FOCUSED RIGHT-OF-WAY INVESTIGATION

FUTURE KIDDIE ACADEMY PROPERTY

8701 Greenwood Avenue North
Seattle, WA 98103

Prepared for:

KIDDIE ACADEMY
EDUCATIONAL CHILD CARE

Attn: Maninder Singh
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Issued on:

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Project No. 1581-21001-02

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This

Focused Right-of-Way Investigation

Report for:

Future Kiddie Academy Property

8701 Greenwood Avenue North
Seattle, Washington 98103

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

and its assignees

KIDDIE ACADEMY
EDUCATIONAL CHILD CARE

Attn: Maninder Singh
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Issued April 7, 2022 *by:*

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bgs	below ground surface
Client	Kiddie Academy
COPCs	constituents of potential concern
cPAHS	carcinogenic polynuclear aromatic hydrocarbons
CSM	conceptual site model
CULs	cleanup levels
DRO	diesel-range organics
Ecology	Washington Department of Ecology
ENW	EVREN Northwest, Inc.
EPA	US Environmental Protection Agency
ft^2	square foot
ft/ft	vertical foot per lineal foot
GRO	gasoline-range organics
MRL	method reporting limit
µg/L	micrograms per liter
mg/Kg	milligrams per Kilogram
mL/min	milliliters per minute
MTCA	Model Toxics Control Act
PAH	polynuclear aromatic hydrocarbon
PCS	petroleum-contaminated soil
PID	photoionization detector
PQL	practical quantitation limit
ROW	right-of-way
RRO	residual (oil)-range organics
SOW	scope of work
SWI	soil-water interface
TOC	total organic carbon
TPH	total petroleum hydrocarbons
USGS	U.S. Geological Survey
VOCs	volatile organic constituents
WAC	Washington Administrative Code

1.0 Introduction

At the request of Kiddie Academy (Client), EVREN Northwest, Inc. (ENW) has prepared this report documenting a Focused Right-of-Way (ROW) Investigation of the commercial property located at 8701 Greenwood Avenue North in Seattle, Washington (the "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 Plan[1] to fulfill Washington Department of Ecology's (Ecology's) requirements[2] pursuant to Client's plans to redevelop the subject property.

This report summarizes previous environmental work and describes the investigation 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 *Data Gap Investigation Work Plan*[1] (Work Plan). Based on this history, ENW prepared the Work Plan, 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 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).

3.0 Scope of Work

This work was performed in accordance with the SOW outlined in ENW's proposed cost estimate submitted on December 22, 2021.

The SOW included the following tasks:

- Obtained Street Use Permit No. SUUTIL0007232 from Seattle Department of Transportation to authorize work in the public ROW. Obtained signage and implemented a traffic control plan, which included sidewalk and parking closures.
- Contracted a driller to advance three temporary direct-push soil borings for collection of five discrete soil samples for laboratory analysis of gasoline-range organics (GRO), diesel-range organics (DRO), residual (oil)-range organics (RRO), and related constituents.

[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.

- Set temporary well points in each of the borings, purged, and collected three (3) ground water samples for analysis of GRO, DRO, and RRO and related constituents.
- Submitted samples to an independent laboratory under chain-of-custody protocols for appropriate analysis.
- Evaluated analytical results with respect to Washington regulatory standards and Ecology guidance documents.
- Prepared this report documenting site conditions and findings.

4.0 Site Setting

A conceptual site model (CSM) is presented in ENW's Work Plan. 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 residence, 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 (USGS) Seattle North, Washington 7.5-minute quadrangle (Figure 1), the subject property lies at an approximate elevation of 260 feet above mean sea level. Topography in the area 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 landsides 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 (3.3 feet) thickness and of mappable extent. These

[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.

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 below ground surface (bgs) that appears to act as a confining layer separating lower saturated soils from the overlying vadose zone. Between 14 and 17 feet 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 sand 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 seven feet bgs. During the January 26, 2022, ground water monitoring event, depth to water in monitoring wells WELL-1 through WELL-13 ranged from 0.00 feet to 2.78 feet below top of well casing. Inferred ground water elevation contours suggested a south-southwesterly flow at a gradient of 0.52 vertical feet per lineal foot (ft/ft) across the southern portion of the site, while a west-southwesterly ground water flow direction at a gradient of 0.044 ft/ft was suggested across the northern portion of the site.[4]

Constituents of Potential Concern (COPCs). According to ENW's Work Plan for this portion of the site:

- On-site gasoline service station-related COPCs, include GRO, DRO, RRO, volatile organic constituents (VOCs), and polynuclear aromatic hydrocarbons (PAHs).

Nature and Extent and Associated Data Gaps. Data gaps being addressed in this SOW are associated with the nature and extent of petroleum impacts in soil and ground water, as follows:

- **Soil.** Confirmation soil data collected by other following a soil removal action in the southeast corner of the site suggest the presence of residual GRO and RRO in soil at concentrations greater than MTCA method A clean-up levels (CULs) at depths between 5 and 6 feet bgs. The extent of impacts at the southeast corner of the property represents a soil data gap.
- **Ground Water**. No ground water data was collected during previous investigations in the southeast portion of the subject site where residual impacts of GRO and RRO remain in soil. Therefore, it was not known if shallow ground was impacted in this area of the site and if that altered the extent of impact.

[4] ENW, February 28, 2022. *Ground Water Monitoring: First Quarter 2022,* Future Kiddie Academy Property, 8701 Greenwood Avenue North, Seattle, Washington 98103: Prepare for Kiddie Academy, Attn: Maninder Singh.

5.0 Methods and Procedures

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

5.1 Work Objectives

The objective of this work was to quantitatively determine whether hazardous substances may be present in the subsurface beneath the ROW area in the southeast portion subject site, and if their presence could potentially be considered an environmental concern. In addition, the following general objectives were followed:

- To perform the work efficiently and cost-effectively, minimizing interference with any site operations.
- To perform the work in a safe manner for technical personnel and site employees / visitors.
- 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, soil boring logs are included in Appendix B, Field Data Sampling Sheets are included in Appendix C, and laboratory analytical reports are included in Appendix D. Findings are presented in Section 6.

5.2 Preparation Activities

ENW performed or coordinated the following activities prior to conducting field activities:

Plan Preparation. In-house Sampling and Analysis Plan was prepared for the project, which followed the previously prepared Work Plan, but was specific to this SOW.

ROW Permitting. Obtained Street Use Permit No. SUUTIL0007232 from Seattle Department of Transportation to authorize work in the public ROW.

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.

5.3 Soil Borings

ENW strategically advanced two soil borings in the ROW at the southeast corner of the site (NW corner of intersection) and one boring in the ROW at the south side of N 87th Street (SW corner of intersection) to delineate the lateral and vertical extents of impacts downgradient of the former on-site gas station. Borings EB01 through EB03 were advanced on March 15, 2022, using a track mounted direct-push technology drill rig operated by Standard Probe of Seattle, Washington. Borings were advanced to a maximum depth of 16 feet bgs in locations shown on the Sample Location Diagram on Figure 3.

Field methods are described further in the following paragraphs. The results of laboratory analysis of soil and ground water samples are presented in Section 6.0.

Soil Screening and Logging. Soil cores and samples were field screened continuously from the surface to the total depth of each boring for the presence of contaminants. Semi-quantitative headspace screening was also performed on each sample core by placing selected soil samples in a plastic sealed bag, breaking the soil core to expose surface area inside the bag, and inserting a photoionization detector (PID) tip into the top of the bag. Soil cores were logged by an ENW Geologist (Appendix B). Soils were classified using the Unified Soil Classification System and complemented with descriptors such as grain size, moisture content, foreign clasts, and other physical properties to describe underlying stratigraphy.

Soil Sampling. Grab samples were collected from each boring for laboratory analysis from zones indicated to be impacted. In the absence of obvious soil impacts, soil samples were collected from immediately above the soil/water interface (SWI). Individual soil samples are designated with the sample's depth appended to the boring number (e.g., EB01/5-7 would indicate a sample collected from 5 to 7 feet bgs in boring EB01). Soil samples collected from the SWI were further designated with the letters "SWI" (e.g., EB01-SWI/14 would indicate a sample collected from the SWI in boring EB01).

Soil samples were transferred with fresh Nitrile gloves into sample containers provided by the laboratory. The containers were filled to minimize headspace before immediate sealing. The samples were immediately labeled and placed in cooled storage until they were delivered to the laboratory following chain-of-custody protocols.

Reconnaissance Ground Water Sampling. Borings were advanced approximately five feet below the first observed water-bearing zone. Reconnaissance ground water samples were collected by retracting the drill stem from the boring and installing a new temporary polyvinyl chloride well screen into the open borehole. The depth to water was measured and then new dedicated low-density polyethylene tubing was inserted into the well screen and attached to a peristaltic pump at the surface. A low flow of approximately 200 milliliters per minute (mL/min) was used to purge approximately three liters from the well, and then ground water samples were collected in laboratory-supplied containers. Samples were labeled to indicate the boring number and depth to bottom of screened interval.

Ground water monitoring results were recorded onto Field Sampling Data Sheets included as Appendix C.

Boring Completion. All borings were backfilled with hydrated bentonite chips to just below ground surface, and the asphalt pavement surface was restored.

5.4 Laboratory Analysis

Soil and ground water samples were analyzed by Friedman and Bruya, Inc. of Seattle, Washington. Samples were analyzed according to the analytical plan presented in Table 5-1. Laboratory analytical reports, including quality assurance/quality control procedures and results are included in Appendix D.

