SOURCE CONTROL EVALUATION REPORT

Industrial Facility

4000 NW St. Helens Road
Portland, Oregon

Agency Information

ODEQ ESCI Site No. 6148
ODEQ UIC No. 16205

Prepared for:

HDNGR NW Industrial LLC
1750 NW Front Avenue #106
Portland, Oregon 97209

Issued on:

May 10, 2024

Project No. 1260-19001-03

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

This

Source Control Evaluation Report

For the:

Industrial Facility

4000 NW St. Helens Road
Portland, Oregon

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

HDNGR NW Industrial LLC

1750 NW Front Avenue #106
Portland, Oregon 97209

and its assignees

Issued April 11, 2023, Revised May 10, 2024 *by:*

EXP. 2/1/2025

Victoria Bennett

Victoria Bennett
Principal Environmental Scientist

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

Table of Contents

List of Tables, Figures and Attachments

Tables (after text)

Figures (after text)

Appendices (after text)

List of Acronyms and Abbreviations

Adapt	Adapt Engineering
Amec	Amec Foster Wheeler
BES	Bureau of Environmental Services
bgs	below ground surface
BMPs	best management practices
CFS	cubic feet per second
Client	HDNGR NW Industrial LLC
CoC	constituent of concern
COI	constituent of interest
DRO	diesel-range organics
ECSI	Environmental Cleanup Site Information
ENW	EVREN Northwest, Inc.
EPA	US Environmental Protection Agency
ESA	Environmental Site Assessment
JSCS	Joint Source Control Strategy
LUST	Leaking Underground Storage Tank
mg/Kg	milligrams per Kilogram
MRLs	method reporting limits
NPDES	National Pollutant Discharge Elimination System
ODEQ	Oregon Department of Environmental Quality
PAHs	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
ROD	Record of Decision
RRO	residual(oil)-range organics
SCE	Source Control Evaluation
SF	square foot
SLV	screening level value
TEQ	Toxicity Equivalence Quotients
TSS	total suspended solids
UIC	underground injection control
UST	underground storage tank
VCP	Voluntary Cleanup Program
VOC	volatile organic constituent

1.0 Introduction

At the request of HDNGR NW Industrial, LLC (Client), EVREN Northwest, Inc. (ENW) has prepared this **Source Control Evaluation** (SCE) report for the property located at 4000 NW St. Helens Road in Portland, Oregon (project site; see Figures 1 and 2). This SCE was requested by the Oregon Department of Environmental Quality (ODEQ) as part of ongoing remedial investigations at the site.

1.1 Purpose

The purpose of the SCE was to identify, evaluate, and control any sources of contamination on the project site with the potential to discharge to the Willamette River. ENW understands the findings will support decision making by ODEQ in their overall evaluation of site conditions.

1.2 Source Control Objectives

The objective of this stormwater SCE is to demonstrate that existing and potential sources of contamination to storm water at the site have been characterized and appropriately managed and no additional characterization or source control measures are needed at the site. This work is in support of issuance by ODEQ and other governing bodies/agencies of a source control determination and subsequent no further action (NFA) determination.

1.3 Regulatory Framework

The ODEQ has identified the subject site as subject to the Portland Harbor Source Control Program. Therefore, this SCE conforms with the requirements of the Portland Harbor Joint Source Control Strategy (JSCS).

The storm water SCE follows ENW's revised *Stormwater Source Control Evaluation Work Plan,*[1] which was approved by ODEQ. The SCE was completed in general accordance with ODEQ guidance[2] and relied upon the following references:

- ODEQ's *Guidance for Evaluating the Stormwater Pathway at Upland Sites*, dated January 2009 (updated October 2010).
- ODEQ/EPA's *Portland Harbor Joint Source Control Strategy* (JSCS), dated December 2005.
- EPA *Record of Decision*, *Portland Harbor Superfund Site*, dated January 2017.

The SCE is intended to provide supporting documentation to assist ODEQ in completing an uplands source control decision for the project site to satisfy the JSCS SCE requirements.

[1] ENW. November 22, 2021. Stormwater Source Control Evaluation Work Plan

[2] https://www.oregon.gov/deq/Hazards-and-Cleanup/env-cleanup/Pages/Stormwater-Guidance.aspx

1.4 Report Organization

This report is organized to be generally consistent with ODEQ's *Template for a Stormwater Source Control Evaluation Report.*[3] Specifically, this report includes: an introduction, a discussion of the site background, an examination of potential sources and contaminants of interest, an evaluation of discharge pathways, presentation of ongoing stormwater management measures, the results of the source control evaluation, and findings and conclusions.

2.0 Site Background

2.1 Site Description

The project site is located at 4000 NW St. Helens Road in Multnomah County within the City of Portland (see Figures 1 and 2) and consists of one tax lot (SECTION 19 1N 1E, TL 1100), totaling 1.77 acres in area. The majority of the site is covered by a large warehouse building (69,293 square feet[4] in area). The subject site and surrounding property area zoned Heavy Industrial (IH) by the City of Portland.

The exterior areas of the facility are limited to the east side of the building and primarily consist of asphalt-paved area except for several landscaped islands around the front entrance. Warehouse access bay doors are located at the south, middle, and north ends of the building. A gravel strip is present just off-site along the southern property margin. Exterior areas are used for vehicle parking and loading and unloading of products. Refuse is stored in closed receptacles located in the northeast corner of the site.

The site lies on the north corner of the intersection of NW St Helens Road and NW Express Avenue. The subject site is shown relative to surrounding physical features on Figure 1. The subject site layout and adjacent properties are shown on Figure 2. Underground sanitary and storm utilities are shown on Figure 3.

The project site is bounded to the southwest by NW St Helens Road with Bridge City Steel and Tahoe Corporation across the street, to the southeast by NW Express Avenue with Shell Oil bulk storage across the street, and to the northwest and northeast by the Western Group. The project site is located over 2000 feet from the Willamette River.

The subject site lies at an elevation of approximately 35 to 40 feet above mean sea level.[5] The subject site and vicinity are generally level with regional topography sloping to the northeast toward the Willamette River. According to the USGS Oregon Water Science Center, depth to ground water at the subject site is expected to be approximately 10 feet below ground surface. According to well logs pertaining to nearby properties, ground water was typically encountered around 10 feet below ground surface.

The direction of shallow ground-water flow in the subject area is generally expected to be to the northeast based on local topography and location southwest of the Willamette River.

[3] https://www.oregon.gov/deq/FilterDocs/cu-stormwaterSitesAppC.pdf

[4] Portlandmaps.com

[5] USGS. 2017, Portland 7.5 Minute Topographic Map, Oregon-Washington: USGS 7.5-Minute Series, scale 1:24,000.

2.2 Description of Stormwater Conveyance System

Please refer to Figure 3 – Storm System.

All storm water at the site is collected and directed to a treatment vault with associated drywell. During larger storm events, drywell overflow discharges to an adjacent manhole which pumps treated storm water to the City of Portland storm sewer. The two drainage basins shown on Figure 3 represent:

- Drainage Basin A: Primarily roof drainage; however, includes some drainage from a trench drain (TD03) present in a building bay door located in near the northwest corner of the building (door no longer used) as well as storm water run on from the adjacent NW Express Avenue.
- Drainage Basin B: Mixed roof and asphalt-paved area drainage. This includes:
    - Trench drains present in front (southern face) of building bay doors in the center of the building (TD01) and at the southwest corner of the building (TDO2).
    - Asphalt-paved area catch basins located near the southeast corner of the building (CB01), south central portion of the building (CB02), and near the center bay door of the building (CB03).

Both drainage basins discharge to a 4-foot x 12-foot pre-cast concrete PerkFilter™ vault (VAULT) outfitted with seven treatment cartridges, which provide filtration and sediment detention. According to the storm-water design engineer, the PerkFilter™ vault is rated with a filtration rate of 0.30 cubic feet per second and the design flow for the site under the City's 0.16"/hr. rainfall intensity for water quality storm is 0.28 cubic feet per second. Therefore, on average, approximately 90% of all the rainfall in a year goes through the filters at the subject site and about 10% goes through the internal bypass.

Treated storm water discharges by gravity flow to a 48-inch diameter, approximately 8-foot-deep dry well manhole (DW01), constructed of pre-formed perforated concrete rings.

Overflow from DW01 (during saturated conditions and/or large rainfall events) discharges south to a 48-inch diameter, approximately 10-foot-deep manhole (PUMP-MH) constructed of pre-formed solid concrete rings outfitted with a duplex pump system rated up to 125 gallons per minute. When activated, this system pumps storm water to the City of Portland storm (only) sewer located in NW Yeon Avenue, which eventually discharges to the Willamette River.

The storm water treatment system on site, including primary source control measures and best management practices, are described in detail in the Storm Water Injection Management Plan provided by ENW to ODEQ.

2.3 Site Ownership and Operating History

Historically, the subject site was occupied by the Rushlight Steel Works Foundry and The Steel Products Company. This land use continued to at least 1940. The original buildings were expanded, and additional buildings were constructed on the site by 1948. By 1980, the site was developed with the current structure and has remained as such to present day. Occupants of the site have included the Rushlight Steel Works Foundry, The Steel Products Company, LaGrand Steel Company, LaGrand Chain Corporation, GTS Interior Supply, McDowell Welding & Pipe Fitting, Inc., Omega Locksmith, and Intrepid Marble and Granite (most recent occupant).

2.4 Environmental Regulatory Review

2.4.1 Underground Injection Control

In 2021, a dry well on site (DW01 on Figure 3) was registered with ODEQ's Underground Injection Control (UIC) program under Facility ID 16205. Storm water discharges to DW01 are managed according to a Storm Water Injection Management Plan.

2.5 Previous Investigations

Multiple previous investigations have been performed on site. The following is a summary of investigative history at the subject site, as reported in the following documents:

- Adapt Engineering, *Phase I Environmental Site Assessment, American Industries, 4000 NW St Helens Road, Portland, Oregon 97210.* Dated December 16, 2015.
- Adapt Engineering, *Limited Phase II Environmental Site Assessment, Intrepid Marble and Granite, 4000 NW St Helens Road, Portland, Oregon 97216.* Dated February 17, 2016.
- Adapt Engineering, *Extended Limited Phase II Environmental Site Assessment, Intrepid Marble and Granite, 4000 NW St Helens Road, Portland, Oregon 97216.* Dated June 13, 2016.
- Amec Foster Wheeler, *Closure Report, 1.77-acre Commercial/Industrial Property, 4000 NW St Helens Road, Portland, Oregon, DEQ ECSI File # 6148.* Dated March 22, 2017.
- Amec Foster Wheeler, *Closure Report Addendum, American Industries, 4000 NW St Helens Road, Portland, Oregon, DEQ ECSI File # 6148.* Dated February 18, 2018.

In 1993, a 5,000-gallon diesel underground storage tank (UST) and a 2,000-gallon gasoline UST were removed from the southeast area of the subject site. Evidence of petroleum release was observed during the tank removal and approximately 48 cubic yards of petroleum impacted soil were removed from the tank excavation pit. Reportedly, ground water was not encountered during decommissioning or soil removal activities. Post-soil removal confirmation samples were collected, and laboratory analysis was non-detect for diesel. ODEQ issued a No Further Action determination for this incident (Leaking Underground Storage Tank [LUST] ID 26-94-0001) in December 1995.

From December 2015 through June 2016, several investigations were performed on site by Adapt Engineering (Adapt) that included a Phase I Environmental Site Assessment (ESA), a Limited Phase II ESA, and an Extended Limited Phase II ESA. In the Phase I ESA, Adapt stated that portions of the former foundry on site had earthen floors and concluded that historical foundry operations had the potential to release metals, petroleum products, phenols, polynuclear aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs) at the subject site. To further evaluate site conditions, Adapt collected soil and reconnaissance ground water samples from four temporary soil borings (GP1 through GP4; see Figure 4 for sample locations) and analyzed them selectively for suspected contaminants (except phenols) as part of the Limited Phase II ESA. This investigation identified diesel-range organics (DRO), residual-range organics (RRO) and PAHs in soils (collected between 2 to 7 feet) and low-level residual concentrations of DRO, petroleum-related VOCs and PAHs in ground water. Total arsenic in soil was the only RCRA 8 metal exceeding its respective background concentration for the Portland Metropolitan region. PCBs were not detected in soil or ground water samples above laboratory method reporting limits. Based on the detected concentrations in soil and ground water, Adapt conducted their Expanded Limited Phase II ESA that included advancement of 14 additional soil borings (GP5 through GP18) and analyzing select soil and ground water samples, with the stated objective of further investigating the vertical and lateral extent of

contaminant impacts to soil and ground water. This additional investigation revealed the presence of DRO, PAHs, and petroleum-related VOC detections in soil samples GP8, GP12, GP13, and GP18, located in the presumed down gradient direction from the former diesel UST. DRO and selected PAHs were detected in reconnaissance ground water samples from borings GP-5 and GP-12. No VOCs were detected in any of the reconnaissance ground water samples. Adapt concluded that the contamination appeared to be aged and was likely released a significant time before their investigation. The most elevated impacts in soil and ground water were isolated near the place of original discovery (boring GP1) near the south side of the subject site, east of the retail sales office near NW Express Avenue. According to Adapt's estimates, the external footprint of soil impacts measured about 500 to 600 square feet in area. Available data indicated ground water impacts extend northeast from GP1 and possibly beneath NW Express Avenue.

On October 13, 2016, the subject site was enrolled in the Voluntary Cleanup Program (VCP) with intent to pursue a determination of No Further Action determination for the petroleum release on site.

In March 2017, Amec Foster Wheeler (Amec) submitted a Site Closure Report to ODEQ for the subject site. The report included a summary of site history and environmental investigations, a data review of ground water results from two wells located east of NW Express Avenue on property owned by Shell Oil Terminal (ECSI 169), a screening level human health risk assessment, and discussion of the potential for risk to ecological receptors. Both ground water monitoring wells on the Shell Terminal Property were "non-detect" for petroleum impacts based on most recent data collected in February 2012. Since these wells appeared unimpacted, AMEC concluded that ground water impacts likely do not extend beyond the public right-of-way (ROW). Amec requested risk-based closure for the site, based on their risk assessment. In a May 31, 2017 correspondence letter, ODEQ identified the following data gaps and administrative issues that would need be addressed prior to issuance of closure:

1. Completion of the delineation of the extent of diesel impacts in shallow groundwater related to the decommissioned UST.
2. Evaluation of available records regarding former historical foundry activities on site and evaluation of the potential for ground water impacts to have resulted from these activities.
3. Completion of an upland storm water source control evaluation for the site to evaluate whether the site requires cleanup or control measures or is not a source of contamination to the Portland Harbor Superfund site.

In February 2018, Amec completed a Limited Subsurface Investigation following an ODEQ-approved work plan in order to characterize the nature and extent of soil and ground water contaminants of interest (COIs) related to the former diesel UST release and historical foundry and plating shop operations at the site. Amec selectively sampled soil and reconnaissance ground water samples from six borings (AB-01 through AB-06, see Figure 4), four of which were advanced in the adjacent right-of-way beneath NW Express Avenue and one of which was placed down gradient of the former foundry and plating operations. RRO and trace levels of PAHs were reported in soil from three borings (borings AB-1, AB-2, and AB-5) at the sampled depth between 5.5-6.5 feet bgs. All RCRA 8 metals in soil were below background levels for the Portland Metro region. Reconnaissance ground water samples from five borings samples did not contain DRO or RRO above their respective laboratory method reporting limits (MRLs), and all RCRA 8 metals were either not detected or were below applicable occupational cleanup levels. Amec concluded that petroleum hydrocarbons and PAHs in soil and ground water decreased with distance from the source area, and that DRO and RRO extended a limited distance beneath NW Express Avenue; however,

attenuated to non-detect at approximately 75 feet (see Figure 4 for estimate extent of impacts in ground water). Based on results from boring AB-05, which did not contain elevated metals normally associated with plating and foundry activities, AMEC concluded that historical operations at the subject property did not result in significant or widespread impacts to soil or ground water. AMEC further concluded that soil and ground water samples were below RBCs for applicable and complete exposure pathways and that COIs in soil and ground water do not pose unacceptable risk to current and future human receptors. Amec requested ODEQ issue a No Further Action determination for the subsurface impact concerns identified in ODEQ's May 31, 2017 Closure Letter.

In May 2018, ODEQ responded to the Client that the work recently documented by Amec supports ODEQ's previous No Further Action determination regarding the former diesel fuel UST at the site.[6]

3.0 Potential Sources and Contaminants of Interest

3.1 Potential On-Site Sources

An inventory of hazardous substances stored on site was performed on September 15, 2021. It should be noted that the subject site is currently vacant and that these materials have been subsequently removed from the site. Substances noted on site at that time are as follows:

- Hydraulic oil
- Other various oils (gear, pump, vacuum seal pump, motor)
- Brake cleaner
- Paint
- Primer
- Isopropyl grease
- WD-40
- Gasoline
- Enamel
- Propane
- Diesel
- Polyester adhesive
- Grout
- Brake fluid
- Caulk
- General cleaners (glass, all purpose)
- Bleach
- Magiclean soap
- Mapelastic

All of the above materials arrived in original containers with no container exceeding 5-gallons in capacity. The materials were unloaded from delivery vehicles at covered loading docks then stored over concrete inside the shop building. No drains were noted within the shop building during the inventory; therefore, it is unlikely that a spill of any of these materials inside the shop building would result in contact with storm water. ENW has concluded that the above materials do not represent significant materials because they are unlikely to come into contact with storm water.

Based on ENW's understanding of historical and current land use and site characteristics, the sources for potential project site-related contaminants are as follows:

- Parking Lots, Drives: typical parking lot and roadway pollutants (total suspended solids [TSS], oil and grease, copper, and zinc from truck traffic on site.
- Petroleum-related VOCs, PAHs, DRO, RRO and arsenic from former releases on site.

[6] ODEQ. May 3, 2018. Letter to American Industries, Inc. regarding Closure Report Addendum, ECSI # 6148

- Prior to the completion of recent roofing work, the facility building's metal roofs had the potential to leach metals, including zinc, into storm water.

3.2 Potential Off-Site Sources of Contaminants of Interest

The subject site is located in an industrial area of northwest Portland at the eastern boundary of City of Portland Basin 19. Adjacent properties are industrial in use and include a bulk fuel storage facility (Shell Oil Terminal) across NW Express Road to the southeast, a wire mesh and perforated plate manufacturer (Western Wire Works) to the north and west, and a steel fabrication company (Bridge City Steel) to the south, across NW St Helens Road. The Shell Terminal lies within a different drainage basin (discharging storm water to City of Portland Outfall 18) and is unlikely to directly impact discharges to Outfall 19. Western Wire Works, Bridge City Steel and other industrial properties along NW St. Helens Road are contributors of storm water discharges at OF19.

3.3 Contaminants of Interest

Based on current and historical site use, and potential COIs previously identified by the City of Portland for Outfall 19, COIs in storm water discharging from the subject site include the following.

- PCBs
- PAHs
- Phthalates
- Petroleum-related VOCs (specifically: benzene, toluene, ethylbenzene, total xylenes)
- Selected metals: copper, lead, nickel, and zinc
- TPH by NWTPH-Gx and NWTPH-Dx
- Dioxins/furans and
- TSS.

ENW does not believe it necessary to include the remaining potential COIs associated with off-site sources identified in Section 3.2, or remaining Portland Harbor surface water and/or sediment COCs present on Table 17 of the Portland Harbor Record of Decision due to the site's current configuration and because the potential for impacts to the subject site from historical uses has been evaluated through previous environmental site assessments conducted by others (see section 2.4). Historical releases have been characterized and no areas of highly impacted soil or ground water have been identified. Since ground water is shallow and can occasionally comingle with storm water, historical and current industrial use of the site is identified as a potential source of some but not all of the storm water COI identified by the Portland Harbor ROD. Furthermore, the current site configuration is simple. Most of the site is roofed, and thus most of the storm water from the subject site is from roof runoff. There is a very small area of asphalt drive surface discharging storm water to the storm water system, and no significant landscaping. As previously discussed, there are no significant materials currently onsite, and characteristics of discharge from the limited asphalt surfaces are expected to be similar to typical parking lot storm water discharge. Hence, ENW believes the COIs listed above are sufficient to characterize storm-water discharges from the site, including from its historical industrial use, and ongoing roof and drive surface runoff.

4.0 Evaluation of Storm Water Pathways

Only one complete pathway for potential sources of contaminants from the subject site to impact Portland Harbor sediments was identified:

- Discharge of contaminants via storm water conveyance lines to the Willamette River.

This potential storm-water pathway is discussed in more detail below.

4.1 Storm Water Discharges to City Conveyance Lines

As described in Section 2.2, all storm water is collected at the site and directed to a treatment vault and drywell. During large storm events, drywell overflow discharges to an adjacent manhole which pumps treated storm water to the City of Portland storm sewer.

According to utility as-built drawings provided by City of Portland[7] and based on observations during a recent emergency vault replacement action, storm water from the subject property enters a 3-inch pipe that flows north to a City storm-only sewer connection on NW Yeon Avenue. From there, storm water flows northwest to the intersection of NW St. Helens Road and NW Kittridge Avenue, joining additional inflow from several industrial properties along NW Yeon Avenue before discharging to City manhole AAT496 at the intersections of NW St. Helens Road, NW Yeon Avenue, and NW Kittridge Avenue. The flow is combined with three additional storm water pipes at manhole AAT496, including a storm line from the southeast serving industrial properties along NW St Helens Avenue, a storm line from the west beneath Highway 30 and another storm line from Forest Park. From manhole AAT496, the combined storm water flows north beneath Kittridge Avenue to manhole AAP918, where storm water flow is joined by additional storm pipes from the east and west beneath NW Front Avenue. There are no additional inlets downstream of manhole AAP918 before storm water is discharged to the Willamette River at outfall 19.

The storm water from the subject site that enters the City storm system is not likely to come in contact with facility activities (which are almost entirely conducted inside the building). Additionally, no current sources of COIs have been identified at the subject site (see Section 3.1) with the exception of the building roof area (sheet metal) and limited areas of asphalt paving.

5.0 Ongoing Storm Water Management Measures

The following best management practices (BMPs) are employed to minimize pollutant contact with storm water runoff:

- Storage of product is exclusively indoors.
- Recycling/waste dumpsters are covered and located away from catch basins.
- Truck cleaning, maintenance, and repair activities are prohibited for loading/unloading vehicles.
- Routine inspection of truck parking/waiting areas to collect refuse and identify excessive oil and grease accumulation.
- Monthly sweeping to remove sediment and debris that might otherwise be transported to the storm water system including vacuuming of paved surfaces in and near truck-travelled areas.

[7] Portlandmaps.com

- Routine cleaning of storm water features to prevent buildup of silt, leaves, and other debris. Cartridge filters are regularly inspected and maintained.
- Routine inspections to identify, contain, report, and remove accidental spills.
- Annual training of employees in BMPs.

These practices are outlined in the ODEQ-approved Storm Water Injection Management Plan[8] for the facility and is referenced in lease terms.

5.1.1 Maintenance of the Storm Water Treatment System

As outlined in the ODEQ-approved Storm Water Injection Management Plan,[8] the storm water treatment system is maintained following City of Portland recommended BMPs for catch basins and drywells, and the PerkFilter™ Inspection and Maintenance Guide provided by the filter vault manufacturer (see Attachment B). Triggers for maintenance of the PerkFilter™ system include, but are not limited to:

- broken or missing internal components,
- inlet piping obstructions,
- accumulation of floating debris or oil,
- sediment accumulation,
- standing water, or
- if the system has not been maintained for three years.

Sediment accumulation within the treatment vault, if any, is removed and disposed of following these BMPs.

6.0 Data Collection and Interpretation

6.1 Conveyance Line Cleaning

Conveyance line cleaning was performed by Storm Water Services of Bend, Oregon (SWS) on November 16, 2021, as part of an emergency vault replacement project, which included cleaning all trench drains (TD01 through TD03), onsite catch basins CB01 through CB03, and newly installed Perk filter treatment vault. Rinse water and sediments removed from the system were disposed at Patriot Environmental Services in Portland, Oregon for disposal.

6.2 Storm Water Sampling

6.2.1 Overview and Rationale

The project site has three catch basins and three trench drains. Storm water captured by these features along with roof drain discharge from the onsite building constitute all the storm water being conveyed and discharged to the storm water treatment vault, dry well and (periodically) to the city of Portland storm sewer system.

[8] ENW. February 26, 2021. Strom Water Injection Management Plan: Intrepid Marple and Granite

Storm water samples were collected and analyzed following the methodology described in the Work Plan. The outflow pipe from the dry well to the downstream pump manhole was designated as the sampling point (ML001) as this flow, when it occurs, represents treated storm water discharge entering the City of Portland storm sewer system.

Storm event criteria provided in Appendix A of ODEQ's Source Control Evaluation Guidance document were used to select the storm events to be sampled:

- Antecedent dry period of at least 24 hours preceding the sample event (as defined by <0.1-inch precipitation over the previous 24 hours).
- Minimum predicted rainfall volume of 0.2 inch per storm event.
- Expected duration of storm event of at least three hours.

In addition, an attempt was made to collect two samples representative of "first-flush" conditions (i.e., within the first 30 minutes of storm water discharge), and all samples within the first three hours of storm water discharge, to the extent practicable.

6.2.2 SCE Storm Water Sampling

Storm-water sampling events related to the SCE process were completed on the following dates. It should be noted that the January 8 and February 26, 2024 sampling events were only submitted for laboratory analysis of dioxins/furans, per ODEQ request.

- Pre-Roof Replacement Sampling
    - Event #1, November 18, 2021,
    - Event #1, November 22, 2021,
    - Event #1, May 18, 2022,
    - Event #1, June 10, 2022,
- Post- Partial Roof Replacement Sampling
    - Event #5, November 29, 2022,
    - Event #6, February 13, 2023,
- Post-Roof Replacement Sampling
    - Event #7A, October 25, 2023,
    - Event #7B, November 22, 2023,
    - Event #8, January 8, 2024 (dioxins/furans only), and
    - Event #9, February 26, 2024 (dioxins/furans only).

All samples were collected at the proposed sampling point indicated in the ODEQ approved Work Plan.[1] Stormwater samples were collected from Storm Water Monitoring Location 1 (ML001) during a period when storm water was overflowing from the dry well into the secondary sump. Samples were collected using a decontaminated sampling "scoop" lowered into the central portion of the flow stream (as shown on Figure 2). The sampling location is shown on Figure 3. Chemical analytical data from the sampling events are summarized in Table 1.

A total of nine stormwater sampling events were conducted, six prior to roof replacement work and three following roof replacement work. ODEQ requires collection of four stormwater samples. Two samples (Events #5 and #6) were collected following limited roof modification work in a portion of the subject building. Another sample (Event #7) was collected following completion of remaining roof modifications onsite. Due to laboratory error in analyzing PAHs in storm water from the Event #7A sample, an additional sample (#7B) was collected during November 2023 and analyzed for PAHs. Because of this, and for the purposes of this report, the October and November 2023 sampling events are considered together to be Sampling Event #7 and more specifically referred to as Events #7A and #7B, respectively. Two more samples (Events #8 and #9) were collected following ODEQ request for dioxin/furans data in storm water leaving the site. Maximum detected concentrations from the nine sampling events were used for comparison to CULs and SLVs.

All storm-water samples represent grab samples. Samples were temporarily stored on ice until transported to the laboratory under chain-of-custody documentation.

7.0 Data Summary

7.1 Storm Event Data

According to rainfall data gathered from City of Portland's Hydra Network, the nine storm events (note, event 7 is divided into 7A and 7B due to laboratory error) lasted between 5 and 32 hours in duration and produced between 0.17 inches and 0.92 inches of total measurable precipitation. Storm data for each event, including time of onset, duration, total precipitation, and sample times are summarized below in Table 6-1.

Table 6-1. Storm Event Data

Storm Event No.	Beginning of Storm Event [1]		Duration (hrs)	Total Precip (in)	Sample		Notes/Observations
	Date	Time			Date	Time	
#1	11/18/2021	14:30	18	0.52	11/18/2021	15:20	First discharge observed @ 15:09
#2	11/22/2021	20:00	13	0.55	11/23/2021	8:48	Storm water discharging upon arrival
#3	5/18/2022	3:00	5	0.17	5/18/2022	5:45	Storm water discharging upon arrival
#4	6/9/2022	16:00	12	0.5	6/10/2022	12:15	Storm water discharging upon arrival
#5	11/29/2022	7:00	13	0.31	11/29/2022	10:35	Storm water discharging upon arrival
#6	2/13/2023	6:00	22	0.35	2/13/2023	8:40	Storm water discharging upon arrival
#7A	10/24/2023	9:00	32	0.92	10/25/2023	8:10	Storm water discharging upon arrival
#7B	11/21/2023	21:00	11	0.3	11/22/2023	10:35	Storm water discharging upon arrival
#8	1/8/2024	3:00	13	0.48	1/8/2024	9:30	Storm water discharging upon arrival
#9	2/25/2024	19:00	20	0.47	2/26/2024	13:40	Storm water discharging upon arrival

Notes:

[1] Based on data from Yeon Rain Gauge, 3395 NW Yeon Avenue, Portland, OR

A brief summary of the nature of each of the sampling storm events regarding storm event criteria is presented below.

- **Storm event #1 (November 18, 2021).** The storm event began with steady precipitation at 2:30 pm in the afternoon of November 18, 2021, and lasted 18 hours. A total of 0.52 inches of rain was produced during the storm event. The sample was collected at 3:20 pm approximately 11 minutes following first observed discharge.

- **Storm Event #2 (November 23, 2021).** Storm event #2 began the evening of November 22, 2021, after 08:00 pm. The storm event lasted 13 hours and produced 0.55 inches of rain. Storm water sampling was conducted at 8:48 am the following morning.
- **Storm Event #3 (May 18, 2022).** Storm event #3 followed a 55-day dry period and lasted 5 hours with a total precipitation count of 0.17 inches. ENW collected the sample within the first 30 minutes of observable precipitation.
- **Storm Event #4 (June 10, 2022).** Storm event #4 consisted of two rain events separated by a dry period lasting 7 hours. The sample was collected at 12:15 pm in the afternoon on June 10, 2022, immediately following the onset of the second rain event. The storm water sample was collected at the onset of the second rain event at 12:15 pm.
- **Storm Event #5 (November 29, 2022).** Storm event #5 began the morning of November 29, 2022 after 07:00 am. The storm event lasted 13 hours and produced 0.31 inches of rain. Storm water sampling was conducted at 10:35 am on November 29, 2022.
- **Storm Event #6 (February 13, 2023).** Storm event #6 consisted of several rain events separated by dry periods lasting 1 to 2 hours. The sample was collected at 08:40 am on February 13, 2023, immediately following the onset of the second rain event.
- **Storm Event #7**
    - **#7A (October 25, 2023).** Storm event #7A consisted of several rain events separated by dry periods lasting 1 to 3 hours. The sample was collected at 08:10 am on October 25, 2023.
    - **#7B (November 22, 2023).** Storm event #7B consisted of two rain events separated by a dry period lasting 2 hours. The sample was collected at 10:35 am on November 22, 2023, immediately following the completion of the second rain event.
- **Storm Event #8 (January 8, 2024).** Storm event #8 consisted of two rain events separated by a dry period lasting 1 hour. The sample was collected at 09:30 am on January 8, 2024, in the middle of the first rain event.
- **Storm Event #9 (February 25, 2024).** Storm event #9 consisted of several rain events separated by dry periods lasting 1 to 5 hours. The sample was collected at 1:40 pm on February 26, 2024, immediately following the end of the first rain event.

In general, storm and sampling criteria were met during the sampling events, except for Storm Event #3, which saw slightly less rainfall than the 0.2 inches per storm event outline in our work plan. Sampling during Event #4 was not preceded by a full 24-hour dry period. Based on sample time, Sampling events #1 and #3 are considered to represent first flush conditions and events #2, #4, #5, #6, #7 (both #7A and #7B), #8, and #9 represent stabilized storm water flow conditions.

During each sampling event, the paved areas of the project site were generally free of debris. Storage, parking, and traveled areas appeared generally clean and in order. Rainfall was significant during the sampling activities and stormwater conveyances were observed to have active flow. Before sample collection, the antecedent dry period (less than 0.1 inch of rain in the 24 hours preceding the sampling storm) was met during all of the storm events, with one exception.

7.2 Storm Water Sample Analytical Results

Storm-water sampling analytical results are summarized in Table 1 and Table 3 (dioxin/furans). Laboratory analytical reports are presented as Appendix E. The analytical results for storm-water samples were compared to the EPA Portland Harbor ROD CULs. If an EPA Portland Harbor ROD CUL was not established for a particular analyte, the JSCS SLVs were used. The following is a brief summary of analytical results from all sampling events.

7.2.1 Total Petroleum Hydrocarbons

DRO and RRO were each detected during three sampling events; however, DRO and RRO concentrations were flagged as not being indicative of the fuel standard used for quantitation. These data suggest initial sample results may have been biased high by biogenic effects (i.e., decaying leaves and other organic matter in contact with storm water).

There are no screening levels established for DRO and RRO. The highest residual levels of DRO and RRO detected in samples (370 micrograms per liter [µg/L] and 550 µg/L, respectively) are not elevated above the NPDES 1200Z permit benchmarks for oil and grease.

7.2.2 Total Metals

Laboratory analysis by EPA 6020 reported the following total metals results:

- Copper was detected at up to 7.62 µg/L in pre-roof replacement samples, exceeding both its ROD CUL and JSCS SLV during "first-flush" samples from Events #1 and #3 and stabilized storm water samples from Events #5 and #6. Copper was below both screening levels in the stabilized storm water sample from Event #4 and was not detected above laboratory reporting limits in the stabilized post-roof replacement storm water sample from Event #7.
- Lead was detected at up to 4.71 µg/L in pre-roof replacement samples, exceeding its JSCS SLV during six of the seven sampling events. It should be noted that in the latest sampling event which represents post-roof replacement storm water discharge (Event #7), the concentration of lead detected (0.584 µg/L) was only slightly above its JSCS SLV (0.54 µg/L).
- Nickel was detected at up 2.54 µg/L in pre-roof replacement samples, below its JSCS SLV during all seven sampling events. Nickel was not detected in the post-roof replacement sample (Event #7A).
- Zinc was detected at up to 2970 µg/L in pre-roof replacement samples, exceeding both its ROD CUL and JSCS SLV during all seven sampling events. However, following completion of roof replacement work at the subject site, the maximum detected concentration (Event #7) was 400 µg/L.

7.2.3 Polynuclear Aromatic Hydrocarbons

PAH constituents were detected in all storm water samples collected between November 2021 and November 2023. Several PAH constituents exceeded their respective EPA Portland Harbor ROD CULs. The concentrations in the sample from Event #5 were the highest concentrations detected, with the next highest concentrations reported in the sample from Event #6. Both of these sampling events were prior to the completion of roof replacement work.

The following PAH constituents exceeded their respective CULs and SLVs:

- Benz(a)anthracene was detected during Event #1 and Event #5 only at up to 0.015 µg/L, exceeding its ROD CUL of 0.0012 µg/L in both pre-roof replacement sampling events. Benz(a)anthracene was not detected during the post-roof replacement sampling Event #7B.
- Benzo(a)pyrene was detected at up to 0.027 µg/L, exceeding its ROD CUL of 0.00012 µg/L during pre-roof replacement sampling Events #1, #2, #5 and #6. Benzo(a)pyrene exceeded its JSCS SLV of 0.018 µg/L during Event #5 only. Benzo(a)pyrene was not detected during the post-roof replacement sampling Event #7B.
- Benzo(b)fluoranthene was detected at up to 0.052 µg/L, exceeding its ROD CUL of 0.0012 µg/L and JSCS SLV of 0.018 µg/L during both pre-roof replacement sampling Events #5 and #6. Benzo(b)fluoranthene exceeded only its ROD CUL during pre-roof replacement sampling Events #1, and #2, and in post-roof replacement sampling Event #7B.
- Benzo(k)fluoranthene was detected during pre-roof replacement sampling Event #5 only at 0.013 µg/L, exceeding its ROD CUL of 0.00013 µg/L. Benzo(k)fluoranthene was not detected in any other sampling event, including post-roof replacement sampling Event #7B.
- Chrysene was detected at up to 0.041 µg/L, exceeding its JSCS SLV of 0.018 µg/L during pre-roof replacement sampling Events #5 and #6 and exceeding both its JSCS SLV and ROD CUL (0.0013 µg/L) during pre-roof replacement sampling Events #1, #2, #5, and #6. Chrysene was detected at an estimated concentration of 0.0024 µg/L in the post-roof replacement sampling Event #7B, exceeding both its JSCS SLV and ROD CUL.
- Indeno(1,2,3-cd)pyrene was detected at up to 0.02 µg/L, exceeding its ROD CUL of 0.0012 µg/L during pre-roof replacement sampling Events #1, #2, and #5. Indeno(1,2,3-cd)pyrene exceeding both its ROD CUL and its JSCS SLV of 0.018 µg/L only during pre-roof replacement sampling Event #5. Indeno(1,2,3-cd)pyrene was detected at an estimated concentration of 0.0024 µg/L in the post-roof replacement sampling Event #7B, exceeding both its JSCS SLV and ROD CUL.
- All other constituents were either non-detect or detected below their respective ROD CULs and JSCS SLVs.

Total cPAHs (as benzo[a]pyrene equivalents) were detected at up to 0.036 µg/L, exceeding its ROD CUL of 0.00012 µg/L and JSCS SLV of 0.018 µg/L in pre-roof replacement sampling Events #1 and #5. Total cPAHs only exceeded its ROD CUL in pre-roof replacement sampling Events #2, #6, and post-roof replacement sampling Event #7B.

7.2.4 Phthalate Esters

Only dimethylphthalate was detected in the sample from pre-roof replacement sampling Event #6. Its concentration did not exceed its JSCS SLV. It should be noted that phthalate esters were not analyzed during post-roof replacement sampling Event #7 as previous results did not warrant further sampling.

7.2.5 Total Suspended Solids

TSS was measured in stormwater samples at between 6.0 mg/L and 34 mg/L. It should be noted that TSS was not analyzed during post-roof replacement sampling Event #7 as previous results did not warrant further sampling.

7.2.6 Dioxins/Furans

2,3,7,8-TCDD (dioxin), as toxic equivalents, was detected at up to 3.68 x 10^{-7} µg/L (0.3679 picograms per Liter), exceeding its JSCS SLV during both post-roof replacement sampling events (see Tables 1 and 3).

Additional information on protocol used to evaluate dioxins. According to ODEQ's *Human Health Risk Assessment Guidance* (October 2010), toxicity equivalency quotients (TEQs) can be used to evaluate toxic effects of polychlorinated dibenzo-p-dioxins (CDDs), polychlorinated dibenzofurans (CDFs), and co-planar (dioxin-like) PCBs congeners relative to 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD). Concentrations of congeners are multiplied by their TEFs to estimate the toxicity of these congeners relative to 2,3,7,8-TCDD; the resulting concentrations may be summed into a total of 2,3,7,8-TCDD toxicity equivalence (TEQ) concentration. The TEQ equation is present below for *n* compounds with congeners represented by compound *i*=1:

$$TEQ = \sum_{i=1}^{n} (C_i * TEF_i)$$

Where: *TEQ* = Toxicity Equivalence Quotient
Ci = concentration of the *i*th individual compound
TEFi = *i*th compound's TEF

TEQ values are provided in the following table:

Table 7-2. TEQ Values

Compound	TEQ
Polychlorinated dibenzo-*p*-dioxins (PCDDs)	
2,3,7,8-TCDD	1
1,2,3,7,8-PeCDD	1
1,2,3,4,7,8-HxCDD	0.1
1,2,3,6,7,8-HxCDD	0.1
1,2,3,7,8,9-HxCDD	0.1
1,2,3,4,6,7,8-HpCDD	0.01
OCDD	0.0003
Polychlorinated dibenzofurans (PCDFs)	
2,3,7,8-TCDF	0.1
1,2,3,7,8-PeCDF	0.03
2,3,4,7,8-PeCDF	0.3
1,2,3,4,7,8-HxCDF	0.1
1,2,3,6,7,8-HxCDF	0.1
1,2,3,7,8,9-HxCDF	0.1
2,3,4,6,7,8-HxCDF	0.1
1,2,3,4,6,7,8-HpCDF	0.01
1,2,3,4,7,8,9-HpCDF	0.01
OCDF	0.0003

Source: van den Berg et al. (2006); WHO's website on dioxin TEFs, available at http://www.who.int/pcs/assessment/tef_update/en/

8.0 Source Control Evaluation

The following sections summarize the evidence used to support our opinion that the storm-water source control at the project site is adequate following completion of the recent replacement, repair, and recoating of the roof and that the site does not represent a significant current or future source of contaminant to the Willamette River. Data evaluation and other lines of evidence are discussed below.

It is our opinion that the analytical data are appropriate for the intended purpose. Data quality exceptions are noted in Appendix E. These limited exceptions do not interfere with the evaluation of source control because consistent and replicated data are available with respect to the COIs.

8.1 Data Evaluation

The environmental site assessments conducted at the subject property by others, in combination with site inspections as part of the development of the source control evaluation work plan have led to the development of the list of COIs for this assessment. Based on these prior assessments, the site does not appear to have been significantly impacted by any historical releases or site operations. Additionally, the recent SCE stormwater sampling shows that the source control measures already implemented at the subject property (including the recently replaced storm-water filtration vault and roof work) are providing effective control of typical potential pollutants from industrial site parking lots; however, the building's roof area is the likely primary source of zinc in storm water exceeding screening levels.

8.1.1 Evaluation of Current Storm Water Data with DEQ's *Tool for Evaluating Storm Water*

ENW compared the analytical data from the 2022 and 2023 storm-water sampling activities to the charts presented in Appendix E of the Upland Guidance document to evaluate if the concentrations of contaminants were representative of typical industrial stormwater. Of the 13 constituents with charts, seven of the constituents (lead, zinc, total PAHs and total suspended solids) were detected in post-roof replacement storm water samples. The remaining constituents (arsenic, copper, cadmium, chromium, mercury, nickel, silver and total PCBs) were not identified as COPCs.

Charts are provided in the tool to evaluate contaminant concentrations at industrial sites in the Portland Harbor area. The concentrations are charted in a curve, which includes a flat portion and a steep portion. The transition area is called the "knee" of the curve. Concentrations within the flat area of the curve are considered typical of industrial sites, while concentrations higher than the knee may represent elevated concentrations.

In the case of six of the seven detected constituents, the detected concentrations were in the low range of the lower/flatter portions of the curves suggesting that storm water is not being unusually impacted by contaminants at the site and is therefore representative of "typical" industrial storm water. The comparison of project site stormwater sample analytical results to other industrial sites using the ODEQ tool is presented in Appendix D.

Zinc was the only constituent measured in project site storm water above the typical industrial range in the Portland Harbor vicinity, and these detections were limited to those sampling events prior to the completion of roofing work. Constituents detected above the CULs/SLVs during the source control sampling can sometimes be associated with particulate deposition from vehicles, which may be an intermittent source to subject site storm water. In any event, the data already collected with respect to

storm water at the project site are sufficient to establish that it is highly unlikely that an on-site source of these constituents is present at the project site connected to current or historical site operations.

As confirmed by data collected directly from the roof drains by ENW, elevated concentrations of zinc in subject site storm water were likely the result of roof runoff. The property owner completed modifications to the roof during the summer of 2023. See Table 2 for roof drain sampling data and Appendix B for laboratory analytical reports. When the post-roof work maximum detected concentration in samples taken directly from the roof drains is compared with the maximum detected concentration pre-roof replacement in samples from the roof drains, the concentration of zinc in roof drain discharge is shown to have been reduced by approximately 95%.

The final storm-water sampling event, Event #7, was conducted following completion of roof work and showed a dramatic decrease in detected zinc concentrations. The concentration of zinc in storm water sampled from monitoring location ML001 during Event #7 decreased by approximately 83% when the results are compared with the highest zinc concentration detected in stormwater prior to roof the completion of all roofing work. The detected concentration of zinc in Event #7 was 484 µg/L, which plots in the flat portion of its rank-order curve, suggesting a concentration typical of industrial discharge.

