139-02 1/5	370	129
GS18-EX01-F-21.5 309139-03 1/5	150	115
GS19-EX01-F-23 309139-04 1/5	78	119
GS20-EX01-NW-10 309139-05	<5	114
GS21-EX01-NW-14 309139-06	27	113
GS22-EX01-NW-18 309139-07	<5	117
GS23-EX01-SW-10 309139-08	<5	114
GS24-EX01-SW-14 309139-09	<5	114
GS25-EX01-SW-18 309139-10	180	129
Method Blank 03-2085 MB	<5	115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/18/23
 Date Received: 09/12/23
 Project: 114-19002, F&BI 309139
 Date Extracted: 09/12/23
 Date Analyzed: 09/12/23

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Residual Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 50-150)
GS15-EX01-F-20 309139-01	<50	<250	94
GS16-EX01-F-20 309139-02	<50	<250	89
GS18-EX01-F-21.5 309139-03	<50	<250	93
GS19-EX01-F-23 309139-04	<50	<250	93
GS20-EX01-NW-10 309139-05	<50	<250	94
GS21-EX01-NW-14 309139-06	<50	<250	95
GS22-EX01-NW-18 309139-07	<50	<250	94
GS23-EX01-SW-10 309139-08	<50	<250	91
GS24-EX01-SW-14 309139-09	<50	<250	90
GS25-EX01-SW-18 309139-10	<50	<250	90
Method Blank 03-2170 MB	<50	<250	95

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	GS16-EX01-F-20	Client:	Evren Northwest
Date Received:	09/12/23	Project:	114-19002, F&BI 309139
Date Extracted:	09/13/23	Lab ID:	309139-02 x2
Date Analyzed:	09/13/23	Data File:	309139-02 x2.093
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Lead	7.25
------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	GS25-EX01-SW-18	Client:	Evren Northwest
Date Received:	09/12/23	Project:	114-19002, F&BI 309139
Date Extracted:	09/13/23	Lab ID:	309139-10
Date Analyzed:	09/13/23	Data File:	309139-10.091
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Lead	11.0
------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	114-19002, F&BI 309139
Date Extracted:	09/13/23	Lab ID:	I3-703 mb2
Date Analyzed:	09/13/23	Data File:	I3-703 mb2.042
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Lead	<1
------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GS16-EX01-F-20	Client:	Evren Northwest
Date Received:	09/12/23	Project:	114-19002, F&BI 309139
Date Extracted:	09/14/23	Lab ID:	309139-02
Date Analyzed:	09/14/23	Data File:	091407.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	90	109
Toluene-d8	102	86	115
4-Bromofluorobenzene	102	84	115

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	0.18
Toluene	0.22
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	0.48
m,p-Xylene	1.8
o-Xylene	1.0
Isopropylbenzene	0.15
n-Propylbenzene	0.68
1,3,5-Trimethylbenzene	1.3
1,2,4-Trimethylbenzene	3.8
Naphthalene	0.22

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GS25-EX01-SW-18	Client:	Evren Northwest
Date Received:	09/12/23	Project:	114-19002, F&BI 309139
Date Extracted:	09/14/23	Lab ID:	309139-10
Date Analyzed:	09/14/23	Data File:	091408.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	110 vo	90	109
Toluene-d8	104	86	115
4-Bromofluorobenzene	99	84	115

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	<0.05
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	<0.05
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	114-19002, F&BI 309139
Date Extracted:	09/14/23	Lab ID:	03-2129 mb
Date Analyzed:	09/14/23	Data File:	091406.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	90	109
Toluene-d8	103	86	115
4-Bromofluorobenzene	107	84	115

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	<0.05
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	<0.05
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/18/23

Date Received: 09/12/23

Project: 114-19002, F&BI 309139

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

Laboratory Code: 309139-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	97	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/18/23

Date Received: 09/12/23

Project: 114-19002, F&BI 309139

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

Laboratory Code: 309139-01 (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	106	63-146	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	108	77-123

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/18/23

Date Received: 09/12/23

Project: 114-19002, F&BI 309139

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

Laboratory Code: 309127-02 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/kg (ppm)	50	104	68 b	131 b	75-125	63 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/kg (ppm)	50	102	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/18/23

Date Received: 09/12/23

Project: 114-19002, F&BI 309139

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

Laboratory Code: 308395-16 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	85	85	21-145	0
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	88	86	12-160	2
Benzene	mg/kg (ppm)	2	<0.03	91	91	29-129	0
Toluene	mg/kg (ppm)	2	<0.05	96	94	35-130	2
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	89	89	28-142	0
Ethylbenzene	mg/kg (ppm)	2	<0.05	91	92	32-137	1
m,p-Xylene	mg/kg (ppm)	4	<0.1	97	97	34-136	0
o-Xylene	mg/kg (ppm)	2	<0.05	94	93	33-134	1
Isopropylbenzene	mg/kg (ppm)	2	<0.05	91	91	31-142	0
n-Propylbenzene	mg/kg (ppm)	2	<0.05	93	97	23-146	4
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	94	97	18-149	3
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	93	97	10-182	4
Naphthalene	mg/kg (ppm)	2	<0.05	82	86	14-157	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	89	60-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	92	56-135
Benzene	mg/kg (ppm)	2	93	65-136
Toluene	mg/kg (ppm)	2	94	66-126
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	93	66-129
Ethylbenzene	mg/kg (ppm)	2	90	64-123
m,p-Xylene	mg/kg (ppm)	4	97	68-128
o-Xylene	mg/kg (ppm)	2	93	67-129
Isopropylbenzene	mg/kg (ppm)	2	91	68-128
n-Propylbenzene	mg/kg (ppm)	2	91	68-129
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	93	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	92	69-128
Naphthalene	mg/kg (ppm)	2	83	62-128

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, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

309139

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

Phone 503-452-5561

Email lynng@evren-nw.com

SAMPLE CHAIN OF CUSTODY

09/12/23

G3/N3/VS-A1

SAMPLERS (signature)

PROJECT NAME

114-19 002

PO #

REMARKS

INVOICE TO

Project Specific RLs - Yes / No

Page # 1 of 2

TURNAROUND TIME

Standard Turnaround

RUSH 24 hr

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Archive Samples

Other

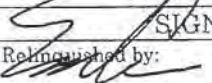
						ANALYSES REQUESTED												Notes
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	RBDM VOCs	Lead					
GS15-EX01-F-20	01	9/11/23	0810	S	1	X	X											A-std TAT
GS16-EX01-F-20	02 A-E	9/11/23	0815	S	5	X	X					A	A					per LG 09/13/23 ME
GS18-EX01-F-21.5	03	9/12/23	1240	S	5	X	X											
GS19-EX01-F-23	04 ↓	9/11/23	1245	S	5	X	X											
GS20-EX01-NW-10	05	9/11/23	1250	S	1	X	X											
GS21-EX01-NW-14	06 A-E	9/11/23	1502	S	5	X	X											
GS22-EX01-NW-18	07	9/11/23	1507	S	5	X	X											200
GS23-EX01-SW-10	08	9/11/23	1522	S	5	X	X											
GS24-EX01-SW-14	09 ↓	9/11/23	1527	S	5	X	X											
GS25-EX01-SW-18	10	9/11/23	1529	S	1	X	X					A	A					

