



FOCUSED SITE INVESTIGATION (WITH RISK-BASED DECISION MAKING)



AWARE Food Bank

152 Arthur Street
Woodburn, Oregon

Agency Information

ODEQ LUST File Number 24-12-0937

Prepared for:

Marion Polk Food Share

Attn: Ian Dixon-McDonald
1660 Salem Industrial Drive NE
Woodburn, Oregon 97301

Issued on:

January 10, 2023

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This

Focused Site Investigation (WITH RISK-BASED DECISION MAKING)

Report for:

AWARE Food Bank
152 Arthur Street
Woodburn, Oregon 97071

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

Marion Polk Food Share

Attn: Ian Dixon-McDonald
1660 Salem Industrial Drive NE
Woodburn, Oregon 97301

and its assignees

Issued January 10, 2023 by:



EVREN NORTHWEST INC.
environmental natural resource consultants



EXP. 2/1/2024



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List of Acronyms and Abbreviations

bgs	below ground surface	PCBs	polychlorinated biphenyls
btoc	below top of casing	PE	polyethylene
Cascade	Cascade Drilling	PID	photoionization detector
CCS	Cowlitz Clean Sweep, A PNE Corporation	PNWL	Pacific Northwest Locating
CFSLs	clean fill screening levels	ppmv	parts per million by volume
Client	Marion Polk Food Share	PVC	polyvinyl chloride
COCs	constituents of concern	QA/QC	Quality Assurance / Quality Control
COIs	constituents of interest	RBCs	risk-based concentrations
COPCs	constituents of potential concern	RBDM	ODEQ's <i>Risk-Based Decision Making for the Remediation of Contaminated Sites</i> guidance document
DDC	Downtown Development and Conservation Zoning Designation	RCRA	Resource Conservation and Recovery Act
DPT	Direct-Push Technology	ROW	right-of-way
DRO	diesel-range organics	RRO	residual (oil)-range organics
ENW	EVREN Northwest, Inc.	SAP	Sampling and Analysis Plan
EPA	US Environmental Protection Agency	SLRBCs	screening-level risk-based concentrations
F&BI	Friedman and Bruya, Inc.	SOW	scope of work
FEI	Foundation Engineering, Inc.	SWI	soil-water interface
FSI	Focused Site Investigation	TPH	Total Petroleum Hydrocarbons
GPR	Ground Penetrating Radar	USGS	U.S. Geological Survey
GRO	gasoline-range organics	UST	underground storage tank
HASP	Health and Safety Plan	VOA	volatile organic analysis
HCID	hydrocarbon identification	VOCs	volatile organic constituents
HDR	Mala High Dynamic Range		
ID	inside diameter		
LUST	leaking underground storage tank		
MA	magnetic anomaly		
µg/L	micrograms per Liter		
mg/Kg	milligrams per Kilogram		
MRL	method reporting limit		
OAR	Oregon Administrative Rules		
ODEQ	Oregon Department of Environmental Quality		
OWRD	Oregon Water Resources Department		
PAHs	polynuclear aromatic hydrocarbons		

1.0 Introduction

At the request of Ian Dixon-McDonald with Marion Polk Food Share (Client), EVREN Northwest, Inc. (ENW) prepared this report documenting a Focused Site Investigation (FSI) to delineate petroleum impacts at the subject site (*AWARE Food Bank, 152 Arthur Street, Woodburn, Oregon*; see Figures 1 and 2). The 0.23-acre site is currently under construction of a new 9,690-square-foot AWARE Food Bank building, which replaces the former Food Bank building that was devastated by fire in August 2021 (Figure 2). The former AWARE Food Bank building was razed, and debris cleared prior to initiating the subsurface investigation. This scope of work (SOW) was approved by Ian Dixon-McDonald on August 18, 2022. The scope of work was later expanded to further assess soil and ground water on October 20, 2022.

ENW investigated a rectangular concrete flow-through tank on the south-adjacent city parking lot on December 21, 2022, under a separate contract with the City of Woodburn. The cast iron discharge pipe associated with this concrete tank was encountered by contractors along the southwest side of the site in a footing excavation for the new AWARE Food Bank building. Assessment boring B13 was sited in the footing excavation on the subject property next to the concrete tank. City of Woodburn accepted financial responsibility for assessing this concrete tank and provided permission to reference the soil boring and soil analytical data in this FSI report. Concrete tank investigation results and recommendations are being reported to the City of Woodburn under separate cover.

Site work was conducted in August and December 2022 and is documented by photographs presented in Appendix A. This report describes the methods and findings of site assessment, evaluates the results through a risk assessment, and recommends next steps needed to proceed to regulatory closure for the site.

2.0 Scope of Work

ENW completed the following SOW for this project:

- Ordered a utility clearance (One Call) to provide clearance prior to the investigation.
- Oversaw private utility locates prior to the investigation.
- Prepared an appropriate Sampling and Analysis Plans (SAPs).
- Completed a geophysical survey of the subject site and a video survey of a storm water catch basin on the south part of the site.
- Collected soil and reconnaissance ground water samples from 12 borings sited on the subject site and the adjacent right-of-way (ROW).
- Under a separate City of Woodburn contract, collected a soil sample adjacent to the concrete flow-through tank discovered by contractors along the southwest property boundary.
- Submitted samples to an independent laboratory under chain-of-custody protocols for appropriate analysis.

- Evaluated analytical results with respect to ODEQ underground storage tank (UST) cleanup standards and risk-based guidance documents.
- Prepared this report documenting the work conducted with findings and presenting recommendations for next steps to obtain regulatory site closure.

3.0 Site Description

The subject property is located on the southern corner of the intersection of Arthur Street and N First Street in a commercial area of Woodburn, Marion County, Oregon (Figure 1). The 0.23-acre site is currently under construction of a new 9,690-square-foot AWARE Food Bank building, which replaces the former Food Bank building that was devastated by fire in August 2021 (Figure 2). The former AWARE Food Bank building was razed, and debris cleared prior to initiating the subsurface investigation. The subject property is zoned DDC (Downtown Development and Conservation) by City of Woodburn. Adjacent properties are all zoned DDC. The subject site is bound to the northwest by N First Street, to the northeast by Arthur Street, to the southeast by an alley, salon (Salon De Belleza La Moda) and equipment distributor (Peterson Equipment), and to the southwest by a City of Woodburn parking lot. The location of the former UST on the southwest side of Arthur Street next to the site, along with USTs formerly located at a former service station south of the site are shown on Figure 2.

Historical Use. In the 1890s, the site was developed residentially with one single-family residence and outbuilding. By 1906, the residence had been demolished and by 1913 the subject site was redeveloped with a structure that occupied the majority of the property. The structure, most recently occupied by AWARE Food Bank, was demolished in 2022 following a fire. Contractors recently broke ground on construction of the new AWARE Food Bank building.

Topography. The subject site is located within the U.S. Geological Survey (USGS) Woodburn, OR 7.5-minute quadrangle, at an approximate elevation of 186 feet above mean sea level (see Figure 1). The surface topography of the site is generally level and local area slopes gently to the northeast.

Geologic Setting. The site is located in the Southern Willamette Valley, which is a low-lying area between the Oregon Cascade Range to the east and the Coast Range to the west. The Willamette River is the principal river within the basin. The Southern Willamette Valley is underlain by fluvial and flood deposits of the Willamette River and its tributaries.

During the late Pleistocene (approximately 12,000 years ago), numerous catastrophic floods swept into the Portland Basin through the Columbia River Gorge to the east. The floods deposited great thicknesses of sediments within the basin. The subject site is mapped as the main body of fine-grained Missoula Flood deposits,¹ which range in thickness from several tens of feet on the flanks of nearby hills to several hundred feet along the central valley axis. These deposits include the Pleistocene age Willamette Silt Formation and the Troutdale Formation of Pliocene Age.² Recent age Willamette Valley alluvium is present in some areas along streams and rivers.

¹ O'Connor and others, 2001. Quaternary Geologic Units in Willamette Valley, Oregon: U.S. Geological Survey Professional Paper 1620, Map Scale 1:250,000.

² Price, D., 1967. Geology and Water Resources in the French Prairie Area, Northern Willamette Valley, Oregon: US Geological Survey, Water-Supply Paper 1833, 97 p.

The sediments of shallower Willamette Silt are very fine-grained and dominated by silt but also contain unconsolidated beds of clay and fine-grained sand. Wells log information provided by the Oregon Water Resources Department (OWRD) well log MARI1850³ describes the upper Willamette Silt (“sandy clay with occasional gravelly streaks”) extending to a depth of approximately 100 feet below ground surface (bgs) in the downtown Woodburn area. The Troutdale Formation directly underlies the Willamette Silt and consists mainly of unconsolidated to consolidated and cemented sand and gravel. The Willamette Silt and Troutdale Formation are separated by impermeable silts layers (aquitards) in some areas.

Borings completed at the site encountered silty fine sands with occasional interbeds of finer sands and silts within the upper 20 feet of surface, consistent with a local lacustrine or alluvial depositional environment. Boring logs are in Appendix B.

Surface Water. There are no surface waters located on the subject site. The nearest surface water body is Mill Creek, which is located approximately one-quarter (0.25) miles west-southwest of the project area. Mill Creek flows generally north along a meandering course terminating at its confluence with the Pudding River approximately eight (8) miles north-northwest of Woodburn.

Ground Water. The regional hydrogeology is described in a US Geological Survey Professional Paper 1424.⁴ The Troutdale Formation and the alluvium of the Willamette River contain the most productive aquifers in the Woodburn area. These aquifers which consist mainly of sand and gravel, generally yield moderate to large quantities of water to properly constructed wells. The Willamette Silt generally yields small but adequate quantities of water for domestic and stock supplies.

The City of Woodburn utilizes ground water from the Troutdale Aquifer as their primary municipal water supply. Ground water from six community water supply wells is typically derived from sand and gravel water bearing units at depths over 175 feet bgs.

A shallow ground water unit also exists within sandy interbeds within the overlying Willamette Silt and was encountered in temporary wells during this FSI at depths ranging from around 10 to 15 bgs, with static ground water levels ranging from 14.15 to 15.75 feet bgs. The potentiometric surface of the shallow ground water table beneath the subject area was not surveyed so ground water flow direction is currently unestablished. Research of information gathered during other cleanup sites in the area indicate ground water in the area may flow north and east, towards Mill Creek. A northeastward ground water flow direction was evident based on plume morphology derived during the N First Street Improvements.^{Error!}

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4.0 Overview of Environmental History

August 2012. A miscellaneous release of gasoline range petroleum hydrocarbons (GRO) was reported from an unregulated UST noted to be located at the subject address. This UST was reported to have been cut open and cleaned at a date that preceded the current owner at the time. Analyses of samples

³ Oregon Water Resources Department, well log MARI1850, City of Woodburn “Library Well #3,” Township 5S, Range 1W, Section 18C, Marion County, Oregon.

⁴ Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998. Hydrogeologic framework of the Willamette Lowland Aquifer System, Oregon and Washington: US Geological Survey, Professional Paper 1424-B, 822 p., maps (1:250,000).

presumably collected beneath the ends of the UST reported GRO in soil up to 1,700 milligrams per kilogram (mg/Kg) and diesel-range organics (DRO) up to 210 mg/Kg, which exceeded ODEQ's soil matrix cleanup levels. No information was provided regarding the precise location of the UST nor its ultimate disposition, i.e., whether it was decommissioned by removal or left in place. The release was reported to ODEQ who assigned LUST file no. 24-12-0937. This file remains open.

August 2019. During N First Street improvements in August 2019, a 750-gallon UST was discovered by CCS in the public right-of-way northeast of the former Food Bank building on the south side of Arthur Street (see Figure 2). ENW understands that CCS decommissioned the UST by removal. Residual (oil)-range organics (RRO) were detected in a soil sample collected beneath the east end of the UST at a concentration less than ODEQ's soil matrix cleanup level. This UST may correspond to LUST file no. 24-12-0937, which file ODEQ is working to close.

June 2022. Apparent petroleum impacted soils were encountered at a depth of approximately eight (8) feet below ground surface in Foundation Engineering, Inc.'s geotechnical boring BH-1 located in a parking lot at the northeast property corner (Figure 3).

In response to the report of petroleum impacts in geotechnical boring BH-1 at the site, ENW was engaged by Marion Polk Food Share to conduct a subsurface investigation consisting of collection of soil and ground water samples from nine borings drilled at the site, which is the first of three phases of investigation described in this report.

5.0 Approach

5.1 Objectives

The Focused Site Investigation objectives were to:

- Delineate the vertical and lateral extent of petroleum impacts to soil and determine if impacts extend to ground water. If so, characterize and delineate extent of impacts to ground water;
- Identify any data gaps, if any;
- Assess potential environmental risk related to residual petroleum impacts, and;
- Develop clear next actions to bring the subject site to regulatory closure.

Additional objectives for the work included:

- To perform the work efficiently and cost-effectively, minimizing interference with any site operations.
- To perform the work in a safe manner for technical personnel and site residents.
- To document information and data generated in a professional manner that is valid for the intended use.

5.2 Roles and Responsibilities

ENW was the contracted environmental consultant, who arranged for subcontracted services with:

- A private utility locate was conducted by Pacific Northwest Locating (PNWL) of Happy Valley, Oregon.
- A geophysical survey was conducted by GeoPotential Inc. of Brightwood, Oregon.
- Drilling services were provided by Cascade Drilling (Cascade) of Clackamas, Oregon.
- Soil and ground water samples were analyzed by Freidman and Bruya, Inc. (F&BI) of Seattle, Washington.

5.3 Preparation Activities

ENW performed or coordinated the following activities.

Plan Preparation. In-house Sampling and Analysis Plan (SAP) and Health and Safety Plan (HASP) were prepared for the project.

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

Private Utility Locate. GeoPotential cleared boring locations in conjunction with the geophysical survey on August 11, 2022. PNWL conducted private utility locates to clear adjusted boring locations on August 25, 2022, prior to the first phase of investigation on August 26, 2022. PNWL cleared boring locations on December 15, 2022, prior to the second phase of investigation on December 16, 2022. Since boring B13 was advanced inside a footing excavation for the new AWARE Food Bank building, private utility locates were not necessary in this case.

Planning. ENW scheduled and coordinated with the Client to begin site work.

5.4 Geophysical Survey

ENW contracted with GeoPotential Inc. to perform a geophysical survey at the site on August 11, 2022, to identify locations of subsurface features of interest, including underground storage tanks and related piping, septic tanks, and other buried features of environmental interest.

Geophysical anomalies result from contrasts of geophysical signatures of subsurface materials and, in some cases, from interference with surface and overhead features. Except where investigated by excavation, all anomalies and interpretations should be considered (somewhat) speculative. Geophysical characteristics result from a variety of factors (e.g., density, distribution, porosity, contrasts in soil composition, intergranular fluid composition and saturation, etc.), and similar anomalies may be produced by different sources. Furthermore, similar sources may result in differing (or obscured) geophysical signatures as a result of other conditions that affect the recognition of contrasting subsurface materials.

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

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

Schonstedt Gradiometer (Magnetometer) – used as a complement to the Aqua-Tronics instrument, the magnetometer senses horizontal variations in the local magnetic field caused by buried ferrous metal objects such as USTs, drums, pipes, and debris-filled trenches.

Magnetic surveys can only detect ferrous metal objects. Interference caused by observed surface metal objects limits the accuracy of the survey. The anomalies produced by fences, power lines, cars, and buildings can easily mask an anomaly caused by an underground target.

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

Using the above geophysical tools, GeoPotential scanned the entire site, which also included the reported location of the UST in the public right-of-way northeast of the site (south side of Arthur Street). The geophysicist used white paint to mark the locations on the surface of the city sidewalk where evidence of fill was observed in the GPS reflection, i.e., where the 750-gallon UST was decommissioned by removal in 2019 (Section 3.2). Each anomaly was documented on a map. The geophysicist utilized a succession of geophysical tools to further explore an anomaly. Where surface conditions permitted, anomalies were further investigated using a 6-foot tile probe and/or hand shovel to confirm the source of the signal.

The geophysicist also surveyed the area around the catch basin at the south end of the former Food Bank building's parking lot to determine if said catch basin was connected to a dry well. In conjunction with this survey, ENW conducted a storm sewer video survey to confirm where storm water was discharged (onsite or offsite). Equipment included a Rigid SeeSnake Compact 2 self-leveling 25 mm camera fitted with a CS6x versa digital monitor and a Rigid Seektech SR-60 utility line locator.

5.5 Soil Boring Investigation

Drilling was directed by ENW. On August 26, 2022, borings B01 through B09 were advanced by Cascade using a track-mounted DPT rig (Geoprobe 6610DT). On December 16, 2022, borings B11 and B12 were advanced by Cascade using a track-mounted DPT rig (Geoprobe 7720DT). On December 27, 2022, ENW returned to the site and completed under separate contract with City of Woodburn boring B13 using a stainless-steel hand auger. Boring locations are indicated on Figure 3.

Drilling tools were decontaminated with an Alconox wash and double rinse prior to each boring. The direct-push tooling used 5-foot (6610DT and 7720DT) samplers lined with a polyvinyl chloride (PVC) sleeve. Each time the tooling was advanced, the sleeve was retrieved and cut open to examine and log the subsurface materials and collect necessary soil samples. All borings were logged by an Oregon Registered Geologist.

Each boring was designated with a "B" prefix and a number (e.g., B01, B02, etc.). Individual soil samples are designated with the sample's depth appended to the boring number (e.g., B02-10 would indicate a sample collected at 10 feet bgs in boring B02). For soil samples collected at the soil/water interface, SWI is inserted between the boring number and sample depth (e.g., B01-SWI-10.5 would indicate a soil-water interface sample collected at 10.5 feet bgs in boring B01). Reconnaissance ground water samples are labeled B01-GW-20 indicating sample collected from boring B01 with the bottom of the temporary well screen located at 20 feet bgs.

Once sampling was complete, all borings were backfilled with bentonite “Holeplug” to the approximate ground surface, and the pavement/asphalt surface was then restored.

5.5.1 Soil Screening and Sampling

Soil cores and samples were visually and olfactorily screened for the presence of petroleum impacts. In addition, semi-quantitative headspace screening was performed by placing selected soil samples in a plastic sealable bag, breaking the soil core to expose surface area inside the bag, and inserting a PID into the top of the bag. The cores were logged (Appendix B) with special attention to description of lithology, color, moisture, physical properties, and odor. Soil samples from each boring were collected for laboratory analysis, based on screening indicators, and/or at the soil/ground water interface; however only selected soil samples were analyzed for this assessment.

Soil samples collected for laboratory analysis were transferred with fresh Nitrile gloves into sample containers provided by the laboratory. The containers were filled to minimize headspace before immediate sealing. Additionally, selected samples were collected according to the prescribed methodology and procedures of US Environmental Protection Agency (EPA) sampling method 5035A. The samples were immediately labeled and placed in cooled storage until they were delivered to the laboratory following chain-of-custody protocols.

5.5.2 Reconnaissance Ground Water Sampling

ENW collected reconnaissance ground water samples from eight borings (B01, B02, B03, B05, B07, B08, B11 and B12). Each of the borings was completed to at least two feet below the observed soil/ground water interface and new 5-foot slotted PVC screen was installed in the open borehole. Clean polyethylene (PE) tubing was inserted into the temporary well point and connected to a peristaltic pump.

After purging standing water from the borehole, reconnaissance ground water samples were transferred into laboratory-supplied containers with appropriate preservative, labeled, recorded, and placed in a cooler on ice pending transport to the laboratory under chain-of-custody protocols. Field sampling data sheets are included as Appendix C.

5.6 Waste Management and Disposal

Soil cuttings and purge and “decon” water generated during the investigation were placed into Department of Transportation-approved 55-gallon drums and left onsite pending future appropriate disposal.

5.7 Laboratory Analysis

All samples were analyzed by F&BI according to the analytical plan presented in Table 5-1. Laboratory analytical reports are included in Appendix D.

Table 5-1. Analytical Plan

Analytical Method	Constituents	Soil	Reconnaissance Ground Water
NWTPH-HCID	Northwest Total Petroleum Hydrocarbons – Hydrocarbon Identification Analysis (TPH-HCID)	All	None
NWTPH-Gx	Northwest Total Petroleum Hydrocarbons – Gasoline-Range Organics (GRO)	Boring B11 through B13	All
NWTPH-Dx	Northwest Total Petroleum Hydrocarbons – Diesel-Range Organics (DRO) and Residual-Range Organics (RRO)	Boring B11 through B13	All
US Environmental Protection Agency (EPA) 8260D	GRO-Related Volatile Organic Constituents (VOCs)	None	All except B02
EPA 8260D	Full Suite of VOCs	None	B02 only
EPA 6020B	Lead (total)	None	Dissolved: sample with the highest GRO concentration
EPA 8270E	Polynuclear Aromatic Hydrocarbons (PAHs)	None	Select ground water samples with detections of DRO above RBCs
EPA 6020B	Resource Conservation and Recovery Act (RCRA) 8 Metals (Totals)	B13 only (next to concrete tank)	---

Note: B13 was completed under separate contract with City of Woodburn.