Table 5-1. Analytical Methods Used

Analytical Method	Constituents	Soil	Water
NWTPH-Gx	Northwest Total Petroleum Hydrocarbons – Gasoline-Range Organics (GRO)	All soil samples	All samples
NWTPH-Dx	Northwest Total Petroleum Hydrocarbons – Diesel-Range Organics (DRO) and Residual-Range Organics (RRO)	All soil samples	All samples
EPA 8260D	GRO-Related Volatile Organic Constituents (VOCs)	All soil samples	All samples
EPA 8270E SIM	Carcinogenic Polynuclear Aromatic Hydrocarbons (cPAHs)	All soil samples	All samples
EPA 9060	Total Organic Carbon	Select soil sample	--
NWTPH-Dx following silica gel cleanup	Extracts Passed through Silica Gel Column Prior to Analysis	--	Water samples with indication of matrix interference based on communication with laboratory

EPA = US Environmental Protection Agency

5.5 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 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 quantitation 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.

5.6 Investigation Derived Waste Disposal

Investigation-derived waste (soil cuttings, purge water, decontamination fluids) were temporarily placed inside Department of Transportation approved 55-gallon drums and stored on site pending receipt of analytical results.

The drums and their contents will be disposed of at an appropriate disposal facility after a disposal profile has been approved.

6.0 Findings

This section describes the findings of site activities. The results of laboratory analysis of the soil and reconnaissance ground water samples are summarized in Tables 1 and 2, respectively (following the Tables Tab after text). Site photographs of field activities are included in Appendix A. Copies of soil boring logs are included in Appendix B. Field sampling data sheets are included in Appendix C. Copies of the Laboratory Reports are included in Appendix D.

6.1 Soil Boring Investigation

ENW advanced three soil borings on March 15, 2022. Boring locations are presented on Figure 3 and soil and ground water samples collected from the borings are summarized in Table 6-1.

Table 6-1. Summary of Sampling

Sample Location Identification	Date Sampled	Depth Sampled (feet bgs)	Sampled by:	Location and Comments
Soil				
EB01	3/15/2022	5-7'	ENW	N of sidewalk, S of building, ~20' W of crosswalk (area where residual impacts suggested present following previous soil removal action in this area)
	3/15/2022	9	ENW	
	3/15/2022	14	ENW	
EB02	3/15/2022	13.5	ENW	N side of 87th St in ROW, W side of crosswalk
EB03	3/15/2022	12	ENW	S side of 87th in parking lane, W side of crosswalk
Reconnaissance Ground Water				
EB01	3/15/2022	16	ENW	N of sidewalk, S of building, ~35' W of crosswalk
EB02	3/15/2022	16	ENW	N side of 87th St in ROW, W side of crosswalk
EB03	3/15/2022	16	ENW	S side of 87th in parking lane, W side of crosswalk

Borings encountered unconsolidated to consolidated fine- to coarse-grained sediments associated with a glacial outwash environment. Most notably was the presence of a substantial, organic-rich peat layer beginning as shallow as 1.5 feet bgs and extending to as deep as 14 feet bgs in all three borings. Boring logs describe a strong odor of decaying organic matter. The peat layer overlain a silty fine sand layer, which was underlain by a highly plastic silt/clay unit.

Shallow ground water was first encountered within the peat layer at approximately nine to 10 feet bgs but produced insufficient water for sampling. Greater yields were found within the underlying silty sands. Evidence of vadose zone petroleum impacts was observed in boring EB01 within the upper part of the peat layer and within the peat at the soil/water interface at nine feet bgs. Soil samples EB01/5-7, EB01/9 and EB01-SWI/14 were collected from EB01 to document the presence of petroleum impacts. No field

evidence of petroleum impacts was noted in EB02 or EB03. In the absence of obvious soil impacts, soil samples were collected from the SWI in borings EB02 and EB03.

6.2 Laboratory Results – Soil

The results of laboratory analysis for five soil samples are presented in Table 1 and summarized below. Boring locations are shown on the Sample Location Diagram on Figure 3.

6.2.1 Petroleum Hydrocarbons

Five soil samples were analyzed for GRO, DRO and RRO and results are provided in Table 1.

- GRO was detected at 190 milligram per kilogram (mg/Kg) in EB01/9 south of the building at the first-encountered ground water, which slightly exceeded the MTCA Method A ground water CUL of 100 mg/Kg. GRO was not detected above the laboratory method reporting limits (MRLs) in EB01/5-7, EB01-SWI-14, EB02-SWI/13.5 (20 feet to the southeast of EB01), or EB03-SWI/12 (30 feet to the south-southeast of EB02).
- DRO was also present in EB01/5-7 at a concentration of 680 mg/Kg and in EB01/9 at 2,600 mg/Kg. DRO was not reported above the laboratory MRL in EB01/14. DRO only exceeded its MTCA Method A CUL of 2000 mg/Kg in EB01/9. DRO was not detected above laboratory MRLs in boring EB02 or EB03, located to the east and south, respectively, of EB01.
- RRO was not detected in any of the borings completed for this SOW.

Based on presence of GRO and DRO above MTCA Method A CULs in soil, all soil samples were further analyzed for GRO- and DRO-related constituents.

6.2.2 GRO-Related VOCs

All soil samples were analyzed for GRO-related VOCs by EPA Method 8260D. Of the five soil samples analyzed, only EB01/9 reported VOCs above laboratory MRLs, though detected VOC constituents cumene and 1,3,5-trimethylbenzene were below their respective MTCA Method A CULs.

6.2.3 Carcinogenic Polynuclear Aromatic Hydrocarbons

Since PAHs can be associated with residual DRO, all soil samples were conservatively analyzed for carcinogenic PAHs (cPAHs) by EPA Method 8270E. Further analysis did not detect any cPAHs above their respective MRLs in any of the soil samples.

6.3 Laboratory Results – Reconnaissance Ground Water

The results of laboratory analysis for three reconnaissance ground water samples are presented in Table 2 and summarized below. Boring locations are shown on the Sample Location Diagram on Figure 3.

6.3.1 Petroleum Hydrocarbons

Three soil samples were analyzed for GRO, DRO and RRO and results are provided in Table 2.

- GRO was below laboratory MRL in all three samples.

- DRO was detected in EB01 and EB02 at 120 micrograms per liter (µg/L) and a laboratory-flagged concentration of 78 µg/L, respectively. The "x" qualifier is used by the laboratory to indicate a chromatographic signature not typical of the petroleum product being analyzed. Neither DRO concentration exceeded the MTCA Method A ground water CUL of 500 µg/L.
- RRO was not detected above laboratory MRLs in any of the samples.

As it is possible for degraded wood residue to affect concentrations of heavier petroleum analysis, ENW requested the laboratory to evaluate the chromatographic patterns of select samples.

To quantify the effects of biogenic carbon materials, the ground water sample from EB02 was re-analyzed with a silica gel filter to screen out biogenic material. Results of further analysis indicated the following:

- DRO concentrations dropped from a maximum of 78 µg/L to below laboratory MRL of 75 µg/L in the sample from EB02.
- RRO remained below the laboratory MRL in the sample from EB02.

ENW requested further analysis of EB02-SWI/13.5 to quantify the total organic carbon (TOC) content of soil at the SWI as a possible source of biogenic material in ground water. Analysis using EPA Method 9060 of the sample measured TOC at 0.391%-dry weight (3910 mg/Kg), which is under the range of 0.5% to 3.0% for most upland soils and falls in the range of desert soils.[5] While TOC is low in EB02-SWI/13.5, a significant source of TOC can be found in the 11-foot-thick organic-rich peat layer immediately overlying this silty sand. Thus, TOC is likely interfering with the DRO detection in the unfiltered reconnaissance ground water sample from EB02, and the DRO result of the sample filtered through silica gel is likely more representative.

6.3.2 GRO-Related VOCs

Three ground water samples were analyzed for GRO-related VOCs. As indicated in Table 2, all GRO-related VOCs were below laboratory MRLs in samples EB01 through EB03.

6.3.3 Carcinogenic Polynuclear Aromatic Hydrocarbons

Three ground water samples were analyzed for cPAHs. As indicated in Table 2, all cPAHs were below laboratory MRLs in samples EB01 through EB03.

7.0 Current Understanding of Magnitude and Extent of Contamination

Findings of soil and reconnaissance ground water sampling demonstrate lateral delineation of soil and ground water impacts at the southeastern portion of the subject property.

7.1 Soil

Soil analytical results suggest the presence of residual GRO- and DRO-impacted soil at five to nine feet bgs within the peat layer at EB01, in which impacts were not detected in the sample collected at 14 feet bgs at the SWI in EB01. Thus, the vertical extent of petroleum-contaminated soil (PCS) appears to be less than

[5] wikipedia.org/wiki/Soil_carbon

14 feet bgs at EB01. No field evidence of petroleum-related VOCs was suggested in the peat layer 20 feet to the southeast at EB02 or 50 feet to the southeast at EB03 (see boring logs Appendix B), and no petroleum hydrocarbons were detected above laboratory MRLs at the SWI in sample EB02-SWI/13.5 or EB03-SWI/12. The estimated extent of residual PCS covers an approximately 350 square foot (ft^2) area around EB01 south of excavation 1A and west of excavation 1B (Figure 3).

7.2 Ground Water

Reconnaissance ground water data suggest the occurrence of DRO impacts in the area of EB01 at a concentration less than the MTCA Method A CUL. However, no DRO impacts were reported in reconnaissance ground water collected at EB02 (after silica gel cleanup) or at EB03 located respectively 20 feet and 50 feet southeast of EB01.

8.0 Conclusions and Recommendations

During March 2022, ENW mobilized to the site to collect soil and ground water samples in the public ROW near in the southeast corner of the subject property where previous sampling from utility excavations had encountered GRO- and RRO-impacted soil above the MTCA Method A soil CUL. During advancement of the borings, a relatively thin zone of petroleum-impacted soil was observed in one of the three borings near the soil/water interface.