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	ERIC CHAPMAN	ENW	9/11/23	1700
Received by: 	ANH PHAN	F8B	09/12/23	12:45
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 18, 2023

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 September 14, 2023 from the 114-19002-02, F&BI 309174 project. There are 6 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
ENW0918R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 14, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 114-19002-02, F&BI 309174 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
309174 -01	Comp01-Upper-East
309174 -02	Comp02-Upper-West
309174 -03	Comp03-Lower-South
309174 -04	Comp04-Lower-North

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/18/23
Date Received: 09/14/23
Project: 114-19002-02, F&BI 309174
Date Extracted: 09/14/23
Date Analyzed: 09/14/23

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

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 50-150)
Comp01-Upper-East 309174-01	<5	115
Comp02-Upper-West 309174-02	<5	111
Comp03-Lower-South 309174-03	<5	110
Comp04-Lower-North 309174-04	<5	113
Method Blank 03-2173 MB	<5	113

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/18/23
Date Received: 09/14/23
Project: 114-19002-02, F&BI 309174
Date Extracted: 09/14/23
Date Analyzed: 09/14/23

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Residual Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
Comp01-Upper-East 309174-01	<50	<250	94
Comp02-Upper-West 309174-02	<50	<250	92
Comp03-Lower-South 309174-03	<50	<250	95
Comp04-Lower-North 309174-04	<50	<250	90
Method Blank 03-2201 MB	<50	<250	85

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/18/23

Date Received: 09/14/23

Project: 114-19002-02, F&BI 309174

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

Laboratory Code: 309169-07 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	100	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/18/23

Date Received: 09/14/23

Project: 114-19002-02, F&BI 309174

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

Laboratory Code: 309174-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	102	104	64-136	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	108	78-121

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

309174
Report To Lynn Green

Company ✓ Even Northwest

Address P.O. Box 14468

City, State, ZIP Portland, OR 97293

Phone (903) 452-9561 Email lynn@acren-nw.com

SAMPLE CHAIN OF CUSTODY

09/14/23

GI

Page # 1 of 1

TURNAROUND TIME

☐ Standard turnaround
☒ RUSH Per Lynn Green
Rush charges authorized by:

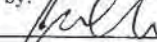
SAMPLE DISPOSAL

☐ Archive samples
☐ Other _____
 Default: Dispose after 30 days

SAMPLERS (signature) <i>[Signature]</i>	
PROJECT NAME <i>114-19002-02</i>	PO #
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

[illegible]

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Jordan Morris	Everen NW	09-13-23	18:00
Received by: 	ANH PHAN	FSB	09/14/23	10:19
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 19, 2023

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 September 13, 2023 from the 114-19002-02, F&BI 309161 project. There are 12 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
ENW0919R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 13, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 114-19002-02, F&BI 309161 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
309161 -01	GS27-EX01-NW-10
309161 -02	GS28-EX01-NW-14
309161 -03	GS29-EX01-NW-18
309161 -04	GS30-EX01-SW-10
309161 -05	GS31-EX01-SW-14
309161 -06	GS32-EX01-SW-18
309161 -07	GS33-EX01-F-21
309161 -08	GS26-EX01-F-20

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/19/23
Date Received: 09/13/23
Project: 114-19002-02, F&BI 309161
Date Extracted: 09/13/23
Date Analyzed: 09/13/23

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

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u>	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
Laboratory ID		
GS27-EX01-NW-10 309161-01	24	98
GS28-EX01-NW-14 309161-02	<5	98
GS29-EX01-NW-18 309161-03	33	104
GS30-EX01-SW-10 309161-04	<5	94
GS31-EX01-SW-14 309161-05	<5	97
GS32-EX01-SW-18 309161-06	140	123
GS33-EX01-F-21 309161-07	80	119
GS26-EX01-F-20 309161-08 1/10	1,100	126
Method Blank 03-2085 MB2	<5	99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/19/23
Date Received: 09/13/23
Project: 114-19002-02, F&BI 309161
Date Extracted: 09/13/23
Date Analyzed: 09/13/23

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Residual Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
GS27-EX01-NW-10 309161-01	<50	<250	104
GS28-EX01-NW-14 309161-02	<50	<250	104
GS29-EX01-NW-18 309161-03	<50	<250	102
GS30-EX01-SW-10 309161-04	<50	<250	105
GS31-EX01-SW-14 309161-05	<50	<250	103
GS32-EX01-SW-18 309161-06	<50	<250	104
GS33-EX01-F-21 309161-07	<50	<250	106
GS26-EX01-F-20 309161-08	<50	<250	105
Method Blank 03-2195 MB	<50	<250	87

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	GS26-EX01-F-20	Client:	Evren Northwest
Date Received:	09/13/23	Project:	114-19002-02, F&BI 309161
Date Extracted:	09/14/23	Lab ID:	309161-08
Date Analyzed:	09/14/23	Data File:	309161-08.121
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Lead	5.01
------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	114-19002-02, F&BI 309161
Date Extracted:	09/14/23	Lab ID:	I3-707 mb
Date Analyzed:	09/14/23	Data File:	I3-707 mb.047
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Lead	<1
------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GS26-EX01-F-20	Client:	Evren Northwest
Date Received:	09/13/23	Project:	114-19002-02, F&BI 309161
Date Extracted:	09/14/23	Lab ID:	309161-08
Date Analyzed:	09/14/23	Data File:	091420.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	90	109
Toluene-d8	99	86	115
4-Bromofluorobenzene	96	84	115

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	0.056
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	0.20
m,p-Xylene	0.59
o-Xylene	0.13
Isopropylbenzene	0.13
n-Propylbenzene	0.58
1,3,5-Trimethylbenzene	1.2
1,2,4-Trimethylbenzene	3.4
Naphthalene	0.25

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	114-19002-02, F&BI 309161
Date Extracted:	09/14/23	Lab ID:	03-2131 mb
Date Analyzed:	09/14/23	Data File:	091418.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	90	109
Toluene-d8	100	86	115
4-Bromofluorobenzene	99	84	115

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	<0.05
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	<0.05
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/19/23

Date Received: 09/13/23

Project: 114-19002-02, F&BI 309161

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

Laboratory Code: 309139-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	97	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/19/23

Date Received: 09/13/23

Project: 114-19002-02, F&BI 309161

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

Laboratory Code: 309156-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	96	98	64-136	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	102	78-121

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/19/23

Date Received: 09/13/23

Project: 114-19002-02, F&BI 309161

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

Laboratory Code: 309169-07 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/kg (ppm)	50	365	356 b	205 b	75-125	54 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/kg (ppm)	50	93	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/19/23

