



GROUND WATER MONITORING: THIRD QUARTER 2022



FUTURE KIDDIE ACADEMY PROPERTY

8701 Greenwood Avenue North
Seattle, WA 98103

Prepared for:



Attn: Maninder Singh

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Issued on:

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This

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Future Kiddie Academy Property

8701 Greenwood Avenue North
Seattle, Washington 98103

Report for:



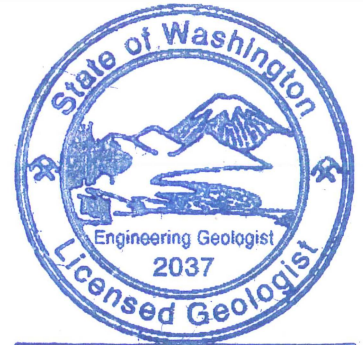
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Issued August 24, 2022 by:



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EXP. 12/14/2022

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List of Acronyms and Abbreviations

Amsl	above mean sea level
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, xylenes
BTOC	Below Top of Casing
Client	Kiddie Academy
COPCs	constituents of potential concern
CSM	conceptual site model
CUL	cleanup level
cVOC	chlorinated volatile organic constituent
DO	dissolved oxygen
DRO	diesel-range organics
Ecology	Washington Department of Ecology
ENW	EVREN Northwest, Inc.
EPA	US Environmental Protection Agency
F&BI	Friedman and Bruya, Inc.
Ft/ft	feet per foot
GRO	gasoline-related organics
LNAPL	light non-aqueous phase liquid
mg/L	milligrams per liter
mV	millivolts
µg/L	micrograms per liter
µS/cm	microSiemens per centimeter
MTCA	Model Toxics Control Act
ORP	oxidation-reduction potential
PAH	polynuclear aromatic hydrocarbon
PE	polyethylene
PQL	practical quantification limit
RRO	residual(oil)-range organics
SOW	scope of work
TOC	top of casing
TPH	total petroleum hydrocarbons
VOCs	volatile organic constituents
WAC	Washington Administrative Code

1.0 Introduction

At the request of Kiddie Academy (Client), EVREN Northwest, Inc. (ENW) conducted ground water monitoring at the commercial property located at 8701 Greenwood Avenue North in Seattle, Washington (subject property; see Figures 1 and 2). The scope of work completed during this investigation further assesses the data gaps identified in ENW's Work Plan¹ to fulfill Washington Department of Ecology's (Ecology's) change of use requirements² pursuant to Client's plans to redevelop the subject property as a child daycare facility.

This report summarizes previous environmental work and describes the ground water monitoring scope of work, findings, and conclusions. This work was authorized by Client on December 29, 2021.

2.0 Background

Site background is detailed in ENW's previously submitted work plan.¹ Based on this history, ENW prepared the *Data Gap Investigation Work Plan (Work Plan)*,¹ which is the basis of the scope of work (SOW) outlined in the following section and followed in the ground water sampling activities presented in this report.

2.1 Purpose

The SOW described below was designed to address Ecology's comments as outlined in ENW's *Work Plan*¹ and support state cleanup requirements of Ecology's Model Toxics Control Act (MTCA), Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 Washington Administrative Code (WAC).

2.2 Scope of Work

This work was performed in accordance with the SOW provided in ENW's proposal dated December 7, 2021.

The SOW included the following tasks:

- Prepared an internal Sample/Analysis Plan for sample collection.
- Gauged water levels in 14 monitoring wells (Well-2 through Well-13, EMW01, and MW-8) and used low-flow purge and sampling methodology to sample select wells (WELL-2 thru WELL-5, WELL-11, WELL-12, EMW01, and MW-8).
- Submitted samples to an independent laboratory for analysis.
- Evaluated analytical data against MTCA Method A and B cleanup levels.

¹ ENW, December 8, 2021. December 2021 Work Plan for Focused Data Gap Investigation, Future Kiddie Academy, Former Texaco #2111544, 8701 Greenwood Avenue North, Seattle, Washington, Facility/Site ID# 6416: Prepared for Kiddie Academy.

² Ecology, March 8, 2021. Response to Change of Use Request at the Following Cleanup Site: Name: Texaco 211544, Address: 8701 Greenwood Ave N, Seattle, Washington, Facility/Site No.: 63538329, Cleanup Site ID No.: 6416.

- Completed this report describing the above activities and findings.

Appendix A presents photos of work conducted on site during this SOW.

3.0 Site Setting

A conceptual site model (CSM) is presented in ENW's *Work Plan*.¹ Key elements of the CSM are summarized in this section.

Site and Vicinity General Description. The subject property is located on the northwest corner of the intersection of Greenwood Avenue N and N 87th Street in the Greenwood neighborhood of North Seattle, Washington. The site is located approximately six miles north-northwest of downtown Seattle, Washington and approximately four miles west of Lake Washington. The King County Assessor's Office identifies the site as parcel number 2920700030 and describes the property as rectangular in shape and 32,728 square feet in area.

The subject property is in a mixed residential and commercial area of King County. The site is bordered to the north by single-family residences, west by an alley beyond which are single-family residences, to the east by Greenwood Avenue North, beyond which is a vacant commercial building and parking lot, and to the south by N 87th Avenue, beyond which is a multi-family residential building and street-level retail businesses.

The subject property was developed in 1997 with the current commercial building in the southern portion of the site. Other site improvements include an asphalt-paved parking lot in the northern portion of the site, drainage features and landscaped areas.

Geographic Setting. According to the U.S. Geological Survey Seattle North, Washington 7.5-minute quadrangle (Figure 1), the subject property lies at an approximate elevation of 260 feet above mean sea level (amsl). Topography in the vicinity of the subject property is indicated as sloping gently to the west-southwest.

Geologic Setting. Seattle is within the Puget Lowland, an elongate structural and topographic basin between the Cascade Range and Olympic Mountains. The Seattle area has experienced repeated glacial advancements during the past 2 million years causing cyclic glacial scouring and deposition and later modified by landslides and stream erosion. Seattle is located on a complex succession of glacial and nonglacial deposits that overlie an irregular bedrock surface. According to the Geologic Map of Northeastern Seattle (Part of the Seattle North 7.5' x 15' Quadrangle),³ the upper most geology beneath the site is mapped as Holocene age Peat deposits, which are accumulations of wood and other plant material forming layers of greater than about 1 meter and of mappable extent. These units are gradational within other non-glacial deposits. The mapped stratigraphy underlying these surficial deposits are mapped as Pleistocene age glacial deposits consisting of glacially transported silt, sand and sub-rounded to well-rounded gravel.

Previous investigations have identified a silt and peat layer present between approximately seven and 15 feet bgs that appears to act as a confining layer separating lower saturated soils from the overlying vadose

³ Booth, D.B., Goetz, K., Schimel, S.A., 2009, Geologic Map of Northeastern Seattle (Part of the Seattle North 7.5' x 15' Quadrangle), King County, Washington: U.S. Geological Survey Scientific Investigations Map 3065, Map 1:24,000.

zone. Between 14 and 17 feet below ground surface (bgs) across the site there is a transition to a gray gravel/silt hard pan layer with relatively high density compared to overlying native sediments.

Hydrogeology. No surface water bodies, lagoons, or manmade drainages are located on the subject property. The nearest surface water body is Green Lake, located approximately 0.95 miles southeast of the site. Well log data in the area indicates ground water occurs as shallow as 4 feet bgs. Previous investigations reported first ground water in borings occurring at the site between nine and 17 feet bgs. Shallow ground water has been reported to occur within a silty/sandy layer located directly above a sand and gravel hardpan layer at depth. Shallow ground water within glacial deposits in the Seattle area commonly occurs as a seasonal perched ground water table recharged primarily by infiltrating precipitation during the wet season. At the subject site, first ground water was generally encountered within silts and sands below the overlying peat layer. Ground water has been reported to recharge slowly into existing monitoring wells. Stabilized static ground water levels in monitoring wells have been reported ranging from approximately 0.0 feet bgs to 7 feet bgs.

Constituents of Potential Concern (COPCs). According to ENW's Work Plan,¹

- On-site dry-cleaning-related COPCs include gasoline-range organics (GRO), diesel-range organics (DRO), and chlorinated volatile organic constituents (cVOCs).
- On-site gasoline service station-related COPCs and off-site COPCs from the north-adjointing property include GRO, DRO, residual(oil)-range organics (RRO), volatile organic constituents (VOCs), and polynuclear aromatic hydrocarbons (PAHs).

Nature and Extent and Associated Data Gaps. Data gaps¹ being addressed in this SOW are associated with the nature and extent of petroleum impacts in ground water, ground-water gradient and flow direction, and seasonal effects on ground water constituent concentrations as follows:

- **Ground Water.** Shallow reconnaissance ground water samples reported GRO, benzene and vinyl chloride at concentrations above MTCA Method A cleanup level (CUL) in Partner's boring B2 (proposed outdoor play area). Benzene, DRO and RRO were also present in temporary wells in Partner borings B4 and B5, located at the central portion of the north property boundary and along the west side of the on-site commercial building (Figure 3).
 - Four quarters of ground water monitoring of 12 on-site monitoring wells (Well-2 through Well-13) are proposed to establish a hydraulic gradient and ground water flow direction, and evaluate seasonal effects on dissolved constituent concentrations at the north-adjointing property boundary (Well-6, Well-8, and Well-12), within and downgradient of the proposed play area (Well-4, Well-5, and Well-13), the former dry cleaner area (Well-10 and Well-11), and west and southwest of the on-site commercial building (Well-2 and Well-3).

4.0 Additional Work Completed During 3rd Quarter 2022

The following remedial actions were completed in addition to the quarterly ground water monitoring and sampling activities conducted during the 3rd Quarter 2022.

Modification to Ground Water Monitoring Program. Based on the first three quarter results of ground water monitoring sampling showed consistently low concentration of dissolved constituents in some

wells, ENW submitted a request to modify the ground water monitoring program starting in July 2022 after installation of new monitoring well EMW01 in May 2022 and refurbishment of MW-8 in April 2022. ENW proposed eliminating several wells from further monitoring, other than depth to water measurements, with continued monitoring at five locations (including the new well locations just installed and/or refurbished). Ecology approved the modified ground water monitoring plan with some revisions in an email on June 8, 2022.

The modified schedule is as follows:

Table 4-1. Ecology Approved Modified Ground Water Monitoring Program

Well	DTW	TPH-G, -D, -O	Petroleum VOCs	CVOCs	PAHs	Pb+Cd
Well-2	X	X	X		X	
Well-3	X	X	X	X	X	
Well-4	X	X			X	
Well-5	X	X			X	
Well-6	X					
Well-7	X					
Well-8	X					
Well-9	X					
Well-10	X					
Well-11	X	X	X	X	X	
Well-12	X	X	X	X	X	X
Well-13	X					
EMW-01	X	X	X		X	
MW-8	X	X	X		X	

X - Ecology proposed addition

Monitoring Well Development (Well EMW-01). On July 15, 2022, monitoring well EMW01 was developed through a process of surging and pumping until development water was clear of sediment and monitored ground-water parameters had stabilized. Development water and recovered sediment were placed in a Department of Transportation (DOT) approved 55-gallon drum.

Prior to developing the well, the following characteristics were noted:

- Recorded depth to water and well depth to the nearest 0.01 foot.
- Based on the above information, the height of the water column and well volume were calculated to determine minimum purge volume.

Development of each well was completed using a Waterra Hydrolift electric pump discharging at a rate of 1.5 to 4 gallons per minute. During pumping, water quality parameters were measured regularly to track the progress of development (pH, temperature, conductivity, ORP [oxygen-reduction potential], DO [dissolved oxygen], and turbidity).

The well was surged before pumping using a surge block. Additional surging was conducted throughout development by the nature of the pump action and by moving the intake up and down the well screen within the water column. This resulted in additional sediment being suspended and pumped to the surface.