Soil samples were collected from areas of visible impacts in boring EB01 and from the SWI in the remaining borings since there were not field evidence of impacts in these borings and submitted for laboratory analysis. Only one sample (EB01/9) collected from boring EB01 near the southern property boundary contained a GRO concentration of 190 mg/Kg and a DRO concentration of 2,600 mg/Kg, exceeding their respective MTCA Method A soil CULs. All other analyte concentrations in remaining samples collected from borings EB01 through EB03 were below MTCA method A CULs. The estimated extent of residual PCS covers an approximately 350 sf area around EB01 south of excavation 1A and west of excavation 1B (Figure 3).

In ground water, only DRO was detected in EB01 at a concentration below the MTCA Method A CUL. DRO was not detected in EB02 or EB03, suggesting that DRO-impacted ground water occurs only in the area of EB01 and does not extend off-site to the southeast. Given the high organic content of the underlying soils (peat), ground water impacts are likely localized to the EB01 location and collocated with soil impacts.

8.1 Recommendations

Based on the above findings and conclusions, residual PCS near the southeast corner of the property has been vertically and laterally delineated, with no suggestion of extensive migration of petroleum impacts from the former excavation area. While GRO and DRO impacts exceed MTCA Method A CULs for soils, these impacts occur at a depth of approximately 5 to 9 feet bgs and are limited to an area beneath the city sidewalk/street ROW area and north-adjacent landscaped strip next to the on-site building where extensive utilities are present. Recent on-site sub-slab vapor sampling results do not suggest the occurrence of petroleum-related VOCs beneath the southeast building corner (SUB03) at concentrations

greater than MTCA Method B CULs.[6] Therefore, no further investigation is recommended in relation to residual petroleum hydrocarbon at the southeast corner of the site.

However, ENW recommends preparation of a Contaminated Media Management Plan to inform decisions related to managing, characterizing, and disposing of residual contaminated media, including these residual GRO and DRO impacted soils, encountered during future redevelopment, construction and/or excavation at the subject property.

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

9.0 Limitations

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

The focus of the work does not extend to the presence of the following conditions:

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

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

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

ENW performed this study under a limited scope of services per our agreement. ENW assumes no responsibility for conditions that we did not specifically evaluate or conditions that were not generally recognized as environmentally unacceptable at the time this report was prepared.

[6] ENW, February 23, 2022. *Focused Sub-Slab Vapor Investigation*, Future Kiddie Academy Property, 8701 Greenwood Avenue North, Seattle, Washington 98103: Prepared for Kiddie Academy, Attn: Maninder Singh.

Tables

Table 1 - Summary of Analytical Data, Soil

Sample ID		EB01/5-7	EB01/9	EB01-SWI/14	EB02-SWI/13.5	EB03-SWI/12	Maximum Residual Soil Concentration (detected)	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses [1]	MTCA Method B Soil Cleanup Levels (if Method A not available) [1]	MTCA Method B Soil Cleanup Levels (iProtectiveness of Ground Water - vadose zone soil)[1]	Constituent of Potential Concern (COPC, exceeds Method A or B CULs)?
Date Sampled		3/15/2022	3/15/2022	3/15/2022	3/15/2022	3/15/2022					
Depth Sampled (feet)		5-7'	9	14	13.5	12					
Sampled by:		ENW	ENW	ENW	ENW	ENW					
Location		N of sidewalk, S of building, ~35' W of crosswalk			N side of 87th St in ROW, W side of crosswalk	S side of 87th in parking lane, W side of crosswalk					
Constituent of Interest	Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	Y / N
Volatile Organic Constituents (VOCs)											
Benzene	c, v	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	<0.03 (ND)	0.03	18	0.027	N
Ethylene dibromide (EDB)	c, v	<0.005 (ND)	<0.005 (ND)	<0.005 (ND)	<0.005 (ND)	<0.05 (ND)	<0.05 (ND)	0.005	0.5	0.00027	(Y)
Dichloroethane;1,2-	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	11	0.023	N
Ethylbenzene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	6	8000	5.9	N
Methyl tert-butyl ether	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.1	560	0.1	N
Naphthalene	c, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	5	1600	4.5	N
Cumene	nc, v	<0.05 (ND)	0.082	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.082	NE	8000	15	N
Propylbenzene;n-	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	8000	16	N
Toluene	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	7	6400	4.5	N
Trimethylbenzene;1,2,4-	nc, v	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	NE	800	1.3	N
Trimethylbenzene;1,3,5-	nc, v	<0.05 (ND)	0.14	<0.05 (ND)	<0.05 (ND)	<0.05 (ND)	0.14	NE	800	1.3	N
Xylenes	nc, v	<0.15 (ND)	<0.15 (ND)	<0.15 (ND)	<0.15 (ND)	<0.15 (ND)	<0.15 (ND)	9	16000	14	N

Table 1 - Summary of Analytical Data, Soil

Sample ID		EB01/5-7	EB01/9	EB01-SWI/14	EB02-SWI/13.5	EB03-SWI/12	Maximum Residual Soil Concentration (detected)	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses [1]	MTCA Method B Soil Cleanup Levels (if Method A not available) [1]	MTCA Method B Soil Cleanup Levels (iProtectiveness of Ground Water - vadose zone soil)[1]	Constituent of Potential Concern (COPC, exceeds Method A or B CULs)?
Date Sampled		3/15/2022	3/15/2022	3/15/2022	3/15/2022	3/15/2022					
Depth Sampled (feet)		5-7'	9	14	13.5	12					
Sampled by:		ENW	ENW	ENW	ENW	ENW					
Location		N of sidewalk, S of building, ~35' W of crosswalk			N side of 87th St in ROW, W side of crosswalk	S side of 87th in parking lane, W side of crosswalk					
Constituent of Interest	Note	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	mg/Kg (ppm)	Y / N
Polyaromatic Hydrocarbons											
Benzo[a]anthracene	c, nv	<0.2 (ND)	<0.2 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.2 (ND)	**	**	**	---
Benzo[a]pyrene	c, nv	<0.2 (ND)	<0.2 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.2 (ND)	0.1 (**)	0.19 (**)	3.9 (**)	---
Benzo[b]fluoranthene	c, nv	<0.2 (ND)	<0.2 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.2 (ND)	**	**	**	---
Benzo[k]fluoranthene	c, nv	<0.2 (ND)	<0.2 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.2 (ND)	**	**	**	---
Chrysene	c, nv	<0.2 (ND)	<0.2 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.2 (ND)	**	**	**	---
Dibenz[a,h]anthracene	c, nv	<0.2 (ND)	<0.2 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.2 (ND)	**	**	**	---
Indeno[1,2,3-cd]pyrene	c, nv	<0.2 (ND)	<0.2 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.2 (ND)	**	**	**	---
TEQ[1]							<0.251 (ND)	0.1 (**)	0.19 (**)	3.9 (**)	(Y)
Total Petroleum Hydrocarbons											
TPH: gasoline range organics, benzene present	nc, v	<20 (ND)	**190**	<5 (ND)	<5 (ND)	<5 (ND)	**190**	100	NE	NE	**Y**
TPH, diesel range organics	nc, nv	680	**2600**	<50 (ND)	<50 (ND)	<50 (ND)	**2600**	2000	NE	NE	**Y**
TPH, heavy oils	nc, nv	<1000 (ND)	<1000 (ND)	<250 (ND)	<250 (ND)	<250 (ND)	<1000 (ND)				
General Chemistry											
Total Organic Carbon	nc, nv	---	---	---	3910	---	---				

Notes:

ND = not detected at or above laboratory method reporting limits

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

— = not analyzed or not applicable.

< = not detected at or above the method reporting limit shown.

NE = not established.

mg/Kg = milligram per kilogram.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

GRO = gasoline-range organics.

DRO = diesel-range organics.

RRO = residual-range organics.

Bolded concentrations exceed either MTCA Cleanup Levels.

** Cleanup level of carcinogenic PAHs based on the quotient of their Toxicity Equivalency with respect to Benzo(a)pyrene

TEQ = Toxicity Equivalency Quotient per Ecology[1]

TEF = Toxicity Equivalency Factor per Ecology[1]

1. Ecology, April 20, 2015. Evaluating the Human Health Toxicity of Carcionogenic PAHs (cPAHs) Using Toxicity Equivalency Factors (TEFs): Implementation Memorandum #10.

Table 2 - Summary of Analytical Data, Reconnaissance Ground Water

Location ID		EB01	EB02	EB03	Maximum Ground Water Concentration	MTCA Method A Cleanup Levels for Ground Water (Unrestricted Land Use)	MTCA Method B Cleanup Levels for Ground Water (lowest)	Constituent of Potential Concern (COPC)?[3]
Sample ID		EB01-GW-16	EB02-GW-16	EB03-GW-16				
Date Sampled		3/15/2022	3/15/2022	3/15/2022				
Sampler		ENW	ENW	ENW				
Depth Sampled (feet)		16	16	16				
Location		N of sidewalk, S of building, ~35' W of crosswalk	N side of 87th St in ROW, W side of crosswalk	S side of 87th in parking lane, W side of crosswalk				
Constituent of Interest	Note	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	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	5	0.8	N
Ethylene dibromide (EDB)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	0.01	0.022	(Y)
Dichloroethane;1,2- (EDC)	c, v	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	<0.2 (ND)	5	0.48	N
Ethylbenzene	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	700	800	N
Methyl tert-butyl ether (MTBE)	c, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	20	24	N
Naphthalene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	160	160	N
Cumene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	NE	800	N
Propylbenzene;n-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	NE	800	N
Toluene	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1000	640	N
Trimethylbenzene;1,2,4-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	NE	80	N
Trimethylbenzene;1,3,5-	nc, v	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	NE	80	N
Xylenes	nc, v	<3 (ND)	<3 (ND)	<3 (ND)	<3 (ND)	1000	1600	N