Date Received: 09/13/23

Project: 114-19002-02, F&BI 309161

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

Laboratory Code: 309169-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	84	89	21-145	6
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	87	94	12-160	8
Benzene	mg/kg (ppm)	2	<0.03	88	94	29-129	7
Toluene	mg/kg (ppm)	2	<0.05	94	97	35-130	3
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	89	92	28-142	3
Ethylbenzene	mg/kg (ppm)	2	<0.05	90	94	32-137	4
m,p-Xylene	mg/kg (ppm)	4	<0.1	97	103	34-136	6
o-Xylene	mg/kg (ppm)	2	<0.05	94	95	33-134	1
Isopropylbenzene	mg/kg (ppm)	2	<0.05	90	94	31-142	4
n-Propylbenzene	mg/kg (ppm)	2	<0.05	97	96	23-146	1
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	96	99	18-149	3
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	95	95	10-182	0
Naphthalene	mg/kg (ppm)	2	<0.05	85	86	14-157	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	90	60-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	94	56-135
Benzene	mg/kg (ppm)	2	97	65-136
Toluene	mg/kg (ppm)	2	102	66-126
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	102	66-129
Ethylbenzene	mg/kg (ppm)	2	98	64-123
m,p-Xylene	mg/kg (ppm)	4	105	68-128
o-Xylene	mg/kg (ppm)	2	99	67-129
Isopropylbenzene	mg/kg (ppm)	2	98	68-128
n-Propylbenzene	mg/kg (ppm)	2	104	68-129
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	105	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	102	69-128
Naphthalene	mg/kg (ppm)	2	94	62-128

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, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

309161

Report To Lynn GreenCompany Everen NorthwestAddress P.O. Box 14468City, State, ZIP Portland OR 97293Phone (503) 452-5561 Email lynn@everen-nw.com

SAMPLE CHAIN OF CUSTODY

09/13/23

VS-A1/N2

SAMPLERS (signature) Jordan Morris

PROJECT NAME

114-19002-02

PO #

REMARKS

INVOICE TO

Project specific RLs? - Yes / No

Page # 1 of 1

TURNAROUND TIME

- ☐ Standard turnaround
☒ RUSH per Lynn Green
 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	ANALYSES REQUESTED												Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	RBDM VOCs	Lead				
G527-EX01-NW-10	01 A-E	09-12-23	12:58	Soil	5	X	X											A-per LG STD TAT
G528-EX01-NW-14	02	09-12-23	13:09	Soil	5	X	X											09/14/23 ME
G529-EX01-NW-18	03	09-12-23	13:18	Soil	5	X	X											
G530-EX01-SW-10	04	09-12-23	13:27	Soil	5	X	X											
G531-EX01-SW-14	05	09-12-23	13:35	Soil	5	X	X											
G532-EX01-SW-18	06	09-12-23	13:44	Soil	5	X	X											
G533-EX01-F-21	07	09-12-23	13:52	Soil	5	X	X											
G526-EX01-F-20	08	09-12-23	11:00	Soil	5	X	X											Samples received at 2 °C

Friedman & Bruya, Inc.
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Jordan Morris</u>	Jordan Morris	Everen Northwest	09-12-23	18:00
Received by: <u>ANH PHAN</u>	ANH PHAN	F&B	09/13/23	10:58
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 4, 2023

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 September 21, 2023 from the 114-19002-02, F&BI 309314 project. There are 15 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
ENW1004R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 21, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 114-19002-02, F&BI 309314 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
309314 -01	GS34-EX02-F-18
309314 -02	GS35-EX02-NW-16
309314 -03	GS36-EX02-SW-15.5
309314 -04	GS37-EX02-EW-16
309314 -05	GS38-EX02-WW-16
309314 -06	COMP05-EX02

Pyrene in the 8270E laboratory control sample exceeded the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/04/23
Date Received: 09/21/23
Project: 114-19002-02, F&BI 309314
Date Extracted: 09/21/23
Date Analyzed: 09/21/23

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

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 50-150)
GS34-EX02-F-18 309314-01	100	132
GS35-EX02-NW-16 309314-02	<5	113
GS36-EX02-SW-15.5 309314-03	43	123
GS37-EX02-EW-16 309314-04	12	116
GS38-EX02-WW-16 309314-05	<5	122
COMP05-EX02 309314-06	<5	105
Method Blank 03-2185 MB	<5	118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/04/23
Date Received: 09/21/23
Project: 114-19002-02, F&BI 309314
Date Extracted: 09/21/23
Date Analyzed: 09/21/23

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Residual Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 50-150)
GS34-EX02-F-18 309314-01	910	<250	102
GS35-EX02-NW-16 309314-02	<50	<250	93
GS36-EX02-SW-15.5 309314-03	300	<250	100
GS37-EX02-EW-16 309314-04	110	<250	99
GS38-EX02-WW-16 309314-05	<50	<250	88
COMP05-EX02 309314-06	230	<250	106
Method Blank 03-2274 MB	<50	<250	94

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	GS34-EX02-F-18	Client:	Evren Northwest
Date Received:	09/21/23	Project:	114-19002-02, F&BI 309314
Date Extracted:	09/25/23	Lab ID:	309314-01
Date Analyzed:	09/25/23	Data File:	309314-01.127
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Lead	6.19
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	114-19002-02, F&BI 309314
Date Extracted:	09/25/23	Lab ID:	I3-741 mb
Date Analyzed:	09/25/23	Data File:	I3-741 mb.082
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Lead	<1
------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GS34-EX02-F-18	Client:	Evren Northwest
Date Received:	09/21/23	Project:	114-19002-02, F&BI 309314
Date Extracted:	09/26/23	Lab ID:	309314-01
Date Analyzed:	09/26/23	Data File:	092616.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	114 vo	90	109
Toluene-d8	103	86	115
4-Bromofluorobenzene	108	84	115

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	<0.05
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	<0.05
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	114-19002-02, F&BI 309314
Date Extracted:	09/26/23	Lab ID:	03-2161 mb
Date Analyzed:	09/26/23	Data File:	092606.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	90	109
Toluene-d8	105	86	115
4-Bromofluorobenzene	101	84	115

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	<0.05
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	<0.05
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	GS34-EX02-F-18	Client:	Evren Northwest
Date Received:	09/21/23	Project:	114-19002-02, F&BI 309314
Date Extracted:	09/26/23	Lab ID:	309314-01 1/5
Date Analyzed:	09/26/23	Data File:	092615.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	104	10	198
2-Fluorobiphenyl	88	45	117
2,4,6-Tribromophenol	86	11	158
Terphenyl-d14	122	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	0.054
1-Methylnaphthalene	0.028
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.045
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	0.091 j l
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	114-19002-02, F&BI 309314
Date Extracted:	09/26/23	Lab ID:	03-2286 mb 1/5
Date Analyzed:	09/26/23	Data File:	092609.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	104	10	198
2-Fluorobiphenyl	111	45	117
2,4,6-Tribromophenol	85	11	158
Terphenyl-d14	124	50	124

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/04/23

Date Received: 09/21/23

Project: 114-19002-02, F&BI 309314

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

Laboratory Code: 309250-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	92	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/04/23

Date Received: 09/21/23

Project: 114-19002-02, F&BI 309314

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

Laboratory Code: 309283-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	110	114	64-136	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	110	78-121

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/04/23

Date Received: 09/21/23

Project: 114-19002-02, F&BI 309314

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

Laboratory Code: 309330-02 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/kg (ppm)	50	6.55	112	97	75-125	14