5.8 Cleanup Standards and Other Numeric Criteria

5.8.1 Cleanup Standards

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

Soil Matrix. Under the Soil Matrix Cleanup Option [Oregon Administrative Rules (OARs) 340-122-0320 through 0360] cleanup standards are determined by assigning site-specific values to environmental parameters (e.g., soil type, depth to ground water, etc.). The Soil Matrix Cleanup Score Sheet and Checklist for the site are presented in Appendix E. The score calculated for the site is 37, indicating that Soil Matrix Level 2 cleanup standards would apply to the site if closed under Soil Matrix Rules.

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

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

Risk-based concentrations (RBCs) are based on Oregon unacceptable additional risk criteria for cancer occurrence and for non-carcinogenic health impacts. The State of Oregon considers acceptable additional risk of cancer from contact with carcinogenic constituents at less than one in one million incidences, or, for non-carcinogenic constituents, below the constituent threshold concentration at which health impacts would occur. RBCs are generally used to evaluate sampling analytical results as follows:

- ODEQ's lowest RBC for all pathways for residential receptors is used as an initial 'conservative' screening of a constituent. If a constituent's concentration exceeds its screening-level RBC (SLRBC), it requires further evaluation. Otherwise, the constituent is considered unlikely to pose unacceptable risk to any human receptor.
- Those constituents identified by initial screening as exceeding their SLRBC should be further evaluated through a risk-based assessment, which evaluates site-specific exposure pathways and receptors against generic ODEQ-provided RBCs.

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

5.8.2 Other Numeric Criteria

Background Metals. Analytical data were compared with background concentrations established by the ODEQ.^{5,6} 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.

6.0 Site Work Results

ENW completed site work during April and May 2019. This section discusses work conducted in general chronological order. Please reference:

- Figure 2 for geophysical survey results.
- Figure 3 for sampling locations.
- Figure 4 for GRO isopleths in ground water.
- Appendix A for a photolog of site work.
- Tables 1 and 2 for a comprehensive summary of analytical results by media.
- Table 6-1 (Section 6.2) for a summary of sampling locations.

⁵ ODEQ, March 2013. Development of Oregon Background Metals Concentrations in Soil: Technical Report, Land Quality Division Cleanup Program.

⁶ 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.

6.1 Geophysical Survey

Results of the geophysical survey identified three magnetic anomalies (MA01 through MA03) and a possible former excavation, which are identified on Figure 3.

Magnetic anomalies identified during the geophysical survey on August 11, 2022 were as follows:

- MA01 – a 2-foot -square anomaly located near the northwest site corner was hand-excavated and determined to be a deteriorated 55-gallon drum that possibly had been converted and used as a dry well (Figure 2). This feature was of potential environmental concern, so boring B08 was sited next to it (B03).
- MA02 – a 105-foot-long linear anomaly that ran the width of the site parallel to the former southeast building wall (Figure 2). This linear anomaly may correspond to a buried cast iron utility pipe, the southwest end of which was connected to the concrete flow-through-tank later discovered along the southwest property boundary. Boring B09 was sited to the northwest within 15 feet of this line (Figure 3).
- MA03 – an approximately 2-foot-square anomaly located approximately 40 feet southwest and 15 feet southeast of the northwest site corner was hand-excavated and determined to be an oxidized piece of scrap steel of no environmental concern (Figure 2).
- Former UST Excavation – a 4-foot-wide by 7-foot-long area of disturbed soil interpreted to be a filled excavation, which appears to correspond to the location where a 750-gallon UST was decommissioned by removal in August 2019 (Section 3.2 and Figure 2). Since this UST is a potential source of petroleum impacts, boring B02 was sited along the northeast site boundary adjacent to this former UST location. Boring B03 was sited approximately 30 feet to the south. No magnetic signals suggestive of a remaining tank was observed.

The geophysicist also surveyed the area around the catch basin at the south end of the former Food Bank building's parking lot to determine if said catch basin was connected to a dry well. No dry well was detected by the geophysical survey equipment.

ENW conducted a storm sewer video survey to determine where the catch basin discharged. ENW determined that the catch basin outlet was connected to a storm water drain line that trended northeast to southwest beneath the alley.

Table 6-1. Summary of Sampling Locations

Borehole / Location ID	Total Depths (feet)	Sample ID	Date Sampled	Depth Sampled (feet)	Sampled By	Location
Soil						
B01	20	B01-SW1-10.5	8/26/2022	10.5	ENW	NW corner of property
B02	15	B02-10	8/26/2022	10	ENW	Adjacent to former decommissioned UST in Arthur St
		B02-SWI-15	8/26/2022	15	ENW	
B03	20	B03-SWI-10	8/26/2022	10	ENW	Norther corner of parking area E of former building
B04	15	B04-10	8/26/2022	10	ENW	Next to north end of SE property line
		B04-15	8/26/2022	15	ENW	
B05	15	B05-SWI-10.5	8/26/2022	10.5	ENW	SE corner of property
B06	15	B06-SWI-11.5	8/26/2022	11.5	ENW	Midpoint of NW property boundary
B07	20	B07-SWI-11.5	8/26/2022	11.5	ENW	South corner of parking area east of former building
B08	20	B08-SW-10	8/26/2022	10	ENW	West corner of property
		B08-4.5	8/26/2022	4.5	ENW	
B09	15	B09-10	8/26/2022	10	ENW	Midpoint of SE wall of former building
		B09-SWI-11	8/26/2022	11	ENW	
B11	20	B11-SWI-10.5	12/16/2022	10.5	ENW	NE of Arthur and N First Street, W of bus transit lane
B12	20	B12-SWI-10.5	12/16/2022	10.5	ENW	NE corner of property
B13	6.5	B13-6.5	12/27/2022	6.5	ENW	In City parking lot, adjacent to SW site boundary
Reconnaissance Ground Water						
B01	20	B01-GW-20	8/26/2022	20	ENW	NW corner of property
B02	Exp. Point to 20'	B02-GW-20	8/26/2022	20	ENW	Adjacent to former decommissioned UST in Arthur St.
B03		B03-GW-20	8/26/2022	20	ENW	In former NE parking lot, 30-ft S of former UST
B05	Exp. Point to 20'	B05-GW-20	8/26/2022	20	ENW	SE corner of property
B07	Exp. Point to 22'	B07-GW-22	8/26/2022	22	ENW	SE corner of parking area east of former building
B08		B08-GW-20	8/26/2022	20	ENW	SW corner of property
B11		B11-GW-20	12/16/2022	20	ENW	NE of Arthur and N First Street, W of bus transit lane
B12		B12-GW-20	12/16/2022	20	ENW	NE corner of property

6.2 Soil Borings

6.2.1 Field Screening and Soil Logging

Headspace screening of cores from borings B01, B02, B03, B09, and B12 indicated elevated PID readings of up to 900 parts per million by volume (ppmv). Screening of headspace over the recovered cores from B04, B05, B06, B07, B08, and B11 was generally low, typically reading between 0.0 and 12.5 ppmv on the PID, suggesting delineation of lateral extent of petroleum impacts to soil.

Borings completed show that the upper soils (to a total explored depth of 22 feet) consist of 1-2 feet of base course gravel fill underlain by silt, silt with sand, and sand with silt. Boring logs are in Appendix B.

6.2.2 Soil Sampling Results

Sixteen (16) soil samples were collected at depths ranging from 4.5 feet bgs to 15 feet bgs in borings B01 through B09, and B11 through B13. Analytical results are presented in Table 1 and summarized here:

- **GRO.** TPH-HCID analysis of soil samples from B01 through B09 did not report the presence of GRO in any of the samples. TPH-Gx analysis of soil samples from B11 through B13 did not detect GRO above laboratory method reporting limits (MRLs) in any of the samples.
- **DRO and RRO.** TPH-HCID analysis of soil samples from B01 through B09 did not report the presence of DRO or RRO in any of the samples. TPH-Dx analysis of soil samples from B11 through B13 did not detect DRO above laboratory MRLs in any of the samples.

Other than soil samples from boring B13, which was analyzed for RCRA metals (since the boring was sited adjacent to a likely oil-water separator), soil samples were not analyzed for constituents given the absence of detectable GRO, DRO, or RRO.

- **RCRA Metals.** Soil sample B13-6.5 was analyzed for total RCRA metals under a separate contract with City of Woodburn.
 - Arsenic was detected at a concentration greater than ODEQ's SLRBC though less than ODEQ's regional default background concentration for the southern Willamette Valley. Arsenic therefore does not appear to be enriched in soil adjacent to the concrete flow-through tank.
 - Barium, chromium, and lead were detected at concentrations less than ODEQ's SLRBCs and regional default background concentrations. Barium, chromium, and lead, therefore, do not appear to be enriched in soil adjacent to the concrete flow-through tank.
 - Cadmium, mercury, selenium, and silver were not detected above laboratory MRLs.

6.2.3 Reconnaissance Ground Water Sampling Results

Eight (8) reconnaissance ground water samples were collected from borings B01, B02, B03, B05, B07, B08, B11, and B12. Analytical results are presented in Table 2 and summarized here:

- **GRO.** GRO was detected above the MRL in reconnaissance ground water samples from borings B01, B02, B03, B07, and B12 at concentrations ranging from 470 micrograms per liter ($\mu\text{g/L}$) to 12,000 $\mu\text{g/L}$ (B02). All GRO detections exceeded ODEQ's SLRBC. The highest GRO concentration was detected in B02 located just southwest of the former UST location on the west side of Arthur Street and northeast side of the subject site (Figure 3).
- **DRO.** DRO was detected above the MRL in reconnaissance ground water samples from borings B01, B02, B03, B07, and B12 at concentrations ranging from 86 $\mu\text{g/L}$ to 1,800 $\mu\text{g/L}$. Four of the five detections (B01, B02, B03 and B07) exceeded ODEQ's SLRBC for DRO. Every detection was annotated by the laboratory stating that the pattern of peaks is not indicative of the fuel standard used for quantitation, suggesting that the DRO detection is overlap from degraded gasoline.
- **RRO.** RRO was not detected above the MRL in reconnaissance ground water samples from any of the borings.
- **Volatile Organic Constituents.** The reconnaissance ground water samples from boring B02 was further analyzed for the full-suite of VOCs, while samples from borings B01, B03, B05, B07, B08, B11 and B12 were analyzed for GRO-related VOCs. GRO-related VOCs were detected above laboratory MRLs in two of eight samples analyzed, i.e., B02 and B03, as summarized below.
 - Benzene was only detected in B02 at a concentration less than ODEQ's SLRBC.
 - Ethylbenzene was detected in reconnaissance ground water samples from borings B02 and B03 at concentrations exceeding its SLRBC of 1.5 $\mu\text{g/L}$.
 - Naphthalene was detected in reconnaissance ground water samples from borings B02 and B03 at concentrations exceeding its SLRBC of 0.17 $\mu\text{g/L}$.
 - Iso-propylbenzene (cumene) was detected in reconnaissance ground water samples from borings B02 and B03; however, none exceeded its SLRBC of 440 $\mu\text{g/L}$.
 - None of the remaining VOCs were detected above laboratory MRLs.
- **PAHs.** B01, B02, B03, and B07 were analyzed for PAHs.

- Acenaphthene was detected in B02, and fluorene was detected in B02, B03, and B07 at concentrations less than ODEQ's SLRBCs.
- **Dissolved Lead.** Having the highest GRO and DRO concentrations, B02 was analyzed for dissolved lead. Dissolved lead in B02 was less than ODEQ's SLRBC and default background concentration in fresh water.

6.3 Extent of Petroleum Impacts

While field evidence of petroleum hydrocarbon impacts was observed in several borings (Section 6.2.1), such impacts did not result in GRO, DRO, or RRO detections above laboratory MRLs. In reconnaissance ground water, GRO and DRO (overlap from gasoline) were detected in B01, B02, B03, B07, and B12 above SLRBCs, and volatile constituents of gasoline (ethylbenzene and naphthalene) were detected above SLRBCs in B02 and B03. These impacts appear to be associated with the former petroleum UST located within the Arthur Street right-of-way adjacent to the northeastern site boundary. This UST is presumed to be the source of the petroleum hydrocarbon release to ground water. Ground water impacts decrease outward from B02, located adjacent to the former UST location. The presumed upgradient extent of impacts appears to have been delineated and approximately corresponds to B05 and B08. The presumed downgradient extent of impacts has been delineated by B11 to the north, near the intersection of N 1st Street and Arthur Street. The east to northeastward extent of impacts can be inferred from the data. ENW's estimate of GRO-impacted ground water is shown on Figure 4.

7.0 Risk Assessment

Where Soil Matrix Cleanup standards are not met or where ground water impacts are present, the State of Oregon requires that the impacts are evaluated using a risk-based approach described in ODEQ's *Risk-Based Decision Making for the Remediation of Petroleum Contaminated Sites* (RBDM) guidance document, 2011 revision. The RBDM guidance document and its supplemental updates periodically provided by the agency provide pre-calculated risk-based concentrations (RBCs) which were developed as screening levels for suspect sites, based on Oregon's unacceptable additional risk criteria for cancer occurrence and for non-carcinogenic health impacts. The State of Oregon considers acceptable additional risk of cancer from contact with carcinogenic constituents at less than one in one million incidences, or for non-carcinogenic constituents, the constituent threshold concentration at which health impacts would occur.

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

7.1 Identification of Constituents of Interest

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

- GRO
- DRO
- GRO and DRO-related volatiles
 - Benzene
 - Toluene

- Ethylbenzene
- Xylenes (total)
- GRO-related volatiles
 - Naphthalene
 - 1,2-dichloroethane (EDC)
 - 1,2-dichloromethane (EDB)
 - methyl-tert-butyl ether (MTBE)
 - 1,2,4-trimethylbenzene (1,2,4-TMB)
 - Isopropylbenzene
 - n-Propylbenzene
- GRO- and DRO-related semi-volatiles
 - PAHs
- GRO-related metals
 - Lead

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

7.2 Identification of Constituents of Potential Concern

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

Several of the constituents of Tables 1 and 2 were not detected above their respective MRLs; however, those detection limits that exceeded the RBCs were indicated with a "(Y)" in the final column. ODEQ guidance states that in general, if a contaminant is not detected by the department-specified analytical methods and if standard method detection limits are met, that this is considered acceptable proof that the contaminant is not present in that medium.⁷ Therefore, these constituents will not be further addressed in the risk assessment.

7.2.1 Soil

The comparison of laboratory results for soil samples to ODEQ's SLRBCs is provided in Table 1. Results of this comparison does not identify any analyte concentrations above their respective SLRBCs in any of the soil samples. Consequently, there are no COPCs in soils.

7.2.2 Reconnaissance Ground Water

The comparison of laboratory results for reconnaissance ground water samples to ODEQ's SLRBCs is provided in Table 2. The maximum concentration of ethylbenzene, naphthalene, GRO, and DRO were above their respective SLRBCs in two or more reconnaissance ground water samples. Therefore, ethylbenzene, naphthalene, GRO, and DRO are retained as COPCs in ground water.

⁷ ODEQ. 2003. RBDM Guidance Document, Pg. 13, Footnote 7.

7.3 Conceptual Site Model

7.3.1 Media of Concern

Laboratory results of soil and reconnaissance ground water suggest subsurface soils have not been shown to be impacted. Ground water was encountered at approximately 10 to 15 feet bgs and is impacted. Therefore, ground water is considered a media of concern.

7.3.2 Land Use– Potential Receptors

The area surrounding Woodburn, Oregon is largely rural, and agriculture is the principal occupation. The subject area comprising the central and older portion of the city supports numerous commercial businesses, restaurants, shops, and city offices. The site is in the DDC Downtown Development and Conservation land use zone, within the Urban Growth Boundary.⁸ This zone is the community's retail core, providing for unique retail and convenient shopping. The following residential land uses are permitted in the DDC zone: attached single-family (row houses) dwellings; childcare facility, group home, and nursing home; one dwelling unit in conjunction with a commercial use; and multiple-family dwellings. Construction workers are unlikely to have contact with subsurface soils. Since subsurface soils are impacted in the depth range of some utility trenches and basement excavations, future excavation workers were retained as possible receptors. Therefore, the reasonably likely future land use needs to include future residential and urban residential, occupational, and excavation worker receptors.

7.3.3 Ground-water Use

As summarized in ENW's Beneficial Water Use Determination,⁹ the City of Woodburn provides municipal water from a system of eight water wells. All water wells are completed in the underlying Troutdale Aquifer. The closest well (Well #13) is about 0.5 miles southwest of the subject area in the up-gradient direction. The next furthest active city wells (Well #11 and Well #9) are between one-half and three-quarters of a mile north-northwest of the subject area in the presumed cross-gradient direction. Only four private wells were identified within a 0.5-mile radius of the subject site, none of which are located in the presumed down gradient direction from the site.

Ground water occurs in a shallow and deeper water-bearing unit (the deeper unit being the regional aquifer). The shallow water-bearing unit was encountered within approximately 10 to 15 feet bgs at the subject site. The shallow water-bearing unit is composed of low permeability silts and clays. There are no beneficial uses of the shallow water-bearing unit within 0.5-mile of the Subject Area, other than to support vegetation. The deeper water-bearing unit, encountered at about 117-foot depth in water well logs, is the regional aquifer used for drinking and irrigation water in the area. The deeper water-bearing unit is composed of gravelly sands and silty sandy gravels and has very good permeability. The deeper water-bearing unit is considered partially confined. The shallow water-bearing unit is separated from the deeper water-bearing unit by low permeability, clay, and fine silt strata within the lower portion of the overlying Willamette Silt. This clay and silt strata together are considered a confining unit.

⁸ Woodburn Development Ordinance, adopted by Ordinance 2313 on April 9, 2002, most recently amended by Ordinance 2544 on January 9, 2017.

⁹ ENW, (in preparation), Beneficial Water Use Determination, N First Street Improvements UST Decommissioning Projects in Woodburn, Oregon.

7.3.4 Pathways of Concern

An exposure pathway is the course a constituent takes from a source to an exposed population. Exposure pathways include four elements: (1) the source of contamination; (2) the means by which a constituent will be released, retained, or travel in a given medium (e.g., air or ground water); (3) a point of potential contact with a receptor; and (4) the means by which contact will occur (e.g., inhalation, ingestion). If any of these elements are missing, the pathway is considered incomplete. Table 7-1 presents a summary of the pathway analysis for human receptors.

Table 7-1. Summary of Pathway Analysis for Human Receptors

Potentially Exposed Population	Exposure Route, Medium and Exposure Point	Pathway Considered	Reason for Selection or Exclusion
Ground Water			
Current/Future Residential Occupant or Occupational Worker	Ingestion, and Inhalation from tap water	No	Ground water not in use for drinking water
	Inhalation of volatiles (outdoor air)	YES	Ground water is impacted with hazardous volatile constituents.
	Inhalation of volatiles from impacted GW intruding into building (indoor air)	YES	Ground water is impacted with hazardous volatile constituents.
Current/Future Construction Worker	GW in an excavation	No	Ground water impacts are beyond what a construction worker is likely to encounter
Current/Future Excavation Worker	GW in an excavation	YES	Excavation workers may encounter impacted ground water at depth during utility work or excavation for a basement.

7.4 Conceptual Model

Based on the above discussion, a conceptual site model has been developed for the site, depicting all exposure pathways evaluated and retained for evaluation of human health risk. The conceptual site model is presented in Figure 5.

7.5 Further Evaluation of Constituents of Potential Concern

7.5.1 Ground Water

Since ethylbenzene, naphthalene, GRO, and DRO were identified by the initial screening as COPCs in ground water, the COPCs are further evaluated by comparing RBCs for complete exposure pathways for applicable receptors to determine if they are constituents of concern (COCs) at the site. Table 3 shows that the maximum ethylbenzene concentration exceeds the applicable RBCs for the vapor intrusion into buildings pathway for future residential and urban residential receptors. Naphthalene, GRO, and DRO concentrations do not exceed any of the RBCs for the applicable pathways.

8.0 Recommendations

The information presented in this report demonstrates that residual impacts to shallow ground water exist from a release from the former UST once located in the ROW adjacent to the northeast site boundary. A risk-based assessment showed that residual ethylbenzene concentrations (a constituent of GRO or DRO) in ground water exceeds ODEQ RBCs as follows:

- The maximum ethylbenzene concentration exceeds the applicable residential and urban residential RBCs for *Vapor Intrusion into Buildings*.