Table 2 - Summary of Analytical Data, Reconnaissance Ground Water

Location ID		EB01	EB02	EB03	Maximum Ground Water Concentration	MTCA Method A Cleanup Levels for Ground Water (Unrestricted Land Use)	MTCA Method B Cleanup Levels for Ground Water (lowest)	Constituent of Potential Concern (COPC)?[3]
Sample ID		EB01-GW-16	EB02-GW-16	EB03-GW-16				
Date Sampled		3/15/2022	3/15/2022	3/15/2022				
Sampler		ENW	ENW	ENW				
Depth Sampled (feet)		16	16	16				
Location		N of sidewalk, S of building, ~35' W of crosswalk	N side of 87th St in ROW, W side of crosswalk	S side of 87th in parking lane, W side of crosswalk				
Polyaromatic Hydrocarbons (Carcinogenic)								
Benz[a]anthracene	c, nv	<0.02 (ND)	<0.04 (ND)	<0.02 (ND)	<0.04 (ND)	**	**	---
Benzo[a]pyrene	c, nv	<0.02 (ND)	<0.04 (ND)	<0.02 (ND)	<0.04 (ND)	0.1 (**)	0.023 (**)	---
Benzo[b]fluoranthene	c, nv	<0.02 (ND)	<0.04 (ND)	<0.02 (ND)	<0.04 (ND)	**	**	---
Benzo[k]fluoranthene	c, nv	<0.02 (ND)	<0.04 (ND)	<0.02 (ND)	<0.04 (ND)	**	**	---
Chrysene	c, nv	<0.02 (ND)	<0.04 (ND)	<0.02 (ND)	<0.04 (ND)	**	**	---
Dibenz[a,h]anthracene	c, nv	<0.02 (ND)	<0.04 (ND)	<0.02 (ND)	<0.04 (ND)	**	**	---
Indeno[1,2,3-cd]pyrene	c, nv	<0.02 (ND)	<0.04 (ND)	<0.02 (ND)	<0.04 (ND)	**	**	---
TEQ[1]					<0.0302 (ND)	0.1 (**)	0.023 (**)	(Y)
Total Petroleum Hydrocarbons								
GRO	nc, v	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	1000	NE	N
DRO	nc, nv	120	78 x <75 (ND) (*)	<50 (ND)	120	500	NE	N
RRO	nc, nv	<250 (ND)	<380 (ND) <380 (ND) (*)	<250 (ND)	<380 (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

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

GRO = gasoline-range organics.

DRO = diesel-range organics.

RRO = residual (oil)-range organics.

* Sample Extract passed throuhg a silica gel column prior to analysis.

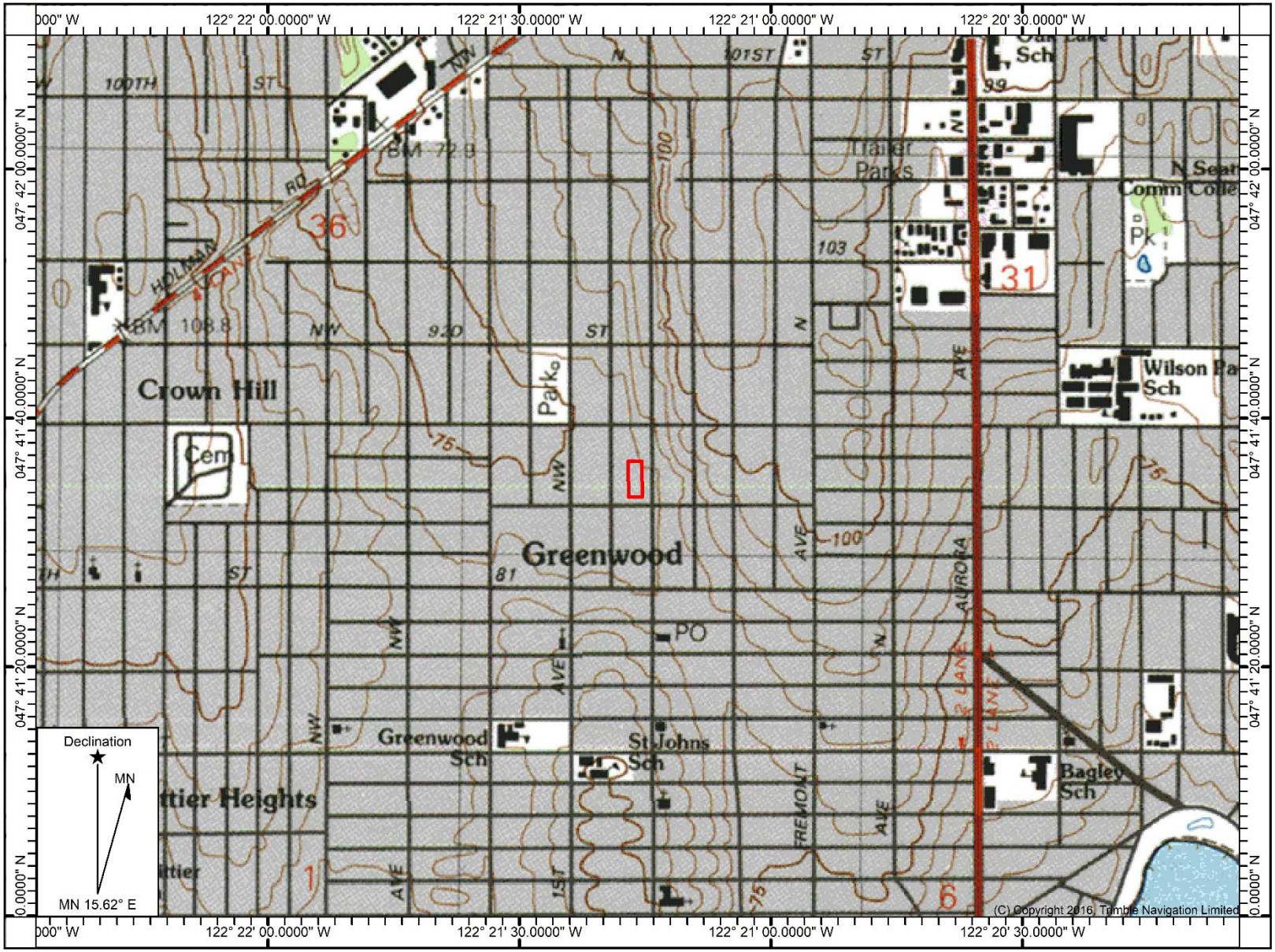
** Cleanup level of carcinogenic PAHs based on the quotient of their Toxicity Equivalency with respect to Benzo(a)pyrene

TEF = Toxicity Equivalency Factor per Ecology[1]

TEQ = Toxicity Equivalency Quotient per Ecology[1]

1. Ecology, April 20, 2015. Evaluating the Human Health Toxicity of Carcionogenic PAHs (cPAHs) Using Toxicity Equivalency Factors (TEFs): Implementation Memorandum #10.

Figures



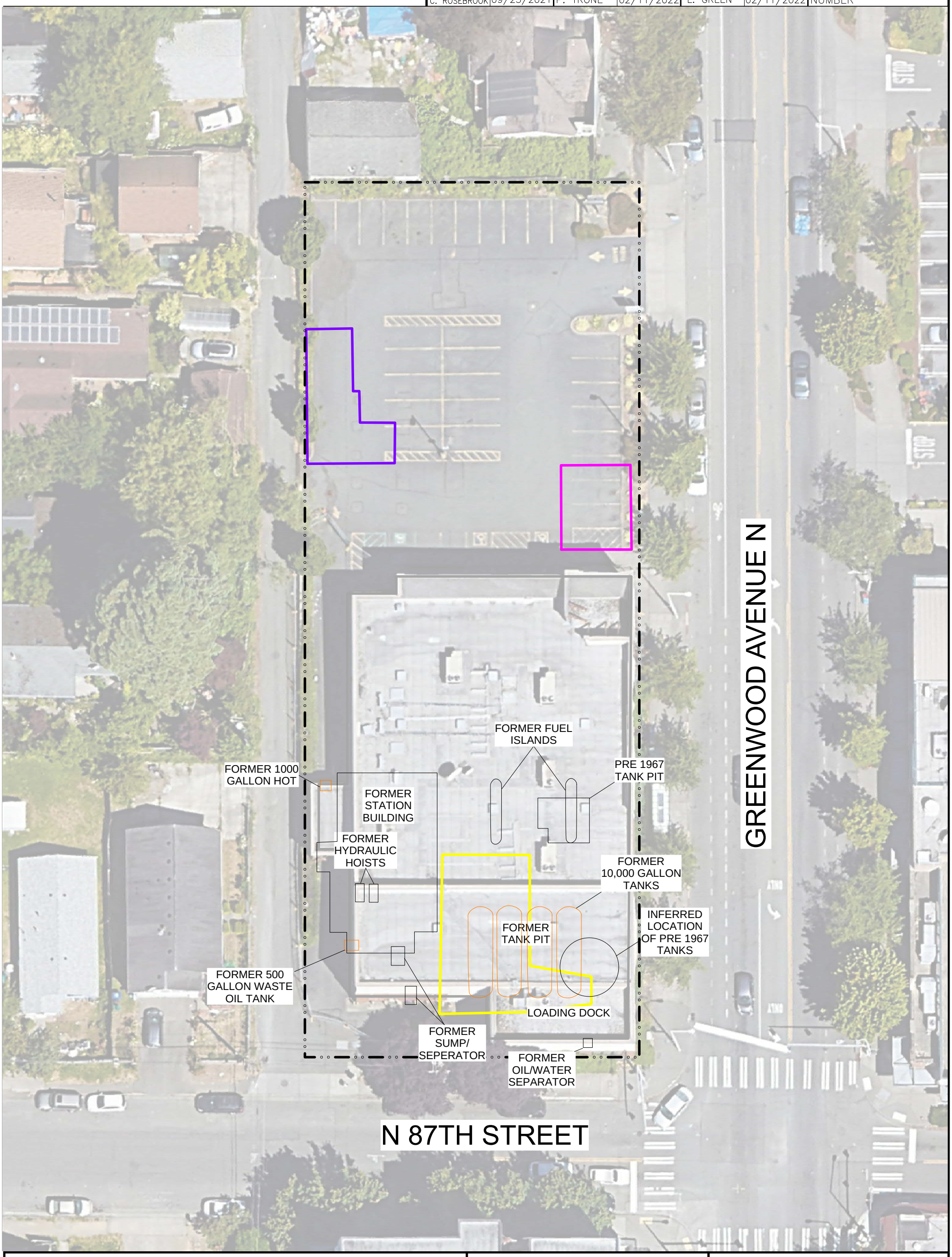
Name: SEATTLE NORTH
Date: 09/20/21

0 1000 2000 3000
Feet

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

EVREN NORTHWEST	Date Drawn: 4/6/2022 CAD File Name: 1581-21001-01_fig1sv_map 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**

DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
C. ROSEBROOK	09/23/2021	P. TRONE	02/11/2022	L. GREEN	02/11/2022	1581-21001(v01)



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

0 30 60 FEET

N

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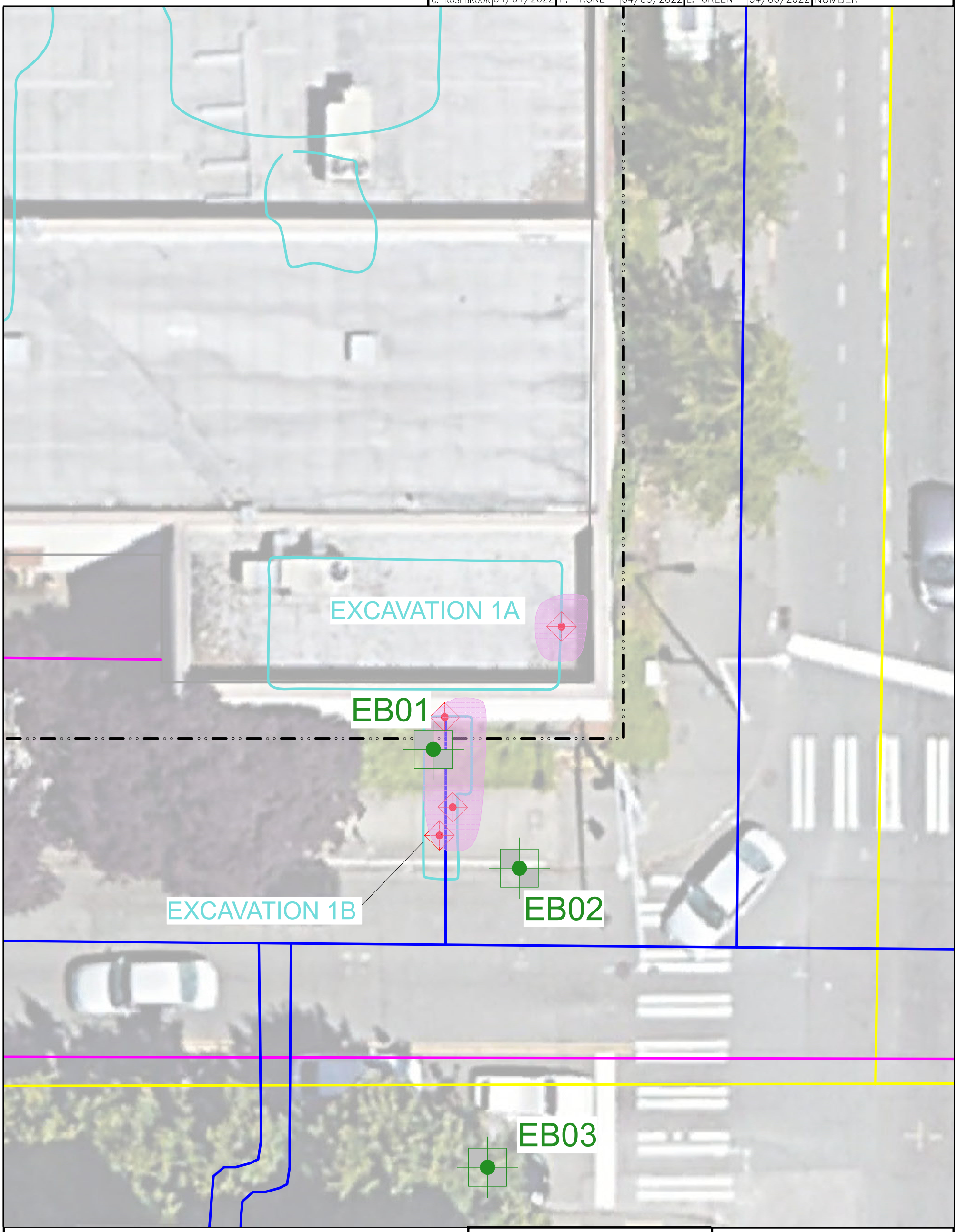
FIGURE 2

SITE PLAN WITH HISTORICAL FEATURES OF INTEREST

FUTRUE KIDDIE ACADEMY PROPERTY
8701 GREENWOOD AVENUE N
SEATTLE, WASHINGTON

DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
C. ROSEBROOK	04/01/2022	P. TRONE	04/05/2022	L. GREEN	04/06/2022	1581-21001(v01)



LEGEND:

- SUBJECT BUILDING
- SUBJECT PROPERTY BOUNDARIES
- PRIOR PCS EXCAVATION MARGINS
- SANITARY SEWER PIPE
- WATER LINE
- GAS LINE
- MONITORING WELL LOCATION PER ENVIRONMENTAL SPECIALTIES MAY 2021
- MONITORING WELL LOCATION PER ENVIRONMENTAL RESOLUTIONS INC.
- ENW BORING LOCATION
- ENVIRO. RESOLUTION INC. SOIL SAMPLE LOCATION REMAINING FOLLOWING 1996 EXCAVATION EXCEEDING MTCA CUL
- INFERRED AREA OF RESIDUAL PETROLEUM IMPACTED SOIL EXCEEDING MTCA METHOD A CUL FOR GRO AND/OR DRO

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.

N

APPROXIMATE SCALE

0 10 20 FEET

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FIGURE 3

SAMPLE LOCATION DIAGRAM

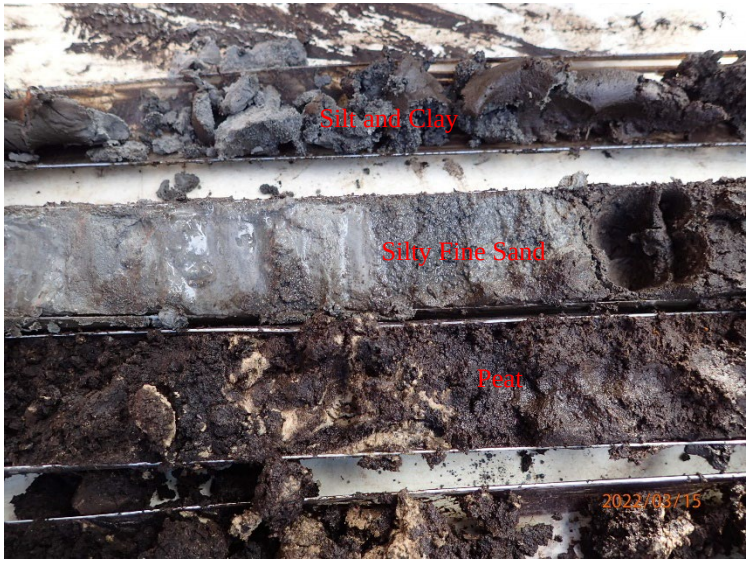
PROPOSED KIDDIE ACADEMY PROPERTY
8701 GREENWOOD AVENUE N
SEATTLE, WASHINGTON

Appendix A

Site Photographs

View east of drill rig set up on boring location EB01.

Soil cores retrieved inside 4-foot-long plastic sleeves were accessed to perform field screening and collect soil samples.



Closer view of peat, silty sand, and clay soils encountered in the three soil borings at the site.

A PID being used to measure headspace for field screening of soil contaminants.

EVREN NORTHWEST INC environmental natural resource consultants	Future Kiddie Academy Property 8701 Greenwood Avenue N Seattle, Washington	**Site Photographs**	Project No. 1581-21001-02 Appendix **A**

Reconnaissance ground water sample collected from EB01 with a peristaltic pump using low-flow purge and sampling methodology.

View east at drill rig set up at EB02 in the parking strip near the southeast corner of the onsite building.

Close-up view of thick layer of peat encountered in all borings.

Close-up view of silty sand soils directly underlying the peat layer.

EVREN NORTHWEST INC environmental natural resource consultants	Future Kiddie Academy Property 8701 Greenwood Avenue N Seattle, Washington	**Site Photographs**	Project No. 1581-21001-02 Appendix **A**

Gray, highly plastic clay soils were encountered at the bottom of the borings.

Ground water sampling at EB02.

View south of drill rig set up at boring EB03 on the south parking strip of 87th Avenue.

Following sampling activities, borings were backfilled and sealed at the surface.

EVREN NORTHWEST INC environmental / natural resource consultants	Future Kiddie Academy Property 8701 Greenwood Avenue N Seattle, Washington	**Site Photographs**	Project No. 1581-21001-02 Appendix **A**

Investigation derived waste (soil and water) was placed in drums and left on site pending receipt of laboratory results.

Appendix B

Soil Boring Logs

EVREN Northwest, Inc.