Prior to development, depth to water and depth to bottom of well were measured at 2.9 feet and 18.2 feet BTOC, respectively. In total, 8.5 gallons were purged from the well. All purge water was contained in a 55-gallon drum. Once the water cleared substantially with pumping and surging, development ceased, and the pump was removed from the well. Water levels in monitor well EMW01 were noted to return to the original elevation quickly after removing the pump from the well.

Development data was recorded on a Well Development Measurements form, and included purge volumes, time of beginning and termination of purging, and observations regarding color and water quality parameters. A copy of the completed form for well EMW01 is included in Appendix B.

5.0 Methods

This section describes the methods used to conduct the SOW. Field activities for this project are documented in the photographic log included as Appendix A.

5.1 Work Objectives

Field work performed for this project was developed with the following specific objectives:

- To sample and evaluate ground water beneath the subject site from the shallow ground water table.
- To perform ground water monitoring in a safe manner for technical personnel.
- To conduct the work efficiently and cost-effectively, without interfering or otherwise affecting the condition and operation of the property.
- To document information and data generated in a professional manner that is valid for the intended use.

The remainder of this section describes the methods and procedures used for this investigation. A photographic log of all the field work is presented in Appendix A, Field Data Sampling Sheets are included in Appendix B, and laboratory analytical reports are included in Appendix C. Findings are presented in Section 6.

5.2 Preparation Activities

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

Plan Preparation. An in-house Sampling and Analysis Plan 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.

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

5.1 Ground Water Sample Collection

Immediately following purging, ground water samples were collected using clean, dedicated PE tubing connected to a peristaltic pump set at its lowest setting (approximately 0.1 to 0.2 liters per minute). Samples were transferred slowly into laboratory-supplied containers minimizing turbulence. Samples for VOC analysis were confirmed to contain no air bubbles within the container before sealing. Each sample container was labeled with the sample identification, date, time, and sampler.

Samples were immediately placed in cooled storage pending delivery to the laboratory under chain-of-custody protocols. All analyses were performed by Friedman & Bruya, Inc. (F&BI), of Seattle, Washington, using the US Environmental Protection Agency (EPA) Methods specified below. The laboratory report and chain-of-custody documents are presented in Appendix C.

5.2 Waste Management and Disposal

Purge and decontaminate water generated during sampling activities were placed into a 55-gallon drum, labeled, and left on-site in a secure location pending receipt of sample laboratory results. Sampling gloves, rags, and tubing were disposed of as solid waste.

5.3 Analytical Methods

Samples were analyzed according to the analytical methods presented in Table 4-1. Samples were analyzed by F&BI of Seattle, Washington. The laboratory analytical reports are included in Appendix C.

Table 4-2. Analytical Methods

Analytical Method	Constituents	Ground Water
NWTPH-Gx	Total Petroleum Hydrocarbons (TPH)–gasoline-range quantification (GRO)	All ground water monitoring wells
NWTPH-Dx	Total Petroleum Hydrocarbons (TPH)–Diesel-range quantification (DRO) and Residual oil-range quantification (RRO)	All ground water monitoring wells
EPA 8260B	Petroleum-related Volatile Organic Compounds (benzene, ethylbenzene, EDB, MTBE, toluene, total xylenes)	All ground water monitoring wells
EPA 8260B	Chlorinated Volatile Organic Compounds	Select ground water monitoring wells (Well-03, -04 and -10)
EPA 8270D SIM	Carcinogenic Polynuclear Aromatic Hydrocarbons (cPAHs)	All ground water monitoring wells
EPA 6020 ⁴	Total lead and cadmium	Select ground water monitoring wells (Well-12)

5.4 Cleanup Standards

The State of Washington MTCA Regulations (Chapter 173-340 WAC) sets numeric cleanup levels for “routine cleanup actions”. “Routine cleanup actions” are defined as those sites where: 1) cleanup

⁴ Cadmium and lead analysis requested by Ecology in an email dated April 25, 2022. The stated purpose of additional analysis was to characterize ground water contaminants migrating onto the subject site from the SMI cleanup property to the north (up gradient of the subject site).

standards for each hazardous substance are obvious and undisputed, allowing for an adequate margin of safety for protection of human health and the environment; 2) does not require preparation of an environmental impact statement, and 3) qualifies for an exclusion from conducting a terrestrial ecological evaluation. CULs are defined as the concentration of a hazardous substance in soil, water, air, or sediment that is determined to be protective of human health and the environment under specified exposure conditions. MTCA's three (3) methods for establishing cleanup levels are briefly described below.

Method A: Method A provides tables of cleanup levels that are protective of human health for the most common hazardous substances found in soil and ground water at sites. Note that these levels were developed by procedures of Method B. The Method A cleanup must meet the concentrations listed in the Method A table and, if not listed in the table, the concentration standards established under applicable state or federal laws. If neither the Method A table nor applicable state and federal laws provide an appropriate cleanup level, then natural background concentration or the practical quantification limit (PQL) may be used as the cleanup level. Method A is the simplest, most streamlined approach to cleanup, but is meant to be applied with sites that have releases of only a few, common, hazardous substances.

Method B: Method B provides cleanup levels using risk assessment equations developed for various exposure pathways, as well as by using standards specified by applicable state and federal laws. Standard Method B uses generic default assumptions; Modified Method B uses chemical-specific and/or site-specific parameters in calculating the cleanup levels. Natural background concentrations and PQLs are also considered in this method. Method B is considered the universal approach to site closure and is the method most commonly used.

Site-Specific Method B Total Petroleum Hydrocarbon Cleanup Levels: In accordance with Ecology guidance⁵, site-specific Method B cleanup levels for total petroleum hydrocarbons were calculated using Ecology's MTCATPH workbooks. MTCA regulation allows for modification of Method B specified default assumptions based on site-specific or chemical-specific data. The Ecology-provided workbook provides the necessary tools for calculating protective soil and ground water concentrations under modified Method B. The Ecology-provided workbook provides the tools to calculate the risk under current site conditions (forward calculation) following entry of measured soil or ground water concentrations. The workbook then executes a "forward" calculation using the equations in the regulation and solving for risk and generates protective soil and ground-water cleanup levels based on the site-specific conditions.

⁵ Ecology. August 2006. Workbook Tools for Calculating Soil and Ground Water Cleanup Levels under the Model Toxics Control Act Cleanup Regulation

6.0 Ground Water Monitoring

6.1.1 Water Level Measurements

On July 25, 2022:

- All well monuments were opened and well casing expanding plugs removed to allow water levels to equilibrate to ambient barometric pressure.
- Following equilibration, static water levels were measured in each well (prior to sample collection).
 - Depth to water in monitoring wells WELL-1 through WELL-13, EMW01 and MW-08 ranged from 0.00 feet (Well-4, -5, -7, -8, -10, -11 and -13) to 3.45 feet (MW-8) below TOC. Note that wells with 0.00 feet depth to water may be artisan.
- Inferred ground water elevation contours (presented on Figure 3) suggest a southwesterly ground water flow direction across the site, with flow in the northern portion of the site exhibiting a more westerly flow direction and the southern portion of the site exhibiting a more southwesterly flow direction. The hydraulic gradient across the northern part of the site (as measured between wells WELL-9 and WELL-3) was estimated at 0.0274 vertical feet per lineal foot (ft/ft) and in the southern part of the site (as measured between WELL-9 and WELL-2) was estimated at 0.021 ft/ft, suggesting a fairly consistent flow gradient across the site.

Water level data was recorded onto Ground Water Sampling Field forms included in Appendix B. Table 1 (behind “Tables” tab after text) presents a summary of monitoring well TOC elevations,⁶ depths to ground water, and the calculated water level elevations for previous monitoring events.

6.2 Monitoring Well Sampling

To produce representative samples, the wells were purged using a low-flow peristaltic pump and dedicated polyethylene (PE) tubing, recording various water quality parameters [pH, temperature, oxidation-reduction potential (ORP), dissolved oxygen (DO), turbidity, and conductivity] until stabilized. The results were recorded onto Ground Water Sampling Field Forms which are included in Appendix B.

6.2.1 Water Quality Parameters

Table 2 (behind “Tables” tab after text) presents a summary of water quality parameters collected during purging during the second quarter 2022. In general:

- Temperature ranged from 17.28 (EMW01) to 22.14 °C (Well-3).
- Electrical conductivity is a measure of groundwater’s ability to carry an electrical current. Greater conductivity suggests a greater concentration of ions and charged molecules in ground water, including chloride and reduced metals. Conductivity ranged from 241 (MW-8) to 320 (WELL-2) microSiemens per centimeter (µS/cm).
- DO ranged from 0.22 milligrams per liter (mg/L) in EMW01 to 0.52 mg/L in Well-4.

⁶ The tops of casing of all wells have been surveyed to within 0.01 foot relative to mean sea level established by the City of Seattle benchmark #SNV-7595.

- Typically, concentrations of DO greater than 1 mg/L are suggestive of aerobic conditions. None of the monitoring wells are currently aerobic based on DO concentrations.
- pH measurements ranged between 6.62 (MW-8) and 7.94 (WELL-3), which is at the middle to upper range of pH of natural waters (6 to 9) in Washington.
- ORP ranged from -163 (WELL-3) to -43 (WELL-2) millivolts (mV).
 - Positive ORP readings generally suggest oxidizing conditions, which is conducive to degradation of petroleum hydrocarbons. ORP is currently negative in all wells measured, suggesting reductive conditions. ORP is difficult to measure in the field and additional data will be needed to determine trends in ORP at each location.

6.3 Laboratory Analytical Results

Table 3 (behind “Tables” tab after text) presents cumulative analytical results for ground water samples collected from WELL-2 through -5, WELL-11, WELL-12, EMW01, and MW-8 and screens laboratory results against generic MTCAL CULs.

Summary of third quarter 2022 analytical results:

- **Total Petroleum Hydrocarbons (as GRO, DRO and RRO).** DRO in monitoring wells WELL-2, WELL-5, WELL-11, and MW-8 was reported at 93x micrograms per liter ($\mu\text{g/L}$), 98x $\mu\text{g/L}$, 200x $\mu\text{g/L}$, and 760x $\mu\text{g/L}$, respectively. The DRO concentration in MW-8 exceeds the ground water cleanup level of 500 $\mu\text{g/L}$. The laboratory flagged the results “x” indicating the sample chromatogram patterns do not resemble the fuel standard used for quantitation. To further evaluation whether the detection may be related to matrix interference, ENW requested DRO be re-analyzed using a silica gel filter. The silica gel filtered results are presented on Table 3, and results indicate:
 - DRO increased from 80 $\mu\text{g/L}$ (in May 2021) to 120 $\mu\text{g/L}$ in WELL-2;
 - DRO was detected at 67 $\mu\text{g/L}$ in WELL-5, consistent with previous testing in May 2021 and January 2021;
 - DRO was detected at 150 $\mu\text{g/L}$ in WELL-11, consistent with previous testing in May 2021, January 2022, and April 2022; and,
 - DRO was detected at 130 $\mu\text{g/L}$ in MW-08.

All detected of DRO were below the Site-Specific calculated ground-water CUL for total petroleum hydrocarbons (500 $\mu\text{g/L}$).

- **VOCs.** All wells were analyzed for gasoline-related VOCs (BTEX, EDB, EDC, and MTBE) and select wells were analyzed for a broader suite of VOC constituents, including dry-cleaning related halogenated VOCs. Naphthalene was the only VOC detected and only in Well-11 at a concentration less than MCTA Method A and B CULs.
- **PAHs.** PAHs were not detected in any of the monitoring wells.
- **Metals.** The ground water sample from Well-12 was analyzed for cadmium and lead to further assess potential impacts migrating onto the subject property from the adjoining property to the north. Laboratory analysis did not detect either metal constituent above laboratory MRLs.

6.4 Quality Control / Quality Assurance

The laboratory results of quality control samples are presented on Table 3 and summarized below.

- **Trip Bank.** All GRO-related VOCs were “non-detect,” suggesting the samples were not affected by VOCs during storage on the site and during transport to the laboratory.
- **Blind Sample Duplicate.** Laboratory analysis of a blind sample duplicate collected from monitoring well EMW01 (sample “MWFD”) did not detect any of the constituents analyzed, which represents a relative percent difference (RPD) of 0% for all constituents. Generally, an RPD of 20% represents the limit of acceptable variance for duplicate samples. Results of the quality control samples for all constituents suggest that the accuracy and precision of both field and laboratory testing methods are within the data quality objectives.