Based on current site use, only the occupational receptor scenario currently applies to the subject site.

Based on these results, ENW recommends that ODEQ proceed with regulatory closure LUST File No. 24-12-0937 given the following:

- No petroleum hydrocarbons were detected in soil at the subject site,
- Petroleum-impacted shallow ground water resulting from the release has been adequately delineated,
- There are no beneficial uses of the shallow ground water-bearing unit within 0.5-mile of the site, other than to support vegetation, and
- Dissolved petroleum hydrocarbons and related constituent concentrations in shallow ground water do not occur at concentrations that present a risk to future occupational workers under any applicable exposure pathways.
 - Note, the State may require a formal restriction on future residential use of the subject property.

The following actions are recommended as protective and proactive measures:

- ENW previously prepared a Contaminated Media Management Plan (CMMP)¹⁰ to ensure appropriate future management and handling of residual impacted media. ENW recommends that owners, architects, and contractors continue to refer to this plan to notify workers of the magnitude and extent of subsurface impacts, prescribe appropriate protective equipment, and present appropriate management and disposal options during ongoing and future construction projects.
- ENW previously recommended installation of a robust vapor barrier beneath the concrete slab of the AWARE Food Bank being constructed at the site. While the concentration of ethylbenzene in ground water appears to be below vapor intrusion into buildings RBCs for an occupational use scenario, ENW continues to recommend a vapor barrier to provide an extra margin of protection to the Food Bank's occupational workers.
- The concrete flow-through tank found along the southwest property boundary appears to be an abandoned oil-water separator, and does not appear to be a regulated tank. No hazardous

¹⁰ ENW, October 21, 2022. *Contaminated Media Management Plan*, Future Aware Food Bank, 152 Arthur Street, Woodburn, Oregon: Prepared for Marion Polk Food Share.

constituents were detected in soils underlying the tank. Abandonment recommendations are provided to City of Woodburn in a separate report.

This report has been submitted to the ODEQ along with a request for regulatory closure of the site, assuming implementation of the site use limitation. The property owner is required to keep a copy of this report for a minimum of ten (10) years; however, we recommend this report is kept as part of the permanent property records.

9.0 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 - Summary of Analytical Data, Soil

Location ID	STE	NTE	31	32	B01	B02		B03	B04		B05	B06	B07	B08	
Sample ID	STE@82"bgs	NTE@82"bgs	8519192-31 West	8519192-32 East	B01-SW1-10.5	B02-10	B02-SWI-15	B03-SWI-10	B04-10	B04-15	B05-SWI-10.5	B06-SWI-11.5	B07-SWI-11.5	B08-SW-10	B08-4.5
Date Sampled	8/8/2012	8/8/2012	8/16/2019	8/16/2019	8/26/2022	8/26/2022	8/26/2022	8/26/2022	8/26/2022	8/26/2022	8/26/2022	8/26/2022	8/26/2022	8/26/2022	8/26/2022
Depth Sampled (feet)	6.83	6.83	7.75	7.83	10.5	10	15	10	10	15	10.5	11.5	11.5	10	4.5
Sampled By	CCS		CCS	CCS	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location	presumed south/east end of tank	presumed north/west end of tank	West end of tank	East end of tank	NW corner of property	Adjacent (SW) of former decommissioned UST in Arthur St. ROW	Adjacent (SW) of former decommissioned UST in Arthur St. ROW	Norther corner of parking area east of former building	Next to north end of SE property line	Next to north end of SE property line	SE corner of property	Midpoint of NW property boundary	South corner of parking area east of former building	West corner of property	West corner of property
Constituent of Interest	Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)
Metals															
Arsenic	c, nv	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	nc, nv	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	nc, nv	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium (III)	nc, nv	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	NA, nv	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	nc, nv	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	nc, nv	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Petroleum Hydrocarbons															
Generic Gasoline (GRO)	nc, v	180	1700	<8.02 (ND)	<7.48 (ND)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)
Generic Diesel / Heating Oil (DRO)	nc, v	120	210	<26.3 (ND)	<25 (ND)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)
Generic Mineral Insulating Oil (RRO)	nc, nv	<66 (ND)	<66 (ND)	<52.7 (ND)	169	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)

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

orange shaded cells indicate soil is presumed to have been excavated during tank decommissioning

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

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

Table 1 - Summary of Analytical Data, Soil

Location ID	B09		B11	B12	B13	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	B09-10	B09-SWI-11	B11-SWI-10.5	B12-SWI-10.5	B13-6.5				South Willamette Valley		
Date Sampled	8/26/2022	8/26/2022	12/16/2022	12/16/2022	12/27/2022						
Depth Sampled (feet)	10	11	10.5	10.5	6.5						
Sampled By	ENW	ENW	ENW	ENW	ENW						
Location	Midpoint of east wall of former building	Midpoint of SE wall of former building	NE of Arthur and N First Street, W of bus transit lane	NE corner of property	Adjacent to offsite concrete flow-through structure					TRUE OR Y FALSE OR N	
Constituent of Interest	Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)				
Metals											
Arsenic	c, nv	---	---	---	---	7.52	7.52	NE	0.43	18	BKG
Barium	nc, nv	---	---	---	---	205	205	NE	15000	730	N
Cadmium	nc, nv	---	---	---	---	<1 (ND)	<1 (ND)	NE	78	1.6	N
Chromium (III)	nc, nv	---	---	---	---	14.6	14.6	NE	120000	100	N
Lead	NA, nv	---	---	---	---	10.5	10.5	NE	30	28	N
Mercury	nc, nv	---	---	---	---	<1 (ND)	<1 (ND)	NE	23	0.07	N
Silver	nc, nv	---	---	---	---	<1 (ND)	<1 (ND)	NE	390	0.33	N
Total Petroleum Hydrocarbons											
Generic Gasoline (GRO)	nc, v	<20 (NP)	<20 (NP)	<5 (ND)	<5 (ND)	<20 (NP)	<20 (NP)	80	31	---	N
Generic Diesel / Heating Oil (DRO)	nc, v	<50 (NP)	<50 (NP)	<50 (ND)	<50 (ND)	<50 (NP)	<50 (NP)	500	1100	---	N
Generic Mineral Insulating Oil (RRO)	nc, nv	<250 (NP)	<250 (NP)	<250 (ND)	<250 (ND)	<250 (NP)	<250 (NP)		2800	---	N

Notes:

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

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

NE = not established.

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

--- = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

GRO = gasoline-range organics.

DRO = diesel-range organics.

RRO = residual-range organics.

orange shaded cells indicate soil is presumed to have been excavated during tank decommissioning

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

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

Table 2 - Summary of Analytical Data, Reconnaissance Ground Water

Location ID	B01	B02	B03	B05	B07	B08	B11	B12	Maximum Ground Water Concentration	ODEQs Screening-level Risk-Based Concentrations (SLRBCs) ¹	Background Concentrations (metals)	Exceeds Background Concentrations (metals)?	COPC?	
Sample ID	B01-GW-20	B02-GW-20	B03-GW-20	B05-GW-20	B07-GW-22	B08-GW-20	B11-GW-20	B12-GW-20						
Date Sampled	8/26/22	8/26/22	8/26/22	8/26/22	8/26/22	8/6/22	12/16/22	12/16/22						
Depth Sampled (feet)	20	20	20	20	22	20	20	20						
Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW						
Location	NW corner of property	Adjacent (SW) of former decommissioned UST in Arthur St. ROW	In former NE parking lot, 30-ft S of former UST	SE corner of property	SE corner of parking area east of former building	SW corner of property	NE of Arthur and N First Street, W of bus transit lane	NE corner of property						
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	TRUE OR Y FALSE OR N	TRUE OR Y FALSE OR N	
Volatile Organic Constituents														
Benzene	c, v	<0.35 (ND)	0.40	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	0.40	0.46	NE	N	N
Bromodichloromethane	c, v	---	<0.5 (ND)	---	---	---	---	---	---	<0.5 (ND)	0.13	NE	N	(Y)
Bromoform	c, v	---	<5 (ND)	---	---	---	---	---	---	<5 (ND)	3.3	NE	N	(Y)
Bromomethane	nc, v	---	<5 (ND)	---	---	---	---	---	---	<5 (ND)	7.5	NE	N	N
Carbon tetrachloride	c, v	---	<0.5 (ND)	---	---	---	---	---	---	<0.5 (ND)	0.46	NE	N	(Y)
Chlorobenzene	nc, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	77	NE	N	N
Chlorodibromomethane (dibromochloromethane)	c, v	---	<0.5 (ND)	---	---	---	---	---	---	<0.5 (ND)	0.17	NE	N	(Y)
Chloroethane (ethyl chloride)	nc, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	21000	NE	N	N
Chloroform	c, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	0.22	NE	N	(Y)
Chloromethane	nc, v	---	<10 (ND)	---	---	---	---	---	---	<10 (ND)	190	NE	N	N
1,2-Dichlorobenzene	nc, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	300	NE	N	N
1,4-Dichlorobenzene	c, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	0.48	NE	N	(Y)
1,1-Dichloroethane	c, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	2.8	NE	N	N
1,1-Dichloroethene	nc, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	280	NE	N	N
cis-1,2-Dichloroethene	nc, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	36	NE	N	N
trans-1,2-Dichloroethene	nc, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	360	NE	N	N
Dichloromethane	c, v	---	<5 (ND)	---	---	---	---	---	---	<5 (ND)	11	NE	N	N
EDB (1,2-dibromoethane)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.0075	NE	N	(Y)
EDC (1,2-dichloroethane)	c, v	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	0.17	NE	N	(Y)
Ethylbenzene	c, v	<1 (ND)	1900	780	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1900	1.5	NE	N	Y
MTBE (methyl t-butyl ether)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	14	NE	N	N
Naphthalene	c, v	<0.4 (ND)	430	210	<1 (ND)	<0.4 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	430	0.17	NE	N	Y
iso-Propylbenzene (cumene)	nc, v	<1 (ND)	81	59	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	81	440	NE	N	N
Tetrachloroethene (PCE)	c, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	12	NE	N	N
Toluene	nc, v	<1 (ND)	34	1.7	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	34	1100	NE	N	N
1,1,1-Trichloroethane	nc, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	8000	NE	N	N
1,1,2-Trichloroethane	c, v	---	<0.5 (ND)	---	---	---	---	---	---	<0.5 (ND)	0.28	NE	N	(Y)
Trichloroethene	NA, v	---	<0.5 (ND)	---	---	---	---	---	---	<0.5 (ND)	0.49	NE	N	(Y)
Trichlorofluoromethane (Freon 11)	nc, v	---	<1 (ND)	---	---	---	---	---	---	<1 (ND)	1100	NE	N	N
1,2,4-Trimethylbenzene	nc, v	<1 (ND)	25	2.4	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	25	54	NE	N	N
1,3,5-Trimethylbenzene	nc, v	<1 (ND)	56	2.1	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	56	59	NE	N	N
Vinyl chloride	c, v	---	<0.02 (ND)	---	---	---	---	---	---	<0.02 (ND)	0.027	NE	N	N
Xylenes	nc, v	<3 (ND)	85	11.9	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	85	190	NE	N	N
Metals														
Lead	NA, nv	---	2.44	---	---	---	---	---	---	2.44	15	13.3	NA	NA
Semivolatile Organic Constituents														
Polycyclic Aromatic Hydrocarbons														
Acenaphthene	nc, v	<0.04 (ND)	0.060	<0.04 (ND)	---	<0.04 (ND)	---	---	---	0.060	510	NE	N	N
Anthracene	nc, v	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	---	---	---	<0.04 (ND)	>S	NE	N	N
Benz[a]anthracene	c, v	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	---	---	---	<0.04 (ND)	0.03	NE	N	(Y)
Benzo[a]pyrene (BaP equivalents)	c, nv	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	---	---	---	<0.04 (ND)	0.025	NE	N	(Y)
Benzo[b]fluoranthene	c, nv	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	---	---	---	<0.04 (ND)	0.25	NE	N	N
Benzo[k]fluoranthene	c, nv	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	---	---	---	<0.04 (ND)	2.5	NE	N	N
Chrysene	c, nv	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	---	---	---	<0.04 (ND)	>S	NE	N	N
Dibenz[a,h]anthracene	c, nv	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	---	---	---	<0.04 (ND)	0.025	NE	N	(Y)
Fluoranthene	nc, nv	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	---	---	---	<0.04 (ND)	>S	NE	N	N
Fluorene	nc, v	<0.04 (ND)	0.052	0.044	---	0.22	---	---	---	0.22	280	NE	N	N
Indeno[1,2,3-cd]pyrene	c, nv	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	---	---	---	<0.04 (ND)	>S	NE	N	N
Pyrene	nc, v	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	---	---	---	<0.04 (ND)	>S	NE	N	N

Table 2 - Summary of Analytical Data, Reconnaissance Ground Water

Location ID	B01	B02	B03	B05	B07	B08	B11	B12	Maximum Ground Water Concentration	ODEQs Screening-level Risk-Based Concentrations (SLRBCs) ¹	Background Concentrations (metals)	Exceeds Background Concentrations (metals)?	COPC?	
Sample ID	B01-GW-20	B02-GW-20	B03-GW-20	B05-GW-20	B07-GW-22	B08-GW-20	B11-GW-20	B12-GW-20						
Date Sampled	8/26/22	8/26/22	8/26/22	8/26/22	8/26/22	8/6/22	12/16/22	12/16/22						
Depth Sampled (feet)	20	20	20	20	22	20	20	20						
Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW						
Location	NW corner of property	Adjacent (SW) of former decommissioned UST in Arthur St. ROW	In former NE parking lot, 30-ft S of former UST	SE corner of property	SE corner of parking area east of former building	SW corner of property	NE of Arthur and N First Street, W of bus transit lane	NE corner of property						
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	TRUE OR Y FALSE OR N	TRUE OR Y FALSE OR N	
Total Petroleum Hydrocarbons														
Generic Gasoline (GRO)	nc, v	1300	12000	6400	<100 (ND)	470	<100 (ND)	<100 (ND)	1500	12000	110	NE	N	Y
Generic Diesel / Heating Oil (DRO)	nc, v	300 x	1800 x	1200 x	<50 (ND)	230 x	<50 (ND)	<50 (ND)	86 x,s	1800 x	100	NE	N	Y
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)	300	NE	N	N

Notes:

ug/L = micrograms per Liter or parts per billion (ppb).

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

NE = not established.

NA = not applicable.

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

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

GRO = gasoline-range organics.

DRO = diesel-range organics.

RRO = residual-range organics.

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

¹ Lowest Risk-Based Concentration for ground water (screening level).

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

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

s = result following silica gel cleanup of sample extract.

Table 3. Further Evaluation of COPCs, Reconnaissance Ground Water

Contaminated Medium		GROUND WATER µg/L (ppb)												Maximum Detected Concentration	Lowest Applicable RBC (Ground Water) ¹	Constituent of Concern (COC)?		
Exposure Pathway		Volatilization to Outdoor Air RBC _{wo}						Vapor Intrusion into Buildings RBC _{wi}									GW in Excavation RBC _{we}	
Receptor Scenario		Residential		Urban Residential		Occupational		Residential		Urban Residential		Occupational					Construction & Excavation Worker	
Direct or Indirect Pathway (see notes)		IVW		IVW		IVW		IVW		IVW		IVW					DS	
Contaminant of Concern	Note		Note		Note		Note		Note		Note		Note		Note	µg/L (ppb)	µg/L (ppb)	Y/N
Volatile Organic Constituents																		
Ethylbenzene	c, v	9900		23000		43000		620		1500		8200		4500		1900	620	Y
Naphthalene	c, v	3600		8500		16000		840		2000		11000		500		430	500	N
Total Petroleum Hydrocarbons																		
Generic Gasoline (GRO)	nc, v	-	>S	-	>S	-	>S	22000		22000		-	>S	14000		12000	14,000	N
Generic Diesel / Heating Oil (DRO)	nc, v	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	-	>S	1800	-	-

Notes:

— = not analyzed or not applicable.

< = not detected above method reporting limit shown.

ug/L = micrograms per Liter or parts per billion (ppb).

c = carcinogenic

nc = noncarcinogenic

v = volatile

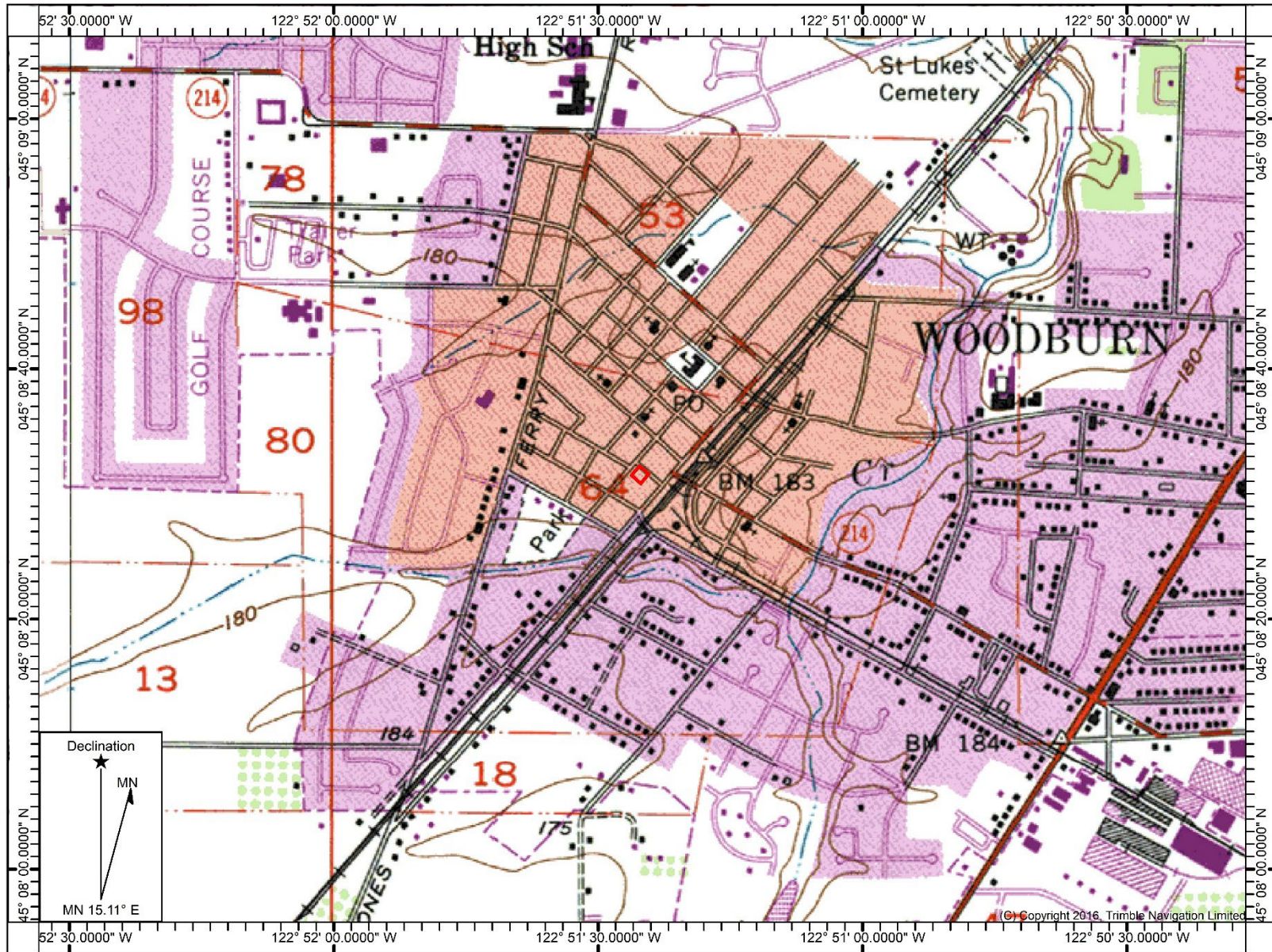
GRO = gasoline-range organics.

DRO = diesel-range organics.

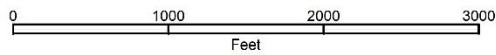
Shaded cells indicate exceeds applicable RBC

¹ Lowest Risk-Based Concentration for groundwater (screening

>S = This groundwater RBC exceeds the solubility limit.