DRILL LOG

PROJECT	PROJECT NO.	BORING NO.
Focused Subsurface Investigation	1581-21001-02	**EB01**

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
8701 Greenwood Ave N., Seattle, WA	3/15/22	3/15/22	2in	

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION
		3/15/22	5.52		

DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Standard Probe				

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
	E.Bruggeman	16

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			SAND (SW); medium brown; fine to coarse-grained sand; some silt; medium dense; slightly moist			50			
2.5								0.0	
			PEAT; dark brown; moist; soft organic rish; petroleum odor; poor recovery						
5					soil			21.3	
				EB01/5-7		35			
7.5									
			wet but not produceable	EB01/9	soil			15.2	
10						90			
			1 inch thick layer of sand; tan; fine-grained sand						
								0.0	
12.5			strong decay/organic odor (methane?)						
			Silty fine SAND (SM); light gray; medium dense; grain size gets finer with depth.	EB01-SWI/ 14	soil	100			Reconn ground water sample collected
15			SILT and CLAY (MH); light gray; high plasticity; soft to medium stiff; wet						
			End of boring					0.0	
17.5									

EVREN Northwest, Inc.

DRILL LOG

PROJECT: Focused Subsurface Investigation		PROJECT NO.: 1581-21001-02	BORING NO.: **EB02**
SITE: 8701 Greenwood Ave N., Seattle, WA	BEGUN: 3/15/22	COMPLETED: 3/15/22	HOLE SIZE: 2in
COORDINATES	DEPTH GROUND WATER	DATE SL: 3/15/22	STATIC LEVEL: 9.85
DRILLER: Standard Probe	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES
DRILL MAKE AND MODEL	LOGGED BY: E.Bruggeman		DEPTH BOTTOM OF HOLE: 16

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE TYPE	CORE RECOVERY	MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0									
			SAND (SW); light brown; fine to coarse sand; some silt; medium dense; slightly moist						
			PEAT; dark brown; moist; soft			50			
2.5									
			strong odor of decay/organics/methane(?)					0.1	
5			grades to medim brown						
						100			
7.5									
			very moist					0.2	
10			3 inch thick sand layer; tan; fine-grained; moist			100			
								0.0	
12.5									
			Silty fine SAND (SM); light gray; soft; medium dense	EB02-SWI/ 13.5	soil	100		0.0	
15									
								0.0	reconn ground water sample collected
			End of boring						
17.5									

EVREN Northwest, Inc.

DRILL LOG	PROJECT	PROJECT NO.	BORING NO.
	Focused Subsurface Investigation	1581-21001-02	**EB03**

SITE	BEGUN	COMPLETED	HOLE SIZE	ANGLE FROM HORIZ.
8701 Greenwood Ave N., Seattle, WA	3/15/22	3/15/22	2in	

COORDINATES	DEPTH GROUND WATER	DATE SL	STATIC LEVEL	FIRST WATER	GROUND ELEVATION
		3/15/22	6.98		

DRILLER	CORE RECOVERY (%)	# SAMPLES	# CORE BOXES	DEPTH TOP OF ROCK
Standard Probe				

DRILL MAKE AND MODEL	LOGGED BY:	DEPTH BOTTOM OF HOLE
	E.Bruggeman	16

DEPTH	STRATA ELEVATION/ DEPTH	GRAPHIC LOG	DESCRIPTION	SAMPLE DATA: SAMPLE NO.	SAMPLE DATA: SAMPLE TYPE	SAMPLE DATA: CORE RECOVERY	SAMPLE DATA: MW Const./ Completion	PID/OVM	REMARKS: NOTES ON WATER LEVELS, LOSSES, CAVING, CASING, DEPTH & DRILLING CONDITIONS.
0			Asphalt over concrete						
			SAND (SW); light brown; fine to coarse grained sand; medium dense; dry						
			PEAT; dark brown; moist; soft			35			
2.5								0.0	
5			decay/organic odor (methane?)			100			
7.5			2 inch thin sand layar; tan					0.0	
10						100			
12.5			Silty fine SAND (SM); light gray; medium dense; wet	EB03-SWI/ 12				0.0	
			begins to get finer			80			
15			SILT and CLAY (MH); highly plasic; soft; wet; medium stiff					0.0	
			End of boring					0.0	
17.5									

Appendix C

Field Sampling Data Sheets

EVREN Northwest GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Kiddie Academy PROJECT NUMBER: 1581-21001-02

Event: GW Recon in ROW Date: 03/15/22

Field Personnel: Dan Sayles Monitoring Well ID: EB01

Weather Conditions: Partly Sunny Start Time: 9:30

DTW (prior to purging): ~10' 5.52' after deepening

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)
9:31			Brown (Color of Rent) turb.d						0.01
9:30			Dried up						
			- Boring deepened						
10:24		175	Brown very turb.d						0.01
10:25									
10:28		"	Brown turb.d (Sheen in bucket)						0.6
10:33			Light brown turb.d						1.20
10:38			tan - sl. turb.d						1.80
10:40			Begin Sampling (Liter 1st)						

Total Purged ~2.0L

Tubing: 1/4" LDPE

Purge Pumping Rate (approx. L/m): 125 ml/min Well casing (in. diam): 1" PVC

Decontamination method: Approx. Pump/Intake Depth: ~13'

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

WELL CONDITION

Recommended Well Repairs/Additional Notes: Screen set from 6'-16'

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
8260 (VOCs) RBDM	EMB	HCl	40ml	4		
cPAHs	"	none	1 liter	1	EB01-GW-16	10:55
DX	"	none	500ml	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:

RBDM = BTEX (EDB, MTBE)

Signature of Field Personnel:

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: _____ PROJECT NUMBER: _____

Event: GW sampling (Recon) ROW Date: 03/15/22

Field Personnel: Dan Sayki Monitoring Well ID: EB02

Weather Conditions: Partly Start Time: 10:57

DTW (prior to purging): 9.85'

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (mL/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), ±0.1%	ORP (mV), ±10 mV	Turbidity (NTU), , ±10%	Total Quantity Purged (gallons/liters)
10:58	—	120		Light brown		turbid			0.2
11:02		"		Drying up - lower intake to 15'					0.50
11:05		"		Completely dried up.					0.80
11:36				Begin purging again - new silicone					
11:37				Brown turbid					
11:38				Drying up stop pump					1.0
11:42				before sample					

Total Purged:

Tubing: 1/4" LDPE

Purge Pumping Rate (approx. L/m): ~ 125 ml/min Well casing (in. diam): 1" PVC

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

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

WELL CONDITION

Recommended Well Repairs/Additional Notes:

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

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

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
GX (PBAM VOCs)	Eq13	HCL	40ml	4	EB02-GW-16	13:20
cPAHs		none	1 Liter	1		
DX		none	500ml	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:

Screened from 6'-16'

Signature of Field Personnel:

EVREN Northwest

GROUND WATER FIELD SAMPLING DATA FORM (FIELD)

PROJECT NAME: Kiddie Academy

PROJECT NUMBER: 1561.21001.02

Event: GW sampling (Rear ROW)

Date: 03/15/22

Field Personnel: Dan Sajko

Monitoring Well ID: EB03

Weather Conditions: Partly Sunny

Start Time: 11:50

DTW (prior to purging): 6.90

WELL PURGING INFORMATION

Time	DTW During Purging (feet)	Pumping Rate (mL/min)	Temperature (degree C)	Specific Conductivity (mS/cm), ±3%	Dissolved Oxygen (mg/L), ±10%	Water pH (S.U.), , ±0.1%	ORP (mV), , ±10 mV	Turbidity (NTU), , ±10%	Total Quantity Purged (gallons/liters)
11:51		150	Dark brown very turbid						
11:55		"	Brown / turbid						0.60
11:59		"	Light brown / turbid						1.20
12:03		"	Mostly clear						1.80

Total Purged: 1.80

Tubing: 1/4" LDPE

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

Well casing (in. diam): 1" PVC

Decontamination method:

Approx. Pump/Intake Depth: ~ 13'

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

WELL CONDITION

Recommended Well Repairs/Additional Notes: Screened from 6' - 16'

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
CX VOCs	TmB	HCl	40ml	4		
CPAHs		none	1 liter	1	EB03-GW-16	12:15
DX		none	500ml	1		

Method of Transportation of samples: FedEx (Courier)

All samples were immediately placed into a cooler and packed with ice or "blue ice" ☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Appendix D

Laboratory Analytical Report

Summary: DATA VALID? ☒YES

Analytical Laboratory Data Validation Check Sheet

Project Name: Kiddie Academy Project Number: 1581-21001-02

Date of Review: 03/30/2022 Lab. Name: **EAS** Lab Batch ID #: 203273

Chain of Custody

1.) Are all requested analyses reported?	☒yes	☐no	
2.) Were the requested methods used?	☒yes	☐no	
3.) Trip blank submitted?	☐yes	☒no	
4.) Field blank submitted?	☐yes	☒no	
Timing			
5.) Samples extracted within holding times?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
6.) Analysis performed within holding times?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
Quality Assurance/Quality Control			
7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs)	☒yes	☐no	
8.) Are all reported values above either MRL or MDL?	☒yes	☐no	
9.) Are all values between the MDL & PQL tagged as trace?	☐yes	☐no	☒NA
10a.) Are reporting limits raised for other reason besides high analyte conc.?	☐yes	☒no	
10b.) If so, are they footnoted?	☐yes	☐no	☒NA
11.) Lab method blank completed?	☒yes	☐no	
12.) Lab, Field, or Trip Blank(s) report detections?	☐yes	☒no	

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

13.) For inorganics and metals, is there one method blank for each analyte?	☐yes	☐no	☒NA
If not, are all discrepancies footnoted?	☐yes	☐no	
14.) For VOCs, is there one method blank for each day of analysis?	☒yes	☐no	☐NA
If not, are all discrepancies footnoted?	☐yes	☐no	
15.) For SVOC's, is there one method blank for each extraction batch?	☒yes	☐no	☐NA
If not, are all discrepancies footnoted?	☐yes	☐no	
Accuracy			
16.) Is there a surrogate spike recovery for all VOC & SVOC samples?	☒yes	☐no	☐NA
Do all surrogate spike recoveries meet accepted criteria?	☐yes	☒no	
If not, are all discrepancies footnoted? **See comment d**	☒yes	☐no	☐NA
17.) Is there a spike recovery for all Laboratory Control Samples?	☒yes	☐no	☐NA
Do all LCS/LCSD spike recoveries meet accepted criteria?	☒yes	☐no	
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
18.) Are all LCS/LCSD RPDs within acceptable limits?	☐yes	☒no	☐NA
If not, are all discrepancies footnoted? **See comment vo**	☒yes	☐no	☐NA
Precision			
19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits?	☒yes	☐no	☐NA
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits?	☒yes	☐no	☐NA
If not, are all discrepancies footnoted?	☐yes	☐no	☒NA
21.) Do all RPD calculations for Field Duplicates meet accepted criteria?	☐yes	☐no	☒NA

Comments:
d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
vo - The value reported fell outside the control limits established for this analyte.