7.0 Discussion of Findings

Ground Water Plume Delineation. During this ground water monitoring event, ground water monitoring data from EMW01 and MW-8 were included in the analysis of the ground water plume delineation. Ground water flow during this event was generally southwesterly beneath the site, generally consistent with previous sampling events. No constituents were detected in down gradient wells to the west or southwest of historical source areas on the subject site, or in cross-gradient well EMW01. Based on currently available data, DRO was not reported in any of the monitoring wells above the site-specific cleanup level for total petroleum hydrocarbons (as a note, the laboratory indicated the presence of high levels of organics and recommended re-analysis of some samples using silica gel cleanup. The silica gel cleanup filtration removes biogenic material that can cause matrix interference during laboratory analysis, and these results are published on Table 3).

Monitoring wells WELL-4 and WELL-5 had detections of PAHs below CULS in previous round of monitoring. Ecology recommended additional data be gathered from well MW-8, WELL-4, and WELL-5 to monitoring current conditions. Laboratory analysis of samples from these wells did not detect VOCs and PAHs above laboratory MRL during this quarterly monitoring event.

8.0 Proposed Monitoring Activities

In consideration of recent ground water monitoring results and Ecology’s suggestions for further investigation, the following activities are proposed for the next quarter:

- Continued monitoring and sampling of select wells based on the modified ground water monitoring and sampling program. The next quarterly monitoring event is scheduled for October 2022.
- Considering recent ground water monitoring data, including results of new monitoring well EMW01, and extent of remedial action performed in the past, recent investigations in the ROW that provided greater resolution on the distribution of residual impacts at the site, ENW will produce a site closure report following one of Ecology’s model remedies outlined in their petroleum site closure guidance. The report will include appropriate tools that may be helpful in

getting the site to closure without a covenant, including use of the -part statistical method described in Chapter 10 of Ecology's Guidance for Remediation of Petroleum Contaminated Sites.

9.0 Limitations

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

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

- Naturally occurring toxic or hazardous substances in the subsurface soils, geology, and water,
- Toxicity of substances common in current habitable environments, such as stored chemicals, products, building materials and consumables,
- Contaminants or contaminant concentrations that are not a concern now but may be under future regulatory standards,
- Unpredictable events that may occur after ENW's site work, such as illegal dumping or accidental spillage.

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

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

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

Table 1. Summary of Ground Water Elevations

Monitoring Well Designation	Date	Surveyed Top of Casing (TOC) Elevation (feet AMSL) ¹	Depth to Water (DTW) (feet below TOC)	Relative Elevation (feet)
WELL-2	1/26/2022	255.26	2.78	252.48
	4/21/2022		2.64	252.62
	7/25/2022		3.20	252.06
Minimum			2.64	252.06
Maximum			3.20	252.62
WELL-3	1/26/2022	259.53	1.54	257.99
	4/21/2022		1.39	258.14
	7/25/2022		1.80	257.73
Minimum			1.39	257.73
Maximum			1.80	258.14
WELL-4	1/26/2022	257.52	0.00	---
	4/21/2022		0.00	---
	7/25/2022		0.00	---
Minimum			0.00	---
Maximum			0.00	---
WELL-5	1/26/2022	258.22	0.02	258.20
	4/21/2022		0.00	---
	7/25/2022		0.00	---
Minimum			0.00	258.20
Maximum			0.02	258.20
WELL-6	1/26/2022	259.31	1.05	258.26
	4/21/2022		0.87	258.44
	7/25/2022		NM	NM
Minimum			0.87	258.26
Maximum			1.05	258.44
WELL-7	1/26/2022	260.39	0.00	---
	4/21/2022		0.00	---
	7/25/2022		NM	NM
Minimum			0.00	---
Maximum			0.00	---
WELL-8	1/26/2022	263.42	2.31	261.11
	4/21/2022		2.10	261.32
	7/25/2022		NM	NM
Minimum			2.10	261.11
Maximum			2.31	261.32
WELL-9	1/26/2022	262.74	1.48	261.26
	4/21/2022		1.51	261.23
	7/25/2022		NM	NM
Minimum			1.48	261.23
Maximum			1.51	261.26
WELL-10	1/26/2022	261.52	0.10	261.42
	4/21/2022		0.35	261.17
	7/25/2022		NM	NM
Minimum			0.10	261.17
Maximum			0.35	261.42
WELL-11	1/26/2022	261.05	0.05	261.00
	4/21/2022		0.00	---
	7/25/2022		0.00	---
Minimum			0.00	261.00
Maximum			0.05	261.00
WELL-12	1/26/2022	261.11	0.95	260.16
	4/21/2022		0.50	260.61
	7/25/2022		0.60	260.51
Minimum			0.50	260.16
Maximum			0.95	260.61
WELL-13	1/26/2022	258.39	0.00	---
	4/21/2022		0.00	---
	7/25/2022		NM	NM
Minimum			0.00	---
Maximum			0.00	---
EMW01	7/25/2022	258.92	2.75	256.17
Minimum			2.75	256.17
Maximum			2.75	256.17
MW-8	7/25/2022	255.42	3.45	251.97
Minimum			3.45	251.97
Maximum			3.45	251.97

¹ Survey conducted on March 15, 2022 and July 25, 2022, relative to NAD83 and NAVD88.
TOC = top of casing

Table 2. Summary of Water Quality Parameters

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
WELL-2	1/26/2022	8.99	317	1.15	6.81	-22	102
	4/21/2022	11.12	336	0.36	7.49	-105	29.2
	7/25/2022	18.65	320	0.33	7.26	-43	7.24
	Minimum	8.99	317	0.33	6.81	-105	7.24
	Maximum	18.65	336	1.15	7.49	-22	102
WELL-3	1/26/2022	10	277	1.34	7.85	-339	139
	4/21/2022	13.36	280	0.33	7.09	8.3	1.77
	7/25/2022	22.14	279	0.39	7.94	-163	2.1
	Minimum	10	277	0.33	7.09	-339	1.77
	Maximum	22.14	280	1.34	7.94	8.3	139
WELL-4	1/26/2022	11.68	278	1.22	7.78	-643	139
	4/21/2022	11.93	283	0.12	7.63	1.7	21.01
	7/25/2022	17.4	275	0.52	6.98	-122	4.1
	Minimum	11.68	275	0.12	6.98	-643	4.1
	Maximum	17.4	283	1.22	7.78	1.7	139
WELL-5	1/26/2022	12.50	278	1.24	7.65	-379	139
	4/21/2022	14.14	291	0.31	7.84	-147	25.4
	7/25/2022	21.04	277	0.43	6.83	-120	7.8
	Minimum	12.50	277	0.31	6.83	-379	7.8
	Maximum	21.04	291	1.24	7.84	-120	139
WELL-6	1/26/2022	9.19	282	0.88	7.22	72	23.4
	4/21/2022	12.23	284	0.33	7.66	162.9	3.43
	7/25/2022	NM	NM	NM	NM	NM	NM
	Minimum	9.19	282	0.33	7.22	72	3.43
	Maximum	12.23	284	0.88	7.66	162.9	23.4
WELL-7	1/26/2022	11.69	286	1.38	7.61	-348	143
	4/21/2022	14.35	301	0.40	7.79	-149	23.8
	7/25/2022	NM	NM	NM	NM	NM	NM
	Minimum	11.69	286	0.40	7.61	-348	23.8
	Maximum	14.35	301	1.38	7.79	-149	143
WELL-8	1/26/2022	10.43	279	0.59	7.23	90	15.9
	4/21/2022	12.15	285	0.30	8.05	231	1
	7/25/2022	NM	NM	NM	NM	NM	NM
	Minimum	10.43	279	0.30	7.23	90	1
	Maximum	12.15	285	0.59	8.05	231	15.9
WELL-9	1/26/2022	11.00	281	1.33	7.13	-204	140
	4/21/2022	13.12	298	0.57	7.74	-127	19
	7/25/2022	NM	NM	NM	NM	NM	NM
	Minimum	11.00	281	0.57	7.13	-204	19
	Maximum	13.12	298	1.33	7.74	-127	140
WELL-10	1/26/2022	9.36	282	0.44	7.09	-124	18.1
	4/21/2022	13.75	279	0.19	7.87	57.1	0
	7/25/2022	NM	NM	NM	NM	NM	NM
	Minimum	9.36	279	0.19	7.09	-124	0
	Maximum	13.75	282	0.44	7.87	57.1	18.1
WELL-11	1/26/2022	9.21	287	0.76	7.05	-142	3.6
	4/21/2022	13.34	285	0.34	7.66	-2.5	0
	7/25/2022	20.65	291	0.40	7.82	-60.9	50.29
	Minimum	9.21	285	0.34	7.05	-142	0
	Maximum	20.65	291	0.76	7.82	-2.5	50.29
WELL-12	1/26/2022	9.61	284	0.80	7.21	20	14.5
	4/21/2022	13.05	286	0.26	8.03	106.3	0
	7/25/2022	21.00	271	0.42	7.06	-135	42.1
	Minimum	9.61	271	0.26	7.06	-135	0
	Maximum	21.00	286	0.80	8.03	106.3	42.1
WELL-13	1/26/2022	11.13	277	0.60	7.19	-61	19.6
	4/21/2022	15.59	284	0.33	7.85	-145	6.7
	7/25/2022	NM	NM	NM	NM	NM	NM
	Minimum	11.13	277	0.33	7.19	-145	6.7
	Maximum	15.59	284	0.60	7.85	-61	19.6
EMW01	7/25/2022	17.28	314	0.22	7.62	-45	105
MW-8	7/25/2022	19.00	241	0.27	6.62	-78	19
Range of Monitored Geochemistry Parameters within Monitored Area							
	Minimum	8.99	241	0.12	6.62	-643	0
	Maximum	22.14	336	1.38	8.05	231	143

°C = degrees Celsius

µS/cm = microsiemens per centimeter

mV = millivolt

NTU = Nephelometric Turbidity Unit

Table 3 - Summary of Analytical Data, Ground Water (Monitoring Wells)

Location ID	Well-2				Well-3				Well-4				Well-5				Well-6			
	Sample ID	Well #2	WELL-2-220126	WELL-2-220421	Well-2-220725	Well #3	WELL-3-220126	WELL-3-220421	Well-3-220725	Well #4	WELL-4-220126	WELL-4-220421	Well-4-220725	Well #5	WELL-5-220126	WELL-5-220421	Well-5-220725	Well #6	WELL-6-220126	WELL-6-220421
Date Sampled	5/4/2021	1/26/2022	4/21/2022	7/25/2022	5/4/2021	1/26/2022	4/21/2022	7/25/2022	5/4/2021	1/26/2022	4/21/2022	7/25/2022	5/4/2021	1/26/2022	4/21/2022	7/25/2022	5/4/2021	1/26/2022	4/21/2022	
Sampler	ES	ENW	ENW	ENW	ES	ENW	ENW	ENW	ES	ENW	ENW	ENW	ES	ENW	ENW	ENW	ES	ENW	ENW	
Location	Southwest Corner of Site	Southwest Corner of Site	Southwest Corner of Site	Southwest Corner of Site	West of Building, Next to Alley	West of Building, Next to Alley	West of Building, Next to Alley	West of Building, Next to Alley	South of Proposed Play Area	South of Proposed Play Area	South of Proposed Play Area	South of Proposed Play Area	Proposed Play Area	Proposed Play Area	Proposed Play Area	Proposed Play Area	North Parking Area - Northwest Corner	North Parking Area - Northwest Corner	North Parking Area - Northwest Corner	
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)	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 (VOCs)																				
Benzene	c, v	<1 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<1 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<1 (ND)	<0.35 (ND)	<0.35 (ND)	<1 (ND)	<0.35 (ND)	<0.35 (ND)	<1 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	
Dichloroethane;1,1-	c, v	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Dichloroethylene;1,1-	nc, v	---	<1 (ND)	---	---	---	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	---	---	---	<1 (ND)	---	
Dichloroethylene;1,2- cis	nc, v	---	---	---	---	---	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	---	---	---	---	---	---	
Dichloroethylene;1,2- trans	nc, v	---	---	---	---	---	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	---	---	---	---	---	---	
Methylene Chloride	c, v	---	---	---	---	---	<5 (ND)	<5 (ND)	<5 (ND)	---	<5 (ND)	<5 (ND)	---	---	---	---	---	---	---	
Ethylene dibromide (EDB)	c, v	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	---	---	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	
Dichloroethane;1,2- (EDC)	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)	---	---	<0.2 (ND)	<0.2 (ND)	
Ethylbenzene	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	
Methyl tert-butyl ether (MTBE)	c, v	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	
Naphthalene	nc, v	---	<0.4 (ND)	<1 (ND)	<1 (ND)	---	<0.4 (ND)	<1 (ND)	<1 (ND)	---	<0.4 (ND)	<1 (ND)	---	<0.4 (ND)	<1 (ND)	<1 (ND)	---	<0.4 (ND)	<1 (ND)	
Tetrachloroethylene (PCE)	c, v	---	---	---	---	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	---	---	---	---	---	---	---	
Toluene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	
Trichloroethane;1,1,1-	nc, v	---	---	---	---	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	---	---	---	---	---	---	---	
Trichloroethylene (TCE)	c, v	---	---	---	---	---	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	---	<0.5 (ND)	<0.5 (ND)	---	---	---	---	---	---	---	
Vinyl chloride	c, v	---	---	---	---	---	<0.02 (ND)	<0.02 (ND)	<0.02 (ND)	---	<0.02 (ND)	<0.02 (ND)	---	---	---	---	---	---	---	
Xylenes	nc, v	<3 (ND)	<3 (ND)	<3 (ND)	<1 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<1 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	
Polyaromatic Hydrocarbons (Carcinogenic)																				
Acenaphthene	nc, v	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	---	---	1.5	1.4	---	---	4.1	3.8	---	---	<0.04 (ND)	<0.04 (ND)
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)	---	---	<0.04 (ND)	<0.04 (ND)
Benz[a]anthracene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)
Benzo[a]pyrene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)
Benzo[b]fluoranthene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)
Benzo[k]fluoranthene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)
Chrysene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)
Dibenz[a,h]anthracene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)
Fluoranthene	nc, nv	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	---	---	0.050	0.046	---	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)
Fluorene	nc, v	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	---	---	0.29	0.3	---	---	1.3	1.2	---	---	<0.04 (ND)	<0.04 (ND)
Indeno[1,2,3-cd]pyrene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)
Naphthalene	c, v	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)
1-Methylnaphthalene	nc, v	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)
2-Methylnaphthalene	nc, v	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)
Pyrene	nc, 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)	---	---	<0.04 (ND)	<0.04 (ND)
Metals																				
Cadmium	c, nv	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Lead	NA, nv	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Petroleum Hydrocarbons																				
GRO	nc, v	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)
DRO	nc, nv	80 x	<50 (ND)	<50 (ND)	120 x *	300 x	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	55 x	64	<50 (ND)	<50 (ND)	67 x *	<50 (ND)	<50 (ND)	<50 (ND)
RRO	nc, nv	410 x	<250 (ND)	<250 (ND)	<250 (ND)	510 x	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)

Notes:
 --- = not analyzed or not applicable.
 ND = not detected at or above the method reporting limit (MRL) or practical quantitation limit (PQL) shown.
 NE = not established.
 (Y) indicates analyte not detected, but detection limit is above screening concentration.
 µg/L = micrograms per liter
 c = carcinogenic
 nc = noncarcinogenic
 v = volatile
 nv = nonvolatile
 GRO = gasoline-range organics.
 DRO = diesel-range organics.
 RRO = residual-range organics.
Bolded/Shaded concentrations exceed MTCA Method A or B Cleanup Levels
 (Y) indicates analyte not detected, but detection limit is above screening concentration.
 J = the identification of the analyte is acceptable; the reported value is an estimate
 ** Cleanup level of carcinogenic PAHs based on cleanup standard for Benzo(a)pyrene
 * = Silica gel cleanup
 x = the sample chromatogram pattern does not resemble the fuel standard used for quantitation.

Table 3 - Summary of Analytical Data, Ground Water (Monitoring Wells)

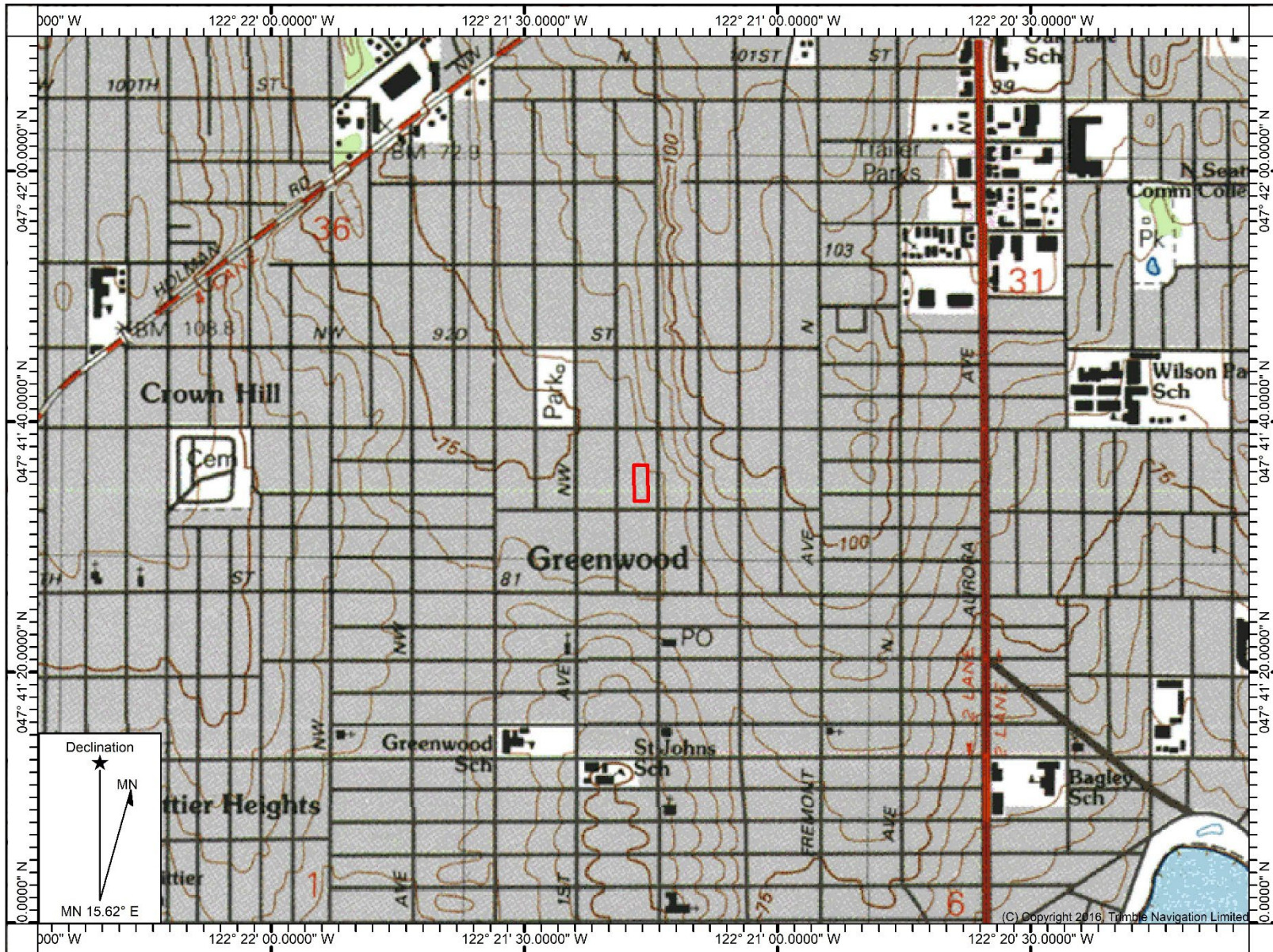
Location ID	Well-7			Well-8			Well-9			Well-10			Well-11				
	Sample ID	Well #7	WELL-7-220126	WELL-7-220421	Well #8	WELL-8-220126	WELL-8-220421	Well #9	WELL-9-220126	WELL-9-220421	Well #10	WELL-10-220126	WELL-10-220421	Well #11	WELL-11-220126	WELL-11-220421	Well-11-220725
Date Sampled	5/4/2021	1/26/2022	4/21/2022	5/4/2021	1/26/2022	4/21/2022	5/4/2021	1/26/2022	4/21/2022	5/4/2021	1/26/2022	4/21/2022	5/4/2021	1/26/2022	4/21/2022	7/25/2022	
Sampler	ES	ENW	ENW	ES	ENW	ENW	ES	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	
Location	North Parking Area - Center	North Parking Area - Center	North Parking Area - Center	North Parking Area - Northeast Corner	North Parking Area - Northeast Corner	North Parking Area - Northeast Corner	North Parking Area - East	North Parking Area - East	North Parking Area - East	Former Dry Cleaner	Former Dry Cleaner	Former Dry Cleaner	Former Dry Cleaner	Former Dry Cleaner	Former Dry Cleaner	Former Dry Cleaner	
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)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	
Volatile Organic Constituents (VOCs)																	
Benzene	c, v	<1 (ND)	<0.35 (ND)	<0.35 (ND)	<1 (ND)	<0.35 (ND)	<0.35 (ND)	<1 (ND)	<0.35 (ND)	<0.35 (ND)	<1 (ND)	<0.35 (ND)	<0.35 (ND)	<1 (ND)	<0.35 (ND)	<0.35 (ND)	
Dichloroethane;1,1-	c, v	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<1 (ND)	
Dichloroethylene;1,1-	nc, v	---	<1 (ND)	---	---	<1 (ND)	---	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	
Dichloroethylene;1,2- cis	nc, v	---	---	---	---	---	---	---	---	---	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	
Dichloroethylene;1,2- trans	nc, v	---	---	---	---	---	---	---	---	---	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	
Methylene Chloride	c, v	---	---	---	---	---	---	---	---	---	<5 (ND)	<5 (ND)	<5 (ND)	<5 (ND)	---	<5 (ND)	
Ethylene dibromide (EDB)	c, v	---	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	
Dichloroethane;1,2- (EDC)	c, v	---	<0.2 (ND)	<0.2 (ND)	---	<0.2 (ND)	<0.2 (ND)	---	<0.2 (ND)	<0.2 (ND)	<1 (ND)	<0.2 (ND)	<0.2 (ND)	<1 (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)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	
Methyl tert-butyl ether (MTBE)	c, v	---	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	
Naphthalene	nc, v	---	<0.4 (ND)	<1 (ND)	---	<0.4 (ND)	<1 (ND)	---	<0.4 (ND)	<1 (ND)	---	<0.4 (ND)	<1 (ND)	---	26 j	39	
Tetrachloroethylene (PCE)	c, v	---	---	---	---	---	---	---	---	---	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	
Toluene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	
Trichloroethane;1,1,1-	nc, v	---	---	---	---	---	---	---	---	---	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	
Trichloroethylene (TCE)	c, v	---	---	---	---	---	---	---	---	---	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	---	<0.5 (ND)	
Vinyl chloride	c, v	---	---	---	---	---	---	---	---	---	<0.2 (ND)	<0.02 (ND)	<0.02 (ND)	<0.2 (ND)	---	<0.02 (ND)	
Xylenes	nc, v	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	
Polyaromatic Hydrocarbons (Carcinogenic)																	
Acenaphthene	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)	---	6.9	5.6	
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)	---	<0.04 (ND)	<0.04 (ND)	
Benz[a]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)	---	<0.04 (ND)	<0.02 (ND)	
Benzo[a]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)	---	<0.04 (ND)	<0.02 (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)	---	<0.04 (ND)	<0.02 (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)	---	<0.04 (ND)	<0.02 (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)	<0.04 (ND)	---	<0.04 (ND)	<0.02 (ND)	
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)	---	<0.04 (ND)	<0.02 (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)	<0.04 (ND)	---	<0.04 (ND)	<0.02 (ND)	
Fluorene	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)	---	2.3	2.3	
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)	---	<0.04 (ND)	<0.02 (ND)	
Naphthalene	c, v	---	<0.4 (ND)	<0.4 (ND)	---	<0.4 (ND)	<0.4 (ND)	---	<0.4 (ND)	<0.4 (ND)	---	<0.4 (ND)	<0.4 (ND)	---	26 j	14	
1-Methylnaphthalene	nc, v	---	<0.4 (ND)	<0.4 (ND)	---	<0.4 (ND)	<0.4 (ND)	---	<0.4 (ND)	<0.4 (ND)	---	<0.4 (ND)	<0.4 (ND)	---	2.8 j	1.8	
2-Methylnaphthalene	nc, v	---	<0.4 (ND)	<0.4 (ND)	---	<0.4 (ND)	<0.4 (ND)	---	<0.4 (ND)	<0.4 (ND)	---	<0.4 (ND)	<0.4 (ND)	---	0.83	0.61	
Pyrene	nc, 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)	---	<0.04 (ND)	<0.04 (ND)	
Metals																	
Cadmium	c, nv	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Lead	NA, nv	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Petroleum Hydrocarbons																	
GRO	nc, v	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	
DRO	nc, nv	<50 (ND)	<50 (ND)	<50 (ND)	53 x	<50 (ND)	<50 (ND)	110 x	<50 (ND)	<50 (ND)	55 x	<50 (ND)	<50 (ND)	150 x	170	130 x	
RRO	nc, nv	300 x	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	