8.2 Other Lines of Evidence

The subject property most recently operated as a business that has no known significant usage of copper, lead, zinc, PAHs, or dioxins/furans currently at the project site. Recent storm water sampling under the Storm Water Injection Management Plan shows that current source control measures are effectively managing any potential pollutants in storm water. The owner and future tenants will continue to use Best Management Practices including sweeping efforts, use of catch basin inserts, and routine maintenance of storm-water conveyance features to prevent the buildup or discharge of COIs in storm water. Ongoing implementation of the BMPs described by the SWIMP and the vault/filtration system's O&M plan should continue to effectively control the site's current, typical industrial storm water contaminant sources. If new operations at the subject property have the potential to impact storm water, the application for and operation under a new NPDES permit would ensure appropriate storm water source control measures are in place.

The 2017 EPA Portland Harbor Record of Decision and subsequent sediment sampling indicate that select dioxins/furans congeners are risk drivers of sediment remediation in some areas of the Willamette River. ODEQ has identified 1,2,3,7,8-PeCDD and 2,3,7,8-TCDD as congeners of concern detected at Outfall 19. Additionally, 2,3,4,7,8-PeCDF, 2,3,7,8-TCDF, and 1,2,3,4,7,8-HxCDF have been identified as congeners of concern in Portland Harbor river sediment.[9] As shown in Table 3, while a few dioxins/furans congeners have been detected above laboratory method reporting limits in storm water from the subject site, none of the detected congeners include the identified congeners that drive risk (i.e., 1,2,3,7,8-PeCDD, 2,3,4,7,8-PeCDF, 2,3,7,8-TCDF, 1,2,3,4,7,8-HxCDF, or 2,3,7,8-TCDD). Therefore, it can be reasonably assumed that storm water from the subject site is not a source of identified dioxins/furans congeners driving risk in the river sediment.

[9] ODEQ, Staff Report: Conditional Source Control Decision City of Portland Outfalls Project in Portland Harbor, 2021.

9.0 Findings and Conclusions

ENW has conducted SCE activities (including reviews of site storm-water source control measures) at the project site located at 4000 NW St Helens Road in Portland, Oregon. These activities were performed in accordance with an ODEQ work plan, ODEQ's *Guidance for Evaluating the Stormwater Pathway at Upland Sites,* dated January 2009 (updated October 2010); ODEQ/EPA's *Portland Harbor Joint Source Control Strategy*, dated December 2005; and the *EPA Record of Decision, Portland Harbor Superfund Site*, dated January 2017. The results of the SCE activities indicate the following:

1. Existing and potential facility-related contaminant sources have been identified and characterized:
    a. The potential sources to impact river sediments are constituents in storm water. This potential source has been fully characterized by investigations performed pursuant to DEQ-approved work plans.
        i. Substances detected and the basis for deciding that all sources have been identified and characterized are as follows:
            a) In post-roof replacement sampling storm-water samples, some metals and PAHs were detected at concentrations exceeding the most conservative CULs or SLVs. However, all of these contaminants are present at concentrations below "typical industrial stormwater concentrations" per ODEQ's *Tool for Evaluating Stormwater Data* (see Appendix D).
            b) In storm water, zinc has been detected exceeding its ROD CUL and JSCS SLV. Concentrations of zinc prior to the completion of all roofing work exceed what are considered typical of industrial storm water. The source of elevated levels of zinc in storm water was further investigated and determined to be likely related to roof runoff. To mitigate zinc in storm water, the property owner completed repair, replacement, and recoating of building roof areas. Based on additional testing for roof water discharge following this roofing work, the concentrations of zinc in roof water discharge are below "typical industrial stormwater concentrations" per ODEQ's *Tool for Evaluating Stormwater Data* and is in the lower part of the flat portion of the curve (see Appendix D).
            c) Based on available data, the discharge of contaminants via storm water conveyance lines pathway is considered controlled and insignificant for the migration of contaminants to the Willamette River.
2. Potential storm-water contaminant sources are being controlled to the extent feasible:
    a. Particulate matter on paved surfaces is controlled by regular site sweeping and good housekeeping practices. Buildup of catch basin sediments is controlled by regular cleaning of catch basins and catch basin filters are maintained and/or replaced as needed.
    b. Recent and future tenants minimize exposure of pollutants to storm water by implementing the above-mentioned BMPs and also by storing all significant materials

indoors. Except for loading and unloading raw and finished products at the facility loading docks, industrial activities are entirely conducted indoors.

c. Modification of most of the roofs on site was completed in Summer 2023 and has resulted in a dramatic decrease in zinc concentrations in samples taken both directly from the roof drains and in samples taken from the monitoring location (ML001).

3. The remaining contaminants in stormwater (metals, PAHs, and 2,3,7,8-TCDD [dioxin] equivalents) that continue to exceed CULs/SLVs, in spite of current source control measures and storm-water management measures are not likely to result in sediment contamination in the Willamette River or contribute to unacceptable risk:

    a. Stormwater contaminants may occasionally exceed the CULs/SLVs; however, are generally in the typical range of industrial storm water in Portland Harbor.
    b. It is estimated that approximately 20 percent[10] of storm water falling on the site infiltrates into the ground surface via the dry well on site and is never discharged to the Willamette River. The remaining 80 percent is treated before it is discharged to the City's storm sewer and subsequently to the Willamette River. Constituents in treated storm water are present at concentrations below "typical industrial stormwater concentrations" per ODEQ's Tool for Evaluating Stormwater Data (see Appendix D).
    c. In the case of 2,3,7,8-TCDD [dioxin] equivalents, dioxin/furan congeners that have been detected above laboratory reporting limits in storm water at the subject site do not include any of the identified congeners that are driving risk near Outfall 19 or in general river sediment.

Based on the findings of this SCE, no further investigation and/or remedial action are anticipated to be needed at this time. Therefore, based on ongoing management of both onsite storm water facilities and impacted media, we request that ODEQ issue a formal Source Control Decision and subsequent determination of No Further Action Required for this facility, considering that (1) the site has been adequately characterized, sources and pathways for mobilization of contaminants have been addressed, and sufficient monitoring has been completed to confirm that contaminants are not leaving the site at levels presenting unacceptable risk; and (2) the site is eligible for a determination that it is not a past, current or reasonably likely future source of contamination to the Willamette River and that additional source control measures are not required.

10.0 Limitations

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

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

[10] Infiltration capacity was calculated as follows: The 4' x 8' drywell on site would be able to handle 100% of the runoff from a typical homesite development. Given the site is about 20% larger than a typical homesite development, it can be assumed that the drywell would manage approximately 10-20% of runoff on site.

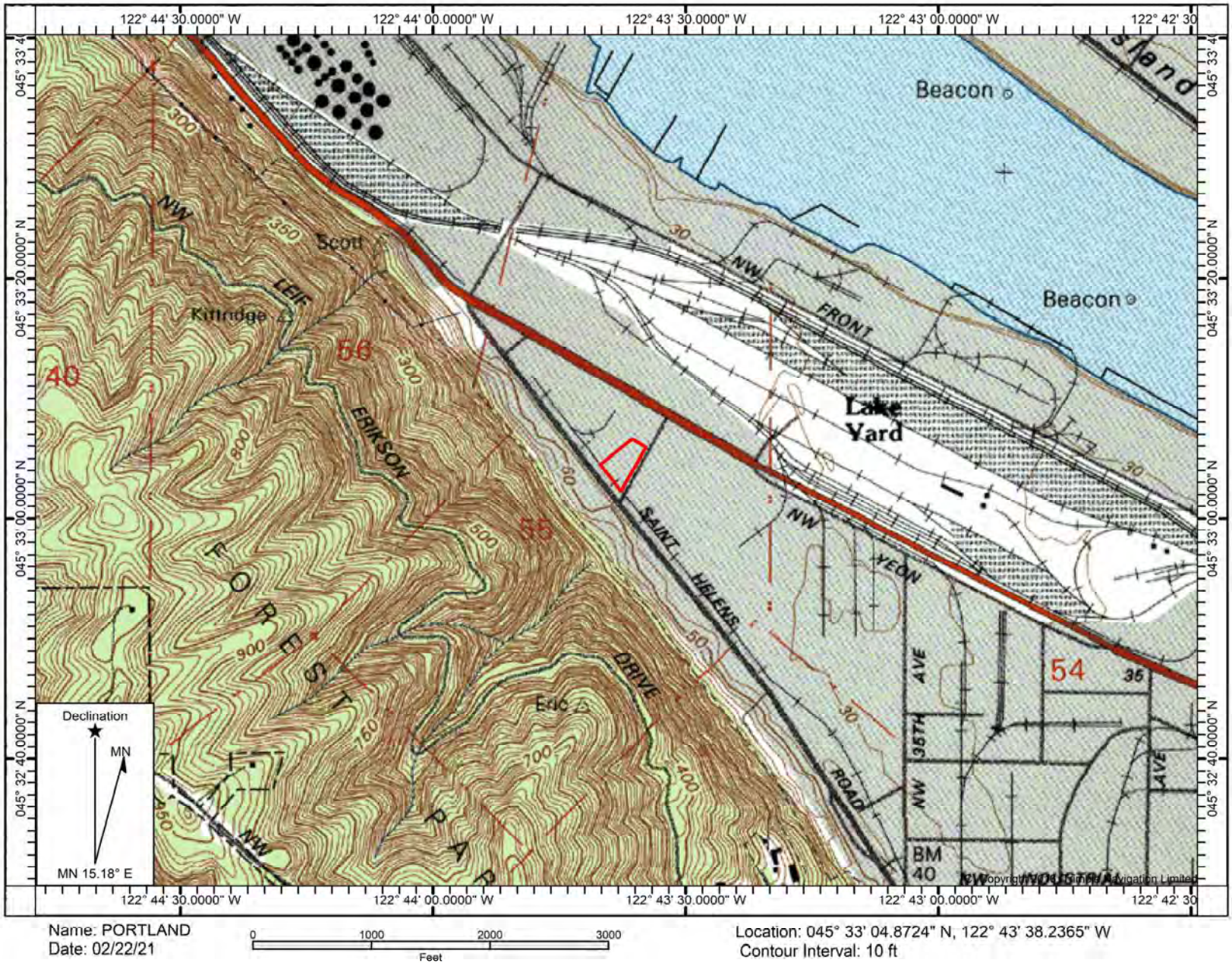
1. Naturally occurring toxic or hazardous substances in the subsurface soils, geology, and water,
2. Toxicity of substances common in current habitable environments, such as stored chemicals, products, building materials and consumables,
3. Contaminants or contaminant concentrations that are not a concern 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.

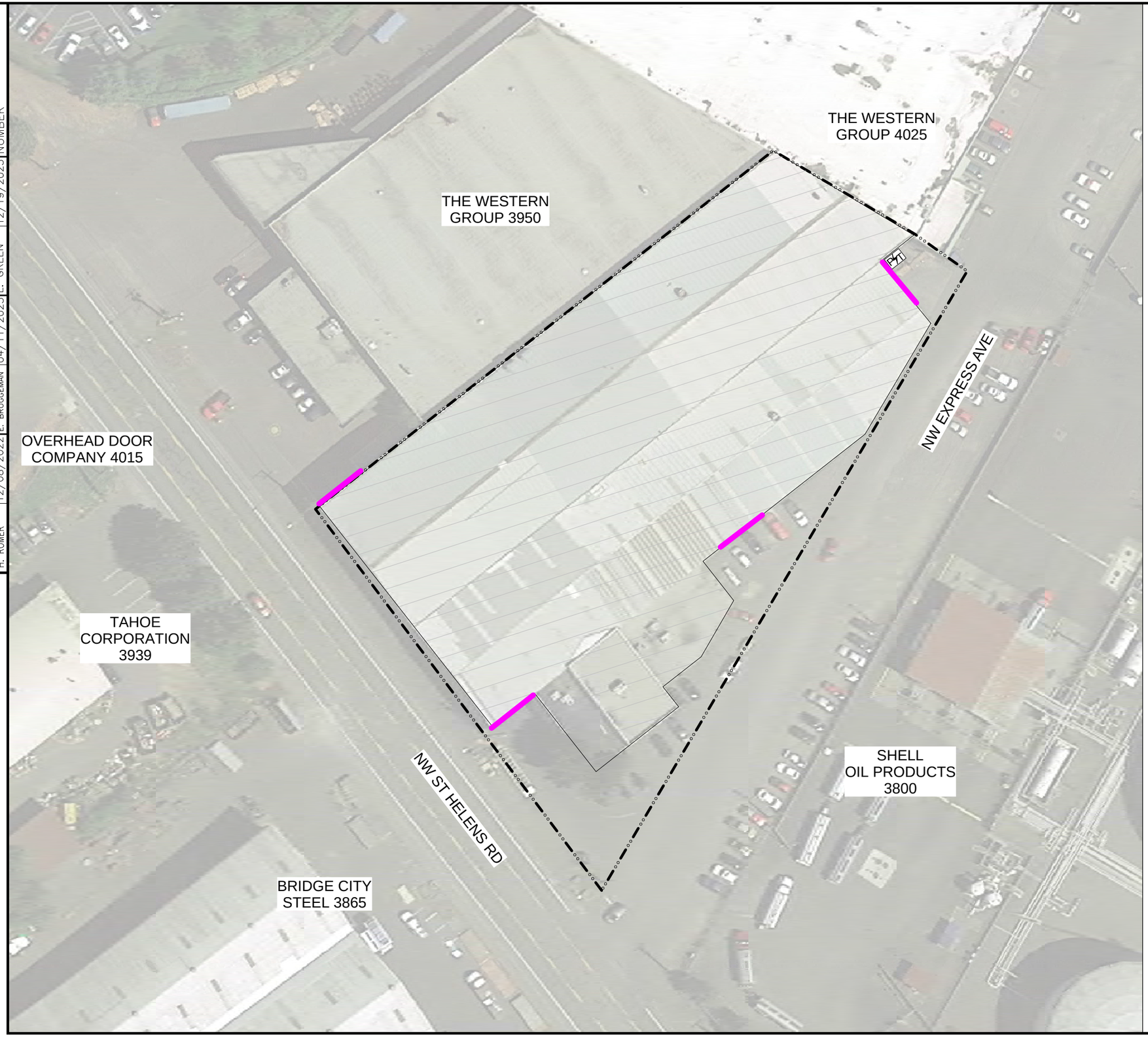
ENW performed this study under a limited scope of services per our agreement. ENW assumes no responsibility for conditions that we did not specifically evaluate or conditions that were not generally recognized as environmentally unacceptable at the time this report was prepared.

Figures



EVREN NORTHWEST	Date Drawn: 2/22/2021 CAD File Name: 1206-19001-04_fig1sv_map Drawn By: CLR Approved By: LDG	Industrial Property 4000 NW St Helens Road Portland, Oregon	**Site Vicinity Map**	Project No. 1260-19001 Figure No. **1**

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
H. ROMER	E. BRUGGEMAN	L. GREEN	1260–19001(v01)
12/08/2022	04/11/2023	12/19/2023	



LEGEND:

- SUBJECT BUILDINGS
- SUBJECT PROPERTY BOUNDARIES
- ROLL UP DOOR
- PAD TRANSFORMER

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2018 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 60 120 FEET

N

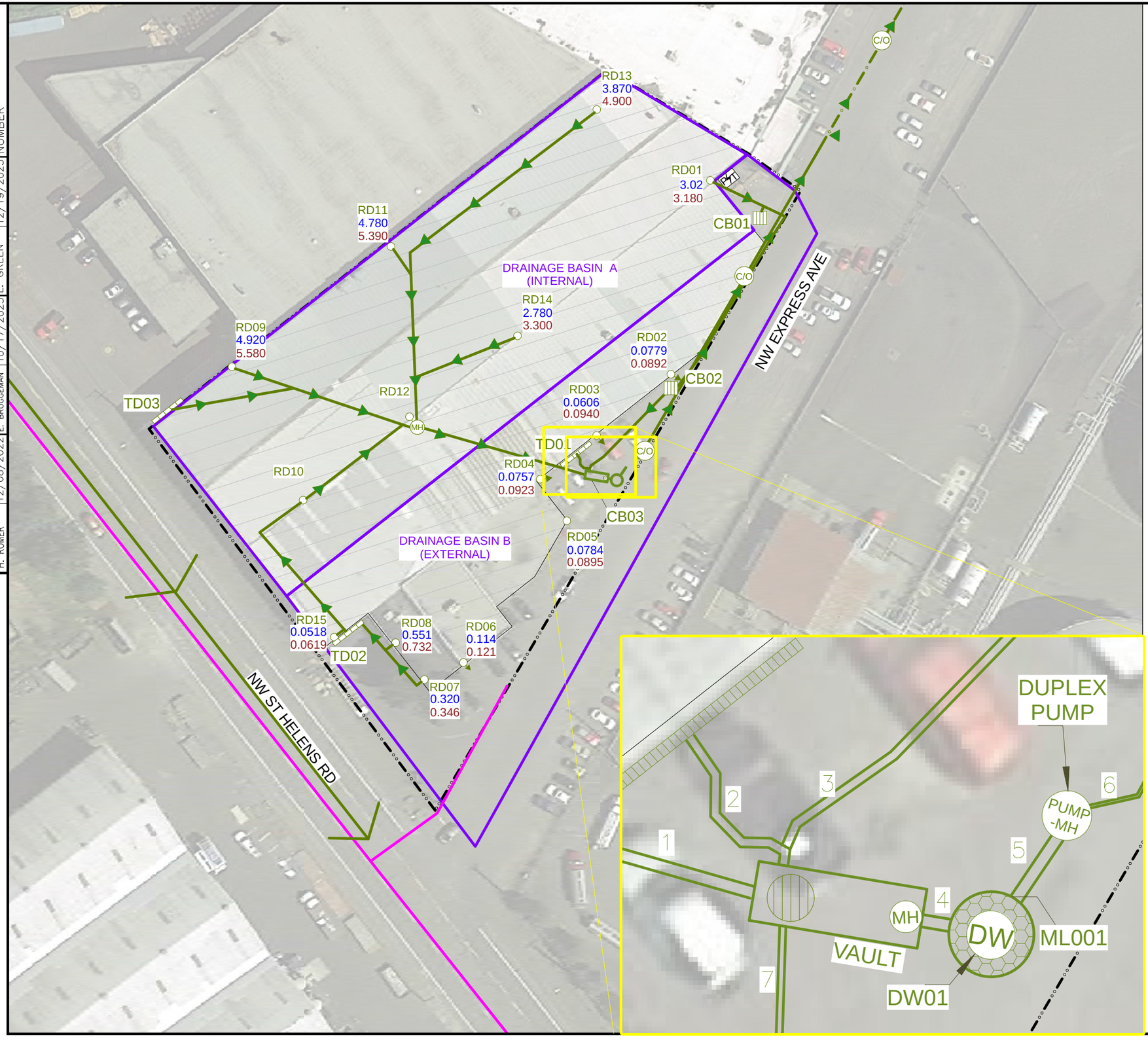
EVREN NORTHWEST INC.
environmental natural resource consultants
PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 2

SITE PLAN

INDUSTRIAL PROPERTY
4000 NW ST HELENS ROAD
PORTLAND, OREGON

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
H. ROMER	E. BRUGGEMAN	L. GREEN	1260-19001(v01)
12/08/2022	10/17/2023	12/19/2023	



LEGEND:

- SUBJECT BUILDINGS
- SUBJECT PROPERTY BOUNDARIES
- DRAINAGE BASIN BOUNDARY
- PAD TRANSFORMER
- MANHOLE
- FLOOR DRAIN
- TRENCH DRAIN
- ML001 MONITORING LOCATION
- CATCH BASIN
- RD ROOF DOWNSPOUT
- STORM SYSTEM
- DW DRYWELL

1	12" INNER DIAMETER PVC
2	8" INNER DIAMETER STEEL
3	8" INNER DIAMETER CONCRETE
4	12" INNER DIAMETER PVC
5	12" INNER DIAMETER PVC
6	3" INNER DIAMETER PIPE TO CITY STORM SEWER
7	6" INNER DIAMETER PVC

VAULT DIMENSIONS:
LENGTH: 11'
WIDTH: 4'
DEPTH: 6'9"

SANITARY SEWER PIPE (PER PORTLAND MAPS)

3.02 DISSOLVED METALS (mg/L)

3.08 TOTAL METALS (mg/L)

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2018 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 60 120 FEET

N

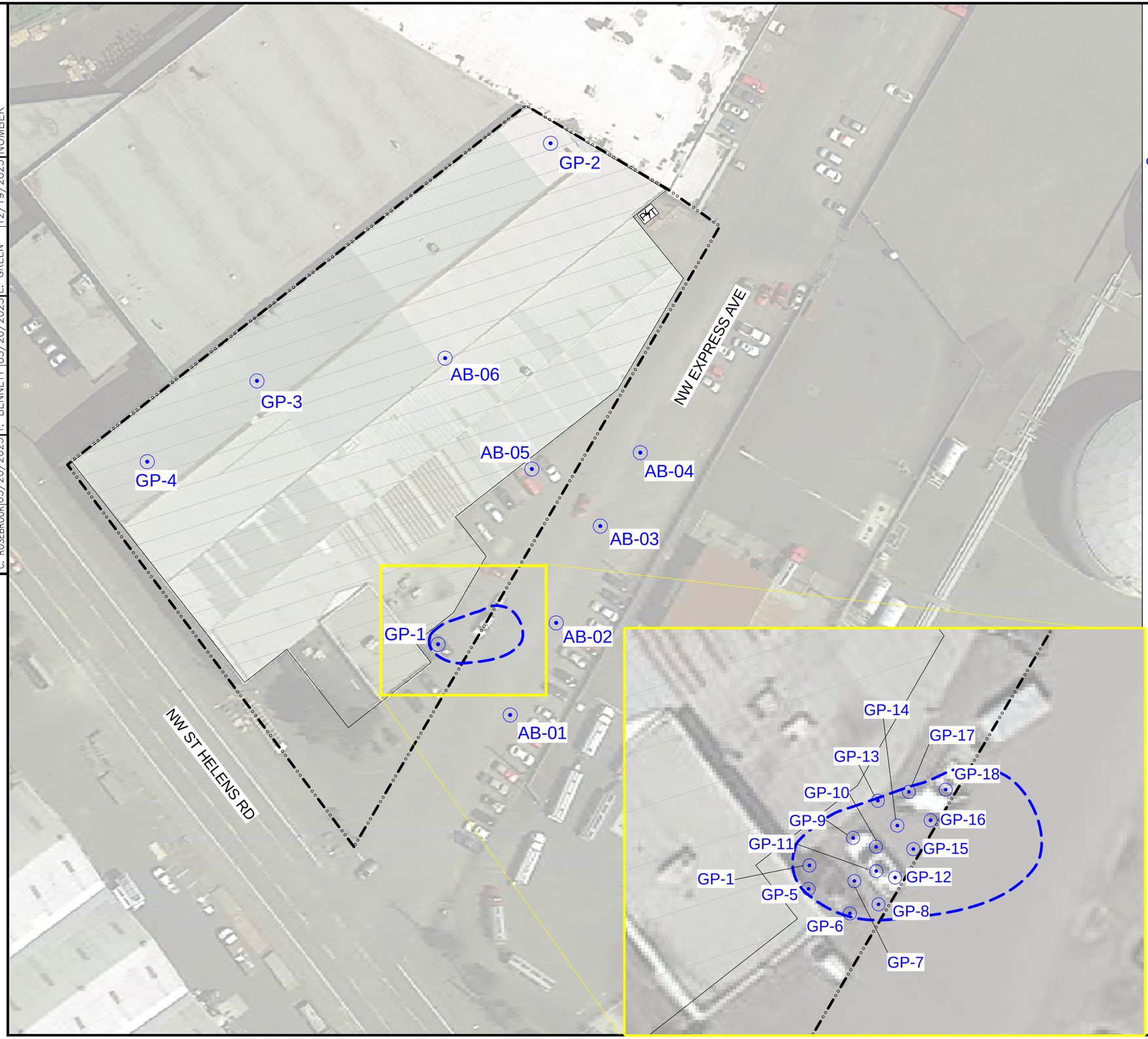
EVREN NORTHWEST INC.
environmental natural resource consultants
PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 3

STORM SYSTEM

INDUSTRIAL PROPERTY
4000 NW ST HELENS ROAD
PORTLAND, OREGON

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
C. ROSEBROOK 03/20/2023	T. BENNETT 03/20/2023	L. GREEN 12/19/2023	1260-19001(v01)



LEGEND:

- SUBJECT BUILDINGS
- SUBJECT PROPERTY BOUNDARIES
- PAD TRANSFORMER
- GP-01 FORMER BORING LOCATION PER AMERICAN INDUSTRIES 2018
- ESTIMATED EXTENT OF IMPACTS

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2018 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 60 120 FEET

N

EVREN NORTHWEST INC.
environmental natural resource consultants
PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 4

SAMPLE LOCATION DIAGRAM

INDUSTRIAL PROPERTY
4000 NW ST HELENS ROAD
PORTLAND, OREGON

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
H. ROMER	T. BENNETT	L. GREEN	1260-19001(v01)
03/20/2023	03/20/2023	12/19/2023	

LEGEND:

- SUBJECT PROPERTY BOUNDARIES
- STORM SYSTEM
- OUTFALL (AS IDENTIFIED BY PORTLAND MAPS)

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2018 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

0 450 900 FEET

N

EVREN NORTHWEST INC.
environmental natural resource consultants
PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 5

STORM WATER OUTFALL

INDUSTRIAL PROPERTY
4000 NW ST HELENS ROAD
PORTLAND, OREGON

Tables

Table 1 - Summary of Analytical Data, Storm Water

Sample Event ID		Event #1	Event #2	Event #3	Event #4	Event #5	Event #6
Sample ID	Laboratory Method Detection Limits (µg/L)	SW-DISCH-211118	SW-Disch-211123	DW01-220518	DW01-220610	ML001-SW-221129	ML001-SW-230213
Date Collected		11/18/2021	11/23/2021	5/18/2022	6/10/2022	11/29/2022	2/13/23
Time Collected		15:20	8:48	5:45	12:15	10:35	8:40
Sampled by		ENW	ENW	ENW	ENW	ENW	ENW
Sample Location		ML001 (pre-roof replacement)					
Analyte		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Gasoline-, Diesel- and Residual(Oil)-Range Petroleum Hydrocarbons							
Gasoline-range	5.4	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)	<100 (ND)
Diesel-range	5.4	<50 (ND) sg	26 sg	<50 (ND) sg	<50 (ND)	370 x	270 x
Oil-range	52	57 sg j	<120 (ND) sg	<250 (ND) sg	<250 (ND)	550 x	390 x
Total Metals							
Copper	0.15	**3.93**	2.34	**3.96**	1.78	**7.62**	5.01
Lead	0.15	**4.1**	**1.10**	**1.97**	0.54	**4.71**	3.1
Nickel	1.0	1.2	<1 (ND)	1.31	1.14	2.54	1.62
Zinc	1.0	**2970**	**1880**	**2850**	**2240**	**2780**	**2660**
PCBs							
Aroclor 1016	0.05	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.0019 (ND) j	<0.01 (ND)
Aroclor 1221	0.05	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.0019 (ND) j	<0.01 (ND)
Aroclor 1232	0.05	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.0019 (ND) j	<0.01 (ND)
Aroclor 1242	0.05	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.0019 (ND) j	<0.01 (ND)
Aroclor 1248	0.05	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.0019 (ND) j	<0.01 (ND)
Aroclor 1254	0.05	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.0019 (ND) j	<0.01 (ND)
Aroclor 1260	0.05	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0.0045	0.017
Aroclor 1262	0.05	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.0019 (ND) j	<0.01 (ND)
Aroclor 1268	0.05	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.0019 (ND) j	<0.01 (ND)
Total PCBs		<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	<0.01 (ND)	0.0045	0.017
Phthalate Esters							
Dimethylphthalate	0.5	0.87	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	1.2
Diethylphthalate	0.5	<0.5 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)
Di-n-butylphthalate	0.5	<0.5 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)
Butylbenzylphthalate	0.5	<0.5 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)
Di-n-octylphthalate	0.5	<0.5 (ND)	<1 (ND)	<0.5 (ND)	<0.5 (ND)	<1 (ND)	<1 (ND)
bis(2-Ethylhexyl)phthalate	0.5	<0.8 (ND)	<1.6 (ND)	<0.8 (ND)	<0.8 (ND)	<1.6 (ND)	<1.6 (ND)
Semi-Volatile Organic Constituents/Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.0037	<0.005 (ND)	<0.004 (ND) j	<0.005 (ND)	<0.005 (ND)	<0.01 (ND)	<0.01 (ND)
Acenaphthylene	0.0033	<0.005 (ND)	<0.004 (ND) j	<0.005 (ND)	<0.005 (ND)	<0.01 (ND)	<0.01 (ND)
Anthracene	0.0023	<0.005 (ND)	<0.004 (ND) j	<0.005 (ND)	<0.005 (ND)	<0.01 (ND)	<0.01 (ND)
Fluorene	0.0044	<0.005 (ND)	<0.004 (ND) j	<0.005 (ND)	<0.005 (ND)	<0.01 (ND)	<0.01 (ND)
1-Methylnapthalene	0.003	<0.05 (ND)	<0.01 (ND) j	<0.05 (ND)	<0.05 (ND)	<0.1 (ND)	<0.1 (ND)
2-Methylnapthalene	0.0034	<0.05 (ND)	<0.01 (ND)	<0.05 (ND)	<0.05 (ND)	<0.1 (ND)	<0.1 (ND)
Naphthalene	0.005	<0.05 (ND)	<0.01 (ND)	<0.05 (ND)	<0.05 (ND)	<0.1 (ND)	<0.1 (ND)
Phenanthrene	0.0062	0.013 fb	0.020	0.0073	<0.005 ND	0.039	0.023
Benz(a)anthracene	0.007	**0.0060**	<0.01 (ND)	<0.005 (ND)	<0.005 (ND)	**0.015**	<0.01 (ND)
Benzo(a)pyrene	0.0028	**0.0073**	**0.010**	<0.005 (ND)	<0.005 (ND)	**0.027**	**0.012**
Benzo(b)fluoranthene	0.0021	**0.011**	**0.012**	<0.005 (ND)	<0.005 (ND)	**0.052**	**0.02**
Benzo(k)fluoranthene	0.0035	<0.005 (ND)	<0.004 (ND) j	<0.005 (ND)	<0.005 (ND)	**0.013**	<0.01 (ND)
Benzo(g,h,i)perylene	0.0057	<0.01 (ND)	0.015	<0.01 (ND)	<0.01 (ND)	0.029	<0.02 (ND)
Chrysene	0.0024	**0.0073**	**0.017**	<0.005 (ND)	<0.005 (ND)	**0.041**	**0.02**
Dibenz(a,h)anthracene	0.0051	<0.005 (ND)	**0.004 J fb**	<0.005 (ND)	<0.005 (ND)	<0.01 (ND)	<0.01 (ND)
Fluoranthene	0.0029	0.012	0.012	0.0061	<0.005 (ND)	0.050	0.029
Indeno(1,2,3-cd)pyrene	0.0049	**0.0065**	**0.008 J**	<0.005 (ND)	<0.005 (ND)	**0.020**	<0.01 (ND)
Pyrene	0.0054	0.020	**0.027**	0.0071	<0.005 (ND)	0.092 ca	0.044
cPAHs (BaP eq.)	--	0.0097	0.016	<0.005 (ND)	<0.005 (ND)	0.036	0.014
2,3,7,8-TCDD (dioxin) equivalents	--	--	--	--	--	--	--
Volatile Organic Constituents							
Benzene	0.35	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)	<0.35 (ND)
Ethylbenzene	1	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)
Toluene	1	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	<1 (ND)	1.1
Total Xylenes	1	<2 (ND)	<2 (ND)	<1 (ND)	<1 (ND)	<2 (ND)	3.6
Total Suspended Solids							
TSS	5000	8000	9600	6500	6000	30,000	34,000

Notes:
ug/L = micrograms per Liter or parts per billion (ppb).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
(YES) indicates analyte not detected, but detection limit is above screening concentration.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

fb = the analyte was detected in the method blank.

Table 1 - Summary of Analytical Data, Storm Water

S	Event #7A	Event #7B	Event #8	Event #9
Sample ID	ML001-SW-231025	ML001-SW-231122	ML001-SW-240108	ML001-SW-240226
Date Collected	10/25/23	11/22/2023	1/8/2024	2/26/2024
Time Collected	8:10	10:35	9:30	13:40
Sampled by	ENW	ENW	ENW	ENW
Sample Location	ML001 (post-roof replacement)			
Analyte	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Gasoline-, Diesel- and Residual(Oil)-Range Petrol				
Gasoline-range	--	--	--	--
Diesel-range	--	--	--	--
Oil-range	--	--	--	--
Total Metals				
Copper	<2.7 (ND)	--	--	--
Lead	**0.584**	--	--	--
Nickel	<1 (ND)	--	--	--
Zinc	**484**	**--**	**--**	**--**
PCBs				
Aroclor 1016	<0.05 (ND)	--	--	--
Aroclor 1221	<0.05 (ND)	--	--	--
Aroclor 1232	<0.05 (ND)	--	--	--
Aroclor 1242	<0.05 (ND)	--	--	--
Aroclor 1248	<0.05 (ND)	--	--	--
Aroclor 1254	<0.05 (ND)	--	--	--
Aroclor 1260	<0.05 (ND)	--	--	--
Aroclor 1262	<0.05 (ND)	--	--	--
Aroclor 1268	<0.05 (ND)	--	--	--
Total PCBs	<0.05 (ND)	--	--	--
Phthalate Esters				
Dimethylphthalate	--	--	--	--
Diethylphthalate	--	--	--	--
Di-n-butylphthalate	--	--	--	--
Butylbenzylphthalate	--	--	--	--
Di-n-octylphthalate	--	--	--	--
bis(2-Ethylhexyl)phthalate	--	--	--	--
Semi-Volatile Organic Constituents/Polycyclic Arc				
Acenaphthene	--	<0.002 (ND) j	---	---
Acenaphthylene	--	<8E-04 (ND) j	---	---
Anthracene	--	<0.002 (ND) j	---	---
Fluorene	--	0.0011 j	---	---
1-Methylnapthalene	--	0.0032 j	---	---
2-Methylnapthalene	--	0.0053 j	---	---
Naphthalene	--	0.0087 j	---	---
Phenanthrene	--	<0.02 (ND) j	---	---
Benz(a)anthracene	--	<0.002 (ND) j	---	---
Benzo(a)pyrene	--	<0.003 (ND) j	---	---
Benzo(b)fluoranthene	--	**0.0037 j**	---	---
Benzo(k)fluoranthene	--	<0.002 (ND) j	---	---
Benzo(g,h,i)perylene	--	0.0045 j	---	---
Chrysene	--	**0.0024 j**	---	---
Dibenz(a,h)anthracene	--	<0.002 (ND) j	---	---
Fluoranthene	--	0.0038 j	---	---
Indeno(1,2,3-cd)pyrene	--	**0.0024 j**	---	---
Pyrene	--	0.0061 j	---	---
cPAHs (BaP eq.)	--	**0.00066**	---	---
2,3,7,8-TCDD (dioxin) equivalents	--	--	**2.74E-07**	**3.68E-07**
Volatile Organic Constituents				
Benzene	--	--	--	--
Ethylbenzene	--	--	--	--
Toluene	--	--	--	--
Total Xylenes	--	--	--	--
Total Suspended Solids				
TSS	--	--	--	--

Notes:
ug/L = micrograms per Liter or parts per billion (ppb).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
(YES) indicates analyte not detected, but detection limit is above screening concentration.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

fb = the analyte was detected in the method blank.

Table 1 - Summary of Analytical Data, Storm Water

S Sample ID Date Collected Time Collected Sampled by Sample Location Analyte	Maximum Detected Concentration (Pre-Roof Replacement) (µg/L)	Maximum Detected Concentration (Post-Roof Replacement) (µg/L)	EPA Portland Harbor ROD Cleanup Levels (µg/L)	JSCS SLV (µg/L)	Maximum detected post-roof replacement (pre-roof replacement value used if no post-replacement data available) concentration exceed ROD Cleanup Level or JSCS SLV? TRUE OR Y FALSE OR N
Gasoline-, Diesel- and Residual(Oil)-Range Petrol					
Gasoline-range	<100 (ND)	---	NE	NE	N
Diesel-range	370 x	---	NE	NE	N
Oil-range	550 x	---	NE	NE	N
Total Metals					
Copper	7.62	<2.7 (ND)	2.74	2.7	N
Lead	4.71	0.58	NE	0.54	Y
Nickel	2.54	<1 (ND)	NE	16	N
Zinc	2970	484	36.5	36	Y
PCBs					
Aroclor 1016	<0.01 (ND)	<0.05 (ND)	NE	0.96	N
Aroclor 1221	<0.01 (ND)	<0.05 (ND)	NE	0.034	N
Aroclor 1232	<0.01 (ND)	<0.05 (ND)	NE	0.034	N
Aroclor 1242	<0.01 (ND)	<0.05 (ND)	NE	0.034	N
Aroclor 1248	<0.01 (ND)	<0.05 (ND)	NE	0.034	N
Aroclor 1254	<0.01 (ND)	<0.05 (ND)	NE	0.034	N
Aroclor 1260	0.017	<0.05 (ND)	NE	0.034	N
Aroclor 1262	<0.01 (ND)	<0.05 (ND)	NE	0.034	N
Aroclor 1268	<0.01 (ND)	<0.05 (ND)	NE	0.034	N
Total PCBs	0.017	<0.05 (ND)	NE	0.034	N
Phthalate Esters					
Dimethylphthalate	1.2	---	NE	3	N
Diethylphthalate	<1 (ND)	---	NE	3	N
Di-n-butylphthalate	<1 (ND)	---	NE	3	N
Butylbenzylphthalate	<1 (ND)	---	NE	3	N
Di-n-octylphthalate	<1 (ND)	---	NE	3	N
bis(2-Ethylhexyl)phthalate	<1.6 (ND)	---	NE	2.2	N
Semi-Volatile Organic Constituents/Polycyclic Arc					
Acenaphthene	<0.01 (ND)	<0.002 (ND)	NE	0.2	N
Acenaphthylene	<0.01 (ND)	<0.0008 (ND)	NE	0.2	N
Anthracene	<0.01 (ND)	<0.002 (ND)	NE	0.2	N
Fluorene	<0.01 (ND)	0.0011	NE	0.2	N
1-Methylnapthalene	<0.1 (ND)	0.0032	NE	NE	N
2-Methylnapthalene	<0.1 (ND)	0.0053	NE	0.2	N
Naphthalene	<0.1 (ND)	0.0087	NE	0.2	N
Phenanthrene	0.039	<0.02 (ND)	NE	0.2	N
Benz(a)anthracene	0.015	<0.002 (ND)	0.0012	0.018	(Y)
Benzo(a)pyrene	0.027	<0.003 (ND)	0.00012	0.018	(Y)
Benzo(b)fluoranthene	0.052	0.0037	0.0012	0.018	Y
Benzo(k)fluoranthene	<0.013 (ND)	<0.002 (ND)	0.0013	0.018	(Y)
Benzo(g,h,i)perylene	<0.029 (ND)	0.0045	NE	0.2	N
Chrysene	0.041	0.0024	0.0013	0.018	Y
Dibenz(a,h)anthracene	0.01 J fb	<0.002 (ND)	0.00012	0.018	Y
Fluoranthene	0.050	0.0038	NE	0.2	N
Indeno(1,2,3-cd)pyrene	0.020	0.0024	0.0012	0.018	Y
Pyrene	0.092 ca	0.0061	NE	0.2	N
cPAHs (BaP eq.)	0.036	0.00066	0.00012	0.018	Y
2,3,7,8-TCDD (dioxin) equivalents	---	3.68E-07	5E-10	5.1E-10	Y
Volatile Organic Constituents					
Benzene	<0.35 (ND)	---	NE	5	N
Ethylbenzene	<1 (ND)	---	7.3	700	N
Toluene	<1.1 (ND)	---	NE	1,000	N
Total Xylenes	<3.6 (ND)	---	NE	10,000	N
Total Suspended Solids					
TSS	34000	---	NE	NE	N

Notes:
ug/L = micrograms per Liter or parts per billion (ppb).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
(YES) indicates analyte not detected, but detection limit is above screening concentration.
x = the pattern of peaks is not indicative of the fuel standard used for quantitation.

fb = the analyte was detected in the method blank.