Name: WOODBURN
Date: 07/28/22



Location: 045° 08' 31.1772" N, 122° 51' 24.9825" W
Contour Interval: 10 ft



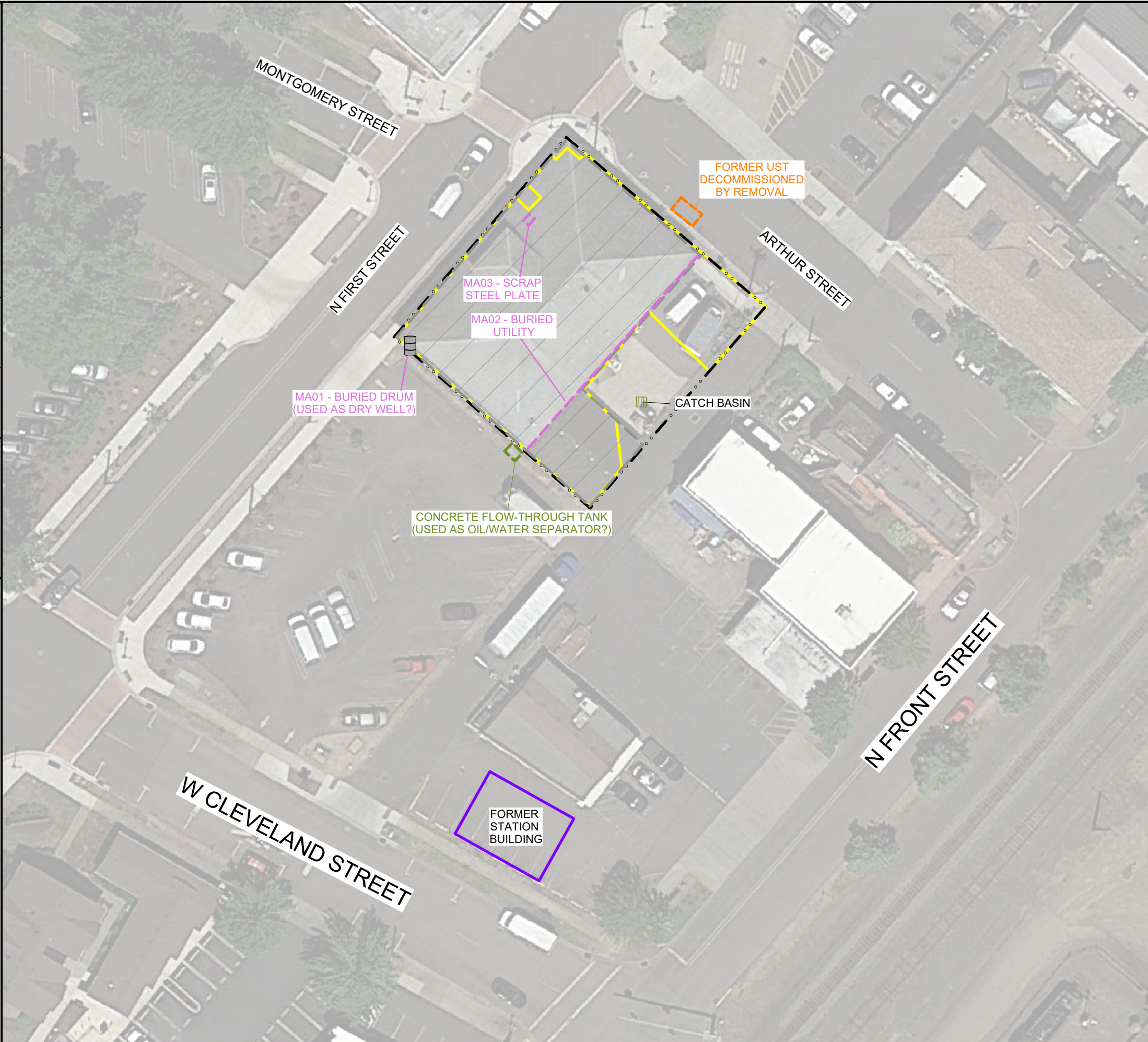
Date Drawn: 1/5/2023
CAD File Name: 1361-22001-01_fig1sv_map
Drawn By: CLR
Approved By: LDG

AWARE Food Bank Property
152 N Arthur Street
Woodburn, Oregon






Site Vicinity Map

Project No.
1361-22001
Figure No.
1

DRAWN BY H. ROMER 12/28/2022
 CHECKED BY L. GREEN 12/30/2022
 APPROVED BY P. TRONE 12/30/2022
 DRAWING NUMBER 1361-22001(v01)



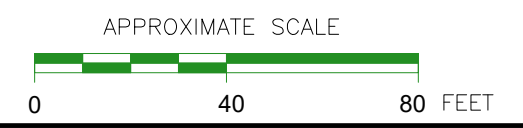
LEGEND:

-  DEMOLISHED BUILDING
-  NEW BUILDING
-  SUBJECT PROPERTY BOUNDARIES
-  UNDERGROUND STORAGE TANK
-  FORMER GAS STATION LOCATION

MA01-MA03 – MAGNETIC ANOMALIES IDENTIFIED DURING A GEOPHYSICAL SURVEY

NOTES:

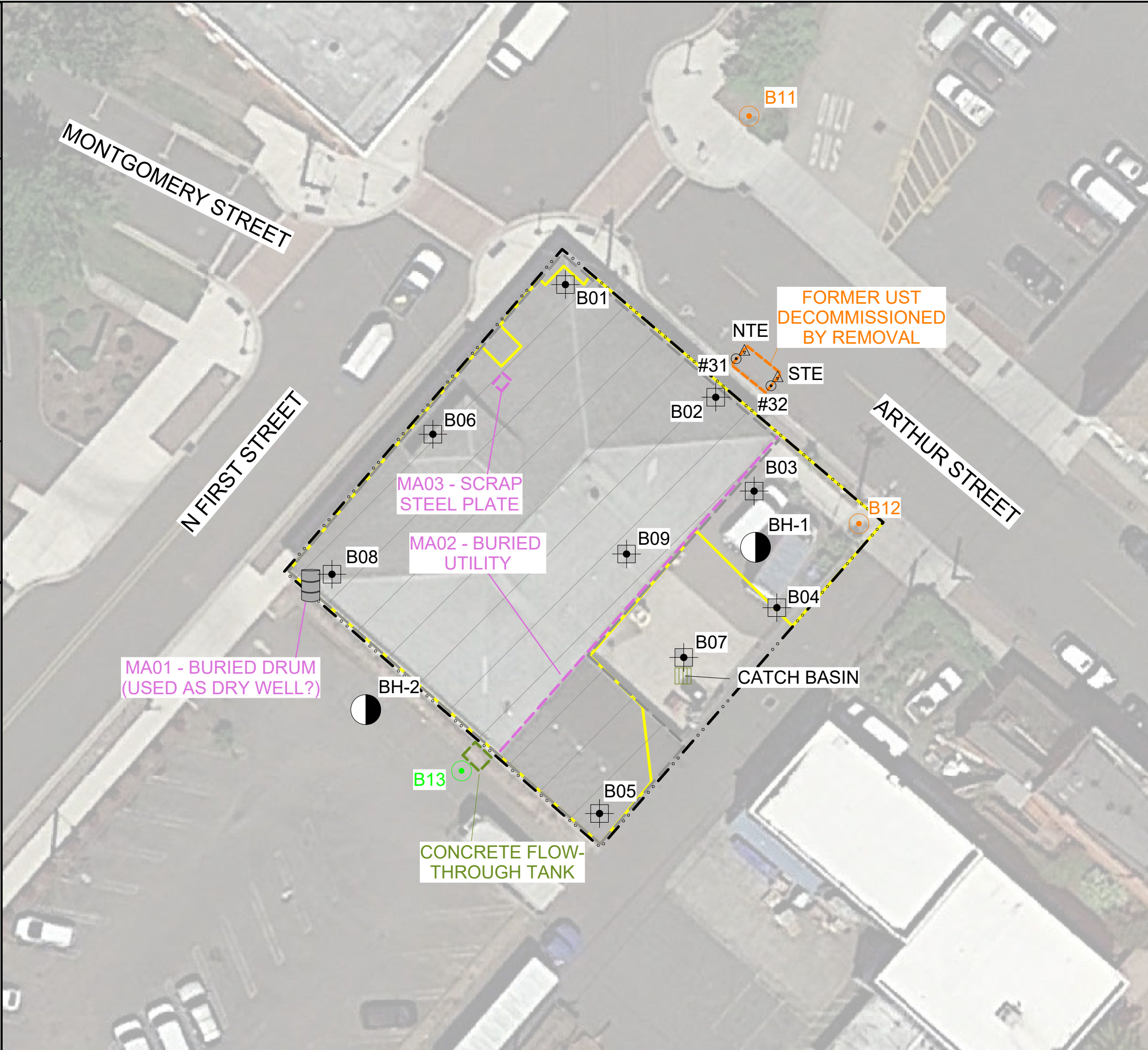
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2022 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.












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 P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 2
SITE PLAN AND GEOPHYSICAL SURVEY RESULTS
 AWARE FOOD BANK PROPERTY
 152 N ARTHUR STREET
 WOODBURN, OREGON

DRAWN BY: H. ROMER 12/29/2022 L. GREEN 01/04/2023 P. TRONE 01/05/2023
 CHECKED BY: L. GREEN 01/04/2023 P. TRONE 01/05/2023
 APPROVED BY: P. TRONE 01/05/2023
 DRAWING NUMBER: 1361-22001(v01)

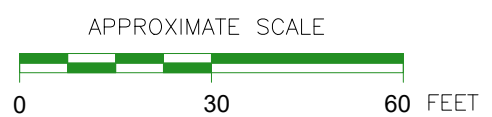


LEGEND:

-  DEMOLISHED SUBJECT BUILDING
-  NEW SUBJECT BUILDING
-  SUBJECT PROPERTY BOUNDARIES
-  UNDERGROUND STORAGE TANKS
-  FOUNDATION ENGINEERING, INC. JUNE 2022 GEOTECH BORINGS (BH-1 EVIDENCE OF IMPACTS)
-  ENW BORINGS (8/26/22)
-  FORMER BORING SAMPLE LOCATION PER SOIL SOLUTIONS ENVIRONMENTAL SERVICES, INC. (8/8/12)
-  ENW'S DELINEATION BORINGS (12/16/22)
-  ENW'S DELINEATION BORINGS (12/27/22)

NOTES:

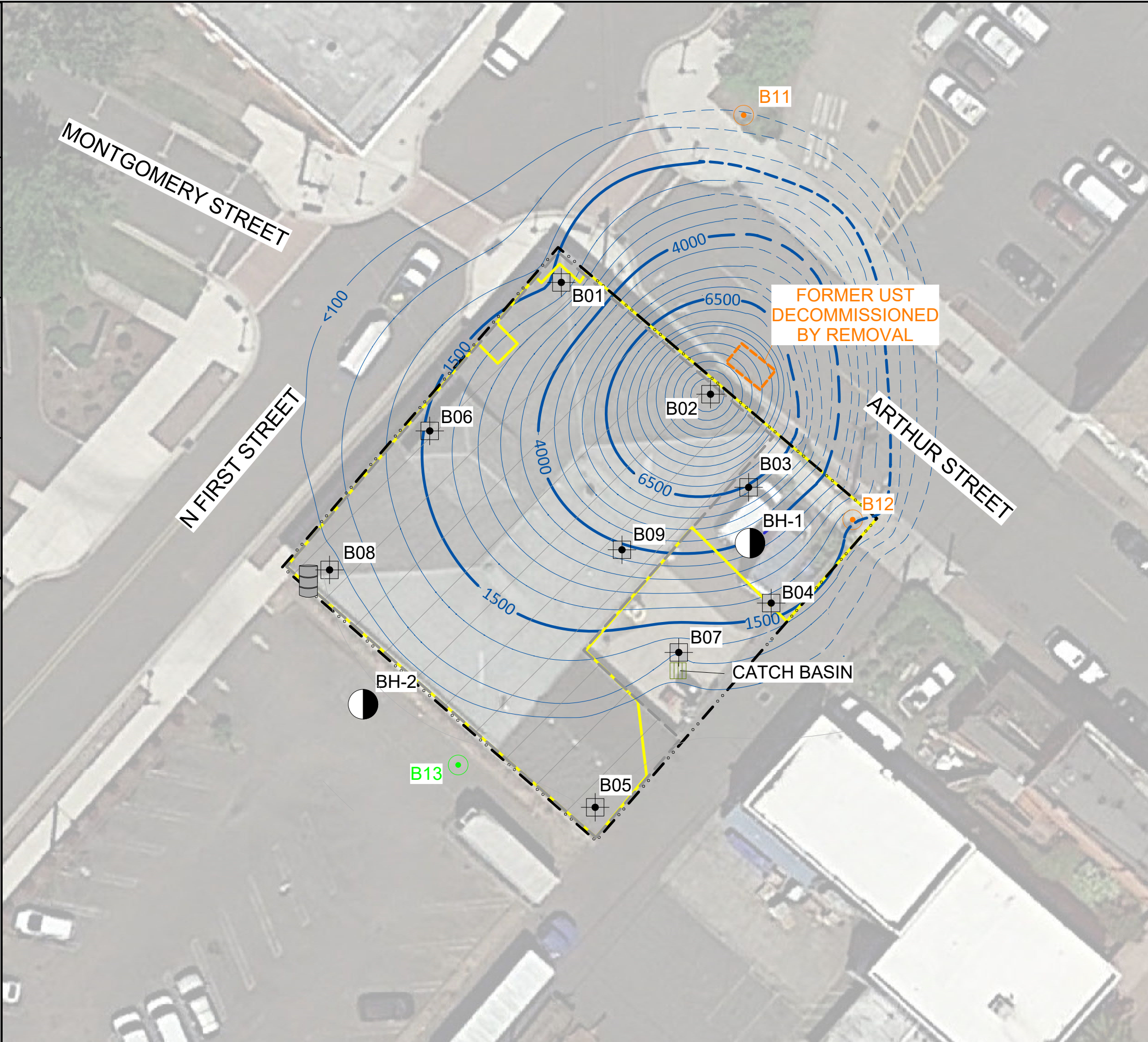
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2022 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.











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FIGURE 3
 SAMPLE LOCATION DIAGRAM
 AWARE FOOD BANK PROPERTY
 152 N ARTHUR STREET
 WOODBURN, OREGON

DRAWN BY: H. ROMER 12/29/2022
 CHECKED BY: L. GREEN 01/04/2023
 APPROVED BY: P. TRONE 01/04/2023
 DRAWING NUMBER: 1361-22001(v01)

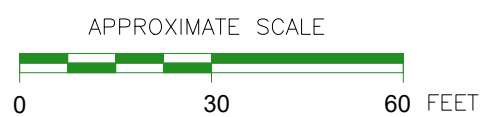


LEGEND:

-  DEMOLISHED SUBJECT BUILDING
-  NEW SUBJECT BUILDING
-  SUBJECT PROPERTY BOUNDARIES
-  UNDERGROUND STORAGE TANK
-  FOUNDATION ENGINEERING, INC. JUNE 2022 GEOTECH BORINGS (BH-1 EVIDENCE OF IMPACTS)
-  ENW BORINGS (8/26/22)
-  ENW'S DELINEATION BORINGS (12/16/22)
-  ENW'S DELINEATION BORINGS (12/27/22)

NOTES:

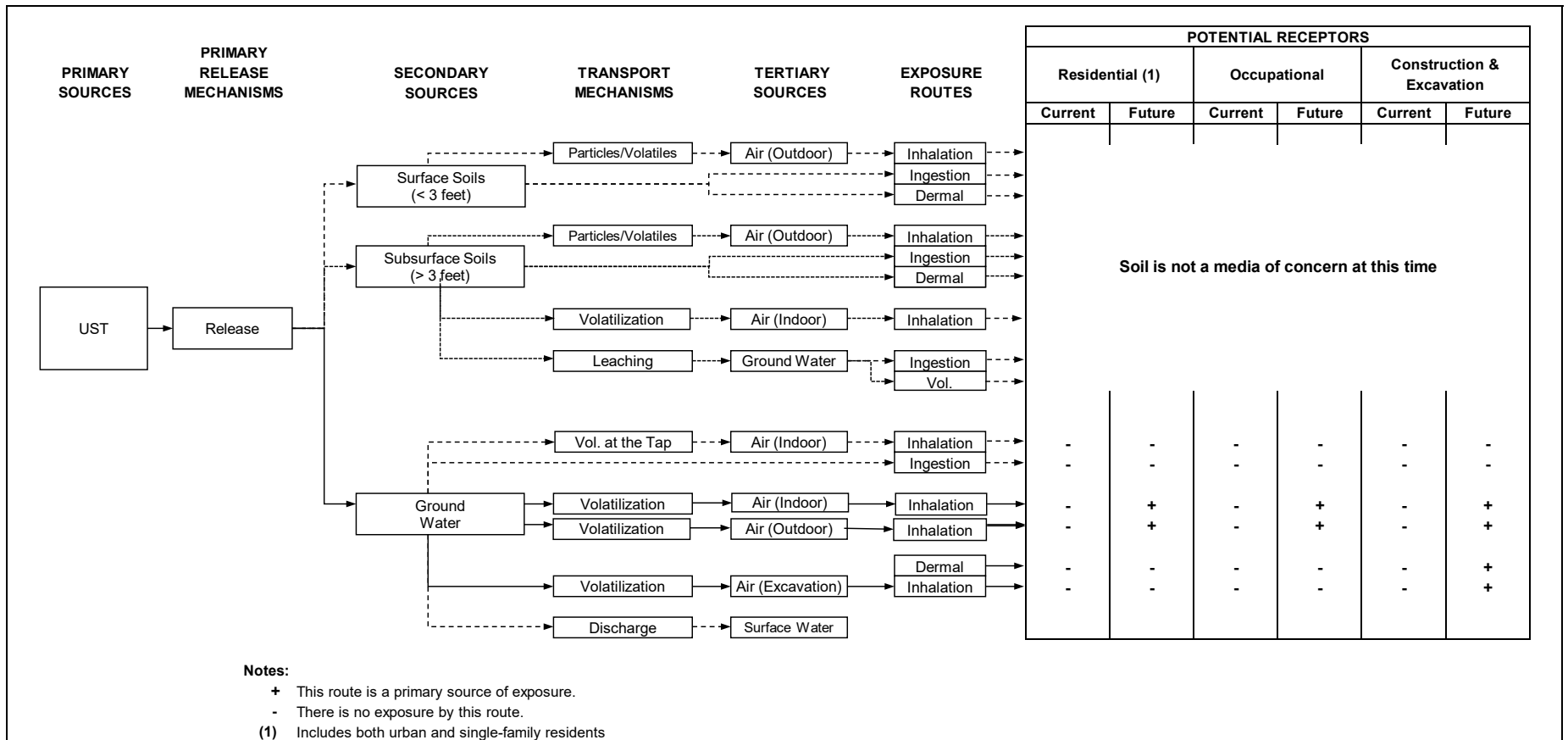
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2022 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.



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FIGURE 4
 GRO ISOPLETHS IN GROUND WATER
 AWARE FOOD BANK PROPERTY
 152 N ARTHUR STREET
 WOODBURN, OREGON

Figure 5. Conceptual Site Model (Human Health)



Appendix A

Site Photographs



The site following building demolition. View NW toward N 1st Street from the alley to the SE.



Using an electromagnetic scanner (EM) to scan within the former building footprint and site perimeter to look for magnetic anomalies.

08/11/2022



Excavation of MA01 near the NW site corner revealed a deteriorated empty steel drum (on end), which may have been used as a dry well.



Close-up view inside the empty drum.



AWARE Food Bank
152 Arthur Street
Woodburn, Oregon

Site Photographs

Project No.
1361-22001-01

Appendix
A



Excavation of magnetic anomaly MA04 located approximately midway down N 1st Street revealed a scrap of steel plate.



Using ground-penetrating radar to locate the former filled UST cavity midway along the SW side of Arthur Street.



Direct-push drilling rig set up at B01 at the N corner of the property.



Soil core from B01, top of boring (lower right) and bottom of boring at 20 feet bgs (lower left).



AWARE Food Bank
152 Arthur Street
Woodburn, Oregon

Site Photographs

Project No.
1361-22001-01

Appendix
A



Reconnaissance ground water sampling at B01 using a peristaltic pump.



Direct-push rig set up at B02, located midway along the NE property boundary.



View of soil core from B02, retrieved inside plastic liners and cut open for inspection. 0 feet lower right and 15 feet upper left.



Drill rig set up at B03 at the edge of the former parking area near the E corner of the site.



AWARE Food Bank
152 Arthur Street
Woodburn, Oregon

Site Photographs

Project No.
1361-22001-01

Appendix
A



Soil core from B03, 0 feet lower right and 20 feet upper left.