Notes:
 --- = not analyzed or not applicable.
 ND = not detected at or above the method reporting limit (MRL) or practical quantitation limit (PQL) shown.
 NE = not established.
 (Y) indicates analyte not detected, but detection limit is above screening concentration.
 µg/L = micrograms per Liter
 c = carcinogenic
 nc = noncarcinogenic
 v = volatile
 nv = nonvolatile
 GRO = gasoline-range organics.
 DRO = diesel-range organics.
 RRO = residual-range organics.
Bolded/Shaded concentrations exceed MTCA Method A or B Cleanup Levels
 (Y) indicates analyte not detected, but detection limit is above screening concentration.
 J = the identification of the analyte is acceptable; the reported value is an estimate
 ** Cleanup level of carcinogenic PAHs based on cleanup standard for Benzo(a)pyrene
 * = Silica gel cleanup
 x = the sample chromatogram pattern does not resemble the fuel standard used for quantitation.

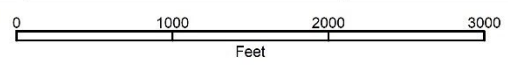
Table 3 - Summary of Analytical Data, Ground Water (Monitoring Wells)

Location ID	Well #12				Well-13			EMW01	MW-8	QA/QC				Maximum Ground Water Concentration (QA/QC not included)	MTCA Method A Cleanup Levels for Ground Water (Unrestricted Land Use)	MTCA Method B Cleanup Levels for Ground Water (lowest)	MTCA Site-Specific Calculated Ground Water Cleanup Level	EPA Region IX Regional Screening Levels (Tapwater) Last Updated May 2012	Background Concentrations (metals) ²	Constituent of Potential Concern (COPC)? ³	
	Sample ID	Well #12	WELL-12-220126	WELL-12-220421	Well-12-220725	Well #13	WELL-13-220126	WELL-13-220421	EMW01-220725	MW-8-220725	WELL-FD-220127	WELL-FD-220127	WELL-FD-220725								Trip Blank
Date Sampled	6/2/2021	1/26/2022	4/21/2022	7/25/2022	6/2/2021	1/26/2022	4/21/2022	7/25/2022	7/25/2022	1/26/2022	4/21/2022	7/25/2022	7/25/2022								
Sampler	ES	ENW	ENW	ENW	ES	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW								
Location	North Property Boundary	North Property Boundary	North Property Boundary	North Property Boundary	North Property Boundary	Proposed Play Area	Proposed Play Area	South of Loading Dock	SW Corner of Site next to Well-2	Field duplicate of Well #10	Field duplicate of Well #4	Field duplicate of EMW01	Trip Blank								
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)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	Y/N	
Volatile Organic Constituents (VOCs)																					
Benzene	c, v	<1 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<1 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<1 (ND)	5	0.8	---	0.39	NE	(Y)	
Dichloroethane;1,1-	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	---	---	---	---	---	---	---	<1 (ND)	7.7	---	2.4	NE	N		
Dichloroethylene;1,1-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	---	---	<1 (ND)	<1 (ND)	---	---	<1 (ND)	NE	400	---	340	NE	N	
Dichloroethylene;1,2- cis	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	---	---	---	<1 (ND)	<1 (ND)	---	---	<1 (ND)	NE	16	---	73	NE	N	
Dichloroethylene;1,2- trans	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	---	---	---	<1 (ND)	<1 (ND)	---	---	<1 (ND)	NE	160	---	110	NE	N	
Methylene Chloride	c, v	---	---	---	<5 ND	---	---	---	---	<5 (ND)	<5 (ND)	---	---	<5 (ND)	5	5.8	---	4.8	NE	N	
Ethylene dibromide (EDB)	c, v	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.01	0.022	---	6.50E-03	NE	(Y)	
Dichloroethane;1,2- (EDC)	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)	<1 (ND)	5	0.48	---	0.15	NE	(Y)	
Ethylbenzene	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	700	800	---	1.3	NE	N	
Methyl tert-butyl ether (MTBE)	c, v	---	<1 (ND)	<1 (ND)	<1 (ND)	---	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	20	24	---	12	NE	N	
Naphthalene	nc, v	---	<0.4 (ND)	<1 (ND)	<1 (ND)	---	<0.4 (ND)	<1 (ND)	<1 (ND)	<0.4 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	39	160	160	---	0.14	NE	N	
Tetrachloroethylene (PCE)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	---	---	---	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	5	21	---	0.11	NE	N	
Toluene	nc, v	2.0	<1 (ND)	<1 (ND)	<1 (ND)	9.4	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	9.4	1000	640	---	860	NE	N	
Trichloroethane;1,1,1-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	---	---	---	---	<1 (ND)	<1 (ND)	---	---	<1 (ND)	200	16000	---	9100	NE	N	
Trichloroethylene (TCE)	c, v	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	<0.5 (ND)	---	---	---	---	<0.5 (ND)	<0.5 (ND)	---	---	<1 (ND)	5	0.54	---	2	NE	(Y)	
Vinyl chloride	c, v	---	---	---	<0.02 (ND)	---	---	---	---	<0.02 (ND)	<0.02 (ND)	---	---	<0.02 (ND)	0.2	0.029	---	0.016	NE	(Y)	
Xylenes	nc, v	<3 (ND)	<3 (ND)	<3 (ND)	<1 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	<1 (ND)	<3 (ND)	<3 (ND)	<1 (ND)	<1 (ND)	<3 (ND)	1000	1600	---	190	NE	N	
Polyaromatic Hydrocarbons (Carcinogenic)																					
Acenaphthene	nc, v	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	1.2	---	6.9	NE	480	---	400	NE	Y	
Anthracene	nc, v	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	NE	2400	---	1300	NE	Y	
Benz[a]anthracene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 ND	<0.02 ND	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	**	---	0.029	NE	(Y)	
Benzo[a]pyrene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 ND	<0.02 ND	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	0.1 (**)	0.023 (**)	---	0.0029	NE	(Y)
Benzo[b]fluoranthene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 ND	<0.02 ND	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	**	---	0.029	NE	(Y)	
Benzo[k]fluoranthene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 ND	<0.02 ND	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	**	---	0.29	NE	(Y)	
Chrysene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 ND	<0.02 ND	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	**	---	2.9	NE	(Y)	
Dibenz[a,h]anthracene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 ND	<0.02 ND	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	**	---	0.0029	NE	(Y)	
Fluoranthene	nc, nv	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	0.052	---	<0.05 (ND)	NE	640	---	630	NE	N	
Fluorene	nc, v	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	0.28	---	2.3	NE	320	---	220	NE	N	
Indeno[1,2,3-cd]pyrene	c, nv	---	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	<0.04 (ND)	<0.02 ND	<0.02 ND	<0.04 (ND)	<0.04 (ND)	<0.02 (ND)	---	<0.04 (ND)	**	---	0.029	NE	(Y)	
Naphthalene	c, v	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	26 j	160	160	---	0.14	NE	N	
1-Methylnaphthalene	nc, v	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	2.8 j	NE	1.5	---	0.97	NE	Y	
2-Methylnaphthalene	nc, v	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	---	<0.4 (ND)	<0.4 (ND)	---	0.83	NE	32	---	27	NE	N	
Pyrene	nc, nv	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	---	---	<0.04 (ND)	<0.04 (ND)	---	<0.04 (ND)	NE	240	---	87	NE	N	
Metals																					
Cadmium	c, nv	---	---	<1 (ND)	<1 (ND)	---	---	---	---	---	---	---	---	<1 (ND)	5	8	---	6.9	<1	#REF!	
Total Lead	NA, nv	---	---	<1 (ND)	<1 (ND)	---	---	---	---	---	---	---	---	<1 (ND)	15	15	---	NE	NE	N	
Total Petroleum Hydrocarbons																					
GRO	nc, v	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	---	<100 (ND)	800	NE	---	NE	NE	N
DRO	nc, nv	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	<50 (ND)	---	<50 x	500	NE	---	NE	NE	N
RRO	nc, nv	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	---	510 x	500	NE	---	NE	NE	Y

Notes:
 --- = not analyzed or not applicable.
 ND = not detected at or above the method reporting limit (MRL) or practical quantitation limit (PQL) shown.
 NE = not established.
 (Y) indicates analyte not detected, but detection limit is above screening concentration.
 µg/L = micrograms per Liter
 c = carcinogenic
 nc = noncarcinogenic
 v = volatile
 nv = nonvolatile
 GRO = gasoline-range organics.
 DRO = diesel-range organics.
 RRO = residual-range organics.
Bolded/Shaded concentrations exceed MTCA Method A or B Cleanup Levels
 (Y) indicates analyte not detected, but detection limit is above screening concentration.
 J = the identification of the analyte is acceptable; the reported value is an estimate
 ** Cleanup level of carcinogenic PAHs based on cleanup standard for Benzo(a)pyrene
 * = Silica gel cleanup
 x = the sample chromatogram pattern does not resemble the fuel standard used for quantitation.