Table 2 - Summary of Analytical Data, Roof Drains

Sample Event ID	RD01		RD02			RD03		RD04			RD05		RD06		RD07	
Sample ID	RD01-SW-221129	RD01-SW-231025	RD02-SW-220130	RD02-SW-221129	RD02-SW-231025	RD03-SW-221129	RD03-SW-231025	RD04-SW-220130	RD04-SW-221129	RD04-SW-231025	RD05-SW-221129	RD05-SW-231025	RD06-SW-221129	RD06-SW-231025	RD07-SW-221129	RD07-SW-231025
Date Collected	11/29/2022	10/25/2023	1/30/2022	11/29/2022	10/25/2023	11/29/2022	10/25/2023	1/30/2022	11/29/2022	10/25/2023	11/29/2022	10/25/2023	11/29/22	10/25/23	11/29/2022	10/25/2023
Sampled by	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Sample Location	Roof drain #1		Roof drain #2			Roof drain #3		Roof drain #4			Roof drain #5		Roof drain #6		Roof drain #7	
Analyte	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Metals																
Total Zinc	3180	97.2	8050	89.2	112	94.0	110	620	92.3	410	89.5	112	121	29.9	346	200

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

Orange shading indicates results not included in maximum detected concentrations. These roof drains serve the roof over the office area only and were not part of the roof area that required replacement

Table 2 - Summary of Analytical Data, Roof Drains

Sample Event ID	RD08		RD09		RD10	RD11		RD12	RD13		RD14		RD15	
Sample ID	RD08-SW-221129	RD08-SW-231025	RD09-SW-221129	RD09-SW-231025	RD10-SW-231025	RD11-SW-221129	RD11-SW-231025	RD12-SW-231025	RD13-SW-221129	RD13-SW-231025	RD14-SW-221129	RD14-SW-231025	RD15-SW-221129	RD15-SW-231025
Date Collected	11/29/2022	10/25/2023	11/29/2022	10/25/2023	10/25/2023	11/29/2022	10/25/2023	10/25/2023	11/29/2022	10/25/2023	11/29/2022	10/25/2023	11/29/2022	10/25/2023
Sampled by	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Sample Location	Roof drain #8		Roof drain #9		Roof drain #10	Roof drain #11		Roof drain #12	Roof drain #13		Roof drain #14		Roof drain #15	
Analyte	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Metals														
Total Zinc	732	228	5580	152	102	5390	442	319	4900	62.1	3300	158	61.9	32.1

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

Orange shading indicates results not included in maximum detected concentrations. These roof drains serve the roof over the office area only and were not part of the roof area that required replacement

Table 2 - Summary of Analytical Data, Roof Drains

Sample Event ID / Sample ID / Date Collected / Sampled by / Sample Location	Maximum Detected Concentration Pre-Roof Replacement	Maximum Detected Concentration Post Roof Replacement	EPA Portland Harbor ROD Cleanup Levels (µg/L)	JSCS SLV (µg/L)	Lower End of Knee from ODEQ Storm Water Curves for Heavy Industrial Sites in Portland Harbor (µg/L)
Analyte	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Metals					
Total Zinc	8050	442	36.5	36	500

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

Orange shading indicates results not included in maximum detected concentrations. These roof drains serve the roof over the office area only and were not part of the roof area that required replacement

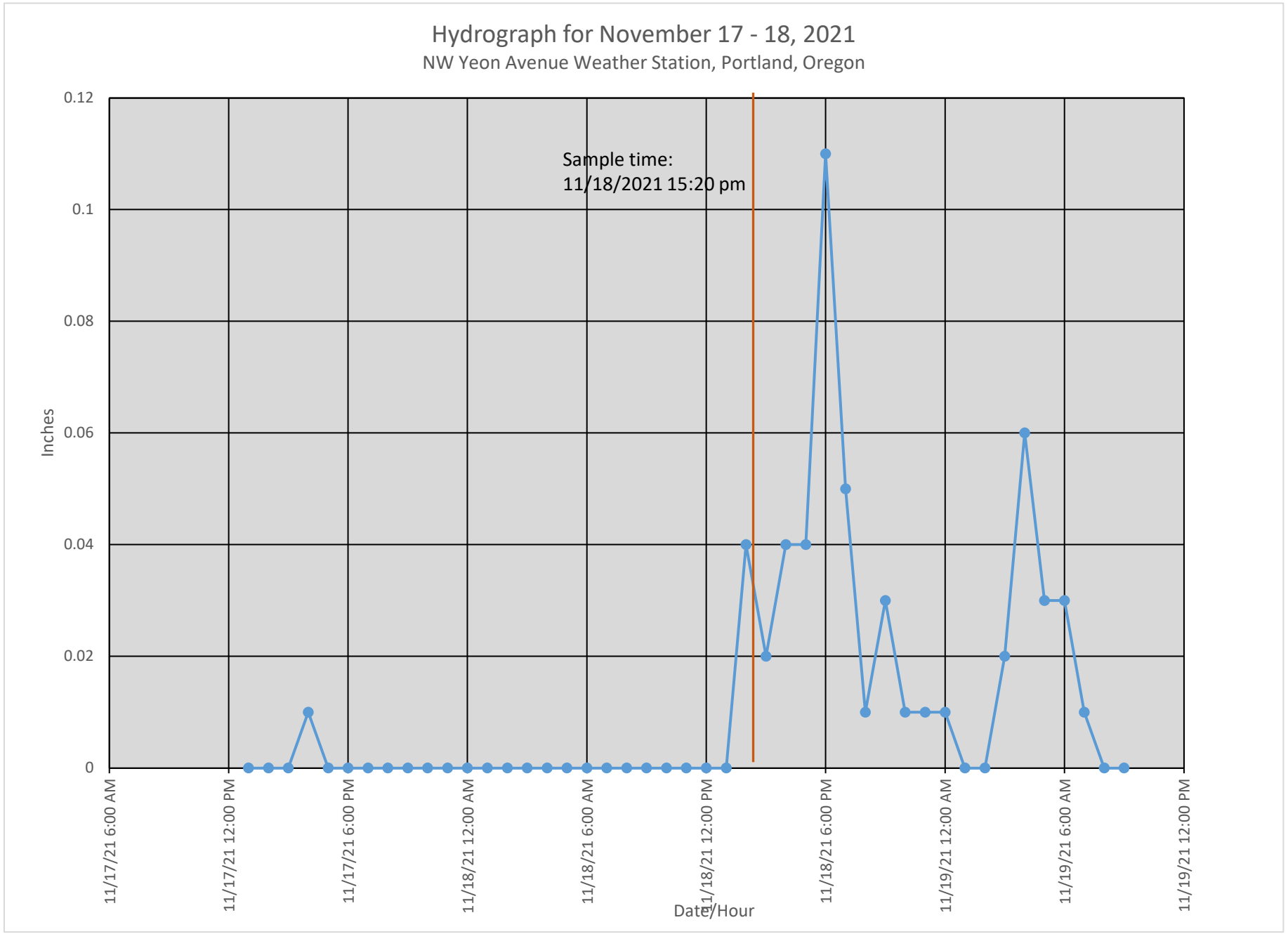
Table 3 - Summary of Analytical Data for Dioxins and Furans, Storm Water

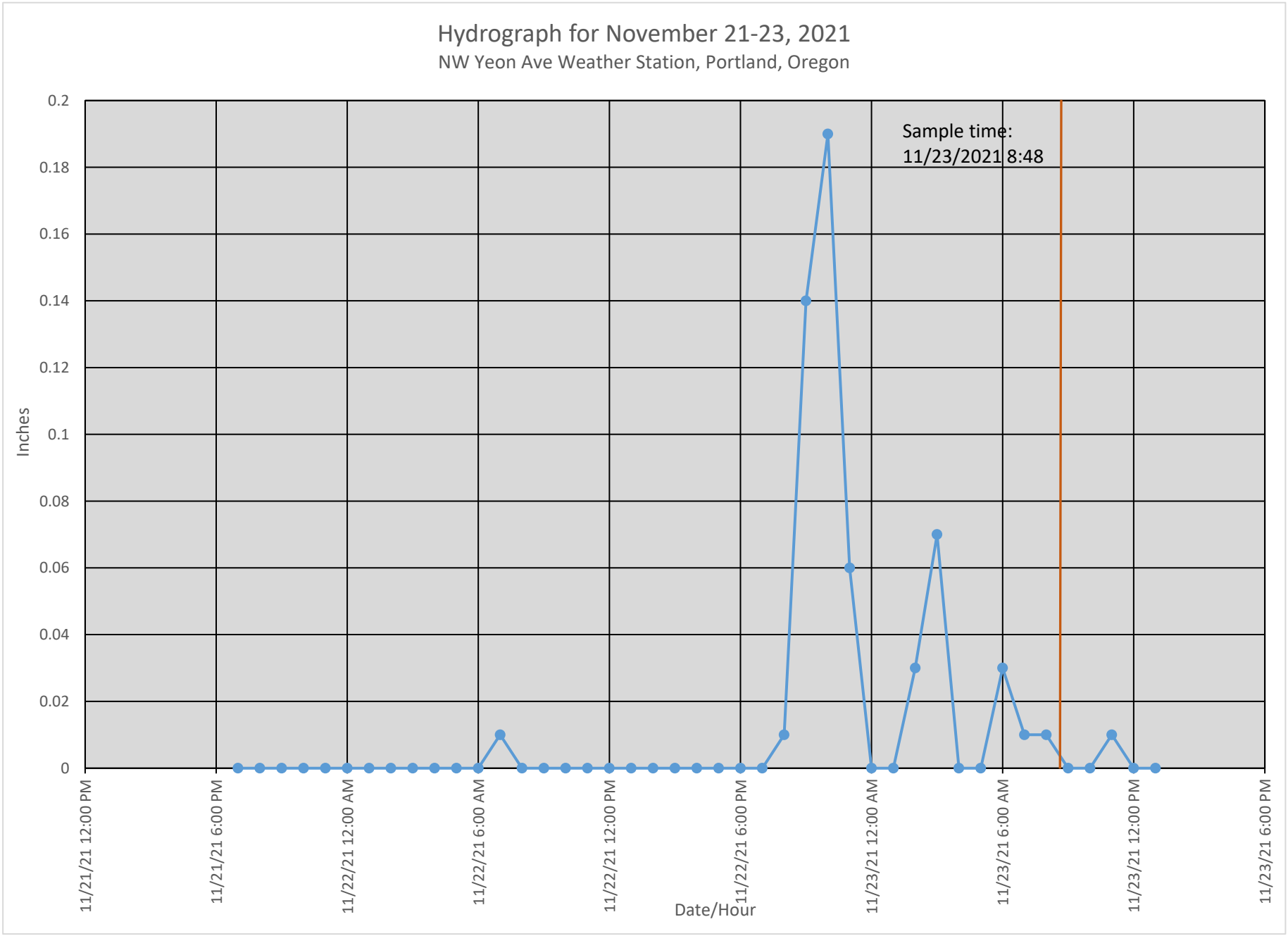
Location ID	ML001				
Sample ID	ML001-240108		ML001-240226		Toxicity Equivalent Factors (TEFs)
Date Sampled	1/8/24	TEF	2/26/24	TEF	
Sampled By	ENW		ENW		
Location	ML001 (discharge from vault)				
Constituent of Interest	pg/L (or ppq)		pg/L (or ppq)		
Dioxins/Furans					
2,3,7,8-TCDD eq	---	2.7E-01	---	3.7E-01	1
2,3,7,8-TCDD	<1.81 (ND)	<1.81 (ND)	<1.46 (ND)	<1.46 (ND)	1
1,2,3,7,8-PeCDD	<1.98 (ND)	<1.98 (ND)	<1.45 (ND)	<1.45 (ND)	1
1,2,3,4,7,8-HxCDD	<2.12 (ND)	<0.212 (ND)	<1.96 (ND)	<0.196 (ND)	0.1
1,2,3,6,7,8-HxCDD	<2.08 (ND)	<0.208 (ND)	<2.11 (ND)	<0.211 (ND)	0.1
1,2,3,7,8,9-HxCDD	<2.08 (ND)	<0.208 (ND)	<2.14 (ND)	<0.214 (ND)	0.1
1,2,3,4,6,7,8-HpCDD	15.5 J EMPC	0.155 J EMPC	26.3	0.263	0.01
OCDD	136	0.0408	154 EMPC	0.0462 EMPC	0.0003
2,3,7,8-TCDF	<1.35 (ND)	<0.135 (ND)	<1.45 (ND)	<0.145 (ND)	0.1
1,2,3,7,8-PeCDF	<1.35 (ND)	<0.0405 (ND)	<0.959 (ND)	<0.02877 (ND)	0.03
2,3,4,7,8-PeCDF	<1.37 (ND)	<0.411 (ND)	<0.953 (ND)	<0.2859 (ND)	0.3
1,2,3,4,7,8-HxCDF	<1.41 (ND)	<0.141 (ND)	<1.16 (ND)	<0.116 (ND)	0.1
1,2,3,6,7,8-HxCDF	<1.44 (ND)	<0.144 (ND)	<0.977 (ND)	<0.0977 (ND)	0.1
2,3,4,6,7,8-HxCDF	<1.49 (ND)	<0.149 (ND)	<1.18 (ND)	<0.118 (ND)	0.1
1,2,3,7,8,9-HxCDF	<1.72 (ND)	<0.172 (ND)	<1.39 (ND)	<0.139 (ND)	0.1
1,2,3,4,6,7,8-HpCDF	7.46 J	0.0746 j	5.51 J	0.0551 j	0.01
1,2,3,4,7,8,9-HpCDF	<1.85 (ND)	<0.0185 (ND)	<1.19 (ND)	<0.0119 (ND)	0.01
OCDF	13.3 J	0.00399 J	12.3 J EMPC	0.00369 J EMPC	0.0003

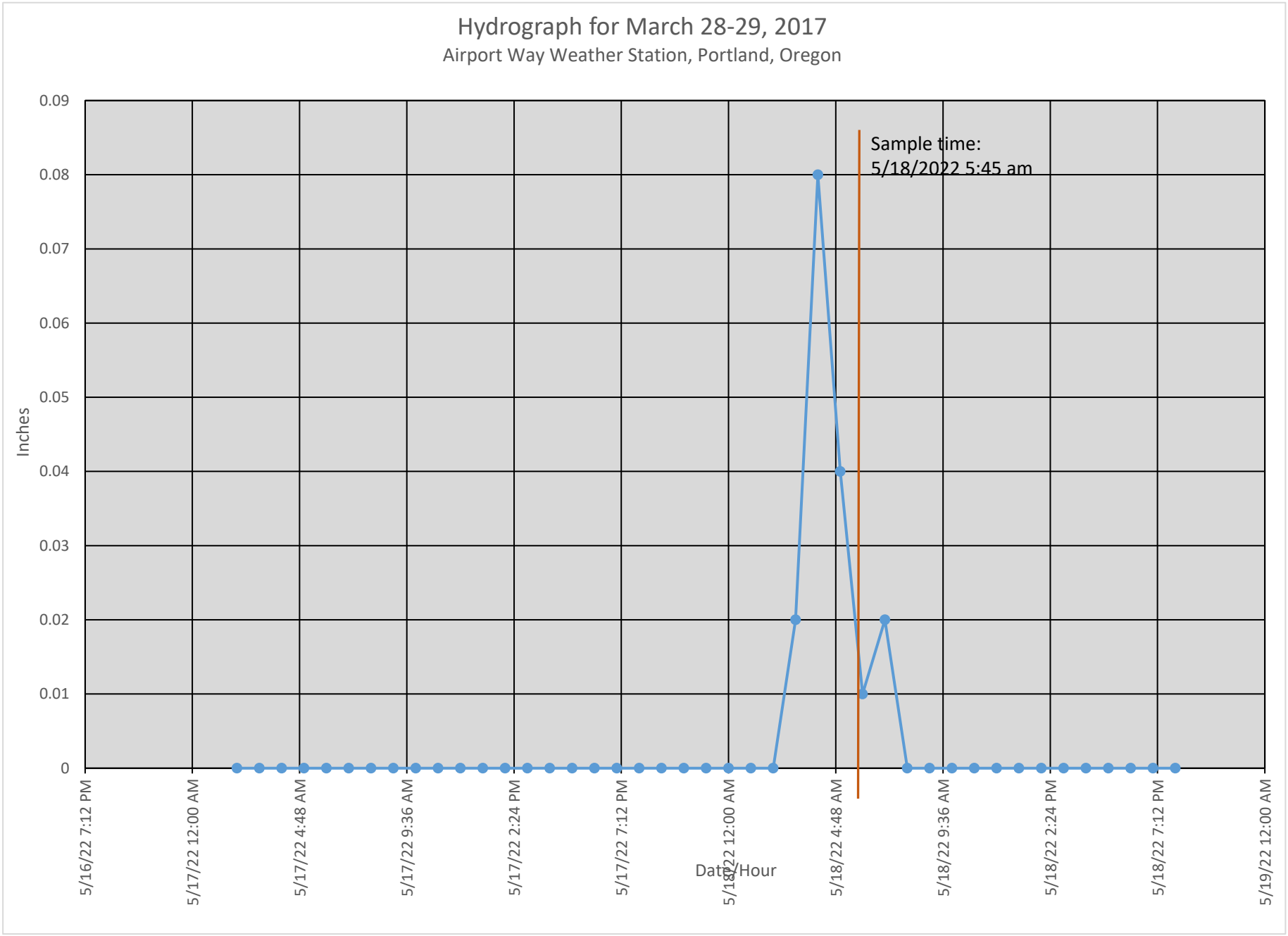
Notes:
pg/L = picrograms per Liter or parts per quadrillion (ppq).
<# (ND) = not detected at or above the laboratory method reporting limit shown.
J = an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
EMPC = Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.
highlighted cells indicate congener of concern near Outfall 19 according to ODEQ

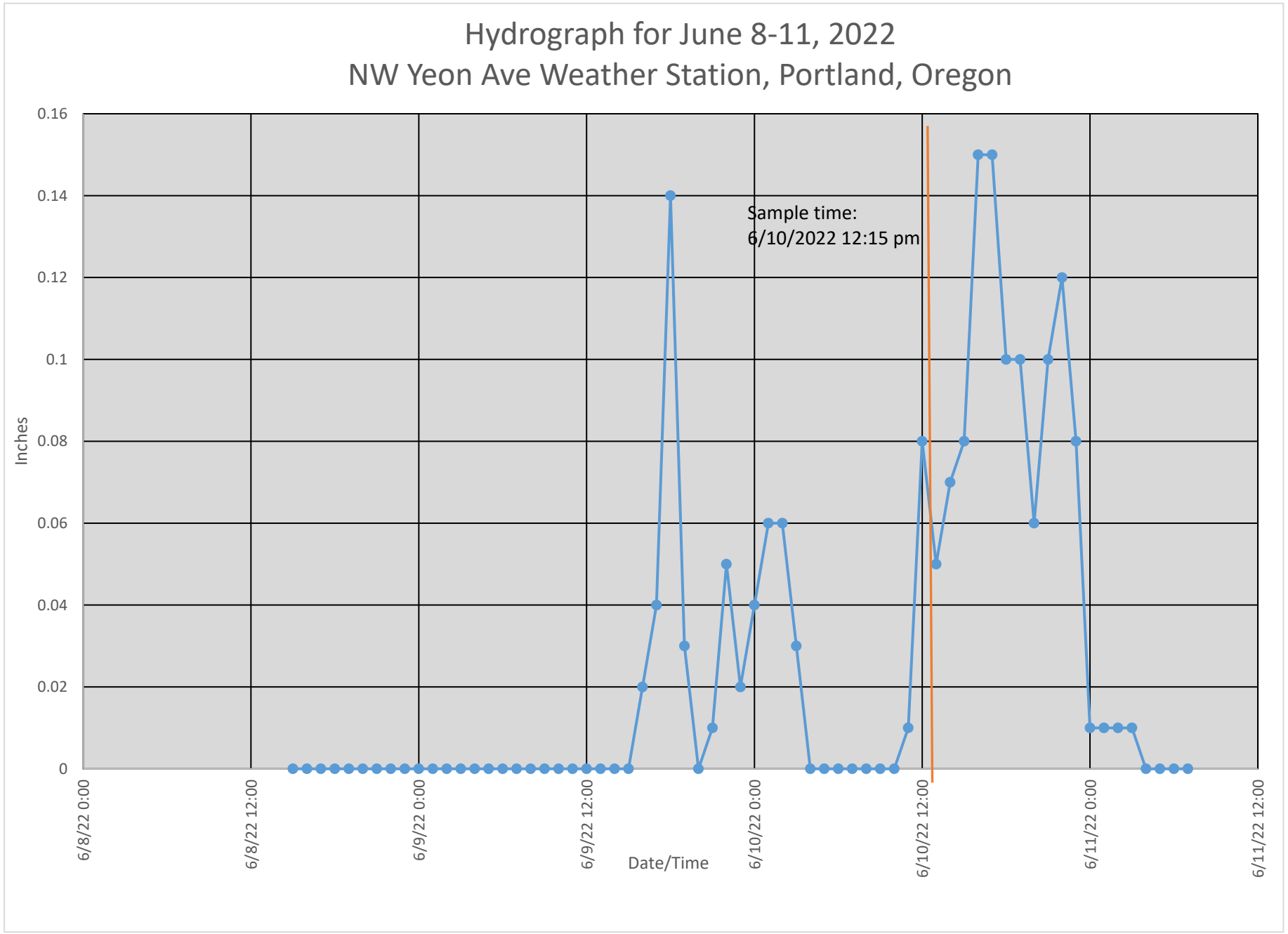
Appendix A

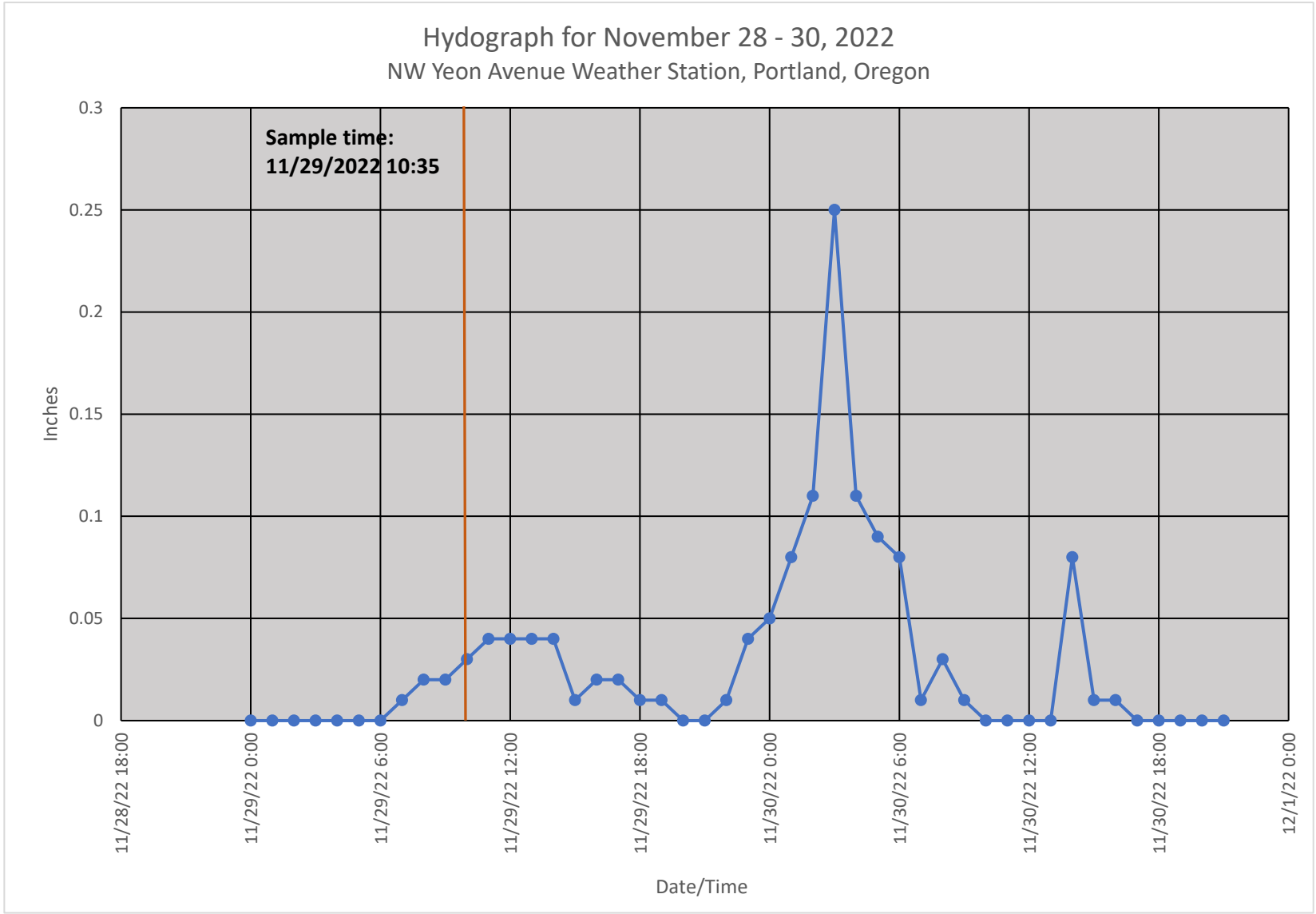
Precipitation Hydrographs

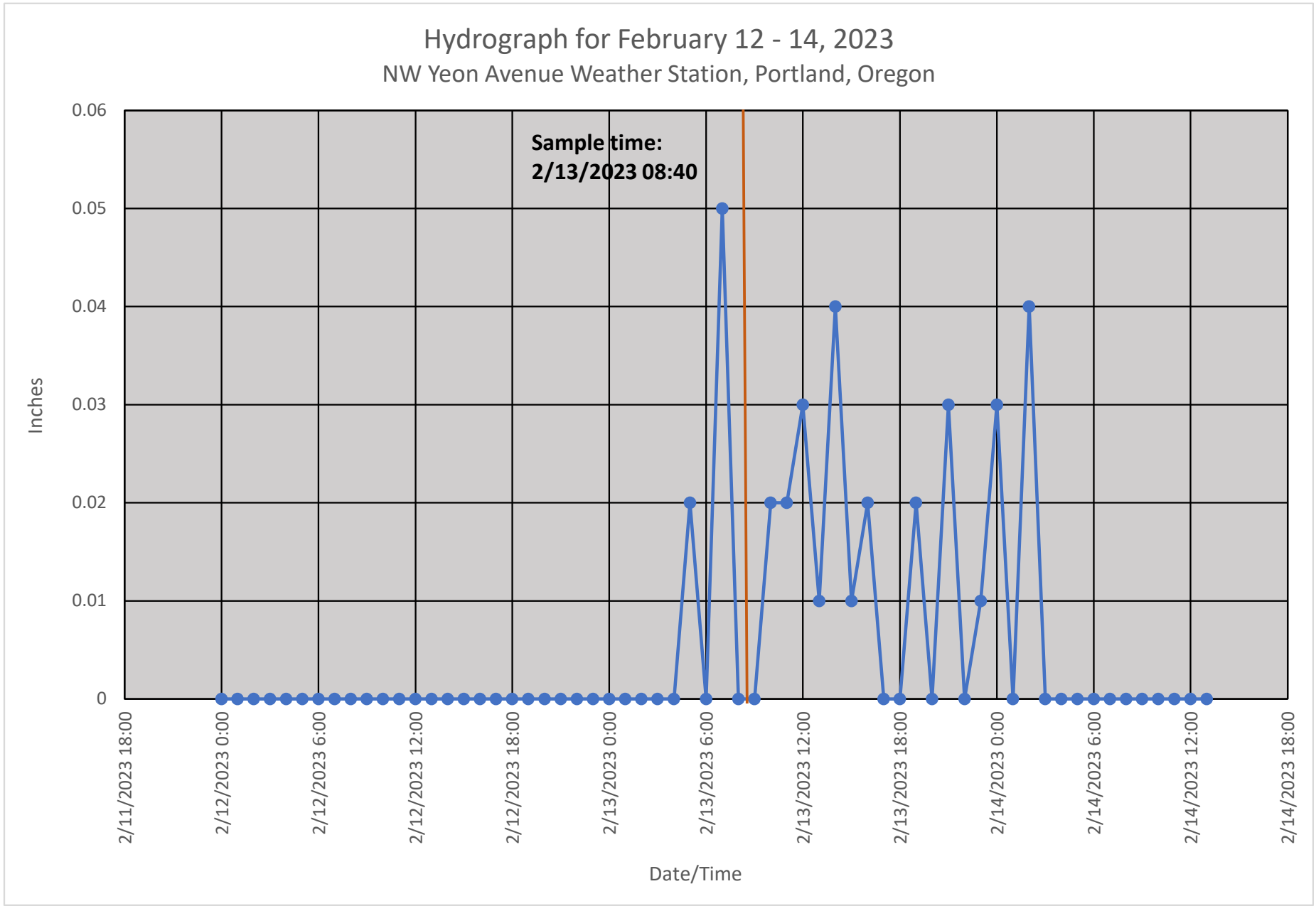

Hydrograph for November 17 - 18, 2021
NW Yeon Avenue Weather Station, Portland, Oregon
Sample time:
11/18/2021 15:20 pm
Inches
0.12
0.1
0.08
0.06
0.04
0.02
0
11/17/21 6:00 AM
11/17/21 12:00 PM
11/17/21 6:00 PM
11/18/21 12:00 AM
11/18/21 6:00 AM
11/18/21 12:00 PM
11/18/21 6:00 PM
11/19/21 12:00 AM
11/19/21 6:00 AM
11/19/21 12:00 PM
Date/Hour

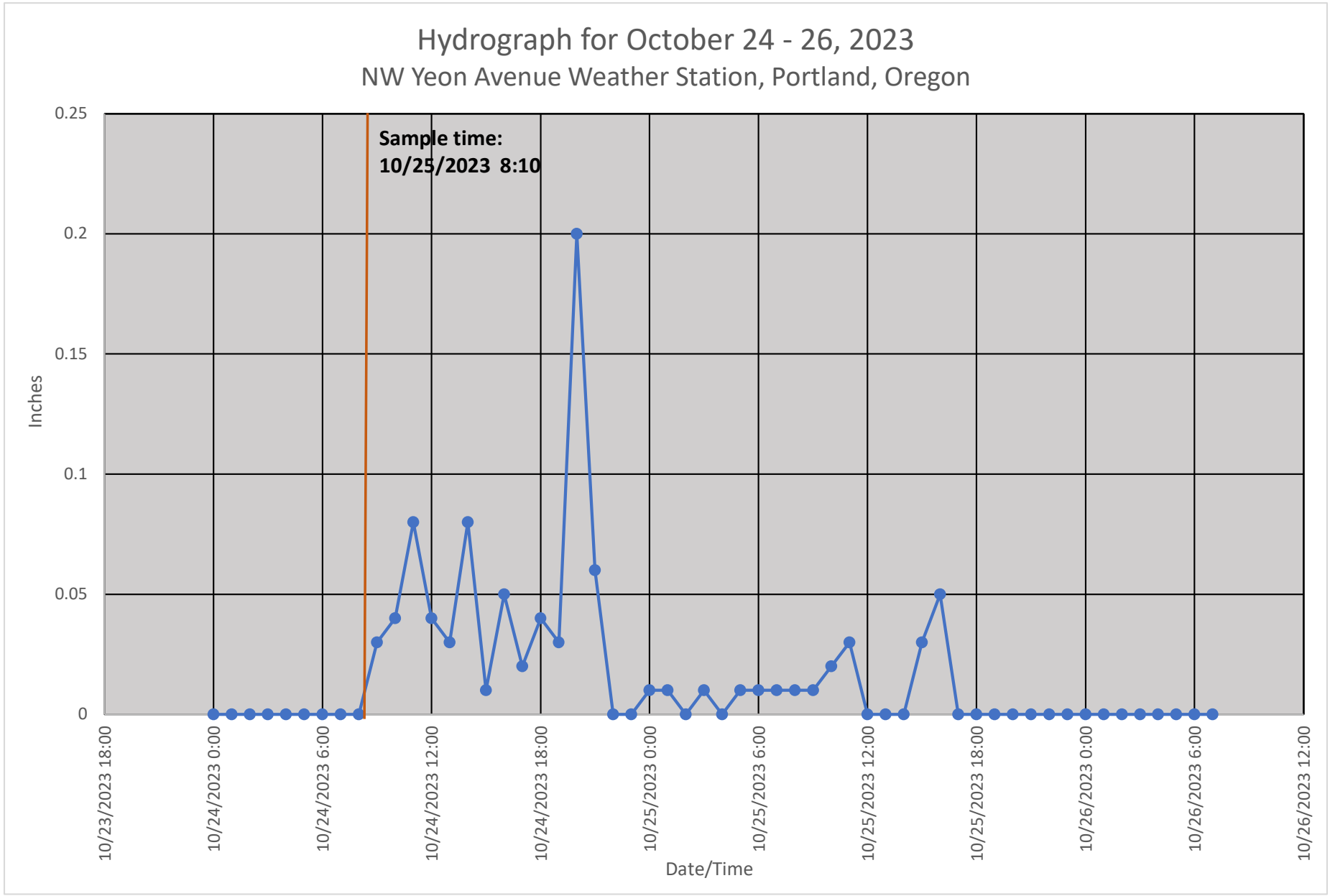

Hydrograph for November 21-23, 2021
NW Yeon Ave Weather Station, Portland, Oregon
Sample time:
11/23/2021 8:48
Inches
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
11/21/21 12:00 PM
11/21/21 6:00 PM
11/22/21 12:00 AM
11/22/21 6:00 AM
11/22/21 12:00 PM
11/22/21 6:00 PM
11/23/21 12:00 AM
11/23/21 6:00 AM
11/23/21 12:00 PM
11/23/21 6:00 PM
Date/Hour

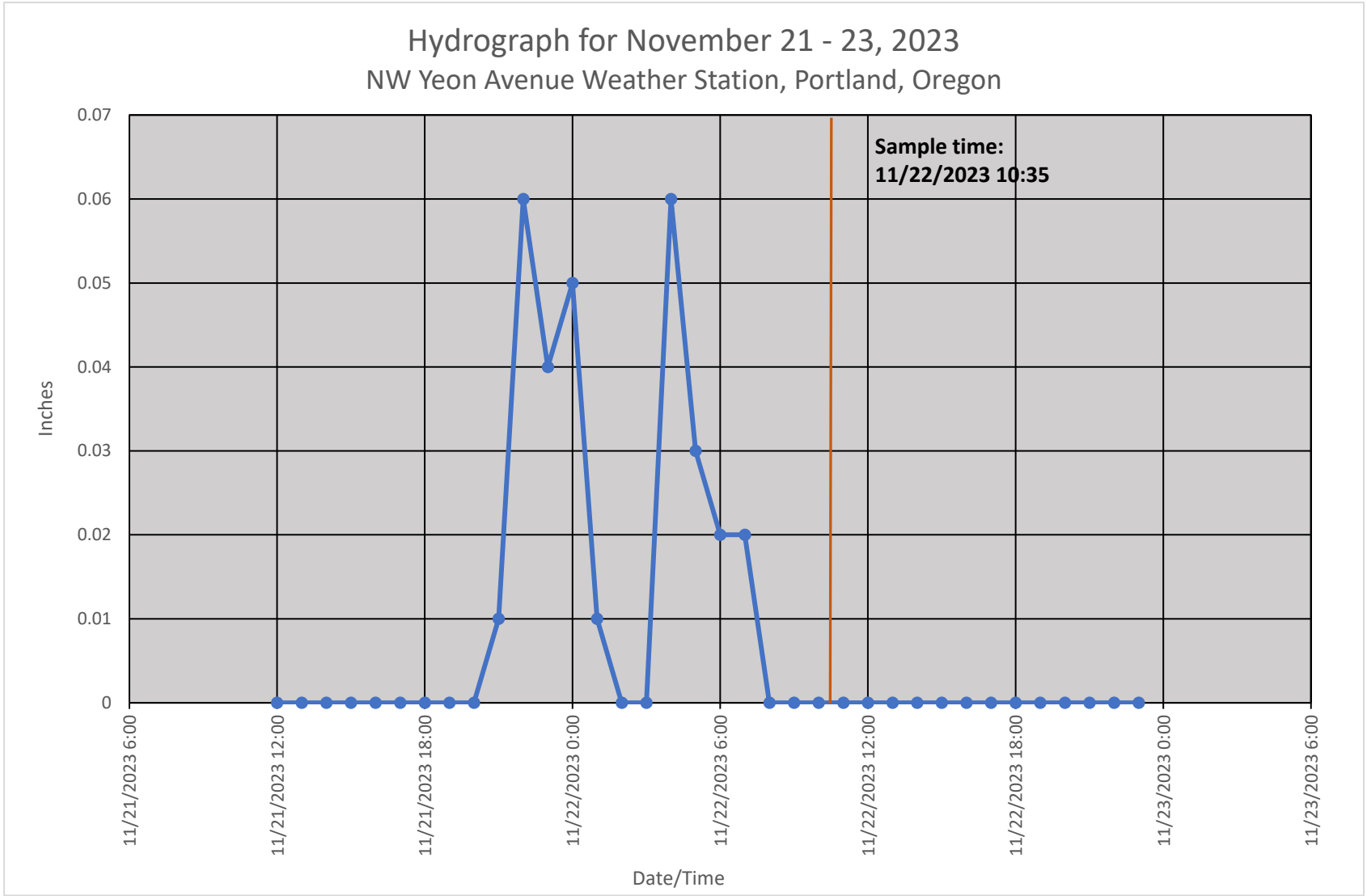

Hydrograph for March 28-29, 2017
Airport Way Weather Station, Portland, Oregon
Inches
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Sample time:
5/18/2022 5:45 am
5/16/22 7:12 PM
5/17/22 12:00 AM
5/17/22 4:48 AM
5/17/22 9:36 AM
5/17/22 2:24 PM
5/17/22 7:12 PM
5/18/22 12:00 AM
5/18/22 4:48 AM
5/18/22 9:36 AM
5/18/22 2:24 PM
5/18/22 7:12 PM
5/19/22 12:00 AM
Date/Hour

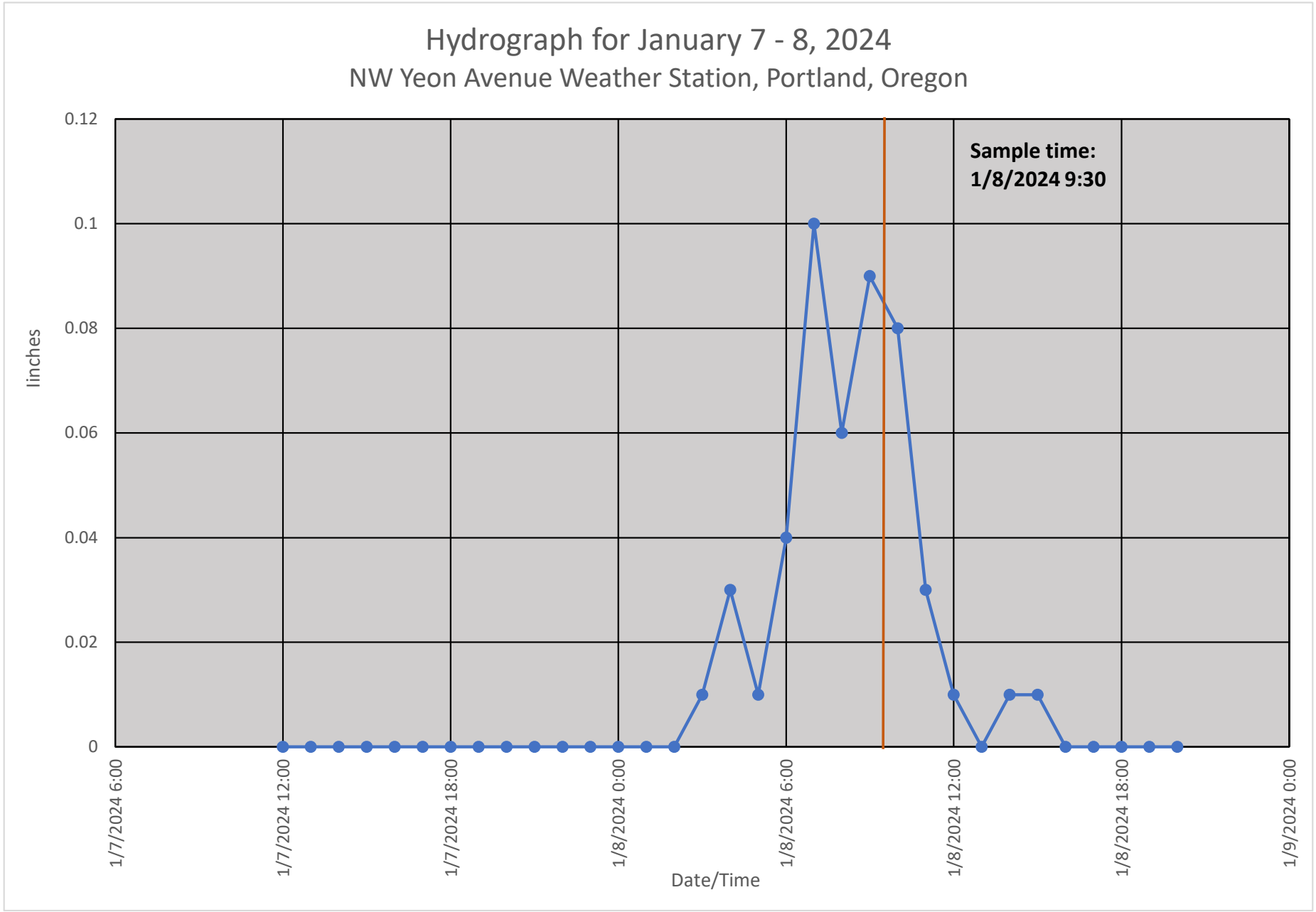

Hydrograph for June 8-11, 2022
NW Yeon Ave Weather Station, Portland, Oregon
Sample time:
6/10/2022 12:15 pm
Inches
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
6/8/22 0:00
6/8/22 12:00
6/9/22 0:00
6/9/22 12:00
6/10/22 0:00
6/10/22 12:00
6/11/22 0:00
6/11/22 12:00
Date/Time

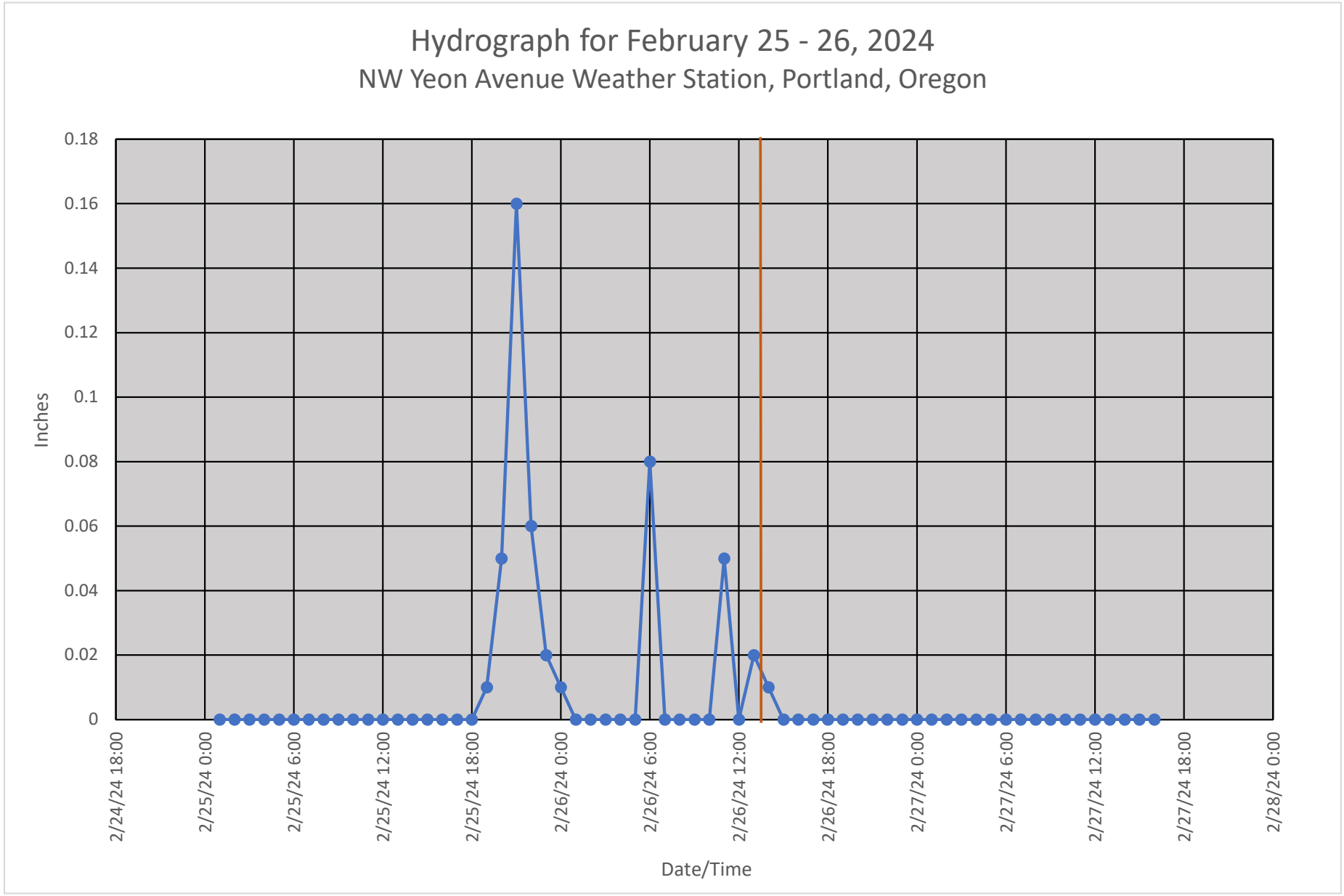

Hydograph for November 28 - 30, 2022
NW Yeon Avenue Weather Station, Portland, Oregon
Sample time:
11/29/2022 10:35
Inches
0.3
0.25
0.2
0.15
0.1
0.05
0
11/28/22 18:00
11/29/22 0:00
11/29/22 6:00
11/29/22 12:00
11/29/22 18:00
11/30/22 0:00
11/30/22 6:00
11/30/22 12:00
11/30/22 18:00
12/1/22 0:00
Date/Time


Hydrograph for February 12 - 14, 2023
NW Yeon Avenue Weather Station, Portland, Oregon
Sample time:
2/13/2023 08:40
Inches
0.06
0.05
0.04
0.03
0.02
0.01
0
2/11/2023 18:00
2/12/2023 0:00
2/12/2023 6:00
2/12/2023 12:00
2/12/2023 18:00
2/13/2023 0:00
2/13/2023 6:00
2/13/2023 12:00
2/13/2023 18:00
2/14/2023 0:00
2/14/2023 6:00
2/14/2023 12:00
2/14/2023 18:00
Date/Time


Hydrograph for October 24 - 26, 2023
NW Yeon Avenue Weather Station, Portland, Oregon
Sample time:
10/25/2023 8:10
Inches
0.25
0.2
0.15
0.1
0.05
0
10/23/2023 18:00
10/24/2023 0:00
10/24/2023 6:00
10/24/2023 12:00
10/24/2023 18:00
10/25/2023 0:00
10/25/2023 6:00
10/25/2023 12:00
10/25/2023 18:00
10/26/2023 0:00
10/26/2023 6:00
10/26/2023 12:00
Date/Time


Hydrograph for November 21 - 23, 2023
NW Yeon Avenue Weather Station, Portland, Oregon
Sample time:
11/22/2023 10:35
Inches
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
11/21/2023 6:00
11/21/2023 12:00
11/21/2023 18:00
11/22/2023 0:00
11/22/2023 6:00
11/22/2023 12:00
11/22/2023 18:00
11/23/2023 0:00
11/23/2023 6:00
Date/Time


Hydrograph for January 7 - 8, 2024
NW Yeon Avenue Weather Station, Portland, Oregon
Sample time:
1/8/2024 9:30
0.12
0.1
0.08
0.06
0.04
0.02
0
linches
1/7/2024 6:00
1/7/2024 12:00
1/7/2024 18:00
1/8/2024 0:00
1/8/2024 6:00
1/8/2024 12:00
1/8/2024 18:00
1/9/2024 0:00
Date/Time


Hydrograph for February 25 - 26, 2024
NW Yeon Avenue Weather Station, Portland, Oregon
Inches
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
2/24/24 18:00
2/25/24 0:00
2/25/24 6:00
2/25/24 12:00
2/25/24 18:00
2/26/24 0:00
2/26/24 6:00
2/26/24 12:00
2/26/24 18:00
2/27/24 0:00
2/27/24 6:00
2/27/24 12:00
2/27/24 18:00
2/28/24 0:00
Date/Time

Appendix B

Laboratory Analytical Results

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 2, 2021

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 November 19, 2021 from the 1260-19001-03, F&BI 111390 project. There are 21 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
ENW1202R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 19, 2021 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 111390 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
111390 -01	SW-DISCH-211118

Several compounds in the 8270E laboratory control sample and laboratory control sample duplicate failed the acceptance criteria. In addition, the 8270E calibration standard did not pass the acceptance criteria for 2,4-dinitrophenol. The data were flagged accordingly.