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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March 30, 2022

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

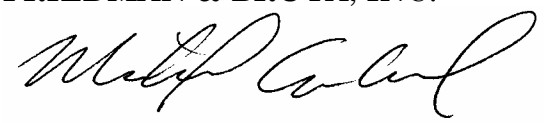
Dear Mr Green:

Included are the results from the testing of material submitted on March 15, 2022 from the 1581-21001-02, F&BI 203273 project. There are 36 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
ENW0330R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 15, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1581-21001-02, F&BI 203273 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
203273 -01	EB01/5-7
203273 -02	EB01/9
203273 -03	EB01-SWI/14
203273 -04	EB02-SWI/13.5
203273 -05	EB03-SWI/12
203273 -06	EB01-GW-16
203273 -07	EB02-GW-16
203273 -08	EB03-GW-16

Sample EB02-SWI/13.5 was sent to Fremont Analytical for total organic carbon analysis. The report is enclosed.

The reporting limits for samples EB01/5-7 and EB01/9 were raised due to a high percent moisture present in the sample.

The silica gel NWTPH-Dx laboratory control sample and laboratory control sample duplicate relative percent difference exceeded the acceptance criteria. Nothing was detected in the sample, therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273
Date Extracted: 03/16/22
Date Analyzed: 03/17/22

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

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

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
EB01/5-7 203273-01 1/4	<20	89
EB01/9 203273-02	190	85
EB01-SWI/14 203273-03	<5	78
EB02-SWI/13.5 203273-04	<5	90
EB03-SWI/12 203273-05	<5	89
Method Blank 02-601 MB	<5	90

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273
Date Extracted: 03/17/22
Date Analyzed: 03/17/22

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
EB01-GW-16 203273-06	<100	76
EB02-GW-16 203273-07	<100	70
EB03-GW-16 203273-08	<100	69
Method Blank 02-604 MB	<100	72

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273
Date Extracted: 03/16/22
Date Analyzed: 03/16/22

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

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

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
EB01/5-7 203273-01	680	<1,000	91
EB01/9 203273-02	2,600	<1,000	93
EB01-SWI/14 203273-03	<50	<250	90
EB02-SWI/13.5 203273-04	<50	<250	91
EB03-SWI/12 203273-05	<50	<250	93
Method Blank 02-667 MB2	<50	<250	93

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273
Date Extracted: 03/16/22
Date Analyzed: 03/18/22

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

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
EB02-GW-16 203273-07 1/1.5	<75	<380	101
Method Blank 02-669 MB2	<50	<250	95

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273
Date Extracted: 03/16/22
Date Analyzed: 03/16/22

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Residual Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
EB01-GW-16 203273-06	120	<250	46
EB02-GW-16 203273-07 1/1.5	78 x	<380	122
EB03-GW-16 203273-08	<50	<250	85
Method Blank 02-669 MB2	<50	<250	131

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	EB01/5-7	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/21/22	Lab ID:	203273-01 1/0.25
Date Analyzed:	03/21/22	Data File:	032131.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	79	128
Toluene-d8	99	84	121
4-Bromofluorobenzene	104	84	116

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.005
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	<0.05
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	<0.05
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	EB01/9	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/21/22	Lab ID:	203273-02 1/0.25
Date Analyzed:	03/21/22	Data File:	032132.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	79	128
Toluene-d8	96	84	121
4-Bromofluorobenzene	99	84	116

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.005
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	0.082
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	0.14
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	EB01-SWI/14	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/21/22	Lab ID:	203273-03 1/0.25
Date Analyzed:	03/21/22	Data File:	032133.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	79	128
Toluene-d8	99	84	121
4-Bromofluorobenzene	107	84	116

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.005
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	<0.05
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	<0.05
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	EB02-SWI/13.5	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/21/22	Lab ID:	203273-04 1/0.25
Date Analyzed:	03/21/22	Data File:	032134.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	79	128
Toluene-d8	94	84	121
4-Bromofluorobenzene	108	84	116

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.005
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	<0.05
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	<0.05
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	EB03-SWI/12	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/21/22	Lab ID:	203273-05 1/0.25
Date Analyzed:	03/21/22	Data File:	032135.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	103	84	116

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.005
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	<0.05
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	<0.05
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

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 203273
Date Extracted:	03/21/22	Lab ID:	02-0689 mb 1/0.25
Date Analyzed:	03/21/22	Data File:	032127.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	79	128
Toluene-d8	99	84	121
4-Bromofluorobenzene	107	84	116

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.005
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Isopropylbenzene	<0.05
n-Propylbenzene	<0.05
1,3,5-Trimethylbenzene	<0.05
1,2,4-Trimethylbenzene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	EB01-GW-16	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/17/22	Lab ID:	203273-06
Date Analyzed:	03/17/22	Data File:	031728.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	85	117
Toluene-d8	100	88	112
4-Bromofluorobenzene	101	90	111

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

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	EB02-GW-16	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/17/22	Lab ID:	203273-07
Date Analyzed:	03/17/22	Data File:	031729.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	85	117
Toluene-d8	99	88	112
4-Bromofluorobenzene	100	90	111

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

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	EB03-GW-16	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/17/22	Lab ID:	203273-08
Date Analyzed:	03/17/22	Data File:	031730.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	85	117
Toluene-d8	97	88	112
4-Bromofluorobenzene	96	90	111

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

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 203273
Date Extracted:	03/17/22	Lab ID:	02-655 mb
Date Analyzed:	03/17/22	Data File:	031707.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	85	117
Toluene-d8	97	88	112
4-Bromofluorobenzene	103	90	111

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

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	EB01/5-7	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/17/22	Lab ID:	203273-01 1/25
Date Analyzed:	03/17/22	Data File:	031712.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	63 d	39	103
Phenol-d6	70 d	48	109
Nitrobenzene-d5	74 d	23	138
2-Fluorobiphenyl	79 d	50	150
2,4,6-Tribromophenol	88 d	40	127
Terphenyl-d14	80 d	50	150

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.2
Chrysene	<0.2
Benzo(a)pyrene	<0.2
Benzo(b)fluoranthene	<0.2
Benzo(k)fluoranthene	<0.2
Indeno(1,2,3-cd)pyrene	<0.2
Dibenz(a,h)anthracene	<0.2

Note: Reporting limits were raised due to high moisture content in the sample.

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	EB01/9	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/17/22	Lab ID:	203273-02 1/25
Date Analyzed:	03/17/22	Data File:	031713.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	75 d	39	103
Phenol-d6	84 d	48	109
Nitrobenzene-d5	84 d	23	138
2-Fluorobiphenyl	86 d	50	150
2,4,6-Tribromophenol	103 d	40	127
Terphenyl-d14	86 d	50	150

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.2
Chrysene	<0.2
Benzo(a)pyrene	<0.2
Benzo(b)fluoranthene	<0.2
Benzo(k)fluoranthene	<0.2
Indeno(1,2,3-cd)pyrene	<0.2
Dibenz(a,h)anthracene	<0.2

Note: Reporting limits were raised due to high moisture content in the sample.

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	EB01-SWI/14	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/17/22	Lab ID:	203273-03 1/5
Date Analyzed:	03/17/22	Data File:	031715.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	73	24	111
Phenol-d6	81	37	116
Nitrobenzene-d5	85	38	117
2-Fluorobiphenyl	79	45	117
2,4,6-Tribromophenol	75	11	158
Terphenyl-d14	96	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	EB02-SWI/13.5	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/17/22	Lab ID:	203273-04 1/5
Date Analyzed:	03/17/22	Data File:	031716.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	75	24	111
Phenol-d6	83	37	116
Nitrobenzene-d5	86	38	117
2-Fluorobiphenyl	82	45	117
2,4,6-Tribromophenol	73	11	158
Terphenyl-d14	98	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	EB03-SWI/12	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/17/22	Lab ID:	203273-05 1/5
Date Analyzed:	03/17/22	Data File:	031717.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	78	24	111
Phenol-d6	87	37	116
Nitrobenzene-d5	81	38	117
2-Fluorobiphenyl	86	45	117
2,4,6-Tribromophenol	77	11	158
Terphenyl-d14	100	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

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 203273
Date Extracted:	03/17/22	Lab ID:	02-676 mb2 1/5
Date Analyzed:	03/17/22	Data File:	031711.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	91	24	111
Phenol-d6	97	37	116
Nitrobenzene-d5	109	38	117
2-Fluorobiphenyl	97	45	117
2,4,6-Tribromophenol	83	11	158
Terphenyl-d14	111	50	124

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	EB01-GW-16	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/16/22	Lab ID:	203273-06
Date Analyzed:	03/16/22	Data File:	031611.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	43	10	60
Phenol-d6	19	10	49
Nitrobenzene-d5	71	15	144
2-Fluorobiphenyl	70	25	128
2,4,6-Tribromophenol	73	10	142
Terphenyl-d14	80	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