Reconnaissance ground water sampling pump and temporary well casing at B03.



Boring B04 advanced S of B03 in the eastern part of the site – view east.



Boring B05 near the S corner of the site – view east.



AWARE Food Bank
152 Arthur Street
Woodburn, Oregon

Site Photographs

Project No.
1361-22001-01

Appendix
A



Reconnaissance ground water sampling at B05 – view northwest.



Drilling of B08 near the W property corner – N 1st Street in background.



Drilling B07, midway along the southeastern site boundary.



Soil core from B08 with 0 feet lower right and 20 feet upper left.



AWARE Food Bank
152 Arthur Street
Woodburn, Oregon

Site Photographs

Project No.
1361-22001-01

Appendix

A



Peristaltic pump used during low-flow purge and sampling of B08.



Using a PID to field screen soil core for volatile organic constituents.



Drilling B07 near the storm water catch basin.



All temporary boreholes were abandoned with bentonite chips and the surface restored to match existing surface.



AWARE Food Bank
152 Arthur Street
Woodburn, Oregon

Site Photographs

Project No.
1361-22001-01

Appendix
A



Direct-push drill rig set up on B11 – view north.



Direct-push drill rig set up at B12 – view southeast.



Soil cuttings from 20-foot boring B11 with 0 feet lower right and 20 feet upper left.



Soil cuttings from 20-foot boring B12 with 0 feet lower right and 20 feet upper left.



AWARE Food Bank
152 Arthur Street
Woodburn, Oregon

Site Photographs

Project No.
1361-22001-01

Appendix

A



Field headspace readings were made using a PID calibrated to 100 ppmv isobutylene.



Sampling reconnaissance ground water at B11.



Sampling reconnaissance ground water at B12.



Using a stainless-steel hand auger to advance boring B13 in the footing excavation on the NE side of an abandoned concrete flow-through tank.



AWARE Food Bank
152 Arthur Street
Woodburn, Oregon

Site Photographs

Project No.
1361-22001-01







Appendix
A

Appendix B

Soil Boring Logs

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	AWARE Food Bank		1361-22001-02
SITE	BEGUN	COMPLETED	HOLE SIZE
152 N Arthur Street, Woodburn, Oregon	8/26/22	8/26/22	2.25"
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL
E: 26051.82, N: -13384.62	8/26/22	1041	15.75
DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES
Cascade	77	1	
DRILL RIG	LOGGED BY:		DEPTH TOP OF ROCK
Geoprobe 06-Z8853	Jordan Morris		NE
			DEPTH BOTTOM OF HOLE
			20

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Brown poorly graded medium SAND with small gravel (SP), loose, barely moist, rounded grains, no plasticity or cohesion, micaceous.						
3			Brown SILT with sand (ML), soft, moist, no plasticity of cohesion, orange and gray mottles, micaceous.					0.0	
6			Sand fraction increases (25%) and moisture content increases to wet						
9			Sharp color change to gray. No petroleum odor					0.0	
12			Gray SAND with silt (SP-SM), loose, wet, no plasticity or cohesion, micaceous Soil-water interface	B01-SWI-10.5				0.0	
			Gray SILT with sand (ML), med. stiff, moist, brown and orange mottles, micaceous						
			Gray SAND with silt (SP-SM), loose, wet, micaceous						
			Gray SILT with SAND (ML), medium stiff, moist, brown and orange mottles, micaceous						
			Gray SAND with silt (SP-SM), loose, wet, micaceous						
			Gray SILT with sand (ML), medium stiff, moist, brown and orange mottles, micaceous					85	
			Gray SAND with silt (SP-SM), loose, wet, micaceous						
			Gray SILT with sand (ML), medium stiff, moist, brown and orange mottles, micaceous						
			Gray SAND with silt (SP-SM), loose, wet, micaceous						
			Gray SILT with sand (ML), medium stiff, moist, brown and orange mottles, micaceous						
21			End of boring - total depth 20 feet.					0.0	

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	AWARE Food Bank		1361-22001-02
SITE	BEGUN	COMPLETED	HOLE SIZE
152 N Arthur Street, Woodburn, Oregon	8/26/22	8/26/22	2.25
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL
E: 26089.06, N: -13412.52	8/26/22	14.40	FIRST WATER
DRILLER	CORE RECOVERY (%)		# CORE BOXES
Cascade	70		N
DRILL RIG	LOGGED BY:		
Geoprobe OG-Z8853	Jordan Morris		
			DEPTH TOP OF ROCK
			NE
			DEPTH BOTTOM OF HOLE
			20

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Brown, sandy GRAVEL with silt (GP-GM), loose, dry, 1" subrounded to rounded clasts, quartz discernible in sand, no mica						
3			Brown, SILT with sand (ML), medium stiff, moist, orange, gray and dark brown mottles, no plasticity or cohesion, micaceous			60		0.0	
6			Gray staining			90			
9			Gray SAND with silt (SP-SM), loose, moist, no plasticity or cohesion, micaceous	B02-10				270.4	
			Gray SILT with sand (ML), medium soft, moist, mottled orange, micaceous						
			Gray SAND with silt, loose, saturated, micaceous						
			Gray SILT with sand (ML), medium stiff, moist, mottled orange, micaceous						
12			Gray SAND with silt (SM), saturated, micaceous			70			
			Gray SILT with sand (ML), medium stiff, moist, mottled orange, micaceous						
			Gray SAND with silt (SM), medium loose, wet, micaceous						
			Gray SILT with sand (ML), medium stiff, moist, mottled orange, micaceous						
15			Gray SAND with silt (SM), medium dense, wet, micaceous	B02-SWI-15				900.4	
			Gray SILT with sand (ML), medium stiff, moist, mottled orange, micaceous						
18									
21			End of boring - total depth 20 feet.						


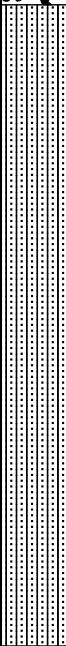




EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	AWARE Food Bank		1361-22001-02
SITE	BEGUN	COMPLETED	HOLE SIZE
152 N Arthur Street, Woodburn, Oregon	08-26-22	08-26-22	2 1/4"
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL
E: 26098.56, N: -13435.76 26098.56		8/26/22	15.35
DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES
Cascade	90	1	
DRILL RIG	LOGGED BY:		DEPTH BOTTOM OF HOLE
	Jordan Morris		20

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Brown SILT with sand (ML), medium stiff, moist, mottled gray, occasional black organics, weakly micaceous						
3			Brown and gray fine SAND with silt (SM), medium dense, moist, strongly mottled orange and gray, micaceous			90		0.0	
6						70			
9			Gray SILT with sand (ML), medium stiff, moist, strongly mottled orange, micaceous	B03-SWI-10				96.3	
			Brown and gray fine SAND with silt (SM), medium dense, moist, strongly mottled orange, micaceous						
			Gray fine SAND with silt (SM) medium loose, moist, micaceous. Gray color may indicate staining.						
			Gray SILT with sand (ML), medium stiff, moist, micaceous						
12			Gray fine SAND with silt (SM), loose, saturated, micaceous				90		
			Gray SILT with sand (ML), medium stiff, moist, micaceous						
			Gray fine SAND with silt (SM), loose, saturated, micaceous						
15			Gray SILT with sand (ML), medium stiff, moist, mottled orange, micaceous						28.7
			Gray fine SAND with silt (SM), medium loose, wet, micaceous						
			Gray SILT with sand (ML), medium stiff, wet, micaceous						60.7
18			Gray fine SAND with silt (SM), medium loose, saturated, micaceous			90			
			Gray SILT with sand (ML), medium stiff, wet, micaceous						
			Gray fine SAND with silt (SM), loose, saturated, micaceous						
21			End of boring - total depth 20 feet.						

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	AWARE Food Bank	1361-22001-02	B04
SITE	BEGUN	COMPLETED	HOLE SIZE
152 N Arthur Street, Woodburn, Oregon	08-26-22	08-26-22	2 1/4"
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL
E: 26104.2, N: -13464.63			NM
DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES
Cascade	83	2	
DRILL RIG	LOGGED BY:		DEPTH BOTTOM OF HOLE
	Jordan Morris		15

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Brown GRAVEL (GP), medium loose, poorly sorted, moist, clasts up to 1.5", micaceous						
3			Brown fine SAND with silt (SM) , medium dense, moist, mottled orange and gray, micaceous			60		0.0	
6									
9						100		0.0	
12				B04-10					
12			Brown SILT with sand (ML), medium stiff, moist, mottled gray, micaceous			90			
13			Brown fine SAND with silt (SM) , loose, wet, micaceous						
14			Brown SILT with sand (ML), medium soft, wet, mottled gray and orange, micaceous						
15			Gray fine SAND with silt (SM), mottled brown, micaceous						
15			End of boring - total depth 15 feet.	B04-15				0.0	No distinct SWI, more lithologically homogenous than B01, 02, 03
18									
21									

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	AWARE Food Bank	1361-22001-02	B05
SITE	BEGUN	COMPLETED	HOLE SIZE
152 N Arthur Street, Woodburn, Oregon	08-26-22	08-26-22	2 1/4"
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL
E: 26060.27, N: -13515.6		8/26/22	15.20
DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES
Cascade	97	1	
DRILL RIG	LOGGED BY:		DEPTH BOTTOM OF HOLE
	Jordan Morris		20

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Gray medium GRAVEL (GP), loose, rounded, little fines						
3			Brown fine SAND with silt (SM) , medium loose, moist, mottled orange and gray, micaceous			90			
6			Density increased sharply (to dense)					0.0	
9			Gray SILT with sand (ML), medium stiff, mottled brown, micaceous	B05-SWI-10.5					
			Brown fine SAND with silt (SM) , dense, moist, mottled gray and orange, micaceous					0.0	
			Brown SILT with sand (ML), medium stiff, wet, mottled gray and orange, micaceous					0.0	
12			Brown fine SAND with silt (SM) , medium loose, saturated, micaceous						
			Brown SILT with sand (ML), medium stiff, wet, mottled orange and gray, micaceous				100		
			Brown fine SAND with silt (SM) , medium loose, saturated, micaceous						
			Brown SILT with sand (ML), medium stiff, wet, mottled gray and orange, micaceous						
15			Brown fine SAND with silt (SM) , medium loose, saturated, micaceous						0.0
18									
21			End of boring - 20 feet bgs.						


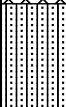
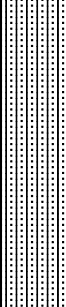











EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	AWARE Food Bank		1361-22001-02
SITE	BEGUN	COMPLETED	HOLE SIZE
152 N Arthur Street, Woodburn, Oregon	08-26-22	08-26-22	2 1/4"
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL
E: 26018.9, N: -13421.68			NM
DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES
Cascade	97	1	
DRILL RIG	LOGGED BY:		DEPTH BOTTOM OF HOLE
	Jordan Morris		15

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Medium GRAVEL with sand and some silt, loose, well-sorted, dry to moist, subrounded to rounded, no visible mica						
3			Brown fine SAND with silt (SM), medium loose, moist, weakly mottled gray and orange, micaceous			60			
			Brown SILT with sand (ML), medium stiff, moist, mottled gray and orange, micaceous					0.0	
			Brown fine SAND with silt (SM), medium loose, moist, mottled gray and orange, micaceous						
6			Brown SILT with sand (ML), medium stiff, moist, mottled gray and orange, micaceous						
			Brown fine SAND with silt (SM), medium dense, mottled gray and orange, micaceous						
			Brown SILT with sand (ML), medium stiff, moist, mottled gray and orange, micaceous			90			
			Brown fine SAND with silt (SM), medium dense, mottled gray and orange, micaceous						
9			Dark gray fine SAND with silt (SM), medium dense, wet, micaceous, sharp color change may indicate staining					0.0	
			Dark gray SILT with sand (ML), medium stiff, wet, micaceous	B06-SWI-11				12.5	
12			Dark gray fine SAND with silt (SM), medium loose, saturated, micaceous			90			
			Light gray fine SAND with silt (SM), medium dense, wet, mottled orange, micaceous						
15			End of boring					5.4	
18									
21									

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	AWARE Food Bank		1361-22001-02
SITE	BEGUN	COMPLETED	HOLE SIZE
152 N Arthur Street, Woodburn, Oregon	08-26-22	08-26-22	2 1/4"
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL
E: 26081.13, N: -13476.96	8/26/22	15.23	FIRST WATER
DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES
Cascade	75	1	
DRILL RIG	LOGGED BY:		DEPTH BOTTOM OF HOLE
	Jordan Morris		22

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Concrete/gravel fill						
3			Dark brown fine SAND with silt (SM), dense, moist, mottled gray, micaceous Brown fine SAND with silt (SM), medium dense, moist, mottled gray and orange, micaceous			60		0.0	
6			Lenses of gray SAND with strong orange mottling from 7. 5-8'			70		0.0	
12			Brown SILT with sand (ML), medium stiff, wet, mottled gray, micaceous	B07-SWI-11.5		90		0.0	
15			Brown fine SAND with silt (SM), medium dense, saturated, micaceous						
15			Dark gray fine SAND with silt (SM), medium dense, saturated, micaceous					0.0	
18			Gray SILT with sand (ML), medium stiff, wet, micaceous						
18			Gray fine SAND with silt (SM), medium loose, saturated, micaceous						
18			Gray SILT with sand (ML), stiff, saturated, micaceous			100			
18			Gray fine SAND with silt (SM), medium dense, saturated, micaceous						
18			Gray SILT with sand (ML), stiff, saturated, micaceous						
18			Gray fine SAND with silt (SM), medium dense, saturated, micaceous						
21			Gray SILT with sand (ML), stiff, saturated, micaceous						
21			Gray fine SAND with silt (SM), medium dense, saturated, micaceous					8.3	
			End of boring - total depth 22 feet.						

EVREN Northwest, Inc.

DRILL LOG	PROJECT		PROJECT NO.		BORING NO.
	AWARE Food Bank		1361-22001-02		B08
SITE		BEGUN	COMPLETED	HOLE SIZE	
152 N Arthur Street, Woodburn, Oregon		08-26-22	08-26-22	2 1/4"	
COORDINATES		DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER
E: 25993.99, N: -13456.36			8/26/22	14.15	10.00
DRILLER		CORE RECOVERY (%)		# SAMPLES	# CORE BOXES
Cascade		98		2	
DRILL RIG		LOGGED BY:			DEPTH BOTTOM OF HOLE
		Jordan Morris			20

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Brown fine SAND with silt (SM) , medium stiff, moist, mottled gray and orange, micaceous. Silt fraction 10 15%						
3						95			
6			Silt fraction increases to about 25% between 6 and 8 feet	B08-4.5				0.0	
9						100			
12			Gray SILT with sand (ML), medium stiff, saturated, mottled gray and orange, micaceous						
			Gray fine SAND with silt (SM), medium loose, saturated, mottled orange, micaceous			95			
			Gray SILT with sand (ML) medium dense, saturated, micaceous						
15									
			Gray SILT with sand (ML), medium stiff, saturated, orange and brown mottling, micaceous						
18			Gray fine SAND with silt (SM), medium dense, saturated, micaceous			0.0			
			Gray SILT with sand (ML), medium stiff, saturated, mottled orange and brown, micaceous						
			Gray fine SAND with silt (SM), dense, saturated, micaceous						
21			End of boring - total depth 20 feet.						










EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	AWARE Food Bank		1361-22001-02
SITE	BEGUN	COMPLETED	HOLE SIZE
152 N Arthur Street, Woodburn, Oregon	08-26-22	08-26-22	2 1/4"
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL
E: 26066.96, N: -13451.34			NM
DRILLER	CORE RECOVERY (%)		# CORE BOXES
Cascade	83		2
DRILL RIG	LOGGED BY:		
	Jordan Morris		
			DEPTH BOTTOM OF HOLE
			15

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Gray GRAVEL with sand and silt (GW), loose, rounded, no visible mica						
3			Brown fine SAND with silt (SM) , medium loose, moist, strongly mottled gray and orange, micaceous			60		0.0	
6									
9			Sharp color change at 9'--sand goes entirely dark gray. Sand looks and smells like petroleum staining			90			
			Gray SILT with sand (ML), medium stiff, wet, micaceous	B09-10				2073	
12			Dark gray fine SAND with silt (SM), medium loose, saturated, micaceous	B09-SWI-11				5.0	
			Gray SILT with sand (ML), medium stiff, wet, micaceous						
			Dark gray fine SAND with silt (SM), medium loose, saturated, micaceous						
15			Gray SILT with sand (ML), medium stiff, wet, micaceous						
			End of boring - total depth 15 feet.						
18									
21									

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	AWARE Food Bank		1361-22001-02
SITE	BEGUN	COMPLETED	HOLE SIZE
152 N Arthur Street, Woodburn, Oregon	12/16/22	12/16/22	2.25"
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL
E: 26097.33, N: -13342.9		12/16/22	13.73
DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES
Cascade	88	1	
DRILL RIG	LOGGED BY:		DEPTH TOP OF ROCK
DPT 06Z3052			None
			DEPTH BOTTOM OF HOLE
			20

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Dark brown GRAVEL (GW-FILL), medium grained, moist, root traces						
3			Brown SILTY SAND (SM), fine-grained sand, some silt, med-soft, moist, slight orange and gray mottles, strongly micaceous.						
6			Same as above except med. dense consistency Same as above					0.0	
9			Moisture increases to wet						
12			Same as above Soil-water interface	B11-SWI-10.5				0.0	
15			Same as above						
18			Same as above. No staining, no odor, and no PID detection in sampling shoe.					0.0	CAB liner fused with barrel, so could only partially observe material
21			Same as above. No staining, no odor.						Waiting for drillers to remove liner from barrel
21			Same as above. End of boring - total depth 20 feet.						

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	AWARE Food Bank		1361-22001-02
SITE	BEGUN	COMPLETED	HOLE SIZE
152 N Arthur Street, Woodburn, Oregon	12/16/22	12/16/22	2.25"
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL
E: 26124.53, N: -13443.84	12/16/22	14.10	FIRST WATER
DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES
Cascade	88	1	DEPTH TOP OF ROCK
DRILL RIG	LOGGED BY:		DEPTH BOTTOM OF HOLE
DPT 06Z3052	Jordan Morris		20

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Brown, poorly graded SAND with some SILT (SP-SM), fine-grained, barely moist, no cohesion, weakly micaceous						
3			SILTY SAND (SM) gray and orange mottles						
6			Same as above except density increases to med. dense					0.0	
9			Same as above except mica content increases to strong						
9			Same as above except mottles are fainter						
9			Same as above except moist						
9			Small gray SILT (ML) lens						
9			SILTY SAND (SM)					0.0	
9			Soil-water interface	B12-SWI-10.5				0.0	
12			Same as above except gray staining and petroleum-like odor in stained medium					2.2	
15			Same as above					1.1	
15			Gray SILTY SAND (SM), saturated, micaceous, gray staining, no discernible odor					16.5	
18									
21			End of boring - total depth 20 feet.						