Phenanthrene was detected in the 8270E method blank at a level greater than one tenth the concentration detected in the sample. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 12/02/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390
Date Extracted: 11/24/21
Date Analyzed: 11/29/21

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)
SW-DISCH-211118 111390-01	<100	91
Method Blank 01-2642 MB	<100	94

Date of Report: 12/02/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390
Date Extracted: 11/22/21
Date Analyzed: 11/22/21

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)
SW-DISCH-211118 111390-01	170 x	160 x	120
Method Blank 01-2738 MB	<25 j	<50 j	122

Analysis For Total Metals By EPA Method 200.8

Client ID:	SW-DISCH-211118	Client:	Evren Northwest
Date Received:	11/19/21	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/22/21	Lab ID:	111390-01
Date Analyzed:	11/22/21	Data File:	111390-01.135
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	3.93
Lead	4.10
Nickel	1.18

Analysis For Total Metals By EPA Method 200.8

Client ID:	SW-DISCH-211118	Client:	Evren Northwest
Date Received:	11/19/21	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/22/21	Lab ID:	111390-01 x100
Date Analyzed:	11/23/21	Data File:	111390-01 x100.155
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	2,970

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/22/21	Lab ID:	I1-770 mb
Date Analyzed:	11/22/21	Data File:	I1-770 mb.107
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	<0.4
Lead	<0.15
Nickel	<1
Zinc	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	SW-DISCH-211118	Client:	Evren Northwest
Date Received:	11/19/21	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/22/21	Lab ID:	111390-01
Date Analyzed:	11/22/21	Data File:	112239.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	98	87	115
4-Bromofluorobenzene	96	92	112

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/22/21	Lab ID:	01-2714 mb
Date Analyzed:	11/22/21	Data File:	112207.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	98	87	115
4-Bromofluorobenzene	100	92	112

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SW-DISCH-211118	Client:	Evren Northwest
Date Received:	11/19/21	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/23/21	Lab ID:	111390-01 1/0.25
Date Analyzed:	11/23/21	Data File:	112310.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	12	11	65
Phenol-d6	7 ip	11	65
Nitrobenzene-d5	84	50	150
2-Fluorobiphenyl	82	44	108
2,4,6-Tribromophenol	91	10	140
Terphenyl-d14	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.5 jl	2,6-Dinitrotoluene	<0.25
Bis(2-chloroethyl) ether	<0.05	3-Nitroaniline	<5
2-Chlorophenol	<0.5	Acenaphthene	<0.005
1,3-Dichlorobenzene	<0.05	2,4-Dinitrophenol	<1.5 ca
1,4-Dichlorobenzene	<0.05	Dibenzofuran	<0.05
1,2-Dichlorobenzene	<0.05	2,4-Dinitrotoluene	<0.25
Benzyl alcohol	<0.5	4-Nitrophenol	<1.5
2,2'-Oxybis(1-chloropropane)	<0.05	Diethyl phthalate	<0.5
2-Methylphenol	<0.5	Fluorene	<0.005
Hexachloroethane	<0.05	4-Chlorophenyl phenyl ether	<0.05
N-Nitroso-di-n-propylamine	<0.05	N-Nitrosodiphenylamine	<0.05
3-Methylphenol + 4-Methylphenol	<1	4-Nitroaniline	<5
Nitrobenzene	<0.05	4,6-Dinitro-2-methylphenol	<1.5
Isophorone	0.062	4-Bromophenyl phenyl ether	<0.05
2-Nitrophenol	<0.5	Hexachlorobenzene	<0.05
2,4-Dimethylphenol	<0.5	Pentachlorophenol	<0.25
Benzoic acid	<2.5 jl	Phenanthrene	0.013 fb
Bis(2-chloroethoxy)methane	<0.05	Anthracene	<0.005
2,4-Dichlorophenol	<0.5	Carbazole	<0.05
1,2,4-Trichlorobenzene	<0.05	Di-n-butyl phthalate	<0.5
Naphthalene	<0.05	Fluoranthene	0.012
Hexachlorobutadiene	<0.05	Pyrene	0.020
4-Chloroaniline	<5	Benzyl butyl phthalate	<0.5
4-Chloro-3-methylphenol	<0.5	Benz(a)anthracene	0.0060
2-Methylnaphthalene	<0.05	Chrysene	0.0073
1-Methylnaphthalene	<0.05	Bis(2-ethylhexyl) phthalate	<0.8
Hexachlorocyclopentadiene	<0.15	Di-n-octyl phthalate	<0.5
2,4,6-Trichlorophenol	<0.5	Benzo(a)pyrene	0.0073
2,4,5-Trichlorophenol	<0.5	Benzo(b)fluoranthene	0.011
2-Chloronaphthalene	<0.05	Benzo(k)fluoranthene	<0.005
2-Nitroaniline	<0.25	Indeno(1,2,3-cd)pyrene	0.0065
Dimethyl phthalate	0.87	Dibenz(a,h)anthracene	<0.005
Acenaphthylene	<0.005	Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/23/21	Lab ID:	01-2740 mb 1/0.25
Date Analyzed:	11/23/21	Data File:	112308.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	13	11	65
Phenol-d6	8 vo	11	65
Nitrobenzene-d5	77	50	150
2-Fluorobiphenyl	78	44	108
2,4,6-Tribromophenol	81	10	140
Terphenyl-d14	85	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.5 js jl	2,6-Dinitrotoluene	<0.25
Bis(2-chloroethyl) ether	<0.05 js	3-Nitroaniline	<5
2-Chlorophenol	<0.5 js	Acenaphthene	<0.005
1,3-Dichlorobenzene	<0.05 js	2,4-Dinitrophenol	<1.5 ca
1,4-Dichlorobenzene	<0.05 js	Dibenzofuran	<0.05
1,2-Dichlorobenzene	<0.05 js	2,4-Dinitrotoluene	<0.25
Benzyl alcohol	<0.5 js	4-Nitrophenol	<1.5
2,2'-Oxybis(1-chloropropane)	<0.05 js	Diethyl phthalate	<0.5
2-Methylphenol	<0.5 js	Fluorene	<0.005
Hexachloroethane	<0.05 js	4-Chlorophenyl phenyl ether	<0.05
N-Nitroso-di-n-propylamine	<0.05 js	N-Nitrosodiphenylamine	<0.05
3-Methylphenol + 4-Methylphenol	<1 js	4-Nitroaniline	<5
Nitrobenzene	<0.05	4,6-Dinitro-2-methylphenol	<1.5
Isophorone	<0.05	4-Bromophenyl phenyl ether	<0.05
2-Nitrophenol	<0.5	Hexachlorobenzene	<0.05
2,4-Dimethylphenol	<0.5	Pentachlorophenol	<0.25
Benzoic acid	<2.5 jl	Phenanthrene	0.004 lc
Bis(2-chloroethoxy)methane	<0.05	Anthracene	<0.005
2,4-Dichlorophenol	<0.5	Carbazole	<0.05
1,2,4-Trichlorobenzene	<0.05	Di-n-butyl phthalate	<0.5
Naphthalene	<0.05	Fluoranthene	<0.005
Hexachlorobutadiene	<0.05	Pyrene	<0.005
4-Chloroaniline	<5	Benzyl butyl phthalate	<0.5
4-Chloro-3-methylphenol	<0.5	Benz(a)anthracene	<0.005
2-Methylnaphthalene	<0.05	Chrysene	<0.005
1-Methylnaphthalene	<0.05	Bis(2-ethylhexyl) phthalate	<0.8
Hexachlorocyclopentadiene	<0.15	Di-n-octyl phthalate	<0.5
2,4,6-Trichlorophenol	<0.5	Benzo(a)pyrene	<0.005
2,4,5-Trichlorophenol	<0.5	Benzo(b)fluoranthene	<0.005
2-Chloronaphthalene	<0.05	Benzo(k)fluoranthene	<0.005
2-Nitroaniline	<0.25	Indeno(1,2,3-cd)pyrene	<0.005
Dimethyl phthalate	<0.5	Dibenz(a,h)anthracene	<0.005
Acenaphthylene	<0.005	Benzo(g,h,i)perylene	<0.01

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	SW-DISCH-211118	Client:	Evren Northwest
Date Received:	11/19/21	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/23/21	Lab ID:	111390-01 1/0.5
Date Analyzed:	11/23/21	Data File:	112310.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	21 ip	25	160

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01
Aroclor 1232	<0.01
Aroclor 1016	<0.01
Aroclor 1242	<0.01
Aroclor 1248	<0.01
Aroclor 1254	<0.01
Aroclor 1260	<0.01
Aroclor 1262	<0.01
Aroclor 1268	<0.01

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/23/21	Lab ID:	01-2745 mb 1/0.5
Date Analyzed:	11/23/21	Data File:	112309.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	44	25	160

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01
Aroclor 1232	<0.01
Aroclor 1016	<0.01
Aroclor 1242	<0.01
Aroclor 1248	<0.01
Aroclor 1254	<0.01
Aroclor 1260	<0.01
Aroclor 1262	<0.01
Aroclor 1268	<0.01

Date of Report: 12/02/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390
Date Extracted: 11/23/21
Date Analyzed: 11/23/21

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
SW-DISCH-211118 111390-01	8.0
Method Blank	<5

Date of Report: 12/02/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

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

Laboratory Code: 111428-01 (Duplicate)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	96	69-134

Date of Report: 12/02/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

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	116	116	63-142	0

Date of Report: 12/02/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 111404-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	<5	96	98	70-130	2
Lead	ug/L (ppb)	10	<1	95	98	70-130	3
Nickel	ug/L (ppb)	20	<1	96	98	70-130	2
Zinc	ug/L (ppb)	50	24.8	89	93	70-130	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	106	85-115
Lead	ug/L (ppb)	10	98	85-115
Nickel	ug/L (ppb)	20	102	85-115
Zinc	ug/L (ppb)	50	99	85-115

Date of Report: 12/02/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

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

Laboratory Code: 111357-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	10	<0.35	104	50-150
Toluene	ug/L (ppb)	10	<1	103	50-150
Ethylbenzene	ug/L (ppb)	10	<1	106	50-150
m,p-Xylene	ug/L (ppb)	20	<2	109	50-150
o-Xylene	ug/L (ppb)	10	<1	111	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	10	96	98	70-130	2
Toluene	ug/L (ppb)	10	96	99	70-130	3
Ethylbenzene	ug/L (ppb)	10	95	98	70-130	3
m,p-Xylene	ug/L (ppb)	20	97	101	70-130	4
o-Xylene	ug/L (ppb)	10	98	101	70-130	3

Date of Report: 12/02/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

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

Laboratory Code: Laboratory Control Sample 1/0.25

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	ug/L (ppb)	1.3	9 vo	9 vo	10-86	0
Bis(2-chloroethyl) ether	ug/L (ppb)	1.3	85	84	60-88	1
2-Chlorophenol	ug/L (ppb)	1.3	54	53	10-89	2
1,3-Dichlorobenzene	ug/L (ppb)	1.3	74	72	48-91	3
1,4-Dichlorobenzene	ug/L (ppb)	1.3	73	71	48-91	3
1,2-Dichlorobenzene	ug/L (ppb)	1.3	74	72	52-92	3
Benzyl alcohol	ug/L (ppb)	3.8	29	30	10-72	3
2,2'-Oxybis(1-chloropropane)	ug/L (ppb)	1.3	81	81	59-86	0
2-Methylphenol	ug/L (ppb)	1.3	37	37	10-75	0
Hexachloroethane	ug/L (ppb)	1.3	73	74	47-92	1
N-Nitroso-di-n-propylamine	ug/L (ppb)	1.3	89	90	70-130	1
3-Methylphenol + 4-Methylphenol	ug/L (ppb)	1.3	27	28	10-66	4
Nitrobenzene	ug/L (ppb)	1.3	90	78	60-90	14
Isophorone	ug/L (ppb)	1.3	95	95	70-130	0
2-Nitrophenol	ug/L (ppb)	1.3	84	84	27-104	0
2,4-Dimethylphenol	ug/L (ppb)	1.3	66	71	10-84	7
Benzoic acid	ug/L (ppb)	10	4 vo	4 vo	10-102	0
Bis(2-chloroethoxy)methane	ug/L (ppb)	1.3	94	96	55-103	2
2,4-Dichlorophenol	ug/L (ppb)	1.3	82	83	23-103	1
1,2,4-Trichlorobenzene	ug/L (ppb)	1.3	78	79	56-93	1
Naphthalene	ug/L (ppb)	1.3	78	78	62-90	0
Hexachlorobutadiene	ug/L (ppb)	1.3	75	76	48-85	1
4-Chloroaniline	ug/L (ppb)	3.8	68	71	35-108	4
4-Chloro-3-methylphenol	ug/L (ppb)	1.3	66	69	18-109	4
2-Methylnaphthalene	ug/L (ppb)	1.3	79	78	64-93	1
1-Methylnaphthalene	ug/L (ppb)	1.3	78	76	64-93	3
Hexachlorocyclopentadiene	ug/L (ppb)	1.3	74	82	49-112	10
2,4,6-Trichlorophenol	ug/L (ppb)	1.3	91	93	16-112	2
2,4,5-Trichlorophenol	ug/L (ppb)	1.3	89	92	26-113	3
2-Chloronaphthalene	ug/L (ppb)	1.3	88	89	67-97	1
2-Nitroaniline	ug/L (ppb)	3.8	77	80	31-168	4
Dimethyl phthalate	ug/L (ppb)	1.3	96	98	70-130	2
Acenaphthylene	ug/L (ppb)	1.3	92	92	70-130	0
2,6-Dinitrotoluene	ug/L (ppb)	1.3	91	98	70-130	7
3-Nitroaniline	ug/L (ppb)	3.8	75	83	33-120	10
Acenaphthene	ug/L (ppb)	1.3	86	88	70-130	2
2,4-Dinitrophenol	ug/L (ppb)	2.5	71	60	10-120	17
Dibenzofuran	ug/L (ppb)	1.3	81	93	67-107	14
2,4-Dinitrotoluene	ug/L (ppb)	1.3	77	82	53-132	6
4-Nitrophenol	ug/L (ppb)	2.5	14	14	10-89	0
Diethyl phthalate	ug/L (ppb)	1.3	89	93	70-130	4
Fluorene	ug/L (ppb)	1.3	89	90	70-130	1
4-Chlorophenyl phenyl ether	ug/L (ppb)	1.3	87	90	70-130	3
N-Nitrosodiphenylamine	ug/L (ppb)	1.3	91	95	70-130	4
4-Nitroaniline	ug/L (ppb)	3.8	68	73	32-122	7
4,6-Dinitro-2-methylphenol	ug/L (ppb)	1.3	88	77	10-139	13
4-Bromophenyl phenyl ether	ug/L (ppb)	1.3	92	93	70-130	1
Hexachlorobenzene	ug/L (ppb)	1.3	73	75	65-95	3
Pentachlorophenol	ug/L (ppb)	1.3	78	70	10-129	11
Phenanthrene	ug/L (ppb)	1.3	91	92	70-130	1
Anthracene	ug/L (ppb)	1.3	91	91	70-130	0
Carbazole	ug/L (ppb)	1.3	97	98	70-130	1
Di-n-butyl phthalate	ug/L (ppb)	1.3	107	107	28-147	0
Fluoranthene	ug/L (ppb)	1.3	93	96	70-130	3
Pyrene	ug/L (ppb)	1.3	98	96	70-130	2
Benzyl butyl phthalate	ug/L (ppb)	1.3	78	81	34-142	4
Benz(a)anthracene	ug/L (ppb)	1.3	93	94	70-130	1
Chrysene	ug/L (ppb)	1.3	94	95	70-130	1
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	1.3	88	86	53-133	2
Di-n-octyl phthalate	ug/L (ppb)	1.3	95	99	49-119	4
Benzo(a)pyrene	ug/L (ppb)	1.3	97	99	70-130	2
Benzo(b)fluoranthene	ug/L (ppb)	1.3	97	101	70-130	4
Benzo(k)fluoranthene	ug/L (ppb)	1.3	96	96	70-130	0
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1.3	96	95	70-130	1
Dibenz(a,h)anthracene	ug/L (ppb)	1.3	95	94	70-130	1
Benzo(g,h,i)perylene	ug/L (ppb)	1.3	93	93	70-130	0

Date of Report: 12/02/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

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

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.13	64	61	25-165	5
Aroclor 1260	ug/L (ppb)	0.13	71	71	25-163	0

Date of Report: 12/02/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	120	108	35-146	11

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.

SAMPLE CHAIN OF CUSTODY

ME 11-19-21 · Page # 1 of 1 · VW1 / E03

111390

Report To: Lynn Green (struck through)

Company: Evren NW

Address: PO 14488

City, State, ZIP: Portland, OR

Phone: 503-452-7669 Email: lynnG@evren-nw.com

SAMPLERS (signature): [signature]

PROJECT NAME: ~~1260-19002-03~~ 19001-03 per EB 11/18/21 ME

PO #

REMARKS: See Attached form

INVOICE TO

Project specific RLs? - Yes / No

TURNAROUND TIME
- [x] Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

AI2

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

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082*	TSS	Total Cu, Pb, Ni, Zn	sVOCs*		Notes
~~BW01-SW-211118~~ SW-DISCH-211118	01 A-M	11-18-21	15:20	water	13	X	(X)	X			X	X	X	X	X		(X) per EB 11/24/21 ME

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Bailey Fowler	ENW	11-18-21	17:00
Received by: [signature]	James Bruya	F&B	11/19	1234
Relinquished by:				
Received by:			Samples received at 2 °C	

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

TWN

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 15, 2021

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

Dear Mr Green:

Included are the additional results from the testing of material submitted on November 19, 2021 from the 1260-19001-03, F&BI 111390 project. There are 23 pages included in this report.

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
ENW1215R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 19, 2021 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 111390 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
111390 -01	SW-DISCH-211118

Several compounds in the 8270E laboratory control sample and laboratory control sample duplicate failed the acceptance criteria. In addition, the 8270E calibration standard did not pass the acceptance criteria for 2,4-dinitrophenol. The data were flagged accordingly.

Phenanthrene was detected in the 8270E method blank at a level greater than one tenth the concentration detected in the sample. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390
Date Extracted: 11/24/21
Date Analyzed: 11/29/21

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)
SW-DISCH-211118 111390-01	<100	91
Method Blank 01-2642 MB	<100	94

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390
Date Extracted: 11/22/21
Date Analyzed: 11/22/21

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)
SW-DISCH-211118 111390-01	170 x	160 x	120
Method Blank 01-2738 MB	<25 j	<50 j	122

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390
Date Extracted: 11/22/21
Date Analyzed: 12/03/21

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)
SW-DISCH-211118 111390-01	<50	57 j	93
Method Blank 01-2738 MB	<50	<52 j	119

Analysis For Total Metals By EPA Method 200.8

Client ID:	SW-DISCH-211118	Client:	Evren Northwest
Date Received:	11/19/21	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/22/21	Lab ID:	111390-01
Date Analyzed:	11/22/21	Data File:	111390-01.135
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	3.93
Lead	4.10
Nickel	1.18

Analysis For Total Metals By EPA Method 200.8

Client ID:	SW-DISCH-211118	Client:	Evren Northwest
Date Received:	11/19/21	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/22/21	Lab ID:	111390-01 x100
Date Analyzed:	11/23/21	Data File:	111390-01 x100.155
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	2,970

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/22/21	Lab ID:	I1-770 mb
Date Analyzed:	11/22/21	Data File:	I1-770 mb.107
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	<0.4
Lead	<0.15
Nickel	<1
Zinc	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	SW-DISCH-211118	Client:	Evren Northwest
Date Received:	11/19/21	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/22/21	Lab ID:	111390-01
Date Analyzed:	11/22/21	Data File:	112239.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	98	87	115
4-Bromofluorobenzene	96	92	112

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/22/21	Lab ID:	01-2714 mb
Date Analyzed:	11/22/21	Data File:	112207.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	98	87	115
4-Bromofluorobenzene	100	92	112

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SW-DISCH-211118	Client:	Evren Northwest
Date Received:	11/19/21	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/23/21	Lab ID:	111390-01 1/0.25
Date Analyzed:	11/23/21	Data File:	112310.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	12	11	65
Phenol-d6	7 ip	11	65
Nitrobenzene-d5	84	50	150
2-Fluorobiphenyl	82	44	108
2,4,6-Tribromophenol	91	10	140
Terphenyl-d14	96	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.05
2-Methylnaphthalene	<0.05
1-Methylnaphthalene	<0.05
Acenaphthylene	<0.005
Acenaphthene	<0.005
Fluorene	<0.005
Phenanthrene	0.013 fb
Anthracene	<0.005
Fluoranthene	0.012
Pyrene	0.020
Benz(a)anthracene	0.0060
Chrysene	0.0073
Benzo(a)pyrene	0.0073
Benzo(b)fluoranthene	0.011
Benzo(k)fluoranthene	<0.005
Indeno(1,2,3-cd)pyrene	0.0065
Dibenz(a,h)anthracene	<0.005
Benzo(g,h,i)perylene	<0.01
Dimethyl phthalate	0.87
Diethyl phthalate	<0.5
Di-n-butyl phthalate	<0.5
Benzyl butyl phthalate	<0.5
Bis(2-ethylhexyl) phthalate	<0.8
Di-n-octyl phthalate	<0.5

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/23/21	Lab ID:	01-2740 mb 1/0.25
Date Analyzed:	11/23/21	Data File:	112308.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	13	11	65
Phenol-d6	8 vo	11	65
Nitrobenzene-d5	77	50	150
2-Fluorobiphenyl	78	44	108
2,4,6-Tribromophenol	81	10	140
Terphenyl-d14	85	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.05
2-Methylnaphthalene	<0.05
1-Methylnaphthalene	<0.05
Acenaphthylene	<0.005
Acenaphthene	<0.005
Fluorene	<0.005
Phenanthrene	0.004 lc
Anthracene	<0.005
Fluoranthene	<0.005
Pyrene	<0.005
Benz(a)anthracene	<0.005
Chrysene	<0.005
Benzo(a)pyrene	<0.005
Benzo(b)fluoranthene	<0.005
Benzo(k)fluoranthene	<0.005
Indeno(1,2,3-cd)pyrene	<0.005
Dibenz(a,h)anthracene	<0.005
Benzo(g,h,i)perylene	<0.01
Dimethyl phthalate	<0.5
Diethyl phthalate	<0.5
Di-n-butyl phthalate	<0.5
Benzyl butyl phthalate	<0.5
Bis(2-ethylhexyl) phthalate	<0.8
Di-n-octyl phthalate	<0.5

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	SW-DISCH-211118	Client:	Evren Northwest
Date Received:	11/19/21	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/23/21	Lab ID:	111390-01 1/0.5
Date Analyzed:	11/23/21	Data File:	112310.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	21 ip	25	160

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01
Aroclor 1232	<0.01
Aroclor 1016	<0.01
Aroclor 1242	<0.01
Aroclor 1248	<0.01
Aroclor 1254	<0.01
Aroclor 1260	<0.01
Aroclor 1262	<0.01
Aroclor 1268	<0.01

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 111390
Date Extracted:	11/23/21	Lab ID:	01-2745 mb 1/0.5
Date Analyzed:	11/23/21	Data File:	112309.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	44	25	160

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01
Aroclor 1232	<0.01
Aroclor 1016	<0.01
Aroclor 1242	<0.01
Aroclor 1248	<0.01
Aroclor 1254	<0.01
Aroclor 1260	<0.01
Aroclor 1262	<0.01
Aroclor 1268	<0.01

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390
Date Extracted: 11/23/21
Date Analyzed: 11/23/21

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
SW-DISCH-211118 111390-01	8.0
Method Blank	<5

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

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

Laboratory Code: 111428-01 (Duplicate)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	96	69-134

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

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	108	120	63-142	11

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 111404-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	<5	96	98	70-130	2
Lead	ug/L (ppb)	10	<1	95	98	70-130	3
Nickel	ug/L (ppb)	20	<1	96	98	70-130	2
Zinc	ug/L (ppb)	50	24.8	89	93	70-130	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	106	85-115
Lead	ug/L (ppb)	10	98	85-115
Nickel	ug/L (ppb)	20	102	85-115
Zinc	ug/L (ppb)	50	99	85-115

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

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

Laboratory Code: 111357-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	10	<0.35	104	50-150
Toluene	ug/L (ppb)	10	<1	103	50-150
Ethylbenzene	ug/L (ppb)	10	<1	106	50-150
m,p-Xylene	ug/L (ppb)	20	<2	109	50-150
o-Xylene	ug/L (ppb)	10	<1	111	50-150

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	10	96	98	70-130	2
Toluene	ug/L (ppb)	10	96	99	70-130	3
Ethylbenzene	ug/L (ppb)	10	95	98	70-130	3
m,p-Xylene	ug/L (ppb)	20	97	101	70-130	4
o-Xylene	ug/L (ppb)	10	98	101	70-130	3

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

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

Laboratory Code: Laboratory Control Sample 1/0.25

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1.3	78	78	62-90	0
2-Methylnaphthalene	ug/L (ppb)	1.3	79	78	64-93	1
1-Methylnaphthalene	ug/L (ppb)	1.3	78	76	64-93	3
Dimethyl phthalate	ug/L (ppb)	1.3	96	98	70-130	2
Acenaphthylene	ug/L (ppb)	1.3	92	92	70-130	0
Acenaphthene	ug/L (ppb)	1.3	86	88	70-130	2
Diethyl phthalate	ug/L (ppb)	1.3	89	93	70-130	4
Fluorene	ug/L (ppb)	1.3	89	90	70-130	1
Phenanthrene	ug/L (ppb)	1.3	91	92	70-130	1
Anthracene	ug/L (ppb)	1.3	91	91	70-130	0
Di-n-butyl phthalate	ug/L (ppb)	1.3	107	107	28-147	0
Fluoranthene	ug/L (ppb)	1.3	93	96	70-130	3
Pyrene	ug/L (ppb)	1.3	98	96	70-130	2
Benzyl butyl phthalate	ug/L (ppb)	1.3	78	81	34-142	4
Benz(a)anthracene	ug/L (ppb)	1.3	93	94	70-130	1
Chrysene	ug/L (ppb)	1.3	94	95	70-130	1
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	1.3	88	86	53-133	2
Di-n-octyl phthalate	ug/L (ppb)	1.3	95	99	49-119	4
Benzo(a)pyrene	ug/L (ppb)	1.3	97	99	70-130	2
Benzo(b)fluoranthene	ug/L (ppb)	1.3	97	101	70-130	4
Benzo(k)fluoranthene	ug/L (ppb)	1.3	96	96	70-130	0
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1.3	96	95	70-130	1
Dibenz(a,h)anthracene	ug/L (ppb)	1.3	95	94	70-130	1
Benzo(g,h,i)perylene	ug/L (ppb)	1.3	93	93	70-130	0

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

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

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.13	64	61	25-165	5
Aroclor 1260	ug/L (ppb)	0.13	71	71	25-163	0

Date of Report: 12/15/21
Date Received: 11/19/21
Project: 1260-19001-03, F&BI 111390

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	120	108	35-146	11

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.

SAMPLE CHAIN OF CUSTODY

ME 11-19-21

111390

Page # 1 of 1 VW1 / E03

Report To Lynn Green

Company Evren NW

Address PO 14488

City, State, ZIP Portland, OR

Phone 503-452-7669 Email lynnG@evren-nw.com

SAMPLERS (signature) [signature]

PROJECT NAME ~~1260-19002-03~~ 19001-03 per EB 11/18/21 ME

PO #

REMARKS See Attached form

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME AI2
- [x] Standard turnaround
- [ ] RUSH
Rush charges authorized by:

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

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082*	TSS	Total Cu, Pb, Ni, Zn	sVOCs*		Notes
SW-DISCH-211118	01 A-M	11-18-21	15:20	water	13	X	(X)	X			X	X	X	X	X		(X) per EB 11/24/21 ME

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

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Bailey Fowler	ENW	11-18-21	17:00
Received by:	[signature]	James Bruya	F&B	11/19	1234
Relinquished by:					
Received by:			Samples received at 2 °C		

TWM

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 8, 2021

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 November 26, 2021 from the 1260-19001-03, F&BI 111503 project. There are 22 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
ENW1208R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 26, 2021 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 111503 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
111503 -01	SW-Disch-211123
111503 -02	Trip Blank

Dibenz(a,h)anthracene was detected in the 8270 method blank at a level greater than one tenth the concentration detected in the sample. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 12/08/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503
Date Extracted: 12/02/21
Date Analyzed: 12/02/21

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)
SW-Disch-211123 111503-01	<100	90
Trip Blank 111503-02	<100	91
Method Blank 01-2648 MB	<100	94

Date of Report: 12/08/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503
Date Extracted: 11/29/21
Date Analyzed: 11/29/21

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)
SW-Disch-211123 111503-01 1/0.5	110 x	170	131
Method Blank 01-2753 MB 1/0.5	<25	<125	116

Analysis For Total Metals By EPA Method 200.8

Client ID:	SW-Disch-211123	Client:	Evren Northwest
Date Received:	11/26/21	Project:	1260-19001-03, F&BI 111503
Date Extracted:	12/02/21	Lab ID:	111503-01
Date Analyzed:	12/03/21	Data File:	111503-01.256
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	2.34
Lead	1.10
Nickel	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	SW-Disch-211123	Client:	Evren Northwest
Date Received:	11/26/21	Project:	1260-19001-03, F&BI 111503
Date Extracted:	12/02/21	Lab ID:	111503-01 x100
Date Analyzed:	12/04/21	Data File:	111503-01 x100.285
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	1,880

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1260-19001-03, F&BI 111503
Date Extracted:	12/02/21	Lab ID:	I1-801 mb
Date Analyzed:	12/02/21	Data File:	I1-801 mb.184
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	<0.6
Lead	<0.15 j
Nickel	<1
Zinc	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	SW-Disch-211123	Client:	Evren Northwest
Date Received:	11/26/21	Project:	1260-19001-03, F&BI 111503
Date Extracted:	11/30/21	Lab ID:	111503-01
Date Analyzed:	11/30/21	Data File:	113034.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	78	126
Toluene-d8	100	87	115
4-Bromofluorobenzene	96	92	112

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Trip Blank	Client:	Evren Northwest
Date Received:	11/26/21	Project:	1260-19001-03, F&BI 111503
Date Extracted:	11/30/21	Lab ID:	111503-02
Date Analyzed:	11/30/21	Data File:	113033.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	78	126
Toluene-d8	99	87	115
4-Bromofluorobenzene	95	92	112

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 111503
Date Extracted:	11/30/21	Lab ID:	01-2729 mb
Date Analyzed:	11/30/21	Data File:	113007.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	78	126
Toluene-d8	103	87	115
4-Bromofluorobenzene	99	92	112

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	SW-Disch-211123	Client:	Evren Northwest
Date Received:	11/26/21	Project:	1260-19001-03, F&BI 111503
Date Extracted:	11/29/21	Lab ID:	111503-01 1/0.5
Date Analyzed:	11/29/21	Data File:	112911.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	16	11	65
Phenol-d6	10 ip	11	65
Nitrobenzene-d5	60	50	150
2-Fluorobiphenyl	71	44	108
2,4,6-Tribromophenol	99	10	140
Terphenyl-d14	108	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01j
Acenaphthylene	<0.004 j
Acenaphthene	<0.004 j
Fluorene	<0.004 j
Phenanthrene	0.020
Anthracene	<0.004 j
Fluoranthene	0.012
Pyrene	0.027
Benz(a)anthracene	<0.01
Chrysene	0.017
Benzo(a)pyrene	0.010
Benzo(b)fluoranthene	0.012
Benzo(k)fluoranthene	<0.004 j
Indeno(1,2,3-cd)pyrene	0.008 j
Dibenz(a,h)anthracene	0.004 j fb
Benzo(g,h,i)perylene	0.015
Dimethyl phthalate	<1
Diethyl phthalate	<1
Di-n-butyl phthalate	<1
Benzyl butyl phthalate	<1
Bis(2-ethylhexyl) phthalate	<1.6
Di-n-octyl phthalate	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 111503
Date Extracted:	11/29/21	Lab ID:	01-2752 mb2 1/0.5
Date Analyzed:	11/29/21	Data File:	112910.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	23	11	65
Phenol-d6	15	11	65
Nitrobenzene-d5	79	50	150
2-Fluorobiphenyl	80	44	108
2,4,6-Tribromophenol	72	10	140
Terphenyl-d14	94	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01j
Acenaphthylene	<0.004 j
Acenaphthene	<0.004 j
Fluorene	<0.004 j
Phenanthrene	<0.01
Anthracene	<0.004 j
Fluoranthene	<0.004 j
Pyrene	<0.005 j
Benz(a)anthracene	<0.004 j
Chrysene	<0.004 j
Benzo(a)pyrene	<0.004 j
Benzo(b)fluoranthene	<0.004 j
Benzo(k)fluoranthene	<0.004 j
Indeno(1,2,3-cd)pyrene	<0.004 j
Dibenz(a,h)anthracene	<0.004 j
Benzo(g,h,i)perylene	<0.004 j
Dimethyl phthalate	<1
Diethyl phthalate	<1
Di-n-butyl phthalate	<1
Benzyl butyl phthalate	<1
Bis(2-ethylhexyl) phthalate	<1.6
Di-n-octyl phthalate	<1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	SW-Disch-211123	Client:	Evren Northwest
Date Received:	11/26/21	Project:	1260-19001-03, F&BI 111503
Date Extracted:	12/01/21	Lab ID:	111503-01 1/0.5
Date Analyzed:	12/02/21	Data File:	120210.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	38	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01
Aroclor 1232	<0.01
Aroclor 1016	<0.01
Aroclor 1242	<0.01
Aroclor 1248	<0.01
Aroclor 1254	<0.01
Aroclor 1260	<0.01
Aroclor 1262	<0.01
Aroclor 1268	<0.01

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 111503
Date Extracted:	12/01/21	Lab ID:	01-2786 mb 1/0.25
Date Analyzed:	12/02/21	Data File:	120206.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	37	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.005
Aroclor 1232	<0.005
Aroclor 1016	<0.005
Aroclor 1242	<0.005
Aroclor 1248	<0.005
Aroclor 1254	<0.005
Aroclor 1260	<0.005
Aroclor 1262	<0.005
Aroclor 1268	<0.005

Date of Report: 12/08/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503
Date Extracted: 11/30/21
Date Analyzed: 11/30/21

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
SW-Disch-211123 111503-01	9.6
Method Blank	<5

Date of Report: 12/08/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503

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

Laboratory Code: 112013-01 (Duplicate)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	97	69-134

Date of Report: 12/08/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503

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	100	104	63-142	4

Date of Report: 12/08/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 111514-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	<5	89	89	70-130	0
Lead	ug/L (ppb)	10	<1	87	86	70-130	1
Nickel	ug/L (ppb)	20	3.15	93	93	70-130	0
Zinc	ug/L (ppb)	50	<5	89	88	70-130	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	98	85-115
Lead	ug/L (ppb)	10	94	85-115
Nickel	ug/L (ppb)	20	101	85-115
Zinc	ug/L (ppb)	50	99	85-115

Date of Report: 12/08/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503

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

Laboratory Code: 111514-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	10	<0.35	100	50-150
Toluene	ug/L (ppb)	10	<1	97	50-150
Ethylbenzene	ug/L (ppb)	10	<1	102	50-150
m,p-Xylene	ug/L (ppb)	20	<2	108	50-150
o-Xylene	ug/L (ppb)	10	<1	104	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	10	96	97	70-130	1
Toluene	ug/L (ppb)	10	97	95	70-130	2
Ethylbenzene	ug/L (ppb)	10	98	99	70-130	1
m,p-Xylene	ug/L (ppb)	20	104	105	70-130	1
o-Xylene	ug/L (ppb)	10	102	106	70-130	4

Date of Report: 12/08/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	78	80	62-90	3
2-Methylnaphthalene	ug/L (ppb)	5	80	83	64-93	4
1-Methylnaphthalene	ug/L (ppb)	5	78	81	64-93	4
Dimethyl phthalate	ug/L (ppb)	5	91	95	70-130	4
Acenaphthylene	ug/L (ppb)	5	89	92	70-130	3
Acenaphthene	ug/L (ppb)	5	84	86	70-130	2
Diethyl phthalate	ug/L (ppb)	5	90	94	70-130	4
Fluorene	ug/L (ppb)	5	88	90	70-130	2
Phenanthrene	ug/L (ppb)	5	91	93	70-130	2
Anthracene	ug/L (ppb)	5	90	93	70-130	3
Di-n-butyl phthalate	ug/L (ppb)	5	95	105	28-147	10
Fluoranthene	ug/L (ppb)	5	93	98	70-130	5
Pyrene	ug/L (ppb)	5	102	102	70-130	0
Benzyl butyl phthalate	ug/L (ppb)	5	88	91	34-142	3
Benz(a)anthracene	ug/L (ppb)	5	95	96	70-130	1
Chrysene	ug/L (ppb)	5	97	99	70-130	2
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	5	83	90	53-133	8
Di-n-octyl phthalate	ug/L (ppb)	5	90	97	49-119	7
Benzo(a)pyrene	ug/L (ppb)	5	101	102	70-130	1
Benzo(b)fluoranthene	ug/L (ppb)	5	101	102	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	5	98	99	70-130	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	99	104	70-130	5
Dibenz(a,h)anthracene	ug/L (ppb)	5	96	100	70-130	4
Benzo(g,h,i)perylene	ug/L (ppb)	5	95	98	70-130	3

Date of Report: 12/08/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503

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

Laboratory Code: Laboratory Control Sample 1/0.25

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.063	55	60	25-111	9
Aroclor 1260	ug/L (ppb)	0.063	67	72	23-123	7

Date of Report: 12/08/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	86	82	35-146	4

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.

111503

SAMPLE CHAIN OF CUSTODY

ME 11/26/21 VW1/AI3/EW3

Page # 1 of 1

Send Report To Lynn Green
Company Evren NW
Address PO 14488
City, State, ZIP Portland, OR 97293
Phone # 503-482-7669 Fax #

SAMPLERS (signature) Bailey Farmer

PROJECT NAME/NO. 1260-19001-03

PO #

REMARKS
* See Attached form

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	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	TSS	PCBs	PAH	Total metals Cu Pb Ni Zn	Notes
SW-DISCH-211123	01 A-H	11-23-21	8:48	water	8	X	X	X		X		X	X	X	X	
TRIP BLANK	02 AB	—	—	WATER	2		X	X								

Samples received at 4 °C

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

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Farmer	Bailey Farmer	EMI	11-24-21	17:00
Received by:		Michael Erdahl	F&B	11/26/21	1130
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 23, 2021

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

Dear Mr Green:

Included are the additional results from the testing of material submitted on November 26, 2021 from the 1260-19001-03, F&BI 111503 project. There are 4 pages included in this report.

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
ENW1223R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 26, 2021 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 111503 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
111503 -01	SW-Disch-211123
111503 -02	Trip Blank

All quality control requirements were acceptable.

Date of Report: 12/23/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503
Date Extracted: 11/29/21
Date Analyzed: 12/21/21

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND RESIDUAL RANGE 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})	Residual Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
SW-Disch-211123 111503-01 1/0.5	26 x	<120	103
Method Blank 01-2753 MB2	<25	<120	118

Date of Report: 12/23/21
Date Received: 11/26/21
Project: 1260-19001-03, F&BI 111503

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	104	112	63-142	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.

111503

SAMPLE CHAIN OF CUSTODY ME 11/26/21 VW1/AI3/E03

Send Report To Lynn Green
Company Evren NW
Address PO 14488
City, State, ZIP Portland, OR 97293
Phone # 503-482-7669 Fax #

SAMPLERS (signature) Bailey R. [signature]
PROJECT NAME/NO. 1260-19001-03
PO #
REMARKS
*See Attached form

Page # 1 of 1
TURNAROUND TIME
☑ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

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

ANALYSES REQUESTED

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	TSS	PCBs	PAH	Total metals Cu, Pb, Ni, Zn	Dy w/SG	Notes
SW-Disch-211123	01 A-H	11-23-21	8:48	water	8	X	X	X		X		X	X	X	✓	●	● Dy w/SG
TRIP BLANK	02 AB	—	—	Water	2		X	X									per LG 12/15/21 ME

Samples received at 4 °C

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Bailey Fowler	EVN	11-24-21	17:00
Received by: [signature]	Michael Erdahl	F&Bi	11/26/21	11:30
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 8, 2022

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

Dear Mr Green:

Included are the results from the testing of material submitted on May 19, 2022 from the 1260-19001-03, F&BI 205325 project. There are 23 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
ENW0608R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 19, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 205325 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
205325 -01	DW01-220518

The 8270E laboratory control sample and laboratory control sample duplicate failed the relative percent difference for several compounds. The analytes were not detected therefore the data were acceptable.