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	EB02-GW-16	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/16/22	Lab ID:	203273-07 1/2
Date Analyzed:	03/16/22	Data File:	031612.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	35	10	60
Phenol-d6	25	10	49
Nitrobenzene-d5	75	15	144
2-Fluorobiphenyl	75	25	128
2,4,6-Tribromophenol	82	10	142
Terphenyl-d14	86	41	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	EB03-GW-16	Client:	Evren Northwest
Date Received:	03/15/22	Project:	1581-21001-02, F&BI 203273
Date Extracted:	03/16/22	Lab ID:	203273-08
Date Analyzed:	03/16/22	Data File:	031613.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	19	10	60
Phenol-d6	13	10	49
Nitrobenzene-d5	54	15	144
2-Fluorobiphenyl	44	25	128
2,4,6-Tribromophenol	50	10	142
Terphenyl-d14	49	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

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 203273
Date Extracted:	03/16/22	Lab ID:	02-663 mb3
Date Analyzed:	03/16/22	Data File:	031610.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	35	10	60
Phenol-d6	14	10	49
Nitrobenzene-d5	86	15	144
2-Fluorobiphenyl	84	25	128
2,4,6-Tribromophenol	77	10	142
Terphenyl-d14	101	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

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273

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

Laboratory Code: 203243-01 (Duplicate)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	85	71-131

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273

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

Laboratory Code: 203290-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	160	150	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	88	69-134

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273

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

Laboratory Code: 203266-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	90	90	64-133	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	90	58-147

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273

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

Laboratory Code: Laboratory Control Sample 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	72	92	63-142	24 vo

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	89	89	63-142	0

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273

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

Laboratory Code: 203360-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	<0.05	94	95	21-145	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	<0.05	86	87	12-160	1
Benzene	mg/kg (ppm)	1	<0.03	86	85	29-129	1
Toluene	mg/kg (ppm)	1	<0.05	91	93	35-130	2
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	<0.05	97	98	28-142	1
Ethylbenzene	mg/kg (ppm)	1	<0.05	94	94	32-137	0
m,p-Xylene	mg/kg (ppm)	2	<0.1	94	95	34-136	1
o-Xylene	mg/kg (ppm)	1	<0.05	96	97	33-134	1
Isopropylbenzene	mg/kg (ppm)	1	<0.05	95	96	31-142	1
n-Propylbenzene	mg/kg (ppm)	1	<0.05	98	100	23-146	2
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	<0.05	98	101	18-149	3
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	<0.05	97	99	10-182	2
Naphthalene	mg/kg (ppm)	1	<0.05	103	104	14-157	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	96	60-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	90	56-135
Benzene	mg/kg (ppm)	1	90	71-118
Toluene	mg/kg (ppm)	1	100	66-126
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	105	74-132
Ethylbenzene	mg/kg (ppm)	1	100	64-123
m,p-Xylene	mg/kg (ppm)	2	101	78-122
o-Xylene	mg/kg (ppm)	1	101	77-124
Isopropylbenzene	mg/kg (ppm)	1	102	76-127
n-Propylbenzene	mg/kg (ppm)	1	106	74-124
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	105	76-126
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	102	76-125
Naphthalene	mg/kg (ppm)	1	101	63-140

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273

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

Laboratory Code: 203164-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	101	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	91	50-150
Benzene	ug/L (ppb)	10	<0.35	93	50-150
Toluene	ug/L (ppb)	10	<1	95	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	104	50-150
Ethylbenzene	ug/L (ppb)	10	<1	98	50-150
m,p-Xylene	ug/L (ppb)	20	<2	98	50-150
o-Xylene	ug/L (ppb)	10	<1	98	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	99	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	99	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	99	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	99	50-150
Naphthalene	ug/L (ppb)	10	<1	101	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	99	99	70-130	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	91	92	70-130	1
Benzene	ug/L (ppb)	10	95	94	70-130	1
Toluene	ug/L (ppb)	10	98	98	70-130	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	107	104	70-130	3
Ethylbenzene	ug/L (ppb)	10	99	99	70-130	0
m,p-Xylene	ug/L (ppb)	20	99	99	70-130	0
o-Xylene	ug/L (ppb)	10	99	98	70-130	1
Isopropylbenzene	ug/L (ppb)	10	102	100	70-130	2
n-Propylbenzene	ug/L (ppb)	10	101	100	70-130	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	99	97	52-150	2
1,2,4-Trimethylbenzene	ug/L (ppb)	10	100	101	70-130	1
Naphthalene	ug/L (ppb)	10	101	100	70-130	1

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273

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

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.83	88	92	64-116	4
Chrysene	mg/kg (ppm)	0.83	90	92	66-119	2
Benzo(a)pyrene	mg/kg (ppm)	0.83	93	96	62-116	3
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	94	100	61-118	6
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	91	93	65-119	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	97	97	64-130	0
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	99	95	67-131	4

Date of Report: 03/30/22
Date Received: 03/15/22
Project: 1581-21001-02, F&BI 203273

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	95	101	70-130	6
Chrysene	ug/L (ppb)	5	96	101	70-130	5
Benzo(a)pyrene	ug/L (ppb)	5	101	106	70-130	5
Benzo(b)fluoranthene	ug/L (ppb)	5	103	107	62-130	4
Benzo(k)fluoranthene	ug/L (ppb)	5	99	108	70-130	9
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	101	100	70-130	1
Dibenz(a,h)anthracene	ug/L (ppb)	5	105	98	70-130	7

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.

203273

SAMPLE CHAIN OF CUSTODY

03-15-22

CI2
E03
VW1
~~US-AT~~ D91

Page # _____ of _____

Send Report To LYNN GREEN
Company EVREN-NW
Address 40 SE 24TH AVE
City, State, ZIP PORTLAND, OR 97214
Phone # 503-452-5561 Fax # LYNN@EVREN-NW.COM

SAMPLERS (signature)

PROJECT NAME/NO. ~~1581-21001-02~~ 1581-21001-02 per EB 3/16/22 ME

PO #

REMARKS
* RBOM VOCs

TURNAROUND TIME
☑ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HI's	BTEX EDB EDC MTBE *	EPH/VPH	PAH's by 8270 SIM	TOC		Notes
EB01/5-7	01 A-E	3/15/22	9:00	SOIL	5	✓	✓					✓	✓				(X) per LG 3/17/22 ME
EB01/9	02		9:20		5	✓	✓					✓	✓				
EB01-SW1/19	03		10:12		5	✓	✓					✓	✓				
EB02-SW1/13.5	04		9:58		5	✓	✓					✓	✓		(X)		
EB03-SW1/12	05 ↓		11:21	↓	5	✓	✓					✓	✓				
EB01-GW-16	06 A-F		10:55	WATER	6	✓	✓					✓	✓				
EB02-GW-16	07		13:08		6	✓	✓					✓	✓	(X)			
EB03-GW-16	08 ↓	↓	12:15	↓	6	✓	✓					✓	✓				

Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fx (206) 283-5044

NP

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Evan Brockman	EVNW	3/15/22	~~14~~ 55
Received by:	Nhan Phan	FEBI	3/15/22	1455
Relinquished by:				
Received by:		Samples received at 4 °C		

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 203273
Work Order Number: 2203431

March 24, 2022

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 3/17/2022 for the analyses presented in the following report.

Total Organic Carbon by EPA 9060

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *03/24/2022*

CLIENT: Friedman & Bruya
Project: 203273
Work Order: 2203431

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2203431-001	EB02/SWI/13.5	03/15/2022 9:58 AM	03/17/2022 5:39 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2203431**

Date: **3/24/2022**

CLIENT: Friedman & Bruya
Project: 203273

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2203431**
Date Reported: **3/24/2022**

Client: Friedman & Bruya
Collection Date: 3/15/2022 9:58:00 AM
Project: 203273
Lab ID: 2203431-001
Matrix: Soil
Client Sample ID: **EB02/SWI/13.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 35857		Analyst: SLL
Total Organic Carbon	0.391	0.150		%-dry	1	3/24/2022 11:48:00 AM

Work Order: 2203431
CLIENT: Friedman & Bruya
Project: 203273

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-35857**	SampType: **MBLK**			Units: **%-dry**		Prep Date: **3/24/2022**		RunNo: **74296**		
Client ID: **MBLKS**	Batch ID: **35857**					Analysis Date: **3/24/2022**		SeqNo: **1523884**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150									

Sample ID: **LCS-35857**	SampType: **LCS**			Units: **%-dry**		Prep Date: **3/24/2022**		RunNo: **74296**		
Client ID: **LCSS**	Batch ID: **35857**					Analysis Date: **3/24/2022**		SeqNo: **1523885**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.06	0.150	1.000	0	106	80	120				

Sample ID: **2203431-001ADUP**	SampType: **DUP**			Units: **%-dry**		Prep Date: **3/24/2022**		RunNo: **74296**		
Client ID: **EB02/SWI/13.5**	Batch ID: **35857**					Analysis Date: **3/24/2022**		SeqNo: **1523887**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	0.381	0.150						0.3910	2.59	20	

Sample ID: **2203431-001AMS**	SampType: **MS**			Units: **%-dry**		Prep Date: **3/24/2022**		RunNo: **74296**		
Client ID: **EB02/SWI/13.5**	Batch ID: **35857**					Analysis Date: **3/24/2022**		SeqNo: **1523888**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.44	0.150	1.000	0.3910	105	75	125				

Sample ID: **2203431-001AMSD**	SampType: **MSD**			Units: **%-dry**		Prep Date: **3/24/2022**		RunNo: **74296**		
Client ID: **EB02/SWI/13.5**	Batch ID: **35857**					Analysis Date: **3/24/2022**		SeqNo: **1523889**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.64	0.150	1.000	0.3910	125	75	125	1.441	13.1	20	

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2203431**
Logged by:	**Matt Langston**	Date Received:	**3/17/2022 5:39:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2203431

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont

PROJECT NAME/NO. 203273

PO # C-108

REMARKS

TURNAROUND TIME
☑ Standard TAT
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TOC							Notes
EB02-SWI/13.5		3/15/22	0958	~~water~~ soil	1				X							

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	3/17/22	0343
Received by:	Alex Trejo	Alex Trejo	FAI	3/17/22	17:39
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044