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	AWARE Food Bank		1361-22001-02
SITE	BEGUN	COMPLETED	HOLE SIZE
152 N Arthur Street, Woodburn, Oregon	12/27/22	12/27/22	2-in
COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL
E: 26032.26, N: -13499.18			FIRST WATER
DRILLER	CORE RECOVERY (%)		# CORE BOXES
ENW	100		1
DRILL RIG	LOGGED BY:		
Stainless-steel Hand Auger	Evan Bruggeman		
			DEPTH BOTTOM OF HOLE
			6.5

DEPTH	STRATA ELEVATION/DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA				PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
				SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./Completion		
0			Medium to light brown SILTY FINE SAND (SM) stiff, slightly moist, rust mottles. No odor or staining.						
3									
6			Same as above. End of boring - total depth 6.5 feet.	B13-6.5				0.0	
9									
12									
15									
18									
21									

Appendix C

Field Sampling Data Sheets

EVREN Northwest GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Forest and Arthur Wood Burr
 Event: GW Assessment

PROJECT NUMBER: 1361-22001-02
 Date: _____

Field Personnel: Dan Salk Monitoring Well ID: B01
 Weather Conditions: Cloudy Start Time: 10:41
 DTW (prior to purging): 15.75' hloc

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
10:43		200	Light brown		sl. turbid			0.0	
10:49		"	mostly clear					0.20	
10:48		"	Begin sampling					1.0	

Total Purged: 1.0

Tubing: 3/8" LDPE
 Purge Pumping Rate (approx. L/m): 200 mL/min
 Decontamination method: _____

Well casing (in. diam): 1" POC
 Approx. Pump/Intake Depth: ~ 16'

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

WELL CONDITION

Recommended Well Repairs/Additional Notes: Screen from 15'-20'

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
6X VOC	ERT3	HCL	40 ml	4	B01-GW-20	11:00
DX	↓	none	500 ml	1		
PARTS select metals	↓	none	1 liter	1		
		HNO3	250 ml	1		

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: Field Filtered HNO3 Poly
 Signature of Field Personnel: [Signature]

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: _____
 Event: GW Assessment

PROJECT NUMBER: 1361-2201-07
 Date: 8/26/22

Field Personnel: Dan Sage
 Weather Conditions: Sunny 70°F
 DTW (prior to purging): 14.40

Monitoring Well ID: 302
 Start Time: 15:04

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
15:07		200	Brown	slight	Gray	turbid		0	
15:11			light	gray	turbid			1.0	
15:15			mostly	clear				1.80	
			sample						

Total Purged:

Tubing: 3/8" LDPE
 Purge Pumping Rate (approx. L/m): 200 ml
 Decontamination method: _____

Well casing (in. diam): 1" PVC
 Approx. Pump/Intake Depth: ~ 16.5

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
	<u>F&B</u>		<u>40ml</u>	<u>4</u>	<u>302-GW-20</u>	<u>15:30</u>
	↓		<u>500ml</u>	<u>1</u>		
			<u>1 liter</u>	<u>1</u>		
			<u>250 ml</u>	<u>1</u>		

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: 

EVREN Northwest GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: First and Arthur Woodburn
 Event: GW assessment

PROJECT NUMBER: 361-22001-02
 Date: 08/26/22

Field Personnel: Dan Sayko Monitoring Well ID: B03
 Weather Conditions: cloudy Start Time: 1200
 DTW (prior to purging): 15.35'

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
12:07		250	some with intake	Dark gray	very turbid - odor			0	
12:09			light brown		turbid			0.50	
12:11		150	cloudy		some fine sand			1.0	
12:15		"			Begin collecting sample			1.60	

Total Purged: 1.60

Tubing: 3/8" LDPE
 Purge Pumping Rate (approx. L/m): 170 ml/min
 Decontamination method:

Well casing (in. diam): 1" PVC
 Approx. Pump/Intake Depth: 17.5

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

WELL CONDITION

Recommended Well Repairs/Additional Notes:

Screen set from 15' - 20'
10' - 20'

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

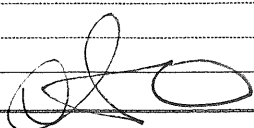
SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
<u>GC/MS</u>	<u>TR13</u>	<u>HCl</u>	<u>40ml</u>	<u>4</u>	<u>B03-GW-20</u>	<u>2:32</u>
<u>DC</u>	<u>↓</u>	<u>none</u>	<u>500ml</u>	<u>1</u>		
<u>PAHs</u>	<u>↓</u>	<u>none</u>	<u>1 Liter</u>	<u>1</u>		
<u>select metals</u>	<u>↓</u>	<u>HNO3</u>	<u>250 ml</u>	<u>1</u>		

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:

Field filtered only

Signature of Field Personnel: 

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Frost and Arthur / woodburn
 Event: GW assessment

PROJECT NUMBER: 1361-22001-02
 Date: 08/26/12

Field Personnel: Dan Saffo Monitoring Well ID: Bos5
 Weather Conditions: sunny Start Time: 6:40
 DTW (prior to purging): 15.70'

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (gal/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
13:41	—	190	Dark brown / Turbid						0.90
3:47		"	Drawing down						1.40
13:50		"	Brown / turbid		0.5				—
13:53			raw dry						
— begin pump again clears up —									

Total Purged: 1.40

Tubing: 3/8" LDPE
 Purge Pumping Rate (approx. L/m): 150 ml/min
 Decontamination method: _____
 Well casing (in. diam): 1" PVC
 Approx. Pump/Intake Depth: ~17.5'

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

WELL CONDITION

Recommended Well Repairs/Additional Notes: Screen set from 10' - 15'

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
OX / uels	FAB	HCL	40ml	4	Bos-GW-20	14:12
DC	↓	none	50ml	1		
metals	F.F.	none	1 liter	1		
		HNO3	250ml	1		

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: [Signature]

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: 1st wellhead
 Event: GW Assessment

PROJECT NUMBER: 1361-22001-07
 Date: 8/24/22

Field Personnel: Dan Saylor Monitoring Well ID: B07
 Weather Conditions: Sunny 78°F Start Time: :40
 DTW (prior to purging): 15.23'

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
15:43		200	6mly						0
15:50			very turbid						1.40
			collected sample						

Total Purged:

Tubing: 3/8" LDPE
 Purge Pumping Rate (approx. L/m): 200 ml/min
 Decontamination method:

Well casing (in. diam): 1" PVC
 Approx. Pump/Intake Depth: ~ 17'

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

WELL CONDITION

Recommended Well Repairs/Additional Notes:

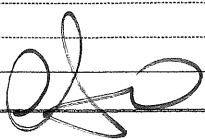
QA/QC Sample: Duplicate Lab QA/QC Equipment Blank None
 Sampling Method: Grundfos Pump Peristaltic Pump Bladder Pump Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
Cu, Pb, Zn	FRB	HCL	40ml	4	B07-GW-22	16:02
Pb		None	500ml	1		
Pb Kspolmed		None	1 liter	1		
		HNO3	250ml	1		

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: 

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: 1st / Artesian well bore
 Event: GW assessment

PROJECT NUMBER: 1361-22001-02
 Date: 08/26/22

Field Personnel: Don Salyer Monitoring Well ID: 300
 Weather Conditions: Sunny 76° F Start Time: 14:20
 DTW (prior to purging): 14.15' DTW

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
<u>14:33</u>									
<u>14:50</u>				<u>Dark brown / Turbid</u>					<u>0.450</u>
<u>14:51</u>				<u>Brown / turbid</u>					<u>1.40</u>
				<u>collect sample mostly clear</u>					

Total Purged:

Tubing: 3/8" LDPE
 Purge Pumping Rate (approx. L/m): 150 w/ min
 Decontamination method: _____ Well casing (in. diam): ~ 1 1/2"
 Approx. Pump/Intake Depth: 116' PVC

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
<u>1000</u>	<u>EM</u>	<u>HCl</u>	<u>4</u>	<u>40ml</u>	<u>DOB-GW-20</u>	<u>14:50</u>
<u>CO2</u>		<u>None</u>	<u>1</u>	<u>500ml</u>		
<u>PM10 (distilled)</u>		<u>None</u>	<u>1</u>	<u>1 liter</u>		
		<u>HNO3</u>	<u>1</u>	<u>250ml</u>		

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: 

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Arthur St Woodlawn
 Event: OW Delineation

PROJECT NUMBER: 13d-22001-02
 Date: 12/14/22

Field Personnel: Dan Sajko Monitoring Well ID: B11
 Weather Conditions: Clear / Cool 30° F Start Time: 1:08
 DTW (prior to purging): 3.73' 500'

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
11:07		150	Light brown					intake @ 17'	
11:14			pulling apart					from siliceous region pump again	0.75
11:15			no change in appearance						
11:16			Drawing down					lower to 20' intake	1.20
11:17			Dark brown					very turbid	2.0
11:22			slit brown turbid						3.2
11:29			run dry						
11:34			Begin collecting sample						

Total Purged:

Tubing: 1/4" LDPE Well casing (in. diam): 1" PVC
 Purge Pumping Rate (approx. L/m): _____ Approx. Pump/Intake Depth: 20'
 Decontamination method: _____

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

WELL CONDITION

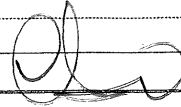
Recommended Well Repairs/Additional Notes:
workability 2nd attempt filtered HNO3 broke through due to
with some low result
 QA/QC Sample: Duplicate Lab QA/QC Equipment Blank None
 Sampling Method: Grundfos Pump Peristaltic Pump Bladder Pump Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
<u>Cx</u> <u>NO3</u>	<u>FMS</u>	<u>HCl</u>	<u>40 ml</u>	<u>4</u>	<u>B11-GW-20</u>	<u>12:02</u>
<u>DE</u>	<u>↓</u>	<u>none</u>	<u>1 liter</u>	<u>1</u>		
<u>DPHs</u>	<u>↓</u>	<u>none</u>	<u>500ml</u>	<u>1</u>		
<u>disinfectant ph</u>	<u>↓</u>	<u>HNO3</u>	<u>250 ml</u>	<u>1</u>		

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:
Screened from 10' - 20' -

Signature of Field Personnel: 

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Arthur / ~~Indiantown~~ woodlawn
 Event: GW Delineation

PROJECT NUMBER: 1301-22001-02
 Date: 12/16/22

Field Personnel: Dan Sayko Monitoring Well ID: B12
 Weather Conditions: Clear / Cold 30°F Start Time: 10:01
 DTW (prior to purging): 14.1

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
10:02		175	light brown		slightly turbid				0
10:03					run dry				0.20
10:16			start pump						"
10:17			mostly clear		some fine sands				
10:18			run dry will deeper						

Total Purged:

Tubing: 1/4 LDPE
 Purge Pumping Rate (approx. L/m): 175 ml/min
 Decontamination method:

Well casing (in. diam):
 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
					B12-GW-00	
					B12-GW-20	11:50

Method of Transportation of samples: FedEx (Courier) Yes No
 All samples were immediately placed into a cooler and packed with ice or "blue ice"

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Appendix D

Laboratory Analytical Results

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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Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 15, 2022

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 August 27, 2022 from the 1361-22001-02, F&BI 208430 project. There are 31 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
ENW0915R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 27, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1361-22001-02, F&BI 208430 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
208430 -01	B01-GW-20
208430 -02	B02-GW-20
208430 -03	B03-GW-20
208430 -04	B05-GW-20
208430 -05	B07-GW-22
208430 -06	B08-GW-20
208430 -07	B01-SWI-10.5
208430 -08	B02-10
208430 -09	B02-SWI-15
208430 -10	B03-SWI-10
208430 -11	B04-10
208430 -12	B05-SWI-10.5
208430 -13	B06-SWI-11.5
208430 -14	B07-SWI-11.5
208430 -15	B08-SWI-10
208430 -16	B09-10
208430 -17	B04-15
208430 -18	B09-SWI-11
208430 -19	B08-4.5

Methylene chloride was detected in the 8260D analysis of the method blank. The data were flagged as due to laboratory contamination.

The 8260D laboratory control sample exceeded the acceptance criteria and relative percent difference for methylene chloride. The compound was not detected, therefore the data were acceptable.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/22
Date Received: 08/27/22
Project: 1361-22001-02, F&BI 208430
Date Extracted: 08/29/22 and 08/30/22
Date Analyzed: 08/29/22 and 08/30/22

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

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

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

<u>Sample ID</u> Laboratory ID	<u>Gasoline</u>	<u>Diesel</u>	<u>Heavy Oil</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 48-168)
B01-SWI-10.5 208430-07	ND	ND	ND	93
B02-10 208430-08	ND	ND	ND	99
B02-SWI-15 208430-09	ND	ND	ND	92
B03-SWI-10 208430-10	ND	ND	ND	92
B04-10 208430-11	ND	ND	ND	102
B05-SWI-10.5 208430-12	ND	ND	ND	98
B06-SWI-11.5 208430-13	ND	ND	ND	93
B07-SWI-11.5 208430-14	ND	ND	ND	107
B08-SWI-10 208430-15	ND	ND	ND	95
B09-10 208430-16	ND	ND	ND	94

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/22
Date Received: 08/27/22
Project: 1361-22001-02, F&BI 208430
Date Extracted: 08/29/22 and 08/30/22
Date Analyzed: 08/29/22 and 08/30/22

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

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

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

<u>Sample ID</u> Laboratory ID	<u>Gasoline</u>	<u>Diesel</u>	<u>Heavy Oil</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 48-168)
B04-15 208430-17	ND	ND	ND	100
B09-SWI-11 208430-18	ND	ND	ND	90
B08-4.5 208430-19	ND	ND	ND	90
Method Blank 02-2056 MB	ND	ND	ND	104
Method Blank 02-2056 MB2	ND	ND	ND	92

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/22
Date Received: 08/27/22
Project: 1361-22001-02, F&BI 208430
Date Extracted: 09/02/22
Date Analyzed: 09/02/22 and 09/08/22

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-G_x**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
B01-GW-20 208430-01	1,300	ip
B02-GW-20 208430-02 1/10	12,000	83
B03-GW-20 208430-03 1/5	6,400	83
B05-GW-20 208430-04	<100	122
B07-GW-22 208430-05	470	96
B08-GW-20 208430-06	<100	118
Method Blank 02-1755 MB	<100	108

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/22
Date Received: 08/27/22
Project: 1361-22001-02, F&BI 208430
Date Extracted: 09/02/22
Date Analyzed: 09/02/22

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-D_x**
Results Reported as ug/L (ppb)

<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> (% Recovery) (Limit 41-152)
B01-GW-20 208430-01	300 x	<250	115
B02-GW-20 208430-02	1,800 x	<250	119
B03-GW-20 208430-03	1,200 x	<250	140
B05-GW-20 208430-04	<50	<250	71
B07-GW-22 208430-05	230 x	<250	112
B08-GW-20 208430-06	<50	<250	126
Method Blank 02-2111 MB	<50	<250	141

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	B02-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	09/07/22	Lab ID:	208430-02
Date Analyzed:	09/07/22	Data File:	208430-02.204
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Lead	2.44
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1361-22001-02, F&BI 208430
Date Extracted:	09/07/22	Lab ID:	I2-618 mb
Date Analyzed:	09/07/22	Data File:	I2-618 mb.100
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Lead	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B01-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	08/29/22	Lab ID:	208430-01
Date Analyzed:	08/29/22	Data File:	082923.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	78	126
Toluene-d8	110	84	115
4-Bromofluorobenzene	95	72	130

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Isopropylbenzene	<1
n-Propylbenzene	2.3
1,3,5-Trimethylbenzene	<1
1,2,4-Trimethylbenzene	<1
Naphthalene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B02-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	08/29/22	Lab ID:	208430-02
Date Analyzed:	08/29/22	Data File:	082924.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	107	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	1,500 ve
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	53
Hexane	260 ve	o-Xylene	32
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	80
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	180 ve
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	55
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	4.1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	25
Benzene	0.40	sec-Butylbenzene	6.6
Trichloroethene	<0.5	p-Isopropyltoluene	6.4
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	34	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	430 ve
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B02-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	08/29/22	Lab ID:	208430-02 1/50
Date Analyzed:	08/31/22	Data File:	083110.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	78	126
Toluene-d8	93	84	115
4-Bromofluorobenzene	97	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<50	1,3-Dichloropropane	<50
Chloromethane	<500	Tetrachloroethene	<50
Vinyl chloride	<1	Dibromochloromethane	<25
Bromomethane	<250	1,2-Dibromoethane (EDB)	<50
Chloroethane	<50	Chlorobenzene	<50
Trichlorofluoromethane	<50	Ethylbenzene	1,900
Acetone	<2,500	1,1,1,2-Tetrachloroethane	<50
1,1-Dichloroethene	<50	m,p-Xylene	<100
Hexane	260	o-Xylene	<50
Methylene chloride	<250	Styrene	<50
Methyl t-butyl ether (MTBE)	<50	Isopropylbenzene	81
trans-1,2-Dichloroethene	<50	Bromoform	<250
1,1-Dichloroethane	<50	n-Propylbenzene	180
2,2-Dichloropropane	<50	Bromobenzene	<50
cis-1,2-Dichloroethene	<50	1,3,5-Trimethylbenzene	56
Chloroform	<50	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<50
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<50
1,1,1-Trichloroethane	<50	4-Chlorotoluene	<50
1,1-Dichloropropene	<50	tert-Butylbenzene	<50
Carbon tetrachloride	<25	1,2,4-Trimethylbenzene	<50
Benzene	<17	sec-Butylbenzene	<50
Trichloroethene	<25	p-Isopropyltoluene	<50
1,2-Dichloropropane	<50	1,3-Dichlorobenzene	<50
Bromodichloromethane	<25	1,4-Dichlorobenzene	<50
Dibromomethane	<50	1,2-Dichlorobenzene	<50
4-Methyl-2-pentanone	<500	1,2-Dibromo-3-chloropropane	<500
cis-1,3-Dichloropropene	<20	1,2,4-Trichlorobenzene	<50
Toluene	<50	Hexachlorobutadiene	<25
trans-1,3-Dichloropropene	<20	Naphthalene	430
1,1,2-Trichloroethane	<25	1,2,3-Trichlorobenzene	<50
2-Hexanone	<500		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B03-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	08/29/22	Lab ID:	208430-03
Date Analyzed:	08/29/22	Data File:	082925.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	107	72	130

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
Benzene	<0.35
Toluene	1.7
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	710 ve
m,p-Xylene	8.7
o-Xylene	3.2
Isopropylbenzene	59
n-Propylbenzene	140
1,3,5-Trimethylbenzene	2.1
1,2,4-Trimethylbenzene	2.4
Naphthalene	210 ve

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B03-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	08/29/22	Lab ID:	208430-03 1/50
Date Analyzed:	08/31/22	Data File:	083111.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	78	126
Toluene-d8	95	84	115
4-Bromofluorobenzene	99	72	130

Compounds:	Concentration ug/L (ppb)
Ethylbenzene	780
Naphthalene	210

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B05-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	08/29/22	Lab ID:	208430-04
Date Analyzed:	09/02/22	Data File:	090147.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	99	72	130

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Isopropylbenzene	<1
n-Propylbenzene	<1
1,3,5-Trimethylbenzene	<1
1,2,4-Trimethylbenzene	<1
Naphthalene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B07-GW-22	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	08/29/22	Lab ID:	208430-05
Date Analyzed:	08/29/22	Data File:	082927.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	106	84	115
4-Bromofluorobenzene	108	72	130

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Isopropylbenzene	<1
n-Propylbenzene	<1
1,3,5-Trimethylbenzene	<1
1,2,4-Trimethylbenzene	<1
Naphthalene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B08-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	08/29/22	Lab ID:	208430-06
Date Analyzed:	08/29/22	Data File:	082928.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	78	126
Toluene-d8	103	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Isopropylbenzene	<1
n-Propylbenzene	<1
1,3,5-Trimethylbenzene	<1
1,2,4-Trimethylbenzene	<1
Naphthalene	<1

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:	1361-22001-02, F&BI 208430
Date Extracted:	08/29/22	Lab ID:	02-1955 mb
Date Analyzed:	08/29/22	Data File:	082907.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	JCM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	11 lc	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B01-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	09/08/22	Lab ID:	208430-01 1/2
Date Analyzed:	09/08/22	Data File:	090817.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	87	15	144
2-Fluorobiphenyl	77	25	128
2,4,6-Tribromophenol	91	10	142
Terphenyl-d14	91	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	<0.04
Phenanthrene	0.041
Anthracene	<0.04
Fluoranthene	<0.04
Pyrene	<0.04
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B02-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	09/07/22	Lab ID:	208430-02 1/2
Date Analyzed:	09/08/22	Data File:	090809.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80	15	144
2-Fluorobiphenyl	76	25	128
2,4,6-Tribromophenol	39	10	142
Terphenyl-d14	101	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	250 ve
2-Methylnaphthalene	22
1-Methylnaphthalene	22
Acenaphthylene	<0.04
Acenaphthene	0.060
Fluorene	0.052
Phenanthrene	0.079
Anthracene	<0.04
Fluoranthene	<0.04
Pyrene	<0.04
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B02-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	09/07/22	Lab ID:	208430-02 1/100
Date Analyzed:	09/09/22	Data File:	090908.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	70 d	11	173
2-Fluorobiphenyl	70 d	44	108
2,4,6-Tribromophenol	0 d	10	140
Terphenyl-d14	85 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	240

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B03-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	09/08/22	Lab ID:	208430-03 1/2
Date Analyzed:	09/09/22	Data File:	090908.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	85	15	144
2-Fluorobiphenyl	76	25	128
2,4,6-Tribromophenol	96	10	142
Terphenyl-d14	89	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	130 ve
2-Methylnaphthalene	2.8
1-Methylnaphthalene	16
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	0.044
Phenanthrene	0.053
Anthracene	<0.04
Fluoranthene	<0.04
Pyrene	<0.04
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B03-GW-20	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	09/08/22	Lab ID:	208430-03 1/20
Date Analyzed:	09/13/22	Data File:	091321.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	77 d	15	144
2-Fluorobiphenyl	74 d	25	128
2,4,6-Tribromophenol	73 d	10	142
Terphenyl-d14	84 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	140