Benzoic acid in the 8270E laboratory control sample and laboratory control sample duplicate failed the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325
Date Extracted: 05/20/22
Date Analyzed: 05/20/22

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
DW01-220518 205325-01	<100	87
Method Blank 02-1125 MB	<100	91

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325
Date Extracted: 05/20/22
Date Analyzed: 06/03/22

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)
DW01-220518 205325-01	<50	<250	108
Method Blank 02-1253 MB2	<50	<250	114

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325
Date Extracted: 05/20/22
Date Analyzed: 05/20/22

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)
DW01-220518 205325-01 1/0.2	160 x	<250	139
Method Blank 02-1253 MB2	<50	<250	133

Analysis For Total Metals By EPA Method 200.8

Client ID:	DW01-220518	Client:	Evren Northwest
Date Received:	05/19/22	Project:	1260-19001-03, F&BI 205325
Date Extracted:	05/25/22	Lab ID:	205325-01
Date Analyzed:	05/25/22	Data File:	205325-01.064
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	3.96
Lead	1.97
Nickel	1.31

Analysis For Total Metals By EPA Method 200.8

Client ID:	DW01-220518	Client:	Evren Northwest
Date Received:	05/19/22	Project:	1260-19001-03, F&BI 205325
Date Extracted:	05/25/22	Lab ID:	205325-01 x100
Date Analyzed:	05/26/22	Data File:	205325-01 x100.037
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	2,850

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1260-19001-03, F&BI 205325
Date Extracted:	05/25/22	Lab ID:	I2-376 mb
Date Analyzed:	05/25/22	Data File:	I2-376 mb.047
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	<1
Lead	<1
Nickel	<1
Zinc	<5

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	DW01-220518	Client:	Evren Northwest
Date Received:	05/19/22	Project:	1260-19001-03, F&BI 205325
Date Extracted:	05/28/30	Lab ID:	205325-01
Date Analyzed:	05/29/22	Data File:	052909.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 205325
Date Extracted:	05/28/22	Lab ID:	02-1296 mb
Date Analyzed:	05/29/22	Data File:	052844.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	113	84	115
4-Bromofluorobenzene	99	72	130

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	DW01-220518	Client:	Evren Northwest
Date Received:	05/19/22	Project:	1260-19001-03, F&BI 205325
Date Extracted:	05/23/22	Lab ID:	205325-01 1/0.25
Date Analyzed:	05/24/22	Data File:	052412.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	8 ip	10	60
Phenol-d6	7 ip	10	49
Nitrobenzene-d5	40	15	144
2-Fluorobiphenyl	45	25	128
2,4,6-Tribromophenol	73	10	142
Terphenyl-d14	62	41	138

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.5	2,6-Dinitrotoluene	<0.25
Bis(2-chloroethyl) ether	<0.05	3-Nitroaniline	<5
2-Chlorophenol	<0.5	Acenaphthene	<0.005
1,3-Dichlorobenzene	<0.05	2,4-Dinitrophenol	<1.5
1,4-Dichlorobenzene	<0.05	Dibenzofuran	<0.05
1,2-Dichlorobenzene	<0.05	2,4-Dinitrotoluene	<0.25
Benzyl alcohol	<0.5	4-Nitrophenol	<1.5
2,2'-Oxybis(1-chloropropane)	<0.05	Diethyl phthalate	<0.5
2-Methylphenol	<0.5	Fluorene	<0.005
Hexachloroethane	<0.05	4-Chlorophenyl phenyl ether	<0.05
N-Nitroso-di-n-propylamine	<0.05	N-Nitrosodiphenylamine	<0.05
3-Methylphenol + 4-Methylphenol	<1	4-Nitroaniline	<5
Nitrobenzene	<0.05	4,6-Dinitro-2-methylphenol	<1.5
Isophorone	<0.05	4-Bromophenyl phenyl ether	<0.05
2-Nitrophenol	<0.5	Hexachlorobenzene	<0.05
2,4-Dimethylphenol	<0.5	Pentachlorophenol	<0.25
Benzoic acid	<2.5	Phenanthrene	0.0073
Bis(2-chloroethoxy)methane	<0.05	Anthracene	<0.005
2,4-Dichlorophenol	<0.5	Carbazole	<0.05
1,2,4-Trichlorobenzene	<0.05	Di-n-butyl phthalate	<0.5
Naphthalene	<0.05	Fluoranthene	0.0061
Hexachlorobutadiene	<0.05	Pyrene	0.0071
4-Chloroaniline	<5	Benzyl butyl phthalate	<0.5
4-Chloro-3-methylphenol	<0.5	Benz(a)anthracene	<0.005
2-Methylnaphthalene	<0.05	Chrysene	<0.005
1-Methylnaphthalene	<0.05	Bis(2-ethylhexyl) phthalate	<0.8
Hexachlorocyclopentadiene	<0.15	Di-n-octyl phthalate	<0.5
2,4,6-Trichlorophenol	<0.5	Benzo(a)pyrene	<0.005
2,4,5-Trichlorophenol	<0.5	Benzo(b)fluoranthene	<0.005
2-Chloronaphthalene	<0.05	Benzo(k)fluoranthene	<0.005
2-Nitroaniline	<0.25	Indeno(1,2,3-cd)pyrene	<0.005
Dimethyl phthalate	<0.5	Dibenz(a,h)anthracene	<0.005
Acenaphthylene	<0.005	Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 205325
Date Extracted:	05/23/22	Lab ID:	02-1261 mb 1/0.25
Date Analyzed:	05/24/22	Data File:	052411.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	15	10	60
Phenol-d6	13	10	49
Nitrobenzene-d5	72	15	144
2-Fluorobiphenyl	73	25	128
2,4,6-Tribromophenol	94	10	142
Terphenyl-d14	85	41	138

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.5	2,6-Dinitrotoluene	<0.25
Bis(2-chloroethyl) ether	<0.05	3-Nitroaniline	<5
2-Chlorophenol	<0.5	Acenaphthene	<0.005
1,3-Dichlorobenzene	<0.05	2,4-Dinitrophenol	<1.5
1,4-Dichlorobenzene	<0.05	Dibenzofuran	<0.05
1,2-Dichlorobenzene	<0.05	2,4-Dinitrotoluene	<0.25
Benzyl alcohol	<0.5	4-Nitrophenol	<1.5
2,2'-Oxybis(1-chloropropane)	<0.05	Diethyl phthalate	<0.5
2-Methylphenol	<0.5	Fluorene	<0.005
Hexachloroethane	<0.05	4-Chlorophenyl phenyl ether	<0.05
N-Nitroso-di-n-propylamine	<0.05	N-Nitrosodiphenylamine	<0.05
3-Methylphenol + 4-Methylphenol	<1	4-Nitroaniline	<5
Nitrobenzene	<0.05	4,6-Dinitro-2-methylphenol	<1.5
Isophorone	<0.05	4-Bromophenyl phenyl ether	<0.05
2-Nitrophenol	<0.5	Hexachlorobenzene	<0.05
2,4-Dimethylphenol	<0.5	Pentachlorophenol	<0.25
Benzoic acid	<2.5	Phenanthrene	0.0052
Bis(2-chloroethoxy)methane	<0.05	Anthracene	<0.005
2,4-Dichlorophenol	<0.5	Carbazole	<0.05
1,2,4-Trichlorobenzene	<0.05	Di-n-butyl phthalate	<0.5
Naphthalene	<0.05	Fluoranthene	<0.005
Hexachlorobutadiene	<0.05	Pyrene	<0.005
4-Chloroaniline	<5	Benzyl butyl phthalate	<0.5
4-Chloro-3-methylphenol	<0.5	Benz(a)anthracene	<0.005
2-Methylnaphthalene	<0.05	Chrysene	<0.005
1-Methylnaphthalene	<0.05	Bis(2-ethylhexyl) phthalate	<0.8
Hexachlorocyclopentadiene	<0.15	Di-n-octyl phthalate	<0.5
2,4,6-Trichlorophenol	<0.5	Benzo(a)pyrene	<0.005
2,4,5-Trichlorophenol	<0.5	Benzo(b)fluoranthene	<0.005
2-Chloronaphthalene	<0.05	Benzo(k)fluoranthene	<0.005
2-Nitroaniline	<0.25	Indeno(1,2,3-cd)pyrene	<0.005
Dimethyl phthalate	<0.5	Dibenz(a,h)anthracene	<0.005
Acenaphthylene	<0.005	Benzo(g,h,i)perylene	<0.01

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DW01-220518	Client:	Evren Northwest
Date Received:	05/19/22	Project:	1260-19001-03, F&BI 205325
Date Extracted:	05/23/22	Lab ID:	205325-01 1/.05
Date Analyzed:	05/24/22	Data File:	052407.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	2 ip	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01
Aroclor 1232	<0.01
Aroclor 1016	<0.01
Aroclor 1242	<0.01
Aroclor 1248	<0.01
Aroclor 1254	<0.01
Aroclor 1260	<0.01
Aroclor 1262	<0.01
Aroclor 1268	<0.01

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 205325
Date Extracted:	05/23/22	Lab ID:	02-1262 mb 1/0.5
Date Analyzed:	05/24/22	Data File:	052404.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	18 vo	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.005 js
Aroclor 1232	<0.005 js
Aroclor 1016	<0.005 js
Aroclor 1242	<0.005 js
Aroclor 1248	<0.005 js
Aroclor 1254	<0.005 js
Aroclor 1260	<0.005 js
Aroclor 1262	<0.005 js
Aroclor 1268	<0.005 js

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325
Date Extracted: 05/23/22
Date Analyzed: 05/24/22

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
DW01-220518 205325-01	6.5
Method Blank	<5

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325

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

Laboratory Code: 205325-01 (Duplicate)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	116	69-134

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325

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	132	132	63-142	0

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325

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	140	140	63-142	0

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 205379-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	<10	94	96	70-130	2
Lead	ug/L (ppb)	10	<10	93	93	70-130	0
Nickel	ug/L (ppb)	20	<10	93	94	70-130	1
Zinc	ug/L (ppb)	50	<50	87	89	70-130	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	104	85-115
Lead	ug/L (ppb)	10	99	85-115
Nickel	ug/L (ppb)	20	102	85-115
Zinc	ug/L (ppb)	50	100	85-115

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325

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

Laboratory Code: 205325-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	10	<0.35	99	50-150
Toluene	ug/L (ppb)	10	<1	95	50-150
Ethylbenzene	ug/L (ppb)	10	<1	95	50-150
m,p-Xylene	ug/L (ppb)	20	<2	91	50-150
o-Xylene	ug/L (ppb)	10	<1	93	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	10	98	102	70-130	4
Toluene	ug/L (ppb)	10	96	98	70-130	2
Ethylbenzene	ug/L (ppb)	10	97	99	70-130	2
m,p-Xylene	ug/L (ppb)	20	96	98	70-130	2
o-Xylene	ug/L (ppb)	10	95	96	70-130	1

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325

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

Laboratory Code: Laboratory Control Sample 1/0.25

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	ug/L (ppb)	1.3	13	12	10-27	8
Bis(2-chloroethyl) ether	ug/L (ppb)	1.3	65	63	44-118	3
2-Chlorophenol	ug/L (ppb)	1.3	43	42	21-97	2
1,3-Dichlorobenzene	ug/L (ppb)	1.3	64	63	50-95	2
1,4-Dichlorobenzene	ug/L (ppb)	1.3	66	65	53-94	2
1,2-Dichlorobenzene	ug/L (ppb)	1.3	69	67	54-96	3
Benzyl alcohol	ug/L (ppb)	6.3	34	34	14-82	0
2,2'-Oxybis(1-chloropropane)	ug/L (ppb)	1.3	68	73	63-101	7
2-Methylphenol	ug/L (ppb)	1.3	33	32	19-74	3
Hexachloroethane	ug/L (ppb)	1.3	64	64	52-96	0
N-Nitroso-di-n-propylamine	ug/L (ppb)	1.3	78	81	70-130	4
3-Methylphenol + 4-Methylphenol	ug/L (ppb)	1.3	30	28	16-60	7
Nitrobenzene	ug/L (ppb)	1.3	71	72	63-109	1
Isophorone	ug/L (ppb)	1.3	83	84	67-114	1
2-Nitrophenol	ug/L (ppb)	1.3	63	72	41-117	13
2,4-Dimethylphenol	ug/L (ppb)	1.3	35	46	23-105	27 vo
Benzoic acid	ug/L (ppb)	10	7 vo	5 vo	10-21	33 vo
Bis(2-chloroethoxy)methane	ug/L (ppb)	1.3	71	77	67-130	8
2,4-Dichlorophenol	ug/L (ppb)	1.3	60	62	34-113	3
1,2,4-Trichlorobenzene	ug/L (ppb)	1.3	68	73	58-97	7
Naphthalene	ug/L (ppb)	1.3	69	72	60-97	4
Hexachlorobutadiene	ug/L (ppb)	1.3	71	73	51-100	3
4-Chloroaniline	ug/L (ppb)	6.3	40	44	40-141	10
4-Chloro-3-methylphenol	ug/L (ppb)	1.3	50	57	34-111	13
2-Methylnaphthalene	ug/L (ppb)	1.3	76	80	63-103	5
1-Methylnaphthalene	ug/L (ppb)	1.3	75	79	64-101	5
Hexachlorocyclopentadiene	ug/L (ppb)	1.3	76	76	34-126	0
2,4,6-Trichlorophenol	ug/L (ppb)	1.3	74	76	28-125	3
2,4,5-Trichlorophenol	ug/L (ppb)	1.3	79	83	39-120	5
2-Chloronaphthalene	ug/L (ppb)	1.3	76	78	65-130	3
2-Nitroaniline	ug/L (ppb)	6.3	84	89	51-146	6
Dimethyl phthalate	ug/L (ppb)	1.3	94	97	70-130	3
Acenaphthylene	ug/L (ppb)	1.3	82	85	70-130	4
2,6-Dinitrotoluene	ug/L (ppb)	1.3	97	91	70-130	6
3-Nitroaniline	ug/L (ppb)	6.3	64	66	42-134	3
Acenaphthene	ug/L (ppb)	1.3	78	81	66-130	4
2,4-Dinitrophenol	ug/L (ppb)	2.5	90	92	10-171	2
Dibenzofuran	ug/L (ppb)	1.3	70	73	56-114	4
2,4-Dinitrotoluene	ug/L (ppb)	1.3	76	75	63-127	1
4-Nitrophenol	ug/L (ppb)	2.5	22	21	10-46	5
Diethyl phthalate	ug/L (ppb)	1.3	94	100	70-130	6
Fluorene	ug/L (ppb)	1.3	88	91	70-130	3
4-Chlorophenyl phenyl ether	ug/L (ppb)	1.3	83	88	70-130	6
N-Nitrosodiphenylamine	ug/L (ppb)	1.3	82	85	70-130	4
4-Nitroaniline	ug/L (ppb)	6.3	68	67	42-150	1
4,6-Dinitro-2-methylphenol	ug/L (ppb)	1.3	89	96	13-148	8
4-Bromophenyl phenyl ether	ug/L (ppb)	1.3	84	90	70-130	7
Hexachlorobenzene	ug/L (ppb)	1.3	88	87	67-130	1
Pentachlorophenol	ug/L (ppb)	1.3	96	99	13-133	3
Phenanthrene	ug/L (ppb)	1.3	83	87	70-130	5
Anthracene	ug/L (ppb)	1.3	88	91	70-130	3
Carbazole	ug/L (ppb)	1.3	92	96	70-130	4
Di-n-butyl phthalate	ug/L (ppb)	1.3	84	88	43-133	5
Fluoranthene	ug/L (ppb)	1.3	93	97	70-130	4
Pyrene	ug/L (ppb)	1.3	82	82	70-130	0
Benzyl butyl phthalate	ug/L (ppb)	1.3	91	94	56-128	3
Benz(a)anthracene	ug/L (ppb)	1.3	87	90	70-130	3
Chrysene	ug/L (ppb)	1.3	87	89	70-130	2
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	1.3	93	101	57-124	8
Di-n-octyl phthalate	ug/L (ppb)	1.3	74	79	43-132	7
Benzo(a)pyrene	ug/L (ppb)	1.3	89	91	70-130	2
Benzo(b)fluoranthene	ug/L (ppb)	1.3	99	104	62-130	5
Benzo(k)fluoranthene	ug/L (ppb)	1.3	84	88	70-130	5
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1.3	112	111	70-130	1
Dibenz(a,h)anthracene	ug/L (ppb)	1.3	120	116	70-130	3
Benzo(g,h,i)perylene	ug/L (ppb)	1.3	114	115	67-124	1

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325

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

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.25	66	66	25-111	0
Aroclor 1260	ug/L (ppb)	0.25	81	69	23-123	16

Date of Report: 06/08/22
Date Received: 05/19/22
Project: 1260-19001-03, F&BI 205325

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	104	94	35-146	10

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.

205325

SAMPLE CHAIN OF CUSTODY 05/19/22

AI3 ~~A03~~ E02 VW3

Page # 01 of 01

Report To Lynn Green
Company EVREN-NW
Address 40 SE 24th Ave
City, State, ZIP Portland, Oregon 97214
Phone 503-452-5561 Email lynng@evren-nw.com

SAMPLERS (*signature*)

PROJECT NAME: 1260-19001-03

PO #

REMARKS: *See Attached form
Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
~~Standard Turnaround~~
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	~~BTEX EPA 8021~~	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TSS	Metals Cu Pb Ni Zn	Select VOCs	PCBs	6PPD	Notes
DW01-220518	A-M	05-18-22	5:45	Water	13	X	X	X		X		X	●	●	X	(X)	(X) per LG 6/1/22 at ● per EB 6/7/22 Select VOCs= BTEX

Samples received at 3 °C

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Bailey Fowler	ENW	05-18-22	
Received by:		Dhan Phan	FEBT	5/19/22	1100
Relinquished by:					
Received by:					

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 24, 2022

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

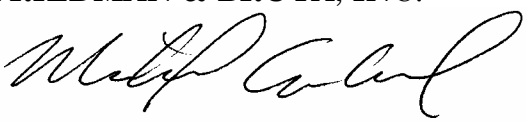
Dear Mr Green:

Included are the results from the testing of material submitted on June 14, 2022 from the 1260-19001-03, F&BI 206257 project. There are 21 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
ENW0624R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on June 14, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 206257 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
206257 -01	DW01-SW-220610

An 8270E surrogate failed the laboratory acceptance criteria in sample DW01-SW-220610. The data were flagged accordingly.

Several compounds in the 8270E laboratory control sample and laboratory control sample duplicate failed the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 06/24/22
Date Received: 06/14/22
Project: 1260-19001-03, F&BI 206257
Date Extracted: 06/16/22
Date Analyzed: 06/17/22

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)
DW01-SW-220610 206257-01	<100	53
Method Blank 02-1159 MB	<100	91

Date of Report: 06/24/22
Date Received: 06/14/22
Project: 1260-19001-03, F&BI 206257
Date Extracted: 06/15/22
Date Analyzed: 06/15/22

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)
DW01-SW-220610 206257-01 1/0.2	<50	<250	96
Method Blank 02-1411 MB2	<50	<250	103

Analysis For Total Metals By EPA Method 200.8

Client ID:	DW01-SW-220610	Client:	Evren Northwest
Date Received:	06/14/22	Project:	1260-19001-03, F&BI 206257
Date Extracted:	06/15/22	Lab ID:	206257-01
Date Analyzed:	06/15/22	Data File:	206257-01.142
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	1.78
Lead	0.536
Nickel	1.14

Analysis For Total Metals By EPA Method 200.8

Client ID:	DW01-SW-220610	Client:	Evren Northwest
Date Received:	06/14/22	Project:	1260-19001-03, F&BI 206257
Date Extracted:	06/15/22	Lab ID:	206257-01 x100
Date Analyzed:	06/16/22	Data File:	206257-01 x100.072
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	2,240

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1260-19001-03, F&BI 206257
Date Extracted:	06/15/22	Lab ID:	I2-421 mb
Date Analyzed:	06/16/22	Data File:	I2-421 mb.062
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	<0.2
Lead	<0.2
Nickel	<1
Zinc	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	DW01-SW-220610	Client:	Evren Northwest
Date Received:	06/14/22	Project:	1260-19001-03, F&BI 206257
Date Extracted:	06/15/22	Lab ID:	206257-01
Date Analyzed:	06/20/22	Data File:	062014.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	71	132
Toluene-d8	92	68	139
4-Bromofluorobenzene	99	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 206257
Date Extracted:	06/15/22	Lab ID:	02-1389 mb
Date Analyzed:	06/15/22	Data File:	061507.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	78	126
Toluene-d8	114	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	DW01-SW-220610	Client:	Evren Northwest
Date Received:	06/14/22	Project:	1260-19001-03, F&BI 206257
Date Extracted:	06/15/22	Lab ID:	206257-01 1/0.25
Date Analyzed:	06/16/22	Data File:	061611.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	4 vo	11	65
Phenol-d6	5 vo	11	65
Nitrobenzene-d5	59	50	150
2-Fluorobiphenyl	74	44	108
2,4,6-Tribromophenol	57	10	140
Terphenyl-d14	89	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.5 js jl	2,6-Dinitrotoluene	<0.25
Bis(2-chloroethyl) ether	<0.05 js	3-Nitroaniline	<5
2-Chlorophenol	<0.5 js	Acenaphthene	<0.005
1,3-Dichlorobenzene	<0.05 js	2,4-Dinitrophenol	<1.5
1,4-Dichlorobenzene	<0.05 js	Dibenzofuran	<0.05
1,2-Dichlorobenzene	<0.05 js	2,4-Dinitrotoluene	<0.25
Benzyl alcohol	<0.5 js	4-Nitrophenol	<1.5 jl
2,2'-Oxybis(1-chloropropane)	<0.05 js	Diethyl phthalate	<0.5
2-Methylphenol	<0.5 js	Fluorene	<0.005
Hexachloroethane	<0.05 js	4-Chlorophenyl phenyl ether	<0.05
N-Nitroso-di-n-propylamine	<0.05 js	N-Nitrosodiphenylamine	<0.05
3-Methylphenol + 4-Methylphenol	<1 js	4-Nitroaniline	<5
Nitrobenzene	<0.05	4,6-Dinitro-2-methylphenol	<1.5
Isophorone	<0.05	4-Bromophenyl phenyl ether	<0.05
2-Nitrophenol	<0.5	Hexachlorobenzene	<0.05
2,4-Dimethylphenol	<0.5	Pentachlorophenol	<0.25
Benzoic acid	<2.5 jl	Phenanthrene	<0.005
Bis(2-chloroethoxy)methane	<0.05	Anthracene	<0.005
2,4-Dichlorophenol	<0.5	Carbazole	<0.05
1,2,4-Trichlorobenzene	<0.05	Di-n-butyl phthalate	<0.5
Naphthalene	<0.05	Fluoranthene	<0.005
Hexachlorobutadiene	<0.05	Pyrene	<0.005
4-Chloroaniline	<5	Benzyl butyl phthalate	<0.5
4-Chloro-3-methylphenol	<0.5	Benz(a)anthracene	<0.005
2-Methylnaphthalene	<0.05	Chrysene	<0.005
1-Methylnaphthalene	<0.05	Bis(2-ethylhexyl) phthalate	<0.8
Hexachlorocyclopentadiene	<0.15	Di-n-octyl phthalate	<0.5
2,4,6-Trichlorophenol	<0.5	Benzo(a)pyrene	<0.005
2,4,5-Trichlorophenol	<0.5	Benzo(b)fluoranthene	<0.005
2-Chloronaphthalene	<0.05	Benzo(k)fluoranthene	<0.005
2-Nitroaniline	<0.25	Indeno(1,2,3-cd)pyrene	<0.005
Dimethyl phthalate	<0.5	Dibenz(a,h)anthracene	<0.005
Acenaphthylene	<0.005	Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 206257
Date Extracted:	06/15/22	Lab ID:	02-1414 mb 1/0.25
Date Analyzed:	06/16/22	Data File:	061610.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	13	11	65
Phenol-d6	9 vo	11	65
Nitrobenzene-d5	85	50	150
2-Fluorobiphenyl	83	44	108
2,4,6-Tribromophenol	72	10	140
Terphenyl-d14	101	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.5 js jl	2,6-Dinitrotoluene	<0.25
Bis(2-chloroethyl) ether	<0.05 js	3-Nitroaniline	<5
2-Chlorophenol	<0.5 js	Acenaphthene	<0.005
1,3-Dichlorobenzene	<0.05 js	2,4-Dinitrophenol	<1.5
1,4-Dichlorobenzene	<0.05 js	Dibenzofuran	<0.05
1,2-Dichlorobenzene	<0.05 js	2,4-Dinitrotoluene	<0.25
Benzyl alcohol	<0.5 js	4-Nitrophenol	<1.5 jl
2,2'-Oxybis(1-chloropropane)	<0.05 js	Diethyl phthalate	<0.5
2-Methylphenol	<0.5 js	Fluorene	<0.005
Hexachloroethane	<0.05 js	4-Chlorophenyl phenyl ether	<0.05
N-Nitroso-di-n-propylamine	<0.05 js	N-Nitrosodiphenylamine	<0.05
3-Methylphenol + 4-Methylphenol	<1 js	4-Nitroaniline	<5
Nitrobenzene	<0.05	4,6-Dinitro-2-methylphenol	<1.5
Isophorone	<0.05	4-Bromophenyl phenyl ether	<0.05
2-Nitrophenol	<0.5	Hexachlorobenzene	<0.05
2,4-Dimethylphenol	<0.5	Pentachlorophenol	<0.25
Benzoic acid	<2.5 jl	Phenanthrene	<0.005
Bis(2-chloroethoxy)methane	<0.05	Anthracene	<0.005
2,4-Dichlorophenol	<0.5	Carbazole	<0.05
1,2,4-Trichlorobenzene	<0.05	Di-n-butyl phthalate	<0.5
Naphthalene	<0.05	Fluoranthene	<0.005
Hexachlorobutadiene	<0.05	Pyrene	<0.005
4-Chloroaniline	<5	Benzyl butyl phthalate	<0.5
4-Chloro-3-methylphenol	<0.5	Benz(a)anthracene	<0.005
2-Methylnaphthalene	<0.05	Chrysene	<0.005
1-Methylnaphthalene	<0.05	Bis(2-ethylhexyl) phthalate	<0.8
Hexachlorocyclopentadiene	<0.15	Di-n-octyl phthalate	<0.5
2,4,6-Trichlorophenol	<0.5	Benzo(a)pyrene	<0.005
2,4,5-Trichlorophenol	<0.5	Benzo(b)fluoranthene	<0.005
2-Chloronaphthalene	<0.05	Benzo(k)fluoranthene	<0.005
2-Nitroaniline	<0.25	Indeno(1,2,3-cd)pyrene	<0.005
Dimethyl phthalate	<0.5	Dibenz(a,h)anthracene	<0.005
Acenaphthylene	<0.005	Benzo(g,h,i)perylene	<0.01

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DW01-SW-220610	Client:	Evren Northwest
Date Received:	06/14/22	Project:	1260-19001-03, F&BI 206257
Date Extracted:	06/15/22	Lab ID:	206257-01 1/0.5
Date Analyzed:	06/15/22	Data File:	061515.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	31	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01
Aroclor 1232	<0.01
Aroclor 1016	<0.01
Aroclor 1242	<0.01
Aroclor 1248	<0.01
Aroclor 1254	<0.01
Aroclor 1260	<0.01
Aroclor 1262	<0.01
Aroclor 1268	<0.01

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 206257
Date Extracted:	06/15/22	Lab ID:	02-1415 mb 1/0.5
Date Analyzed:	06/15/22	Data File:	061512.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	MG

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	33	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01
Aroclor 1232	<0.01
Aroclor 1016	<0.01
Aroclor 1242	<0.01
Aroclor 1248	<0.01
Aroclor 1254	<0.01
Aroclor 1260	<0.01
Aroclor 1262	<0.01
Aroclor 1268	<0.01

Date of Report: 06/24/22
Date Received: 06/14/22
Project: 1260-19001-03, F&BI 206257
Date Extracted: 06/17/22
Date Analyzed: 06/17/22

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
DW01-SW-220610 206257-01	6.0
Method Blank	<5

Date of Report: 06/24/22
Date Received: 06/14/22
Project: 1260-19001-03, F&BI 206257

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

Laboratory Code: 206264-01 (Duplicate)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	95	69-134

Date of Report: 06/24/22
Date Received: 06/14/22
Project: 1260-19001-03, F&BI 206257

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	96	100	61-133	4

Date of Report: 06/24/22
Date Received: 06/14/22
Project: 1260-19001-03, F&BI 206257

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 206215-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	2.22	99	96	70-130	3
Lead	ug/L (ppb)	10	<1	95	96	70-130	1
Nickel	ug/L (ppb)	20	1.54	100	98	70-130	2
Zinc	ug/L (ppb)	50	<5	97	95	70-130	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	105	85-115
Lead	ug/L (ppb)	10	95	85-115
Nickel	ug/L (ppb)	20	102	85-115
Zinc	ug/L (ppb)	50	101	85-115

Date of Report: 06/24/22
Date Received: 06/14/22
Project: 1260-19001-03, F&BI 206257

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

Laboratory Code: 206257-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	10	<0.35	104	50-150
Toluene	ug/L (ppb)	10	1.3	101	50-150
Ethylbenzene	ug/L (ppb)	10	<1	101	50-150
m,p-Xylene	ug/L (ppb)	20	<2	101	50-150
o-Xylene	ug/L (ppb)	10	<1	98	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	10	98	96	70-130	2
Toluene	ug/L (ppb)	10	111	108	70-130	3
Ethylbenzene	ug/L (ppb)	10	99	101	70-130	2
m,p-Xylene	ug/L (ppb)	20	99	101	70-130	2
o-Xylene	ug/L (ppb)	10	98	98	70-130	0

Date of Report: 06/24/22
Date Received: 06/14/22
Project: 1260-19001-03, F&BI 206257

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

Laboratory Code: Laboratory Control Sample 1/0.25

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	ug/L (ppb)	5	9 vo	9 vo	10-86	0
Bis(2-chloroethyl) ether	ug/L (ppb)	5	77	74	60-88	4
2-Chlorophenol	ug/L (ppb)	5	41	40	10-89	2
1,3-Dichlorobenzene	ug/L (ppb)	5	71	75	48-91	5
1,4-Dichlorobenzene	ug/L (ppb)	5	70	74	48-91	6
1,2-Dichlorobenzene	ug/L (ppb)	5	72	74	52-92	3
Benzyl alcohol	ug/L (ppb)	25	30	31	10-72	3
2,2'-Oxybis(1-chloropropane)	ug/L (ppb)	5	81	78	59-86	4
2-Methylphenol	ug/L (ppb)	5	31	32	10-75	3
Hexachloroethane	ug/L (ppb)	5	69	73	47-92	6
N-Nitroso-di-n-propylamine	ug/L (ppb)	5	87	87	70-130	0
3-Methylphenol + 4-Methylphenol	ug/L (ppb)	5	25	27	10-66	8
Nitrobenzene	ug/L (ppb)	5	79	78	60-90	1
Isophorone	ug/L (ppb)	5	86	91	70-130	6
2-Nitrophenol	ug/L (ppb)	5	67	58	27-104	14
2,4-Dimethylphenol	ug/L (ppb)	5	30	31	10-84	3
Benzoic acid	ug/L (ppb)	40	3 vo	3 vo	10-102	0
Bis(2-chloroethoxy)methane	ug/L (ppb)	5	86	88	55-103	2
2,4-Dichlorophenol	ug/L (ppb)	5	58	57	23-103	2
1,2,4-Trichlorobenzene	ug/L (ppb)	5	73	75	56-93	3
Naphthalene	ug/L (ppb)	5	80	80	62-90	0
Hexachlorobutadiene	ug/L (ppb)	5	74	75	48-85	1
4-Chloroaniline	ug/L (ppb)	25	66	71	35-108	7
4-Chloro-3-methylphenol	ug/L (ppb)	5	55	61	18-109	10
2-Methylnaphthalene	ug/L (ppb)	5	85	87	64-93	2
1-Methylnaphthalene	ug/L (ppb)	5	84	86	64-93	2
Hexachlorocyclopentadiene	ug/L (ppb)	5	86	79	49-112	8
2,4,6-Trichlorophenol	ug/L (ppb)	5	55	43	16-112	24 vo
2,4,5-Trichlorophenol	ug/L (ppb)	5	67	59	26-113	13
2-Chloronaphthalene	ug/L (ppb)	5	86	87	67-97	1
2-Nitroaniline	ug/L (ppb)	25	96	104	31-168	8
Dimethyl phthalate	ug/L (ppb)	5	92	101	70-130	9
Acenaphthylene	ug/L (ppb)	5	91	94	70-130	3
2,6-Dinitrotoluene	ug/L (ppb)	5	93	96	70-130	3
3-Nitroaniline	ug/L (ppb)	25	75	85	33-120	12
Acenaphthene	ug/L (ppb)	5	89	92	70-130	3
2,4-Dinitrophenol	ug/L (ppb)	10	18	15	10-120	18
Dibenzofuran	ug/L (ppb)	5	90	95	67-107	5
2,4-Dinitrotoluene	ug/L (ppb)	5	89	99	53-132	11
4-Nitrophenol	ug/L (ppb)	10	8 vo	7 vo	10-89	13
Diethyl phthalate	ug/L (ppb)	5	94	107	70-130	13
Fluorene	ug/L (ppb)	5	92	99	70-130	7
4-Chlorophenyl phenyl ether	ug/L (ppb)	5	90	96	70-130	6
N-Nitrosodiphenylamine	ug/L (ppb)	5	86	92	70-130	7
4-Nitroaniline	ug/L (ppb)	25	69	77	32-122	11
4,6-Dinitro-2-methylphenol	ug/L (ppb)	5	46	36	10-139	24 vo
4-Bromophenyl phenyl ether	ug/L (ppb)	5	87	90	70-130	3
Hexachlorobenzene	ug/L (ppb)	5	85	91	65-95	7
Pentachlorophenol	ug/L (ppb)	5	45	35	10-129	25 vo
Phenanthrene	ug/L (ppb)	5	88	97	70-130	10
Anthracene	ug/L (ppb)	5	91	97	70-130	6
Carbazole	ug/L (ppb)	5	97	106	70-130	9
Di-n-butyl phthalate	ug/L (ppb)	5	101	106	28-147	5
Fluoranthene	ug/L (ppb)	5	94	102	70-130	8
Pyrene	ug/L (ppb)	5	97	100	70-130	3
Benzyl butyl phthalate	ug/L (ppb)	5	99	106	34-142	7
Benz(a)anthracene	ug/L (ppb)	5	93	97	70-130	4
Chrysene	ug/L (ppb)	5	94	100	70-130	6
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	5	91	95	53-133	4
Di-n-octyl phthalate	ug/L (ppb)	5	113	126 vo	49-119	11
Benzo(a)pyrene	ug/L (ppb)	5	97	106	70-130	9
Benzo(b)fluoranthene	ug/L (ppb)	5	98	106	70-130	8
Benzo(k)fluoranthene	ug/L (ppb)	5	95	109	70-130	14
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	96	100	70-130	4
Dibenz(a,h)anthracene	ug/L (ppb)	5	101	101	70-130	0
Benzo(g,h,i)perylene	ug/L (ppb)	5	93	93	70-130	0

Date of Report: 06/24/22
Date Received: 06/14/22
Project: 1260-19001-03, F&BI 206257

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

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.25	41	42	25-111	2
Aroclor 1260	ug/L (ppb)	0.25	48	52	23-123	8

Date of Report: 06/24/22
Date Received: 06/14/22
Project: 1260-19001-03, F&BI 206257

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	106	108	35-146	2

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.

206257

SAMPLE CHAIN OF CUSTODY

ME 06-14-22

AIS

Page # 01 of 01 IW3

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*) [signature]

PROJECT NAME: 1260-19001-03

PO#

REMARKS: ✩ See Attached Form

Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
(Standard) Turnaround E04
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Total Metals (Cu, Pb, Ni, Zn)	TSS	Select VOC's ✩			Notes
~~DW01-22061022~~ DW01-~~[illegible]~~-220610	01 A-M	06-10-22	12:15	Water	13	X	X	X		X	(X)	X	X	X			(X) per attached form MS 6/14/22

Samples received at 15 °C

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Bailey Farver	ENW	06-10-22	17:00
Received by:	[signature]	Liz Webber-Bruya	F&B	6/14/22	1300
Relinquished by:					
Received by:					

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 31, 2023

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

Dear Mr Green:

Included are the additional results from the testing of material submitted on November 30, 2022 from the 1260-19001-03, F&BI 211413 project. There are 4 pages included in this report.

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
ENW0131R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 30, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 211413 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
211413 -01	M1001-SW-221129

The NWTPH-Dx with silica gel analysis was performed outside of the method recommended holding time. The data were qualified accordingly.

All quality control requirements were acceptable.

Date of Report: 01/31/23
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413
Date Extracted: 12/01/22
Date Analyzed: 01/25/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND RESIDUAL RANGE 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})	Residual Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
M1001-SW-221129 ht 211413-01	100 x	370	106
Method Blank 02-2891 MB	<50	<250	104

Date of Report: 01/31/23
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413

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)	1,000	92	91	70-130	1

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.

211413

SAMPLE CHAIN OF CUSTODY

11/30/22

B4 / M2 / VW1

Page # 01 of 01

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 1260-19001-03

PO #

REMARKS: *See Attached form for Selected Spikes and bench marks
Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8260 ~~8021~~	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TSS	Total Cr, Fe, Ni, Zn	Selected VOCs *	7x w/ SG		Notes
M1001-SW-221129	01 A-M	11-29-22	10:35	water	13	X	X	X		X	X	X	X	X	(X)		(X) per EB 1/19/23 MG

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Fawver	ENW	11-29-22	17:00
Received by:	ANH PHAN	FSB	11/30/22	11:06
Relinquished by:				
Received by:		Samples received at 1 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

December 9, 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 November 30, 2022 from the 1260-19001-03, F&BI 211413 project. There are 21 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
ENW1209R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 30, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 211413 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
211413 -01	M1001-SW-221129

The 8270E calibration standard failed the acceptance criteria for pyrene. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 12/09/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413
Date Extracted: 12/06/22
Date Analyzed: 12/06/22

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 50-150)
M1001-SW-221129 211413-01	<100	101
Method Blank 02-2740 MB	<100	108

Date of Report: 12/09/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413
Date Extracted: 12/01/22
Date Analyzed: 12/01/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL10 AND MOTOR OIL USING METHOD NWTPH-Dx

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 50-150)
M1001-SW-221129 211413-01 1/0.4	370 x	550 x	116
Method Blank 02-2891 MB	<50	<250	110

Analysis For Total Metals By EPA Method 200.8

Client ID:	M1001-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211413
Date Extracted:	12/05/22	Lab ID:	211413-01
Date Analyzed:	12/06/22	Data File:	211413-01.450
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	7.62
Lead	4.71
Nickel	2.54

Analysis For Total Metals By EPA Method 200.8

Client ID:	M1001-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211413
Date Extracted:	12/05/22	Lab ID:	211413-01 x100
Date Analyzed:	12/06/22	Data File:	211413-01 x100.116
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	2,780

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1260-19001-03, F&BI 211413
Date Extracted:	12/05/22	Lab ID:	I2-865 mb
Date Analyzed:	12/05/22	Data File:	I2-865 mb.232
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	<5
Lead	<1
Nickel	<1
Zinc	<5

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	M1001-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211413
Date Extracted:	12/01/22	Lab ID:	211413-01
Date Analyzed:	12/01/22	Data File:	120123.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	71	132
Toluene-d8	95	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 211413
Date Extracted:	12/01/22	Lab ID:	02-2831 mb
Date Analyzed:	12/01/22	Data File:	120107.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	71	132
Toluene-d8	94	68	139
4-Bromofluorobenzene	98	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	M1001-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211413
Date Extracted:	12/01/22	Lab ID:	211413-01 1/0.5
Date Analyzed:	12/02/22	Data File:	120215.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69	15	144
2-Fluorobiphenyl	79	25	128
2,4,6-Tribromophenol	98	10	142
Terphenyl-d14	117	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
2-Methylnaphthalene	<0.1
1-Methylnaphthalene	<0.1
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.039
Anthracene	<0.01
Fluoranthene	0.050
Pyrene	0.092 ca
Benz(a)anthracene	0.015
Chrysene	0.041
Benzo(a)pyrene	0.027
Benzo(b)fluoranthene	0.052
Benzo(k)fluoranthene	0.013
Indeno(1,2,3-cd)pyrene	0.020
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	0.029
Dibenz(a,h)anthracene	<0.01
Dimethyl phthalate	<1
Diethyl phthalate	<1
Di-n-butyl phthalate	<1
Benzyl butyl phthalate	<1
Bis(2-ethylhexyl) phthalate	<1.6
Di-n-octyl phthalate	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 211413
Date Extracted:	12/01/22	Lab ID:	02-2892 mb 1/0.5
Date Analyzed:	12/02/22	Data File:	120208.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	93	15	144
2-Fluorobiphenyl	92	25	128
2,4,6-Tribromophenol	65	10	142
Terphenyl-d14	113	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
2-Methylnaphthalene	<0.1
1-Methylnaphthalene	<0.1
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.02
Dibenz(a,h)anthracene	<0.01
Dimethyl phthalate	<1
Diethyl phthalate	<1
Di-n-butyl phthalate	<1
Benzyl butyl phthalate	<1
Bis(2-ethylhexyl) phthalate	<1.6
Di-n-octyl phthalate	<1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	M1001-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211413
Date Extracted:	12/01/22	Lab ID:	211413-01 1/0.5
Date Analyzed:	12/02/22	Data File:	120206.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	46	29	154

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.0019 j
Aroclor 1232	<0.0019 j
Aroclor 1016	<0.0019 j
Aroclor 1242	<0.0019 j
Aroclor 1248	<0.0019 j
Aroclor 1254	<0.0019 j
Aroclor 1260	0.0045 j
Aroclor 1262	<0.0019 j
Aroclor 1268	<0.0019 j

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 211413
Date Extracted:	12/01/22	Lab ID:	02-2888 mb2 1/0.5
Date Analyzed:	12/02/22	Data File:	120204.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	53	29	154

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.0019 j
Aroclor 1232	<0.0019 j
Aroclor 1016	<0.0019 j
Aroclor 1242	<0.0019 j
Aroclor 1248	<0.0019 j
Aroclor 1254	<0.0019 j
Aroclor 1260	<0.0019 j
Aroclor 1262	<0.0019 j
Aroclor 1268	<0.0019 j

Date of Report: 12/09/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413
Date Extracted: 12/01/22
Date Analyzed: 12/08/22

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
M1001-SW-221129 211413-01	30
Method Blank O2-2894 MB	<5

Date of Report: 12/09/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413

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

Laboratory Code: 212013-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	190	190	0

Laboratory Code: Laboratory Control Sample

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

Date of Report: 12/09/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413

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)	1,000	82	84	70-130	2

Date of Report: 12/09/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 211400-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	<5	91	92	70-130	1
Lead	ug/L (ppb)	10	<1	97	98	70-130	1
Nickel	ug/L (ppb)	20	5.28	92	88	70-130	4
Zinc	ug/L (ppb)	50	5.47	95	95	70-130	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	112	85-115
Lead	ug/L (ppb)	10	95	85-115
Nickel	ug/L (ppb)	20	102	85-115
Zinc	ug/L (ppb)	50	103	85-115

Date of Report: 12/09/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	10	105	116	70-130	10
Toluene	ug/L (ppb)	10	101	105	70-130	4
Ethylbenzene	ug/L (ppb)	10	106	107	70-130	1
m,p-Xylene	ug/L (ppb)	20	105	107	70-130	2
o-Xylene	ug/L (ppb)	10	103	104	70-130	1

Date of Report: 12/09/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413

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)
Naphthalene	ug/L (ppb)	2.5	74	82	50-104	10
2-Methylnaphthalene	ug/L (ppb)	2.5	75	82	54-109	9
1-Methylnaphthalene	ug/L (ppb)	2.5	74	81	55-108	9
Dimethyl phthalate	ug/L (ppb)	2.5	96	106	64-118	10
Acenaphthylene	ug/L (ppb)	2.5	90	99	60-114	10
Acenaphthene	ug/L (ppb)	2.5	86	95	57-110	10
Diethyl phthalate	ug/L (ppb)	2.5	98	108	63-118	10
Fluorene	ug/L (ppb)	2.5	90	99	61-115	10
Phenanthrene	ug/L (ppb)	2.5	89	100	63-113	12
Anthracene	ug/L (ppb)	2.5	90	100	65-117	11
Di-n-butyl phthalate	ug/L (ppb)	2.5	80	94	37-135	16
Fluoranthene	ug/L (ppb)	2.5	98	110	68-121	12
Pyrene	ug/L (ppb)	2.5	108	114	66-125	5
Benzyl butyl phthalate	ug/L (ppb)	2.5	121	133 vo	56-128	9
Benz(a)anthracene	ug/L (ppb)	2.5	107	116	70-130	8
Chrysene	ug/L (ppb)	2.5	101	109	67-119	8
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	2.5	91	106	57-124	15
Di-n-octyl phthalate	ug/L (ppb)	2.5	90	100	43-132	11
Benzo(a)pyrene	ug/L (ppb)	2.5	101	109	68-126	8
Benzo(b)fluoranthene	ug/L (ppb)	2.5	106	117	62-130	10
Benzo(k)fluoranthene	ug/L (ppb)	2.5	105	108	67-125	3
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	2.5	105	113	63-131	7
Dibenz(a,h)anthracene	ug/L (ppb)	2.5	108	117	62-133	8
Benzo(g,h,i)perylene	ug/L (ppb)	2.5	101	110	57-133	9

Date of Report: 12/09/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413

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

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.25	74	76	25-111	3
Aroclor 1260	ug/L (ppb)	0.25	85	88	23-123	3

Date of Report: 12/09/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211413

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	94	96	35-146	2

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.