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/kg (ppm)	50	95	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/04/23

Date Received: 09/21/23

Project: 114-19002-02, F&BI 309314

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

Laboratory Code: 309371-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	83	89	21-145	7
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	89	93	12-160	4
Benzene	mg/kg (ppm)	2	<0.03	89	94	29-129	5
Toluene	mg/kg (ppm)	2	<0.05	90	94	35-130	4
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	87	87	28-142	0
Ethylbenzene	mg/kg (ppm)	2	<0.05	87	90	32-137	3
m,p-Xylene	mg/kg (ppm)	4	<0.1	93	96	34-136	3
o-Xylene	mg/kg (ppm)	2	<0.05	89	95	33-134	7
Isopropylbenzene	mg/kg (ppm)	2	<0.05	88	93	31-142	6
n-Propylbenzene	mg/kg (ppm)	2	<0.05	92	94	23-146	2
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	92	95	18-149	3
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	89	95	10-182	7
Naphthalene	mg/kg (ppm)	2	<0.05	80	86	14-157	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	95	60-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	101	56-135
Benzene	mg/kg (ppm)	2	101	65-136
Toluene	mg/kg (ppm)	2	100	66-126
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	99	66-129
Ethylbenzene	mg/kg (ppm)	2	97	64-123
m,p-Xylene	mg/kg (ppm)	4	101	68-128
o-Xylene	mg/kg (ppm)	2	100	67-129
Isopropylbenzene	mg/kg (ppm)	2	99	68-128
n-Propylbenzene	mg/kg (ppm)	2	94	68-129
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	98	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	95	69-128
Naphthalene	mg/kg (ppm)	2	84	62-128

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/04/23

Date Received: 09/21/23

Project: 114-19002-02, F&BI 309314

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

Laboratory Code: 309367-01 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	88	79	28-125	11
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	97	87	10-192	11
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	100	91	10-163	9
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	97	90	45-128	7
Acenaphthene	mg/kg (ppm)	0.83	<0.01	96	89	36-125	8
Fluorene	mg/kg (ppm)	0.83	<0.01	101	94	48-121	7
Phenanthrene	mg/kg (ppm)	0.83	<0.01	99	95	46-122	4
Anthracene	mg/kg (ppm)	0.83	<0.01	100	97	30-144	3
Fluoranthene	mg/kg (ppm)	0.83	<0.01	94	96	50-150	2
Pyrene	mg/kg (ppm)	0.83	<0.01	105	113	40-134	7
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	105	107	50-150	2
Chrysene	mg/kg (ppm)	0.83	<0.01	109	105	50-150	4
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	106	104	50-150	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	98	95	50-150	3
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	102	103	50-150	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	105	103	40-140	2
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	104	101	41-136	3
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	105	105	29-139	0

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	97	57-107
2-Methylnaphthalene	mg/kg (ppm)	0.83	98	63-112
1-Methylnaphthalene	mg/kg (ppm)	0.83	102	63-113
Acenaphthylene	mg/kg (ppm)	0.83	108	70-130
Acenaphthene	mg/kg (ppm)	0.83	106	66-112
Fluorene	mg/kg (ppm)	0.83	113	67-117
Phenanthrene	mg/kg (ppm)	0.83	105	70-130
Anthracene	mg/kg (ppm)	0.83	107	70-130
Fluoranthene	mg/kg (ppm)	0.83	98	70-130
Pyrene	mg/kg (ppm)	0.83	136 vo	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	117	70-130
Chrysene	mg/kg (ppm)	0.83	113	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	111	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	107	67-128
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	105	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	118	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	114	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	119	65-130

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, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.

k - The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

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.

09/21/23 H2/N1
Page # 1

Report To John Green

Company Edren Northwest

Address To Box 14408

City, State, ZIP Portland OR 97243

Phone 503 452-5561 Email lynn@evern-hw.co

SAMPLERS (signature)

PROJECT NAME

PO #

REMARKS

INVOICE TO

* RUSH COMP05-Ex02

Project specific RLs? - Yes / No

Page #

of

TURNAROUND TIME

- Standard turnaround

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples☐ Other

Default: Dispose after 30 days

						ANALYSES REQUESTED											A-per LG 09/23/23 ME Notes
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	RBDM VOCs		Lead		
GS34-EX02-F-18	01 A-E	9/20/23	8:52	Soil	5	X	X				A		A		A		
GS35-EX02-NW-16	02		9:07		5	X	X										
GS36-EX02-SW-15	03		9:19		5	X	X										
GS37-EX02-EW-16	04		9:30		5	X	X										
GS38-EX02-WWD16	05	✓	9:39		5	X	X										
Compos-EX02	06		9:40	✓	1	X	X										

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Dan Saito	EPNW	9/20/23	17:30
Received by: 	Nham Pham	FEBI	9/21/23	1025
Relinquished by:				
Received by:				