Name: SEATTLE NORTH
Date: 09/20/21



Location: 047° 41' 35.3419\" N, 122° 21' 15.9186\" W
Contour Interval: 16 ft

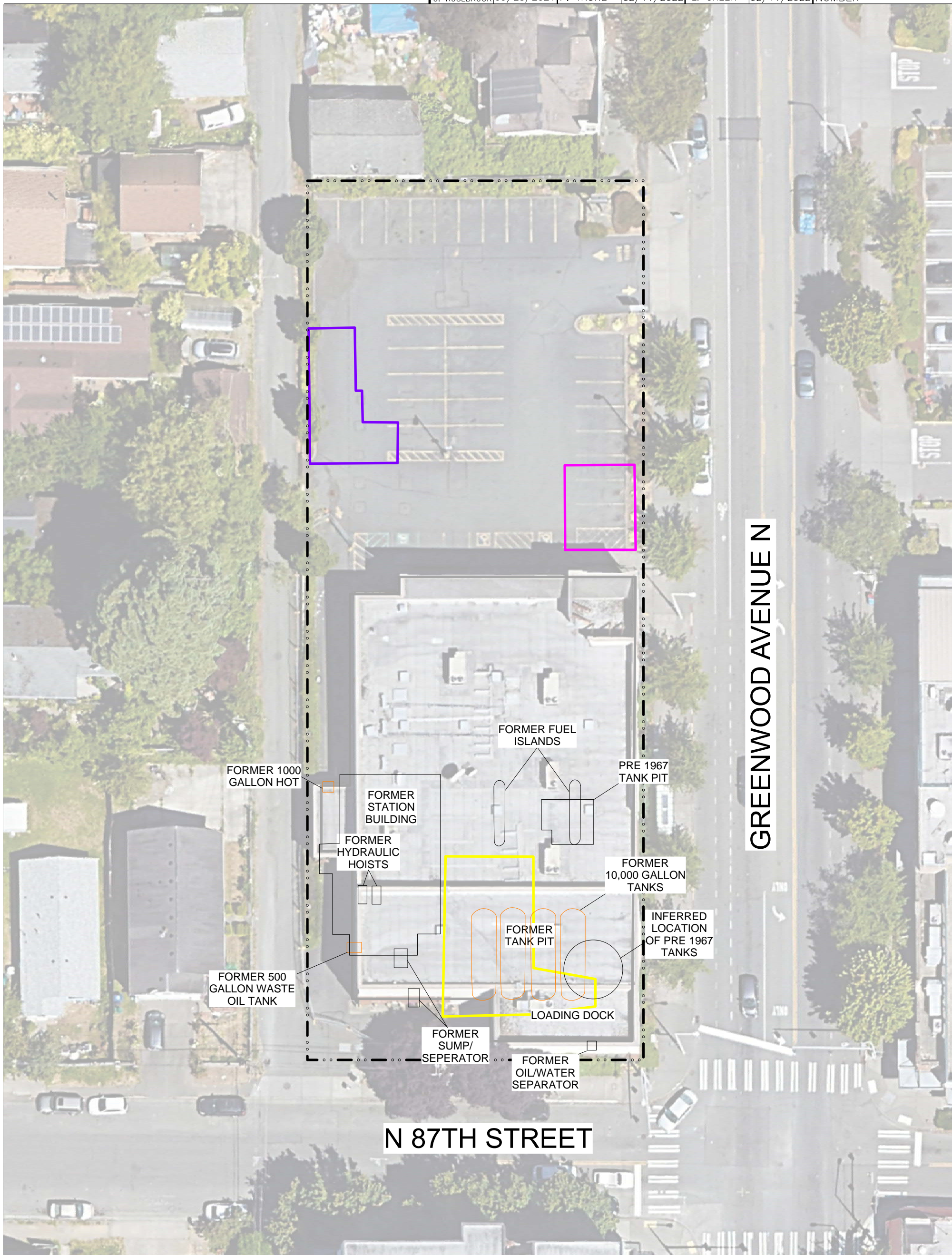


Date Drawn: 2/28/2022
CAD File Name: 1581-21001-01_fig1sv_map.docx
Drawn By: CLR
Approved By: LDG






Future Kiddie Academy Property
8701 Greenwood Avenue N
Seattle, Washington

Site Vicinity Map

Project No.
1581-21001
Figure No.
1



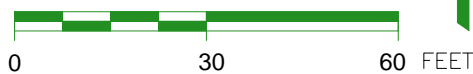
LEGEND:

-  SUBJECT BUILDINGS
 -  SUBJECT PROPERTY BOUNDARIES
 -  FORMER GAS STATION PER 1950 HISTORICAL SANBORN MAP
 -  FORMER VANITY CLEANERS PER CITY DIRECTORY 1951-1955, LOCATION BASED ON 1950-1966 SANBORN MAP
 -  FORMER LAUNDRY PER 1930 HISTORICAL SANBORN MAP
- * FORMER FEATURES PER 1994 EMCON NORTHWEST INC. AND TEXACO 1991 AND ENVIRO. RESOLUTION INC. 1994 AND 1996

NOTES:

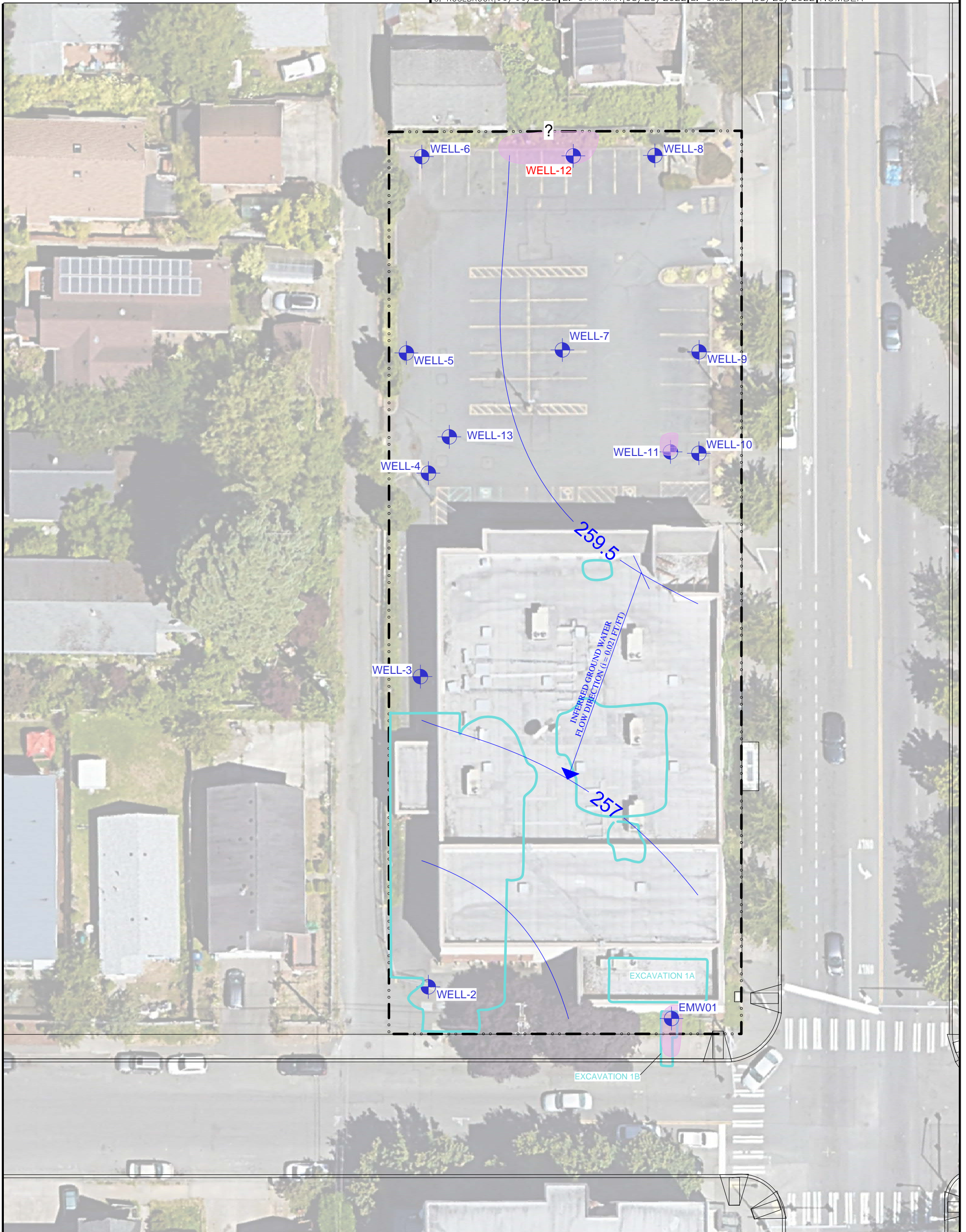
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2019 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.

APPROXIMATE SCALE









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

FIGURE 2
SITE PLAN WITH HISTORICAL
FEATURES OF INTEREST
FUTRUE KIDDIE ACADEMY PROPERTY
8701 GREENWOOD AVENUE N
SEATTLE, WASHINGTON

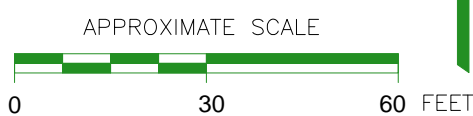


LEGEND:

-  SUBJECT BUILDING
-  SUBJECT PROPERTY BOUNDARIES
-  PRIOR PCS EXCAVATION MARGINS
-  MONITORING WELL LOCATION PER ENVIRONMENTAL SPECIALTIES MAY 2021
-  INFERRED AREA OF RESIDUAL PETROLEUM IMPACTED SOIL EXCEEDING THE SITE-SPECIFIC CUL FOR TOTAL PETROLEUM HYDROCARBONS (>1706 MG/KG)
-  GROUND WATER POTENTIOMETRIC SURFACE CONTOURS (THIRD QUARTER 2022)

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2019 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.



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

FIGURE 3
GROUND WATER POTENTIOMETRIC SURFACE MAP - THIRD QUARTER 2022

PROPOSED KIDDIE ACADEMY PROPERTY
8701 GREENWOOD AVENUE N
SEATTLE, WASHINGTON

Appendix A

Site Photographs



New monitoring well EMW01 being developed on June 2, 2022.



Purging and sampling EMW01 with a peristaltic pump and field meter with flow-through cell, view looking west.



Low-flow purge and sampling set up on Well #2 in the southwestern corner of the site.



Low-flow purge and sampling at MW-8, view south.



8701 Greenwood Avenue N
Seattle, Washington

**Site
Photographs**

Project No.
1581-21001-02

Appendix
A

Appendix B

Field Sampling Data Sheets



Well Development Measurements

Site: 8701 N. Greenwood Sea.

Project No.: 1501-21001-01

Monitoring Well: EM001

Date: 7/15/02

Well Information	
Depth to Water: <u>2.9</u> ft	
Depth to Bottom of Well: <u>16.2</u> ft	<u>1" ID of casing</u>
Height of Water Column: <u>15.3</u> ft	
Vol. of Water in Well: <u>0.612</u> gal.	Conversion Factor: 2" - 0.164 gal/ft.
Added water during installation?	How much?

Weather: Sunny 68° F

Water Quality Parameters During Development

Time	Volume of Water Removed	Temperature (°C)	pH	Conduc-tivity (mS/cm)	ORP (± mv)	Dissolved Oxygen (mg/L)	Appearance of Water.
10:54							Begin with
10:56	0.5 gal						issue with footvalve replace w/ ss footvalve
10:57							Begin again
11:02	1.0						run dry after Dark brown / sands
11:06	1.5	17.7	6.96	0.301	0.87	10.82	> 1000 Brown
11:13							start pump
11:15	2.0	16.24	6.62	0.298	7.6	11.96	> 1000 gray brown turbid
11:18							run dry
11:20	~ 2.25						run dry gray brown / turbid
11:23							begin again
11:27	3.5	15.65	7.13	.303	-7	11.28	light gray / brown > 1000
11:30							start pump
11:33	~ 4.25						slow down / run dry over 1000 NTU
11:37							start
11:40	~ 5.0						run dry > 1000 NTU
11:43		14.02	7.15	0.303	-14	11.71	> 1000 NTU -
11:45	5.5						looks improved
11:52	7.25						pump still gassy mostly clear but over 1000

Meter Calibration

Meter Number: _____

Parameter	Date & Time Calibrated	Calibration Results
pH		
Conductivity		
ORP		
DO		

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

Develop by pumping 5 to 10 well volumes out - or until water clears after surging.