211413

SAMPLE CHAIN OF CUSTODY

11/30/22

B4 / M2 / VW1

Page # 01 of 01

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 1260-19001-03

PO #

REMARKS: *See Attached form for Selects VOCs and bench marks
Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021 8260	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TSS	Total Cu, Pb, Ni, Zn	Selects VOCs *			Notes
M1001-SW-221129	01 A-M	11-29-22	10:35	Water	13	X	X	X		X	X	X	X	X			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Fawver	ENW	11-29-22	17:00
Received by:	ANH PHAN	FSB	11/30/22	11:06
Relinquished by:				
Received by:		Samples received at 1 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

January 24, 2023

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

Dear Mr Green:

Included are the results from the testing of material submitted on January 5, 2023 from the 1260-19001-03, F&BI 301041 project. There are 23 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
ENW0124R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 5, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 301041 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
301041 -01	M1001-SW-230104

Several compounds in the 8270E laboratory control sample and laboratory control sample duplicate failed the acceptance criteria. The data were flagged accordingly.

Several 8270E compounds were detected in sample M1001-SW-230104 at a level greater than one tenth the concentration detected in the samples. The affected data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 01/24/23
Date Received: 01/05/23
Project: 1260-19001-03, F&BI 301041
Date Extracted: 01/10/23
Date Analyzed: 01/10/23

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
M1001-SW-230104 301041-01 1/10	20,000	120
Method Blank 03-0016 MB	<100	113

Date of Report: 01/24/23
Date Received: 01/05/23
Project: 1260-19001-03, F&BI 301041
Date Extracted: 01/05/23
Date Analyzed: 01/05/23

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Residual Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
M1001-SW-230104 301041-01	5,500 x	<250	90
Method Blank 03-112 MB2	<50	<250	103

Analysis For Total Metals By EPA Method 200.8

Client ID:	M1001-SW-230104	Client:	Evren Northwest
Date Received:	01/05/23	Project:	1260-19001-03, F&BI 301041
Date Extracted:	01/05/22	Lab ID:	301041-01
Date Analyzed:	01/05/23	Data File:	301041-01.120
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	5.13
Lead	2.34
Nickel	2.10

Analysis For Total Metals By EPA Method 200.8

Client ID:	M1001-SW-230104	Client:	Evren Northwest
Date Received:	01/05/23	Project:	1260-19001-03, F&BI 301041
Date Extracted:	01/05/23	Lab ID:	301041-01 x100
Date Analyzed:	01/06/23	Data File:	301041-01 x100.051
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	2,770

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	NA	Project:	1260-19001-03, F&BI 301041
Date Extracted:	01/05/23	Lab ID:	I3-06 mb
Date Analyzed:	01/05/23	Data File:	I3-06 mb.109
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	<0.5
Lead	<0.15 j
Nickel	<1
Zinc	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	M1001-SW-230104	Client:	Evren Northwest
Date Received:	01/05/23	Project:	1260-19001-03, F&BI 301041
Date Extracted:	01/09/23	Lab ID:	301041-01 1/200
Date Analyzed:	01/09/23	Data File:	010911.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	98	72	130

Compounds:	Concentration ug/L (ppb)
Benzene	<70
Toluene	1,300
Ethylbenzene	490
m,p-Xylene	2,000
o-Xylene	930

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 301041
Date Extracted:	01/09/23	Lab ID:	03-0057 mb
Date Analyzed:	01/09/23	Data File:	010916.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	71	132
Toluene-d8	100	68	139
4-Bromofluorobenzene	97	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	M1001-SW-230104	Client:	Evren Northwest
Date Received:	01/05/23	Project:	1260-19001-03, F&BI 301041
Date Extracted:	01/06/23	Lab ID:	301041-01 1/0.5
Date Analyzed:	01/06/23	Data File:	010611.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	21	10	60
Phenol-d6	25	10	49
Nitrobenzene-d5	71	15	144
2-Fluorobiphenyl	81	25	128
2,4,6-Tribromophenol	87	10	142
Terphenyl-d14	110	41	138

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1	2,6-Dinitrotoluene	<0.5
Bis(2-chloroethyl) ether	<0.1	3-Nitroaniline	<10
2-Chlorophenol	<1	Acenaphthene	0.045 jl
1,3-Dichlorobenzene	<0.1	2,4-Dinitrophenol	<3
1,4-Dichlorobenzene	<0.1 jl	Dibenzofuran	<0.1
1,2-Dichlorobenzene	<0.1 jl	2,4-Dinitrotoluene	<0.5
Benzyl alcohol	<1	4-Nitrophenol	<3
2,2'-Oxybis(1-chloropropane)	<0.1 jl	Diethyl phthalate	<1
2-Methylphenol	<1	Fluorene	<0.01
Hexachloroethane	<0.1	4-Chlorophenyl phenyl ether	<0.1 jl
N-Nitroso-di-n-propylamine	<0.1 jl	N-Nitrosodiphenylamine	<0.1 jl
3-Methylphenol + 4-Methylphenol	<2	4-Nitroaniline	<10 jl
Nitrobenzene	<0.1 jl	4,6-Dinitro-2-methylphenol	<3
Isophorone	<0.1 jl	4-Bromophenyl phenyl ether	<0.1 jl
2-Nitrophenol	<1	Hexachlorobenzene	<0.1 jl
2,4-Dimethylphenol	<1	Pentachlorophenol	<0.5
Benzoic acid	<5	Phenanthrene	0.14 fb jl
Bis(2-chloroethoxy)methane	<0.1 jl	Anthracene	0.049 jl
2,4-Dichlorophenol	<1	Carbazole	<0.1 jl
1,2,4-Trichlorobenzene	<0.1 jl	Di-n-butyl phthalate	<1 ca
Naphthalene	63 ve jl	Fluoranthene	0.028 fb jl
Hexachlorobutadiene	<0.1	Pyrene	0.047 fb jl
4-Chloroaniline	<10	Benzyl butyl phthalate	<1
4-Chloro-3-methylphenol	<1	Benz(a)anthracene	0.020 jl
2-Methylnaphthalene	24 ve jl	Chrysene	0.015 jl
1-Methylnaphthalene	15 jl	Bis(2-ethylhexyl) phthalate	<1.6
Hexachlorocyclopentadiene	<0.3	Di-n-octyl phthalate	<1 ca
2,4,6-Trichlorophenol	<1	Benzo(a)pyrene	0.015 fb jl
2,4,5-Trichlorophenol	<1	Benzo(b)fluoranthene	0.016 fb jl
2-Chloronaphthalene	<0.1 jl	Benzo(k)fluoranthene	<0.01 jl
2-Nitroaniline	<0.5	Indeno(1,2,3-cd)pyrene	0.012 jl
Dimethyl phthalate	<1	Dibenz(a,h)anthracene	<0.01 jl
Acenaphthylene	<0.01 jl	Benzo(g,h,i)perylene	<0.02 jl

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	M1001-SW-230104	Client:	Evren Northwest
Date Received:	01/05/23	Project:	1260-19001-03, F&BI 301041
Date Extracted:	01/06/23	Lab ID:	301041-01 1/5
Date Analyzed:	01/06/23	Data File:	010616.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	27 d	10	60
Phenol-d6	27 d	10	49
Nitrobenzene-d5	64 d	15	144
2-Fluorobiphenyl	77 d	25	128
2,4,6-Tribromophenol	99 d	10	142
Terphenyl-d14	102 d	41	138

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<10	2,6-Dinitrotoluene	<5
Bis(2-chloroethyl) ether	<1	3-Nitroaniline	<100
2-Chlorophenol	<10	Acenaphthene	<0.1 jl
1,3-Dichlorobenzene	<1	2,4-Dinitrophenol	<30
1,4-Dichlorobenzene	<1 jl	Dibenzofuran	<1
1,2-Dichlorobenzene	<1 jl	2,4-Dinitrotoluene	<5
Benzyl alcohol	<10	4-Nitrophenol	<30
2,2'-Oxybis(1-chloropropane)	<1 jl	Diethyl phthalate	<10
2-Methylphenol	<10	Fluorene	<0.1
Hexachloroethane	<1	4-Chlorophenyl phenyl ether	<1 jl
N-Nitroso-di-n-propylamine	<1 jl	N-Nitrosodiphenylamine	<1 jl
3-Methylphenol + 4-Methylphenol	<20	4-Nitroaniline	<100 jl
Nitrobenzene	<1 jl	4,6-Dinitro-2-methylphenol	<30
Isophorone	<1 jl	4-Bromophenyl phenyl ether	<1 jl
2-Nitrophenol	<10	Hexachlorobenzene	<1 jl
2,4-Dimethylphenol	<10	Pentachlorophenol	<5
Benzoic acid	<50	Phenanthrene	0.15 fb jl
Bis(2-chloroethoxy)methane	<1 jl	Anthracene	<0.1 jl
2,4-Dichlorophenol	<10	Carbazole	<1 jl
1,2,4-Trichlorobenzene	<1 jl	Di-n-butyl phthalate	<10 ca
Naphthalene	81 jl	Fluoranthene	<0.1 jl
Hexachlorobutadiene	<1	Pyrene	<0.1 jl
4-Chloroaniline	<100	Benzyl butyl phthalate	<10
4-Chloro-3-methylphenol	<10	Benz(a)anthracene	<0.1 jl
2-Methylnaphthalene	26 jl	Chrysene	<0.1 jl
1-Methylnaphthalene	17 jl	Bis(2-ethylhexyl) phthalate	<16
Hexachlorocyclopentadiene	<3	Di-n-octyl phthalate	<10 ca
2,4,6-Trichlorophenol	<10	Benzo(a)pyrene	<0.1 jl
2,4,5-Trichlorophenol	<10	Benzo(b)fluoranthene	<0.1
2-Chloronaphthalene	<1 jl	Benzo(k)fluoranthene	<0.1 jl
2-Nitroaniline	<5	Indeno(1,2,3-cd)pyrene	<0.1 jl
Dimethyl phthalate	<10	Dibenz(a,h)anthracene	<0.1 jl
Acenaphthylene	<0.1 jl	Benzo(g,h,i)perylene	<0.2 j l

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 301041
Date Extracted:	01/06/23	Lab ID:	03-114 mb 1/0.5
Date Analyzed:	01/06/23	Data File:	010613.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	36	10	60
Phenol-d6	24	10	49
Nitrobenzene-d5	64	15	144
2-Fluorobiphenyl	70	25	128
2,4,6-Tribromophenol	79	10	142
Terphenyl-d14	96	41	138

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<1	2,6-Dinitrotoluene	<0.5
Bis(2-chloroethyl) ether	<0.1	3-Nitroaniline	<10
2-Chlorophenol	<1	Acenaphthene	<0.01 jl
1,3-Dichlorobenzene	<0.1	2,4-Dinitrophenol	<3
1,4-Dichlorobenzene	<0.1 jl	Dibenzofuran	<0.1
1,2-Dichlorobenzene	<0.1 jl	2,4-Dinitrotoluene	<0.5
Benzyl alcohol	<1	4-Nitrophenol	<3
2,2'-Oxybis(1-chloropropane)	<0.1 jl	Diethyl phthalate	<1
2-Methylphenol	<1	Fluorene	0.033 lc jl
Hexachloroethane	<0.1	4-Chlorophenyl phenyl ether	<0.1 jl
N-Nitroso-di-n-propylamine	<0.1 jl	N-Nitrosodiphenylamine	<0.1 jl
3-Methylphenol + 4-Methylphenol	<2	4-Nitroaniline	<10 jl
Nitrobenzene	<0.1 jl	4,6-Dinitro-2-methylphenol	<3
Isophorone	<0.1 jl	4-Bromophenyl phenyl ether	<0.1 jl
2-Nitrophenol	<1	Hexachlorobenzene	<0.1 jl
2,4-Dimethylphenol	<1	Pentachlorophenol	<0.5
Benzoic acid	<5	Phenanthrene	0.065 lc jl
Bis(2-chloroethoxy)methane	<0.1 jl	Anthracene	<0.01 jl
2,4-Dichlorophenol	<1	Carbazole	<0.1 jl
1,2,4-Trichlorobenzene	<0.1 jl	Di-n-butyl phthalate	<1 ca
Naphthalene	<0.1 jl	Fluoranthene	0.011 lc jl
Hexachlorobutadiene	<0.1	Pyrene	0.016 lc jl
4-Chloroaniline	<10	Benzyl butyl phthalate	<1
4-Chloro-3-methylphenol	<1	Benz(a)anthracene	<0.01 jl
2-Methylnaphthalene	0.12 lc jl	Chrysene	<0.01 jl
1-Methylnaphthalene	<0.1 jl	Bis(2-ethylhexyl) phthalate	<1.6
Hexachlorocyclopentadiene	<0.3	Di-n-octyl phthalate	<1 ca
2,4,6-Trichlorophenol	<1	Benzo(a)pyrene	<0.01 jl
2,4,5-Trichlorophenol	<1	Benzo(b)fluoranthene	<0.01
2-Chloronaphthalene	<0.1 jl	Benzo(k)fluoranthene	<0.01 jl
2-Nitroaniline	<0.5	Indeno(1,2,3-cd)pyrene	<0.01 jl
Dimethyl phthalate	<1	Dibenz(a,h)anthracene	<0.01 jl
Acenaphthylene	<0.01 jl	Benzo(g,h,i)perylene	<0.02 jl

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	M1001-SW-230104	Client:	Evren Northwest
Date Received:	01/05/23	Project:	1260-19001-03, F&BI 301041
Date Extracted:	01/09/23	Lab ID:	301041-01 1/0.5
Date Analyzed:	01/09/23	Data File:	010910.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	31	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.0019 j
Aroclor 1232	<0.0019 j
Aroclor 1016	<0.0019 j
Aroclor 1242	<0.0019 j
Aroclor 1248	<0.0019 j
Aroclor 1254	<0.0019 j
Aroclor 1260	0.011 j
Aroclor 1262	<0.0019 j
Aroclor 1268	<0.0019 j

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 301041
Date Extracted:	01/09/22	Lab ID:	03-122 mb 1/0.5
Date Analyzed:	01/09/23	Data File:	010907.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	36	24	127

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.0019 j
Aroclor 1232	<0.0019 j
Aroclor 1016	<0.0019 j
Aroclor 1242	<0.0019 j
Aroclor 1248	<0.0019 j
Aroclor 1254	<0.0019 j
Aroclor 1260	<0.0019 j
Aroclor 1262	<0.0019 j
Aroclor 1268	<0.0019 j

Date of Report: 01/24/23
Date Received: 01/05/23
Project: 1260-19001-03, F&BI 301041
Date Extracted: 01/10/23
Date Analyzed: 01/11/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
M1001-SW-230104 301041-01	18
Method Blank 03-131 mb	<5

Date of Report: 01/24/23
Date Received: 01/05/23
Project: 1260-19001-03, F&BI 301041

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

Laboratory Code: 301008-01 (Duplicate)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	120	70-130

Date of Report: 01/24/23
Date Received: 01/05/23
Project: 1260-19001-03, F&BI 301041

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	112	100	70-130	11

Date of Report: 01/24/23
Date Received: 01/05/23
Project: 1260-19001-03, F&BI 301041

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 301041-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	5.13	102	100	70-130	2
Lead	ug/L (ppb)	10	2.34	91	91	70-130	0
Nickel	ug/L (ppb)	20	2.10	100	100	70-130	0
Zinc	ug/L (ppb)	50	2,670	<5	35 b	70-130	

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	106	85-115
Lead	ug/L (ppb)	10	104	85-115
Nickel	ug/L (ppb)	20	105	85-115
Zinc	ug/L (ppb)	50	102	85-115

Date of Report: 01/24/23
Date Received: 01/05/23
Project: 1260-19001-03, F&BI 301041

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

Laboratory Code: 301070-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	10	<0.35	73	50-150
Toluene	ug/L (ppb)	10	2.3	81 b	50-150
Ethylbenzene	ug/L (ppb)	10	<1	78	50-150
m,p-Xylene	ug/L (ppb)	20	2.5	79	50-150
o-Xylene	ug/L (ppb)	10	1.0	74	50-150

Date of Report: 01/24/23
Date Received: 01/05/23
Project: 1260-19001-03, F&BI 301041

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	10	109	99	70-130	10
Toluene	ug/L (ppb)	10	106	108	70-130	2
Ethylbenzene	ug/L (ppb)	10	106	107	70-130	1
m,p-Xylene	ug/L (ppb)	20	106	108	70-130	2
o-Xylene	ug/L (ppb)	10	103	105	70-130	2

Date of Report: 01/24/23
Date Received: 01/05/23
Project: 1260-19001-03, F&BI 301041

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)
Phenol	ug/L (ppb)	2.5	25	19	10-30	27 vo
Bis(2-chloroethyl) ether	ug/L (ppb)	2.5	61	46	43-117	28 vo
2-Chlorophenol	ug/L (ppb)	2.5	59	44	21-97	29 vo
1,3-Dichlorobenzene	ug/L (ppb)	2.5	61	39	39-102	44 vo
1,4-Dichlorobenzene	ug/L (ppb)	2.5	64	40 vo	41-103	46 vo
1,2-Dichlorobenzene	ug/L (ppb)	2.5	65	41 vo	43-105	45 vo
Benzyl alcohol	ug/L (ppb)	13	59	42	14-82	34 vo
2,2'-Oxybis(1-chloropropane)	ug/L (ppb)	2.5	70	49 vo	51-110	35 vo
2-Methylphenol	ug/L (ppb)	2.5	54	39	19-77	32 vo
Hexachloroethane	ug/L (ppb)	2.5	62	40	39-104	43 vo
N-Nitroso-di-n-propylamine	ug/L (ppb)	2.5	75	56 vo	60-114	29 vo
3-Methylphenol + 4-Methylphenol	ug/L (ppb)	2.5	50	38	14-63	27 vo
Nitrobenzene	ug/L (ppb)	2.5	63	50 vo	53-114	23 vo
Isophorone	ug/L (ppb)	2.5	73	56 vo	62-113	26 vo
2-Nitrophenol	ug/L (ppb)	2.5	69	56	41-117	21 vo
2,4-Dimethylphenol	ug/L (ppb)	2.5	34	24	23-105	34 vo
Benzoic acid	ug/L (ppb)	20	16	15	10-25	6
Bis(2-chloroethoxy)methane	ug/L (ppb)	2.5	68	53 vo	56-111	25 vo
2,4-Dichlorophenol	ug/L (ppb)	2.5	68	53	34-113	25 vo
1,2,4-Trichlorobenzene	ug/L (ppb)	2.5	62	44 vo	48-104	34 vo
Naphthalene	ug/L (ppb)	2.5	63	46 vo	50-104	31 vo
Hexachlorobutadiene	ug/L (ppb)	2.5	65	41	40-107	45 vo
4-Chloroaniline	ug/L (ppb)	13	57	43	34-120	28 vo
4-Chloro-3-methylphenol	ug/L (ppb)	2.5	73	56	34-111	26 vo
2-Methylnaphthalene	ug/L (ppb)	2.5	68	48 vo	54-109	34 vo
1-Methylnaphthalene	ug/L (ppb)	2.5	73	52 vo	55-108	34 vo
Hexachlorocyclopentadiene	ug/L (ppb)	2.5	70	55	34-126	24 vo
2,4,6-Trichlorophenol	ug/L (ppb)	2.5	74	61	28-125	19
2,4,5-Trichlorophenol	ug/L (ppb)	2.5	82	65	39-120	23 vo
2-Chloronaphthalene	ug/L (ppb)	2.5	70	54 vo	57-130	26 vo
2-Nitroaniline	ug/L (ppb)	13	77	63	51-146	20
Dimethyl phthalate	ug/L (ppb)	2.5	85	66	64-118	25 vo
Acenaphthylene	ug/L (ppb)	2.5	74	58 vo	60-114	24 vo
2,6-Dinitrotoluene	ug/L (ppb)	2.5	90	70	66-121	25 vo
3-Nitroaniline	ug/L (ppb)	13	68	57	42-134	18
Acenaphthene	ug/L (ppb)	2.5	72	56 vo	57-110	25 vo
2,4-Dinitrophenol	ug/L (ppb)	5	64	60	10-171	6
Dibenzofuran	ug/L (ppb)	2.5	73	56	52-116	26 vo
2,4-Dinitrotoluene	ug/L (ppb)	2.5	81	63	55-127	25 vo
4-Nitrophenol	ug/L (ppb)	5	28	25	10-46	11
Diethyl phthalate	ug/L (ppb)	2.5	85	66	63-118	25 vo
Fluorene	ug/L (ppb)	2.5	77	59 vo	61-115	26 vo
4-Chlorophenyl phenyl ether	ug/L (ppb)	2.5	78	60 vo	61-112	26 vo
N-Nitrosodiphenylamine	ug/L (ppb)	2.5	76	56 vo	63-116	30 vo
4-Nitroaniline	ug/L (ppb)	13	65	54	42-150	18
4,6-Dinitro-2-methylphenol	ug/L (ppb)	2.5	74	62	13-152	18
4-Bromophenyl phenyl ether	ug/L (ppb)	2.5	82	61 vo	62-115	29 vo
Hexachlorobenzene	ug/L (ppb)	2.5	80	59 vo	60-113	30 vo
Pentachlorophenol	ug/L (ppb)	2.5	81	66	14-137	20
Phenanthrene	ug/L (ppb)	2.5	76	56 vo	63-113	30 vo
Anthracene	ug/L (ppb)	2.5	77	59 vo	65-117	26 vo
Carbazole	ug/L (ppb)	2.5	82	61 vo	67-131	29 vo
Di-n-butyl phthalate	ug/L (ppb)	2.5	72	53	37-135	30 vo
Fluoranthene	ug/L (ppb)	2.5	85	63 vo	68-121	30 vo
Pyrene	ug/L (ppb)	2.5	81	61 vo	66-125	28 vo
Benzyl butyl phthalate	ug/L (ppb)	2.5	90	68	56-128	28 vo
Benz(a)anthracene	ug/L (ppb)	2.5	86	64 vo	70-130	29 vo
Chrysene	ug/L (ppb)	2.5	89	65 vo	67-119	31 vo
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	2.5	88	62	57-124	35 vo
Di-n-octyl phthalate	ug/L (ppb)	2.5	100	75	43-132	29 vo
Benzo(a)pyrene	ug/L (ppb)	2.5	84	63 vo	68-126	29 vo
Benzo(b)fluoranthene	ug/L (ppb)	2.5	88	65	62-130	30 vo
Benzo(k)fluoranthene	ug/L (ppb)	2.5	89	66 vo	67-125	30 vo
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	2.5	72	58 vo	63-131	22 vo
Dibenz(a,h)anthracene	ug/L (ppb)	2.5	71	55 vo	62-133	25 vo
Benzo(g,h,i)perylene	ug/L (ppb)	2.5	70	54 vo	57-133	26 vo

Date of Report: 01/24/23
Date Received: 01/05/23
Project: 1260-19001-03, F&BI 301041

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

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.25	70	74	25-111	6
Aroclor 1260	ug/L (ppb)	0.25	87	88	23-123	1

Date of Report: 01/24/23
Date Received: 01/05/23
Project: 1260-19001-03, F&BI 301041

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	98	88	35-146	10

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.

301041

SAMPLE CHAIN OF CUSTODY

01/05/23

J1/VW1/C4

Page # 01 of 01

Report To Lynn Erven

Company Erven NW

Address 40 SE 24th Ave

City, State, ZIP Portland, OR 97214

Phone (503) 467-5561 Email lynn@Erven-NW.com

SAMPLERS (*signature*)

PROJECT NAME: 1260-A001-03

PO #

REMARKS: ~~See~~ See attached Form for select VOC's and bench marks
Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
~~Standard turnaround~~
☐ RUSH
Rush charges authorized by:

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TSS	Total Cu, Pb, Ni, Zn	Select VOC's GRO		Notes
M1001-SW-230104	01A-N	01.04.23	14:10	Water	14	X	X	X			X	X	X	X	X		
																	Samples received at 2 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Fowler	ENW	01/04/23	17:06
Received by:	Nhan Phan	FedEx	01/05/23	10:45
Relinquished by:				
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

February 9, 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 February 1, 2022 from the 1260-19001-04, F&BI 202010 project. There are 10 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
ENW0209R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 1, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-04, F&BI 202010 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
202010 -01	RD04-SW-220130
202010 -02	RD02-SW-220130

All quality control requirements were acceptable.

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD04-SW-220130	Client:	Evren Northwest
Date Received:	02/01/22	Project:	1260-19001-04, F&BI 202010
Date Extracted:	02/02/22	Lab ID:	202010-01
Date Analyzed:	02/02/22	Data File:	202010-01.141
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	592

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD02-SW-220130	Client:	Evren Northwest
Date Received:	02/01/22	Project:	1260-19001-04, F&BI 202010
Date Extracted:	02/02/22	Lab ID:	202010-02 x100
Date Analyzed:	02/03/22	Data File:	202010-02 x100.047
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	7,590

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-04, F&BI 202010
Date Extracted:	02/02/22	Lab ID:	I2-94 mb
Date Analyzed:	02/02/22	Data File:	I2-94 mb.041
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	<5

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD04-SW-220130	Client:	Evren Northwest
Date Received:	02/01/22	Project:	1260-19001-04, F&BI 202010
Date Extracted:	02/03/22	Lab ID:	202010-01 x100
Date Analyzed:	02/03/22	Data File:	202010-01 x100.128
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	620

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD02-SW-220130	Client:	Evren Northwest
Date Received:	02/01/22	Project:	1260-19001-04, F&BI 202010
Date Extracted:	02/03/22	Lab ID:	202010-02 x100
Date Analyzed:	02/03/22	Data File:	202010-02 x100.129
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	8,050

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-04, F&BI 202010
Date Extracted:	02/03/22	Lab ID:	I2-99 mb
Date Analyzed:	02/03/22	Data File:	I2-99 mb.094
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	<5

Date of Report: 02/09/22
Date Received: 02/01/22
Project: 1260-19001-04, F&BI 202010

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 200.8

Laboratory Code: 201370-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Zinc	ug/L (ppb)	50	<5	91	90	70-130	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Zinc	ug/L (ppb)	50	98	85-115

Date of Report: 02/09/22
Date Received: 02/01/22
Project: 1260-19001-04, F&BI 202010

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 202015-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Zinc	ug/L (ppb)	50	5.29	98	90	70-130	9

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Zinc	ug/L (ppb)	50	101	85-115

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.

202010

SAMPLE CHAIN OF CUSTODY

02-01-22

AI2

Page # 01 of 01

Report To Lynn Green
Company ENW
Address PO 14488
City, State, ZIP Portland, OR 97293
Phone 503-452-5561 Email lynn@greenenw.com

SAMPLERS (*signature*)

PROJECT NAME: 1260-19001-04

PO #

REMARKS: Filtered
Project specific RLs? - Yes / No

INVOICE TO

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

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Total Zinc	dissolved Zinc			Notes
RD04-SW-220130	01 A-B	01-30-22	18:36	water	2								X	X			
RD02-SW-220130	02 A-B	01-30-22	19:00	water	2								X	X			only 1 sample rec'd AMB 2/1
~~RD06-SW-220130~~	~~03~~	~~1/30/21~~	~~1900~~	~~W~~	~~1~~												rec'd at lab AMB 2/1

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Fauver	ENW	01-31-22	1700
Received by:	Amanda Bruya	FXB	2/1/22	1045
Relinquished by:				
Received by:		Samples received at 6 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

December 8, 2022

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

Dear Mr Green:

Included are the results from the testing of material submitted on November 30, 2022 from the 1260-19001-03, F&BI 211414 project. There are 32 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
ENW1208R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 30, 2022 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 211414 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
211414 -01	RD01-SW-221129
211414 -02	RD02-SW-221129
211414 -03	RD03-SW-221129
211414 -04	RD04-SW-221129
211414 -05	RD05-SW-221129
211414 -06	RD06-SW-221129
211414 -07	RD07-SW-221129
211414 -08	RD08-SW-221129
211414 -09	RD09-SW-221129
211414 -10	RD11-SW-221129
211414 -11	RD13-SW-221129
211414 -12	RD14-SW-221129
211414 -13	RD15-SW-221129

All quality control requirements were acceptable.

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD01-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-01 x10
Date Analyzed:	12/06/22	Data File:	211414-01 x10.120
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	3,020

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD02-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-02
Date Analyzed:	12/06/22	Data File:	211414-02.121
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	77.9

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD03-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-03
Date Analyzed:	12/06/22	Data File:	211414-03.122
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	60.6

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD04-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-04
Date Analyzed:	12/06/22	Data File:	211414-04.123
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	75.7

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD05-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-05
Date Analyzed:	12/06/22	Data File:	211414-05.124
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	78.4

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD06-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-06
Date Analyzed:	12/06/22	Data File:	211414-06.125
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	114

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD07-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-07
Date Analyzed:	12/06/22	Data File:	211414-07.126
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	320

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD08-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-08
Date Analyzed:	12/06/22	Data File:	211414-08.127
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	551

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD09-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-09 x10
Date Analyzed:	12/06/22	Data File:	211414-09 x10.132
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	4,920

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD11-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-10 x10
Date Analyzed:	12/06/22	Data File:	211414-10 x10.133
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	4,780

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD13-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-11 x10
Date Analyzed:	12/06/22	Data File:	211414-11 x10.134
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	3,870

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD14-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-12 x10
Date Analyzed:	12/06/22	Data File:	211414-12 x10.135
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	2,780

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	RD15-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	211414-13
Date Analyzed:	12/06/22	Data File:	211414-13.136
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	51.8

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/06/22	Lab ID:	I2-870 mb
Date Analyzed:	12/06/22	Data File:	I2-870 mb.077
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	<5

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD01-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-01 x100
Date Analyzed:	12/06/22	Data File:	211414-01 x100.109
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	3,180

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD02-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-02
Date Analyzed:	12/06/22	Data File:	211414-02.110
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	89.2

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD03-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-03
Date Analyzed:	12/05/22	Data File:	211414-03.357
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	94.0

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD04-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-04
Date Analyzed:	12/05/22	Data File:	211414-04.358
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	92.3

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD05-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-05
Date Analyzed:	12/05/22	Data File:	211414-05.359
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	89.5

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD06-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-06
Date Analyzed:	12/05/22	Data File:	211414-06.360
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	121

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD07-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-07
Date Analyzed:	12/06/22	Data File:	211414-07.367
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	346

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD08-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-08
Date Analyzed:	12/06/22	Data File:	211414-08.368
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	732

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD09-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-09 x100
Date Analyzed:	12/06/22	Data File:	211414-09 x100.111
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	5,580

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD11-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-10 x100
Date Analyzed:	12/06/22	Data File:	211414-10 x100.112
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	5,390

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD13-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-11 x100
Date Analyzed:	12/06/22	Data File:	211414-11 x100.113
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	4,900

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD14-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-12 x100
Date Analyzed:	12/06/22	Data File:	211414-12 x100.114
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	3,300

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD15-SW-221129	Client:	Evren Northwest
Date Received:	11/30/22	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	211414-13
Date Analyzed:	12/06/22	Data File:	211414-13.115
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	61.9

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 211414
Date Extracted:	12/05/22	Lab ID:	I2-865 mb
Date Analyzed:	12/05/22	Data File:	I2-865 mb.232
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	<5

Date of Report: 12/08/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211414

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 200.8

Laboratory Code: 212040-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Zinc	ug/L (ppb)	50	9.97	90	85	70-130	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Zinc	ug/L (ppb)	50	98	85-115

Date of Report: 12/08/22
Date Received: 11/30/22
Project: 1260-19001-03, F&BI 211414

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 211400-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Zinc	ug/L (ppb)	50	5.47	95	95	70-130	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Zinc	ug/L (ppb)	50	103	85-115

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.

SAMPLE CHAIN OF CUSTODY

211414

11/30/22

MY 01 02

Page # 01 of 02

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 1260-19001-03

PO #

REMARKS: ~~See Attached form for VOCs~~ Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TSS	Total Cu, Pb, Ni, Zn	PCBs	Select VOCs	Total Zn	Dissolved Zn	Notes
~~AH001-SW-221129~~		~~11-29-22~~	~~10:35~~	~~water~~	~~3~~	X	X	X		X		X	X	X	X			
RD01-SW-221129	01 A-B	11-29-22	12:50	water	2											X	X	
RD02-SW-221129	02	11-29-22	12:30	water	2											X	X	
RD03-SW-221129	03	11-29-22	12:45	water	2											X	X	
RD04-SW-221129	04	11-29-22	12:20	water	2											X	X	
RD05-SW-221129	05	11-29-22	12:31	water	2											X	X	
RD06-SW-221129	06	11-29-22	12:06	water	2											X	X	
RD07-SW-221129	07	11-29-22	11:54	water	2											X	X	
RD08-SW-221129	08	11-29-22	11:44	water	2											X	X	
RD09-SW-221129	09	11-29-22	13:40	water	2											X	X	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Fawver	ENW	11-29-22	17:00
Received by:	ANH PHAN	FSS	11/30/22	11:06
Relinquished by:				
Received by:		Samples received at 1 °C		

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

SAMPLE CHAIN OF CUSTODY

211414

11/30/22

M4

Page # 01 of 02

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 1260-19001-03

PO #

REMARKS

Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Total Zn	Dissolved Zn				Notes
RD11-SW-221129	10 A-B	11-29-22	14:06	water	2							X	X				
RD13-SW-221129	11	11-29-22	14:20	water	2							X	X				
RD14-SW-221129	12	11-29-22	13:15	water	2							X	X				
RD15-SW-221129	13	11-29-22	11:24	water	2							X	X				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Fawver	ENW	11-29-22	17:00
Received by:	ANH PHAN	FED	11/30/22	11:06
Relinquished by:				
Received by:		Samples received at 1 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

October 31, 2023

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

Dear Mr Green:

Included are the results from the testing of material submitted on October 26, 2023 from the 1260-19001-03, F&BI 310482 project. There are 19 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
ENW1031R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 26, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 310482 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
310482 -01	RD04-SW-231025
310482 -02	RD09-SW-231025
310482 -03	RD10-SW-231025
310482 -04	RD11-SW-231025
310482 -05	RD14-SW-231025
310482 -06	RD03-SW-231025
310482 -07	RD05-SW-231025
310482 -08	RD02-SW-231025
310482 -09	RD12-SW-231025
310482 -10	RD13-SW-231025
310482 -11	RD01-SW-231025
310482 -12	RD07-SW-231025
310482 -13	RD06-SW-231025
310482 -14	RD08-SW-231025
310482 -15	RD15-SW-231025

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD04-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-01 x5
Date Analyzed:	10/26/23	Data File:	310482-01 x5.164
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	410

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD09-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-02
Date Analyzed:	10/26/23	Data File:	310482-02.171
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	152

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD10-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-03 x5
Date Analyzed:	10/26/23	Data File:	310482-03 x5.174
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	102

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD11-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-04 x5
Date Analyzed:	10/26/23	Data File:	310482-04 x5.175
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	442

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD14-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-05 x5
Date Analyzed:	10/26/23	Data File:	310482-05 x5.176
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	158

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD03-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-06 x5
Date Analyzed:	10/26/23	Data File:	310482-06 x5.177
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	110

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD05-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-07 x5
Date Analyzed:	10/26/23	Data File:	310482-07 x5.178
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	112

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD02-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-08 x5
Date Analyzed:	10/26/23	Data File:	310482-08 x5.182
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	112

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD12-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-09 x5
Date Analyzed:	10/26/23	Data File:	310482-09 x5.183
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	319

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD13-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-10 x5
Date Analyzed:	10/26/23	Data File:	310482-10 x5.184
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	62.1

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD01-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-11 x5
Date Analyzed:	10/26/23	Data File:	310482-11 x5.185
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	97.2

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD07-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-12 x5
Date Analyzed:	10/26/23	Data File:	310482-12 x5.186
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	200

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD06-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-13 x5
Date Analyzed:	10/26/23	Data File:	310482-13 x5.187
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	29.9

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD08-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-14 x5
Date Analyzed:	10/26/23	Data File:	310482-14 x5.188
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	228

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD15-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-15 x5
Date Analyzed:	10/26/23	Data File:	310482-15 x5.189
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	32.1

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	I3-855 mb
Date Analyzed:	10/26/23	Data File:	I3-855 mb.148
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	<5

Date of Report: 10/31/23
Date Received: 10/26/23
Project: 1260-19001-03, F&BI 310482

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 310482-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Zinc	ug/L (ppb)	50	152	83 b	80 b	70-130	4 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Zinc	ug/L (ppb)	50	90	85-115

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

310482

SAMPLE CHAIN OF CUSTODY

10/26/23 J4

Page # 01 of 02

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 1260-1900/-03

PO #

REMARKS

Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Select total metals (Zn)					Notes
RD09-SW-231025	01	10-25-23	8:00	Liquid	1							X					
RD09-SW-231025	02	10-25-23	8:39	↓	1							X					
RD10-SW-231025	03	10-25-23	8:58		1							X					
RD11-SW-231025	04	10-25-23	9:11		1							X					
RD14-SW-231025	05	10-25-23	9:20		1							X					
RD03-SW-231025	06	10-25-23	10:05		1							X					
RD05-SW-231025	07	10-25-23	10:30		1							X					
RD02-SW-231025	08	10-25-23	11:13		1							X					
RD12-SW-231025	09	10-25-23	11:23		1							X					Samples received at 2 °C
RD13-SW-231025	10	10-25-23	11:30		1							X					

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Fowler	EVN	10-25-23	17:00
Received by:	ANHPHAN	F&B	10/26/23	10:32
Relinquished by:				
Received by:				

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

AEC

310482

SAMPLE CHAIN OF CUSTODY

10/26/23 J4

Page # 02 of 02

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 1260-1901-03

PO #

REMARKS: Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Select total metals (CZN)					Notes
																	(X) per EB
RD01-SW-231025	11	10-25-23	11:39	Liquid	1							X					10/27/23 ME
RD07-SW-231025	12	10-25-23	11:45	Liquid	1							X					
RD06-SW-231025	13	10-25-23	12:03	Liquid	1							X					
RD08-SW-231025	14	10-25-23	12:00	Liquid	1							X					
RD15-SW-231025	15	10-25-23	11:52	water	1							(X)					Added at lab (AP) 10/26

Samples received at 2 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Farmer	ENW	10-25-23	17:00
Received by:	ANH PHAN	FSB	10/26/23	10:32
Relinquished by:				
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

October 31, 2023

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

Dear Mr Green:

Included are the results from the testing of material submitted on October 26, 2023 from the 1260-19001-03, F&BI 310482 project. There are 19 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
ENW1031R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 26, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 310482 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
310482 -01	RD04-SW-231025
310482 -02	RD09-SW-231025
310482 -03	RD10-SW-231025
310482 -04	RD11-SW-231025
310482 -05	RD14-SW-231025
310482 -06	RD03-SW-231025
310482 -07	RD05-SW-231025
310482 -08	RD02-SW-231025
310482 -09	RD12-SW-231025
310482 -10	RD13-SW-231025
310482 -11	RD01-SW-231025
310482 -12	RD07-SW-231025
310482 -13	RD06-SW-231025
310482 -14	RD08-SW-231025
310482 -15	RD15-SW-231025

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD04-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-01 x5
Date Analyzed:	10/26/23	Data File:	310482-01 x5.164
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	410

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD09-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-02
Date Analyzed:	10/26/23	Data File:	310482-02.171
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	152

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD10-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-03 x5
Date Analyzed:	10/26/23	Data File:	310482-03 x5.174
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	102

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD11-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-04 x5
Date Analyzed:	10/26/23	Data File:	310482-04 x5.175
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	442

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD14-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-05 x5
Date Analyzed:	10/26/23	Data File:	310482-05 x5.176
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	158

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD03-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-06 x5
Date Analyzed:	10/26/23	Data File:	310482-06 x5.177
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	110

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD05-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-07 x5
Date Analyzed:	10/26/23	Data File:	310482-07 x5.178
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	112

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD02-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-08 x5
Date Analyzed:	10/26/23	Data File:	310482-08 x5.182
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	112

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD12-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-09 x5
Date Analyzed:	10/26/23	Data File:	310482-09 x5.183
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	319

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD13-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-10 x5
Date Analyzed:	10/26/23	Data File:	310482-10 x5.184
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	62.1

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD01-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-11 x5
Date Analyzed:	10/26/23	Data File:	310482-11 x5.185
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	97.2

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD07-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-12 x5
Date Analyzed:	10/26/23	Data File:	310482-12 x5.186
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	200

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD06-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-13 x5
Date Analyzed:	10/26/23	Data File:	310482-13 x5.187
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	29.9

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD08-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-14 x5
Date Analyzed:	10/26/23	Data File:	310482-14 x5.188
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	228

Analysis For Total Metals By EPA Method 200.8

Client ID:	RD15-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	310482-15 x5
Date Analyzed:	10/26/23	Data File:	310482-15 x5.189
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	32.1

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 310482
Date Extracted:	10/26/23	Lab ID:	I3-855 mb
Date Analyzed:	10/26/23	Data File:	I3-855 mb.148
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Zinc	<5

Date of Report: 10/31/23
Date Received: 10/26/23
Project: 1260-19001-03, F&BI 310482

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 310482-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Zinc	ug/L (ppb)	50	152	83 b	80 b	70-130	4 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Zinc	ug/L (ppb)	50	90	85-115

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

310482

SAMPLE CHAIN OF CUSTODY

10/26/23 J4

Page # 01 of 02

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 1260-1900/-03

PO #

REMARKS

Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Select total metals (Zn)					Notes
RD09-SW-231025	01	10-25-23	8:00	Liquid	1							X					
RD09-SW-231025	02	10-25-23	8:39	↓	1							X					
RD10-SW-231025	03	10-25-23	8:58		1							X					
RD11-SW-231025	04	10-25-23	9:11		1							X					
RD14-SW-231025	05	10-25-23	9:20		1							X					
RD03-SW-231025	06	10-25-23	10:05		1							X					
RD05-SW-231025	07	10-25-23	10:30		1							X					
RD02-SW-231025	08	10-25-23	11:13		1							X					
RD12-SW-231025	09	10-25-23	11:23		1							X					Samples received at 2 °C
RD13-SW-231025	10	10-25-23	11:30		1							X					

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Fowler	EVN	10-25-23	17:00
Received by:	ANHPHAN	F&B	10/26/23	10:32
Relinquished by:				
Received by:				

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

AEC

310482

SAMPLE CHAIN OF CUSTODY

10/26/23 J4

Page # 02 of 02

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 1260-1901-03

PO #

REMARKS: Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Select total metals (CZN)					Notes
																	(X) per EB
RD01-SW-231025	11	10-25-23	11:39	Liquid	1							X					10/27/23 ME
RD07-SW-231025	12	10-25-23	11:45	Liquid	1							X					
RD06-SW-231025	13	10-25-23	12:03	Liquid	1							X					
RD08-SW-231025	14	10-25-23	12:00	Liquid	1							X					
RD15-SW-231025	15	10-25-23	11:52	water	1							(X)					Added at lab (AP) 10/26

Samples received at 2 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Farmer	ENW	10-25-23	17:00
Received by:	ANH PHAN	FSB	10/26/23	10:32
Relinquished by:				
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

November 10, 2023

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

Dear Mr Green:

Included are the results from the testing of material submitted on October 26, 2023 from the 4000 building 1260-19001-03, F&BI 310483 project. There are 8 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
ENW1110R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 26, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 4000 building 1260-19001-03, F&BI 310483 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
310483 -01	M1001-SW-231025

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	M1001-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	4000 building 1260-19001-03
Date Extracted:	10/27/23	Lab ID:	310483-01
Date Analyzed:	10/27/23	Data File:	310483-01.131
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	<2.7
Lead	0.584
Nickel	<1
Zinc	484

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	4000 building 1260-19001-03
Date Extracted:	10/27/23	Lab ID:	I3-859 mb
Date Analyzed:	10/27/23	Data File:	I3-859 mb.101
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	<2.7
Lead	<0.5
Nickel	<1
Zinc	<5

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	M1001-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	4000 building 1260-19001-03
Date Extracted:	10/27/23	Lab ID:	310483-01 1/0.5
Date Analyzed:	10/30/23	Data File:	103011.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Tetrachlorometaxylene	65	24	127
Decachlorobiphenyl	61	10	89

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

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	4000 building 1260-19001-03
Date Extracted:	10/27/23	Lab ID:	03-2581 mb2 1/0.5
Date Analyzed:	10/30/23	Data File:	103010.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Tetrachlorometaxylene	48	24	127
Decachlorobiphenyl	28	10	89

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

Date of Report: 11/10/23
Date Received: 10/26/23
Project: 4000 building 1260-19001-03, F&BI 310483

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 310481-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	5.48	90 b	91 b	70-130	1 b
Lead	ug/L (ppb)	10	<1	90	92	70-130	2
Nickel	ug/L (ppb)	20	2.36	90	93	70-130	3
Zinc	ug/L (ppb)	50	8.85	90	94	70-130	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	94	85-115
Lead	ug/L (ppb)	10	96	85-115
Nickel	ug/L (ppb)	20	93	85-115
Zinc	ug/L (ppb)	50	96	85-115

Date of Report: 11/10/23
Date Received: 10/26/23
Project: 4000 building 1260-19001-03, F&BI 310483

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.25	77	78	20-94	1
Aroclor 1260	ug/L (ppb)	0.25	85	86	23-123	1

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

310483

SAMPLE CHAIN OF CUSTODY

10/26/23 J5/C2/VW2

Page # 01 of 01

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 4000 building 1260-19001-03

PO #

REMARKS: ☆See Attached Form for ☆sample details

Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Select total metals (As, Pb, Zn, Ni)	Select SVOCs				Notes
MIDG1-SW-231025	01A-M	10-25-23	8:10	liquid	13					X	X	X	X				SVOCs not reported due to lab issue ME 11/6/23
									Samples received at 2 °C								

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Fawver	ENW	10-25-23	17:00
Received by:	ANH PHAN	F&B	10/26/23	10:32
Relinquished by:				
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

December 6, 2023

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

Dear Mr Green:

Included are the results from the testing of material submitted on November 28, 2023 from the 1260-19001-03, F&BI 311365 project. There are 5 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
ENW1206R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 28, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 311365 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
311365 -01	M1001-SW-231122

All quality control requirements were acceptable.