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B07-GW-22	Client:	Evren Northwest
Date Received:	08/27/22	Project:	1361-22001-02, F&BI 208430
Date Extracted:	09/08/22	Lab ID:	208430-05 1/2
Date Analyzed:	09/09/22	Data File:	090907.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	87	15	144
2-Fluorobiphenyl	82	25	128
2,4,6-Tribromophenol	88	10	142
Terphenyl-d14	98	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	0.22
Phenanthrene	<0.04
Anthracene	<0.04
Fluoranthene	<0.04
Pyrene	<0.04
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

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:	1361-22001-02, F&BI 208430
Date Extracted:	09/07/22	Lab ID:	02-2125 mb
Date Analyzed:	09/08/22	Data File:	090808.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	83	15	144
2-Fluorobiphenyl	79	25	128
2,4,6-Tribromophenol	66	10	142
Terphenyl-d14	110	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

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:	1361-22001-02, F&BI 208430
Date Extracted:	09/08/22	Lab ID:	02-2125 mb2
Date Analyzed:	09/08/22	Data File:	090816.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	86	15	144
2-Fluorobiphenyl	86	25	128
2,4,6-Tribromophenol	93	10	142
Terphenyl-d14	93	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/22

Date Received: 08/27/22

Project: 1361-22001-02, F&BI 208430

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

Laboratory Code: 208396-05 Matrix Spike

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,000	1,100	93	94	53-117	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	99	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/22

Date Received: 08/27/22

Project: 1361-22001-02, F&BI 208430

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	83	84	63-142	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/22

Date Received: 08/27/22

Project: 1361-22001-02, F&BI 208430

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

Laboratory Code: 209052-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	87	89	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	106	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/22

Date Received: 08/27/22

Project: 1361-22001-02, F&BI 208430

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

Laboratory Code: 208353-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	111	50-150
Chloromethane	ug/L (ppb)	10	<10	107	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	110	50-150
Bromomethane	ug/L (ppb)	10	<5	106	50-150
Chloroethane	ug/L (ppb)	10	<1	111	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	99	50-150
Acetone	ug/L (ppb)	50	<50	100	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	98	50-150
Hexane	ug/L (ppb)	10	<5	88	50-150
Methylene chloride	ug/L (ppb)	10	<5	107	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	99	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	105	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	98	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	94	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	101	50-150
Chloroform	ug/L (ppb)	10	4.4	98 b	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	91	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	99	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	98	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	100	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	100	50-150
Benzene	ug/L (ppb)	10	<0.35	101	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	102	50-150
1,2-Dichloropropane	ug/L (ppb)	10	<1	95	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	100	50-150
Dibromomethane	ug/L (ppb)	10	<1	100	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	100	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	98	50-150
Toluene	ug/L (ppb)	10	<1	102	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	95	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	99	50-150
2-Hexanone	ug/L (ppb)	50	<10	98	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	96	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	99	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	99	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	100	50-150
Chlorobenzene	ug/L (ppb)	10	<1	100	50-150
Ethylbenzene	ug/L (ppb)	10	<1	98	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	96	50-150
m,p-Xylene	ug/L (ppb)	20	<2	100	50-150
o-Xylene	ug/L (ppb)	10	<1	99	50-150
Styrene	ug/L (ppb)	10	<1	93	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	98	50-150
Bromoform	ug/L (ppb)	10	<5	109	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	94	50-150
Bromobenzene	ug/L (ppb)	10	<1	95	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	92	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	94	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	92	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	93	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	94	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	94	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	92	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	93	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	95	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	94	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	95	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	102	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	92	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	89	50-150
Naphthalene	ug/L (ppb)	10	<1	88	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	90	50-150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/22

Date Received: 08/27/22

Project: 1361-22001-02, F&BI 208430

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	110	102	46-206	8
Chloromethane	ug/L (ppb)	10	101	90	70-142	12
Vinyl chloride	ug/L (ppb)	10	108	100	70-130	8
Bromomethane	ug/L (ppb)	10	110	103	56-197	7
Chloroethane	ug/L (ppb)	10	109	102	70-130	7
Trichlorofluoromethane	ug/L (ppb)	10	102	93	70-130	9
Acetone	ug/L (ppb)	50	98	92	10-140	6
1,1-Dichloroethene	ug/L (ppb)	10	97	91	70-130	6
Hexane	ug/L (ppb)	10	97	90	54-136	7
Methylene chloride	ug/L (ppb)	10	142 vo	53	43-134	91 vo
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	96	89	70-130	8
trans-1,2-Dichloroethene	ug/L (ppb)	10	104	98	70-130	6
1,1-Dichloroethane	ug/L (ppb)	10	95	89	70-130	7
2,2-Dichloropropane	ug/L (ppb)	10	118	108	70-130	9
cis-1,2-Dichloroethene	ug/L (ppb)	10	103	98	70-130	5
Chloroform	ug/L (ppb)	10	92	89	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	103	90	17-154	13
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	96	90	70-130	6
1,1,1-Trichloroethane	ug/L (ppb)	10	96	89	70-130	8
1,1-Dichloropropene	ug/L (ppb)	10	95	91	70-130	4
Carbon tetrachloride	ug/L (ppb)	10	99	95	70-130	4
Benzene	ug/L (ppb)	10	98	91	70-130	7
Trichloroethene	ug/L (ppb)	10	100	92	70-130	8
1,2-Dichloropropane	ug/L (ppb)	10	93	85	70-130	9
Bromodichloromethane	ug/L (ppb)	10	96	87	70-130	10
Dibromomethane	ug/L (ppb)	10	103	94	70-130	9
4-Methyl-2-pentanone	ug/L (ppb)	50	107	91	68-130	16
cis-1,3-Dichloropropene	ug/L (ppb)	10	103	91	69-131	12
Toluene	ug/L (ppb)	10	102	93	70-130	9
trans-1,3-Dichloropropene	ug/L (ppb)	10	100	87	70-130	14
1,1,2-Trichloroethane	ug/L (ppb)	10	96	88	70-130	9
2-Hexanone	ug/L (ppb)	50	98	91	45-138	7
1,3-Dichloropropane	ug/L (ppb)	10	95	87	70-130	9
Tetrachloroethene	ug/L (ppb)	10	99	91	70-130	8
Dibromochloromethane	ug/L (ppb)	10	98	90	60-148	9
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	98	90	70-130	9
Chlorobenzene	ug/L (ppb)	10	96	88	70-130	9
Ethylbenzene	ug/L (ppb)	10	97	90	70-130	7
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	94	90	70-130	4
m,p-Xylene	ug/L (ppb)	20	97	90	70-130	7
o-Xylene	ug/L (ppb)	10	95	90	70-130	5
Styrene	ug/L (ppb)	10	92	86	70-130	7
Isopropylbenzene	ug/L (ppb)	10	94	88	70-130	7
Bromoform	ug/L (ppb)	10	105	96	69-138	9
n-Propylbenzene	ug/L (ppb)	10	98	88	70-130	11
Bromobenzene	ug/L (ppb)	10	99	88	70-130	12
1,3,5-Trimethylbenzene	ug/L (ppb)	10	95	86	70-130	10
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	100	88	70-130	13
1,2,3-Trichloropropane	ug/L (ppb)	10	101	85	70-130	17
2-Chlorotoluene	ug/L (ppb)	10	95	86	70-130	10
4-Chlorotoluene	ug/L (ppb)	10	99	87	70-130	13
tert-Butylbenzene	ug/L (ppb)	10	97	87	70-130	11
1,2,4-Trimethylbenzene	ug/L (ppb)	10	94	86	70-130	9
sec-Butylbenzene	ug/L (ppb)	10	98	88	70-130	11
p-Isopropyltoluene	ug/L (ppb)	10	97	88	70-130	10
1,3-Dichlorobenzene	ug/L (ppb)	10	96	87	70-130	10
1,4-Dichlorobenzene	ug/L (ppb)	10	96	88	70-130	9
1,2-Dichlorobenzene	ug/L (ppb)	10	93	87	70-130	7
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	102	91	70-130	11
1,2,4-Trichlorobenzene	ug/L (ppb)	10	90	85	70-130	6
Hexachlorobutadiene	ug/L (ppb)	10	94	91	70-130	3
Naphthalene	ug/L (ppb)	10	90	85	70-130	6
1,2,3-Trichlorobenzene	ug/L (ppb)	10	91	87	70-130	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/22

Date Received: 08/27/22

Project: 1361-22001-02, F&BI 208430

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	78	77	50-104	1
2-Methylnaphthalene	ug/L (ppb)	5	85	82	54-109	4
1-Methylnaphthalene	ug/L (ppb)	5	85	83	55-108	2
Acenaphthylene	ug/L (ppb)	5	88	87	60-114	1
Acenaphthene	ug/L (ppb)	5	86	85	57-110	1
Fluorene	ug/L (ppb)	5	91	91	61-115	0
Phenanthrene	ug/L (ppb)	5	92	90	63-113	2
Anthracene	ug/L (ppb)	5	94	92	65-117	2
Fluoranthene	ug/L (ppb)	5	96	96	68-121	0
Pyrene	ug/L (ppb)	5	96	93	66-125	3
Benzo(a)anthracene	ug/L (ppb)	5	98	96	70-130	2
Chrysene	ug/L (ppb)	5	95	93	67-119	2
Benzo(a)pyrene	ug/L (ppb)	5	97	97	68-126	0
Benzo(b)fluoranthene	ug/L (ppb)	5	98	96	62-130	2
Benzo(k)fluoranthene	ug/L (ppb)	5	97	100	67-125	3
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	95	91	63-131	4
Dibenz(a,h)anthracene	ug/L (ppb)	5	94	90	62-133	4
Benzo(g,h,i)perylene	ug/L (ppb)	5	94	88	57-133	7

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. The value reported is an estimate.

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

208430

SAMPLE CHAIN OF CUSTODY

08-27-22

VS BS E03/VW2/C13/AL4
Page # 1 of 2

Report To Lynn Green
 Company Even Northwest
 Address P.O. Box 14408
 City, State, ZIP Portland, OR 97223
 Phone (503) 452-5564 Email lynn@even-nw.com

SAMPLERS (signature) Jordan Morris
 PROJECT NAME 1361-22001-02 PO #
 REMARKS RBDM VOCs INVOICE TO
 Project specific RLs? - Yes / No

TURNAROUND TIME E04
 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	Disc Lead				
B01-GW-20	01A-G	08-26-22	11:00	GW	7	X	X			X	X						(X) per PT 9/7/22 ME
B02-GW-20	02	08-26-22	15:30	GW	7	X	X			X	●		✓				Full VOCs on B02
B03-GW-20	03	08-26-22	12:32	GW	7	X	X			X	X						me pull 8/21/22
B05-GW-20	04	08-26-22	14:12	GW	7	X	X			X							● per PT 9/6/22 me
B07-GW-22	05	08-26-22	16:02	GW	7	X	X			X	X						me
B08-GW-20	06	08-26-22	14:50	GW	7	X	X			X							✓ per PT 9/2/22 ME
B01-SWI-105	07A-E	08-26-22	9:05	Soil	5			X									ME
B02-10	08	08-26-22	11:10	Soil	5			X									
B02-SWI-15	09	08-26-22	11:15	Soil	5			X									label B02-15 (NP) 8/24
B03-SWI-10	10	08-26-22	11:35	Soil	5			X									

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Jordan Morris</u>	Jordan Morris	ENW	08-26-22	18:00
Received by: <u>Ann W Bruya</u>	Ann W Bruya	FRB	08/27/22	1600
Relinquished by:				
Received by:		Samples received at	50C	

208430

SAMPLE CHAIN OF CUSTODY

08-27-22

VS-53 COS/VWY/CTZ/HLL

Report To Lynn Green
 Company Emen Northwest
 Address P.O. Box 14488
 City, State, ZIP Portland, OR 97223
 Phone (503) 452-5561 Email lynn@emen-nw.com

SAMPLERS (signature) Jordan Morris
 PROJECT NAME 1361-2201-02 PO #
 REMARKS INVOICE TO
 Project specific RLs? - Yes / No

Page # 2 of 2
 TURNAROUND TIME EO4
 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					
B04-10	11 A-E	08-26-22	12:30	Soil	5				X								(X) per LG 8/30/22 ME
B05-SWI-10.5	12	08-26-22	13:30	Soil	5				X								
B06-SWI-11.5	13	08-26-22	13:50	Soil	5				X					lined B06-SWI-11		Time 1550 (17) -11 8/29	
B07-SWI-11.5	14	08-26-22	15:25	Soil	5				X								
B08-SWI-10	15	08-26-22	14:10	Soil	5				X								
B09-10	16 ↓	08-26-22	16:19	Soil	5				X								
B04-15	17 A-E	8/26/22	1240		5				(X)								Added at lab 8/26/22
B09-SWI-11	18 ↓	8/26/22	1615		5				(X)								
B08-4.5	19 ↓	8/26/22	1430		5				(X)								

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Jordan Morris</u>	Jordan Morris	EMW	08-26-22	16:00
Received by: <u>[Signature]</u>	Ann W. Bruya	FRB	08/27/22	1600
Relinquished by:				
Received by:		Samples received at	5°C	

Analytical Laboratory Data Validation Check Sheet

Project Name: 152 N Arthur Street, Woodburn Project Number: 1361-22001-02
 Date of Review: 9/15/2022 Lab. Name: F&B Lab Batch ID #: 208430

Chain of Custody

- | | | | |
|--|---|--|--|
| 1.) Are all requested analyses reported? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| 2.) Were the requested methods used? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| 3.) Trip blank submitted? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | |
| 4.) Field blank submitted? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | |

Timing

- | | | | |
|--|---|-----------------------------|--|
| 5.) Samples extracted within holding times? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 6.) Analysis performed within holding times? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |

Quality Assurance/Quality Control

- | | | | |
|--|---|--|--|
| 7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs) | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| 8.) Are all reported values above either MRL or MDL? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| 9.) Are all values between the MDL & PQL tagged as trace? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 10a.) Are reporting limits raised for other reason besides high analyte conc.? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | |
| 10b.) If so, are they footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 11.) Lab method blank completed? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| 12.) Lab, Field, or Trip Blank(s) report detections? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |

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

Method blank result for methylene chloride was 11 ug/L which is above the reporting limit. The presence of the analyte was likely due to a laboratory contamination (lc).

- | | | | |
|---|---|-----------------------------|-----------------------------|
| 13.) For inorganics and metals, is there one method blank for each analyte? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | |
| 14.) For VOCs, is there one method blank for each day of analysis? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | |
| 15.) For SVOC's, is there one method blank for each extraction batch? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | |

Accuracy

- | | | | |
|--|---|--|-----------------------------|
| 16.) Is there a surrogate spike recovery for all VOC & SVOC samples? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| Do all surrogate spike recoveries meet accepted criteria? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | |
| If not, are all discrepancies footnoted? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |

Surrogate 2,4,6-Tribromophenol (d).

- | | | | |
|--|---|--|-----------------------------|
| 17.) Is there a spike recovery for all Laboratory Control Samples? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| Do all LCS/LCSD spike recoveries meet accepted criteria? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | |
| If not, are all discrepancies footnoted? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |

The reported value for methylene chloride fell outside the control limits established for this analyte (vo).

- | | | | |
|--|---|--|-----------------------------|
| 18.) Are all LCS/LCSD RPDs within acceptable limits? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |

See above (vo).

Precision

- | | | | |
|---|---|--|-----------------------------|
| 19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |

Chloroform was spiked 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

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

yes no NA

Comments:

Surrogate recoveries may not be meaningful due to raised detection limits from sample dilution (d).

Surrogate recovery for B01-GW-20, using method NWTPH-Gx, fell outside of control limits due to sample matrix effects (ip).

The analyte responses for naphthalene, ethylbenzene, n-Propylbenzene, and hexane exceeded the valid instrument calibration ranges; therefore, the values reported are an estimate (ve).

The sample chromatographic pattern for B01-GW-20, B02-GW-20, B03-GW-20, and B07-GW-20 does not resemble the diesel range fuel standard used for quantitation (x).

Initial Review By: LP

Final Review By: PT

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

January 3, 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 December 17, 2022 from the 1361-22001-02, F&BI 212302 project. There are 16 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
ENW0103R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 17, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1361-22001-02, F&BI 212302 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
212302 -01	B11-SWI-10.5
212302 -02	B11-GW-20
212302 -03	B12-SWI-10.5
212302 -04	B12-GW-20

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/03/23
Date Received: 12/17/22
Project: 1361-22001-02, F&BI 212302
Date Extracted: 12/19/22
Date Analyzed: 12/20/22

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

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)
B11-SWI-10.5 212302-01	<5	119
B12-SWI-10.5 212302-03	<5	117
Method Blank 02-2934 MB	<5	113

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/03/23
Date Received: 12/17/22
Project: 1361-22001-02, F&BI 212302
Date Extracted: 12/19/22
Date Analyzed: 12/20/22

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
B11-GW-20 212302-02	<100	116
B12-GW-20 212302-04	1,500	ip
Method Blank 02-2933 MB	<100	118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/03/23
Date Received: 12/17/22
Project: 1361-22001-02, F&BI 212302
Date Extracted: 12/19/22
Date Analyzed: 12/19/22

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

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)
B11-SWI-10.5 212302-01	<50	<250	114
B12-SWI-10.5 212302-03	<50	<250	112
Method Blank 02-3025 MB	<50	<250	112

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/03/23
Date Received: 12/17/22
Project: 1361-22001-02, F&BI 212302
Date Extracted: 12/19/22
Date Analyzed: 12/20/22

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND RESIDUAL RANGE
USING METHOD NWTPH-D_x**
Results Reported as ug/L (ppb)

<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 41-152)
B11-GW-20 212302-02 1/0.4	<50	<250	ip
B12-GW-20 212302-04 1/0.4	150 x	<250	151
Method Blank 02-3021 MB	<50	<250	141

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/03/23
Date Received: 12/17/22
Project: 1361-22001-02, F&BI 212302
Date Extracted: 12/19/22
Date Analyzed: 12/21/22

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND RESIDUAL RANGE
USING METHOD NWTPH-D_x
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)**

<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 41-152)
B12-GW-20 212302-04	86 x	<250	131
Method Blank 02-3021 MB	<50	<250	141

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B11-GW-20	Client:	Evren Northwest
Date Received:	12/17/22	Project:	1361-22001-02, F&BI 212302
Date Extracted:	12/27/22	Lab ID:	212302-02
Date Analyzed:	12/22/22	Data File:	122226.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Isopropylbenzene	<1
n-Propylbenzene	<1
1,3,5-Trimethylbenzene	<1
1,2,4-Trimethylbenzene	<1
Naphthalene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B12-GW-20	Client:	Evren Northwest
Date Received:	12/17/22	Project:	1361-22001-02, F&BI 212302
Date Extracted:	12/27/22	Lab ID:	212302-04
Date Analyzed:	12/27/22	Data File:	122706.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	lm

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	71	132
Toluene-d8	99	68	139
4-Bromofluorobenzene	119	62	136

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Isopropylbenzene	<1
n-Propylbenzene	<1
1,3,5-Trimethylbenzene	<1
1,2,4-Trimethylbenzene	<1
Naphthalene	<1

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:	1361-22001-02, F&BI 212302
Date Extracted:	12/20/22	Lab ID:	02-2976 mb
Date Analyzed:	12/20/22	Data File:	122007.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Isopropylbenzene	<1
n-Propylbenzene	<1
1,3,5-Trimethylbenzene	<1
1,2,4-Trimethylbenzene	<1
Naphthalene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/03/23

Date Received: 12/17/22

Project: 1361-22001-02, F&BI 212302

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

Laboratory Code: 212302-03 (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)	20	120	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/03/23

Date Received: 12/17/22

Project: 1361-22001-02, F&BI 212302

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

Laboratory Code: 212258-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	110	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	110	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/03/23

Date Received: 12/17/22

Project: 1361-22001-02, F&BI 212302

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

Laboratory Code: 212302-01 (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)	2,000	<50	105	105	70-130	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	2,000	105	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/03/23

Date Received: 12/17/22

Project: 1361-22001-02, F&BI 212302

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

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	1,000	84	85	70-130	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/03/23

Date Received: 12/17/22

Project: 1361-22001-02, F&BI 212302

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	1,000	109	108	70-130	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/03/23

Date Received: 12/17/22

Project: 1361-22001-02, F&BI 212302

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

Laboratory Code: 212284-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	102	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	100	50-150
Benzene	ug/L (ppb)	10	<0.35	103	50-150
Toluene	ug/L (ppb)	10	<1	100	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	102	50-150
Ethylbenzene	ug/L (ppb)	10	<1	102	50-150
m,p-Xylene	ug/L (ppb)	20	<2	101	50-150
o-Xylene	ug/L (ppb)	10	<1	104	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	97	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	107	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	105	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	109	50-150
Naphthalene	ug/L (ppb)	10	<1	67	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	103	101	70-130	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	101	99	70-130	2
Benzene	ug/L (ppb)	10	105	104	70-130	1
Toluene	ug/L (ppb)	10	101	101	70-130	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	102	102	70-130	0
Ethylbenzene	ug/L (ppb)	10	101	102	70-130	1
m,p-Xylene	ug/L (ppb)	20	102	101	70-130	1
o-Xylene	ug/L (ppb)	10	104	104	70-130	0
Isopropylbenzene	ug/L (ppb)	10	99	95	70-130	4
n-Propylbenzene	ug/L (ppb)	10	103	100	70-130	3
1,3,5-Trimethylbenzene	ug/L (ppb)	10	103	100	70-130	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	104	99	70-130	5
Naphthalene	ug/L (ppb)	10	89	85	70-130	5

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. The value reported is an estimate.