Appendix E

Water Quality Parameter Charts

Chart E-1

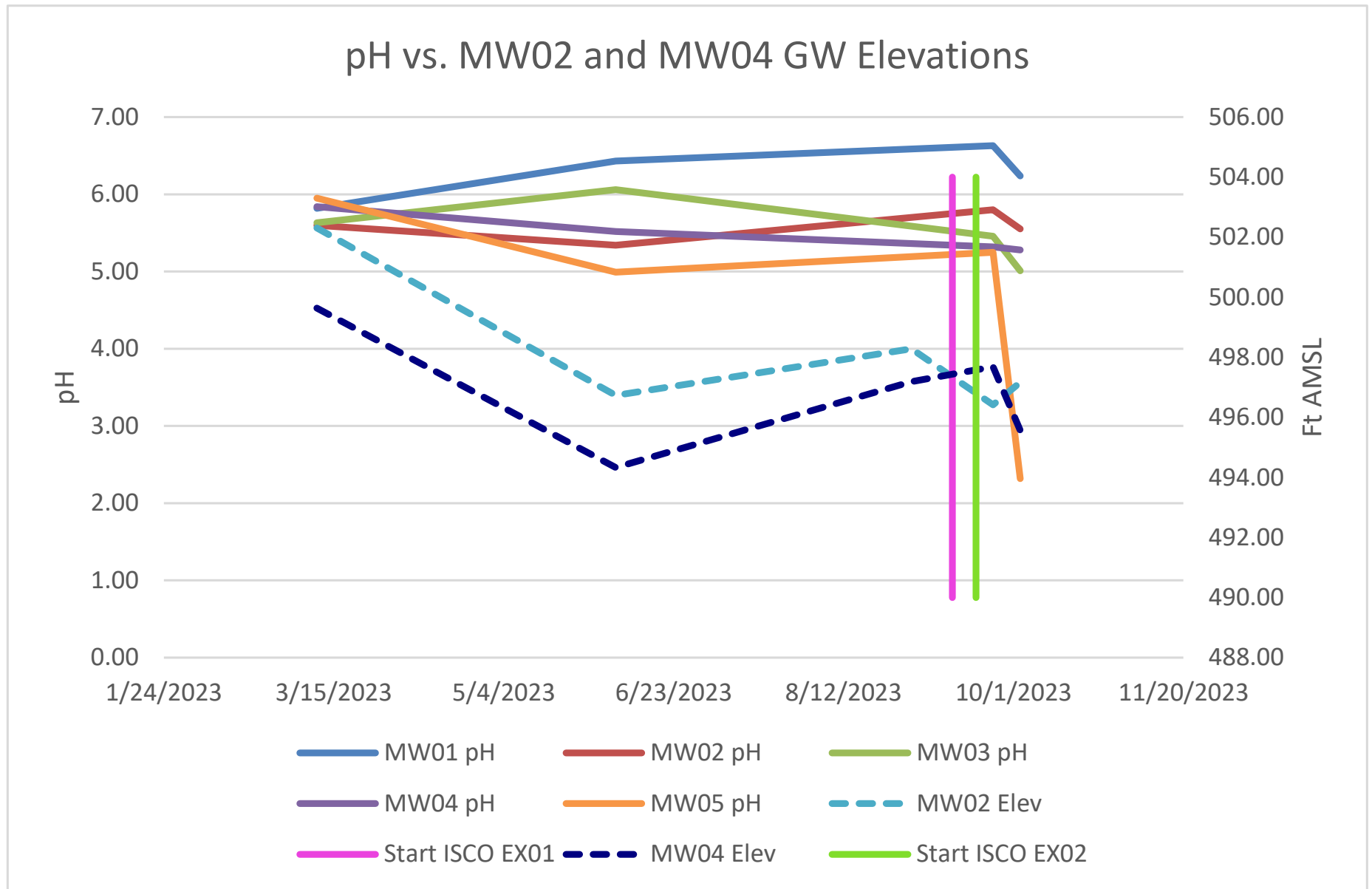


Chart E-2

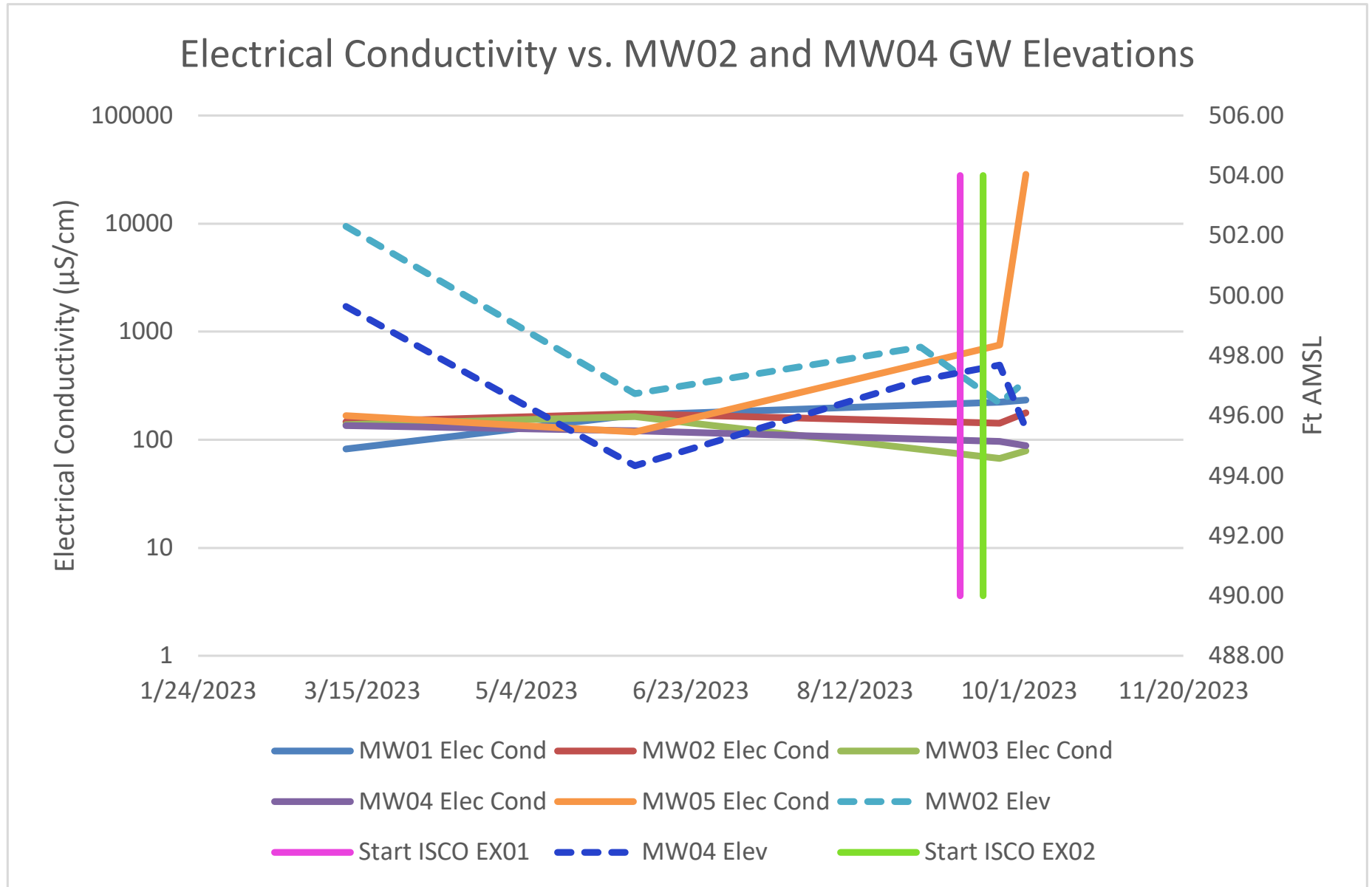


Chart E-3

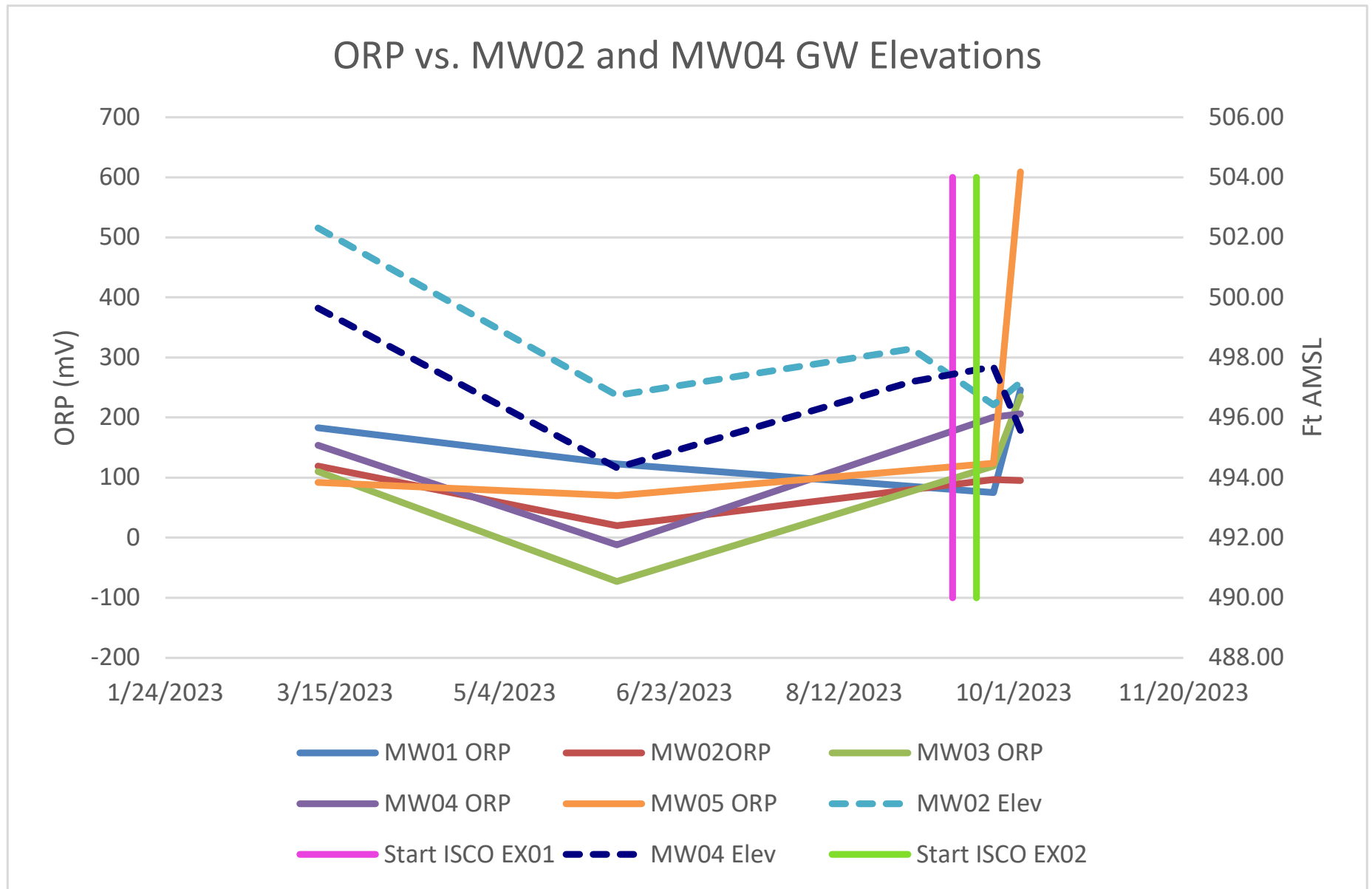
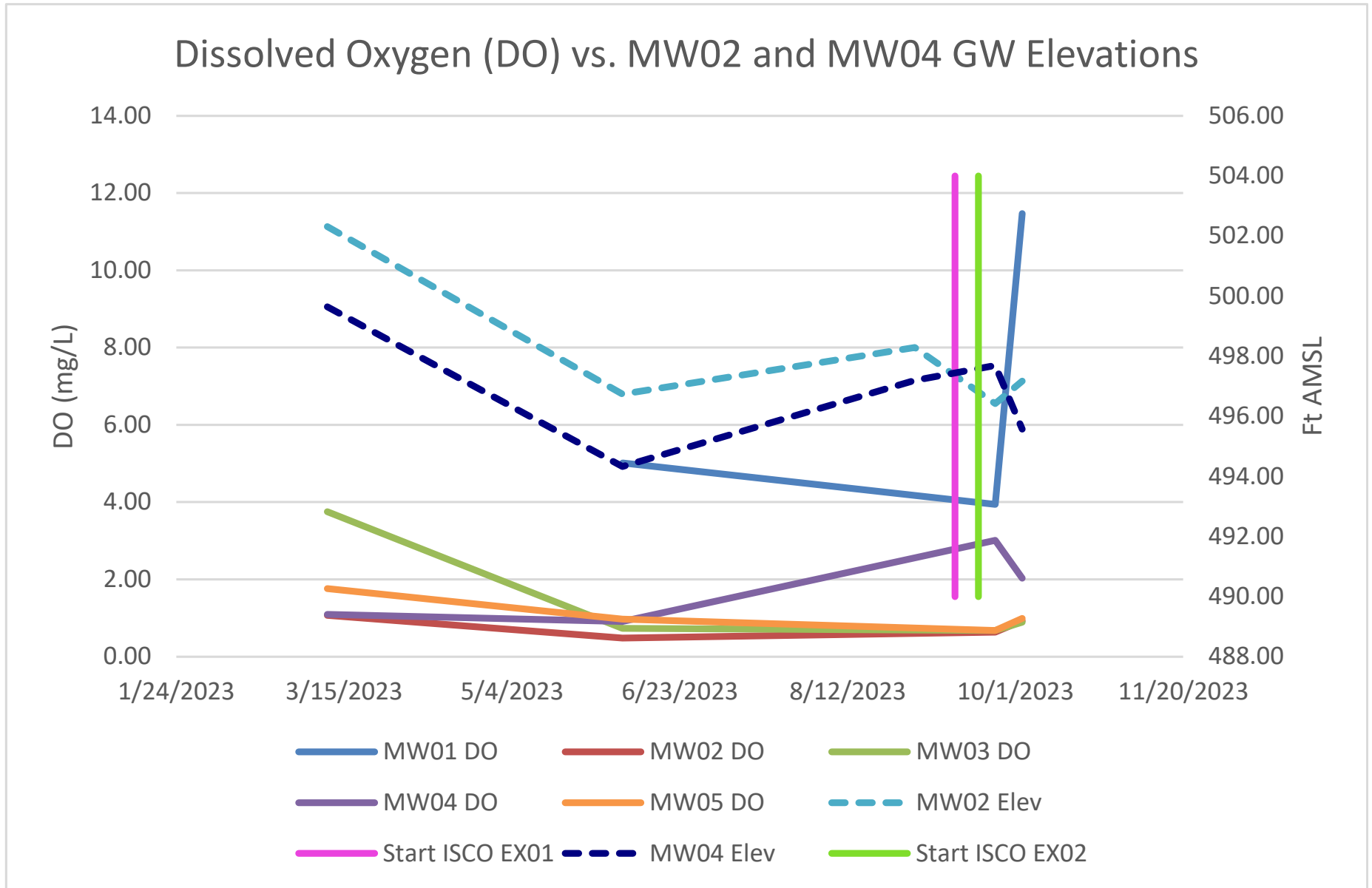


Chart E-4



Appendix F

ODEQ Soil Matrix Cleanup Scoresheet

Soil Matrix Scoresheet

Depth to Ground Water < 25 feet (10) 25 – 50 feet (7) 51 – 100 feet (4) > 100 feet (1)	10	
Mean Annual Precipitation > 45 inches (10) 20 – 45 inches (5) < 20 inches (1)	5	
Native Soil Types Coarse sands, gravels (10) Silts, fine sands (5) Clays (1)	5	
Sensitivity of uppermost Aquifer Sole Source (10) Current Potable (7) Future Potable (4) Non-potable (1)	7	
Potential Receptors Many, near (10) Medium (5) Few, far (1)	10	
TOTAL SCORE =	37	
Matrix Score	Cleanup level in ppm TPH	
	Gasoline	Diesel
Level 1: > 40 pts.	40	100
Level 2: 25 - 40 pts.	80	500
Level 3: < 25 pts.	130	1000