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	M1001-SW-231122	Client:	Evren Northwest
Date Received:	11/28/23	Project:	1260-19001-03, F&BI 311365
Date Extracted:	11/29/23 and 12/04/23	Lab ID:	311365-01 1/0.25 and 311365-01 1/0.25
Date Analyzed:	11/29/23 and 12/05/23	Data File:	112912.D and 120506.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	66	11	173
2-Fluorobiphenyl	68	25	128
2,4,6-Tribromophenol	89	10	140
Terphenyl-d14	78	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0087 j
2-Methylnaphthalene	0.0053 j
1-Methylnaphthalene	0.0032 j
Acenaphthylene	<0.0008 j
Acenaphthene	<0.002 j
Fluorene	0.0011 j
Phenanthrene	<0.02 j
Anthracene	<0.002 j
Fluoranthene	0.0038 j
Pyrene	0.0061 j
Benz(a)anthracene	<0.002 j
Chrysene	0.0024 j
Benzo(a)pyrene	<0.003 j
Benzo(b)fluoranthene	0.0037 j
Benzo(k)fluoranthene	<0.002 j
Indeno(1,2,3-cd)pyrene	0.0024 j
Dibenz(a,h)anthracene	<0.002 j
Benzo(g,h,i)perylene	0.0045 j

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 311365
Date Extracted:	11/29/23 and 12/04/23	Lab ID:	03-2766 mb 1/0.25 and 03-2779 mb2 1/0.25
Date Analyzed:	11/29/23 and 12/04/23	Data File:	112911.D and 120409.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	11	173
2-Fluorobiphenyl	81	25	128
2,4,6-Tribromophenol	72	10	140
Terphenyl-d14	87	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.002 j
2-Methylnaphthalene	<0.002 j
1-Methylnaphthalene	<0.002 j
Acenaphthylene	<0.0008 j
Acenaphthene	<0.002 j
Fluorene	<0.0008 j
Phenanthrene	<0.02 j
Anthracene	<0.002 j
Fluoranthene	<0.002 j
Pyrene	<0.002 j
Benz(a)anthracene	<0.002 j
Chrysene	<0.002 j
Benzo(a)pyrene	<0.003 j
Benzo(b)fluoranthene	<0.002 j
Benzo(k)fluoranthene	<0.002 j
Indeno(1,2,3-cd)pyrene	<0.002 j
Dibenz(a,h)anthracene	<0.002 j
Benzo(g,h,i)perylene	<0.002 j

Date of Report: 12/06/23
Date Received: 11/28/23
Project: 1260-19001-03, F&BI 311365

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	77	75	62-97	3
2-Methylnaphthalene	ug/L (ppb)	5	82	80	64-101	2
1-Methylnaphthalene	ug/L (ppb)	5	86	84	64-103	2
Acenaphthylene	ug/L (ppb)	5	97	95	70-130	2
Acenaphthene	ug/L (ppb)	5	84	83	70-130	1
Fluorene	ug/L (ppb)	5	92	92	70-130	0
Phenanthrene	ug/L (ppb)	5	94	91	70-130	3
Anthracene	ug/L (ppb)	5	93	94	70-130	1
Fluoranthene	ug/L (ppb)	5	101	100	70-130	1
Pyrene	ug/L (ppb)	5	97	96	70-130	1
Benz(a)anthracene	ug/L (ppb)	5	98	99	70-130	1
Chrysene	ug/L (ppb)	5	96	96	70-130	0
Benzo(a)pyrene	ug/L (ppb)	5	100	101	70-130	1
Benzo(b)fluoranthene	ug/L (ppb)	5	96	97	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	5	92	97	70-130	5
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	113	104	70-130	8
Dibenz(a,h)anthracene	ug/L (ppb)	5	115	110	70-130	4
Benzo(g,h,i)perylene	ug/L (ppb)	5	119	112	70-130	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenanthrene	ug/L (ppb)	5	97	86	63-113	12
Fluoranthene	ug/L (ppb)	5	95	97	68-121	2
Pyrene	ug/L (ppb)	5	117	97	62-133	19

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

311365

SAMPLE CHAIN OF CUSTODY 11/28/23 F2

Page # 1 of 1

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 1260-19001-03

PO #

REMARKS: * See attached for list of PAHs

Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
X Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	* select PAHs					Notes
MW001-SW-231122	01 A-D	11-22-23	10:35	Liquid	4							X					

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Dan Saito	ENW	11/27/23	1730
Received by:	Nhan Phan	FEBI	11/28/23	1825
Relinquished by:				
Received by:		Samples received at 4 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

November 10, 2023

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

Dear Mr Green:

Included are the results from the testing of material submitted on October 26, 2023 from the 4000 building 1260-19001-03, F&BI 310483 project. There are 8 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
ENW1110R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 26, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 4000 building 1260-19001-03, F&BI 310483 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
310483 -01	M1001-SW-231025

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	M1001-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	4000 building 1260-19001-03
Date Extracted:	10/27/23	Lab ID:	310483-01
Date Analyzed:	10/27/23	Data File:	310483-01.131
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	<2.7
Lead	0.584
Nickel	<1
Zinc	484

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	4000 building 1260-19001-03
Date Extracted:	10/27/23	Lab ID:	I3-859 mb
Date Analyzed:	10/27/23	Data File:	I3-859 mb.101
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Copper	<2.7
Lead	<0.5
Nickel	<1
Zinc	<5

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	M1001-SW-231025	Client:	Evren Northwest
Date Received:	10/26/23	Project:	4000 building 1260-19001-03
Date Extracted:	10/27/23	Lab ID:	310483-01 1/0.5
Date Analyzed:	10/30/23	Data File:	103011.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Tetrachlorometaxylene	65	24	127
Decachlorobiphenyl	61	10	89

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

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	4000 building 1260-19001-03
Date Extracted:	10/27/23	Lab ID:	03-2581 mb2 1/0.5
Date Analyzed:	10/30/23	Data File:	103010.D
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Tetrachlorometaxylene	48	24	127
Decachlorobiphenyl	28	10	89

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

Date of Report: 11/10/23
Date Received: 10/26/23
Project: 4000 building 1260-19001-03, F&BI 310483

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 310481-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	5.48	90 b	91 b	70-130	1 b
Lead	ug/L (ppb)	10	<1	90	92	70-130	2
Nickel	ug/L (ppb)	20	2.36	90	93	70-130	3
Zinc	ug/L (ppb)	50	8.85	90	94	70-130	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	94	85-115
Lead	ug/L (ppb)	10	96	85-115
Nickel	ug/L (ppb)	20	93	85-115
Zinc	ug/L (ppb)	50	96	85-115

Date of Report: 11/10/23
Date Received: 10/26/23
Project: 4000 building 1260-19001-03, F&BI 310483

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.25	77	78	20-94	1
Aroclor 1260	ug/L (ppb)	0.25	85	86	23-123	1

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

310483

SAMPLE CHAIN OF CUSTODY

10/26/23 J5/C2/VW2

Page # 01 of 01

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 4000 building 1260-19001-03

PO #

REMARKS: ☆See Attached Form for ☆sample details

Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Select total metals (As, Pb, Zn, Ni)	Select SVOCs				Notes
MIDG1-SW-231025	01A-M	10-25-23	8:10	liquid	13					X	X	X	X				SVOCs not reported due to lab issue ME 11/6/23
									Samples received at 2 °C								

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Bailey Fawver	ENW	10-25-23	17:00
Received by:	ANH PHAN	F&B	10/26/23	10:32
Relinquished by:				
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

December 6, 2023

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

Dear Mr Green:

Included are the results from the testing of material submitted on November 28, 2023 from the 1260-19001-03, F&BI 311365 project. There are 5 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
ENW1206R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 28, 2023 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 311365 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
311365 -01	M1001-SW-231122

All quality control requirements were acceptable.

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	M1001-SW-231122	Client:	Evren Northwest
Date Received:	11/28/23	Project:	1260-19001-03, F&BI 311365
Date Extracted:	11/29/23 and 12/04/23	Lab ID:	311365-01 1/0.25 and 311365-01 1/0.25
Date Analyzed:	11/29/23 and 12/05/23	Data File:	112912.D and 120506.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	66	11	173
2-Fluorobiphenyl	68	25	128
2,4,6-Tribromophenol	89	10	140
Terphenyl-d14	78	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0087 j
2-Methylnaphthalene	0.0053 j
1-Methylnaphthalene	0.0032 j
Acenaphthylene	<0.0008 j
Acenaphthene	<0.002 j
Fluorene	0.0011 j
Phenanthrene	<0.02 j
Anthracene	<0.002 j
Fluoranthene	0.0038 j
Pyrene	0.0061 j
Benz(a)anthracene	<0.002 j
Chrysene	0.0024 j
Benzo(a)pyrene	<0.003 j
Benzo(b)fluoranthene	0.0037 j
Benzo(k)fluoranthene	<0.002 j
Indeno(1,2,3-cd)pyrene	0.0024 j
Dibenz(a,h)anthracene	<0.002 j
Benzo(g,h,i)perylene	0.0045 j

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	1260-19001-03, F&BI 311365
Date Extracted:	11/29/23 and 12/04/23	Lab ID:	03-2766 mb 1/0.25 and 03-2779 mb2 1/0.25
Date Analyzed:	11/29/23 and 12/04/23	Data File:	112911.D and 120409.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	11	173
2-Fluorobiphenyl	81	25	128
2,4,6-Tribromophenol	72	10	140
Terphenyl-d14	87	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.002 j
2-Methylnaphthalene	<0.002 j
1-Methylnaphthalene	<0.002 j
Acenaphthylene	<0.0008 j
Acenaphthene	<0.002 j
Fluorene	<0.0008 j
Phenanthrene	<0.02 j
Anthracene	<0.002 j
Fluoranthene	<0.002 j
Pyrene	<0.002 j
Benz(a)anthracene	<0.002 j
Chrysene	<0.002 j
Benzo(a)pyrene	<0.003 j
Benzo(b)fluoranthene	<0.002 j
Benzo(k)fluoranthene	<0.002 j
Indeno(1,2,3-cd)pyrene	<0.002 j
Dibenz(a,h)anthracene	<0.002 j
Benzo(g,h,i)perylene	<0.002 j

Date of Report: 12/06/23
Date Received: 11/28/23
Project: 1260-19001-03, F&BI 311365

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	77	75	62-97	3
2-Methylnaphthalene	ug/L (ppb)	5	82	80	64-101	2
1-Methylnaphthalene	ug/L (ppb)	5	86	84	64-103	2
Acenaphthylene	ug/L (ppb)	5	97	95	70-130	2
Acenaphthene	ug/L (ppb)	5	84	83	70-130	1
Fluorene	ug/L (ppb)	5	92	92	70-130	0
Phenanthrene	ug/L (ppb)	5	94	91	70-130	3
Anthracene	ug/L (ppb)	5	93	94	70-130	1
Fluoranthene	ug/L (ppb)	5	101	100	70-130	1
Pyrene	ug/L (ppb)	5	97	96	70-130	1
Benz(a)anthracene	ug/L (ppb)	5	98	99	70-130	1
Chrysene	ug/L (ppb)	5	96	96	70-130	0
Benzo(a)pyrene	ug/L (ppb)	5	100	101	70-130	1
Benzo(b)fluoranthene	ug/L (ppb)	5	96	97	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	5	92	97	70-130	5
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	113	104	70-130	8
Dibenz(a,h)anthracene	ug/L (ppb)	5	115	110	70-130	4
Benzo(g,h,i)perylene	ug/L (ppb)	5	119	112	70-130	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenanthrene	ug/L (ppb)	5	97	86	63-113	12
Fluoranthene	ug/L (ppb)	5	95	97	68-121	2
Pyrene	ug/L (ppb)	5	117	97	62-133	19

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

311365

SAMPLE CHAIN OF CUSTODY 11/28/23 F2

Page # 1 of 1

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 1260-19001-03

PO #

REMARKS: * See attached for list of PAHs

Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
X Standard Turnaround
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	* select PAHs					Notes
MW001-SW-231122	01 A-D	11-22-23	10:35	Liquid	4							X					

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Dan Saito	ENW	11/27/23	1730
Received by:	Nhan Phan	FEBI	11/28/23	1825
Relinquished by:				
Received by:		Samples received at 4 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 2, 2024

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 January 9, 2024 from the 1260-19001-03, F&BI 401088 project. There is 1 page 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
ENW0202R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 9, 2024 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 401088 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
401088 -01	ML001-240108

Sample ML001-240108 was sent to SGS for dioxin and furan analysis. The report is enclosed.

401088

SAMPLE CHAIN OF CUSTODY

01/09/24 C2

Page # 1 of 1

Report To Lynn Green
Company Even Northwest
Address P.O. Box 14488
City, State, ZIP Portland, OR 97293
Phone (503) 452-5561 Email lynng@even-nw.com

SAMPLERS (*signature*) Jordan Mons
PROJECT NAME 1260-19001-03
PO #
REMARKS
Project specific RLs? - Yes / No
INVOICE TO

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

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Dioxins	Furans			Notes
ML001-240108	01 AB	01-08-24	9:30	Water	2								X	X			

Samples received at 3 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Jordan Mons	Jordan Mons	Even Northwest	01-08-24	16:00
Received by: Jordan Mons	ANHPHAN	FS &	01/09/24	10:00
Relinquished by:				
Received by:				

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

FINAL LAB REPORT

401088

B9021

31-Jan-2024

Prepared by

SGS NORTH AMERICA

Prepared for

Friedman and Bruya Inc

Michael Erdahl

5500 4th Ave S
Seattle, WA 98108
Phone: 206 285-8282
Email: merdahl@friedmanandbruya.com

This report is approved by

---

for Amy Boehm

amy.boehm@sgs.com

Senior Project Manager

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	401088
SGS Project #	B9021
Analytical Protocol(s)	1613B
No. Samples Submitted	1
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	10-Jan-24
Condition Received	Good
Temperature upon Receipt (ºC)	0.6
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS / APPROVALS / PERMITS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	88-0682
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Colorado	NC00919
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.4)
Florida DOH	E87634
Hawaii DOH	Approval
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020020
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
Ohio	87785
Oklahoma	2205
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
UCMR 5	NC00919
US Coast Guard	16714/159.317/SGS
U.S. Fish and Wildlife Service	A22801
Vermont	VT-87634
Virginia	460214
Washington	C913

Sample ID: ML001-240108 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Friedman and Bruya Inc	Matrix:	Aqueous	Lab Project ID:	B9021	Date Received:	10-Jan-2024
Project ID:	401088	Weight/Volume:	0.97 L	Lab Sample ID	B9021_20810_DF_001	Date Extracted:	15-Jan-2024
Date Collected:	08-Jan-2024	pH:	5	QC Batch No:	20810	Date Analyzed:	29-Jan-2024
		Split:	-	Dilution:	-	Time Analyzed:	7:21:31

Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.81			ES 2378-TCDD	73.5	
12378-PeCDD	ND	1.98			ES 12378-PeCDD	68.2	
123478-HxCDD	ND	2.12			ES 123478-HxCDD	73.6	
123678-HxCDD	ND	2.08			ES 123678-HxCDD	74.6	
123789-HxCDD	ND	2.08			ES 123789-HxCDD	75.7	
1234678-HpCDD	EMPC		15.5	J	ES 1234678-HpCDD	69	
OCDD	136				ES OCDD	82.3	
2378-TCDF	ND	1.35			ES 2378-TCDF	74.9	
12378-PeCDF	ND	1.35			ES 12378-PeCDF	70.9	
23478-PeCDF	ND	1.37			ES 23478-PeCDF	69.6	
123478-HxCDF	ND	1.41			ES 123478-HxCDF	70.2	
123678-HxCDF	ND	1.44			ES 123678-HxCDF	74.4	
234678-HxCDF	ND	1.49			ES 234678-HxCDF	71.9	
123789-HxCDF	ND	1.72			ES 123789-HxCDF	67.5	
1234678-HpCDF	7.46			J	ES 1234678-HpCDF	67	
1234789-HpCDF	ND	1.85			ES 1234789-HpCDF	64.5	
OCDF	13.3			J	ES OCDF	75.5	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	83.1	
Total TCDD	ND	1.81	ND		CS 12347-PeCDD	n/a	
Total PeCDD	ND	1.98	ND		CS 12346-PeCDF	n/a	
Total HxCDD	ND	2.09	ND		CS 123469-HxCDF	n/a	
Total HpCDD	ND		29.2		CS 1234689-HpCDF	n/a	
Total TCDF	ND	1.35	ND				
Total PeCDF	ND	1.36	ND				
Total HxCDF	4.6		4.6				
Total HpCDF	16.8		16.8				
Total PCDD/Fs	**171**		**200**				
WHO-2005 TEQs							
TEQ: ND=0	0.12		0.275				
TEQ: ND=DL/2	2.93	2.83	3.09				
TEQ: ND=DL	5.75	5.67	5.9				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample ID: Method Blank B9021_20810 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Friedman and Bruya Inc	Matrix:	Aqueous	Lab Project ID:	B9021	Date Received:	n/a
Project ID:	401088	Weight/Volume:	1.00 L	Lab Sample ID	MB1_20810_DF_TLX	Date Extracted:	15-Jan-2024
Date Collected:	n/a	pH:	n/a	QC Batch No:	20810	Date Analyzed:	29-Jan-2024
		Split:	-	Dilution:	-	Time Analyzed:	0:24:46

Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.72			ES 2378-TCDD	86.8	
12378-PeCDD	ND	1.41			ES 12378-PeCDD	79.8	
123478-HxCDD	ND	1.3			ES 123478-HxCDD	85.3	
123678-HxCDD	ND	1.39			ES 123678-HxCDD	88.5	
123789-HxCDD	ND	1.44			ES 123789-HxCDD	86	
1234678-HpCDD	ND	1.74			ES 1234678-HpCDD	82.3	
OCDD	ND	7.81			ES OCDD	96.3	
2378-TCDF	ND	1.16			ES 2378-TCDF	87.7	
12378-PeCDF	ND	0.87			ES 12378-PeCDF	83.7	
23478-PeCDF	ND	0.851			ES 23478-PeCDF	81.9	
123478-HxCDF	ND	1.09			ES 123478-HxCDF	83.4	
123678-HxCDF	ND	1.04			ES 123678-HxCDF	91.1	
234678-HxCDF	ND	1.16			ES 234678-HxCDF	85.9	
123789-HxCDF	ND	1.21			ES 123789-HxCDF	84.2	
1234678-HpCDF	ND	1.14			ES 1234678-HpCDF	78.1	
1234789-HpCDF	ND	1.36			ES 1234789-HpCDF	74	
OCDF	ND	1.52			ES OCDF	91.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	86.4	
Total TCDD	ND	1.72	ND		CS 12347-PeCDD	n/a	
Total PeCDD	ND	1.41	ND		CS 12346-PeCDF	n/a	
Total HxCDD	ND	1.38	ND		CS 123469-HxCDF	n/a	
Total HpCDD	ND	1.74	ND		CS 1234689-HpCDF	n/a	
Total TCDF	ND	1.16	ND				
Total PeCDF	ND	0.86	ND				
Total HxCDF	ND	1.12	ND				
Total HpCDF	ND	1.24	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	2.22	2.22	2.22				
TEQ: ND=DL	4.44	4.44	4.44				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10172022_26APR2023		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	240128C15	Analysis Date:	28-JAN-2024 22:52:08
Lab ID:	OPR1_20810_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	11.7	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	50.2	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	54.9	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	54.9	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	50.5	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	55.1	35	-	70	Y
OCDD	100	111	78	-	144	Y
2,3,7,8-TCDF	10	10.8	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	48.7	40	-	67	Y
2,3,4,7,8-PeCDF	50	51.7	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	50.6	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	48.8	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	50.1	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	48.3	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	49.9	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	47.8	39	-	69	Y
OCDF	100	97.5	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 29 Jan 2024 15:31 Analyst: TF

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS3_DF_10172022_26APR2023		
Instrument ID:	HRMS3	GC Column ID:	ZB-5ms
VER Data Filename:	240128C15	Analysis Date:	28-JAN-2024 22:52:08
Lab ID:	OPR1_20810_DF		

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	87.8	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	81.9	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	88.2	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	91.4	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	91	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	81.4	26	-	166	Y
13C-OCDD	200	191	26	-	397	Y
13C-2,3,7,8-TCDF	100	91.4	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	87	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	84.2	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	85.4	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	90.6	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	86.3	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	81.9	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	80.4	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	76.8	20	-	186	Y
13C-OCDF	200	186	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	34.3	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 29 Jan 2024 15:31 Analyst: TF

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Amy Boehm*
Receipt Date & Time:	*10-Jan-24 at 10:04*
AP Project name:	*B9021*
Requested TAT:	*15 business days*
Projected due date:	*31-Jan-24*
Matrix:	*Aqueous*
Phone#:	*910-794-1613*
Email Address:	*Amy.Boehm@sgs.com*

Company Contact:	*Michael Erdahl*
Company:	*Friedman and Bruya Inc*
Project Name & Site:	*401088*
Project PO#:	*D-621*
QAAP/Contract #:	*2023 1978*
Requested Analysis:	*Method 1613B*
Phone#:	*(206) 285-8282*
Email Address:	*merdahl@FriedmanAndBruya.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
ML001-240108	B9021_001	Water	1	1-Liter Amber	08-Jan-24	09:30	0.6	1	7747 3955 1391

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by:* Ashley Owens *QC'ed by:* AK 11 Jan 24

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

B9021

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
SGS

PROJECT NAME/NO.	PO #
401088	D-621

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 and Furans	Nitrate	Nitrite	Sulfate	RSK-175						Notes
ML001-240108		1/8/2024	930	water	1	x										

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

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	1/9/24	1054
Received by:	Ashley Owens	Ashley Owens	SGS-ILM	1/10/24	10:04
Relinquished by:					0-6°
Received by:					

B9021

ORIGIN ID:BFIA (206) 285-8282
SAMPLE RECEIVING
FRIEDMAN & BRUYA, INC
5500 4TH AVENUE SOUTH

SEATTLE, WA 98108
UNITED STATES US

SHIP DATE: 09JAN24
ACTWGT: 27.00 LB
CAD: 102636532/INET4535
DIMS: 15x8x15 IN

BILL SENDER

TO **AMBER KORNEGAY**
SGS NORTH AMERICA, INC
5600 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 667-0148 REF:
INV:
PO: DEPT:

5833BB1409AE3

FedEx Express

WED - 10 JAN 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7747 3955 1391

XG ILMA

28405
NC-US RDU

0.6°
1/10
10:04

RT 358 1 10:30 A
FZ 367 1391 01.10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

March 28, 2024

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 February 27, 2024 from the 1260-19001-03, F&BI 402371 project. There is 1 page 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
ENW0328R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 27, 2024 by Friedman & Bruya, Inc. from the Evren Northwest 1260-19001-03, F&BI 402371 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Evren Northwest
402371 -01	ML001-240226

The samples were sent to SGS for dioxin and furan analysis. The report is enclosed.

402371

SAMPLE CHAIN OF CUSTODY 02/27/24 F2

Page # 1 of 1

Report To Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

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

SAMPLERS (*signature*)

PROJECT NAME: 1260-19001-03

PO #

REMARKS

Project Specific RLs - Yes / No

INVOICE TO

TURNAROUND TIME
- Standard Turnaround
- RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- Dispose after 30 days
- Archive Samples
- Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Dioxins and Furans					Notes
ML001-240226	01A-B	02-26-24	13:40	Water	2							X					
						Samples received at 2 °C											

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Jordan Morris	Evren Northwest	02-26-24	18:00
Received by:	ANH PHAN	FSB	02/27/24	10:20
Relinquished by:				
Received by:				

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

FINAL LAB REPORT

401088

B9021

31-Jan-2024

Prepared by

SGS NORTH AMERICA

Prepared for

Friedman and Bruya Inc

Michael Erdahl

5500 4th Ave S
Seattle, WA 98108
Phone: 206 285-8282
Email: merdahl@friedmanandbruya.com

This report is approved by

---

for Amy Boehm

amy.boehm@sgs.com

Senior Project Manager

PROJECT INFORMATION SUMMARY *(When applicable, see QC Annotations for details)*

Client Project	401088
SGS Project #	B9021
Analytical Protocol(s)	1613B
No. Samples Submitted	1
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	10-Jan-24
Condition Received	Good
Temperature upon Receipt (ºC)	0.6
Extraction within Holding Time	Yes
Analysis within Holding Time	Yes

QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value “H” is assigned. If the obtained value is less than half the specified value “h” is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

SGS CERTIFICATIONS / APPROVALS / PERMITS

Alaska DEC LAP	17-012
Alaska DEC LCP	NC00919
Arkansas	88-0682
California (ELAP)	ELAP Cert #2914
CLIA	34D1013708
Colorado	NC00919
Connecticut	PH-0258
USDA Soil Permit	P330-20-00103
American Association for Laboratory Accreditation (A2LA)	2726.01 (ISO 17025:2017, 2009 TNI, DoD ELAP QSM 5.4)
Florida DOH	E87634
Hawaii DOH	Approval
Louisiana DEQ	4115
Louisiana DOH	LA031
Maine	2020020
Massachusetts	M-NC919
Michigan	9950
Minnesota (Primary NELAP For Method 23)	037-999-459
Montana	0106
New Hampshire (Secondary NELAP)	2083
New Jersey	NC100
New York	11685
North Carolina DEQ	481
Ohio	87785
Oklahoma	2205
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	99029002
Texas	T104704260
UCMR 5	NC00919
US Coast Guard	16714/159.317/SGS
U.S. Fish and Wildlife Service	A22801
Vermont	VT-87634
Virginia	460214
Washington	C913

Sample ID: ML001-240226 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Friedman and Bruya Inc	Matrix:	Aqueous	Lab Project ID:	B9182	Date Received:	28-Feb-2024
Project ID:	402371	Weight/Volume:	0.97 L	Lab Sample ID	B9182_20947_DF_001	Date Extracted:	04-Mar-2024
Date Collected:	26-Feb-2024	pH:	6	QC Batch No:	20947	Date Analyzed:	23-Mar-2024
		Split:	-	Dilution:	-	Time Analyzed:	21:51:44

Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.46			ES 2378-TCDD	85	
12378-PeCDD	ND	1.45			ES 12378-PeCDD	84.4	
123478-HxCDD	ND	1.96			ES 123478-HxCDD	80.1	
123678-HxCDD	ND	2.11			ES 123678-HxCDD	89.6	
123789-HxCDD	ND	2.14			ES 123789-HxCDD	85	
1234678-HpCDD	26.3				ES 1234678-HpCDD	83.5	
OCDD	EMPC		154		ES OCDD	97.2	
2378-TCDF	ND	1.45			ES 2378-TCDF	83.1	
12378-PeCDF	ND	0.959			ES 12378-PeCDF	84.4	
23478-PeCDF	ND	0.953			ES 23478-PeCDF	82.6	
123478-HxCDF	ND	1.16			ES 123478-HxCDF	81.5	
123678-HxCDF	ND	0.977			ES 123678-HxCDF	91	
234678-HxCDF	ND	1.18			ES 234678-HxCDF	86.4	
123789-HxCDF	ND	1.39			ES 123789-HxCDF	78.9	
1234678-HpCDF	5.51			J	ES 1234678-HpCDF	91	
1234789-HpCDF	ND	1.19			ES 1234789-HpCDF	79.6	
OCDF	EMPC		12.3	J	ES OCDF	98.4	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	87.3	
Total TCDD	ND	1.46	ND		CS 12347-PeCDD	n/a	
Total PeCDD	ND	1.45	ND		CS 12346-PeCDF	n/a	
Total HxCDD	ND	2.07	ND		CS 123469-HxCDF	n/a	
Total HpCDD	46.8		46.8		CS 1234689-HpCDF	n/a	
Total TCDF	ND	1.45	ND				
Total PeCDF	ND	0.956	ND				
Total HxCDF	ND	1.16	ND				
Total HpCDF	5.51		11.9				
Total PCDD/Fs	**52.3**		**225**				
WHO-2005 TEQs							
TEQ: ND=0	0.318		0.368				
TEQ: ND=DL/2	2.56	2.25	2.61				
TEQ: ND=DL	4.8	4.51	4.85				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

Sample ID: Method Blank B9182_20947 — Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	Friedman and Bruya Inc	Matrix:	Aqueous	Lab Project ID:	B9182	Date Received:	n/a
Project ID:	402371	Weight/Volume:	1.00 L	Lab Sample ID	MB1_20947_DF_TLX	Date Extracted:	04-Mar-2024
Date Collected:	n/a	pH:	n/a	QC Batch No:	20947	Date Analyzed:	23-Mar-2024
		Split:	-	Dilution:	-	Time Analyzed:	18:41:13

Analyte	Conc. (pg/L)	DL (pg/L)	EMPC (pg/L)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	1.18			ES 2378-TCDD	84.2	
12378-PeCDD	ND	1.08			ES 12378-PeCDD	84.8	
123478-HxCDD	ND	1.69			ES 123478-HxCDD	82.4	
123678-HxCDD	ND	1.78			ES 123678-HxCDD	84.5	
123789-HxCDD	ND	1.75			ES 123789-HxCDD	86.8	
1234678-HpCDD	ND	1.53			ES 1234678-HpCDD	79.7	
OCDD	ND	3.34			ES OCDD	84.8	
2378-TCDF	ND	0.886			ES 2378-TCDF	84.3	
12378-PeCDF	ND	0.904			ES 12378-PeCDF	83.3	
23478-PeCDF	ND	0.867			ES 23478-PeCDF	82.7	
123478-HxCDF	ND	0.969			ES 123478-HxCDF	79.1	
123678-HxCDF	ND	1.02			ES 123678-HxCDF	86.5	
234678-HxCDF	ND	1.09			ES 234678-HxCDF	81	
123789-HxCDF	ND	1.31			ES 123789-HxCDF	72.4	
1234678-HpCDF	ND	1.02			ES 1234678-HpCDF	86.7	
1234789-HpCDF	ND	1.51			ES 1234789-HpCDF	69.4	
OCDF	ND	2.67			ES OCDF	86.7	
Totals					**Standard**	**CS Recoveries**	
					CS 37Cl-2378-TCDD	87.7	
Total TCDD	ND	1.18	ND		CS 12347-PeCDD	n/a	
Total PeCDD	ND	1.08	ND		CS 12346-PeCDF	n/a	
Total HxCDD	ND	1.74	ND		CS 123469-HxCDF	n/a	
Total HpCDD	ND	1.53	ND		CS 1234689-HpCDF	n/a	
Total TCDF	ND	0.886	ND				
Total PeCDF	ND	0.886	ND				
Total HxCDF	ND	1.08	ND				
Total HpCDF	ND	1.23	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	1.82	1.82	1.82				
TEQ: ND=DL	3.65	3.65	3.65				

SGS
5500 Business Drive
Wilmington, NC 28405, USA
www.us.sgs.com
Tel: +1 910 794-1613; Toll-Free 866 846-8290

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8A**

Lab Name:	SGS North America		
Initial Calibration:	ICAL: HRMS1_DF_10172022_28APR2023		
Instrument ID:	HRMS1	GC Column ID:	ZB-5ms
VER Data Filename:	240323A02	Analysis Date:	23-MAR-2024 16:18:30
Lab ID:	OPR1_20947_DF		

NATIVE ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
2,3,7,8-TCDD	10	10.7	6.7	-	15.8	Y
1,2,3,7,8-PeCDD	50	46.3	35	-	71	Y
1,2,3,4,7,8-HxCDD	50	53.4	35	-	82	Y
1,2,3,6,7,8-HxCDD	50	54.3	38	-	67	Y
1,2,3,7,8,9-HxCDD	50	50	32	-	81	Y
1,2,3,4,6,7,8-HpCDD	50	51.9	35	-	70	Y
OCDD	100	105	78	-	144	Y
2,3,7,8-TCDF	10	11.2	7.5	-	15.8	Y
1,2,3,7,8-PeCDF	50	50	40	-	67	Y
2,3,4,7,8-PeCDF	50	53.4	34	-	80	Y
1,2,3,4,7,8-HxCDF	50	49.1	36	-	67	Y
1,2,3,6,7,8-HxCDF	50	51.1	42	-	65	Y
2,3,4,6,7,8-HxCDF	50	52.3	35	-	78	Y
1,2,3,7,8,9-HxCDF	50	49.5	39	-	65	Y
1,2,3,4,6,7,8-HpCDF	50	51.4	41	-	61	Y
1,2,3,4,7,8,9-HpCDF	50	50.3	39	-	69	Y
OCDF	100	100	63	-	170	Y

Contract-required concentration limits for OPR as specified in Table 6,
Method 1613. 10/94

Processed: 25 Mar 2024 11:57 Analyst: pw

METHOD 1613B **PCDD/F ONGOING PRECISION AND RECOVERY (OPR)** **FORM 8B**

Lab Name: SGS North America

Initial Calibration: ICAL: HRMS1_DF_10172022_28APR2023

Instrument ID: HRMS1 GC Column ID: ZB-5ms

VER Data Filename: 240323A02 Analysis Date: 23-MAR-2024 16:18:30

Lab ID: OPR1_20947_DF

LABELED ANALYTES	SPIKE CONC.	CONC. FOUND	RANGE (ng/mL)			OK
13C-2,3,7,8-TCDD	100	89.4	20	-	175	Y
13C-1,2,3,7,8-PeCDD	100	84.1	21	-	227	Y
13C-1,2,3,4,7,8-HxCDD	100	87.9	21	-	193	Y
13C-1,2,3,6,7,8-HxCDD	100	93.9	25	-	163	Y
13C-1,2,3,7,8,9-HxCDD	100	90	26	-	166	Y
13C-1,2,3,4,6,7,8-HpCDD	100	83.1	26	-	166	Y
13C-OCDD	200	185	26	-	397	Y
13C-2,3,7,8-TCDF	100	90.6	22	-	152	Y
13C-1,2,3,7,8-PeCDF	100	87	21	-	192	Y
13C-2,3,4,7,8-PeCDF	100	85.2	13	-	328	Y
13C-1,2,3,4,7,8-HxCDF	100	87.5	19	-	202	Y
13C-1,2,3,6,7,8-HxCDF	100	93.6	21	-	159	Y
13C-2,3,4,6,7,8-HxCDF	100	89.7	22	-	176	Y
13C-1,2,3,7,8,9-HxCDF	100	76.6	17	-	205	Y
13C-1,2,3,4,6,7,8-HpCDF	100	88.2	21	-	158	Y
13C-1,2,3,4,7,8,9-HpCDF	100	75.4	20	-	186	Y
13C-OCDF	200	186	26	-	397	Y
CLEANUP STANDARD						
37Cl-2,3,7,8-TCDD	40	35.4	12.4	-	76.4	Y

Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

Processed: 25 Mar 2024 11:57 Analyst: pw

Sample Receipt Notification

5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919

Project Manager:	*Amy Boehm*
Receipt Date & Time:	*28-Feb-24 at 09:36*
AP Project name:	*B9182*
Requested TAT:	*15 business days*
Projected due date:	*20-Mar-24*
Matrix:	*Aqueous*
Phone#:	*910-794-1613*
Email Address:	*Amy.Boehm@sgs.com*

Company Contact:	*Michael Erdahl*
Company:	*Friedman and Bruya Inc*
Project Name & Site:	*402371*
Project PO#:	*D-687*
QAAP/Contract #:	*2023 1978*
Requested Analysis:	*Method 1613B*
Phone#:	*(206) 285-8282*
Email Address:	*merdahl@FriedmanAndBruya.com*

Client Smp ID	AP Smp ID	Sample Condition & Notes	Quantity	Size	Sampling Date	Sampling Time	Received Temp (°C)	Container #	Shipping #
ML001-240226	B9182_001	Water	1	1-Liter Amber	26-Feb-24	13:40	1.3	1	7753 3478 7531

Preservation Type: **Sample Seals:** No

Notes/Comments:

Samples received intact.

COC lists matrix as soil, sample does not appear to include any solids. Logged in as aqueous.

Any un-extracted sample will be stored for 90 days from reporting date. Additional storage fees may apply for any samples stored longer than 90 days.

Received by: Ashley Owens *Logged in by: Ashley Owens* *QC'ed by:* AK 29 Feb 24

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

B9182

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

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

SUBCONTRACTER
SGS

PROJECT NAME/NO.	PO #
402371	D-687

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 and Furans 1613B	Nitrate	Nitrite	Sulfate	RSK-175						Notes
ML001-240226		2/26/2024	1340	soil	1	x										

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

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/27/24	11 00AM
Received by:	Ashley Owens	Ashley Owens	SGS-ILM	2/28/24	9:30
Relinquished by:					1.3°
Received by:					

B9182

ORIGIN ID:BFIA (206) 285-8282
SAMPLE RECEIVING
FRIEDMAN & BRUYA, INC
5500 4TH AVENUE SOUTH

SEATTLE, WA 98108
UNITED STATES US

SHIP DATE: 27FEB24
ACTWGT: 10.00 LB
CAD: 102636532/INET4535
DIMS: 12x6x8 IN

BILL SENDER

TO AMBER KORNEGAY
SGS NORTH AMERICA, INC
5500 BUSINESS DRIVE

WILMINGTON NC 28405
(910) 667-0148

REF:
INV:
PO:
DEPT:

2128
9:30
1.30

5831919489/9AE3

FedEx Express

E

WED - 28 FEB 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7753 3478 7531

28405
NC-US RDU

XG ILMA

Appendix C

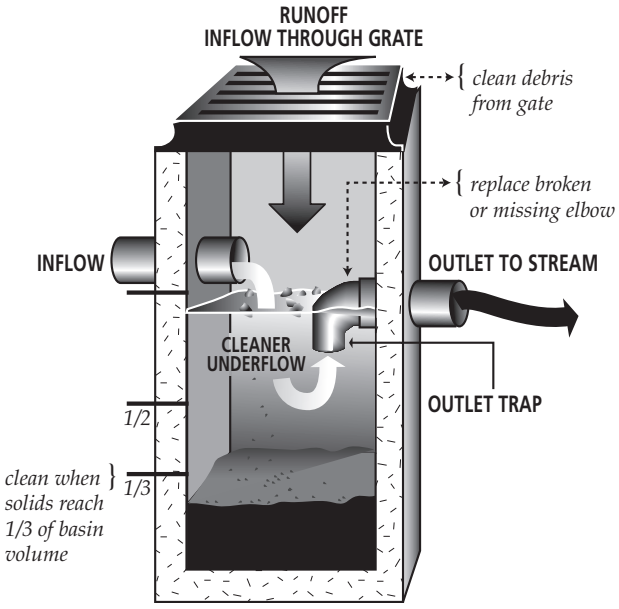
Storm Water System Maintenance BMPs

Environmentally Responsible Best Management Practices

17 Maintaining Catch Basins

A catch basin is an inlet to a storm drain system that typically includes a grate where stormwater enters the catch basin, and a basin to capture sediment, debris, and associated pollutants. The purpose of the basin is to help prevent the downstream pipes from becoming clogged and to reduce the amount of sediment and debris being discharged into our rivers and streams. Many catch basins are installed with a downturned elbow or tee to trap floatable material. Storm drain inlets that do not contain basins or outlet traps are not effective in reducing pollutants in stormwater.

Catch basins must be cleaned periodically to maintain their ability to trap sediment and provide drainage for stormwater. The removal of sediment, decaying debris, and associated pollutants from catch basins has aesthetic and water quality benefits. The benefits include reducing foul odors, solids, and other pollutants that reach receiving waters.



Grates:

- Remove leaves and trash so the grate doesn't clog.
- Consider marking the message "Dump No Waste, Drains to Stream" next to your grates in areas that may be at risk. Vendors can be found in the telephone directories or on the web.

Catch Basin:

- The more frequently a catch basin is cleaned, the more pollutants it removes. The U.S. Environmental Protection Agency (EPA) recommends cleaning if the depth of solids reaches one-third the depth from the basin bottom to the invert of the lowest pipe into or out of the basin.
- To clean the catch basin you can hire a contractor by looking in a telephone directory or you can do it yourself by lifting the grate and using a bucket (to remove water) and a shovel to remove the sediment.
- Dispose of the water in a sanitary sewer through a shop drain or sink. Otherwise, use a toilet or other appropriate drain. Let the removed solids dry out, then properly dispose of them. When deciding how to dispose of the sediment, you need to consider the types of activities and pollutants on site. Catch basins in areas used for chemical or hazardous waste storage, material handling or equipment maintenance may collect the chemicals used in these activities from spills or via stormwater runoff. Solids removed from catch basins at commercial or industrial sites are usually not considered hazardous waste and may be disposed of as solid waste.
However, as the "generator" of this waste, you are responsible for making that decision and deciding how to properly manage the solids. If you need assistance deciding whether the solids should be managed as a hazardous waste, contact the Oregon Department of Environmental Quality at 503-229-5263. Make sure the removed solids don't wash back into your catch basin, and don't dispose of them on your or someone else's property.

continued on back

Be sure to follow safety precautions:

- Use caution in removing the grate as it may be heavy.
- Don't leave an open catch basin unattended.
- Never enter a catch basin or other drainage structure unless you are properly trained.
- Ensure proper traffic safety is in place.

Tips:

- Sweep your lot regularly to reduce the need for catch basin cleaning.
- Consider installing and maintaining catch basin inserts or an oil-absorbent pillow.
- Repair or replace damaged outlet traps.
- Install an outlet trap if there isn't one already. They're inexpensive and make it easier and cheaper to remove any floatable pollutants that spill into your catch basin.
- Make sure your chemical and waste storage practices aren't exposed to rainfall and stormwater runoff.
- Don't wash vehicles or equipment to the storm sewer system.