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

212302

SAMPLE CHAIN OF CUSTODY

12/17/22

VW2 / I3 / G1 / VS-D1
Page # 1 of 1

Report To Lynn Green
 Company Evon Northwest
 Address P.O. Box 14488
 City, State, ZIP Portland, OR 97293
 Phone (503) 452-4367 Email lynnj@evon-nw.com

SAMPLERS (signature) Jordan Mann

PROJECT NAME 1361-22001-02 PO # _____

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

TURNAROUND TIME N/A

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	RSDM VOCs	Dx 1/56				
B11-SWI-10.5	01A-E	12-16-22	10:28	Soil	5	X	X											● per PT 12/20/22
B11-GW-20	02A-G	12-16-22	12:02	GW	7	X	X			X								nc
B12-SWI-10.5	03A-E	12-16-22	9:10	Soil	5	X	X											
B12-GW-20	04A-G	12-16-22	11:50	GW	7	X	X			X								

Samples received at 4 °C

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Jordan Mann</u>	Jordan Mann	Evon Northwest	12-16-22	18:00
Received by: <u>Liz Wessber</u>	Liz Wessber - Bjo	F?B	12/17/22	1200
Relinquished by:				
Received by:				

(NP)

Analytical Laboratory Data Validation Check Sheet

Project Name: 152 N Arthur Street, Woodburn

Project Number: 1361-22001-02

Date of Review: 1/3/2023

Lab. Name: F&B

Lab Batch ID #: 212302

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?
If yes, indicate blank type, chemical(s) and concentration(s): yes no
- 13.) For inorganics and metals, is there one method blank for each analyte?
If not, are all discrepancies footnoted? yes no NA
- 14.) For VOCs, is there one method blank for each day of analysis?
If not, are all discrepancies footnoted? yes no NA
- 15.) For SVOC's, is there one method blank for each extraction batch?
If not, are all discrepancies footnoted? yes no NA

Accuracy

- 16.) Is there a surrogate spike recovery for all VOC & SVOC samples?
Do all surrogate spike recoveries meet accepted criteria? yes no NA
If not, are all discrepancies footnoted? yes no NA

GRO recovery for sample B12-GW-20 fell outside of control limits due to sample matrix effects. (ip)**DRO & RRO recovery for sample B11-GW-20 fell outside of control limits due to sample matrix effects. (ip)**

- 17.) Is there a spike recovery for all Laboratory Control Samples?
Do all LCS/LCSD spike recoveries meet accepted criteria? yes no NA
If not, are all discrepancies footnoted? yes no NA
- 18.) Are all LCS/LCSD RPDs within acceptable limits?
If not, are all discrepancies footnoted? yes no NA

Gasoline was not detected in soil & water Duplicate analyses. Therefore, calculation of the RPD is not applicable. (nm)Precision

- 19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits?
If not, are all discrepancies footnoted? yes no NA
 yes no NA
- 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits?
If not, are all discrepancies footnoted? yes no NA
 yes no NA

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

yes no NA

Comments:

The B12-GW-20 chromatographic pattern does not resemble the fuel standard used for DRO quantitation. (x)

Initial Review By: AR

Final Review By: PT

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

January 6, 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 December 28, 2022 from the 1361-22001-04, F&BI 212370 project. There are 17 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
ENW0106R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 28, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1361-22001-04, F&BI 212370 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
212370 -01	B13-6.5
212370 -02	CONTENTS-221227

The 8260D calibration standard failed the acceptance criteria for acetone. The data were flagged accordingly.

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

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/06/23
Date Received: 12/28/22
Project: 1361-22001-04, F&BI 212370
Date Extracted: 12/28/22
Date Analyzed: 12/28/22

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

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

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

<u>Sample ID</u> Laboratory ID	<u>Gasoline</u>	<u>Diesel</u>	<u>Heavy Oil</u>	Surrogate (% Recovery) (Limit 50-150)
B13-6.5 212370-01	ND	ND	ND	102
Method Blank 02-3064 MB	ND	ND	ND	103

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B13-6.5	Client:	Evren Northwest
Date Received:	12/28/22	Project:	1361-22001-04, F&BI 212370
Date Extracted:	12/29/22	Lab ID:	212370-01
Date Analyzed:	12/29/22	Data File:	212370-01.090
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	7.52
Barium	205
Cadmium	<1
Lead	10.5
Mercury	<1
Selenium	<1
Silver	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	B13-6.5	Client:	Evren Northwest
Date Received:	12/28/22	Project:	1361-22001-04, F&BI 212370
Date Extracted:	12/29/22	Lab ID:	212370-01 x10
Date Analyzed:	01/03/23	Data File:	212370-01 x10.082
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

Analyte:	Concentration mg/kg (ppm)
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Chromium	14.6
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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:	1361-22001-04, F&BI 212370
Date Extracted:	12/29/22	Lab ID:	I2-932 mb
Date Analyzed:	12/29/22	Data File:	I2-932 mb.044
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	WE

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	CONTENTS-221227	Client:	Evren Northwest
Date Received:	12/28/22	Project:	1361-22001-04, F&BI 212370
Date Extracted:	12/28/22	Lab ID:	212370-02
Date Analyzed:	12/28/22	Data File:	212370-02.052
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Barium	71.8
Cadmium	1.35
Chromium	1.04
Lead	44.9
Mercury	<1
Selenium	<1
Silver	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1361-22001-04, F&BI 212370
Date Extracted:	12/28/22	Lab ID:	I2-928 mb2
Date Analyzed:	12/28/22	Data File:	I2-928 mb2.050
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	CONTENTS-221227	Client:	Evren Northwest
Date Received:	12/28/22	Project:	1361-22001-04, F&BI 212370
Date Extracted:	12/30/22	Lab ID:	212370-02
Date Analyzed:	12/30/22	Data File:	123023.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	71	132
Toluene-d8	91	68	139
4-Bromofluorobenzene	98	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

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:	1361-22001-04, F&BI 212370
Date Extracted:	12/30/22	Lab ID:	02-2991 mb
Date Analyzed:	12/30/22	Data File:	123007.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	71	132
Toluene-d8	95	68	139
4-Bromofluorobenzene	103	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	CONTENTS-221227	Client:	Evren Northwest
Date Received:	12/28/22	Project:	1361-22001-04, F&BI 212370
Date Extracted:	12/28/22	Lab ID:	212370-02
Date Analyzed:	12/28/22	Data File:	122816.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	42	24	127

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

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:	1361-22001-04, F&BI 212370
Date Extracted:	12/28/22	Lab ID:	02-3062 mb2 1/0.5
Date Analyzed:	12/28/22	Data File:	122814.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	49	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.05
Aroclor 1232	<0.05
Aroclor 1016	<0.05
Aroclor 1242	<0.05
Aroclor 1248	<0.05
Aroclor 1254	<0.05
Aroclor 1260	<0.05
Aroclor 1262	<0.05
Aroclor 1268	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/06/23

Date Received: 12/28/22

Project: 1361-22001-04, F&BI 212370

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

Laboratory Code: 212370-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	6.61	84	98	75-125	15
Barium	mg/kg (ppm)	50	153	50 b	139b	75-125	94 b
Cadmium	mg/kg (ppm)	10	<5	105	103	75-125	2
Chromium	mg/kg (ppm)	50	13.3	96	96	75-125	0
Lead	mg/kg (ppm)	50	8.65	97	98	75-125	1
Mercury	mg/kg (ppm)	5	<5	105	100	75-125	5
Selenium	mg/kg (ppm)	5	<5	85	93	75-125	9
Silver	mg/kg (ppm)	10	<5	103	99	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	85	80-120
Barium	mg/kg (ppm)	50	97	80-120
Cadmium	mg/kg (ppm)	10	99	80-120
Chromium	mg/kg (ppm)	50	112	80-120
Lead	mg/kg (ppm)	50	103	80-120
Mercury	mg/kg (ppm)	5	102	80-120
Selenium	mg/kg (ppm)	5	81	80-120
Silver	mg/kg (ppm)	10	91	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/06/23

Date Received: 12/28/22

Project: 1361-22001-04, F&BI 212370

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

Laboratory Code: 212351-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	1.73	117	114	75-125	3
Barium	ug/L (ppb)	50	30.9	95	98	75-125	3
Cadmium	ug/L (ppb)	5	<1	94	94	75-125	0
Chromium	ug/L (ppb)	20	5.69	86	86	75-125	0
Lead	ug/L (ppb)	10	<1	79	77	75-125	3
Mercury	ug/L (ppb)	5	<1	88	86	75-125	2
Selenium	ug/L (ppb)	5	1.56	101	100	75-125	1
Silver	ug/L (ppb)	5	<1	96	94	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	91	80-120
Barium	ug/L (ppb)	50	94	80-120
Cadmium	ug/L (ppb)	5	95	80-120
Chromium	ug/L (ppb)	20	95	80-120
Lead	ug/L (ppb)	10	96	80-120
Mercury	ug/L (ppb)	5	97	80-120
Selenium	ug/L (ppb)	5	97	80-120
Silver	ug/L (ppb)	5	89	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/06/23

Date Received: 12/28/22

Project: 1361-22001-04, F&BI 212370

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

Laboratory Code: 212388-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<10	83	50-150
Chloromethane	ug/L (ppb)	10	<10	88	50-150
Vinyl chloride	ug/L (ppb)	10	<0.2	92	16-176
Bromomethane	ug/L (ppb)	10	<1	101	10-193
Chloroethane	ug/L (ppb)	10	<1	98	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	84	50-150
Acetone	ug/L (ppb)	50	<10	50	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	89	50-150
Hexane	ug/L (ppb)	10	<1	65	49-161
Methylene chloride	ug/L (ppb)	10	<5	84	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	88	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	85	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	89	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	95	10-335
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	87	50-150
Chloroform	ug/L (ppb)	10	<1	88	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<10	80	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	96	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	86	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	82	50-150
Carbon tetrachloride	ug/L (ppb)	10	<1	84	50-150
Benzene	ug/L (ppb)	10	<0.35	88	50-150
Trichloroethene	ug/L (ppb)	10	<1	82	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	84	50-150
Bromodichloromethane	ug/L (ppb)	10	<1	86	50-150
Dibromomethane	ug/L (ppb)	10	<1	86	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	85	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	86	48-145
Toluene	ug/L (ppb)	10	<1	95	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	90	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	97	50-150
2-Hexanone	ug/L (ppb)	50	<10	101	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	94	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	89	50-150
Dibromochloromethane	ug/L (ppb)	10	<1	92	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	95	50-150
Chlorobenzene	ug/L (ppb)	10	<1	89	50-150
Ethylbenzene	ug/L (ppb)	10	<1	95	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	94	50-150
m,p-Xylene	ug/L (ppb)	20	<2	93	50-150
o-Xylene	ug/L (ppb)	10	<1	93	50-150
Styrene	ug/L (ppb)	10	<1	89	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	89	50-150
Bromoform	ug/L (ppb)	10	<1	89	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	92	50-150
Bromobenzene	ug/L (ppb)	10	<1	95	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	90	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	104	10-235
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	100	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	93	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	92	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	90	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	89	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	86	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	91	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	91	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	91	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	94	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	84	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<1	78	42-150
Naphthalene	ug/L (ppb)	10	<1	90	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	89	44-155

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/06/23

Date Received: 12/28/22

Project: 1361-22001-04, F&BI 212370

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	84	100	70-130	17
Chloromethane	ug/L (ppb)	10	88	97	70-130	10
Vinyl chloride	ug/L (ppb)	10	97	111	70-130	13
Bromomethane	ug/L (ppb)	10	115	131	28-182	13
Chloroethane	ug/L (ppb)	10	101	119	70-130	16
Trichlorofluoromethane	ug/L (ppb)	10	86	103	70-130	18
Acetone	ug/L (ppb)	50	53	60	42-155	12
1,1-Dichloroethene	ug/L (ppb)	10	92	109	70-130	17
Hexane	ug/L (ppb)	10	86	103	50-161	18
Methylene chloride	ug/L (ppb)	10	87	106	29-192	20
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	86	106	70-130	21 vo
trans-1,2-Dichloroethene	ug/L (ppb)	10	88	103	70-130	16
1,1-Dichloroethane	ug/L (ppb)	10	89	107	70-130	18
2,2-Dichloropropane	ug/L (ppb)	10	106	127	70-130	18
cis-1,2-Dichloroethene	ug/L (ppb)	10	89	105	70-130	16
Chloroform	ug/L (ppb)	10	88	106	70-130	19
2-Butanone (MEK)	ug/L (ppb)	50	69	83	50-157	18
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	98	116	70-130	17
1,1,1-Trichloroethane	ug/L (ppb)	10	86	104	70-130	19
1,1-Dichloropropene	ug/L (ppb)	10	88	105	70-130	18
Carbon tetrachloride	ug/L (ppb)	10	83	102	70-130	21 vo
Benzene	ug/L (ppb)	10	89	107	70-130	18
Trichloroethene	ug/L (ppb)	10	86	101	70-130	16
1,2-Dichloropropane	ug/L (ppb)	10	86	101	70-130	16
Bromodichloromethane	ug/L (ppb)	10	86	105	70-130	20
Dibromomethane	ug/L (ppb)	10	93	103	70-130	10
4-Methyl-2-pentanone	ug/L (ppb)	50	81	98	70-130	19
cis-1,3-Dichloropropene	ug/L (ppb)	10	88	102	70-130	15
Toluene	ug/L (ppb)	10	86	106	70-130	21 vo
trans-1,3-Dichloropropene	ug/L (ppb)	10	87	105	70-130	19
1,1,2-Trichloroethane	ug/L (ppb)	10	85	105	70-130	21 vo
2-Hexanone	ug/L (ppb)	50	81	102	69-130	23 vo
1,3-Dichloropropane	ug/L (ppb)	10	84	104	70-130	21 vo
Tetrachloroethene	ug/L (ppb)	10	84	106	70-130	23 vo
Dibromochloromethane	ug/L (ppb)	10	83	101	63-142	20
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	83	102	70-130	21 vo
Chlorobenzene	ug/L (ppb)	10	81	101	70-130	22 vo
Ethylbenzene	ug/L (ppb)	10	86	108	70-130	23 vo
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	84	104	70-130	21 vo
m,p-Xylene	ug/L (ppb)	20	85	107	70-130	23 vo
o-Xylene	ug/L (ppb)	10	84	106	70-130	23 vo
Styrene	ug/L (ppb)	10	81	100	70-130	21 vo
Isopropylbenzene	ug/L (ppb)	10	80	101	70-130	23 vo
Bromoform	ug/L (ppb)	10	83	103	50-157	22 vo
n-Propylbenzene	ug/L (ppb)	10	85	109	70-130	25 vo
Bromobenzene	ug/L (ppb)	10	84	105	70-130	22 vo
1,3,5-Trimethylbenzene	ug/L (ppb)	10	83	105	52-150	23 vo
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	92	114	70-130	21 vo
1,2,3-Trichloropropane	ug/L (ppb)	10	87	109	70-130	22 vo
2-Chlorotoluene	ug/L (ppb)	10	87	107	70-130	21 vo
4-Chlorotoluene	ug/L (ppb)	10	88	109	70-130	21 vo
tert-Butylbenzene	ug/L (ppb)	10	83	107	70-130	25 vo
1,2,4-Trimethylbenzene	ug/L (ppb)	10	82	103	70-130	23 vo
sec-Butylbenzene	ug/L (ppb)	10	83	106	70-130	24 vo
p-Isopropyltoluene	ug/L (ppb)	10	83	105	70-130	23 vo
1,3-Dichlorobenzene	ug/L (ppb)	10	86	107	70-130	22 vo
1,4-Dichlorobenzene	ug/L (ppb)	10	83	103	70-130	22 vo
1,2-Dichlorobenzene	ug/L (ppb)	10	84	104	70-130	21 vo
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	89	104	70-130	16
1,2,4-Trichlorobenzene	ug/L (ppb)	10	79	99	70-130	22 vo
Hexachlorobutadiene	ug/L (ppb)	10	79	99	70-130	22 vo
Naphthalene	ug/L (ppb)	10	80	101	70-130	23 vo
1,2,3-Trichlorobenzene	ug/L (ppb)	10	81	99	69-143	20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/06/23

Date Received: 12/28/22

Project: 1361-22001-04, F&BI 212370

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

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.13	46	49	25-111	6
Aroclor 1260	ug/L (ppb)	0.13	55	65	23-123	17

FRIEDMAN & BRUYA, INC.

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Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Analytical Laboratory Data Validation Check Sheet

Project Name: 152 N Arthur Street, Woodburn Project Number: 1361-22001-04
 Date of Review: 1/6/2023 Lab. Name: F&B Lab Batch ID #: 212370

Chain of Custody

- | | | | |
|--|---|--|--|
| 1.) Are all requested analyses reported? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| 2.) Were the requested methods used? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| 3.) Trip blank submitted? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | |
| 4.) Field blank submitted? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | |

Timing

- | | | | |
|--|---|-----------------------------|--|
| 5.) Samples extracted within holding times? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 6.) Analysis performed within holding times? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |

Quality Assurance/Quality Control

- | | | | |
|--|---|--|--|
| 7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs) | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| 8.) Are all reported values above either MRL or MDL? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| 9.) Are all values between the MDL & PQL tagged as trace? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 10a.) Are reporting limits raised for other reason besides high analyte conc.? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | |
| 10b.) If so, are they footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 11.) Lab method blank completed? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| 12.) Lab, Field, or Trip Blank(s) report detections? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | |
| If yes, indicate blank type, chemical(s) and concentration(s): | | | |
| 13.) For inorganics and metals, is there one method blank for each analyte? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | |
| 14.) For VOCs, is there one method blank for each day of analysis? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | |
| 15.) For SVOC's, is there one method blank for each extraction batch? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | |

Accuracy

- | | | | |
|--|---|--|--|
| 16.) Is there a surrogate spike recovery for all VOC & SVOC samples? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| Do all surrogate spike recoveries meet accepted criteria? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 17.) Is there a spike recovery for all Laboratory Control Samples? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| Do all LCS/LCSD spike recoveries meet accepted criteria? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 18.) Are all LCS/LCSD RPDs within acceptable limits? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |

The value reported for VOC 8260D fell outside the control limits established for 33 analytes. (vo)

Precision

- | | | | |
|---|---|--|-----------------------------|
| 19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |

Barium was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful. (b)

- | | | | |
|---|---|--|-----------------------------|
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |

Barium was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful. (b)

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

Comments:

The calibration results for Acetone were outside of acceptance criteria, for both CONTENTS sample and Method Blank. The value reported is an estimate. (ca)

Initial Review By: AR

Final Review By: PT

Appendix E

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												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 25%; text-align: center;">Gasoline</th> <th style="width: 25%; text-align: center;">Diesel</th> </tr> </thead> <tbody> <tr> <td>Level 1: > 40 pts.</td> <td style="text-align: center;">40</td> <td style="text-align: center;">100</td> </tr> <tr> <td>Level 2: 25 - 40 pts.</td> <td style="text-align: center;">80</td> <td style="text-align: center;">500</td> </tr> <tr> <td>Level 3: < 25 pts.</td> <td style="text-align: center;">130</td> <td style="text-align: center;">1000</td> </tr> </tbody> </table>		Gasoline	Diesel	Level 1: > 40 pts.	40	100	Level 2: 25 - 40 pts.	80	500	Level 3: < 25 pts.	130	1000
	Gasoline	Diesel											
Level 1: > 40 pts.	40	100											
Level 2: 25 - 40 pts.	80	500											
Level 3: < 25 pts.	130	1000											
Level 1: > 40 pts.	40	100											
Level 2: 25 - 40 pts.	80	500											
Level 3: < 25 pts.	130	1000											