Stop Pump @ 11:57 ~ 8.5 gallons out
mostly clear yet over 1000 NTU

EVREN Northwest GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: **8701 Greenwood Avenue N. Seattle**

PROJECT NUMBER: **1581-21001-01**

Event: Ground Monitoring

Date: 07-25-22

Field Personnel: Dan S. and Bailey F.	Monitoring Well ID: <u>Well-12</u>
Weather Conditions: <u>Sunny 72°</u>	Start Time: <u>11:29</u>
DTW (prior to purging): <u>0.60</u>	

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm, ±3%)	Dissolved Oxygen (mg/L, ±10%)	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
<u>11:33</u>	<u>.9</u>	<u>200ml</u>	<u>23.36</u>	<u>.271</u>	<u>0.43</u>	<u>6.81</u>	<u>-59</u>	<u>70.7</u>	<u>.2</u>
<u>11:37</u>	<u>1.25</u>	<u>200ml</u>	<u>21.77</u>	<u>.270</u>	<u>0.39</u>	<u>7.03</u>	<u>-113</u>	<u>20.2</u>	<u>1.6</u>
<u>11:41</u>	<u>1.30</u>	<u>200ml</u>	<u>21.51</u>	<u>.270</u>	<u>0.40</u>	<u>7.04</u>	<u>-121</u>	<u>32.3</u>	<u>2.9</u>
<u>11:45</u>	<u>1.33</u>	<u>200ml</u>	<u>21.29</u>	<u>.271</u>	<u>0.41</u>	<u>7.05</u>	<u>-130</u>	<u>20.2</u>	<u>3.2</u>
<u>11:49</u>	<u>1.36</u>	<u>200ml</u>	<u>21.00</u>	<u>.271</u>	<u>0.42</u>	<u>7.06</u>	<u>-135</u>	<u>42.1</u>	<u>4.0</u>

Tubing: <u>1 1/4" LDPE</u>	Total Purged: _____
Purge Pumping Rate (approx. L/m): <u>200ml</u>	Well casing (in. diam): <u>2 in</u>
Decontamination method: _____	Approx. Pump/Intake Depth: _____

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

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample:	<input type="checkbox"/> Duplicate	<input type="checkbox"/> Lab QA/QC	<input type="checkbox"/> Equipment Blank	<input type="checkbox"/> None
Sampling Method:	<input type="checkbox"/> Grundfos Pump	<input checked="" type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Bladder Pump	<input type="checkbox"/> Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
Gx	F + B	HCl	40ml	2	<u>Well-12-64-220725</u>	<u>11:50</u>
MTCA VOCs / CVOCs	"	HCl	40ml	4		
Dx	"	none	500 ml amber	1		
cPAHs	"	none	1L amber	1		
Total Pb, Cd	"	HNO3	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: 8701 Greenwood Avenue N. Seattle

PROJECT NUMBER: 1581-21001-01

Event: Ground Monitoring

Date: 07/25/22

Field Personnel: Dan S. and Bailey F. Monitoring Well ID: Well-11
 Weather Conditions: sunny 76°F Start Time: 10:29
 DTW (prior to purging): 0.0' at top of casing

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
10:30		150	21.68	289.49	0.37	7.62	-20.0	0.71	0.4
0:32	~ 0.70	"	20.35	288.45	0.27	7.70	-27.4	3.63	1.0
10:36	0.90	"	21.13	289.28	0.21	7.72	-40.8	7.50	1.40
10:40	0.90	100	20.87	288.15	0.35	7.81	-50.6	15.40	1.80
10:44	0.96	"	20.92	288.41	0.40	7.77	-50.8	29.99	2.20
0:46	0.96	"	20.85	290.83	0.40	7.82	-60.9	50.29	2.60
10:52	1.08	"							

collected sample

Total Purged: 2.60

Tubing: 1/4" LDPE (dedicated)
 Purge Pumping Rate (approx. L/m): 150 ml/min
 Decontamination method:
 Well casing (in. diam): 2"
 Approx. Pump/Intake Depth: ~14'

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	F + B	HCl	40ml	2	Well-11-220725	11:10
TCA VOCs / CVOCs	"	HCl	40ml	4		
Dx	"	none	500 ml amber	1		
cPAHs	"	none	1L amber	1		

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

Observations/Notes of sampling event:

Field Personnel:

10:53 09

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: **8701 Greenwood Avenue N. Seattle**

PROJECT NUMBER: **1581-21001-01**

Event: Ground Monitoring

Date: 07-25-22

Field Personnel:	Dan S. and Bailey F.	Monitoring Well ID:	Well-5
Weather Conditions:	Sunny, 70°	Start Time:	10:19
DTW (prior to purging):	TOP OF CASING (TOC)		

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
10:37	TOC	150ml	23.72	251	7.27	6.93	-19	9.7	0.6
10:36	TOC	150ml	22.50	252	6.43	6.76	-53	4.0	1.2
10:40	TOC	150ml	21.74	224	6.01	6.93	-74	7.7	2.3
10:49	TOC	150ml	21.62	220	6.44	6.65	-94	15.2	2.4
10:49	TOC	150ml	21.53	279	0.44	6.71	-102	11.0	3.0
10:52	TOC	150ml	21.34	275	0.43	6.74	-103	10.6	3.6
10:56	TOC	150ml	21.29	277	0.43	6.82	-117	9.8	4.2
11:00	TOC	150ml	21.04	277	0.43	6.83	-121	7.8	4.9

Tubing:	1" WPE	Purge Pumping Rate (approx. L/m):	150ml/min	Well casing (in. diam):	2.0
Decontamination method:		Approx. Pump/Intake Depth:			

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

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample:	<input type="checkbox"/> Duplicate	<input type="checkbox"/> Lab QA/QC	<input type="checkbox"/> Equipment Blank	<input type="checkbox"/> None	
Sampling Method:	<input type="checkbox"/> Grundfos Pump	<input checked="" type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Bladder Pump	<input type="checkbox"/> Dual Valve	

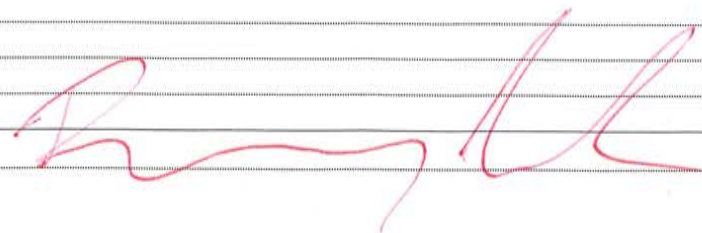
SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
Gx	F + B	HCl	40ml	2	Well-5-GW-220725	11:02
Dx	"	none	500 ml amber	1		
cPAHs	"	none	1L amber	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: 8701 Greenwood Avenue N. Seattle

PROJECT NUMBER: 1581-21001-01

Event: Ground Monitoring

Date:

Field Personnel: Dan S. and Bailey F. Monitoring Well ID: Well-2
 Weather Conditions: Sunny 78°F Start Time: 13:19
 DTW (prior to purging): 3.20' btec

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/kers)
13:19		150	GW entering				flow cell		0
13:21	3.67		19.76	312.10	0.67	7.05	34.0	0.71	0.30
13:25	4.60		17.80	320.90	0.36	7.70	-3.7	0.38	0.9
13:29	5.10		17.50	320.39	0.28	7.41	-9.7	6.82	1.50
13:33	5.55	100	19.23	317.81	0.27	7.21	-15.4	5.97	1.90
13:37	5.85	11	19.06	316.68	0.33	7.23	-27.3	3.50	2.30
13:41	6.20	11	18.81	316.17	0.30	7.26	-36.9	4.06	2.70
13:45	6.50		18.65	319.54	0.33	7.26	-43.2	7.24	3.10
Collect Sample									

Total Purged: 3.10

Tubing: 1/4" LDPE (dedicated)
 Purge Pumping Rate (approx. L/m): 100 L/min
 Decontamination method:
 Well casing (in. diam): 2" PVC
 Approx. Pump/Intake Depth:

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

WELL CONDITION

Recommended Well Repairs/Additional Notes:

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

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
Gx	F + B	HCl	40ml	2	WELL-2-220225	14:00
MTCA VOCs	"	HCl	40ml	4		
Dx	"	none	500 ml amber	1		
cPAHs	"	none	1L amber	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:

* Drawdown at lowest flow of 100ml/min

Signature of Field Personnel:

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: 8701 Greenwood Avenue N. Seattle

PROJECT NUMBER: 1581-21001-01

Event: Ground Monitoring

Date: 07/25/22

Field Personnel: Dan S. and Bailey F.
 Weather Conditions: Sunny 77°F
 DTW (prior to purging): 2.75 btoC
 Monitoring Well ID: EMW01
 Start Time: 11:44

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
11:45		100	GW entering						
11:46	3.44	60	19.28	311.43	1.12	7.71	37.7	125.0	0.40
11:50	3.34	100	19.72	311.23	1.16	7.97	20.8	118.0	0.70
11:54	3.60	"	18.05	310.10	0.62	7.79	0.54	115.86	1.10
11:58	3.71	"	17.73	310.98	0.56	7.51	-1.7	123.57	1.50
12:02	3.74	"	17.77	311.00	0.42	7.54	-5.8	106.61	1.90
12:06	3.79	"	17.63	311.17	0.35	7.57	-23.2	81.74	2.30
12:10	3.82	"	17.25	312.26	0.31	7.62	-37.0	80.01	2.70
12:14	3.87	"	17.28	313.95	0.22	7.62	-44.5	105.21	3.10
called sample									

Tubing: 1/4" LDPE
 Purge Pumping Rate (approx L/min): 100 ml/min
 Decontamination method:
 Well casing (in. diam): 1" I.D. PVC
 Approx. Pump/Intake Depth: 13.5'

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

WELL CONDITION

Recommended Well Repairs/Additional Notes:

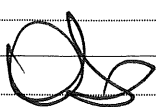
QA/QC Sample: Duplicate Lab QA/QC Equipment Blank None
 Sampling Method: Grundfos Pump Peristaltic Pump Bladder Pump Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
Gx	F + B	HCl	40ml	2	EMW01-220725	12:49
MTCA VOCs	"	HCl	40ml	4		
Dx	"	none	500 ml amber	1		
cPAHs	"	none	1L amber	1	WELL-FD-220725	9:35

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: 8701 Greenwood Avenue N. Seattle

PROJECT NUMBER: 1581-21001-01

Event: Ground Monitoring

Date: 07/25/22

Field Personnel: Dan S. and Bailey F.
 Weather Conditions: Sunny 80°F
 DTW (prior to purging): 3.45' h2o
 Monitoring Well ID: MW-8
 Start Time: 14:27

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), ±10mV	Turbidity (NTU), ±10%	Total Quantity Purged (gallons/liters)
14:28									
14:30	3.50	125	19.10	230.63	1.56	7.01	-61.5	5.75	0.40
14:34	3.60	11	19.56	240.33	0.49	6.91	-76.5	8.61	0.20
14:38	3.94	11	19.21	241.24	0.36	6.85	-79.4	11.84	1.40
14:42	4.28	11	18.72	241.37	0.30	6.76	-79.6	27.34	1.90
14:46	4.40	11	19.02	241.25	0.27	6.62	-77.6	18.61	2.40

Collect sample

Tubing: 1/4" LDPE
 Purge Pumping Rate (approx. L/m): 125 ml/min
 Decontamination method:
 Well casing (in. diam): 4" PVC
 Approx. Pump/Intake Depth:
 Total Purged:

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

WELL CONDITION

Recommended Well Repairs/Additional Notes: * odor ~ sulfur - sewer like

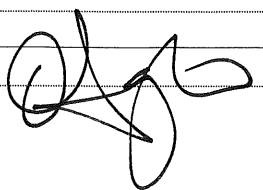
QA/QC Sample: Duplicate Lab QA/QC Equipment Blank None
 Sampling Method: Grundfos Pump Peristaltic Pump Bladder Pump Dual Valve

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
Gx	F + B	HCl	40ml	2		
MTCA VOCs	"	HCl	40ml	4		
Dx	"	none	500 ml amber	1	MW-8-220725	15:03
cPAHs	"	none	1L amber	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 C

Laboratory Analytical Report

Analytical Laboratory Data Validation Check Sheet

Project Name: 8701 Greenwood Avenue North-Seattle Project Number: 1581-21001-02

Date of Review: 8/8/2022 Lab. Name: F&BI Lab Batch ID #: 207422

Chain of Custody

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

Timing

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

Quality Assurance/Quality Control

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

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

Accuracy

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

Precision

- | | | | |
|---|---|-----------------------------|--|
| 19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |
| If not, are all discrepancies footnoted? | <input type="checkbox"/> yes | <input type="checkbox"/> no | <input checked="" type="checkbox"/> NA |
| 21.) Do all RPD calculations for Field Duplicates meet accepted criteria? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> NA |

Comments:

Several samples have chromatographic patterns that do not resemble the fuel standard for quantitation (x).