Appendix G

Waste Disposal Receipts

METRO METALS NORTHWEST, INC.: FERROUS

Date: 09/21/2023

2541506

2541506

Vendor: 353309 JESSE JACOB ASHE

Ticket#: 4006943

Paid To: JESSE JACOB ASHE

Total Wt: 521

Descrip: OR

Truck#

Notes:

Tot.Paid: \$45.10

Commodity

Gross

Tare

Tare2 Contam

Net UM

Price

Total

Environmental Surcharge

1

1 EA

-3.00

-3.00

Tin

19,960

19,440

520 N

185.00

48.10



Expiration: 12/10/24

EZ Profile™

Requested Facility: Hillsboro Landfill ☐ Unsure Profile Number: 134514OR
☐ Multiple Generator Locations (Attach Locations) ☒ Request Certificate of Disposal ☒ Renewal? Original Profile Number: 134514OR

A. GENERATOR INFORMATION (MATERIAL ORIGIN)

1. Generator Name: Universal Applicators, Inc.
2. Generator Site Address: Various Generators
(City, State, ZIP) Portland OR 97217
3. County: Multnomah
4. Contact Name: Greg Babcock
5. Email: uaitank@gmail.com
6. Phone: (503) 236-6359 7. Fax: (503) 233-9804
8. Generator EPA ID: N/A
9. State ID: N/A

B. BILLING INFORMATION

☒ SAME AS GENERATOR

1. Billing Name: Universal Applicators, Inc.
2. Billing Address: 10350 N Vancouver Way #329
(City, State, ZIP) Portland OR 97217
3. Contact Name: Greg Babcock
4. Email: uaitank@gmail.com
5. Phone: (503) 236-6359 6. Fax: (503) 233-9804
7. WM Hauled? ☐ Yes ☒ No
8. P.O. Number: _____
9. Payment Method: ☒ Credit Account ☐ Cash ☐ Credit Card

C. MATERIAL INFORMATION

1. Common Name: LF02 Diesel Fuel/Fuel Oil Contaminated Soil
Describe Process(es) Generating Material: ☐ See Attached
Soil contaminated with diesel fuel and/or fuel oil from a product spill, associated with vehicle accidents or minor spills experienced during fuel transfer.
2. Material Composition and Contaminants: ☐ See Attached

1. Soil	100 %
2.	
3.	
4.	

Total comp. must be equal to or greater than 100% ≥100%

3. State Waste Codes: N/A
4. Color: Varies
5. Physical State at 70°F: ☒ Solid ☐ Liquid ☐ Other: _____
6. Free Liquid Range Percentage: _____ to _____ N/A
7. pH: _____ to _____ N/A
8. Strong Odor: ☐ Yes ☒ No Describe: _____
9. Flash Point: ☐ <140°F ☐ 140°–199°F ☒ ≥200° N/A

D. REGULATORY INFORMATION

1. EPA Hazardous Waste? ☐ Yes* ☒ No
Code: _____
2. State Hazardous Waste? ☐ Yes ☒ No
Code: _____
3. Is this material non-hazardous due to Treatment, Delisting, or an Exclusion? ☐ Yes* ☒ No
4. Contains Underlying Hazardous Constituents? ☐ Yes* ☒ No
5. From an industry regulated under Benzene NESHAP? ☐ Yes* ☒ No
6. Facility remediation subject to 40 CFR 63 GGGGG? ☐ Yes* ☒ No
7. CERCLA or State-mandated clean-up? ☐ Yes* ☒ No
8. NRC or State-regulated radioactive or NORM waste? ☐ Yes* ☒ No
***If Yes, see Addendum (page 2) for additional questions and space.**
9. Contains PCBs? → If Yes, answer a, b and c. ☐ Yes ☒ No
a. Regulated by 40 CFR 761? ☐ Yes ☐ No
b. Remediation under 40 CFR 761.61 (a)? ☐ Yes ☐ No
c. Were PCB imported into the US? ☐ Yes ☐ No
10. Regulated and/or Untreated Medical/Infectious Waste? ☐ Yes ☒ No
11. Contains Asbestos? ☐ Yes ☒ No
→ If Yes: ☐ Non-Friable ☐ Non-Friable – Regulated ☐ Friable

E. ANALYTICAL AND OTHER REPRESENTATIVE INFORMATION

1. Analytical attached ☐ Yes
Please identify applicable samples and/or lab reports:

2. Other information attached (such as MSDS)? ☐ Yes

F. SHIPPING AND DOT INFORMATION

1. ☐ One-Time Event ☒ Repeat Event/Ongoing Business
2. Estimated Quantity/Unit of Measure: 500
☒ Tons ☐ Yards ☐ Drums ☐ Gallons ☐ Other: _____
3. Container Type and Size: Dump Truck or Dump Box
4. USDOT Proper Shipping Name: N/A

G. GENERATOR CERTIFICATION (PLEASE READ AND CERTIFY BY SIGNATURE)

By signing this EZ Profile™ form, I hereby certify that all information submitted in this and all attached documents contain true and accurate descriptions of this material, and that all relevant information necessary for proper material characterization and to identify known and suspected hazards has been provided. Any analytical data attached was derived from a sample that is representative as defined in 40 CFR 261 – Appendix 1 or by using an equivalent method. All changes occurring in the character of the material (i.e., changes in the process or new analytical) will be identified by the Generator and be disclosed to Waste Management prior to providing the material to Waste Management.

☐ I am an Authorized Agent signing on behalf of the Generator, and I have confirmed with the Generator that information contained in this profile, as well as supporting documents provided, are accurate and complete.

Name (Print): Greg Babcock Date: 11/10/2021
Title: Controller
Company: Universal Applicators, Inc.

Certification Signature

THINK GREEN®

QUESTIONS? CALL 800 963 4776 FOR ASSISTANCE Revised November 06, 2020 © 2020 WM Intellectual Property Holdings, L.L.C.

