GROUND WATER DELINEATION AND FOCUSED BENEFICIAL WATER USE DETERMINATION

INDUSTRIAL PROPERTY

10103 NE Marx Street
Portland, Oregon

Prepared for:

Blackstone Consulting
Attn: Allan Coffee
Santa Ana, California
(714) 343-7014
acoffee@blackstoneconsulting.com

Issued on:

September 8, 2023
EVREN NORTHWEST, INC.
Project No. 1460-23001-04

Offices in Portland and Bend, OR / San Rafael, CA
P.O. Box 14488, Portland, Oregon 97293
T. 503-452-5561 / E. ENW@EVREN-NW.com

This

Ground Water Delineation

and Focused beneficial Water Use Determination

Report for:

Industrial Property

10103 NE Marx Street
Portland, Oregon

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

Blackstone Consulting
Attn: Allan Coffee
Santa Ana, CA
(714) 343-7014
acoffee@blackstoneconsulting.com

and its assignees

Issued September 8, 2023 *by:*

EVREN NORTHWEST INC.
environmental & natural resource consultants

REGISTERED PROFESSIONAL GEOLOGIST
OREGON
PAUL M. TRONE
No. G1178
EXP 1-1-24

CERTIFIED ENGINEERING GEOLOGIST
OREGON
LYNN DELAVAN GREEN
E2332
EXP. 2/1/2024

Paul M. Trone 10/2

Paul M. Trone, R.G.
Principal Geologist

Lynn D. Green, C.E.G.
Principal Engineering Geologist

Table of Contents

List of Tables, Figures and Appendices

Tables

IN TEXT (*labeled by Section – Number)*

AFTER TEXT (*following 'Tables' tab)*

Figures

Appendices

List of Acronyms and Abbreviations

ACM	asbestos-containing material
AST	above-ground storage tank
ASTM	American Society for Testing and Materials
bgs	below ground surface
BWUD	Beneficial Water Use Determination
CE	Commercial Employment
CFSLs	clean fill screening levels
Client	Blackstone Consulting, LLC (Blackstone)
CMMP	Contaminated Media Management Plan
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
COPCs	constituents of potential concern
COIs	constituents of interest
CRSA	Columbia River Sand Aquifer
CSSWF	Columbia South Shore Well Field
CU1	Confining Unit 1
CU2	Confining Unit 2
cVOC	chlorinated volatile organic constituents
DOT	Department of Transportation
DPT	direct-push technology
DRO	diesel-range organics
DU	decision unit
EAS	Environmental Analytical Service, Inc.
ECSI	Environmental Cleanup Site Inventory
EG2	General Employment 2
ENW	EVREN Northwest, Inc.
EPA	US Environmental Protection Agency
ESA	Environmental Site Assessment
F&BI	Friedman and Bruya, Inc.
FSDS	Field Sampling Data Sheet
GPR	ground penetrating radar
GRO	gasoline-range organics
GWD	Ground Water Delineation
HCID	hydrocarbon identification
HREC	Historical Recognized Environmental Condition
I-205	Interstate 205
IBC	Intermediate Bulk Container
IG1	General Industrial 1
IG2	General Industrial 2
ITRC	Interstate Technology Regulatory Council
ISM	Incremental Sample Methodology
LUST	Leaking Underground Storage Tank
µg/L	micrograms per Liter
mg/Kg	milligrams per Kilogram
mg/L	milligrams per liter
$\mu g/m^3$	micrograms per cubic meter
MRL	method reporting limit
NBBS	n butyl benzenesulfonamide
NFA	No Further Action
O_2	oxygen
O&M	operations and maintenance
OAR	Oregon Administrative Rules
OB	Overbank (deposits)
ODEQ	Oregon Department of Environmental Quality
ODOT	Oregon Department of Transportation
OSHA	Occupational Safety and Health Administration
PAHs	polynuclear aromatic hydrocarbons
Pal	recent alluvium
PCBs	polychlorinated biphenyls
PCE	tetrachloroethylene
PDX	Portland International Airport
PID	photoionization detector
Ppm	parts per million
Ppmv	parts per million by volume
Qa or Qal	Quaternary Alluvium
RBCs	risk-based concentrations
RBDM	ODEQ's *Risk-Based Decision Making for the Remediation of Contaminated Sites* guidance document
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RMP	Residential Manufactured Dwelling Park
ROW	right-of-way
RRO	residual (oil)-range organics

SAP	Sampling and Analysis Plan
SGA	Sand and Gravel Aquifer
SLR	SLR International Corporation
SLRBCs	screening-level risk-based concentrations
SOW	scope of work
SVOC	semi-volatile organic constituent
SWI	soil/water interface
TCE	trichloroethylene
TPH	Total Petroleum Hydrocarbons
UG/TGA	Unconsolidated Gravel/ Troutdale Gravel Aquifer
UIC	Underground Injection Control
USCS	Unified Soil Classification System
USGS	U.S. Geological Survey
UST	underground storage tank
VECs	Vapor Encroachment Conditions
VISL	Vapor Intrusion Screening Levels
VOCs	volatile organic constituents

1.0 Introduction

At the request of Blackstone Consulting, LLC (Blackstone - Client), EVREN Northwest, Inc. (ENW) prepared this Ground Water Delineation and Focused Beneficial Water Use Determination (BWUD) report for the subject site (10103 NE Marx Street, Portland, Oregon; see Figures 1 and 2).

This additional evaluation was conducted to complete the delineation of ground water impacts identified in ENW's *Draft Phase II Environmental Site Assessments* (ESA)[1], which addressed environmental concerns identified by Blackstone, Consulting, LLC (Blackstone) in their *Phase I ESA (DRAFT)*.[2]

This report summarizes the background and purpose of the ground water delineation, field methods and observations, and the findings of laboratory analyses. The Focused BWUD portion of this report further evaluates ground-water use in the site vicinity and provides an assessment of potential impacts to beneficial uses, if any. This further investigation is photographically documented (Appendix A).

2.0 Salient Background

2.1 Historical Land Use

According to historical information provided by Blackstone, various business entities have occupied the subject property since the 1970s. Industrial activities on the subject property have included a drum reconditioning and intermediate bulk container (IBC) processing operation from approximately the 1970s until the site was reportedly vacated in 2022. Site operations included restoration of empty containers previously used for chemical and liquid storage by various industrial and agricultural operations whereby the containers were cleaned inside the warehouse building using a phosphate detergent and hot water and other cleaning solutions. The refurbished containers were sold to customers for re-use.

Surrounding properties began transitioning to industrial use in the 1950s. Several commercial/warehouse buildings and a lumber storage yard were initially present on the south and southwest adjoining properties beginning in the 1970s, with the lumber operation later becoming the current Oregon Department of Transportation (ODOT) East Portland Maintenance Yard. The east-adjoining property was operated as a salvage yard in the 1960s, and a commercial waste handling/recycling company occupied the southeast-adjacent property by the 1970s. The present-day multi-use public pathway and Interstate 205 (I-205) Sandy Boulevard onramp have bordered the site to the northwest since the 1980s. Current nearby businesses include an auto body shop, waste handling facility and storage yard to the east, and a paving contractor to the south.

[1] ENW, May 18, 2023. *Focused Phase II Environmental Site Assessment, Industrial Property, 10103 NE Marx Street, Portland, Oregon (Draft)*: Prepared for: Blackstone Consulting, Attn: Allan Coffee, Santa Ana, California.

[2] Blackstone Consulting, LLC 2022. *Phase I Environmental Site Assessment Report, 5.3-Acre Industrial Property, 10103 Northeast Marx Street, Portland, Oregon*: Prepared for Crest Partners, dated January 15, 2023.

2.2 Previous Environmental Investigations

Blackstone prepared a Draft Phase I ESA (Draft for Discussion Purposes Only) of the 5.3-acre subject property in January 2023.[2] The stated purpose of Blackstone's Phase I ESA was to "investigate and identify *recognized environmental conditions* (RECs) in accordance with American Society for Testing and Materials (ASTM) Standard E1527-21. ENW understands the Phase I ESA was performed in anticipation of a potential property transaction. The findings of the Phase I ESA were as follows:

- ***Prior Use of Subject Property:*** *The subject property is listed on various regulatory databases for the generation of hazardous wastes, including ignitable/corrosive wastes, chromium, lead, and solvents; and the Underground Injection Control (UIC) database for an unregistered storm water drainage UIC. The subject property was identified as a "significant noncomplier" between 2020 and 2022, with informal enforcement actions issued. Although previous environmental investigations have been completed at the subject property, the investigations were limited to surficial soil sampling, did not include characterization or investigation of groundwater, and did not address the prior operational areas within the warehouse building. Based on the long-term use of the subject property as a drum reconditioning and container processing facility (approximately 45 years), the limited data available regarding the prior operational areas and groundwater at the subject property, and the recent regulatory violations issued, the prior use of the subject property as a steel drum reconditioning and container processing facility is considered a REC.*

- ***Current/Prior Use of Adjoining Properties:*** *Industrial uses on adjoining properties to the east, southeast, and southwest date to the 1960s and 1970s and include an auto wrecking/salvage yard, vehicle maintenance, sandblasting, steam cleaning, engine rebuilding/repair, and recycling operations. Regulatory listings associated with the properties note the use of underground storage tanks (USTs), hazardous waste generation and management, and ODEQ involvement recommending further investigation. In addition, the industrial property uses in the subject property area commenced prior to the establishment of modern regulations regarding the handling of hazardous materials and waste. Blackstone encountered no evidence of comprehensive environmental investigations into historical adjoining property uses from ODEQ online resources; therefore, based on the inferred groundwater flow direction and close proximity to the subject property, the current and former industrial uses of adjoining properties are considered RECs and vapor encroachment concerns (VECs).*

- ***Polychlorinated biphenyl (PCB)-Impacted Soil and Stormwater Runoff:*** *The subject property (also known as the Former Myers Container Site) was identified as ECSI Site ID #2062 in association with the investigation and cleanup actions focused on PCB-contaminated soil in stormwater. According to ODEQ records, the subject property was previously owned by various entities and operated as a drum reconditioning and intermediate bulk container processing facility since 1977. In the late-1990s/early-2000s, the subject property was evaluated due to elevated levels of PCBs found in sediment in the nearby Johnson Lake to the west, which is the discharge point for the two stormwater runoff ponds located on the subject property. A potential source of the PCBs was attributed to historical container management operations at the subject property. Source control measures were conducted at the subject property in 2003, and later in 2012-2013. These cleanup measures included the excavation and removal of PCB contaminated shallow soil and sediment*

from select surface areas, the on-site ponds, and the associated catch basin/pipeline/culvert. These source control measures adequately addressed PCB contamination along the stormwater migration pathway and residual PCB contamination identified in the subject property shallow soil. A No Further Action (NFA) determination was issued by ODEQ for the subject property on September 17, 2014. Based on the completed cleanup actions and the issuance of a NFA letter, the PCB contamination identified in near-surface soil resulting from historic container management operations at the subject property is considered a HREC.

- ***Former Underground Storage Tanks (USTs):*** *Two former USTs were located on the subject property and removed in 1997. The locations and contents of the USTs were not reported. However, regulatory information indicated that confirmation soil sampling was performed, and up to 302 ppm diesel-range petroleum hydrocarbon contamination was discovered during the decommissioning, which was below the applicable 500 ppm cleanup level. Groundwater was reportedly not encountered during the UST removal activities. The ODEQ issued a NFA determination for the removal of the USTs on September 26, 2000. Based on the absence of significant contamination and issuance of a NFA letter, the former USTs are considered a HREC.*

- ***Asbestos-Containing Materials (ACM):*** *Based on the construction date of the subject property building (circa 1977-1978) and the limited nature of Blackstone's visual survey, Blackstone recommends preparing and implementing a subject property-specific Asbestos Operations and Maintenance (O&M) Program. In addition, Blackstone recommends compliance with Occupational Safety and Health Administration (OSHA) regulations requiring the identification of presumed ACM as well as training, notification, and labeling requirements in operational areas.*

In February and April of 2023, Blackstone engaged ENW to conduct a *Focused Phase II****Error! Bookmark not defined.*** *to* further investigate possible environmental concerns associated with the historical uses of the subject property. The results of the Focused Phase II identified environmental impacts by hazardous substances and/or petroleum hydrocarbons in the following areas.

- **Pond Sediments (DU01 and DU02).** Elevated PCBs, total lead, and PAHs in pond sediments are potential sources of storm water pollutants that, if discharged offsite, could adversely impact nearby surface water bodies within the Columbia Slough Source Control Study Area.

- **Sump Features Inside Warehouse (MA02 and MA03).** Soils are impacted with DRO, RRO, PAHs, and VOCs, including chlorinated VOCs PCE and TCE and shallow ground water is impacted PCE/TCE, vinyl chloride, GRO, DRO, RRO, ethylbenzene, and naphthalene. Ground water impacts extend west to B17; however, have not been fully delineated at this time.

- **Suspected UST (MA10).** The abandoned UST near the southwest corner of the warehouse is a possible source of petroleum hydrocarbons in shallow ground water near B12 immediately north of the UST. Ground water impacts include moderate levels of GRO, DRO, RRO and naphthalene. Ground water impacts appear to increase to the north at B17 and northwest at B18 and may be comingling with ground water containing petroleum and chlorinated solvents beneath the warehouse building. The comingled ground water plumes appear to be delineated further to the north near B07 and to the northwest by B20, to the south by B06 and B19, and to the east by B16. The sandy fill material observed within the UST does not appear to be impacted with petroleum hydrocarbons or RCRA 8 metals above applicable screening levels.

- **Vapor Intrusion Conditions Beneath On-site Warehouse Building.** PCE and/or TCE are present at SUB01, SUB02, SUB04, SUB05, SUB06 and in soil gas sample SG01 at concentrations exceeding screening levels. The source of chlorinated compounds in sub-slab vapor and soil gas appears to be related to PCE/TCE and vinyl chloride impacts to soil and ground water beneath the southern portion of the warehouse building.
- **West Yard and North Yard Areas.** Soil impacts were generally absent in borings B07 and B20 in the West Yard and B08, B09, B10, and B11 in the North Yard. Reconnaissance ground water samples from these borings revealed only relatively low, laboratory-flagged detections of DRO and chloroform exceeding the SLRBCs. Chloroform is often detected in areas where chlorinated tap water from a municipal water source may have leaked from subsurface water lines. These findings suggest relatively little environmental impacts beneath the yard areas.

3.0 Scope of Work

ENW completed the following SOW for this project:

- Called One Call Utility Notification Service to identify and locate all public utilities near each of the proposed sampling locations.
- Performed a private utility locates at the site to clear proposed boring locations.
- Advanced five temporary soil borings and collected soil/water interface and reconnaissance ground water samples for laboratory analysis.
- Submitted soil and reconnaissance ground water samples to an independent laboratory for appropriate analysis.
- Evaluated analytical results with respect to Oregon Department of Environmental Quality (ODEQ) cleanup standards and risk-based guidance documents.
- Prepared this report documenting the work conducted with findings.

4.0 Site Setting

4.1 Description and Location

The 5.3-acre subject property is identified as Multnomah County parcel numbers R235909 and R235911. The subject address is 10103 NE Marx Street in northeast Portland, Oregon (Figures 1 and 2).

The property is located in an industrial district reclaimed from former wetlands within the alluvial flood plain of the Columbia River. At the time of this focused Phase II assessment, the subject property was noted to be developed with a single-story warehouse constructed in the 1970s. There is an excavated slope on the southern and western edges of the property and two retention ponds/bioswales in the central portion of the site. Except for the excavated slopes and drainage ponds, the site has been paved or covered with compacted gravel and dirt. A chain link and corrugated metal fence surrounded the site

perimeter. Land use in the vicinity includes a mix of industrial properties and I-205. The subject property was vacant and not in use.

The subject property is bounded to the northwest by I-205. Johnson Lake lies beyond I-205 right-of-way. Several industrial properties are found nearby, including an Auto body shop and Painting business, automobile salvage yard, and industrial warehouse buildings.

4.2 Cultural Setting

The subject site and adjacent properties are zoned General Industrial 2 (IG2), which tend to be located in industrial areas like the Columbia Corridor (see Figure 3). In comparison to General Industrial 1 (IG1)-zoned areas, IG2-zoned areas are less well developed, have larger-sized lots of irregular or large block pattern, and have medium and low building coverages usually set back from the street.[3] Specific uses include manufacturing, warehouse and freight movement, wholesale sales, industrial service, railroad yards, parks and open spaces. Zoning overlays at the subject site include:

- Aircraft Landing (h): provides safer operating conditions for aircraft in the vicinity of Portland International Airport (PDX) by limiting the height of structures and vegetation.
- Portland International Airport Noise Impact (x): reduces the impact of aircraft noise on development within the noise impact area surrounding PDX by limiting residential densities and by requiring noise insulation, noise disclosure statement, and noise easements.
- Scenic Resource (s) intends to:
    - Protect Portland's significant scenic resources as identified in the Scenic Resources Protection Plan;
    - Enhance the appearance of Portland to make it a better place to live and work;
    - Create attractive entrance ways to Portland and its districts;
    - Improve Portland's economic vitality by enhancing the City's attractiveness to its citizens and to visitors; and
    - Implement the scenic resource policies and objectives of Portland's Comprehensive Plan.
- Prime Industrial (k): limits new parks, open areas, and commercial outdoor recreation; prohibits self-service storage and major event entertainment uses; and prohibits future quasi-judicial Comprehensive Plan Map amendments. This overlay preserves Portland's limited supply of prime industrial land for industrial use.

Properties one block or more south of the subject site are zoned primarily Commercial Employment (CE), with lesser General Employment 2 (EG2) and Residential Manufactured Dwelling Park (RMP) mixed in.

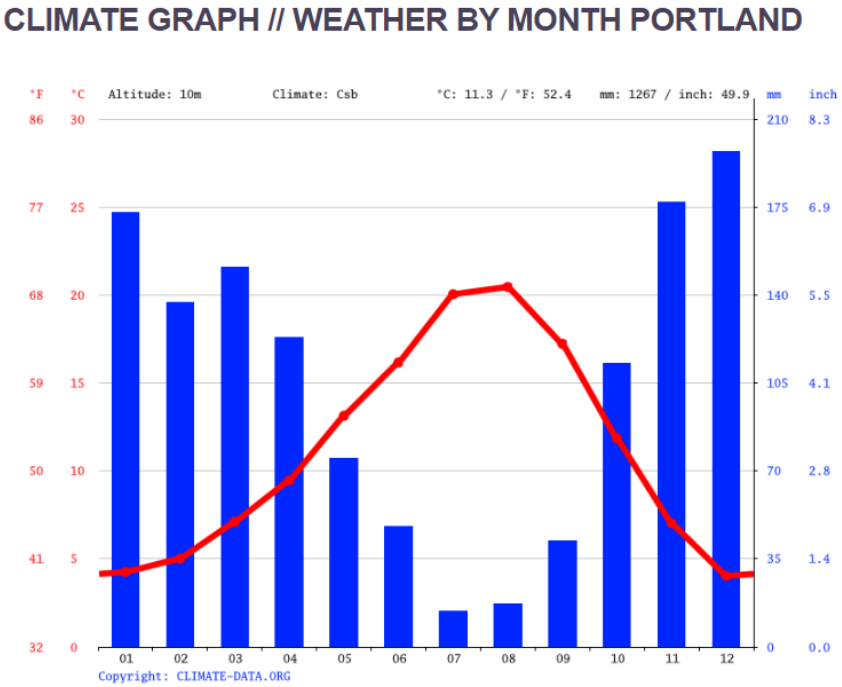
Since current zoning restricts residential use on the subject property and properties to the immediate north, south, and east (I-205 to the west); therefore, occupational receptors should be used in evaluating onsite risk at the subject site and on those properties, as appli9cable. Residential pathways are not applicable at the subject site.

[3] Portland Zoning, General Industrial 2 (IG2); https://www.portlandmaps.com/bps/zoning/#/map/R235908

4.3 Climate

East Portland, Oregon has a temperate climate with dry warm summers and mild winters with moderate year-round temperatures, wet winters, dry summers, and transitional summer and fall seasons. The warmest months are between July through September, when the temperature averages between 56.0 °F and 80.8 °F.[5] The coolest months are between November and February, when the average temperature is between 36.1 °F and 48.6 °F. The average low temperature in January is 34.9 °F. Annual rainfall in Portland is 41 inches, and average snow accumulation is 3 inches.[4] Precipitation primarily as rain falls 109 days per year on the average.[5]

Table 4-1. Gresham Climate Data[5]



Precipitation is the lowest in July, with an average of 14 mm | 0.6 inch. The greatest amount of precipitation occurs in December, with an average of 197 mm | 7.8 inch.

4.4 Geographic Setting and Topography

The subject property and surrounding area lie within the historic flood plain of the Columbia River, between the Columbia River and the Columbia Slough in Northeast Portland, Oregon. Prior to 1917, the Columbia Slough mainstem channel was seasonally connected to the Columbia River, and part of the active floodplain of the Columbia River, seasonally inundated forming and re-forming side channels, wetlands, sloughs, and shallow lakes. Between 1917 and 1919, several levees were constructed along the Columbia River to control seasonal flooding and promote agricultural development of the area.

The natural topography of the slough mainstem channel and floodplain near the subject property has likely been significantly modified to accommodate agricultural and industrial development. According to

[4] https://www.bestplaces.net/climate/city/oregon/portland

[5] https://en.climate-data.org/north-america/united-states-of-america/oregon/portland-6342/

historical records, the original floodplain and former wetlands associated with Johnson Lake were filled in when the area was first reclaimed for agricultural use in the 1920s-30s. Subsequent industrial development resulted in a significant amount of material excavated from cut slopes at the southern and western portions of the subject property as well as an embankment along the shared boundary with the north-adjacent property. It was not determined if the excavated material was spread over other portions of the site or disposed of off-site. Currently, the modified surface topography of the site is generally level to slightly sloping toward the center of the site with up to 13-feet of relief across the site.

4.5 Regional Geologic Setting

The site is located south of the Columbia River in the east portion of the Portland Basin. The Portland Basin is part of the Puget-Willamette Lowland, a topographic and structural trough that separates the Coast Range to the west and the Cascade Mountains to the east.[6] The Coast Range is composed of uplifted Tertiary marine sedimentary rocks and related volcanic and intrusive rocks. The Cascade Range is an accumulation of volcanic lavas and debris erupted from continental volcanoes. Tertiary marine strata and older Cascade volcanic rocks interfinger at depth and form the bedrock foundation beneath the Willamette Valley.[7]

Oblique subduction of the Pacific Plate along the Cascadia Subduction Zone is believed to have created the regional transpression, transtension, and dextral shear forces that created two echelon, northwest-striking right-lateral faults, the releasing stepover between which pulled apart the Portland Basin.[7] As the basin gradually subsided during the late Miocene and Pliocene, it filled with fluvial and lacustrine sediments transported by the ancestral Columbia River from continental terrain to the east. Locally derived sediments shed from highlands and carried by tributaries combined with continental detritus to fill the Portland Basin. The fine-grained beds comprising the older part of this nonmarine section rest unconformably on Paleogene bedrock or flood lavas of the Miocene Columbia River Basalt Group. These older fine-grained sediments contrast with the overlying coarse-grained sandstone and conglomerate of the tertiary Troutdale Formation. This contrasting lithology prompted several authors[8,9,10] to informally divide the Troutdale Formation into an upper coarse-grained member and a lower fine-grained member. Later, the lower fine-grained member was formally named the Sandy River Mudstone, while the designation Troutdale Formation was retained for the upper member.[11] Younger Pliocene to Pleistocene volcanic debris flow deposits with clasts derived from the Cascade Range rather than eastern continental terrain were observed unconformably overlying the Troutdale conglomerates south of the Columbia River. Given the differences in clast composition and unconformable contact, these deposits were

[6] Evarts, R.C. and O'Connor, J.E., 2008. Geologic Map of the Camas Quadrangle, Clark County, Washington, and Multnomah County, Oregon: U.S. Geological Survey Scientific Investigations Map 3017, 1:24,000.

[7] McFarland, William D., and David S. Morgan, 1996. Description of the Ground-Water Flow System in the Portland Basin, Oregon and Washington, US Geological Survey Water-Supply Paper 2470-A, 58 pgs., and plates.

[8] Trimble, D.E., 1957. Geology of the Portland Quadrangle, Oregon-Washington: U.S. Geological Survey Geologic Quadrangle Map GQ-104, 1:62,500.

[9] Mundorff, M.J., 1964. Geology and Ground-Water Conditions of Clark County, Washington, with a Description of a Major Alluvial Aquifer along the Columbia River: U.S. Geologic Survey Water-Supply Paper 1600, 268 p., 1:48,000.

[10] Howard, K.A., 2002. Geologic map of the Battle Ground 7.5-minute Quadrangle, Clark County, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-2395, 1:24,000, with 18-p. pamphlet. [http:// geopubs.wr.usgs.gov/map-mf/mf2395/]

[11] Trimble, D.E., 1963. Geology of Portland, Oregon, and Adjacent Areas: U.S. Geological Survey Bulletin 1119, 119 p., 1:62,500.

separated from the Troutdale Formation and named the Springwater Formation.[11] The Springwater is overlain by mafic rocks of Boring Lava, which was erupted from scattered volcanic centers during the Quaternary.

A variety of geologic processes and events are recorded in the young geologic units in the basin, including cataclysmic glacial lake Missoula floods at the end of the Pleistocene, landslides, volcanic debris flows (lahars) and river aggradation triggered by eruptions of Mount Hood, and aggradation of the Columbia River flood plain in response to sea level rise, and deposition of wind-blown sediment (loess).[6]

4.6 Site Geology

The subject site is and surrounding properties are located on Quaternary (Holocene and Anthropocene) Alluvium (Qa or Qal) composed of stratified clay, silt, sand, and gravel of mixed lithologies deposited along channels and flood plains of major rivers and valley bottoms of tributary streams.[11,12,13,14,15] These sediments locally includes organic-rich mud in valley bottoms. Soils encountered during this assessment included 9 to 13 feet of silt and fine sand overlying medium to coarse gravels, consistent with imported fill sands, alluvium, and Overbank (OB) Deposits.

4.7 Hydrogeology

4.7.1 Surface Water

Current nearby surface water bodies include Johnson Lake and the Columbia Slough, located within approximately one-quarter (0.25) mile of the property. The Columbia River is located approximately 1 mile north of the subject property.

4.7.2 Storm Water Drainage

Precipitation falling on the site's impervious surfaces, e.g., asphaltic concrete paved areas and the warehouse roof, is received by catch basins and directed to the east and west storm water retention ponds prior to discharging offsite towards Johnson Lake. The subject property was identified on ODEQ 's Environmental Cleanup Site Information (ECSI) database for storm water related issues in which the site was evaluated as a potential contributor of polychlorinated biphenyls (PCBs) in nearby Johnson Lake.[2] ODEQ collected sediment samples from two ponds at the subject property in early 2000s and found them to contain elevated PCBs along with petroleum hydrocarbons attributed to the site's history of drum/container management operations. Source control measures implemented at the site in 2003 included removal of PCB-impacted sediments from the two ponds and beneath a catch basin and a storm water pipeline. Additional soils testing in 2012 found contamination in the upper 1.5 feet of soil at the subject site. Further source control measures including additional contaminated soil and sediment

[12] Hogenson, G.M. and Foxworthy B.L., 1965. *Ground Water in the East Portland Area, Oregon:* U.S. Geological Survey Water Supply Paper 1793, 77 p., Map Scale 1:62,500.

[13] Hartford, S.V. and McFarland, W.D., 1989. Lithology, Thickness, and Extent of Hydrogeologic Units Underlying the East Portland Area, Oregon: U.S. Geological Survey Water-Resources Investigations Report 88-4110, 20 p., Map Scale

[14] Madin, I.P. (1990). *Earthquake-Hazard Geology Maps of the Portland Metropolitan Area, Oregon*: Text and Map Explanation, 21 p., Mt. Tabor Quadrangle, Map Scale 1:24,000.

[15] Wells, R.E. and others, 2020. *Geologic Map of the Greater Portland Metropolitan Area and Surrounding Region, Oregon, and Washington*: U.S. Geological Survey Scientific Investigations Map 3443 and Pamphlet, 55 p., Map Scale 1:63,360.

removal were conducted under a Final Removal Action Work Plan prepared for the subject property in August 2013.[2] ODEQ issued a No Further Action Memorandum in 2014, stating the source control measures adequately addressed the PCB impacts; however, ODEQ also stated that source control measures did not address all potential PCB impacts identified in shallow soils at the subject property. ENW in its May 2023 Draft *Phase II ESA*[1] recommended that an engineering evaluation of the existing storm water controls, including two retention ponds, should be performed to ensure impacted sediment is not discharged to receiving waters.

4.7.3 Site Hydrostratigraphic Units

Shallow, intermediate, and deep ground-water bearing units (aquifers) separated by lower permeability, less transmissive strata (confining units) are described for the west part of the Columbia South Shore Well Field (CSSWF) including the area of the subject site.[16] The aquifer units include from oldest to youngest: Sand and Gravel Aquifer (SGA), Confining Unit 2 (CU2), Troutdale Sandstone Aquifer (TSA), Confining Unit 1 (CU1), Unconsolidated Gravel (UG) / Troutdale Gravel Aquifer (TGA), Columbia River Sand Aquifer (CRSA), and Overbank (OB) deposits.[17] Municipal wells used as a domestic water backup supply by the City of Portland's Water Bureau generally derive ground water from deeper strata, including the TSA conglomerate and SGA.[16] Brief descriptions of these Hydrostratigraphic units as provided from Hartford and McFarland (1989)[13] are provided below.

SGA. Consisting of a thick (>560 feet in SE part of CSSWF) section of sand, silt, gravel, and clay beds, the SGA is one of the more important aquifers in the CSSWF. The SGA is divided into a relatively coarse-grained upper unit and a predominately fine-grained lower unit.

- **Upper Unit.** In the western part of the CSSWF near the site, the upper unit is approximately 50 to 120-feet-thick, indurated, and consists primarily of fine to medium vitric (basaltic glass) - lithic (basalt and quartz sand) sand with minor amounts of gravel. Throughout the upper unit occur minor lenses of greenish-blue clay to gray-brown silt and minor clasts of basaltic composition. Transition from the upper relatively coarse-grained unit to the lower finer-grained unit is gradual. This unit is part of the informal upper member of the ancestral Columbia River facies of the Troutdale Formation based on correlation of basaltic glass (vitric material) in the SGA with basaltic glass clasts from outcrops in the Columbia River Gorge.
- **Lower Unit.** Predominately fine-grained sediment lenses inter-stratified with few coarse-grained lenses comprise the lower unit. Light blue-gray sandy to silty clay layers interbedded with layers of micaceous, quartzitic2, and basaltic sand. Less common in the lower unit are quartizitic and basaltic sand and gravel lenses.

The top of the SGA occurs at an altitude of approximately -450 feet, which is approximately 420 feet bgs at the subject site.

[16] ODEQ, 1996. *Remedial Action Record of Decision for the East Multnomah County Groundwater Contamination Site, Troutdale Sandstone Aquifer*: Oregon Department of Environmental Quality Waste Management & Cleanup Division, dated December 1996.

[17] OWRD, not dated. *West-to-East Conceptual Geologic Cross Section through the Columbia South Shore Wellfield*, horizontal scale 1 inch = 9,000 feet, vertical scale 1-inch = 300 feet.

CU2. Interpreted as lacustrine sediments deposited in a closed-basin formed by local tectonic deformation, CU2 is described as grayish-olive clay with minor silt and thin lenses of fine- to medium-grained basaltic sand. A claystone occurs near the bottom of CU2 throughout most of the CSSWR. Gently dipping, CU2 is estimated to be less than 30-feet-thick near the site, though CU2 becomes more than 180-feet-thick in the more steeply dipping south-southeast part of the CSSWF. CU2 acts as a leaky confining layer between the upper unit of the SGA and the overlying TGA. The top of CU2 occurs at an altitude of approximately -400 feet, which is approximately 370 feet bgs at the subject site. CU2 is estimated to be approximately 50-feet-thick in the area of the subject site.

TSA. The most litholgically unique hydrostratigraphic unit in the CSSWF, and it consists of an upper (sandstone) unit and lower (conglomerate) unit an average of approximately 100-feet-thick.

- **Upper Unit.** Sand, sandstone, and minor thin silty-clay lenses comprise two-thirds the thickness of the TSA. Sand and sandstone are composed of relatively clean, moderate- to well-sorted, angular to sub-rounded black basaltic glass (sideromelane), which where locally altered to palagonite forms the cement to bind the sand grains in the upper unit. Blue to blue-green silty clay as thin lenses occur in the upper one-half of the upper unit.
- **Lower Unit.** A conglomerate chiefly composes of basaltic gravel comprises one-third the thickness of the TSA. The proportion of sand versus gravel becomes greater in the northwest corner of the CSSWF northwest of the site. The lower unit is composed of a quartzite-bearing basalt conglomerate with a silty to sandy matrix composed of vitric-lithic material. Cemented basalt clasts are well rounded and poorly sorted.

Based on lithological and geochemical similarity of well cuttings in the CSSWF with outcrop samples in the lower Columbia River Gorge, the TSA correlates with the upper member of the ancestral Columbia River facies of the Troutdale formation.

The top of the TSA occurs at an altitude of approximately -310 feet at the subject site. The TSA is estimated to be approximately 90-feet-thick in the area of the subject site.

CU1. Interpreted as lacustrine sediments deposited in a closed-basin that existed for a relatively short period of time, CU1 is described as olive-gray to gray-brown sand, silt, and clay with black vitric sand or sandstone beds (5 to 15-feet-thick) occurring near the top of this unit. A clay with high natural gamma activity occurs at the bottom of this unit. The estimated average thickness of CU1 is 100 feet in the portion of the CSSWF west of Blue Lake. CU1 acts as a confining unit between the TSA and the Unconsolidated Gravel / TGA. The top of the CU1 occurs at an altitude of approximately -240 feet at the subject site. CU1 is estimated to be approximately 70-feet-thick in the area of the subject site.

UG/TGA. Consists of gravels of the late Pliocene Troutdale Formation and younger undifferentiated Pleistocene gravels that are up to 580-feet-thick in the CSSWF. Upper Pliocene TGA gravels consist mainly of pebbly to cobbly clast-supported conglomerate with a silty to sandy matrix. Sixty to eighty percent of the clasts are sub- to well-rounded basalt derived locally, while the remaining 20 to 40% of the clasts are composed of quartzite and other foreign clasts derived from the Columbia Plateau. The matrix consists of olive-gray to brown sand, silt, and clay. Thin sand, silt, and clay lenses occur intermittently throughout the unit. Overlying Pleistocene UG gravels are composed of basaltic clasts derived locally. These gravels are generally uncemented, though cemented UG gravels also occur within the CSSWF. Therefore, the presence or absence of quartzite and other foreign clasts is a more reliable indicator than cementation

for distinguishing Pleistocene UG gravels from upper Pliocene Troutdale gravels. The UGA/TGA is estimated to be 250-feet-thick in the subject site area.

The top of the UG/TGA occurs at an altitude of approximately +10 feet at the subject site. The UG/TGA is estimated to be approximately 250-feet-thick in the area of the subject site. Medium to coarse gravels correlating with the UG were encountered at depths ranging from 9 to 13 feet bgs in soil borings drilled at the subject site.

CRSA. Fills the lower part of a Pleistocene channel segment of the ancestral Columbia River, which channel has a depth of more than 300 feet in the northwest part of the CSSWF north and west of the subject site. The CRSA is composed of gray to gray-brown, fine-grained, clean quartz-rich basaltic sand. Trace amounts of silt, siltstone fragments, sandstone fragments, muscovite flakes, wood fragments, shell fragments, and coarse sand and gravel occur throughout the aquifer. The CRSA generally becomes siltier with depth, but in some borehole logs the bottom 10 to 40 feet of the CRSA contains coarse sand and gravel layer with minor boulders. The CRSA occurs approximately 0.5-mile north to 1.0-mile northwest of the subject site at an altitude ranging from 0 to -40 feet and a thickness ranging from 140 to 280 feet. The CRSA is not likely present in the immediate area of the subject site.

OB. The uppermost unit on the Columbia River floodplain deposited as the result of intermittent flooding of the Columbia River. OB consists of light olive-brown to dusky yellow-brown silty clay and brown to gray-brown fine-grained sandy silt. The thickness of OB is greatest near the modern Columbia River shoreline and thins to zero at the southern limit of the floodplain. Based on borings drilled at the subject site, OB ranges from 9- to 13-feet-thick at the subject site. OB correlates with Qa (Quaternary alluvium) mapped at the site.

4.7.4 Ground Water: Flow, Recharge, and Discharge

Aquifers underlying the site are thought to be recharged from precipitation, surface drainage and upgradient ground water flow. For example, the TSA's primary sources of recharge are upgradient regional ground-water flow, ground-water flow from the SGA in areas where CU2 is more permeable and an upward gradient exists, spring flow and discharge from the TGA at the CU1 erosional truncation, and possibly irrigation.[16] Most precipitation evaporates; however, smaller percentages either runoff to surface water (as storm water), are collected by vegetation and transpired back into the atmosphere (evapotranspiration), or percolates downward to the water table.

Discharge from the shallow aquifers eventually occurs to surface water bodies such as the Columbia Slough, Johnson Lake, and a myriad of other surface water bodies, which in turn discharge to the Willamette River or are pumped to the Columbia River.

4.7.5 Summary – Conceptual Hydrogeologic Model

The subject property is located in the east portion of the Portland Basin of the Puget-Willamette Lowland, a topographic and structural trough that separates the Coast Range to the west and Cascade Mountains to the east.[6] The Columbia River is the major west-flowing drainage located north of the site and receives water from the Snake River and numerous smaller drainages of the Columbia Plateau, Cascadian highlands, Willamette Valley, and Coast Range. The Columbia Slough runs parallel to the Columbia River, receives surface runoff and aquifer discharge from the south shore of the Columbia, and either discharges

to the Willamette River (lower slough) or is pumped over a system of protective dikes into the Columbia River (middle and upper sloughs). A system of prolific sand and gravel aquifers such as the TGA, TSA and SGA separated by fine-grained, low conductivity confining units such as CU1 and CU2, make up an important ground water resource in the area. Public water supply wells in the CSSWF serving smaller communities also serve as a backup water supply for millions of City of Portland residents and businesses when Bull Run Reservoir water levels become turbid or are too low to withdraw. Numerous private wells completed in these aquifers serve neighborhoods, industry, agriculture, and individual homes. In the absence of pumping, these aquifers generally flow northward toward the Columbia Slough, Columbia River, and border lakes, e.g., Fairview and Blue Lake. Flow directions and vertical gradients can be reversed when wells are pumped.

OB deposits (correlates with Qa) are mapped at the surface of the site and composed of sand, silt, and clay with minor gravel. Shallow ground water in the OB deposits occur at depths ranging from 8 to 14 feet bgs, just above the UG gravel. Shallow ground water in the OB is recharged principally by precipitation. Although some of the precipitation evaporates, becomes storm water, or becomes biologic uptake and returns to the atmosphere by transpiration, some precipitation penetrates the ground surface where it eventually percolates down to shallow ground water in the OB which is expected to follow topography and flow northward to northwestward toward the Columbia Slough and Columbia River. Though evaluation of the hydraulic characteristics of the OB deposits was not included in the scope of work at the subject site, OB deposits are known to be much less prolific than the deeper TGA, TSA and SGA aquifers which produce most of the municipal water used by private residents, smaller communities as well as the entire City of Portland when a backup to the Bull Run Reservoir is needed. Occasionally the surface waters rise in response to high precipitation events and may recharge underlying sedimentary aquifers. Ground water in the OB deposits may also be recharged from the underlying UG/TGA in the presence of a vertical upward gradient.

5.0 Methods

5.1 Objectives

The objectives of this investigation were to:

- Complete the delineation of petroleum hydrocarbon-related volatile organic constituent (VOC) and chlorinated VOC (CVOC) plumes in shallow ground water underlying south Tax Lot 1N2E16D-02800-A1.

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 Preparation Activities

ENW performed or coordinated the following activities before commencing all field activities.

Plan Preparation. In-house Sampling and Analysis Plan (SAP) was 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.

5.3 Soil Boring and Sampling

Using information in Blackstone's *Phase I ESA*[2] and results from ENW's Draft *Phase II ESA*,[Error! Bookmark not defined.] five (5) direct-push borings (B21 through B25) were advanced around the perimeter of the petroleum hydrocarbon-related VOC and CVOC plumes for the purposes of collecting SWI and reconnaissance ground water samples for laboratory analysis. ENW advanced the soil borings B21 through B25 using a percussive Direct Push Technology (DPT) drill rig operated by Cascade Drilling of Clackamas, Oregon under the direction of an ENW geologist. The locations of borings B21 through B25 are illustrated in Figure 4. Soil materials recovered from the DPT sleeves were inspected continuously for the presence of contamination by visual and olfactory inspection. 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 photoionization detector (PID) tip 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 borings intended for collection of reconnaissance ground water samples were completed to approximately five (5) feet below the first observed ground water table (i.e., approximately 10 to 15 feet below ground surface [bgs]). During each sampling interval, select portions of the soil core were retained for possible laboratory analysis. Soil samples were retained for possible laboratory analysis from zones where field screening identified evidence of possible impacts. If soil impacts were not indicated, at least one soil sample was collected from each boring from the soil/ water interface (SWI).

Soil samples were placed directly into labeled laboratory-prepared glass sample jars using clean Nitrile-gloved hands and sealed with a Teflon-lined lid. Samples for analysis of volatile constituents were additionally collected using sampling procedures prescribed by the Environmental Protection Agency (EPA) Method 5035. All samples were preserved on ice in a cooler pending transport to the laboratory following chain-of-custody protocols.

5.3.1 Reconnaissance Ground Water Sampling

Upon reaching total depth, the drill tooling was removed from the five borings, and a temporary well point was installed in select boreholes in preparation for reconnaissance ground water sampling. Approximately one (1) to three (3) liters of ground water were pumped from each boring using a low-flow peristaltic pump and dedicated polyethylene tubing to "purge" the standing water from the borehole and to draw representative ground water into the temporary well point. Following purging, a reconnaissance ground water sample was collected from clean, dedicated polyethylene tubing connected to a peristaltic pump set at a low rate to minimize off gassing of volatile contaminants. The sample was transferred into laboratory-supplied containers with appropriate preservative, uniquely labelled, documented on a chain-

of-custody record, and placed in a cooler on ice pending transport to the laboratory. Reconnaissance ground water field sampling data sheets (FSDS) are included in Appendix C.

5.3.2 Sample Nomenclature

Each boring was designated with a "B" prefix and a number (e.g., B21, B22, etc.). Individual soil samples were designated with the sample's depth appended to the boring number, e.g., B21-8 would indicate a sample collected at 8 feet bgs in boring B21. Additional qualifiers such as a sample collected at the soil/water interface (SWI) were appended to the boring number as appropriate (e.g., B21-8-SWI would indicate a soil/water interface sample collected from 8 feet bgs in boring B21). Reconnaissance ground water samples were labeled similarly (e.g., B21-GW-19 would indicate the sample was collected from boring B21 from within the temporary well screen at a depth of 19 feet bgs).

All sampling equipment was decontaminated before and after sampling by undergoing a wash sequence of Alconox® solution, tap water, and then deionized water final rinse. Clean Nitrile gloves were used during sample collection. Following sampling, temporary soil gas probes and Vapor Pins® were removed and properly abandoned in accordance with Oregon regulations and the pavement/asphalt surface restored, as applicable.

5.4 Waste Management and Disposal

Investigation-derived waste (soil and purge water) was contained inside labelled Department of Transportation (DOT)-certified 55-gallon drums and staged on-site pending appropriate disposal.

5.5 Laboratory Sub-sampling, Compositing, and Analytical Methods

Soil and reconnaissance ground water samples were delivered to Friedman & Bruya, Inc. (F&BI) of Seattle, Washington, for analysis under formal chain-of-custody protocol.

Samples were analyzed for select constituents using the analytical methods presented in Table 5-1. Copies of the F&BI and Fremont laboratory analytical reports and chain-of-custody documentation are provided in Appendix D.

Table 5-1. Analytical Plan

Analytical Method	Constituents	Soil	Reconnaissance Ground Water
NWTPH-Gx	TPH as Gasoline-Range Organics (GRO)	All samples	All samples
NWTPH-Dx	TPH as Diesel- and Residual-range organics (DRO and RRO, respectively)	All samples	All samples
Environmental Protection Agency (EPA) 8260D	Volatile organic compounds (VOCs) – Full List	All Samples	All samples.
EPA Method 8270B	Polynuclear Aromatic Hydrocarbons (PAHs)	None	Select samples from the west margin of site

5.6 Cleanup Standards and Other Numeric Criteria

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

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

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

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

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

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

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

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

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

RBCs are generally used to evaluate sampling analytical results as follows:

- ODEQ's lowest RBC for all pathways for residential receptors is used as an initial 'conservative' screening of a constituent. If a constituent's concentration exceeds its screening level risk-based concentration (SLRBC), it requires further evaluation. Otherwise, the constituent is considered unlikely to pose unacceptable risk to any human receptor.
- Because ODEQ Generic RBCs are based on several conservative assumptions (e.g., duration and type of exposure), exceeding an SLRBC does not necessarily indicate that additional investigation or remediation is required. Rather, the exceedance of a SLRBC may indicate that additional investigation and evaluation, including consideration of site-specific information (e.g., current, and future land uses), may be necessary to determine if remediation or other actions are necessary. In many cases, it is not possible to determine whether unacceptable risks to human health and the environment are present, and require further action, until a risk assessment, including evaluation of current and reasonably likely land and water uses, is complete.
- In general, ODEQ considers chemical concentrations less than SLRBCs to be protective of human health.

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

- **Clean Fill Screening Levels.** Analytical data for organics were compared to clean fill screening levels (CFSLs) for upland sites established by the ODEQ.[3] ODEQ does not require materials in which contaminant concentrations are less than or equal to CFSLs to be regulated as a solid waste. Rather, these materials may be placed at upland locations that are far enough away from a surface water body, or where there are sufficient controls to avoid erosion into surface water. CFSLs are used to determine if impacts to soil may require future management and are not used for risk screening.

6.0 Findings

The findings of this Focused Phase II ESA are presented in this section. Please reference:

- Figure 2 for the site layout.
- Figure 4 for temporary soil boring locations
- Appendix A for a photolog of site work.

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

- Appendix B for boring logs.
- Appendix C for reconnaissance ground water FSDS sheets.
- Appendix D for laboratory analytical reports.
- Tables 1 and 2 for a comprehensive summary of analytical results for soil and reconnaissance ground water, respectively.

Tables 6-1 present a list of soil and reconnaissance ground water sampling locations for this additional investigation.

Table 6-1. Summary of Sampling Locations – Soil and Reconnaissance Ground Water

Borehole / Location ID	Date Sampled	Depth Sampled (feet)	Sampled By	Location
Soil				
B21	7/24/2023	8	ENW	Western margin of site, west of boring B18, south of boring B22
B22	7/24/2023	10	ENW	Western margin of site, west of boring B17,south of boring B20
B23	7/24/2023	12	ENW	Northern part of south tax lot, north of boring B03, south of B08
B24	7/24/2023	14	ENW	Eastern margin of site, east of boring B03, north of boring B25
B25	7/24/2023	10	ENW	Eastern margin of site, east-southeast of boring B15, south of boring B24
Reconnaissance Ground Water				
B21	7/24/2023	19	ENW	Western margin of site, west of boring B18, south of boring B22
B22	7/24/2023	20	ENW	Western margin of site, west of boring B17, south of boring B20
B23	7/24/2023	19	ENW	Northern part of south tax lot, north of boring B03, south of B08
B24	7/24/2023	20	ENW	Eastern margin of site, east of boring B03, north of boring B25
B25	7/24/2023	20	ENW	Eastern margin of site, east-southeast of boring B15, south of boring B24

6.1 Soil and Ground Water Investigation

Subsurface materials in borings generally consisted of approximately 0.5-feet of gravel fill, 9 to 11.5 feet of unconsolidated sand and silt underlain by gravel to the maximum depth explored of 20 feet bgs.

Fill Gravel. 0.5-feet of angular gravel surface fill was encountered in all borings.

Overlying Sand and Silt. Sandy sediments were characterized as poorly graded sand (SP), poorly graded sand with silt (SP-SM), silt with fine gravel (ML), silty sand with gravel (SM), and silt (ML). These sediments were brown to gray, loose to medium dense, medium-grained, micaceous, quartz-rich, and saturated at depths ranging from 8 to 11 feet bgs in B21, B22, B23, and B25. Silt beds encountered along with sand in B23 and B24 were dark brown to gray, moist, medium soft, micaceous, and mottled gray (in B23). These sand and silt sediments are believed to correlate with Qa (Quaternary alluvium) and OB (Overbank deposits).

Underlying Gravels. Gravelly sediments were characterized as poorly graded gravel with sand (GP), poorly graded gravel with/without sand and silt (GP-GM), and well-graded gravel with some sand and silt (GW-GM) to the maximum depth explored of 20 feet bgs. These coarse-grained sediments were brown and/or gray, medium dense to dense, sub-rounded, coarse-grained, saturated, and non-micaceous. A 1-foot-thick SP interbed was encountered from 15 to 16 feet bgs between GP and GW-GM in B-24. Less than 0.5-feet of gravel fill was encountered in all five borings. The underlying gravels and gravelly sediments are

believed to correlate with the upper part of the UG/TGA (Unconsolidated Gravel / Troutdale Gravel Aquifer).

The soil/water interface (SWI) was encountered in all borings at depths ranging from 8 to 14 feet bgs. Ground water stabilized at depths ranging from 9.84 to 11.92 feet bgs.

During drilling, no field evidence of impacts, as suggested by absence of olfactory indications and zero to low (≤ 0.2 parts per million by volume [ppmv]) soil vapor headspace readings, were observed by ENW.

6.1.1 Laboratory Results – Soil

The results of laboratory analysis of soil samples are summarized on Table 1, behind the Tables tab following text. The results on Table 1 are compared to ODEQs Soil Matrix cleanup levels, ODEQ SLRBCs, and ODEQ clean fill screening levels (CFSLs).

Petroleum Hydrocarbons. Laboratory analysis did not detect the presence of total petroleum hydrocarbons as GRO, DRO, or RRO above laboratory MRLs in any of the five SWI samples from B21, B22, B23, B24, or B25.

Volatile Organic Constituents (VOCs). Laboratory analysis by EPA Method 8260D for the full suite of volatiles did not detect any VOCs above laboratory MRLs in any of the five SWI samples analyzed.

6.1.2 Laboratory Results – Reconnaissance Ground Water

The results of laboratory analysis of reconnaissance ground water samples are summarized on Table 2, behind the Tables tab following text. Results in Table 2 are compared to ODEQs SLRBCs and ODEQ suggested default background concentrations for inorganic contaminants in fresh water.[18]

Petroleum Hydrocarbons. Laboratory analysis did not detect the presence of total petroleum hydrocarbons as GRO, DRO, or RRO above laboratory MRLs in any of the five reconnaissance ground water samples from B21, B22, B23, B24, or B25.

Volatile Organic Constituents (VOCs). Laboratory analysis by EPA Method 8260D for the full suite of volatiles did not detect any VOCs above laboratory MRLs in any of the five reconnaissance ground water samples analyzed.

Semi-Volatile Organic Constituents (SVOCs). Reconnaissance ground water samples from B21 and B22 were analyzed for PAHs using EPA Method 8270E. Results follow.

- Fluoranthene (0.036 micrograms per liter [µg/L]) and pyrene (.047 µg/L) were detected in the reconnaissance ground water sample collected from boring B21. However, PAH concentrations were very low (neither exceeded their respective solubility limits as published in ODEQ's RBDM guidance or their respective SLRBCs) and no evidence of impacts was noted at this location during drilling. The remaining PAHs in the sample from boring B21 were not detected above laboratory MRLs.

[18] For reference only. ODEQ prefers a site-specific determination of background concentrations; however, the default values may be used during the screening phase of a site investigation to make an initial assessment of whether metals concentrations at that site exceed regional background concentrations.

- No PAHs were detected above laboratory MRLs in the sample of reconnaissance ground water collected from boring B22.

6.1.3 Data Validation

A review of the laboratory reports for soil and reconnaissance ground water samples suggest samples were generally analyzed within appropriate quality assurance/quality control procedures and specified holding times (see Appendix D for laboratory data validation form completed for this project).

7.0 Locality of Facility

The Locality of Facility (LOF) is defined as any point where a human or an ecological receptor is reasonably likely to come into contact with facility-related hazardous substances. The LOF considers the likelihood of the contamination migrating over time and may be larger than the subject site.

In developing a LOF for the subject property, ENW considered the conceptual hydrogeologic model discussed above, results of previous sampling investigations, cleanup activities, as well as the findings concerning beneficial uses of ground water described further in Section 8.0 (Water Well Records).

7.1Current Understanding of Extent of Ground Water Impacts

This section presents our current understanding of the extent of dissolved petroleum hydrocarbon and dissolved chlorinated volatile constituents impacting ground water at the subject site at concentrations greater than ODEQ's SLRBCs.

No evidence of light non-aqueous phase liquids (LNAPLs) associated with petroleum hydrocarbons or dense non-aqueous phase liquids (DNAPLs) associated with chlorinated solvents was detected at the site.

The following sections describe the dissolved constituents of potential concern (COPCs) and discuss the potential for contaminants to migrate with ground water. Figure 1 provides a location reference.

7.1.1 Dissolved Petroleum Hydrocarbon Plume

Petroleum hydrocarbons and related VOCs occurrence summarized below are described in detail in ENW's draft *Focused Phase II ESAs*.[Error! Bookmark not defined.] The estimated extent of petroleum hydrocarbons and related VOCs in ground water is shown in Figure 4.

GRO and Related VOCs. Dissolved GRO and related VOCs benzene, ethylbenzene, naphthalene, 1,2,4-trimethylbenzene (TMB), and total xylenes were previously detected at concentrations greater than SLRBCs in reconnaissance ground water samples collected in the south-central part of the site. The GRO plume is generally centered around B17 and is delineated by B07 to the north, B15 to the east, B04, B06, and B16 and B19 to the south, and B20 through B22 to the west. The GRO plume is entirely within the site boundaries.

DRO. Dissolved DRO was also previously detected in reconnaissance ground water at concentrations greater than ODEQ's SLRBCs; however, the chromatograms for DRO did not match the standard used for quantitation for any of the detections. Further evaluation by the laboratory revealed that a plasticizer (n butyl benzenesulfonamide [NBBS]) in the sample tubing used by the driller during reconnaissance ground

water sampling of B06 through B11 biased those samples high in DRO. Running these sample extracts through silica gel followed by re-analysis reduced the DRO concentration in these samples. However, the chromatograms still did not match the DRO standard used for quantitation, and DRO remained above ODEQ's SLRBC in B06 and B11. Since the DRO concentration was relatively low, and DRO was not caused by overlap from GRO or RRO (both not detected in B06 or B11), ENW concluded that a the DRO detections in B06 and B11 were due to non-petroleum interferences. A similar argument appears justified for the DRO detection in B19 to the south of B06, where the chromatogram does not match the DRO standard, the DRO concentration following silica gel cleanup is relatively low, and DRO does not appear to be caused by overlap from GRO or RRO, neither of which were detected in B19. The chromatograms for DRO in B12 through B14, B17, and B18 also do not match the DRO standard, however, GRO and RRO detections in these five samples lead to the possibility of overlap of those constituents in the diesel range.

RRO. Dissolved RRO was previously detected at concentrations exceeding ODEQ's RBCs in B12 through B14, B17, and B18.

7.1.2 Dissolved Chlorinated VOC Plume

The occurrence of chlorinated VOCs (cVOCs) summarized below are described in detail in ENW's draft *Focused Phase II ESAs*.[Error! Bookmark not defined.] The estimated extent of the cVOC plume is shown in Figure 4.

CVOCs. Dissolved tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride (VC) were previously detected at concentrations greater than ODEQ's SLRBCs in reconnaissance ground water samples collected in the south-central to eastern part of the site. The CVOC plume appears generally centered around B13 and B15 and is delineated by B17 to the west, B23 to the north, B24 and B25 to the east, and B05 and B16 to the south. The cVOC plume is entirely within the site boundaries.

7.2 Potential for Impacts to Migrate

7.2.1 Petroleum Hydrocarbon Plume

The petroleum hydrocarbon and related VOC-impacted ground water plume is restricted to the south-central part of the site, suggesting a localized source or sources of primarily GRO and RRO, with the possibility of lesser DRO impacts. The two (2) 2,000-gal underground storage tanks (USTs) decommissioned by removal at the site in 1997, LUST Facility ID 26-97-0561, cannot be ruled out as the source of some petroleum hydrocarbon impacts given that the contents and locations of the USTs were not reported. However, historical UST decommissioning information[2] does not support these USTs as being a significant source of primarily GRO, GRO-related VOCs, and RRO dissolved in ground water at the site given the following: only DRO-impacted soil at concentrations less than the Soil Matrix Cleanup Level of 500 milligrams per kilogram (mg/Kg) were encountered during the decommissioning, no ground water was encountered during the tank removal, and the ODEQ issued a No Further Action (NFA) determination in September 2000 based on the absence of significant contamination. While the USTs may not be a significant source of petroleum hydrocarbon impacts, 45 years of drum reconditioning and IBC processing operations at the site may have contributed to the dissolved petroleum hydrocarbon plume. Drums and IBCs may have contained residual petrochemicals, e.g., fuels, oils, greases, and solvents, which may have splashed or spilled onto the ground surface and ultimately leached to ground water. In addition, residual petrochemicals may have been discharged with drum cleaning solutions to the septic system and released

to shallow ground water via the suspected septic tank at the south end of the site and upgradient (south) end of the petroleum hydrocarbon plume. Similarly, petrochemicals may have been discharged with drum cleaning solutions to the sanitary sewer and released to ground water through leaky sewer pipes.

Regardless of the source or release mechanism, the absence of LNAPL and localized distribution of the dissolved petroleum hydrocarbon plume suggests that the released volume was not large. Furthermore, the potential sources of petroleum hydrocarbons have been removed, i.e., the USTs were decommissioned by removal in 1997, and on-site drum reconditioning and IBC processing operations ceased in 2022. Therefore, ENW concludes that the dissolved petroleum hydrocarbon plume is unlikely to migrate with ground water beyond the site boundaries and will naturally attenuate over time.

7.2.2 cVOC Plume

The location of the cVOC plume entirely beneath and within the south warehouse building footprint suggests that the source of the cVOC plume may have been associated with drum reconditioning and IBC processing operations previously conducted inside the building. Blackstone's P1ESA noted that such operations included the receipt, storage, cleaning, and processing of previously used, empty, 5- to 550-gallon IBCs or "totes," plastic drums, and containers, which previously contained a variety of products used in the agricultural, industrial, and food and beverage industries. These drums, totes and containers were cleaned using hot water, Trisodium Phosphate, or other cleaning solutions. Similar to the petroleum hydrocarbon impacts, 45 years of drum reconditioning and IBC processing operations at the site may have contributed to the dissolved cVOC plume. Drums and IBCs may have contained residual chlorinated solvents, which may have been dissolved with drum cleaning solutions and released through cracks or joints in the warehouse slab floor, captured by floor drains, or discharged to the sanitary sewer system and released to ground water through leaky sewer pipes or released to shallow ground water via the suspected septic tank at the south end of the site and upgradient (south) end of the petroleum hydrocarbon plume.

Regardless of the source or release mechanism, the absence of DNAPL and localized distribution of the dissolved CVOC plume suggests that the released volume was not large. Furthermore, the potential cVOC source has been removed, i.e., the on-site drum reconditioning and IBC processing operations ceased in 2022. Therefore, ENW concludes that the dissolved CVOC plume is unlikely to migrate with ground water beyond the site boundaries or impact deeper ground water aquifers.

7.3 LOF Description

The following LOF is based on both the current known extent of impacts and the evaluation of the potential to migrate described above. All locations with GRO, DRO, RRO and related constituent concentrations have been included in this LOF.

The LOF is shown on Figure 5 and described as follows:

- **To the south:** Consistent with an east west line running through B05 to the east and B19 to the west, while intersecting the south ends of the west and east LOF boundaries. As previously explained in section 7.1.1, the low-level DRO detection in B19 is likely due to non-petroleum interferences.

- **To the west:** Consistent with a north-south best-fit line running through B21, B22, and B20, while intersecting the west end of the north and south LOF boundaries.
- **To the north:** Consistent with an east-west line running through B23 to the north and intersecting the north ends of the west and east LOF boundaries.
- **To the east:** Consistent with a north-south line running through B24 and B25, while intersecting the east ends of the north and south LOF boundaries.

8.0 Water Well Records

8.1 Oregon Water Resources Department GRID Database

The OWRD maintains the GRID (Ground Water Information Database) consisting of logs for borings and wells in the State. ENW searched all water wells within sections 15, 16, 21 and 22 in Township 1N, Range 2E of the Willamette Meridian using OWRD's GRID database. North Tax Lot 1600 at the subject site is located within the SW ¼ of the SW ¼ of section 15 and the SE ¼ of the southeast ¼ of section 16. South Tax Lot 2800 at the subject site is located within the NE ¼ of the NE ¼ of section 21 and the NW ¼ of the NW ¼ of section 22 near the intersecting corners of these four sections. Well records identified within this four-square mile area are summarized in Table 8-1 below.

Table 8-1. Water Well Record Summary Within Sections 19, 20, 29 and 30

	Sections				Totals
	15	**16**	**21**	**22**	
Work New	37	138	3	6	**184**
Work Abandoned	22	129	3	6	**160**
Work Deepened	0	0	1	0	**1**
Work Alteration	5	1	1	1	**8**
Use Domestic	0	0	1	1	**2**
Use Irrigation	1	4	4	5	**14**
Use Community	9	0	0	1	**10**
Use Dewatering	8	257	0	0	**265**
Total # Wells	**64**	**268**	**6**	**13**	**351**

The following should be noted with regard to the logs within the database:

1. Over the years the well report form has changed several times, and the filing of well logs has only been required since 1955.
2. Older wells are frequently undocumented.
3. Well logs are completed and filed by well drillers and well locations are commonly poorly described.
4. Older wells have the names of the original property owners which are not updated with changes of title.

5. Drillers also have no training in materials descriptions, and the lithologies described in the well logs should be considered carefully during review.

8.1.1 Water Wells Potentially in the LOF

ENW was very conservative in considering database-listed water wells in proximity to the LOF. No records of water wells were identified at the subject site and potentially within the LOF.

8.1.2 Down-Gradient Water Wells

Wells in sections 15 and 16 are considered generally down- to cross-gradient (northeast to northwest) of the subject site. Of the 332 wells, 265 are used for dewatering, five are used for irrigation, and nine are used for community supply. The LOF does not extend offsite, so none of these wells are at risk of being impacted by the shallow dissolved phase petroleum hydrocarbon or CVOC plumes at the subject site. Furthermore, none of these wells, other than the dewatering wells, are shallow enough to have been completed in the OB deposits. Rather, the wells are 94 to 667 feet deep and completed in the CRSA, TGA, TSA, and SGA. For example, of the 11 Portland Water Bureau wells completed in the west part of the CSSWF, one is completed in the TGA, four are completed in the CRSA, four are completed in the TSA, and one is completed in the SGA.[16]

8.1.3 Upgradient Water Wells

Wells in sections 21 and 22 are considered generally up-gradient of the subject site. Of the 19 wells, two are domestic, nine are irrigation, and one is community use. The LOF does not extend offsite, so none of these wells are at risk of being impacted by the shallow dissolved phase petroleum hydrocarbon or CVOC plumes at the subject site. Furthermore, the wells in sections 21 and 22 are too deep (64 to 75 feet in depth) to have been completed in the OB deposits.

9.0 Conclusions and Recommendations

ENW completed the delineation of the dissolved petroleum hydrocarbon and cVOC plumes in the south part of the subject site. Analysis of soil and reconnaissance ground water samples from direct-push borings B21 through B25 completed in the OB deposits showed:

- Neither GRO, DRO, RRO, nor VOCs were detected in soil/water interface or reconnaissance ground water samples above laboratory MRLs.
- Only low concentrations of PAHs (specifically fluoranthene and pyrene) were detected in a sample of reconnaissance ground water sampled from boring B21. These PAH concentrations were very low, and no evidence of impacts was noted during drilling at this location.

Based on both the current known extent of impacts and the evaluation of the potential for dissolved contaminants to migrate in the OB deposits, all locations with GRO, DRO, RRO and related constituent concentrations have been included in a LOF defined as follows (see Figure 5):

- **To the south:** Consistent with an east west line running through B05 to the east and B19 to the west, while intersecting the south ends of the west and east LOF boundaries. As previously

explained in section 7.1.1, the low-level DRO detection in B19 is likely due to non-petroleum interferences.

- **To the west:** Consistent with a north-south best-fit line running through B21, B22, and B20, while intersecting the west end of the north and south LOF boundaries.
- **To the north:** Consistent with an east-west line running through B23 to the north and intersecting the north ends of the west and east LOF boundaries.
- **To the east:** Consistent with a north-south line running through B24 and B25, while intersecting the east ends of the north and south LOF boundaries.

ENW searched all water wells within sections 15, 16, 21 and 22 in Township 1N, Range 2E of the Willamette Meridian using OWRD's GRID database.

- No records of water wells were identified at the subject site and potentially within the LOF.
- Of the 332 down- to cross-gradient (northeast to northwest) wells in sections 15 and 16, 265 are used for dewatering, five are used for irrigation, and nine are used for community supply, i.e., Portland Water Bureau wells. The LOF does not extend offsite, so none of these wells are at risk of being impacted by the shallow dissolved phase petroleum hydrocarbon or CVOC plumes at the subject site. Furthermore, none of these wells, other than the dewatering wells, are shallow enough to have been completed in the OB deposits. Rather, the wells are 94 to 667 feet deep and completed in the CRSA, TGA, TSA, and SGA.
- Of the 19 up-gradient (southeast to southwest) wells in sections 21 and 22, two are domestic, nine are irrigation, and one is community use. The LOF does not extend offsite, so none of these wells are at risk of being impacted by the shallow dissolved phase petroleum hydrocarbon or CVOC plumes at the subject site. Furthermore, the wells in sections 21 and 22 are too deep (64 to 875 feet in depth) to have been completed in the OB deposits.

Based on the above findings, ENW recommends:

- Having completed the delineation of the dissolved petroleum hydrocarbons and CVOCs plumes, an assessment of risk should be conducted to further evaluate the ground water and vapor exposure pathways, which should include indoor air assessment of the onsite building once renovation work is completed.
- To ensure proper handing and management of residual impacts to soil and ground water, a Contaminated Media Management Plan (CMMP) should be prepared to ensure appropriate future management and handling of impacted soil and shallow ground water media.

10.0 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 unless they were the express concerns of contacted personnel, report and literature authors or the work scope.

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, and
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 have endeavored to collect representative analytical samples for the locations and depths indicated in this report. However, no sampling program can thoroughly identify all variations in contaminant distribution.

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

ENW performed this study under a limited scope of services per our agreement. It is possible, despite the use of reasonable care and interpretation, that ENW may have failed to identify regulation violations related to the presence of hazardous substances other than those specifically mentioned at the closure site. ENW assumes no responsibility for conditions that we did not specifically evaluate or conditions that were not generally recognized as environmentally unacceptable at the time this report was prepared.

Tables

Table 1 - Summary of Analytical Data, Soil

Location ID		DU01	DU02	B01	B02	B03		B04	B05
Sample ID		DU01-230214-0.5-IS	DU02-230214-0.5-IS	B01-2	B02-2	B03-5	B03-7	B04-9-SWI	B05-9-SWI
Date Sampled		2/14/2023	2/14/2023	2/14/2023	2/14/2023	2/15/2023	2/15/2023	2/15/2023	2/16/2023
Depth Sampled (feet)		0.5	0.5	2	2	5	7	9	9
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		West Retention Pond	East Retention Pond	MA01: Stained concrete floor of AST compound inside Warehouse	MA02/MA03: trench and sump feature	MA04: Potential Filled Sump	MA04: Potential Filled Sump	South of Suspected UST	MA13: Former ASTs South of Warehouse
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)
Volatile Organic Constituents									
Benzene	c, v	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	---	---	---	---
Bromodichloromethane	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Bromoform	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Bromomethane	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	---	---	---	---
Carbon tetrachloride	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Chlorobenzene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Chlorodibromomethane (dibromochloromethane)	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Chloroethane (ethyl chloride)	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	---	---	---	---
Chloroform	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Chloromethane	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	---	---	---	---
1,2-Dichlorobenzene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.13	---	---	---	---
1,4-Dichlorobenzene	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
1,1-Dichloroethane	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
1,1-Dichloroethene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
cis-1,2-Dichloroethene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
trans-1,2-Dichloroethene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Dichloromethane	c, v	**11 lc**	**6.8 lc**	<0.5 (ND)	<0.5 (ND)	---	---	---	---
EDB (1,2-dibromoethane)	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
EDC (1,2-dichloroethane)	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Ethylbenzene	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
MTBE (methyl t-butyl ether)	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Naphthalene	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	**0.16**	---	---	---	---
iso-Propylbenzene (cumene)	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Tetrachloroethene (PCE)	c, v	<0.025 (ND)	<0.025 (ND)	0.3	**13**	---	---	---	---
Toluene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
1,1,1-Trichloroethane	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
1,1,2-Trichloroethane	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Trichloroethene	NA, v	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	**0.056**	---	---	---	---
Trichlorofluoromethane (Freon 11)	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	---	---	---	---
1,2,4-Trimethylbenzene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.091	---	---	---	---
1,3,5-Trimethylbenzene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.058	---	---	---	---
Vinyl chloride	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Xylenes	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Metals									
Arsenic	c, nv	2.66	3.47	2.89	2.27	5.73	4.05	3.23	3.92
Barium	nc, nv	140	147	90.1	95.5	135	148	103	108
Cadmium	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Chromium (III)	nc, nv	26.2	32.8	6.79	13.5	14	20	11.5	10.2
Lead	NA, nv	**54.3**	37.9	8.56	6.73	10.2	5.53	7.34	6.24
Mercury	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Silver	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Semivolatile Organic Constituents									
Polychlorinated biphenyls (Total PCBs)	c, v	**0.3**	**0.51**	0.035	<0.02 (ND)	---	---	---	---
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.25	---	---	---	---
Anthracene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.18	---	---	---	---
Benz[a]anthracene	c, v	<0.05 (ND)	0.088	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Benzo[a]pyrene (BaP equivalents)	c, nv	0.06	**0.16**	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Benzo[b]fluoranthene	c, nv	0.085	0.18	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Benzo[k]fluoranthene	c, nv	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Chrysene	c, nv	0.064	0.12	<0.05 (ND)	0.062	---	---	---	---
Dibenz[a,h]anthracene	c, nv	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Fluoranthene	nc, nv	0.058	0.16	<0.05 (ND)	0.083	---	---	---	---
Fluorene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.43	---	---	---	---
Indeno[1,2,3-cd]pyrene	c, nv	0.057	0.14	<0.05 (ND)	<0.05 (ND)	---	---	---	---
Pyrene	nc, v	0.088	0.23	<0.05 (ND)	0.17	---	---	---	---
Total Petroleum Hydrocarbons									
Generic Gasoline (GRO)	nc, v	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)
Generic Diesel / Heating Oil (DRO)	nc, v	35 x	41 x	<50 (ND)	**1600**	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)
Generic Mineral Insulating Oil (RRO)	nc, nv	920	570	1300	**11000**	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)

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

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

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

(Y) indicates analyte not detected, but detection limit is above screening concentration.
j = The result is below method reporting limits. The value reported is an estimate.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

ca = the calibration results for the analyte were outside of acceptance criteria, biased high. The value reported is an estimate.

lc = The presence of the compound indicated is likely due to laboratory contamination.

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

Table 1 - Summary of Analytical Data, Soil

Location ID		B06		B07	B08	B09	B10	B11	B12
Sample ID		B06-1	B06-9-SWI	B07-9-SWI	B08-9-SWI	B09-7-SWI	B10-9-SWI	B11-5-SWI	B12-9-SWI
Date Sampled		2/16/2023	2/16/2023	2/16/2023	2/16/2023	2/16/2023	2/16/2023	2/16/2023	2/16/2023
Depth Sampled (feet)		1	9	9	9	7	9	5	9
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		MA11: Suspected Septic Feature		West Yard	North Yard	North Yard	North Yard	North Yard	MA10: North of Suspected UST
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)
Volatile Organic Constituents									
Benzene	c, v	<0.03 (ND)	---	---	---	---	---	---	---
Bromodichloromethane	c, v	<0.05 (ND)	---	---	---	---	---	---	---
Bromoform	c, v	<0.05 (ND)	---	---	---	---	---	---	---
Bromomethane	nc, v	<0.5 (ND)	---	---	---	---	---	---	---
Carbon tetrachloride	c, v	<0.05 (ND)	---	---	---	---	---	---	---
Chlorobenzene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
Chlorodibromomethane (dibromochloromethane)	c, v	<0.05 (ND)	---	---	---	---	---	---	---
Chloroethane (ethyl chloride)	nc, v	<0.5 (ND)	---	---	---	---	---	---	---
Chloroform	c, v	<0.05 (ND)	---	---	---	---	---	---	---
Chloromethane	nc, v	<0.5 (ND)	---	---	---	---	---	---	---
1,2-Dichlorobenzene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
1,4-Dichlorobenzene	c, v	<0.05 (ND)	---	---	---	---	---	---	---
1,1-Dichloroethane	c, v	<0.05 (ND)	---	---	---	---	---	---	---
1,1-Dichloroethene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
Dichloromethane	c, v	<0.5 (ND)	---	---	---	---	---	---	---
EDB (1,2-dibromoethane)	c, v	<0.05 (ND)	---	---	---	---	---	---	---
EDC (1,2-dichloroethane)	c, v	<0.05 (ND)	---	---	---	---	---	---	---
Ethylbenzene	c, v	<0.05 (ND)	---	---	---	---	---	---	---
MTBE (methyl t-butyl ether)	c, v	<0.05 (ND)	---	---	---	---	---	---	---
Naphthalene	c, v	<0.05 (ND)	---	---	---	---	---	---	---
iso-Propylbenzene (cumene)	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
Tetrachloroethene (PCE)	c, v	0.041	---	---	---	---	---	---	---
Toluene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
1,1,1-Trichloroethane	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
1,1,2-Trichloroethane	c, v	<0.05 (ND)	---	---	---	---	---	---	---
Trichloroethene	NA, v	<0.02 (ND)	---	---	---	---	---	---	---
Trichlorofluoromethane (Freon 11)	nc, v	<0.5 (ND)	---	---	---	---	---	---	---
1,2,4-Trimethylbenzene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
1,3,5-Trimethylbenzene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
Vinyl chloride	c, v	<0.05 (ND)	---	---	---	---	---	---	---
Xylenes	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
Metals									
Arsenic	c, nv	3.23	2.67	4.12	6.92	5.23	5.91	2.65	2.02
Barium	nc, nv	88.8	89.6	95.3	92.5	149	93.2	158	74.7
Cadmium	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Chromium (III)	nc, nv	11.8	18.8	16.5	18.9	20.4	22.1	19	5.42
Lead	NA, nv	**34.4**	4.06	4.76	5.93	6.62	5.91	8.62	2.72
Mercury	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Silver	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Semivolatile Organic Constituents									
Polychlorinated biphenyls (Total PCBs)	c, v	**0.34**	---	---	---	---	---	---	---
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
Anthracene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
Benz[a]anthracene	c, v	<0.05 (ND)	---	---	---	---	---	---	---
Benzo[a]pyrene (BaP equivalents)	c, nv	<0.05 (ND)	---	---	---	---	---	---	---
Benzo[b]fluoranthene	c, nv	<0.05 (ND)	---	---	---	---	---	---	---
Benzo[k]fluoranthene	c, nv	<0.05 (ND)	---	---	---	---	---	---	---
Chrysene	c, nv	<0.05 (ND)	---	---	---	---	---	---	---
Dibenz[a,h]anthracene	c, nv	<0.05 (ND)	---	---	---	---	---	---	---
Fluoranthene	nc, nv	<0.05 (ND)	---	---	---	---	---	---	---
Fluorene	nc, v	<0.05 (ND)	---	---	---	---	---	---	---
Indeno[1,2,3-cd]pyrene	c, nv	<0.05 (ND)	---	---	---	---	---	---	---
Pyrene	nc, v	0.061	---	---	---	---	---	---	---
Total Petroleum Hydrocarbons									
Generic Gasoline (GRO)	nc, v	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)	<20 (NP)
Generic Diesel / Heating Oil (DRO)	nc, v	**2000 x**	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)	<50 (NP)
Generic Mineral Insulating Oil (RRO)	nc, nv	**7200**	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)	<250 (NP)

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

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

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

(Y) indicates analyte not detected, but detection limit is above screening concentration.
j = The result is below method reporting limits. The value reported is an estimate.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

ca = the calibration results for the analyte were outside of acceptance criteria, biased high. The value reported is an estimate.

lc = The presence of the compound indicated is likely due to laboratory contamination.

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

Table 1 - Summary of Analytical Data, Soil

Location ID		B13			B14	B15	B16	B17		B18
Sample ID		B13-10.5	B13-12	B13-13.5-SWI	B14-12.5-SWI	B15-7.5-SWI	B16-14-SWI	B17-3	B17-14-SWI	B18-13-SWI
Date Sampled		4/21/2023	4/21/2023	4/21/2023	4/21/2023	4/21/2023	4/21/2023	4/21/2023	4/21/2023	4/21/2023
Depth Sampled (feet)		10.5	12	13.5	12.5	7.5	14	3	14	13
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		Adjacent to B02			North of B02	East of B02	South of B02 42' East of UST	30' North of UST		36' west of UST
Constituent of Interest	Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)
Volatile Organic Constituents										
Benzene	c, v	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	**0.056**	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)
Bromodichloromethane	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Bromoform	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Bromomethane	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Carbon tetrachloride	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Chlorobenzene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Chlorodibromomethane (dibromochloromethane)	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Chloroethane (ethyl chloride)	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Chloroform	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Chloromethane	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
1,2-Dichlorobenzene	nc, v	<0.05 (ND)	<0.05 (ND)	0.061	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.056	<0.05 (ND)
1,4-Dichlorobenzene	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
1,1-Dichloroethane	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
1,1-Dichloroethene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
cis-1,2-Dichloroethene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
trans-1,2-Dichloroethene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Dichloromethane	c, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
EDB (1,2-dibromoethane)	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
EDC (1,2-dichloroethane)	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Ethylbenzene	c, v	<0.05 (ND)	<0.05 (ND)	0.075	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	**2.9**	**0.3**
MTBE (methyl t-butyl ether)	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Naphthalene	c, v	<0.05 (ND)	<0.05 (ND)	**0.14**	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	**0.14**	**1.6**	**1.1**
iso-Propylbenzene (cumene)	nc, v	<0.05 (ND)	<0.05 (ND)	0.22	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.5	0.27
Tetrachloroethene (PCE)	c, v	0.43	<0.025 (ND)	<0.025 (ND)	<0.025 (ND)	0.1	<0.025 (ND)	<0.025 (ND)	<0.025 (ND)	<0.025 (ND)
Toluene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.089	<0.05 (ND)
1,1,1-Trichloroethane	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
1,1,2-Trichloroethane	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Trichloroethene	NA, v	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)
Trichlorofluoromethane (Freon 11)	nc, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
1,2,4-Trimethylbenzene	nc, v	<0.05 (ND)	<0.05 (ND)	2.8	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.32	7.6	3.5
1,3,5-Trimethylbenzene	nc, v	<0.05 (ND)	<0.05 (ND)	0.56	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.11	2.5	0.22
Vinyl chloride	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)
Xylenes	nc, v	<0.15 (ND)	<0.15 (ND)	0.17	<0.15 (ND)	<0.15 (ND)	<0.15 (ND)	<0.15 (ND)	16	1.2
Metals										
Arsenic	c, nv	---	---	---	---	---	---	---	---	---
Barium	nc, nv	---	---	---	---	---	---	---	---	---
Cadmium	nc, nv	---	---	---	---	---	---	---	---	---
Chromium (III)	nc, nv	---	---	---	---	---	---	---	---	---
Lead	NA, nv	---	---	---	---	---	---	---	---	---
Mercury	nc, nv	---	---	---	---	---	---	---	---	---
Silver	nc, nv	---	---	---	---	---	---	---	---	---
Semivolatile Organic Constituents										
Polychlorinated biphenyls (Total PCBs)	c, v	---	---	---	---	---	---	0.075	<0.02 (ND)	<0.02 (ND)
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	nc, v	---	---	<0.05 (ND)	---	---	---	0.027	<0.01 (ND)	<0.05 (ND)
Anthracene	nc, v	---	---	<0.05 (ND)	---	---	---	<0.01 (ND)	<0.01 (ND)	<0.05 (ND)
Benz[a]anthracene	c, v	---	---	<0.05 (ND)	---	---	---	<0.01 (ND)	<0.1 (ND)	<0.05 (ND)
Benzo[a]pyrene (BaP equivalents)	c, nv	---	---	<0.05 (ND)	---	---	---	<0.01 (ND)	<0.1 (ND)	<0.05 (ND)
Benzo[b]fluoranthene	c, nv	---	---	<0.05 (ND)	---	---	---	0.02	<0.1 (ND)	<0.05 (ND)
Benzo[k]fluoranthene	c, nv	---	---	<0.05 (ND)	---	---	---	<0.01 (ND)	<0.1 (ND)	<0.05 (ND)
Chrysene	c, nv	---	---	<0.05 (ND)	---	---	---	0.024	0.022	<0.05 (ND)
Dibenz[a,h]anthracene	c, nv	---	---	<0.05 (ND)	---	---	---	<0.01 (ND)	<0.1 (ND)	<0.05 (ND)
Fluoranthene	nc, nv	---	---	<0.05 (ND)	---	---	---	0.019	0.012	<0.05 (ND)
Fluorene	nc, v	---	---	0.087	---	---	---	0.043	0.15	0.21
Indeno[1,2,3-cd]pyrene	c, nv	---	---	<0.05 (ND)	---	---	---	<0.01 (ND)	<0.1 (ND)	<0.5 (ND)
Pyrene	nc, v	---	---	<0.05 (ND)	---	---	---	0.043	0.016	<0.5 (ND)
Total Petroleum Hydrocarbons										
Generic Gasoline (GRO)	nc, v	<5 (ND)	<20 (NP)	**300**	<20 (NP)	<20 (NP)	<20 (NP)	58	**550**	**310**
Generic Diesel / Heating Oil (DRO)	nc, v	<50 (NP)	<50 (NP)	**1600**	<50 (NP)	<50 (NP)	<50 (NP)	**750**	**2000 x**	**2000 x**
Generic Mineral Insulating Oil (RRO)	nc, nv	<250 (NP)	<250 (NP)	**5500**	<250 (NP)	<250 (NP)	<250 (NP)	**2300**	**6600**	**7700**

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

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

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

(Y) indicates analyte not detected, but detection limit is above screening concentration.
j = The result is below method reporting limits. The value reported is an estimate.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

ca = the calibration results for the analyte were outside of acceptance criteria, biased high. The value reported is an estimate.

lc = The presence of the compound indicated is likely due to laboratory contamination.

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

Table 1 - Summary of Analytical Data, Soil

Location ID		B19	B20	B21	B22	B23	B24	B25	Maximum Soil Concentration (remaining soil)	Soil Matrix Cleanup Level	ODEQs Screening-Level Risk-Based Concentrations SLRBCs[1] (Soil)
Sample ID		B19-13-SWI	B20-13-SWI	B21-8-SWI	B22-10-SWI	B23-12-SWI	B24-14-SWI	B25-10-SWI			
Date Sampled		4/21/2023	4/21/2023	7/24/2023	7/24/2023	7/24/2023	7/24/2023	7/24/2023			
Depth Sampled (feet)		13	13	8	10	12	14	10			
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW			
Location		58' south of UST	42' north and 54' west of B17	Western margin of site, west of boring B18, south of boring B22	Western margin of site, west of boring B17, south of boring B20	Northern part of south tax lot, north of boring B03, south of B08	Eastern margin of site, east of boring B03, north of boring B25	Eastern margin of site, east-southeast of boring B15, south of boring B24			
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)
Volatile Organic Constituents											
Benzene	c, v	---	---	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	**0.056**	NE	0.023
Bromodichloromethane	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.002
Bromoform	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.046
Bromomethane	nc, v	---	---	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	NE	0.083
Carbon tetrachloride	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.013
Chlorobenzene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	5.8
Chlorodibromomethane (dibromochloromethane)	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.0024
Chloroethane (ethyl chloride)	nc, v	---	---	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	NE	310
Chloroform	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.0034
Chloromethane	nc, v	---	---	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	NE	2.2
1,2-Dichlorobenzene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.13	NE	36
1,4-Dichlorobenzene	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.057
1,1-Dichloroethane	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.044
1,1-Dichloroethene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	6.7
cis-1,2-Dichloroethene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.63
trans-1,2-Dichloroethene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	7.0
Dichloromethane	c, v	---	---	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	**11 lc**	NE	0.14
EDB (1,2-dibromoethane)	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.00012
EDC (1,2-dichloroethane)	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.0028
Ethylbenzene	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	**2.9**	NE	0.22
MTBE (methyl t-butyl ether)	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.11
Naphthalene	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	**1.6**	NE	0.077
iso-Propylbenzene (cumene)	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.5	NE	96
Tetrachloroethene (PCE)	c, v	---	---	<0.025 (ND)	<0.025 (ND)	<0.025 (ND)	<0.025 (ND)	<0.025 (ND)	**13**	NE	0.46
Toluene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.089	NE	83
1,1,1-Trichloroethane	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	190
1,1,2-Trichloroethane	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.0063
Trichloroethene	NA, v	---	---	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	**0.056**	NE	0.013
Trichlorofluoromethane (Freon 11)	nc, v	---	---	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	NE	61
1,2,4-Trimethylbenzene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	7.6	NE	10
1,3,5-Trimethylbenzene	nc, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	2.5	NE	11
Vinyl chloride	c, v	---	---	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	0.00057
Xylenes	nc, v	---	---	<0.15 (ND)	<0.15 (ND)	<0.15 (ND)	<0.15 (ND)	<0.15 (ND)	16	NE	23
Metals											
Arsenic	c, nv	---	---	---	---	---	---	---	6.92	NE	0.43
Barium	nc, nv	---	---	---	---	---	---	---	158	NE	15000
Cadmium	nc, nv	---	---	---	---	---	---	---	<1 (ND)	NE	78
Chromium (III)	nc, nv	---	---	---	---	---	---	---	32.8	NE	120000
Lead	NA, nv	---	---	---	---	---	---	---	**54.3**	NE	30
Mercury	nc, nv	---	---	---	---	---	---	---	<1 (ND)	NE	23
Silver	nc, nv	---	---	---	---	---	---	---	<1 (ND)	NE	390
Semivolatile Organic Constituents											
Polychlorinated biphenyls (Total PCBs)	c, v	---	---	---	---	---	---	---	**0.51**	NE	0.23
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	nc, v	---	---	---	---	---	---	---	0.25	NE	770
Anthracene	nc, v	---	---	---	---	---	---	---	0.18	NE	8200
Benz[a]anthracene	c, v	---	---	---	---	---	---	---	0.1	NE	1.1
Benzo[a]pyrene (BaP equivalents)	c, nv	---	---	---	---	---	---	---	**0.16**	NE	0.11
Benzo[b]fluoranthene	c, nv	---	---	---	---	---	---	---	0.18	NE	1.1
Benzo[k]fluoranthene	c, nv	---	---	---	---	---	---	---	<0.1 (ND)	NE	11
Chrysene	c, nv	---	---	---	---	---	---	---	0.12	NE	110
Dibenz[a,h]anthracene	c, nv	---	---	---	---	---	---	---	<0.1 (ND)	NE	0.11
Fluoranthene	nc, nv	---	---	---	---	---	---	---	0.16	NE	2400
Fluorene	nc, v	---	---	---	---	---	---	---	0.43	NE	770
Indeno[1,2,3-cd]pyrene	c, nv	---	---	---	---	---	---	---	0.5	NE	1.1
Pyrene	nc, v	---	---	---	---	---	---	---	0.5	NE	1800
Total Petroleum Hydrocarbons											
Generic Gasoline (GRO)	nc, v	<20 (NP)	<20 (NP)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	**550**	80	31
Generic Diesel / Heating Oil (DRO)	nc, v	<50 (NP)	<50 (NP)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	**2000 x**	500	1100
Generic Mineral Insulating Oil (RRO)	nc, nv	<250 (NP)	<250 (NP)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	**11000**		2800

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

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

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

(Y) indicates analyte not detected, but detection limit is above screening concentration.
j = The result is below method reporting limits. The value reported is an estimate.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

ca = the calibration results for the analyte were outside of acceptance criteria, biased high. The value reported is an estimate.

lc = The presence of the compound indicated is likely due to laboratory contamination.

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

Table 1 - Summary of Analytical Data, Soil

Location ID		Background Concentrations (Regional Default)	Clean Fill Screening Levels or Background Concentrations (as applicable)	Exceeds ODEQs Screening-Level SLRBCs (Soil) and/or Soil Matrix Cleanup Level
Sample ID				
Date Sampled				
Depth Sampled (feet)				
Sampled By				
Location		Portland Basin		TRUE OR Y FALSE OR N
Constituent of Interest	Note			
Volatile Organic Constituents				
Benzene	c, v	---	0.023	Y
Bromodichloromethane	c, v	---	0.002	(Y)
Bromoform	c, v	---	0.046	(Y)
Bromomethane	nc, v	---	0.083	(Y)
Carbon tetrachloride	c, v	---	0.013	(Y)
Chlorobenzene	nc, v	---	2.4	N
Chlorodibromomethane (dibromochloromethane)	c, v	---	0.0024	(Y)
Chloroethane (ethyl chloride)	nc, v	---	310	N
Chloroform	c, v	---	0.0034	(Y)
Chloromethane	nc, v	---	2.2	N
1,2-Dichlorobenzene	nc, v	---	0.92	N
1,4-Dichlorobenzene	c, v	---	0.057	N
1,1-Dichloroethane	c, v	---	0.044	(Y)
1,1-Dichloroethene	nc, v	---	6.7	N
cis-1,2-Dichloroethene	nc, v	---	0.63	N
trans-1,2-Dichloroethene	nc, v	---	7	N
Dichloromethane	c, v	---	0.14	LC
EDB (1,2-dibromoethane)	c, v	---	0.00012	(Y)
EDC (1,2-dichloroethane)	c, v	---	0.0028	(Y)
Ethylbenzene	c, v	---	0.22	Y
MTBE (methyl t-butyl ether)	c, v	---	0.11	N
Naphthalene	c, v	---	0.077	Y
iso-Propylbenzene (cumene)	nc, v	---	96	N
Tetrachloroethene (PCE)	c, v	---	0.18	Y
Toluene	nc, v	---	23	N
1,1,1-Trichloroethane	nc, v	---	190	N
1,1,2-Trichloroethane	c, v	---	0.0063	(Y)
Trichloroethene	NA, v	---	0.013	Y
Trichlorofluoromethane (Freon 11)	nc, v	---	52	N
1,2,4-Trimethylbenzene	nc, v	---	10	N
1,3,5-Trimethylbenzene	nc, v	---	11	N
Vinyl chloride	c, v	---	0.00057	(Y)
Xylenes	nc, v	---	1.4	N
Metals				
Arsenic	c, nv	8.8	8.8	BKG
Barium	nc, nv	790	790	N
Cadmium	nc, nv	0.63	0.63	N
Chromium (III)	nc, nv	76	76	N
Lead	NA, nv	28	28	Y
Mercury	nc, nv	0.23	0.23	N
Silver	nc, nv	0.82	0.82	N
Semivolatile Organic Constituents				
Polychlorinated biphenyls (Total PCBs)	c, v	---	0.23	Y
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	nc, v	---	0.25	N
Anthracene	nc, v	---	6.8	N
Benz[a]anthracene	c, v	---	0.73	N
Benzo[a]pyrene (BaP equivalents)	c, nv	---	0.11	Y
Benzo[b]fluoranthene	c, nv	---	1.1	N
Benzo[k]fluoranthene	c, nv	---	11	N
Chrysene	c, nv	---	3.1	N
Dibenz[a,h]anthracene	c, nv	---	0.11	N
Fluoranthene	nc, nv	---	10	N
Fluorene	nc, v	---	3.7	N
Indeno[1,2,3-cd]pyrene	c, nv	---	1.1	N
Pyrene	nc, v	---	10	N
Total Petroleum Hydrocarbons				
Generic Gasoline (GRO)	nc, v	---	520	Y
Generic Diesel / Heating Oil (DRO)	nc, v	---	90	Y
Generic Mineral Insulating Oil (RRO)	nc, nv	---	140,000	Y

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

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

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

(Y) indicates analyte not detected, but detection limit is above screening concentration.
j = The result is below method reporting limits. The value reported is an estimate.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

ca = the calibration results for the analyte were outside of acceptance criteria, biased high. The value reported is an estimate.

lc = The presence of the compound indicated is likely due to laboratory contamination.

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

Table 2 - Summary of Analytical Data, Reconnaissance Ground Water

Location ID		B04	B05	B06	B07	B08	B09	B10	B11	B12	B13
Sample ID		B04-GW-12.5	B05-GW-12.5	B06-GW-15	B07-GW-15	B08-GW-13	B09-GW-14.5	B10-GW-14.5	B11-GW-15	B12-GW-230216	B13-GW-14.5
Date Sampled		2/16/23	2/16/23	2/16/23	2/16/23	2/16/23	2/16/23	2/16/23	2/16/23	2/16/23	4/21/23
Depth Sampled (feet)		12.5	12.5	15	15	13	14.5	14.5	15	15	14.5
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		South of Suspected UST	MA13: Former ASTs South of Warehouse	MA11: Suspected Septic Feature	West Yard	North Yard	North Yard	North Yard	North Yard	MA10: North of Suspected UST	Adjacent to B02
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)
Volatile Organic Constituents											
Benzene	c, v	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)
Bromodichloromethane	c, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Bromoform	c, v	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)
Bromomethane	nc, v	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)
Carbon tetrachloride	c, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Chlorobenzene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Chlorodibromomethane (dibromochloromethane)	c, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Chloroethane (ethyl chloride)	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Chloroform	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	**1.1**	**1.0**	**1.0**	<1 (ND)	<1 (ND)
Chloromethane	nc, v	<10 (ND)	<10 (ND)	<10 (ND)	<10 (ND)	<10 (ND)	<10 (ND)	<10 (ND)	<10 (ND)	<10 (ND)	<10 (ND)
1,2-Dichlorobenzene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	2.5
1,4-Dichlorobenzene	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
1,1-Dichloroethane	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
1,1-Dichloroethene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
cis-1,2-Dichloroethene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
trans-1,2-Dichloroethene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Dichloromethane	c, v	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)
EDB (1,2-dibromoethane)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
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)	<0.2 (ND)
Ethylbenzene	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	**2.7**
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)	<1 (ND)
Naphthalene	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	**1.1**	**3.2**
iso-Propylbenzene (cumene)	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	3.1
Tetrachloroethene (PCE)	c, v	2.3	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1.2	<1 (ND)	<1 (ND)	**62**
Toluene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
1,1,1-Trichloroethane	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
1,1,2-Trichloroethane	c, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Trichloroethene	NA, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	**2.9**
Trichlorofluoromethane (Freon 11)	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
1,2,4-Trimethylbenzene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1.3	37
1,3,5-Trimethylbenzene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	7.6
Vinyl chloride	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	>SLRBC	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.021	**0.21**
Xylenes	nc, v	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	2.1	8.2
Metals											
Arsenic	c, nv	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	<1 (ND)	<5 (ND)	---
Barium	nc, nv	28.0	10.9	9.13	60.6	49.2	1870	20.3	13.9	21.4	---
Cadmium	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1.44	<1 (ND)	<1 (ND)	<1 (ND)	---
Chromium (III)	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	32.2	<1 (ND)	<1 (ND)	<1 (ND)	---
Lead	NA, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	8.81	<1 (ND)	<1 (ND)	<1 (ND)	---
Mercury	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---
Silver	nc, nv	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<5 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---
Semivolatile Organic Constituents											
Polychlorinated biphenyls (Total PCBs)	c, v	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)	<0.1 (ND)
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	nc, v	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	0.051	0.21
Anthracene	nc, v	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)
Benz[a]anthracene	c, v	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)
Benzo[a]pyrene (BaP equivalents)	c, nv	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)
Benzo[b]fluoranthene	c, nv	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)
Benzo[k]fluoranthene	c, nv	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)
Chrysene	c, nv	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	0.047
Dibenz[a,h]anthracene	c, nv	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)
Fluoranthene	nc, nv	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	0.07
Fluorene	nc, v	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	0.32	1.3
Indeno[1,2,3-cd]pyrene	c, nv	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)
Pyrene	nc, v	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	0.16
Total Petroleum Hydrocarbons											
Generic Gasoline (GRO)	nc, v	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	**120**	**1100**
Generic Diesel / Heating Oil (DRO)	nc, v	<50 (ND)	<50 (ND)	**130 x ***	65 x *	76 x *	<53 (ND) *	83 x *	**240 x ***	**1100 x**	**3400 x ***
Generic Mineral Insulating Oil (RRO)	nc, nv	<250 (ND)	<250 (ND)	<250 (ND) *	<250 (ND) *	<250 (ND) *	<250 (ND) *	<250 (ND) *	<250 (ND) *	**6800**	**13000 ***

Notes:

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

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

NE = not established.

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

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

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

GRO = gasoline-range organics.

DRO = diesel-range organics.

RRO = residual-range organics.

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

Bolded 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.

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

* = DRO result after extracts passed through silica gel column prior to analysis

>S = The groundwater RBC exceeds the solubility limit. Refer to Appendix D for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present.

Table 2 - Summary of Analytical Data, Reconnaissance Ground Water

Location ID		B14	B15	B16	B17	B18	B19	B20	B21	B22	B23
Sample ID		B14-GW-15	B15-GW-14	B16-GW-13.5	B17-GW-14	B18-GW-15	B19-GW-15	B20-GW-15	B21-GW-19	B22-GW-20	B23-GW-19
Date Sampled		4/21/23	4/21/23	4/21/23	4/21/23	4/21/23	4/21/23	4/21/23	7/24/23	7/24/23	7/24/23
Depth Sampled (feet)		15	14	13.5	14	15	15	15	19	20	19
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Location		North of B02	East of B02	South of B02; 42' East of UST	30' North of UST	36' west of UST	58' south of UST	42' north and 54' west of B17	Western margin of site, west of boring B18, south of boring B22	Western margin of site, west of boring B17, south of boring B20	Northern part of south tax lot, north of boring B03, south of B08
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)
Volatile Organic Constituents											
Benzene	c, v	**1.2**	<0.35 (ND)	<0.35 (ND)	**2.7 j**	<0.35 (ND)	---	---	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)
Bromodichloromethane	c, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<5 (ND)	<0.5 (ND)	---	---	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Bromoform	c, v	<5 (ND)	<5 (ND)	<5 (ND)	<50 (ND)	<5 (ND)	---	---	<5 (ND)	<5 (ND)	<5 (ND)
Bromomethane	nc, v	<5 (ND)	<5 (ND)	<5 (ND)	<50 (ND)	<5 (ND)	---	---	<5 k	<5 k	<5 k
Carbon tetrachloride	c, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<5 (ND)	<0.5 (ND)	---	---	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Chlorobenzene	nc, v	1.1	<1 (ND)	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
Chlorodibromomethane (dibromochloromethane)	c, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<5 (ND)	<0.5 (ND)	---	---	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Chloroethane (ethyl chloride)	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
Chloroform	c, v	<1 (ND)	**1.1**	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
Chloromethane	nc, v	<10 (ND)	<10 (ND)	<10 (ND)	<100 (ND)	<10 (ND)	---	---	<10 (ND)	<10 (ND)	<10 (ND)
1,2-Dichlorobenzene	nc, v	3.5	<1 (ND)	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
1,4-Dichlorobenzene	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
1,1-Dichloroethane	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
1,1-Dichloroethene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
cis-1,2-Dichloroethene	nc, v	<1 (ND)	9	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
trans-1,2-Dichloroethene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
Dichloromethane	c, v	<5 (ND)	<5 (ND)	<5 (ND)	<50 (ND)	<5 (ND)	---	---	<5 (ND)	<5 (ND)	<5 (ND)
EDB (1,2-dibromoethane)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)
EDC (1,2-dichloroethane)	c, v	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<2 (ND)	<0.2 (ND)	---	---	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)
Ethylbenzene	c, v	**11**	<1 (ND)	<1 (ND)	**130**	**5.3**	---	---	<1 (ND)	<1 (ND)	<1 (ND)
MTBE (methyl t-butyl ether)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
Naphthalene	c, v	**7.6**	<1 (ND)	<1 (ND)	**33**	**11**	---	---	<0.2 (ND)	<0.2 (ND)	<1 (ND)
iso-Propylbenzene (cumene)	nc, v	3.2	<1 (ND)	<1 (ND)	<10 (ND)	3	---	---	<1 (ND)	<1 (ND)	<1 (ND)
Tetrachloroethene (PCE)	c, v	<1 (ND)	**86**	9.4	1.8 j	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
Toluene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	13	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
1,1,1-Trichloroethane	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
1,1,2-Trichloroethane	c, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<5 (ND)	<0.5 (ND)	---	---	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Trichloroethene	NA, v	<0.5 (ND)	**9**	<0.5 (ND)	<5 (ND)	<0.5 (ND)	---	---	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)
Trichlorofluoromethane (Freon 11)	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<10 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	<1 (ND)
1,2,4-Trimethylbenzene	nc, v	4.4	<1 (ND)	<1 (ND)	**120**	33	---	---	<1 (ND)	<1 (ND)	<1 (ND)
1,3,5-Trimethylbenzene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	35	1.9	---	---	<1 (ND)	<1 (ND)	<1 (ND)
Vinyl chloride	c, v	**0.24**	<0.02 (ND)	<0.02 (ND)	<0.2 (ND)	<0.02 (ND)	---	---	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)
Xylenes	nc, v	17	<3 (ND)	<3 (ND)	**610**	21	---	---	<3 (ND)	<3 (ND)	<3 (ND)
Metals											
Arsenic	c, nv	---	---	---	---	---	---	---	---	---	---
Barium	nc, nv	---	---	---	---	---	---	---	---	---	---
Cadmium	nc, nv	---	---	---	---	---	---	---	---	---	---
Chromium (III)	nc, nv	---	---	---	---	---	---	---	---	---	---
Lead	NA, nv	---	---	---	---	---	---	---	---	---	---
Mercury	nc, nv	---	---	---	---	---	---	---	---	---	---
Silver	nc, nv	---	---	---	---	---	---	---	---	---	---
Semivolatile Organic Constituents											
Polychlorinated biphenyls (Total PCBs)	c, v	<0.1 (ND)	---	---	<0.13 (ND)	<0.1 (ND)	<0.1 (ND)	---	---	---	---
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	nc, v	<0.04 (ND)	---	---	0.27	0.19	<0.04 (ND)	---	<0.02 (ND)	<0.02 (ND)	---
Anthracene	nc, v	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.02 (ND)	<0.02 (ND)	---
Benz[a]anthracene	c, v	<0.04 (ND)	---	---	**0.082**	<0.04 (ND)	<0.04 (ND)	---	<0.02 (ND)	<0.02 (ND)	---
Benzo[a]pyrene (BaP equivalents)	c, nv	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.02 (ND)	<0.4 (ND)	---
Benzo[b]fluoranthene	c, nv	<0.04 (ND)	---	---	0.055	<0.04 (ND)	<0.04 (ND)	---	<0.02 (ND)	<0.4 (ND)	---
Benzo[k]fluoranthene	c, nv	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.02 (ND)	<0.4 (ND)	---
Chrysene	c, nv	<0.04 (ND)	---	---	0.25	<0.04 (ND)	<0.04 (ND)	---	<0.02 (ND)	<0.02 (ND)	---
Dibenz[a,h]anthracene	c, nv	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.02 (ND)	<0.4 (ND)	---
Fluoranthene	nc, nv	0.052	---	---	0.17	<0.04 (ND)	<0.04 (ND)	---	0.036	<0.02 (ND)	---
Fluorene	nc, v	1	---	---	1.8	0.9	<0.04 (ND)	---	<0.02 (ND)	<0.02 (ND)	---
Indeno[1,2,3-cd]pyrene	c, nv	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	<0.04 (ND)	---	<0.02 (ND)	<0.4 (ND)	---
Pyrene	nc, v	0.12	---	---	0.54	0.053	<0.04 (ND)	---	0.047	<0.02 (ND)	---
Total Petroleum Hydrocarbons											
Generic Gasoline (GRO)	nc, v	**630**	<100 (ND)	<100 (ND)	**2700**	**770**	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)
Generic Diesel / Heating Oil (DRO)	nc, v	**14000 x ***	<50 (ND) *	<50 (ND) *	**12000 x ***	**8900 x ***	**200 x ***	<50 (ND) *	<50 (ND)	<50 (ND)	<50 (ND)
Generic Mineral Insulating Oil (RRO)	nc, nv	**55000 ***	<250 (ND) *	<250 (ND) *	**44000 ***	**32000 ***	<250 (ND) *	<250 (ND) *	<250 (ND)	<250 (ND)	<250 (ND)

Notes:

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

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

NE = not established.

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

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

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

GRO = gasoline-range organics.

DRO = diesel-range organics.

RRO = residual-range organics.

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

Bolded 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.

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

* = DRO result after extracts passed through silica gel column prior to analysis

>S = The groundwater RBC exceeds the solubility limit. Refer to Appendix D for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present.

Table 2 - Summary of Analytical Data, Reconnaissance Ground Water

Location ID		B24	B25	Maximum Ground Water Concentration	ODEQs Screening-level Risk-Based Concentrations (SLRBCs) [1]	Background Concentrations (metals)	COPC?
Sample ID		B24-GW-20	B25-GW-20				
Date Sampled		7/24/23	7/24/23				
Depth Sampled (feet)		20	20				
Sampled By		ENW	ENW				
Location		Eastern margin of site, east of boring B03, north of boring B25	Eastern margin of site, east-southeast of boring B15, south of boring B24				TRUE OR Y FALSE OR N
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)			
Volatile Organic Constituents							
Benzene	c, v	<0.35 (ND)	<0.35 (ND)	**2.7 j**	0.46	NE	Y
Bromodichloromethane	c, v	<0.5 (ND)	<0.5 (ND)	<5 (ND)	0.13	NE	(Y)
Bromoform	c, v	<5 (ND)	<5 (ND)	<50 (ND)	3.3	NE	(Y)
Bromomethane	nc, v	<5 k	<5 k	<50 (ND)	7.5	NE	(Y)
Carbon tetrachloride	c, v	<0.5 (ND)	<0.5 (ND)	<5 (ND)	0.46	NE	(Y)
Chlorobenzene	nc, v	<1 (ND)	<1 (ND)	1.1	77	NE	N
Chlorodibromomethane (dibromochloromethane)	c, v	<0.5 (ND)	<0.5 (ND)	<5 (ND)	0.17	NE	(Y)
Chloroethane (ethyl chloride)	nc, v	<1 (ND)	<1 (ND)	<10 (ND)	21000	NE	N
Chloroform	c, v	<1 (ND)	<1 (ND)	**1.1**	0.22	NE	Y
Chloromethane	nc, v	<10 (ND)	<10 (ND)	<100 (ND)	190	NE	N
1,2-Dichlorobenzene	nc, v	<1 (ND)	<1 (ND)	3.5	300	NE	N
1,4-Dichlorobenzene	c, v	<1 (ND)	<1 (ND)	<10 (ND)	0.48	NE	(Y)
1,1-Dichloroethane	c, v	<1 (ND)	<1 (ND)	<10 (ND)	2.8	NE	(Y)
1,1-Dichloroethene	nc, v	<1 (ND)	<1 (ND)	<10 (ND)	280	NE	N
cis-1,2-Dichloroethene	nc, v	<1 (ND)	<1 (ND)	9	36	NE	N
trans-1,2-Dichloroethene	nc, v	<1 (ND)	<1 (ND)	<10 (ND)	360	NE	N
Dichloromethane	c, v	<5 (ND)	<5 (ND)	<50 (ND)	11	NE	(Y)
EDB (1,2-dibromoethane)	c, v	<0.01 (ND)	<0.01 (ND)	<10 (ND)	0.0075	NE	(Y)
EDC (1,2-dichloroethane)	c, v	<0.2 (ND)	<0.2 (ND)	<2 (ND)	0.17	NE	(Y)
Ethylbenzene	c, v	<1 (ND)	<1 (ND)	**130**	1.5	NE	Y
MTBE (methyl t-butyl ether)	c, v	<1 (ND)	<1 (ND)	<10 (ND)	14	NE	N
Naphthalene	c, v	<1 (ND)	<1 (ND)	**33**	0.17	NE	Y
iso-Propylbenzene (cumene)	nc, v	<1 (ND)	<1 (ND)	3.2	440	NE	N
Tetrachloroethene (PCE)	c, v	<1 (ND)	<1 (ND)	**86**	12	NE	Y
Toluene	nc, v	<1 (ND)	<1 (ND)	13	1100	NE	N
1,1,1-Trichloroethane	nc, v	<1 (ND)	<1 (ND)	<10 (ND)	8000	NE	N
1,1,2-Trichloroethane	c, v	<0.5 (ND)	<0.5 (ND)	<5 (ND)	0.28	NE	(Y)
Trichloroethene	NA, v	<0.5 (ND)	<0.5 (ND)	**9**	0.49	NE	Y
Trichlorofluoromethane (Freon 11)	nc, v	<1 (ND)	<1 (ND)	<10 (ND)	1100	NE	N
1,2,4-Trimethylbenzene	nc, v	<1 (ND)	<1 (ND)	**120**	54	NE	Y
1,3,5-Trimethylbenzene	nc, v	<1 (ND)	<1 (ND)	35	59	NE	N
Vinyl chloride	c, v	<0.02 (ND)	<0.02 (ND)	**0.24**	0.027	NE	Y
Xylenes	nc, v	<3 (ND)	<3 (ND)	**610**	190	NE	Y
Metals							
Arsenic	c, nv	---	---	<5 (ND)	0.052	2	(Y)
Barium	nc, nv	---	---	1870	4000	NE	N
Cadmium	nc, nv	---	---	1.44	20	1	N
Chromium (III)	nc, nv	---	---	32.2	30000	1	N
Lead	NA, nv	---	---	8.81	15	13.3	N
Mercury	nc, nv	---	---	<5 (ND)	6	0.1	N
Silver	nc, nv	---	---	<5 (ND)	100	1	N
Semivolatile Organic Constituents							
Polychlorinated biphenyls (Total PCBs)	c, v	---	---	<0.13 (ND)	0.006	NE	(Y)
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	nc, v	---	---	0.27	510	NE	N
Anthracene	nc, v	---	---	<0.04 (ND)	>S	NE	N
Benz[a]anthracene	c, v	---	---	**0.082**	0.03	NE	Y
Benzo[a]pyrene (BaP equivalents)	c, nv	---	---	<0.4 (ND)	0.025	NE	(Y)
Benzo[b]fluoranthene	c, nv	---	---	0.055	0.25	NE	N
Benzo[k]fluoranthene	c, nv	---	---	<0.4 (ND)	2.5	NE	N
Chrysene	c, nv	---	---	0.25	>S	NE	N
Dibenz[a,h]anthracene	c, nv	---	---	<0.4 (ND)	0.025	NE	(Y)
Fluoranthene	nc, nv	---	---	0.17	800	NE	N
Fluorene	nc, v	---	---	1.8	280	NE	N
Indeno[1,2,3-cd]pyrene	c, nv	---	---	<0.4 (ND)	0.25	NE	(Y)
Pyrene	nc, v	---	---	0.54	110	NE	N
Total Petroleum Hydrocarbons							
Generic Gasoline (GRO)	nc, v	<100 (ND)	<100 (ND)	**2700**	110	NE	Y
Generic Diesel / Heating Oil (DRO)	nc, v	<50 (ND)	<50 (ND)	**14000 x ***	100	NE	Y
Generic Mineral Insulating Oil (RRO)	nc, nv	<250 (ND)	<250 (ND)	**55000 ***	300	NE	Y

Notes:

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

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

NE = not established.

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

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

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

GRO = gasoline-range organics.

DRO = diesel-range organics.

RRO = residual-range organics.

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

Bolded 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.

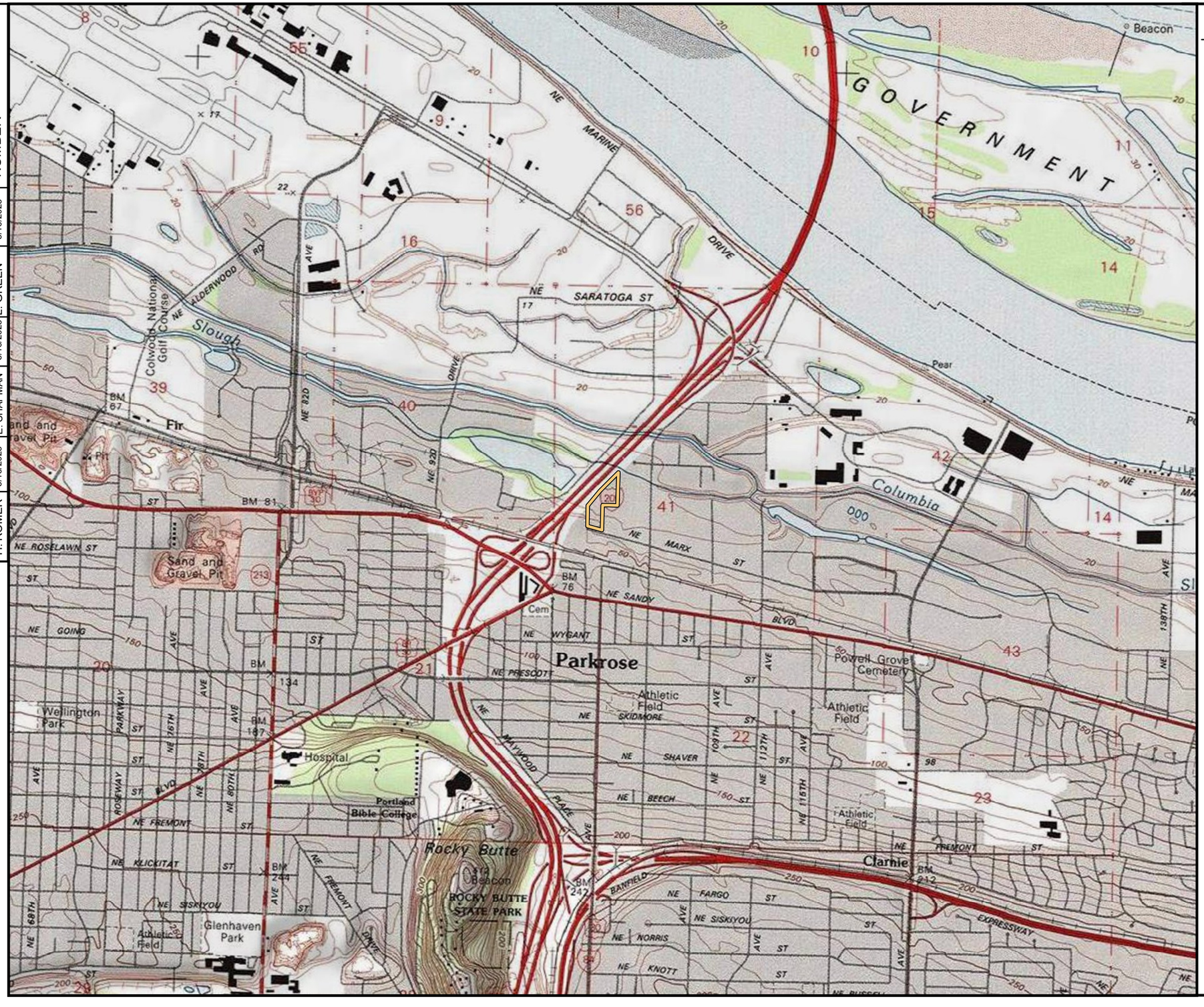
k = The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

* = DRO result after extracts passed through silica gel column prior to analysis

>S = The groundwater RBC exceeds the solubility limit. Refer to Appendix D for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present.

Figures

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
H. ROMER 3/16/2023	E. CHAPMAN 3/16/2023	L. GREEN 3/16/2023	1460-23001(V01)



LEGEND:

SUBJECT PROPERTY BOUNDARY

NOTES:

1. BASE MAP DEVELOPED BY THE USGS

0 1,125 2,250 4,500

Feet

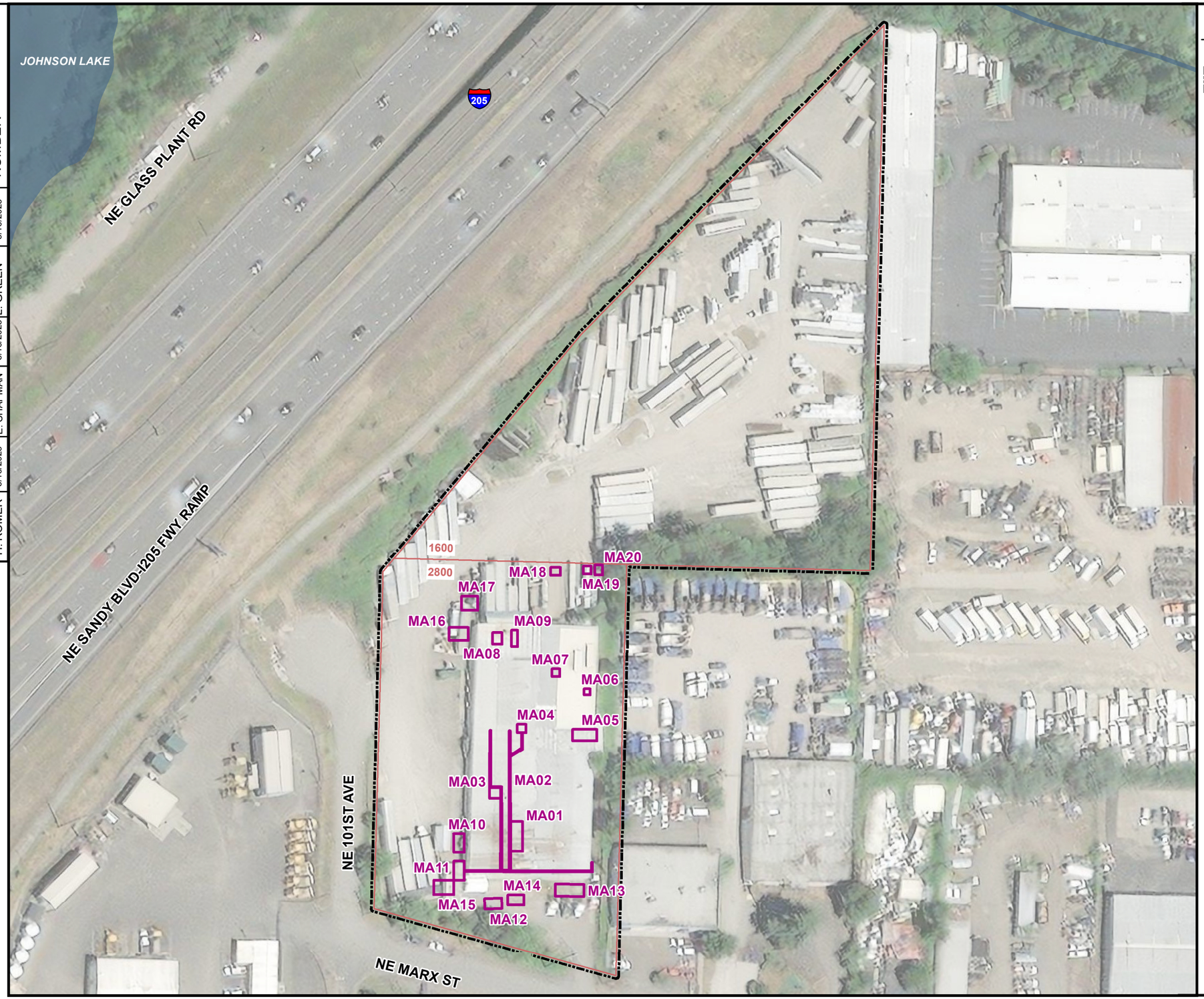
EVREN NORTHWEST INC.
environmental natural resource consultants

FIGURE 1

SITE VICINITY

5.3-ACRE INDUSTRIAL PROPERTY
10103 NE MARX STREET
PORTLAND, OREGON

DRAWING NUMBER	1460-23001(V01)
APPROVED BY	L. GREEN 3/16/2023
CHECKED BY	E. CHAPMAN 3/16/2023
DRAWN BY	H. ROMER 3/16/2023



LEGEND:

- SUBJECT PROPERTY BOUNDARY
- TAX LOT
- MAGNETIC ANOMALY

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2021 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION

0 65 130 260

Feet

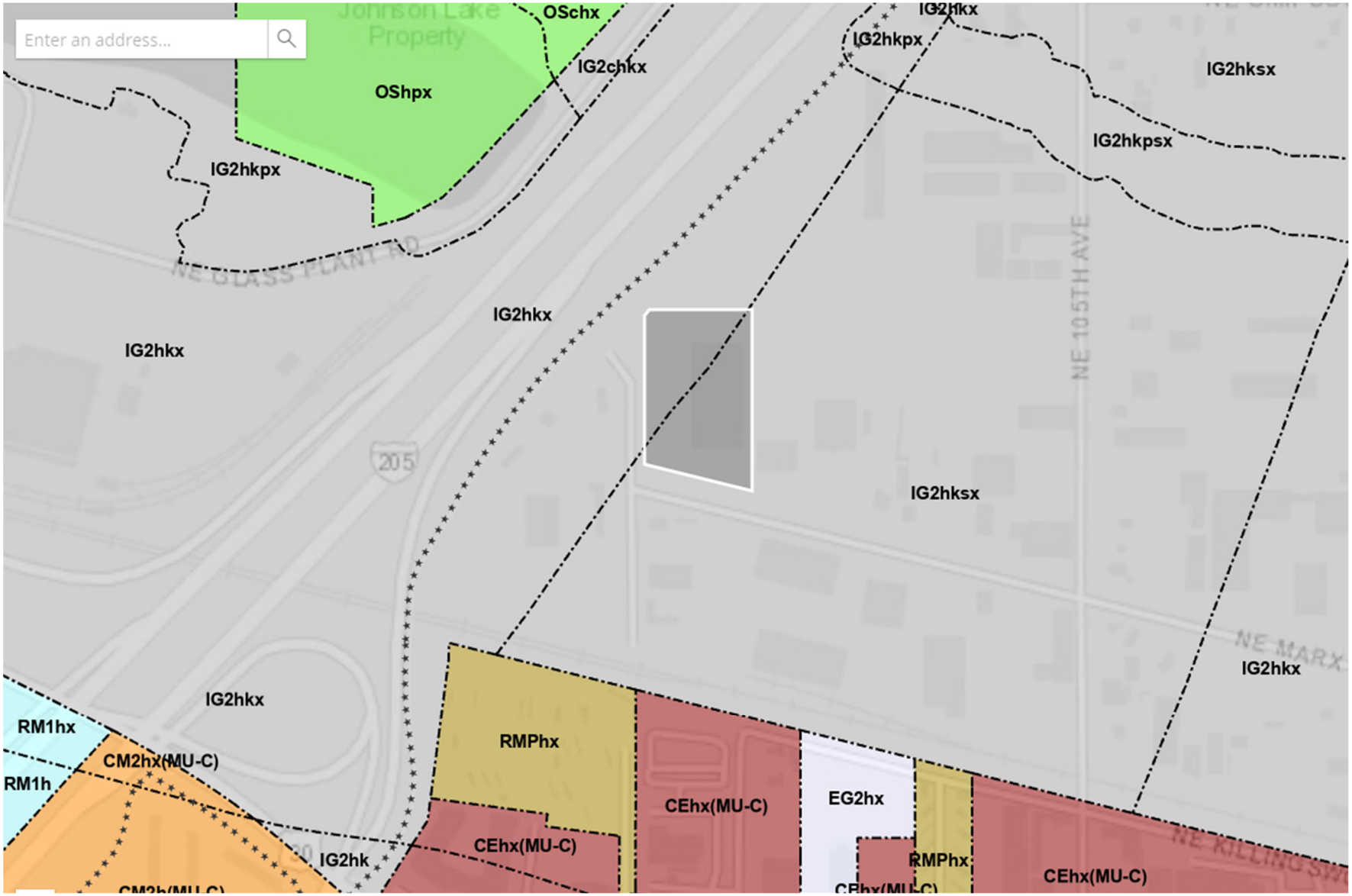
N

EVREN NORTHWEST INC.
environmental natural resource consultants

FIGURE 2

SITE PLAN WITH GEOPHYSICAL FINDINGS

5.3-ACRE INDUSTRIAL PROPERTY
10103 NE MARX STREET
PORTLAND, OREGON



https://www.portlandmaps.com/bps/zoning/#/map/R235908

EVREN NORTHWEST INC environmental natural resource consultants	Date Drawn: 8/28/2023 CAD File Name: 1460-23001_Fig4(Zoning) Drawn By: LDG Approved By: PMT	Industrial Property 10103 NE Marx Street Portland, Oregon	**Zoning Map**	Project No. 1466-23001 Figure No. **3**

DRAWING NUMBER	1460-23001(V01)
APPROVED BY	L. GREEN 9/7/2023
CHECKED BY	E. CHAPMAN 9/7/2023
DRAWN BY	H. ROMER 9/7/2023

LEGEND:

- SUBJECT PROPERTY BOUNDARY
- TAX LOT
- DECISION UNIT
- ESTIMATED EXTENT OF PCE/TCE/VC IN GROUNDWATER
- ESTIMATED EXTENT OF PETROLEUM AND RELATED-VOCS IN GROUND WATER
- ENW BORING LOCATION

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2021 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION

0 65 130 260 Feet

EVREN NORTHWEST INC.
environmental / natural resource consultants

N

FIGURE 4

TEMPORARY SOIL BORING LOCATION DIAGRAM

5.3-ACRE INDUSTRIAL PROPERTY
10103 NE MARX STREET
PORTLAND, OREGON

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
H. ROMER 8/21/2023	E. CHAPMAN 8/21/2023	L. GREEN 8/21/2023	1460-23001(V01)

LEGEND:

- SUBJECT PROPERTY BOUNDARY
- TAX LOT
- LOF

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2023 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

0 65 130 260

Feet

N

EVREN NORTHWEST INC.
environmental / natural resource consultants

FIGURE 5

LOF

5.3-ACRE INDUSTRIAL PROPERTY
10103 NE MARX STREET
PORTLAND, OREGON

Appendix A

Site Photographs

Private locator clearing boring locations of utilities.

Direct-push drill rig set up at B24 on the east side of the warehouse.

Cleared boring location.

Field headspace volatiles screening of soil core using a photoionization detector (PID).

EVREN NORTHWEST INC. environmental / natural resource consultants	10103 NE Marx St Portland, Oregon 97220	**Site Photographs**	Project No. 1460-23001-04 Appendix **A**

Reconnaissance ground water sample collection at B24 using a peristaltic pump.

View of soil cores from boring B23 at the soil-water interface.

Drill rig set up at B22 along the western property margin.

Brown and gray poorly graded sand underlain by poorly graded sand with silt in boring B21.

EVREN NORTHWEST INC. environmental / natural resource consultants	10103 NE Marx St Portland, Oregon 97220	**Site Photographs**	Project No. 1460-23001-04 Appendix **A**

Appendix B

Soil Boring Logs

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
		1460-23001-01	**B21**

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
NE Marx St	7/24/23	7/24/23	2.25	

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION
		7/24/23	11.92	8	

DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade	80	1		NA

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
	Jordan Morris	20

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			GRAVEL (FILL) dry, sub-rounded						
			POORLY GRADED SAND (SP) loose, moist, medium-grained, quartz-rich, micaceous						
4			Gray, POORLY GRADED SAND (SP) loose, medium-grained, quartz-rich, micaceous			60		0.0	
8			Brown POORLY GRADED SAND WITH SILT (SP-SM) med. loose, wet to saturated, fine-grained sand, micaceous, SWI at 8'	B21-8-SWI					
			Gray POORLY GRADED GRAVEL WITH SAND (GP) dense, wet, coarse grained,micaceous sand					0.0	
12						100			
			As above					0.0	
16						60			
20			As above. Total depth of boring 20 feet.					0.0	
						100			
24									
28									

EVREN Northwest, Inc.

DRILL LOG

PROJECT	PROJECT NO.	BORING NO.
	1460-23001-01	**B22**

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
NE Marx St	7/24/223	7/24/23	2.25	

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION
		7/24/23	11.5	10	

DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade	80	1		NA

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
	Jordan Morris	20

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			GRAVEL FILL (FILL) dry, subangular						
			Gray-brown POORLY GRADED GRAVEL WITH SAND (GP) dense, sub-rounded, no visible mica						
4			Gray POORLY GRADED SAND (SP) loose, moist, quartz-rich, micaceous						
			Same as above.					0.1	
						60			
8									
			Same as above. Soil water interface at 10' - saturated.	B22-10-SWI				0.2	
			Gray POORLY GRADED GRAVEL WITH SAND AND SILT (GP-GM) dense, saturated, coarse-grained gravel, no visible mica						
12						100			
			As above.					0.2	
16						60			
20			As above. Total depth of boring = 20 feet.					0.2	
						100			
24									
28									

EVREN Northwest, Inc.

DRILL LOG

PROJECT		PROJECT NO.	BORING NO.
		1460-23001-01	**B23**

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
NE Marx St	7/24/23	7/24/23	2.25	

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION
		7/24/23	9.84	11	

DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade		1		NA

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
	Jordan Morris	20

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			GRAVEL FILL (FILL) loose, dry						
			Dark brown SILT WITH FINE GRAVEL (ML) moist, orange mottles, micaceous						
4			Gray mottles Gravel disappears			60		0.2	
8			Brown POORLY GRADED SAND WITH SILT (SP-SM) med. dense, wet, fine-grained, micaceous						
			Saturated; soil-water interface at 11 feet bgs			70			
12			POORLY GRADED GRAVEL WITH SILT (GP-GM) subrounded	B23-12-SWI				0.0	
16						60			
20			As above.						
24									
28									

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
		1460-23001-01	**B24**

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
NE Marx St	7/24/23	7/24/23	2.25	

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION
				14	

DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade	43	2		NA

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
	Jordan Morris	20

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			SANDY GRAVEL FILL (FILL) sub rounded						
			Dark brown (4/4/10Y) SILTY SAND WITH GRAVEL (SM) med. dense, moist, no mica						
			Brown (2/5/10YR) POORLY GRADED SAND (SP) med. loose, moist, micaceous						
			Dark brown SILTY SAND WITH GRAVEL (SM) med. dense, moist, orange mottles						
4			Brown POORLY GRADED SAND (SP) med. loose, moist, micaceous						
			Color changes to gray (2/3 1YR) and wood debris appears.					0.2	
			Dark gray (2/2/10YR) SILT (ML) med. soft, moist, micaceous			60			
8			Color grades to light gray (2/5/10YR), trace fine sand					0.1	
			As above, though wet	B24-9				0.2	
			Gray (1/5/10YR) POORLY GRADED GRAVEL (GP) med. dense, wet, no visible mica						
12						80			
			As above, though saturated; soil-water interface	B24-14-SWI					
			Brown and gray (2/5/10YR) POORLY GRADED SAND WITH SILT (SP-SM) loose, saturated, micaceous			20		0.1	
16			Brown and gray WELL GRADED GRAVEL WITH SOME SAND AND SILT (GW-GM) med. dense, saturated, no visible mica						
20			End of boring at 20 feet bgs.					0.1	
						70			
24									
28									

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
		1460-23001-01	**B25**

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
NE Marx St	7/24/23	7/24/23	2.25	

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION
		7/24/23	11.84	10.5	

DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Cascade	55	1		NA

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
	Jordan Morris	15

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			GRAVEL WITH SAND FILL (FILL) dry, sub-rounded						
			Brown (6/3/10YR) POORLY GRADED SAND WITH GRAVEL (SP) med. loose, moist, medium-grained sub-angular clasts, no visible mica						
4			Orange-brown (8/5/10YR) POORLY GRADED SAND WITH SILT (SP-SM) med. dense, moist, fine-grained, micaceous						
			Gray (2/4/10YR) POORLY GRADED SAND (SP) med. loose, moist, medium-grained, quartz-rich, micaceous			50			
8			As above					0.0	
			AS above.					0.1	
			Saturated; soil-water interface at 10.5 feet bgs.	B25-10.5-SWI		40			
12			Gray POORLY GRADED GRAVEL WITH SAND AND TRACE SILT (GP) dense, saturated, no visible mica			70			
			As above.					0.1	
16						60			
20									
24									
28									

Appendix C

Field Sampling Data Sheets

EVREN Northwest **GROUND WATER FIELD SAMPLING DATA FORM (FIELD)**

PROJECT NAME: _____ PROJECT NUMBER: 1460-23001-04

Event: _____ Date: 7/24/23

Field Personnel: E Chapman Monitoring Well ID: B21

Weather Conditions: cloudy warm 70's °F Start Time: 1500

DTW (prior to purging): 11.92

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)
1517		~~0.5~~ 1.5	0.15 L/m					dk gray	0.1
1520		~~0.25~~ 1.5						gray	0.3
1522		1.5						gray	0.5

Total Purged: 1.5 L

Tubing: 3/8

Purge Pumping Rate (approx. L/m): 0.15 - 0.25 L/m Well casing (in. diam): 1"

Decontamination method: Approx. Pump/Intake Depth: 18

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
	VBI	0	1L AMB	2	B21-GW-19	15:20
		0	0.5L AMB	1		
		HCl	40mL VOA	4		
		HNO_3	250mL poly	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: PROJECT NUMBER: 1460-23001-04

Event: GW Delineation Date: 7/24/23

Field Personnel: Dan Sayko Monitoring Well ID: B22

Weather Conditions: cloudy 75°F Start Time: 16:00

DTW (prior to purging): 11.50 bgs

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate mL/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)
16:01		150		light brown turbid	turbid				0
16:04				tan - slightly					0.30
16:05		200		milky					0.70
16:07		"	—	mostly clear — collect sample —					1.30

Total Purged:

Tubing: 3/8" LDPE

Purge Pumping Rate (approx. L/m): 150 ml/min Well casing (in. diam): 1" PVC

Decontamination method: Approx. Pump/Intake Depth: ~15'

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
GX, VOCs	Eurofins	HCl	40ml	4	B22-GW-20	16:18
PAHs	↓	none	1 liter	1		
DX		none	500ml	1		
dissolved metals		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:

Signature of Field Personnel:

EVREN Northwest **GROUND WATER FIELD SAMPLING DATA FORM (FIELD)**

PROJECT NAME: _____ PROJECT NUMBER: 1420-23001-04

Event: _____ Date: 7/24/23

Field Personnel: E Chapman Monitoring Well ID: B23

Weather Conditions: cloudy / warm ~70°F s Start Time: 1414

DTW (prior to purging): 9.84

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)
1414		1.5 L/m					dk grey	cloudy	0.1
1420							grey	less cldy	0.2
1422							grey	less cldy	0.5
1426								lt grey	1.0
1430								opaque	1.5

Total Purged: 1.5

Tubing: 3/8

Purge Pumping Rate (approx. L/m): 0.15 - 0.25 L/min

Well casing (in. diam): 3/4" 1"

Decontamination method:

Approx. Pump/Intake Depth: 19

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
	F3B1	—	1L AMB	2	B23-GW-19	14:30
		—	0.5L AMB	1		
		HCl	40mL VOA	4		
		HNO_3	500mL Poly	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: MARX SITE — PROJECT NUMBER: 1460-23001-04

Event: GW DELINEATION — Date: 7-24-2023

Field Personnel: EVAN BRUGGEMAN — Monitoring Well ID: BZ4

Weather Conditions: P. CLOUDY 68F — Start Time: ~~11:42~~ 11:30

DTW (prior to purging):

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (mL/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)
11:42		200 mL/min						GREY/MUDDY	0
11:45		"						GREY	0.6 L
11:50		"						GREY	1.6 L
12:00		"						LIGHT GREY	3.6 L

Total Purged:

Tubing: 3/8" PE

Purge Pumping Rate (approx. L/m): 200 mL/min — Well casing (in. diam): 1" PVC

Decontamination method: — Approx. Pump/Intake Depth: 18' bgs

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
GRX + VOCs	F&B	HCL	40mL	4	BZ4-GW-20	12:20
DX	"	NONE	500mL	1		
PAHs (HOLD)		"	1L	1		
PCBs (HOLD)		"	1L	1		
DIST. RCRA 8 (HOLD		HNO3	250mL	1	(FIELD FILTERED)	

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: Filled 1L containers first to allow more time to clear before filling VOAs. VOAs were cloudy.

Signature of Field Personnel:

EVREN Northwest **GROUND WATER FIELD SAMPLING DATA FORM (FIELD)**

PROJECT NAME: _____ PROJECT NUMBER: 1460-23001-04

Event: _____ Date: 7-24-23

Field Personnel: E Chapman Monitoring Well ID: B25

Weather Conditions: 70's F° O/cast breezy Start Time: 1325

DTW (prior to purging): 11.84

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate mL/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)
1325		150						clear	1.5 L

Total Purged: 1.5 L

Tubing: 3/8"

Purge Pumping Rate (approx. L/m): 150 mL/m

Well casing (in. diam): 3/4"

Decontamination method:

Approx. Pump/Intake Depth: 18' bgs

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
	FBI	~~0~~	1 L Amb	2	B25-GW-20	1335
		~~0~~	0.5 L Amb	1		
		HCl	40 mL	4		
			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:

Signature of Field Personnel:

Appendix D

Laboratory Analytical Reports

Summary: DATA VALID? ☒YES

Analytical Laboratory Data Validation Check Sheet

Project Name: 10103 NE Marx, Portland

Project Number: 1460-23001-04

Date of Review: 8/3/23 Lab. Name: F&B Lab Batch ID #: 307298 amended

Chain of Custody

1.) Are all requested analyses reported?	☒yes	☐no	
2.) Were the requested methods used?	☒yes	☐no	
3.) Trip blank submitted?	☐yes	☒no	
4.) Field blank submitted?	☐yes	☒no	

Timing

5.) Samples extracted within holding times?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
6.) Analysis performed within holding times?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA

Quality Assurance/Quality Control

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

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

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

Accuracy

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

Precision

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

Dichlorodifluoromethane failed below the acceptance criteria in the 8260D matrix spike samples. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect. (vo)

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

Comments:

The 8260D soil calibration standard failed the acceptance criteria for 1,2,3-trichloropropane and 1,2-dibromo-3-chloropropane. The data were flagged accordingly. (ca)

The 8260D soil acetone and water acetone and bromomethane calibration standards exceeded the acceptance criteria. The compounds were not detected, therefore this did not represent an out of control condition. (k)

An 8270E internal standard failed the acceptance criteria for sample B22-GW-20. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported. (J)

Sample B22-GW-20 was diluted for 8270E re-analysis. Detection limits were raised and surrogate recoveries may not be meaningful (d). The B22-GW-20 calibration results for 2,4,6-Tribromophenol were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate (ca).

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

Initial Review By: AR_____ **Final** Review By: _____

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

August 3, 2023

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

Dear Mr Green:

Included are the amended results from the testing of material submitted on July 25, 2023 from the 1460-23001-01, F&BI 307298 project. The PAH sample IDs have been corrected.

We apologize for the inconvenience 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
ENW0802R.DOC

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

August 2, 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 July 25, 2023 from the 1460-23001-01, F&BI 307298 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
ENW0802R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on July 25, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 1460-23001-01, F&BI 307298 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
307298 -01	B21-8-SWI
307298 -02	B22-10-SWI
307298 -03	B23-12-SWI
307298 -04	B24-14-SWI
307298 -05	B25-10-SWI
307298 -06	B24-9
307298 -07	B21-GW-19
307298 -08	B22-GW-20
307298 -09	B23-GW-19
307298 -10	B24-GW-20
307298 -11	B25-GW-20

The 8260D soil calibration standard failed the acceptance criteria for 1,2,3-trichloropropane and 1,2-dibromo-3-chloropropane. The data were flagged accordingly.

The 8260D soil acetone and water acetone and bromomethane calibration standards exceeded the acceptance criteria. The compounds were not detected, therefore this did not represent an out of control condition.

Dichlorodifluoromethane failed below the acceptance criteria in the 8260D matrix spike samples. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

An 8270E internal standard failed the acceptance criteria for sample B22-GW-20. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298
Date Extracted: 07/26/23
Date Analyzed: 07/26/23

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

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

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
B21-8-SWI 307298-01	<5	118
B22-10-SWI 307298-02	<5	121
B23-12-SWI 307298-03	<5	115
B24-14-SWI 307298-04	<5	114
B25-10-SWI 307298-05	<5	113
Method Blank 03-1612 MB	<5	111

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298
Date Extracted: 07/25/23
Date Analyzed: 07/26/23

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
B21-GW-19 307298-07	<100	100
B22-GW-20 307298-08	<100	94
B23-GW-19 307298-09	<100	100
B24-GW-20 307298-10	<100	100
B25-GW-20 307298-11	<100	100
Method Blank 03-1611 MB	<100	116

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298
Date Extracted: 07/25/23
Date Analyzed: 07/25/23

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

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

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Residual Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
B21-8-SWI 307298-01	<50	<250	100
B22-10-SWI 307298-02	<50	<250	98
B23-12-SWI 307298-03	<50	<250	94
B24-14-SWI 307298-04	<50	<250	98
B25-10-SWI 307298-05	<50	<250	106
Method Blank 03-1770 MB	<50	<250	96

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298
Date Extracted: 07/25/23
Date Analyzed: 07/25/23

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Residual Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
B21-GW-19 307298-07	<50	<250	114
B22-GW-20 307298-08	<50	<250	114
B23-GW-19 307298-09	<50	<250	127
B24-GW-20 307298-10	<50	<250	87
B25-GW-20 307298-11	<50	<250	109
Method Blank 03-1775 MB	<50	<250	123

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B21-8-SWI	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/25/23	Lab ID:	307298-01
Date Analyzed:	07/25/23	Data File:	072520.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	93	84	116

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

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B22-10-SWI	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/25/23	Lab ID:	307298-02
Date Analyzed:	07/25/23	Data File:	072521.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	79	128
Toluene-d8	103	84	121
4-Bromofluorobenzene	92	84	116

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

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B23-12-SWI	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/25/23	Lab ID:	307298-03
Date Analyzed:	07/25/23	Data File:	072522.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	79	128
Toluene-d8	101	84	121
4-Bromofluorobenzene	92	84	116

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

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B24-14-SWI	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/25/23	Lab ID:	307298-04
Date Analyzed:	07/25/23	Data File:	072523.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	79	128
Toluene-d8	101	84	121
4-Bromofluorobenzene	95	84	116

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

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B25-10-SWI	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/25/23	Lab ID:	307298-05
Date Analyzed:	07/25/23	Data File:	072524.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	79	128
Toluene-d8	102	84	121
4-Bromofluorobenzene	94	84	116

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

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/25/23	Lab ID:	03-1722 mb
Date Analyzed:	07/25/23	Data File:	072509.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	91	84	116

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

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B21-GW-19	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/26/23	Lab ID:	307298-07
Date Analyzed:	07/26/23	Data File:	072617.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	110	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	93	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 k	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	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		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B22-GW-20	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/26/23	Lab ID:	307298-08
Date Analyzed:	07/26/23	Data File:	072618.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	78	126
Toluene-d8	101	84	115
4-Bromofluorobenzene	95	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 k	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	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		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B23-GW-19	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/26/23	Lab ID:	307298-09
Date Analyzed:	07/26/23	Data File:	072619.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	93	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 k	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	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		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B24-GW-20	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/26/23	Lab ID:	307298-10
Date Analyzed:	07/26/23	Data File:	072620.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	90	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 k	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	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		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	B25-GW-20	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/26/23	Lab ID:	307298-11
Date Analyzed:	07/26/23	Data File:	072621.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	93	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 k	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	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		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/26/23	Lab ID:	03-1728 mb
Date Analyzed:	07/26/23	Data File:	072607.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	111	71	132
Toluene-d8	105	68	139
4-Bromofluorobenzene	101	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 k	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	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		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B21-GW-19	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/27/23	Lab ID:	307298-07
Date Analyzed:	07/27/23	Data File:	072708.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	70	11	173
2-Fluorobiphenyl	74	25	128
2,4,6-Tribromophenol	66	10	140
Terphenyl-d14	99	50	150

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	0.068
Anthracene	<0.02
Fluoranthene	0.036
Pyrene	0.047
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

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B22-GW-20	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/27/23	Lab ID:	307298-08
Date Analyzed:	07/27/23	Data File:	072709.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	11	173
2-Fluorobiphenyl	82	25	128
2,4,6-Tribromophenol	64	10	140
Terphenyl-d14	105	50	150

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 J
Benzo(b)fluoranthene	<0.02 J
Benzo(k)fluoranthene	<0.02 J
Indeno(1,2,3-cd)pyrene	<0.02 J
Dibenz(a,h)anthracene	<0.02 J
Benzo(g,h,i)perylene	<0.04 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B22-GW-20	Client:	Evren Northwest
Date Received:	07/25/23	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/27/23	Lab ID:	307298-08 1/20
Date Analyzed:	07/28/23	Data File:	072807.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	68 d	11	173
2-Fluorobiphenyl	70 d	25	128
2,4,6-Tribromophenol	75 d ca	10	140
Terphenyl-d14	74 d	50	150

Compounds:	Concentration ug/L (ppb)
Benzo(a)pyrene	<0.4
Benzo(b)fluoranthene	<0.4
Benzo(k)fluoranthene	<0.4
Indeno(1,2,3-cd)pyrene	<0.4
Dibenz(a,h)anthracene	<0.4
Benzo(g,h,i)perylene	<0.8

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1460-23001-01, F&BI 307298
Date Extracted:	07/27/23	Lab ID:	03-1780 mb
Date Analyzed:	07/27/23	Data File:	072709.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	86	15	144
2-Fluorobiphenyl	80	25	128
2,4,6-Tribromophenol	78	10	142
Terphenyl-d14	99	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

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298

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

Laboratory Code: 307298-01 (Duplicate)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	82	70-130

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298

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

Laboratory Code: 307271-01 (Duplicate)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	91	70-130

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298

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

Laboratory Code: 307277-03 (Matrix Spike)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	90	78-121

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	104	65-151	0

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298

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

Laboratory Code: 307277-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	30 vo	31 vo	50-150	3
Chloromethane	mg/kg (ppm)	2	<0.5	59	58	50-150	2
Vinyl chloride	mg/kg (ppm)	2	<0.05	73	74	50-150	1
Bromomethane	mg/kg (ppm)	2	<0.5	71	73	50-150	3
Chloroethane	mg/kg (ppm)	2	<0.5	77	78	50-150	1
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	74	74	50-150	0
Acetone	mg/kg (ppm)	10	<5	118	117	50-150	1
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	78	80	50-150	3
Hexane	mg/kg (ppm)	2	<0.25	55	59	50-150	7
Methylene chloride	mg/kg (ppm)	2	<0.5	81	82	50-150	1
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	78	80	50-150	3
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	83	86	50-150	4
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	73	75	50-150	3
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	81	85	50-150	5
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	84	87	50-150	4
Chloroform	mg/kg (ppm)	2	<0.05	76	78	50-150	3
2-Butanone (MEK)	mg/kg (ppm)	10	<1	87	80	50-150	8
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	75	77	50-150	3
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	77	79	50-150	3
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	74	77	50-150	4
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	82	82	50-150	0
Benzene	mg/kg (ppm)	2	<0.03	80	82	50-150	2
Trichloroethene	mg/kg (ppm)	2	<0.02	80	83	50-150	4
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	72	74	50-150	3
Bromodichloromethane	mg/kg (ppm)	2	<0.05	78	76	50-150	3
Dibromomethane	mg/kg (ppm)	2	<0.05	79	82	50-150	4
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	89	87	50-150	2
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	80	81	50-150	1
Toluene	mg/kg (ppm)	2	<0.05	79	82	50-150	4
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	73	74	50-150	1
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	77	80	50-150	4
2-Hexanone	mg/kg (ppm)	10	<0.5	73	73	50-150	0
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	73	75	50-150	3
Tetrachloroethene	mg/kg (ppm)	2	<0.025	87	91	50-150	4
Dibromochloromethane	mg/kg (ppm)	2	<0.05	82	86	50-150	5
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	81	83	50-150	2
Chlorobenzene	mg/kg (ppm)	2	<0.05	81	84	50-150	4
Ethylbenzene	mg/kg (ppm)	2	<0.05	80	83	50-150	4
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	82	85	50-150	4
m,p-Xylene	mg/kg (ppm)	4	<0.1	80	84	50-150	5
o-Xylene	mg/kg (ppm)	2	<0.05	80	84	50-150	5
Styrene	mg/kg (ppm)	2	<0.05	81	84	50-150	4
Isopropylbenzene	mg/kg (ppm)	2	<0.05	85	90	50-150	6
Bromoform	mg/kg (ppm)	2	<0.05	83	85	50-150	2
n-Propylbenzene	mg/kg (ppm)	2	<0.05	74	76	50-150	3
Bromobenzene	mg/kg (ppm)	2	<0.05	81	82	50-150	1
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	78	80	50-150	3
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	75	74	50-150	1
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	68	69	50-150	1
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	72	74	50-150	3
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	72	74	50-150	3
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	79	80	50-150	1
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	76	79	50-150	4
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	79	80	50-150	1
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	83	85	50-150	2
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	79	82	50-150	4
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	80	83	50-150	4
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	81	84	50-150	4
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	64	65	50-150	2
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	79	83	50-150	5
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	84	87	50-150	4
Naphthalene	mg/kg (ppm)	2	<0.05	76	80	50-150	5
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	80	83	50-150	4

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	62	10-150
Chloromethane	mg/kg (ppm)	2	80	21-140
Vinyl chloride	mg/kg (ppm)	2	100	35-135
Bromomethane	mg/kg (ppm)	2	101	20-151
Chloroethane	mg/kg (ppm)	2	100	21-147
Trichlorofluoromethane	mg/kg (ppm)	2	102	47-143
Acetone	mg/kg (ppm)	10	141	13-169
1,1-Dichloroethene	mg/kg (ppm)	2	101	49-138
Hexane	mg/kg (ppm)	2	90	61-141
Methylene chloride	mg/kg (ppm)	2	101	25-146
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	91	65-129
trans-1,2-Dichloroethene	mg/kg (ppm)	2	105	62-126
1,1-Dichloroethane	mg/kg (ppm)	2	90	64-131
2,2-Dichloropropane	mg/kg (ppm)	2	96	76-150
cis-1,2-Dichloroethene	mg/kg (ppm)	2	103	62-127
Chloroform	mg/kg (ppm)	2	94	67-129
2-Butanone (MEK)	mg/kg (ppm)	10	99	19-171
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	90	73-123
1,1,1-Trichloroethane	mg/kg (ppm)	2	95	66-125
1,1-Dichloropropene	mg/kg (ppm)	2	92	70-131
Carbon tetrachloride	mg/kg (ppm)	2	97	53-135
Benzene	mg/kg (ppm)	2	98	70-130
Trichloroethene	mg/kg (ppm)	2	97	62-116
1,2-Dichloropropane	mg/kg (ppm)	2	87	70-130
Bromodichloromethane	mg/kg (ppm)	2	93	70-130
Dibromomethane	mg/kg (ppm)	2	92	70-130
4-Methyl-2-pentanone	mg/kg (ppm)	10	97	64-137
cis-1,3-Dichloropropene	mg/kg (ppm)	2	95	68-137
Toluene	mg/kg (ppm)	2	95	70-130
trans-1,3-Dichloropropene	mg/kg (ppm)	2	85	70-130
1,1,2-Trichloroethane	mg/kg (ppm)	2	91	70-130
2-Hexanone	mg/kg (ppm)	10	80	55-145
1,3-Dichloropropane	mg/kg (ppm)	2	86	70-130
Tetrachloroethene	mg/kg (ppm)	2	106	69-131
Dibromochloromethane	mg/kg (ppm)	2	100	61-137
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	94	70-130
Chlorobenzene	mg/kg (ppm)	2	98	70-130
Ethylbenzene	mg/kg (ppm)	2	96	70-130
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	99	56-134
m,p-Xylene	mg/kg (ppm)	4	96	70-130
o-Xylene	mg/kg (ppm)	2	97	70-130
Styrene	mg/kg (ppm)	2	97	70-130
Isopropylbenzene	mg/kg (ppm)	2	103	67-131
Bromoform	mg/kg (ppm)	2	94	70-130
n-Propylbenzene	mg/kg (ppm)	2	89	70-130
Bromobenzene	mg/kg (ppm)	2	95	70-130
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	93	70-130
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	83	70-130
1,2,3-Trichloropropane	mg/kg (ppm)	2	76	70-130
2-Chlorotoluene	mg/kg (ppm)	2	87	70-130
4-Chlorotoluene	mg/kg (ppm)	2	88	70-130
tert-Butylbenzene	mg/kg (ppm)	2	96	70-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	94	70-130
sec-Butylbenzene	mg/kg (ppm)	2	93	68-131
p-Isopropyltoluene	mg/kg (ppm)	2	98	70-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	97	70-130
1,4-Dichlorobenzene	mg/kg (ppm)	2	96	70-130
1,2-Dichlorobenzene	mg/kg (ppm)	2	98	70-130
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	73	70-130
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	98	66-140
Hexachlorobutadiene	mg/kg (ppm)	2	102	67-141
Naphthalene	mg/kg (ppm)	2	90	69-119
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	97	66-138

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298

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

Laboratory Code: 307282-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	99	27-164
Chloromethane	ug/L (ppb)	10	<10	91	34-141
Vinyl chloride	ug/L (ppb)	10	<0.02	105	16-176
Bromomethane	ug/L (ppb)	10	<5	126	10-193
Chloroethane	ug/L (ppb)	10	<1	119	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	99	50-150
Acetone	ug/L (ppb)	50	<50	59	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	94	50-150
Hexane	ug/L (ppb)	10	<5	101	49-161
Methylene chloride	ug/L (ppb)	10	<5	84	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	85	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	98	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	94	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	84	62-152
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	96	50-150
Chloroform	ug/L (ppb)	10	<1	96	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	72	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	101	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	95	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	100	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	98	50-150
Benzene	ug/L (ppb)	10	<0.35	99	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	95	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	92	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	96	50-150
Dibromomethane	ug/L (ppb)	10	<1	97	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	94	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	48-145
Toluene	ug/L (ppb)	10	<1	113	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	103	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	111	50-150
2-Hexanone	ug/L (ppb)	50	<10	99	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	111	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	111	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	110	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	111	50-150
Chlorobenzene	ug/L (ppb)	10	<1	107	50-150
Ethylbenzene	ug/L (ppb)	10	<1	106	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	103	50-150
m,p-Xylene	ug/L (ppb)	20	<2	116	50-150
o-Xylene	ug/L (ppb)	10	<1	110	50-150
Styrene	ug/L (ppb)	10	<1	106	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	103	50-150
Bromoform	ug/L (ppb)	10	<5	109	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	114	50-150
Bromobenzene	ug/L (ppb)	10	<1	107	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	113	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	116	57-162
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	109	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	115	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	113	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	107	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	116	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	112	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	111	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	107	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	107	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	105	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	101	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	104	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	98	42-150
Naphthalene	ug/L (ppb)	10	<1	102	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	99	44-155

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298

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	119	117	49-149	2
Chloromethane	ug/L (ppb)	10	105	105	34-143	0
Vinyl chloride	ug/L (ppb)	10	122	119	43-149	2
Bromomethane	ug/L (ppb)	10	149	128	28-182	15
Chloroethane	ug/L (ppb)	10	132	129	59-157	2
Trichlorofluoromethane	ug/L (ppb)	10	125	113	59-141	10
Acetone	ug/L (ppb)	50	84	85	20-139	1
1,1-Dichloroethene	ug/L (ppb)	10	119	115	67-138	3
Hexane	ug/L (ppb)	10	116	109	50-161	6
Methylene chloride	ug/L (ppb)	10	121	110	29-192	10
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	112	110	70-130	2
trans-1,2-Dichloroethene	ug/L (ppb)	10	120	114	70-130	5
1,1-Dichloroethane	ug/L (ppb)	10	117	112	70-130	4
2,2-Dichloropropane	ug/L (ppb)	10	120	112	71-148	7
cis-1,2-Dichloroethene	ug/L (ppb)	10	113	109	70-130	4
Chloroform	ug/L (ppb)	10	121	115	70-130	5
2-Butanone (MEK)	ug/L (ppb)	50	110	98	50-157	12
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	125	121	70-130	3
1,1,1-Trichloroethane	ug/L (ppb)	10	117	113	70-130	3
1,1-Dichloropropene	ug/L (ppb)	10	117	115	70-130	2
Carbon tetrachloride	ug/L (ppb)	10	118	110	70-130	7
Benzene	ug/L (ppb)	10	121	116	70-130	4
Trichloroethene	ug/L (ppb)	10	118	113	70-130	4
1,2-Dichloropropane	ug/L (ppb)	10	118	113	70-130	4
Bromodichloromethane	ug/L (ppb)	10	122	117	70-130	4
Dibromomethane	ug/L (ppb)	10	120	115	70-130	4
4-Methyl-2-pentanone	ug/L (ppb)	50	122	114	70-130	7
cis-1,3-Dichloropropene	ug/L (ppb)	10	115	114	70-130	1
Toluene	ug/L (ppb)	10	105	102	70-130	3
trans-1,3-Dichloropropene	ug/L (ppb)	10	97	95	70-130	2
1,1,2-Trichloroethane	ug/L (ppb)	10	106	103	70-130	3
2-Hexanone	ug/L (ppb)	50	99	95	66-132	4
1,3-Dichloropropane	ug/L (ppb)	10	102	101	70-130	1
Tetrachloroethene	ug/L (ppb)	10	102	100	70-130	2
Dibromochloromethane	ug/L (ppb)	10	104	105	63-142	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	105	104	70-130	1
Chlorobenzene	ug/L (ppb)	10	102	98	70-130	4
Ethylbenzene	ug/L (ppb)	10	99	96	70-130	3
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	102	100	70-130	2
m,p-Xylene	ug/L (ppb)	20	106	104	70-130	2
o-Xylene	ug/L (ppb)	10	103	102	70-130	1
Styrene	ug/L (ppb)	10	101	98	70-130	3
Isopropylbenzene	ug/L (ppb)	10	103	102	70-130	1
Bromoform	ug/L (ppb)	10	106	100	50-157	6
n-Propylbenzene	ug/L (ppb)	10	100	98	70-130	2
Bromobenzene	ug/L (ppb)	10	100	95	70-130	5
1,3,5-Trimethylbenzene	ug/L (ppb)	10	99	95	52-150	4
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	108	105	75-140	3
1,2,3-Trichloropropane	ug/L (ppb)	10	99	97	40-153	2
2-Chlorotoluene	ug/L (ppb)	10	103	99	70-130	4
4-Chlorotoluene	ug/L (ppb)	10	103	101	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	97	95	70-130	2
1,2,4-Trimethylbenzene	ug/L (ppb)	10	104	99	70-130	5
sec-Butylbenzene	ug/L (ppb)	10	100	97	70-130	3
p-Isopropyltoluene	ug/L (ppb)	10	98	96	70-130	2
1,3-Dichlorobenzene	ug/L (ppb)	10	96	94	70-130	2
1,4-Dichlorobenzene	ug/L (ppb)	10	97	95	70-130	2
1,2-Dichlorobenzene	ug/L (ppb)	10	95	94	70-130	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	99	101	70-130	2
1,2,4-Trichlorobenzene	ug/L (ppb)	10	92	95	70-130	3
Hexachlorobutadiene	ug/L (ppb)	10	89	88	70-130	1
Naphthalene	ug/L (ppb)	10	96	95	61-133	1
1,2,3-Trichlorobenzene	ug/L (ppb)	10	93	91	69-143	2

Date of Report: 08/02/23
Date Received: 07/25/23
Project: 1460-23001-01, F&BI 307298

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	75	76	50-104	1
2-Methylnaphthalene	ug/L (ppb)	5	88	94	52-113	7
1-Methylnaphthalene	ug/L (ppb)	5	92	100	51-115	8
Acenaphthylene	ug/L (ppb)	5	85	88	60-114	3
Acenaphthene	ug/L (ppb)	5	83	86	57-110	4
Fluorene	ug/L (ppb)	5	92	96	61-115	4
Phenanthrene	ug/L (ppb)	5	89	90	63-113	1
Anthracene	ug/L (ppb)	5	90	94	65-117	4
Fluoranthene	ug/L (ppb)	5	96	95	68-121	1
Pyrene	ug/L (ppb)	5	102	99	62-133	3
Benz(a)anthracene	ug/L (ppb)	5	94	96	66-131	2
Chrysene	ug/L (ppb)	5	100	104	66-129	4
Benzo(a)pyrene	ug/L (ppb)	5	97	100	66-129	3
Benzo(b)fluoranthene	ug/L (ppb)	5	90	94	55-144	4
Benzo(k)fluoranthene	ug/L (ppb)	5	94	103	58-139	9
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	94	86	62-136	9
Dibenz(a,h)anthracene	ug/L (ppb)	5	94	86	55-146	9
Benzo(g,h,i)perylene	ug/L (ppb)	5	93	82	58-137	13

Data Qualifiers & Definitions

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

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

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

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

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

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

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

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

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

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

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

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

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

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

307298

SAMPLE CHAIN OF CUSTODY

07/25/23 VW3/CH/JI/N3

Page # 1 of 2

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

Phone 503-452-5561 Email lynng@evren-nw.com

SAMPLERS (*signature*) Jordan Morris

PROJECT NAME 1460-23001-01 04 per EB ME

PO #

REMARKS

Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
Standard Turnaround
X RUSH Per client
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082						Notes
B21-8-SWI	01 A-E	07-24-23	14:20	Soil	5	X	X		X								
B22-10-SWI	02	07-24-23	15:40	Soil	5	X	X		X								
B23-12-SWI	03	07-24-23	13:48	Soil	5	X	X		X								
B24-14-SWI	04	07-24-23	11:00	Soil	5	X	X		X								
B25-10-SWI	05	07-24-23	12:25	Soil	5	X	X		X								
B24-9	06	07-24-23	1618	Soil	1												Added at lab - Hold per JM 7/25/23 ME
																	(NP) 7/25/23

ANALYSES REQUESTED

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Jordan Morris	Jordan Morris	Evren Northwest	07-24-23	1810
Received by:	Nham Pham	Nham Pham	FEBI	7/25/23	1025
Relinquished by:					
Received by:			Samples received at 3		°C

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

307298

SAMPLE CHAIN OF CUSTODY

07/25/23 VW3/C4/J1/N3

Page # 1 of 2

Report To Lynn Green

Company ENW

Address PO Box 40

City, State, ZIP Portland, OR

Phone _____ Email lynng@evren-nw

SAMPLERS (signature)

PROJECT NAME

PO # 1460-23001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO ENW

TURNAROUND TIME
- ☐ Standard turnaround
- ☒ RUSH Per Client
- Rush charges authorized by:

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
						ANALYSES REQUESTED											
B21-GW-19	07-AH	7/24/23	15:20	W	8	X	X			X	A						A-Per EB 07/26/23
B22-GW-20	08	7/24/23	16:18	W	8	X	X			X	A						ME
B23-GW-19	09	7/24/23	14:30	W	8	X	X			X							
B24-GW-20	10	7/24/23	12:20	W	8	X	X			X							
B25-GW-20	11	7/24/23	1335	W	8	X	X			X							
B																	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Jordan Mowe	Jordan Mowe	Evren Northwest	07-24-23	18:00
Received by: Nhan Phan	Nhan Phan	FedEx	7/25/23	1025
Relinquished by:				
Received by:		Samples received at 3 °C		

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