Initial Review By: LP

Final Review By: _____

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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Seattle, WA 98119-2029
(206) 285-8282
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August 8, 2022

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

Dear Mr Green:

Included are the results from the testing of material submitted on July 26, 2022 from the 1581-21001-02, F&BI 207422 project. There are 33 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
ENW0808R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on July 26, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1581-21001-02, F&BI 207422 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
207422 -01	Well-2-220725
207422 -02	Well-3-220725
207422 -03	Well-4-220725
207422 -04	Well-5-220725
207422 -05	Well-11-220725
207422 -06	Well-12-220725
207422 -07	EMW01-220725
207422 -08	MW-8-220725
207422 -09	Well-FD-220725
207422 -10	Trip Blank-220725

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/08/22
Date Received: 07/26/22
Project: 1581-21001-02, F&BI 207422
Date Extracted: 07/27/22
Date Analyzed: 07/28/22

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

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
Well-2-220725 207422-01	<100	106
Well-3-220725 207422-02	<100	103
Well-4-220725 207422-03	<100	96
Well-5-220725 207422-04	<100	100
Well-11-220725 207422-05	<100	108
Well-12-220725 207422-06	<100	102
EMW01-220725 207422-07	<100	100
MW-8-220725 207422-08	<100	101
Well-FD-220725 207422-09	<100	98
Method Blank 02-1710 MB	<100	96

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/08/22
Date Received: 07/26/22
Project: 1581-21001-02, F&BI 207422
Date Extracted: 07/27/22
Date Analyzed: 08/03/22

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

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Residual Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 41-152)
Well-2-220725 207422-01	120 x	<250	139
Well-5-220725 207422-04	67 x	<250	125
Well-11-220725 207422-05	150 x	<250	119
MW-8-220725 207422-08	130 x	<250	138
Method Blank 02-1847 MB	<50	<250	100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/08/22
 Date Received: 07/26/22
 Project: 1581-21001-02, F&BI 207422
 Date Extracted: 07/27/22
 Date Analyzed: 07/27/22

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

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Residual Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 41-152)
Well-2-220725 207422-01	93 x	<250	148
Well-3-220725 207422-02	<50	<250	145
Well-4-220725 207422-03	<50	<250	137
Well-5-220725 207422-04	98 x	<250	145
Well-11-220725 207422-05	200 x	<250	140
Well-12-220725 207422-06	<50	<250	118
EMW01-220725 207422-07	<50	<250	153 vo
MW-8-220725 207422-08	760 x	350 x	147
Well-FD-220725 207422-09	<50	<250	143
Method Blank 02-1847 MB	<50	<250	111

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Well-12-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-06
Date Analyzed:	07/26/22	Data File:	207422-06.138
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	WE

Analyte:	Concentration ug/L (ppb)
Cadmium	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	I2-507 mb
Date Analyzed:	07/26/22	Data File:	I2-507 mb.132
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	WE

Analyte:	Concentration ug/L (ppb)
Cadmium	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Well-2-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-01
Date Analyzed:	07/26/22	Data File:	072644.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	96	72	130

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Well-3-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-02
Date Analyzed:	07/27/22	Data File:	072645.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	99	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1
Hexane	<5
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
1,2-Dibromoethane (EDB)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Well-11-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-05
Date Analyzed:	07/27/22	Data File:	072646.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	96	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1
Hexane	<5
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
1,2-Dibromoethane (EDB)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	35

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Well-12-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-06
Date Analyzed:	07/27/22	Data File:	072647.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	101	84	115
4-Bromofluorobenzene	98	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1
Hexane	<5
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
1,2-Dibromoethane (EDB)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	EMW01-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-07
Date Analyzed:	07/27/22	Data File:	072648.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	78	126
Toluene-d8	94	84	115
4-Bromofluorobenzene	98	72	130

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-8-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-08
Date Analyzed:	07/27/22	Data File:	072649.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	101	84	115
4-Bromofluorobenzene	102	72	130

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Well-FD-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-09
Date Analyzed:	07/27/22	Data File:	072650.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

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

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Trip Blank-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-10
Date Analyzed:	07/27/22	Data File:	072651.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	101	72	130

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	02-1778 mb
Date Analyzed:	07/26/22	Data File:	072640.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	105	84	115
4-Bromofluorobenzene	94	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1
Hexane	<5
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<0.2
1,2-Dibromoethane (EDB)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Well-2-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-01
Date Analyzed:	07/26/22	Data File:	072623.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	20	10	60
Phenol-d6	13	10	49
Nitrobenzene-d5	84	15	144
2-Fluorobiphenyl	85	25	128
2,4,6-Tribromophenol	75	10	142
Terphenyl-d14	96	41	138

Compounds:	Concentration ug/L (ppb)
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Well-3-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-02
Date Analyzed:	07/26/22	Data File:	072624.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	22	10	60
Phenol-d6	14	10	49
Nitrobenzene-d5	87	15	144
2-Fluorobiphenyl	85	25	128
2,4,6-Tribromophenol	75	10	142
Terphenyl-d14	100	41	138

Compounds:	Concentration ug/L (ppb)
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Well-4-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-03
Date Analyzed:	07/26/22	Data File:	072625.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	18	10	60
Phenol-d6	13	10	49
Nitrobenzene-d5	82	15	144
2-Fluorobiphenyl	86	25	128
2,4,6-Tribromophenol	66	10	142
Terphenyl-d14	99	41	138

Compounds:	Concentration ug/L (ppb)
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Well-5-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-04
Date Analyzed:	07/26/22	Data File:	072626.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	22	10	60
Phenol-d6	14	10	49
Nitrobenzene-d5	92	15	144
2-Fluorobiphenyl	83	25	128
2,4,6-Tribromophenol	59	10	142
Terphenyl-d14	103	41	138

Compounds:	Concentration ug/L (ppb)
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Well-11-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-05
Date Analyzed:	07/26/22	Data File:	072618.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	21	11	65
Phenol-d6	13	11	65
Nitrobenzene-d5	82	50	150
2-Fluorobiphenyl	77	44	108
2,4,6-Tribromophenol	89	10	140
Terphenyl-d14	93	50	150

Compounds:	Concentration ug/L (ppb)
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Well-12-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-06
Date Analyzed:	07/26/22	Data File:	072619.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	19	11	65
Phenol-d6	12	11	65
Nitrobenzene-d5	82	50	150
2-Fluorobiphenyl	79	44	108
2,4,6-Tribromophenol	82	10	140
Terphenyl-d14	98	50	150

Compounds:	Concentration ug/L (ppb)
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	EMW01-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-07
Date Analyzed:	07/26/22	Data File:	072620.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	21	11	65
Phenol-d6	12	11	65
Nitrobenzene-d5	80	50	150
2-Fluorobiphenyl	84	44	108
2,4,6-Tribromophenol	83	10	140
Terphenyl-d14	94	50	150

Compounds:	Concentration ug/L (ppb)
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-8-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-08
Date Analyzed:	07/26/22	Data File:	072621.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	7 vo	11	65
Phenol-d6	9 vo	11	65
Nitrobenzene-d5	62	50	150
2-Fluorobiphenyl	68	44	108
2,4,6-Tribromophenol	56	10	140
Terphenyl-d14	88	50	150

Compounds:	Concentration ug/L (ppb)
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Well-FD-220725	Client:	Evren Northwest
Date Received:	07/26/22	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	207422-09
Date Analyzed:	07/26/22	Data File:	072622.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	19	11	65
Phenol-d6	12	11	65
Nitrobenzene-d5	81	50	150
2-Fluorobiphenyl	80	44	108
2,4,6-Tribromophenol	81	10	140
Terphenyl-d14	95	50	150

Compounds:	Concentration ug/L (ppb)
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1581-21001-02, F&BI 207422
Date Extracted:	07/26/22	Lab ID:	02-1832 mb3
Date Analyzed:	07/26/22	Data File:	072621.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	22	10	60
Phenol-d6	13	10	49
Nitrobenzene-d5	87	15	144
2-Fluorobiphenyl	86	25	128
2,4,6-Tribromophenol	81	10	142
Terphenyl-d14	99	41	138

Compounds:	Concentration ug/L (ppb)
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/08/22

Date Received: 07/26/22

Project: 1581-21001-02, F&BI 207422

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

Laboratory Code: 207423-01 (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	103	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/08/22

Date Received: 07/26/22

Project: 1581-21001-02, F&BI 207422

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

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	100	104	63-142	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/08/22

Date Received: 07/26/22

Project: 1581-21001-02, F&BI 207422

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	108	108	63-142	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/08/22

Date Received: 07/26/22

Project: 1581-21001-02, F&BI 207422

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

Laboratory Code: 207421-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Cadmium	ug/L (ppb)	5	<1	98	99	75-125	1
Lead	ug/L (ppb)	10	<1	89	88	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Cadmium	ug/L (ppb)	5	95	80-120
Lead	ug/L (ppb)	10	94	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/08/22

Date Received: 07/26/22

Project: 1581-21001-02, F&BI 207422

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

Laboratory Code: 207422-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Vinyl chloride	ug/L (ppb)	10	<0.02	92	50-150
Chloroethane	ug/L (ppb)	10	<1	94	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	91	50-150
Hexane	ug/L (ppb)	10	<5	84	50-150
Methylene chloride	ug/L (ppb)	10	<5	95	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	99	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	100	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	98	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	99	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	90	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	94	50-150
Benzene	ug/L (ppb)	10	<0.35	98	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	93	50-150
Toluene	ug/L (ppb)	10	<1	98	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	94	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	101	50-150
Ethylbenzene	ug/L (ppb)	10	<1	94	50-150
m,p-Xylene	ug/L (ppb)	20	<2	94	50-150
o-Xylene	ug/L (ppb)	10	<1	93	50-150
Naphthalene	ug/L (ppb)	10	<1	96	50-150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/08/22

Date Received: 07/26/22

Project: 1581-21001-02, F&BI 207422

**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 LCS D	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	10	86	88	70-130	2
Chloroethane	ug/L (ppb)	10	89	94	70-130	5
1,1-Dichloroethene	ug/L (ppb)	10	97	91	70-130	6
Hexane	ug/L (ppb)	10	85	84	54-136	1
Methylene chloride	ug/L (ppb)	10	90	93	43-134	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	95	99	70-130	4
trans-1,2-Dichloroethene	ug/L (ppb)	10	96	100	70-130	4
1,1-Dichloroethane	ug/L (ppb)	10	94	97	70-130	3
cis-1,2-Dichloroethene	ug/L (ppb)	10	95	108	70-130	13
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	89	90	70-130	1
1,1,1-Trichloroethane	ug/L (ppb)	10	91	94	70-130	3
Benzene	ug/L (ppb)	10	94	97	70-130	3
Trichloroethene	ug/L (ppb)	10	90	95	70-130	5
Toluene	ug/L (ppb)	10	101	100	70-130	1
Tetrachloroethene	ug/L (ppb)	10	100	99	70-130	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	98	96	70-130	2
Ethylbenzene	ug/L (ppb)	10	94	94	70-130	0
m,p-Xylene	ug/L (ppb)	20	95	95	70-130	0
o-Xylene	ug/L (ppb)	10	94	93	70-130	1
Naphthalene	ug/L (ppb)	10	97	97	70-130	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/08/22

Date Received: 07/26/22

Project: 1581-21001-02, F&BI 207422

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

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	5	90	87	70-130	3
Chrysene	ug/L (ppb)	5	88	84	70-130	5
Benzo(a)pyrene	ug/L (ppb)	5	91	88	70-130	3
Benzo(b)fluoranthene	ug/L (ppb)	5	94	85	70-130	10
Benzo(k)fluoranthene	ug/L (ppb)	5	87	89	70-130	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	92	90	70-130	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	91	90	70-130	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