Customer Summary Report

Hillsboro Landfill - S03305 (USA) 08/30/2023 12:00 AM - 09/22/2023 11:59 PM Operation Type: All

Customer: All - Ticket Type: All - Customer Type: All - PMT Category: All - Profile: 134514OR

Ticket Date	Customer	Profile	Truck	Material	Tons
8/31/2023	UNIVERSAL APPLICATORS INC	134514OR	68-SOLO	Cont Soil Pet-RGC-Tons	9.66
8/31/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	10.86
8/31/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	12.71
8/31/2023	UNIVERSAL APPLICATORS INC	134514OR	68-SOLO	Cont Soil Pet-RGC-Tons	11.45
8/31/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	13.99
8/31/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	12.48
8/31/2023	UNIVERSAL APPLICATORS INC	134514OR	68-SOLO	Cont Soil Pet-RGC-Tons	11.26
8/31/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	13.38
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	68-SOLO	Cont Soil Pet-RGC-Tons	12.36
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	12.61
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	1	Cont Soil Pet-RGC-Tons	10.47
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	12.64
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	68-SOLO	Cont Soil Pet-RGC-Tons	13.59
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	14.51
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	1	Cont Soil Pet-RGC-Tons	11.73
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	13.07
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	68-SOLO	Cont Soil Pet-RGC-Tons	14.01
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	1	Cont Soil Pet-RGC-Tons	11.40
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	11.34
9/1/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	11.60
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	7-SOLO	Cont Soil Pet-RGC-Tons	13.64
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	6-SOLO	Cont Soil Pet-RGC-Tons	12.09
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	2	Cont Soil Pet-RGC-Tons	11.08
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	18	Cont Soil Pet-RGC-Tons	13.82
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	13.73
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	7-SOLO	Cont Soil Pet-RGC-Tons	14.12
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	6-SOLO	Cont Soil Pet-RGC-Tons	14.29
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	2	Cont Soil Pet-RGC-Tons	13.89
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	18	Cont Soil Pet-RGC-Tons	14.69
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	14.28
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	7-SOLO	Cont Soil Pet-RGC-Tons	13.59
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	6-SOLO	Cont Soil Pet-RGC-Tons	13.95
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	2	Cont Soil Pet-RGC-Tons	12.89
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	18	Cont Soil Pet-RGC-Tons	13.96
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	11.86
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	7-SOLO	Cont Soil Pet-RGC-Tons	13.53
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	2	Cont Soil Pet-RGC-Tons	11.71
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	6-SOLO	Cont Soil Pet-RGC-Tons	13.80
9/5/2023	UNIVERSAL APPLICATORS INC	134514OR	18	Cont Soil Pet-RGC-Tons	14.11
9/7/2023	UNIVERSAL APPLICATORS INC	134514OR	68-SOLO	Cont Soil Pet-RGC-Tons	11.35
9/7/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	11.25

Customer Summary Report

Hillsboro Landfill - S03305 (USA) 08/30/2023 12:00 AM - 09/22/2023 11:59 PM Operation Type: All

Customer: All - Ticket Type: All - Customer Type: All - PMT Category: All - Profile: 134514OR

Ticket Date	Customer	Profile	Truck	Material	Tons
9/7/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	11.74
9/7/2023	UNIVERSAL APPLICATORS INC	134514OR	68-SOLO	Cont Soil Pet-RGC-Tons	14.46
9/7/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	13.75
9/7/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	14.00
9/7/2023	UNIVERSAL APPLICATORS INC	134514OR	68-SOLO	Cont Soil Pet-RGC-Tons	14.13
9/7/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	14.37
9/7/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	14.47
9/8/2023	UNIVERSAL APPLICATORS INC	134514OR	68-SOLO	Cont Soil Pet-RGC-Tons	14.07
9/8/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	17.03
9/8/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	13.53
9/8/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	14.84
9/8/2023	UNIVERSAL APPLICATORS INC	134514OR	68-SOLO	Cont Soil Pet-RGC-Tons	13.40
9/8/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	12.98
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	11.91
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	4 SOLO	Cont Soil Pet-RGC-Tons	13.62
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	27-solo	Cont Soil Pet-RGC-Tons	15.36
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	5	Cont Soil Pet-RGC-Tons	12.84
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	14.22
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	16.46
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	4 SOLO	Cont Soil Pet-RGC-Tons	13.81
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	5	Cont Soil Pet-RGC-Tons	12.26
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	27-solo	Cont Soil Pet-RGC-Tons	15.39
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	12.12
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	14.54
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	5	Cont Soil Pet-RGC-Tons	12.57
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	4 SOLO	Cont Soil Pet-RGC-Tons	12.27
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	13.79
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	07-SOLO	Cont Soil Pet-RGC-Tons	15.96
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	5	Cont Soil Pet-RGC-Tons	12.16
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	27-solo	Cont Soil Pet-RGC-Tons	15.47
9/11/2023	UNIVERSAL APPLICATORS INC	134514OR	4 SOLO	Cont Soil Pet-RGC-Tons	11.83
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	1-solo	Cont Soil Pet-RGC-Tons	14.19
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	14.55
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	21 SOLO	Cont Soil Pet-RGC-Tons	15.79
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	1	Cont Soil Pet-RGC-Tons	13.03
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	134	Cont Soil Pet-RGC-Tons	13.10
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	1-solo	Cont Soil Pet-RGC-Tons	9.99
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	21 SOLO	Cont Soil Pet-RGC-Tons	14.18
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	1	Cont Soil Pet-RGC-Tons	12.16
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	134	Cont Soil Pet-RGC-Tons	14.04
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	1	Cont Soil Pet-RGC-Tons	9.83

Customer Summary Report

Hillsboro Landfill - S03305 (USA) 08/30/2023 12:00 AM - 09/22/2023 11:59 PM Operation Type: All

Customer: All - Ticket Type: All - Customer Type: All - PMT Category: All - Profile: 134514OR

Ticket Date	Customer	Profile	Truck	Material	Tons
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	1-solo	Cont Soil Pet-RGC-Tons	16.51
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	12.97
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	21 SOLO	Cont Soil Pet-RGC-Tons	13.45
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	1	Cont Soil Pet-RGC-Tons	13.17
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	134	Cont Soil Pet-RGC-Tons	15.94
9/12/2023	UNIVERSAL APPLICATORS INC	134514OR	1	Cont Soil Pet-RGC-Tons	10.54
9/13/2023	UNIVERSAL APPLICATORS INC	134514OR	DAVE	Cont Soil Pet-RGC-Tons	4.63
9/14/2023	UNIVERSAL APPLICATORS INC	134514OR	DAVE	Cont Soil Pet-RGC-Tons	3.45
9/15/2023	UNIVERSAL APPLICATORS INC	134514OR	DAVE	Cont Soil Pet-RGC-Tons	7.14
9/15/2023	UNIVERSAL APPLICATORS INC	134514OR	dave	Cont Soil Pet-RGC-Tons	7.72
9/19/2023	UNIVERSAL APPLICATORS INC	134514OR	4	Cont Soil Pet-RGC-Tons	5.71
9/20/2023	UNIVERSAL APPLICATORS INC	134514OR	57	Cont Soil Pet-RGC-Tons	13.23
9/20/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	13.52
9/20/2023	UNIVERSAL APPLICATORS INC	134514OR	57	Cont Soil Pet-RGC-Tons	11.34
9/20/2023	UNIVERSAL APPLICATORS INC	134514OR	96	Cont Soil Pet-RGC-Tons	13.19
9/20/2023	UNIVERSAL APPLICATORS INC	134514OR	57	Cont Soil Pet-RGC-Tons	11.65
9/22/2023	UNIVERSAL APPLICATORS INC	134514OR	28	Cont Soil Pet-RGC-Tons	8.48
9/22/2023	UNIVERSAL APPLICATORS INC	134514OR	28	Cont Soil Pet-RGC-Tons	12.46
9/22/2023	UNIVERSAL APPLICATORS INC	134514OR	28	Cont Soil Pet-RGC-Tons	8.26
TOTALS:					1,286.32