For additional Best Management Practices to minimize pollution from other site activities, call 503-823-5320.

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
working for clean rivers

Printed on recycled paper. PP 0731

STANDARD O&M PLAN FOR THE SIMPLIFIED APPROACH

3.1.1.11. Drywells and Soakage Trenches

Structural components must be operated and maintained in accordance with the design specifications.		
	MAINTENANCE INDICATOR	**CORRECTIVE ACTION**
	Clogged inlets, manholes, catch basins, or silt traps	Clean gutters, rain drains, catch basins, or silt traps at least twice a year. Remove sediment, debris, and blockages from catch basins, trench drains, curb inlets, and pipes to maintain at least 50% conveyance at all times.
	Cracked drain pipes, catch basins or manholes	Repair or seal cracks. Replace when repair is insufficient.
	Vegetation encroachment	Prevent large root systems from trees and bushes from damaging subsurface structural components.
	Ponding water	Remove sediment and debris from all accessible components. Repeated ponding in the system may indicate end of facility life. Consult with City prior to decommissioning or replacement activities.

Annual Maintenance Schedule

Summer	**Make structural repairs. Clear drains, inlets and catch basins.**
Fall	Clean gutters and rain drains; remove sediment and plant debris.
Winter	Monitor infiltration rates.
Spring	Clean gutters and rain drains

Maintenance Records: All facility operators are required to keep an inspection and maintenance log. Record date, description, and contractor (if applicable) for all repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the City inspector.

Access: Maintain ingress/egress per design standards.

Infiltration/Flow Control: All facilities must drain within 48 hours. Record time/date, weather, and site conditions when ponding occurs.

Pollution Prevention: All sites must implement Best Management Practices to prevent contamination of stormwater. Call 503-823-7180 to report spills. Never wash spills into a stormwater facility. If contamination occurs, document the circumstances and the corrective action taken; include the time/date, weather, and site conditions.

Vectors (Mosquitoes and Rats): Stormwater facilities must not harbor mosquito larvae or rodents that pose a threat to public health or that undermine the facility structure. Record the time/date, weather, and site conditions when vector activity observed. Record when vector abatement started and ended.

Oldcastle Infrastructure™
A CRH COMPANY

PERKFILTER™

Inspection and Maintenance Guide

Water

PerkFilter™ Media Filtration System

Description

The PerkFilter is a stormwater treatment device used to remove pollutants from urban runoff. Impervious surfaces and other urban and suburban landscapes generate a variety of contaminants that can enter stormwater and pollute downstream receiving waters. The PerkFilter is a media-filled cartridge filtration device designed to capture and retain sediment, gross solids, metals, nutrients, hydrocarbons, and trash and debris. As with any stormwater treatment system, the PerkFilter requires periodic maintenance to sustain optimum system performance.

Function

The PerkFilter is a water quality treatment system consisting of three chambers: an inlet chamber, a filter cartridge treatment chamber, and an outlet chamber (Figure 1). Stormwater runoff enters the inlet chamber through an inlet pipe, curb opening, or grated inlet. Gross solids are settled out, and floating trash and debris are trapped in the inlet chamber. Pretreated flow is then directed to the treatment chamber through an opening in the baffle wall between the inlet chamber and treatment chamber. The treatment chamber contains media-filled filter cartridges (Figure 2) that use physical and chemical processes to remove pollutants. During a storm event, runoff pools in the treatment chamber before passing radially through the cylindrical cartridges from the outside surface, through the media for treatment, and into the center of the cartridge. At the center of the cartridge is a center tube assembly designed to distribute the hydraulic load evenly across the surface of the filter cartridge and control the treatment flow rate. The center tube assembly discharges treated flow through the false floor and into the outlet chamber. A draindown feature built into each cartridge allows the treatment chamber to dewater between storm events.

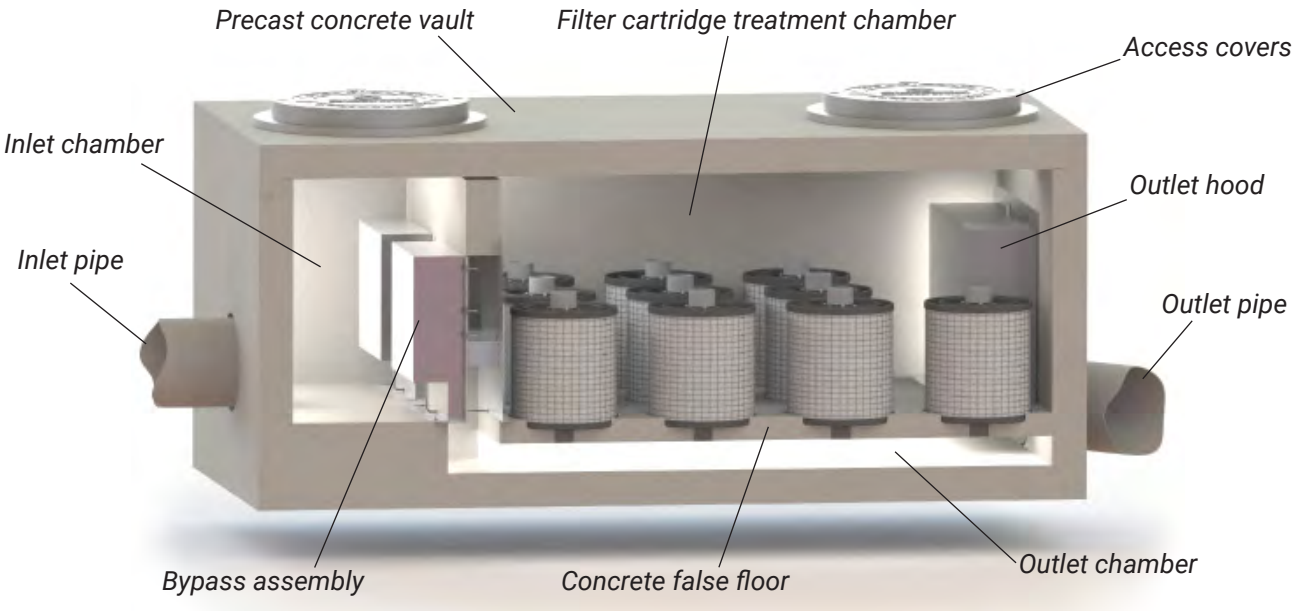


Figure 1. Schematic of the PerkFilter system.

All PerkFilter systems include a high-flow bypass assembly to divert flow exceeding the treatment capacity of the filter cartridges around the treatment chamber. The bypass assembly routes peak flow from the inlet chamber directly to the outlet chamber, bypassing the treatment chamber to prevent sediment and other captured pollutants from being scoured and re-entrained by high flow. Treated flow and bypass flow merge in the outlet chamber for discharge by a single outlet pipe.

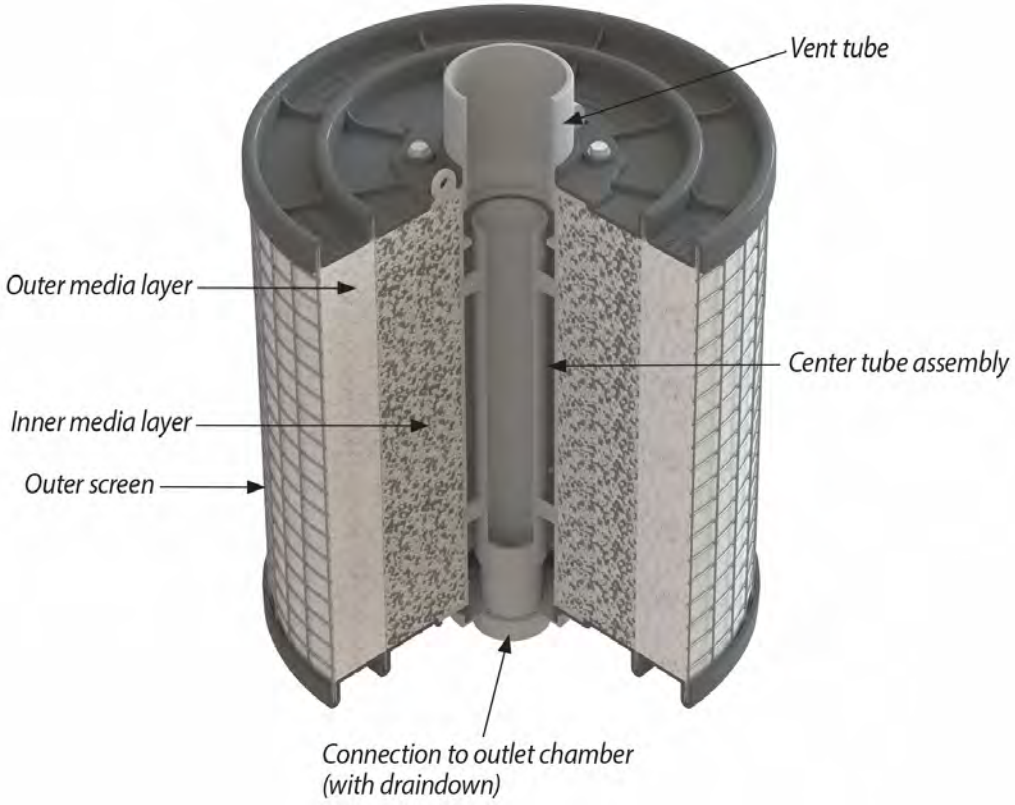


Figure 2. Schematic of PerkFilter cartridge.

Configuration

The PerkFilter structure may consist of a vault, manhole, or catch basin configuration. Catch basin units may be fabricated from concrete or steel. Internal components including the PerkFilter cartridges are manufactured from durable plastic and stainless steel components and hardware. All cartridges are 18 inches in diameter and are available in two heights: 12-inch and 18-inch. Cartridges may be used alone or may be stacked (Figure 3) to provide 24-inch and 30-inch combinations. The capacity of each cartridge or cartridge combination is dictated by the allowable operating rate of the media and the outer surface area of the cartridge. Thus, taller cartridges have greater treatment capacity than shorter cartridges, but they also require more hydraulic drop across the system. Cartridges may be filled with a wide variety of media but the standard mix is composed of zeolite, perlite and carbon (ZPC).

Access to an installed PerkFilter system is typically provided by ductile iron castings or hatch covers. The location and number of access appurtenances is dependent on the size and configuration of the system.

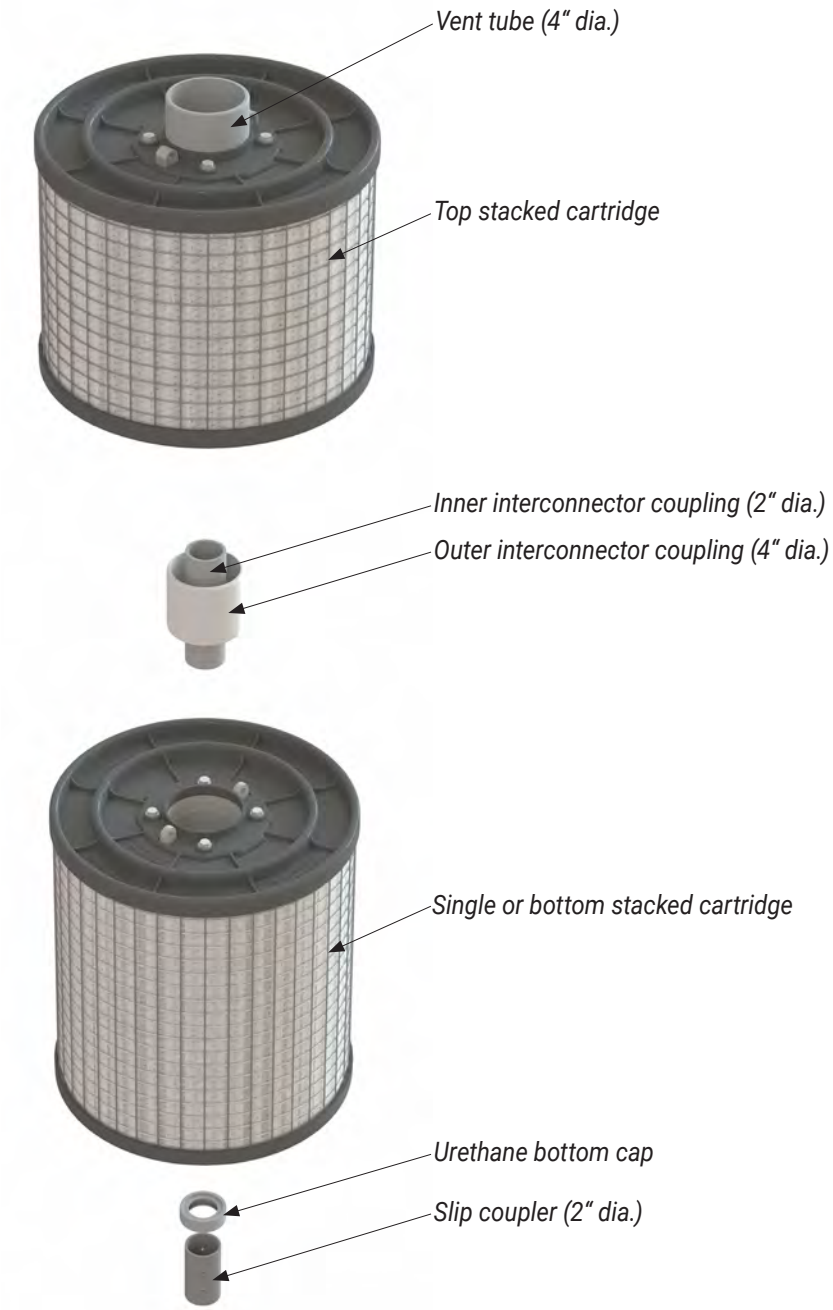


Figure 3. Schematic of stacked cartridges and connector components.

Maintenance Overview

State and local regulations require all stormwater management systems to be inspected on a periodic basis and maintained as necessary to ensure performance and protect downstream receiving waters. Maintenance prevents excessive pollutant buildup that can limit system performance by reducing the operating capacity and increasing the potential for scouring of pollutants during periods of high flow.

Inspection and Maintenance Frequency

The PerkFilter should be inspected on a periodic basis, typically twice per year, and maintained as required. Initially, inspections of a new system should be conducted more frequently to help establish an appropriate site-specific inspection frequency. The maintenance frequency will be driven by the amount of runoff and pollutant loading encountered by a given system. In most cases, the optimum maintenance interval will be one to three years. Inspection and maintenance activities should be performed only during dry weather periods.

Inspection Equipment

The following equipment is helpful when conducting PerkFilter inspections:

- Recording device (pen and paper form, voice recorder, iPad, etc.)
- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Socket and wrench for bolt-down access covers
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Measuring stick or sludge sampler
- Long-handled net (optional)

Inspection Procedures

PerkFilter inspections are visual and may be conducted from the ground surface without entering the unit. To complete an inspection, safety measures including traffic control should be deployed before the access covers are removed. Once the covers have been removed, the following items should be checked and recorded (see form provided at the end of this document) to determine whether maintenance is required:

- Inspect the internal components and note whether there are any broken or missing parts. In the unlikely event that internal parts are broken or missing, contact Oldcastle Infrastructure at (800) 579-8819 to determine appropriate corrective action.
- Note whether the inlet pipe is blocked or obstructed. The outlet pipe is covered by a removable outlet hood and cannot be observed without entering the unit.
- Observe, quantify and record the accumulation of floating trash and debris in the inlet chamber. The significance of accumulated floating trash and debris is a matter of judgment. A long-handled net may be used to retrieve the bulk of trash and debris at the time of inspection if full maintenance due to accumulation of floating oils or settled sediment is not yet warranted.

- Observe, quantify and record the accumulation of oils in the inlet chamber. The significance of accumulated floating oils is a matter of judgment. However, if there is evidence of an oil or fuel spill, immediate maintenance by appropriate certified personnel is warranted.
- Observe, quantify and record the average accumulation of sediment in the inlet chamber and treatment chamber. A calibrated dipstick, tape measure, or sludge sampler may be used to determine the amount of accumulated sediment in each chamber. The depth of sediment may be determined by calculating the difference between the measurement from the rim of the PerkFilter to the top of the accumulated sediment, and the measurement from the rim of the PerkFilter to the bottom of the PerkFilter structure. Finding the top of the accumulated sediment below standing water takes some practice and a light touch, but increased resistance as the measuring device is lowered toward the bottom of the unit indicates the top of the accumulated sediment.
- Finally, observe, quantify and record the amount of standing water in the treatment chamber around the cartridges. If standing water is present, do not include the depth of sediment that may have settled out below the standing water in the measurement.

Maintenance Triggers

Maintenance should be scheduled if any of the following conditions are identified during the inspection:

- Internal components are broken or missing.
- Inlet piping is obstructed.
- The accumulation of floating trash and debris that cannot be retrieved with a net and/or oil in the inlet chamber is significant.
- There is more than 6” of accumulated sediment in the inlet chamber.
- There is more than 4” of accumulated sediment in the treatment chamber.
- There is more than 4” of standing water in the treatment chamber more than 24 hours after end of rain event.
- A hazardous material release (e.g. automotive fluids) is observed or reported.
- The system has not been maintained for 3 years (wet climates) to 5 years (dry climates).

Maintenance Equipment

The following equipment is helpful when conducting PerkFilter maintenance:

- Suitable clothing (appropriate footwear, gloves, hardhat, safety glasses, etc.)
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Socket and wrench for bolt-down access covers
- Manhole hook or pry bar
- Confined space entry equipment, if needed
- Flashlight
- Tape measure
- 9/16” socket and wrench to remove hold-down struts and filter cartridge tops
- Replacement filter cartridges
- Vacuum truck with water supply and water jet

Contact Oldcastle Infrastructure at (800) 579-8819 for replacement filter cartridges. A lead time of four weeks is recommended.

Maintenance Procedures

Maintenance should be conducted during dry weather when no flow is entering the system. Confined space entry is necessary to maintain vault and manhole PerkFilter configurations. Only personnel that are OSHA Confined Space Entry trained and certified may enter underground structures. Confined space entry is not required for catch basin PerkFilter configurations. Once safety measures such as traffic control are deployed, the access covers may be removed and the following activities may be conducted to complete maintenance:

- Remove floating trash, debris and oils from the water surface in the inlet chamber using the extension nozzle on the end of the boom hose of the vacuum truck. Continue using the vacuum truck to completely dewater the inlet chamber and evacuate all accumulated sediment from the inlet chamber. Some jetting may be required to fully remove sediment. The inlet chamber does not need to be refilled with water after maintenance is complete. The system will fill with water when the next storm event occurs.
- Remove the hold-down strut from each row of filter cartridges and then remove the top of each cartridge (the top is held on by four 9/16" bolts) and use the vacuum truck to evacuate the spent media. When empty, the spent cartridges may be easily lifted off their slip couplers and removed from the vault. The couplers may be left inserted into couplings cast into the false floor to prevent sediment and debris from being washed into the outlet chamber during washdown.
- Once all the spent cartridges have been removed from the structure, the vacuum truck may be used to evacuate all accumulated sediment from the treatment chamber. Some jetting may be required to fully remove sediment. Take care not to wash sediment and debris through the openings in the false floor and into the outlet chamber. All material removed from the PerkFilter during maintenance including the spent media must be disposed of in accordance with local, state, and/or federal regulations. In most cases, the material may be handled in the same manner as disposal of material removed from sumped catch basins or manholes.
- Place a fresh cartridge in each cartridge position using the existing slip couplers and urethane bottom caps. If the vault is equipped with stacked cartridges, the existing outer and inner interconnector couplers must be used between the stacked cartridges to provide hydraulic connection. Transfer the existing vent tubes from the spent cartridges to the fresh cartridges. Finally, refit the struts to hold the fresh cartridges in place.
- Securely replace access covers, as appropriate.
- Make arrangements to return the empty spent cartridges to Oldcastle Infrastructure.

PerkFilter
Inspection and Maintenance Log

Location_____

Structure Configuration and Size:

Inspection Date_____

☐ Vault _____feet x _____feet
☐ Manhole _____feet diameter
☐ Catch Basin _____feet x _____feet

Number and Height of Cartridge Stacks:

Count____each ☐12" ☐ 18" ☐ 24" ☐ 30"

Media Type:

☐ ZPC ☐ Perlite ☐ Other_____

Condition of Internal Components ☐ Good ☐ Damaged ☐ Missing	Notes:
Inlet or Outlet Blockage or Obstruction ☐ Yes ☐ No	Notes:
Floating Trash and Debris ☐ Significant ☐ Not Significant	Notes:
Floating Oils ☐ Significant ☐ Not Significant ☐ Spill	Notes:
Sediment Depth in Inlet Chamber ☐ Inches of Sediment:_____	Notes:
Sediment Depth in Treatment Chamber ☐ Inches of Sediment:_____	Notes:
Standing Water in Treatment Chamber ☐ Inches of Standing Water:_____	Notes:

Maintenance Required

☐ **Yes - Schedule Maintenance** ☐ **No - Inspect Again in _____ Months**

PERKFILTER™

OUR MARKETS

BUILDING STRUCTURES

COMMUNICATIONS

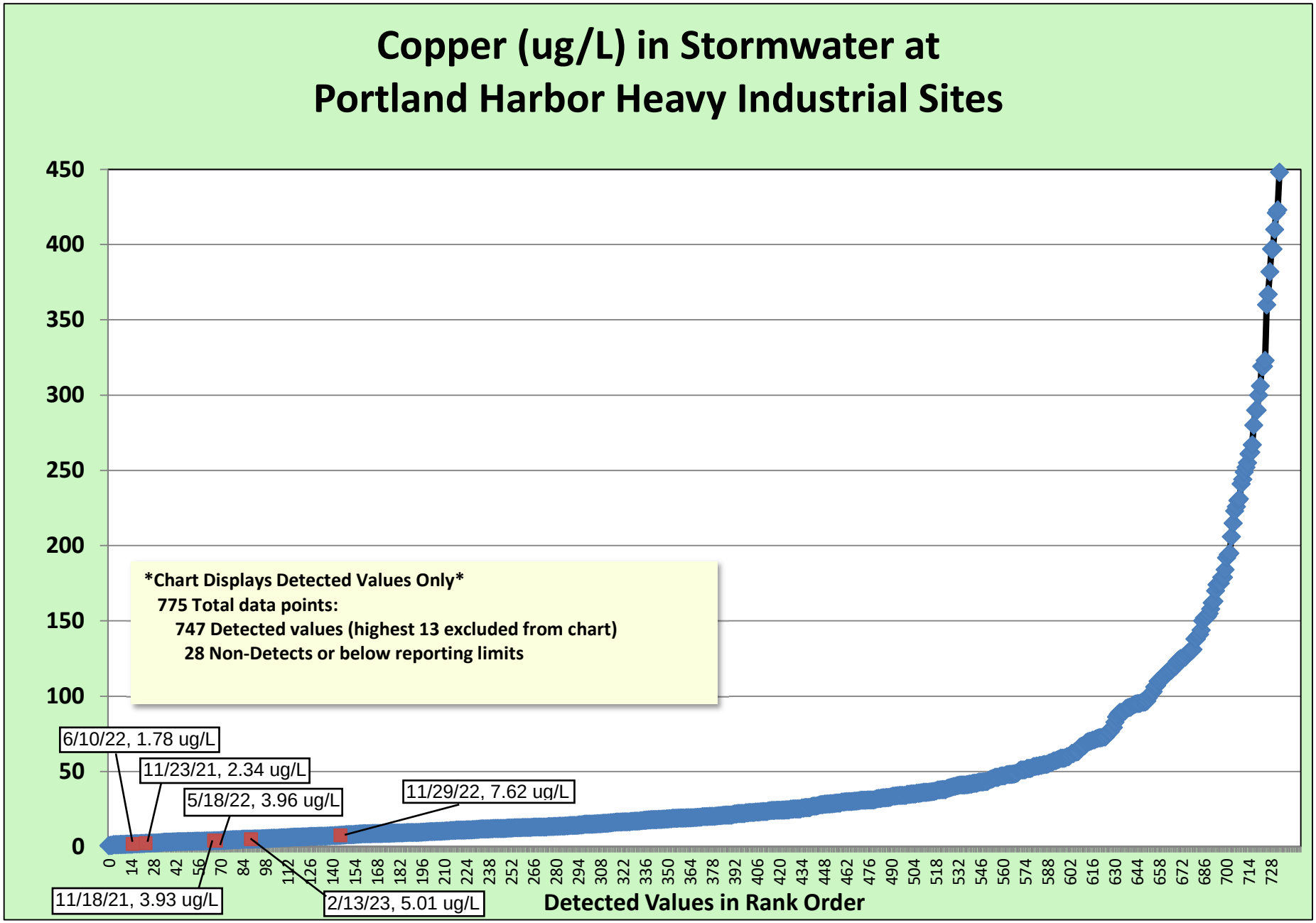
WATER

ENERGY

TRANSPORTATION

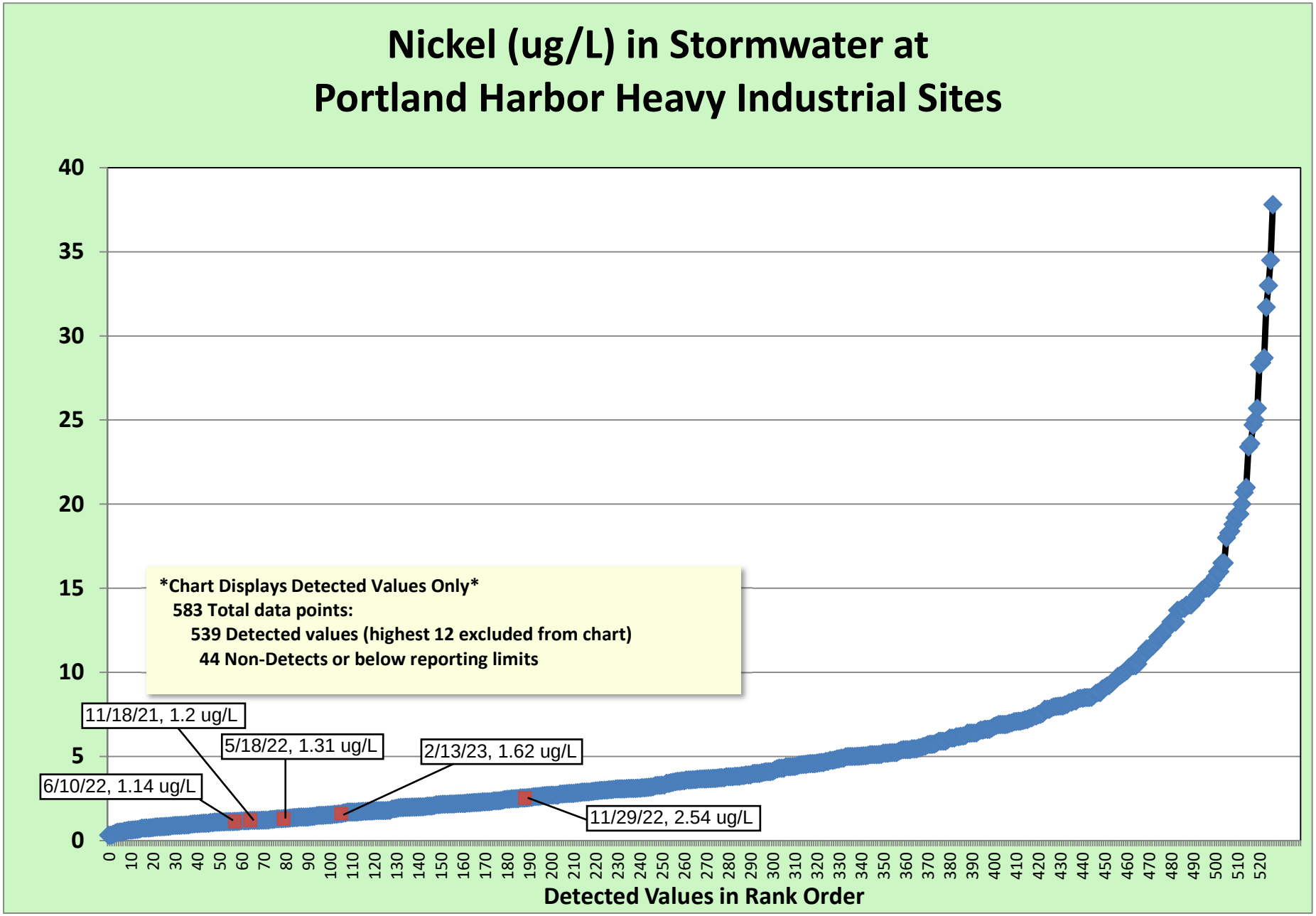
Appendix D

Comparison of Storm Water Analytical Results to Typical Industrial Sites

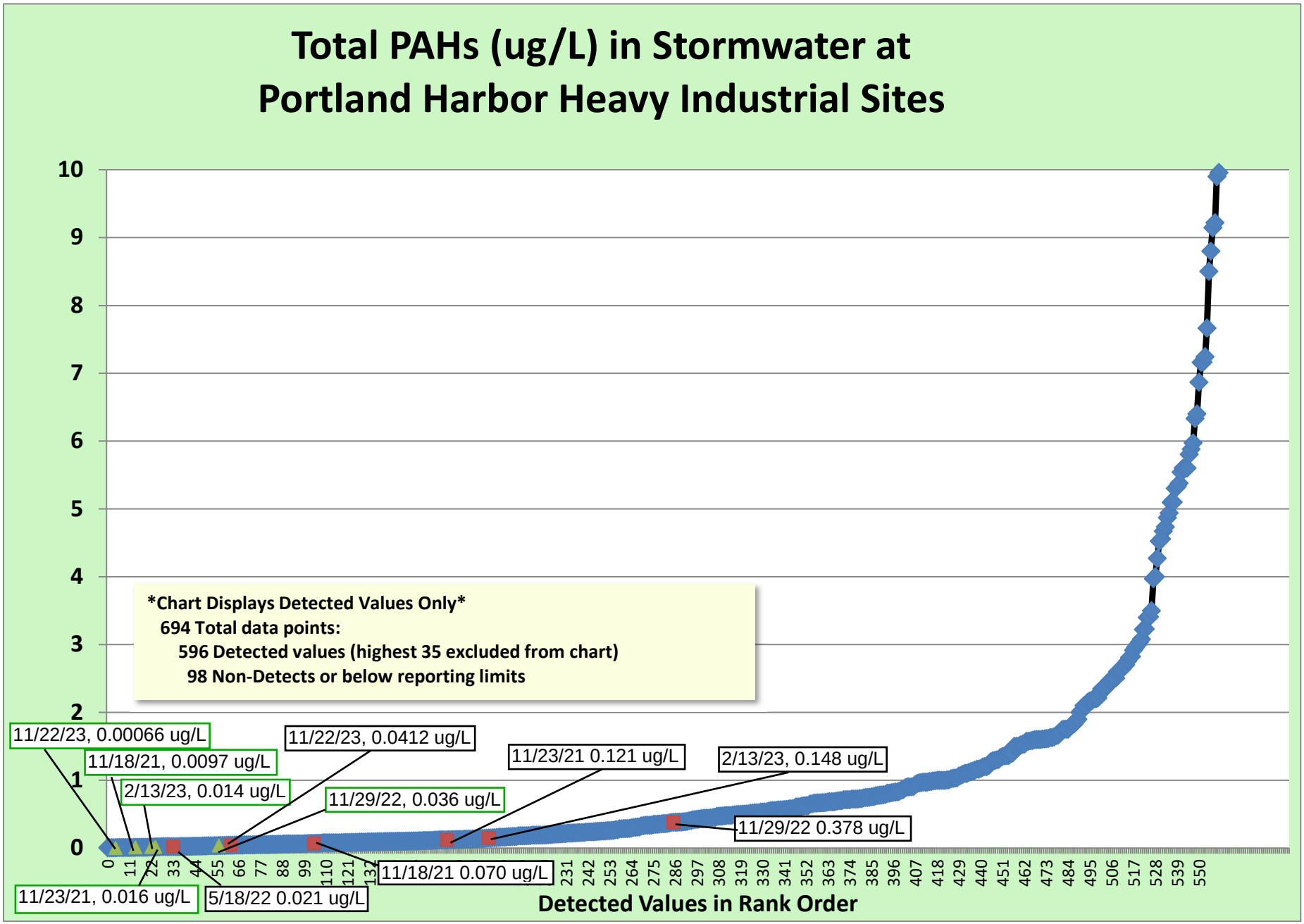


ENW Sample Date, Concentration

Nickel (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites



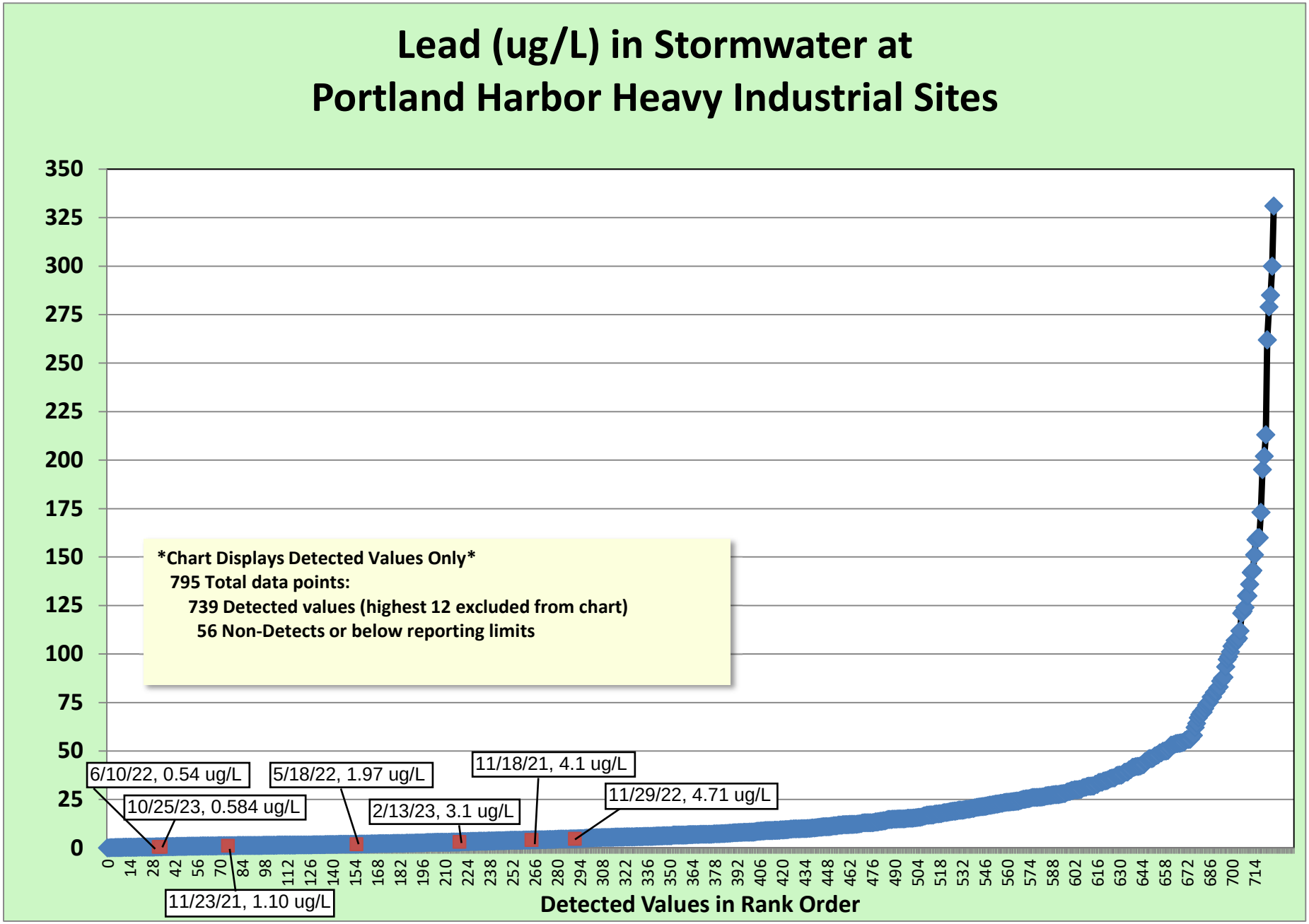
ENW Sample Date, Concentration



ENW Sample Date, total PAH concentration

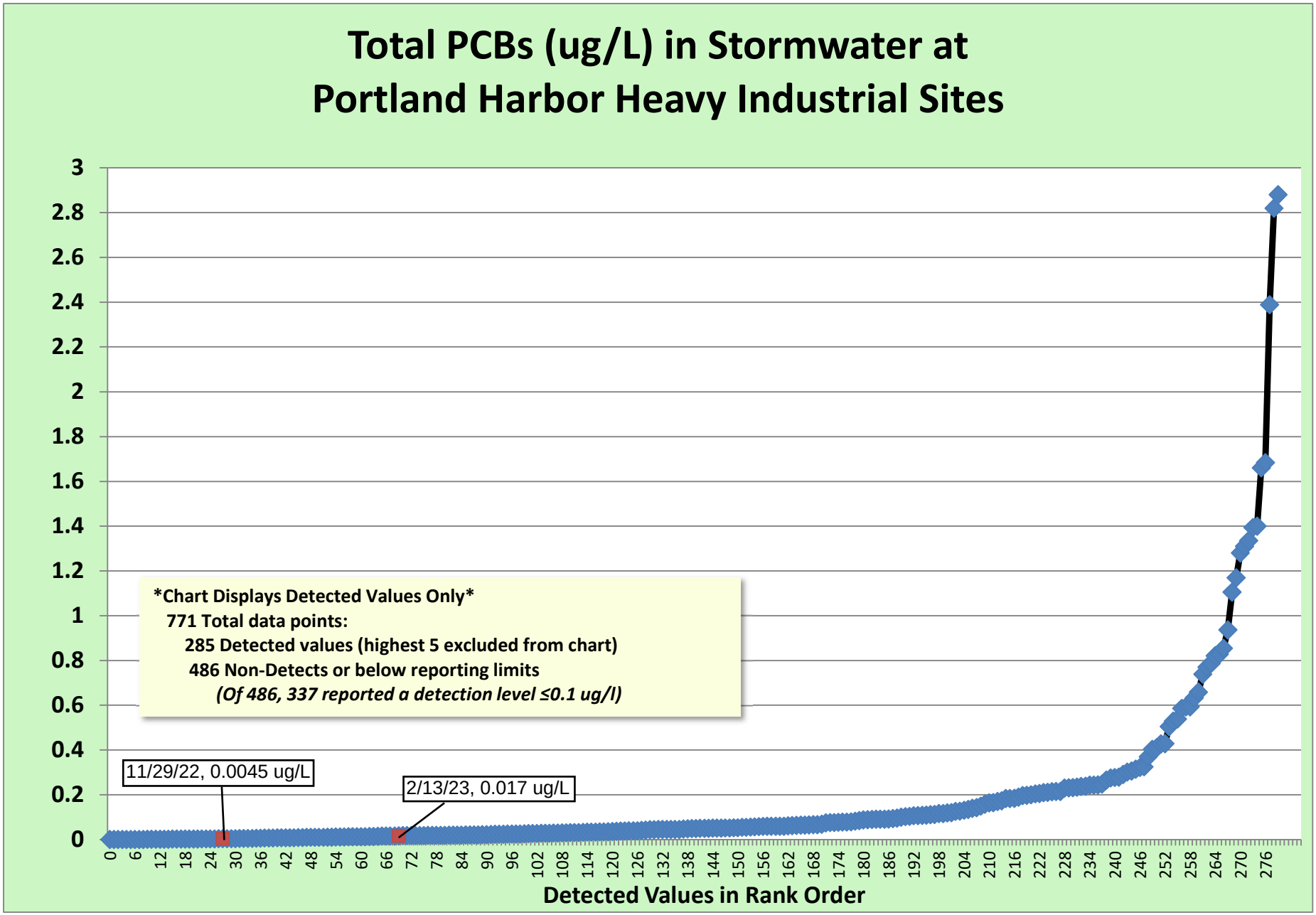
ENW Sample Date, total cPAH concentration

Lead (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites



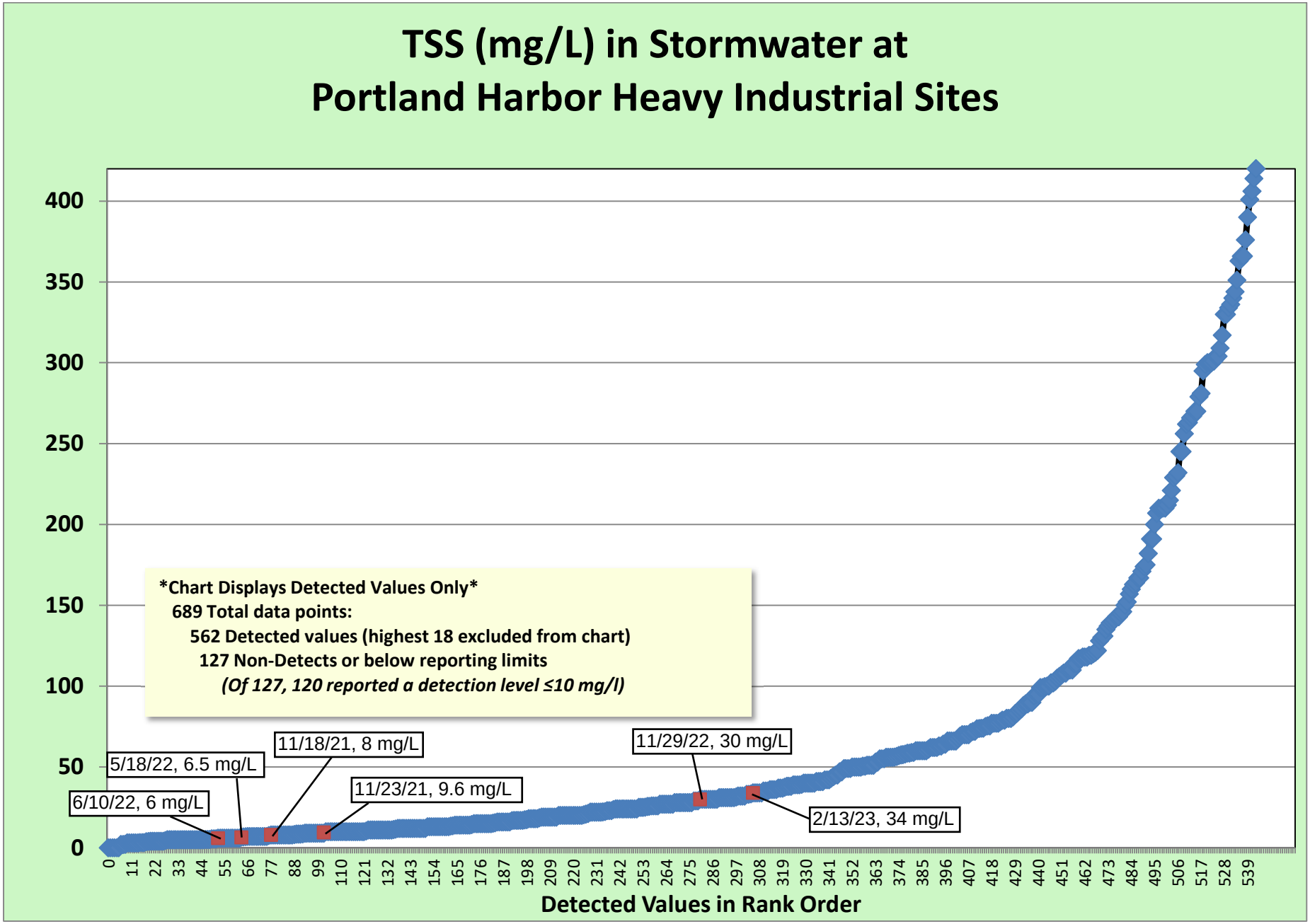
ENW Sample Date, Concentration

Total PCBs (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites



ENW Sample Date, Concentration

TSS (mg/L) in Stormwater at Portland Harbor Heavy Industrial Sites



ENW Sample Date, Concentration

Zinc (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites