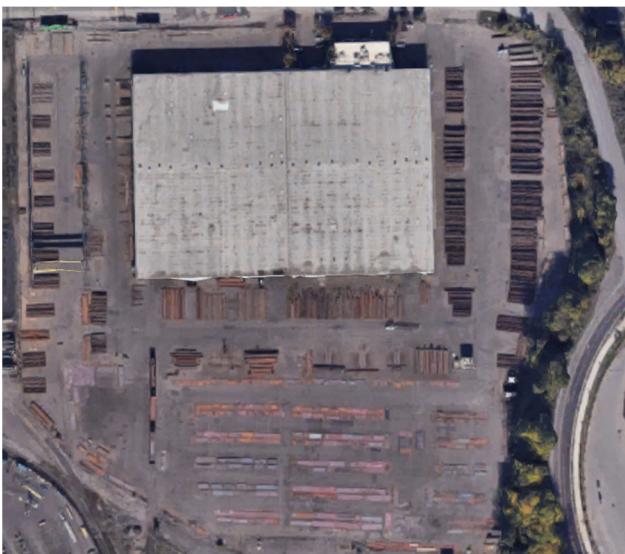




# STORM WATER SOURCE CONTROL EVALUATION (AS IT RELATES TO GROUND WATER)



## **LAMPROS STEEL**

9040 North Burgard Way  
Portland, Oregon 97203

### **Agency Information**

NPDES 1200-Z Permit  
DEQ File No. 125660  
EPA Permit # ORR127248  
ECSI File No. 2441

### **Prepared for:**

## **Johnson-Lampros Warehouse LLC**

9040 North Burgard Way  
Portland, Oregon 97203

### **Issued on:**

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*This*

# Storm Water Source Control Evaluation

(as it Relates to Ground Water)

*For the:*

**Johnson-Lampros Warehouse LLC**

9040 North Burgard Way  
Portland, Oregon 97203

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

**Johnson-Lampros Warehouse LLC**

9040 North Burgard Way  
Portland, Oregon 97203

*and its assignees*

*Issued November 28, 2023 by:*



EXP. 2/1/2024

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## *List of Acronyms and Abbreviations*

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|          |                                            |
|----------|--------------------------------------------|
| bgs      | below ground surface                       |
| Cascadia | Cascadia Associates, LLC                   |
| Client   | Johnson-Lampros Warehouse LLC (JLW)        |
| CoC      | constituent of concern                     |
| COI      | constituent of interest                    |
| COPCs    | constituents of potential concern          |
| ECSI     | Environmental Cleanup Site Information     |
| ENW      | EVREN Northwest, Inc.                      |
| EPA      | US Environmental Protection Agency         |
| GRO      | Gasoline-range organics                    |
| IT       | International                              |
| JSCS     | Joint Source Control Strategy              |
| MRLs     | Method Reporting Limits                    |
| µg/L     | micrograms per liter                       |
| mg/Kg    | milligrams per Kilogram                    |
| ODEQ     | Oregon Department of Environmental Quality |
| PAHs     | polycyclic aromatic hydrocarbons           |
| PCB      | polychlorinated biphenyl                   |
| ROD      | Record of Decision                         |
| SCE      | Source Control Evaluation                  |
| SLV      | screening level value                      |
| UST      | underground storage tank                   |

## 1.0 Introduction

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At the request of Johnson-Lampros Warehouse LLC (JLW; Client) EVREN Northwest, Inc. (ENW) has prepared this **Storm Water Source Control Evaluation** (SCE) report for the Lampros Steel facility located at 9040 North Burgard Way, Portland, Oregon (subject site; see Figures 1 and 2). This SCE is focused on potential ground-water contributions to storm water discharge from the Lampros Steel facility. The approximately 25-acre subject site is currently occupied by American Metals Corporation (dba Lampros Steel) who uses the site for specialty structural steel warehousing, sales, and distribution, and Peninsula Iron Works, who uses a portion of the subject building for machining and fabrication.

### 1.1 Purpose

This report presents the results of the SCE, as it relates to ground water, to identify, evaluate, and control any sources of ground water contamination on the project site with the potential to discharge to the Willamette River.

### 1.2 Source Control Objectives

The objective of this ground water SCE is to demonstrate that ground water is not an existing or potential source of contamination to the Willamette River and no additional characterization or source control measures are needed at the site.

### 1.3 Regulatory Framework

The SCE components described herein were completed in general accordance with the Oregon Department of Environmental Quality (ODEQ) guidance and relied upon the following references:

- 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.

### 1.4 Report Organization

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, an evaluation of ground water data, the results of the source control evaluation as it relates to ground water, and findings and conclusions.

## 2.0 Site Background

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### 2.1 Site Description

The 25.2-acre subject site consists of one tax lot (2N1W35D 300), located in an industrial area in north Portland, Oregon. The site lies 2,800 feet east of the Willamette River and approximately 2.7 miles upstream (south) of its confluence with the Columbia River. The site is bordered to the north by N Burgard Way, to the south by N Sever Road, to the west by industrial properties, and to the east by N Time Oil Road. The City of Portland has zoned the subject property IH – Heavy Industrial. All adjacent properties are similarly zoned IH – Heavy Industrial.

The project site is shown relative to surrounding physical features on Figure 1. The project site layout and adjacent properties are shown on Figure 2. Utilities are shown on Figure 3.

The topography at the subject site is generally level at an approximate elevation of 30 feet above mean sea level (see Figure 1). The surrounding area slopes gently to the northwest and northeast. The site lies slightly lower than industrial properties to the north, south and west, and significantly lower than roadways to the east. Ground water at the project site is expected to be present at less 10 feet below ground surface (bgs),<sup>1</sup> and was observed to be at approximately eight feet depth during previous shallow soil investigation.<sup>2</sup> The inferred (predominant) ground-water flow direction beneath the subject site is likely to the west toward the Willamette River.

### 2.2 Project Site Ownership and Operating History

The subject site was vacant marshland until the late 1940's, when it was filled and developed with a structure in the southeast corner of the site. Based on information reported by others,<sup>3</sup> the site had been undeveloped until the mid-1940s, when a small building was constructed at the south end of the property and used as storage for World War II military operations at the nearby Port of Portland Terminal. After World War II, the site was used as storage space by several industrial tenants and as part of a larger industrial park. By the early 1960s, the previously existing structure on site had been removed. The building currently on site was constructed in the early 1980s and has consistently been used as a warehouse, with outdoor open-air storage of metal sheeting.

### 2.3 Environmental Regulatory Review

The site has been under the oversight of ODEQ's Voluntary Cleanup Program since May 2011 for storm-water source control evaluations, which are summarized in ODEQ's Environmental Cleanup Site Inventory database file ECSI #2441. The site is also listed on ODEQ's Leaking Underground Storage Tank (LUST) database (LUST File No. 26-10-0019), however, ODEQ has issued a No Further Action (NFA) for the petroleum release.

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<sup>1</sup> <https://or.water.usgs.gov/proj/puz/>

<sup>2</sup> ENW. November 4, 2020. Shallow Soil Investigation. Lampros Steel Property.

<sup>3</sup> Adapt Engineering, Inc. September 20, 2010. Phase I Environmental Site Assessment: Lampros Steel – 9040 North Burgard Way

The complete environmental history of the site will not be presented but can be referenced in the following documents:

- *Phase I Environmental Site Assessment*, prepared by Adapt Engineering for Lampros Steel, September 20, 2010.
- *Soil Matrix Closure Report (LUST File No. 26-10-0019)*, prepared by Construction and Environmental Services for Schnitzer Investment Corporation, January 2010.
- *Phase II Environmental Site Assessment*, prepared by Cascadia Associated, Inc. for Lampros Steel, April 25, 2019.
- *Shallow Soil Investigation*, prepared by ENW for Johnson-Lampros Warehouse, LLC in November 2020.

## 2.4 Previous Subsurface Investigations

### 2.4.1 Construction & Environmental Services Co., Inc., Soil Matrix Closure Report (January 2010)

In January 2010, Construction & Environmental Services Co., Inc. (CAESCO) completed cleanup activities on site following the decommissioning by removal of one (1) 20,000-gallon gasoline and two (2) 6,000-gallon diesel USTs from the subject site.<sup>4</sup> During decommissioning, water entered the excavation pit. Approximately 4200 gallons of water were pumped from the excavation and disposed of offsite. Water began to recharge in the pit and ground water samples were collected. Soil samples were also collected at the soil/water interface and from the bottom of the excavation. Eight (8) fuel dispensers were removed with soils sampled from beneath their former locations.

Laboratory analysis indicated all soil samples taken from within the excavation pit were non-detect for gas, diesel, and heavy oil. The ground water sample taken from the pit was non-detect for all constituents (gasoline-extended, diesel-extended, polynuclear aromatic hydrocarbons [PAHs], and total petroleum hydrocarbons [TPH]). Lab results concluded soil and ground water within the pit area were below regulatory screening levels. All but two of the soil samples collected from the eight dispenser areas had detections of diesel. Soils from beneath the three dispensing points east of the excavation pit and the three dispensing points west of the excavation pit had diesel in concentrations above allowable Soil Matrix Cleanup levels. Over-excavation beneath the dispenser areas #1-#6 to the east and west of the tank excavation pit was performed with suspected impacted soils removed and placed on plastic. Confirmation soil samples were collected from the excavation areas. All were non-detect with the exception of soils from dispensers #2 and #6. These areas were further excavated along with another round of confirmation soil sampling, which were all non-detect for diesel. The excavations were backfilled with clean fill. CAESCO requested site closure from ODEQ under Soil Matrix Cleanup guidelines. In August 2010, ODEQ issued a letter of No Further Action (NFA) for the UST decommissioning and release documented under LUST ID No. 26-10-0019. Per an easement in place between a prior owner of the subject site and Schnitzer Steel, Schnitzer Steel assumed responsibility for this release. As such, the address listed on the LUST

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<sup>4</sup> CAESCO, January 2010. Soil Matrix Closure Report (LUST File No. 26-10-0019), prepared for Schnitzer Investment Corporation.

database for this release on site corresponds with the south adjacent property, 12005 N Burgard Way which was occupied by Schnitzer Steel.

#### 2.4.2 Cascadia Associates, LLC, Phase II Environmental Site Assessment (April 2019)

In February 2019, Cascadia Associates, LLC (Cascadia), conducted a Phase II Environmental Site Assessment.<sup>5</sup> In summary, they reported:

- In general, a brown medium sand present at depths of 2 to 8 feet below ground surface (bgs) inferred to be imported dredged material.
- Beneath this a gray silt with sand was encountered and inferred to be native material.
- Ground water was encountered at approximate depths of 5 to 8 feet bgs.
- The International (IT) Slip of the Willamette River is 600 feet to the west.
- Certain polycyclic aromatic hydrocarbons (PAHs) and dissolved metals were detected in reconnaissance ground water samples at concentrations above Portland Harbor Cleanup Levels (see Table 1). Cascadia noted:
  - The ground water samples were collected from temporary borings and not from developed monitoring wells and therefore are reconnaissance in nature. This can result in a higher level of entrained solids in the ground water sample and results are likely biased high.
  - The PAHs in site ground water are unlikely to migrate to the Willamette River at significant concentrations because: (1) PAH concentrations are relatively low at the site, and (2) concentrations are expected to further attenuate between the site and the Willamette River.
  - With the exception of manganese, dissolved metals that exceeded ground water cleanup levels (chromium, lead and zinc) were detected in only a single sample collected from the southeast corner of the site and weren't detected at downgradient locations from this point. The data indicates that the site is not a significant source of chromium, lead or zinc to the Willamette River.
  - Manganese is ubiquitous in ground water at the site (and at other sites in the Portland Harbor region) indicating that the concentrations of manganese in site ground water is naturally occurring (background).

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<sup>5</sup> Cascadia Associates, LLC, April 25, 2019. *Phase II Environmental Site Assessment*, 9040 N. Burgard Way, Portland, Oregon. Prepared for Lampros Properties LLC.

### 3.0 Potential Sources and Constituents of Interest

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COIs in Integral's Draft SCE included those approved by ODEQ in a Stormwater Sampling and Analysis Plan<sup>6</sup> initially prepared in September 2017 and revised in February 2018, at ODEQ's request. Based on previous SCE, COIs in storm water detected above screening levels included:

- TSS
- PAHs, specifically: acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene and pyrene.
- Polychlorinated biphenyls (PCBs), specifically as Aroclor 1248.
- Total metals, specifically: aluminum, arsenic, cadmium, chromium, copper, lead, manganese, silver, and zinc.
- Phthalates, specifically bis(2-ethylhexyl)phthalate

The rest of this section examines potential sources of these COIs.

#### 3.1 Potential On-Site Sources of Constituents of Interest

Based on previous investigations and knowledge of the project site, sources for potential project site-related contaminants to impact the IT Slip section of the Willamette River are as follows:

- ✓ Underground storage tanks (USTs) were formerly utilized on-site for fueling operations. In January 2010, one 20,000-gallon gasoline and two 6,000-gallon diesel USTs were decommissioned from the site along with eight fuel dispensers. All current fueling operations on site use above ground storage tanks (ASTs).
- ✓ The presence of residual metals, SVOCs, and TPH previously identified in subject site reconnaissance ground water samples.

#### 3.2 Potential Off-Site Sources of Constituents of Interest

Surrounding areas have historically been used industrially for activities ranging from pipe and steel production to log storage to shipping container and repair.<sup>5</sup>

### 4.0 Evaluation of Ground Water Pathways

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This section considers potential ground water pathways from the subject property to the Willamette River. The following two routes were identified:

- Facilitated ground water transport by utilities and infiltration of the storm water conveyance system.

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<sup>6</sup> Integral, September 29, 2017. *Lampros Properties: Stormwater Sampling and Analysis Plan, 9040 N Burgard Way, Portland, Oregon*. Revised February 26, 2018. Prepared for Lampros Properties, Portland, Oregon.

- Ground water discharge to the Willamette River.

These potential ground water pathways are discussed in more detail below.

#### 4.1 Facilitated Ground Water Transport by Utilities and Infiltration of the Storm Waster Conveyance System

**This pathway is incomplete and does not contribute COIs to the Portland Harbor.**

There is low potential for contaminated ground-water transport around utility lines, since shallow ground water is present at depths deeper than the adjoining utility lines. Based on current observations during storm-water monitoring as part of the subject site's storm water discharge permit, following replacement of the storm-water system there has been no documentation or evidence of ground water entering into the storm water system.

#### 4.2 Discharge to the Willamette River

**This stormwater pathway is complete and while unlikely to contribute COIs to the Portland Harbor, cannot be ruled out.**

There is low potential for contaminated ground water to contribute CIOs to the Portland Harbor. While several constituents were detected above screening levels, ground water was collected as reconnaissance samples from open boreholes rather than through property developed monitoring wells, which may falsely inflate the concentrations of CIOs present in the water samples due to the inclusion of suspended sediment. Additionally, based on the nature of the constituents detected in ground water, they have very low mobility in ground water.

### 5.0 Data Summary

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#### 5.1 Reconnaissance Ground Water Sample Analytical Results

Reconnaissance ground water sampling analytical results are summarized in Table 1. Ground water samples were collected from temporary, direct-push explorations and thus are viewed as reconnaissance-level screening information, as this type of sampling typically yields biased-high results due to sorption of contaminants on entrained soil particles within the samples. As such, reconnaissance ground water data is typically inflated due to inclusion of suspended sediment in the sample matrix. Reconnaissance ground water samples are therefore used as a method to allow conservative assessment of ground-water data as part of initial stages of investigation to determine constituents of potential concern (COPCs). Concentrations of COIs were to both Joint Source Control Strategy (JSCS) Screening Level Values (SLVs) and Cleanup Levels in Table 17 of the EPA's Record of Decision (ROD).

##### 5.1.1 Dissolved Metals

Metals were analyzed both for total and dissolved metals in ground water. As samples were collected as reconnaissance ground water, the results for dissolved metals were deemed most appropriate for evaluation.

- Dissolved arsenic, cadmium and silver were not detected in any of the reconnaissance ground water samples.

- Dissolved chromium was only detected in one reconnaissance ground water sample, at a concentration exceeding its EPA ROD CUL.
- Dissolved copper was detected in only one reconnaissance ground water sample, at a concentration exceeding both its EPA ROD CUL and JSCS SLV.
- Dissolved lead was detected in only one reconnaissance ground water sample, at a concentration exceeding both its EPA ROD CUL and JSCS SLV. It should be noted that the detected concentration of dissolved lead in this reconnaissance sample is below typical concentrations of lead in surface water (background).<sup>7</sup>
- Dissolved manganese was detected in all reconnaissance ground water samples above its JSCS SLV and at four locations at concentrations exceeding its EPA ROD CUL.
- Dissolved mercury was only detected in one reconnaissance ground water sample, at a concentration exceeding its JSCS SLV.
- Dissolved nickel was only detected in one reconnaissance ground water sample; however, at a concentration below both its JSCS SLV and ROD CUL.

### 5.1.2 Semi-volatile Organic Constituents

PCBs were not detected in any reconnaissance ground water samples.

### 5.1.3 Polycyclic Aromatic Hydrocarbons

- Acenaphthene was detected in five reconnaissance ground water samples; however, only two locations had concentrations exceeding its JSCS SLV.
- Anthracene was detected in five reconnaissance ground water samples; however, only two locations had concentrations exceeding both its JSCS SLV and ROD CUL.
- Benz(a)anthracene was detected in five reconnaissance ground water samples, with concentrations at all five locations exceeding its ROD CUL. Its JSCS SLV was only exceeded in four locations.
- Benzo(a)pyrene was detected in five reconnaissance ground water samples with concentrations at all five locations exceeding its ROD CUL and only four locations exceeding its JSCS SLV.
- Benzo(b)fluoranthene was detected in all seven reconnaissance ground water samples at concentrations exceeding its ROD CUL. Its JSCS SLV was only exceeded in five locations.
- Benzo(k)fluoranthene was detected in three reconnaissance ground water samples with concentrations in all three exceeding its ROD CUL and JSCS SLV.
- Chrysene was detected in five reconnaissance ground water samples with concentrations at all five exceeding its ROD CUL. Its JSCS SLV was only exceeded in four locations.
- Dibenzo(a,h)anthracene was detected in two reconnaissance ground water samples with concentrations at both locations exceeding its ROD CUL.
- Fluoranthene was detected in six reconnaissance ground water samples with concentrations in five locations exceeding its ROD CUL and at four locations exceeding its JSCS SLV.
- Fluorene was detected in five reconnaissance ground water samples with concentrations at just two locations exceeding its ROD CUL and JSCS SLV.

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<sup>7</sup> ODEQ, October 28, 2002, Default Background Concentrations for metals, Memo from Toxicology Workgroup to DEQ Cleanup, Table 1 – Oregon DEQ Suggested Default Background Concentrations for Inorganic Contaminants in Various Environmental Media.

- Indeno(1,2,3-cd)pyrene was detected in four reconnaissance ground water samples with concentrations at all four locations exceeding its ROD CUL and its JSCS SLV.
- Naphthalene was detected in four reconnaissance ground water samples with all concentrations exceeding both its ROD CUL and its JSCS SLV.
- Pyrene was detected in all seven reconnaissance ground water samples with concentrations at four locations exceeding its JSCS SLV.

#### 5.1.4 Total Petroleum Hydrocarbons

- Gasoline-range organics (GRO) were not detected in any of the reconnaissance ground water samples.
- Diesel-range petroleum hydrocarbons (DRO) were detected in two reconnaissance ground water samples, at concentrations up to 488 µg/L (micrograms per liter).
- Residual-range petroleum hydrocarbons (RRO) were detected in five reconnaissance ground water samples, at concentrations up to 765 µg/L.
- There are no JSCS SLVs or EPA ROD CULs for GRO, DRO and/or RRO.

#### 5.1.5 Discussion

As previously described, ground water was collected as reconnaissance water from open boreholes rather than from developed monitoring wells and therefore may falsely inflate the concentrations of COIs in water samples due to the inclusion of suspended sediment. Additionally, based on the nature of the constituents detected, all have low mobility in ground water under current site conditions.

### 5.2 Non-Stormwater Discharge Sample Analytical Results

Non-stormwater discharge sampling analytical results are summarized in Table 1. A non-stormwater discharge sample was collected by ENW after observation of dry-weather flow in early March 2021, prior to the replacement of the existing storm-water system. Flow was observed at ML004B, located downstream of ML002 and serving drainage basins DB1 and DB3 as well as mixed storm water from onflow from neighboring properties to the south. Storm water was not discharging to the storm-water system at the time of this inspection. One grab sample of the discharge was collected from monitoring location ML004B, representative of the non-stormwater discharge. Samples for dissolved metals were field filtered at the time of sample collection. Grab samples were collected in clean, laboratory-supplied bottles appropriate for the analysis being requested, following standard industry protocol. Samples were kept cold on ice in a cooler and transported the same day to Friedman & Bruya, Inc. of Seattle, Washington (F&BI).

It should be noted that since the time this sample was collected, the storm water system was completely replaced. Based on recent observations during the summer months, no non-storm water flow has been observed in this new storm water system.

### 5.2.1 Dissolved Metals

Metals were analyzed both for total and dissolved metals in ground water. The following observations (summarized on Table 1) were made about this data:

- Total arsenic was detected above both its EPA ROD CUL and JSCS SLV.
- Total manganese was detected above its EPA ROD CUL and JSCS SLV.
- Total nickel was detected above its JSCS SLV.
- All remaining metals were not detected above laboratory Method Reporting Limits (MRLs).

### 5.2.2 Semi-volatile Organic Constituents

PCBs, pesticides, and other select phthalate ester SVOCs (Bis(2-ethylhexyl)phthalate, Butylbenzylphthalate, Diethylphthalate, Dimethylphthalate, Di-n-butylphthalate, and Di-n-octylphthalate) were not detected above their respective MRLs.

### 5.2.3 Polycyclic Aromatic Hydrocarbons

Only four PAHs were detected above their respective MRLs:

- Acenaphthene, fluoranthene, fluorene and phenanthrene were detected in the sample of non-storm water discharge; however, at concentrations below both EPA ROD CULs and JSCS SLVs.

### 5.2.4 Discussion

It is important to note that ENW cannot determine with certainty where this non-stormwater discharge originated. While it may be ground-water related, it could also be from other, off-site sources given the storm-water system at that time received discharge from neighboring properties. The location from where this discharge was sampled ties into the storm water system to areas to the south and it is not known what activities were being performed at these off-site locations at the time of sample collection.

## 6.0 Source Control Evaluation (as it Relates to Ground water)

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This section summarizes the evidence used to support our opinion that ground water at the project site does not represent a significant past, current, or future source of contamination to the Willamette River. However, based on the catalog of reconnaissance ground water data for the project site and other lines of evidence, it is our opinion that additional source control sampling activities related to ground water is warranted to address data gaps. Specifically, the only ground water samples were collected as reconnaissance samples and not from developed monitoring wells and therefore the data from these locations are likely inflated due to suspended sediment entrainment, which is a common artifact of these types of samples.

## 7.0 Findings and Conclusions

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ENW has evaluated existing ground water data at the subject site as it relates to SCE activities. This evaluation was performed in accordance with 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. **Storm water does not enter the current storm-water system and therefore the only potential migration pathway to the river is via ground-water transport. Additionally, the nature of COIs detected in ground water have a low potential for mobility in ground water.**
2. **No existing potential facility-related contaminant sources have been identified.**
3. **Identified COPCs in ground water may be falsely inflated due to the sampling method (reconnaissance).**

This SCE related to ground water suggests that there are currently no facility-related potential sources on the project site that have the potential to impact ground water discharging to the Willamette River. However, there are a few COIs (specifically, benzo[g,h,i]perylene, aluminum, and zinc) that have not been analyzed for in ground water beneath the subject site. ENW recommends sampling for these additional COIs as well as tentatively identified COPCs prior to requesting a Source Control Decision related to ground water from ODEQ. ENW will work with ODEQ to develop a work plan for this additional ground water assessment. A conceptual further ground-water characterization work plan is presented in Section 8.

## 8.0 Conceptual Further Ground Water Characterization Work Plan

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ENW proposes to resample previous ground-water assessment boring locations B-5 and B-8. ENW will install two ground water monitoring wells, one at each location, and collect a ground water sample from each location. Prior to sampling, each monitoring well will be developed to ensure proper hydraulic connection between the well and the adjacent hydrostratigraphic unit by stressing each well so that mobile particulates are removed so that a water sample can be obtained that is as similar as possible to in-situ conditions. Samples will be analyzed for:

- Metals:
  - Dissolved Aluminum, Arsenic, Chromium, Copper, Lead, Manganese, Mercury, Nickel, and Zinc.
- PAHs
  - Acenaphthene, Anthracene, Benzo[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Chrysene, Dibenzo[a,h]anthracene, Fluoranthene, Fluorene, Indeno[1,2,3-cd]pyrene, Naphthalene, Pyrene

This data will then be used to update this SCE, as it relates to ground water.

## 9.0 Limitations

---

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

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

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

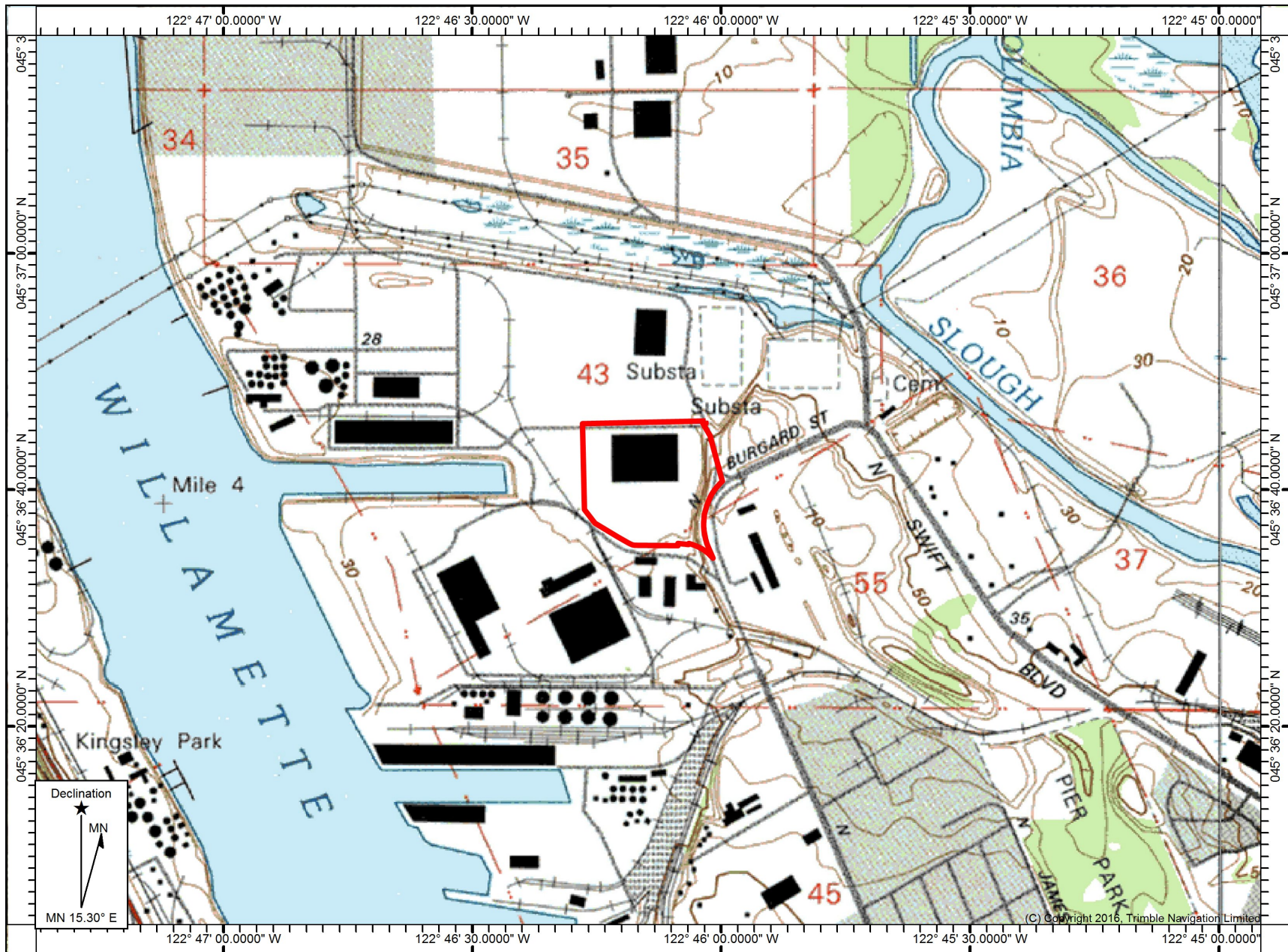
There is no practice that is thorough enough to absolutely identify the presence of all hazardous substances that may be present at a given site. ENW's investigation has been focused only on the potential for contamination that was specifically identified in the Scope of Work. Therefore, if contamination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

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

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

## *Figures*

---



Name: LINNTON  
Date: Jan 1, 1990

0 1000 2000  
Feet

Location: 045° 36' 40.8547" N, 122° 46' 08.7935" W  
Contour Interval: 10 ft



Date Drawn: 7/8/2019  
CAD File Name: 1355-19001-fig1sv\_map(v01)  
Drawn By: JOB  
Approved By: LDG

Lampros Steel  
9040 N Burgard Way  
Portland, Oregon

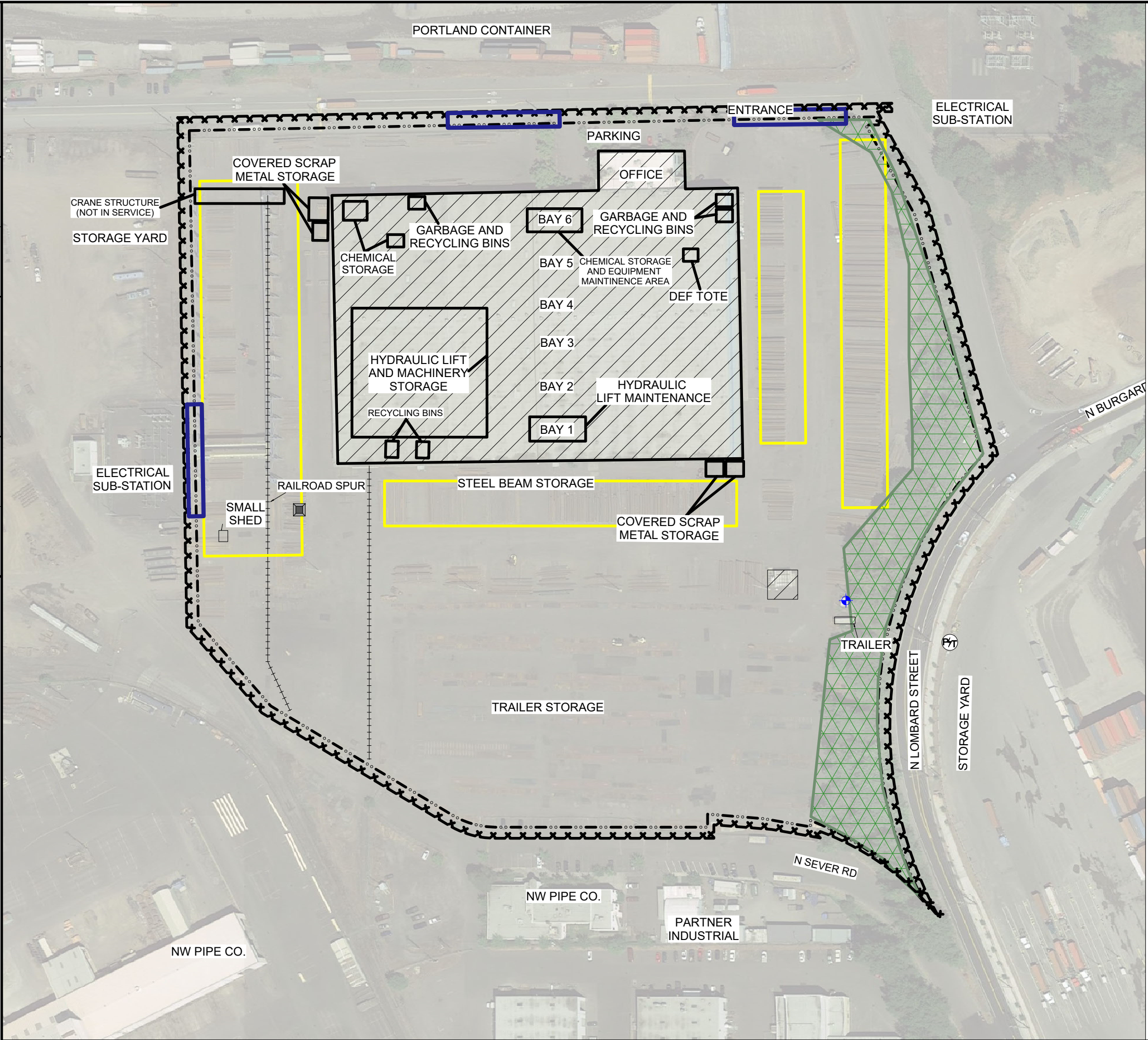
## Site Vicinity Map

Project No.  
1355-19001

Figure No.

1

DRAWN BY C. ROSEBROOK 07/06/2021  
CHECKED BY T. BENNETT 07/06/2021  
APPROVED BY L. GREEN 11/27/2023  
DRAWING NUMBER 1355-19001(v01)



- LEGEND:
- SUBJECT BUILDINGS
  - SUBJECT PROPERTY BOUNDARIES
  - MANUFACTURED STEEL STORAGE LOCATION
  - PERVIOUS SURFACE
  - SURFACE BARRIERS TO REDUCE OFF SITE SURFACE WATER RUN-ON
  - POLE TRANSFORMER
  - PAD TRANSFORMER
  - WELL
  - DEF: DIESEL EXHAUST FLUID
  - CHAIN LINK FENCE

- 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

0 150 300 FEET

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

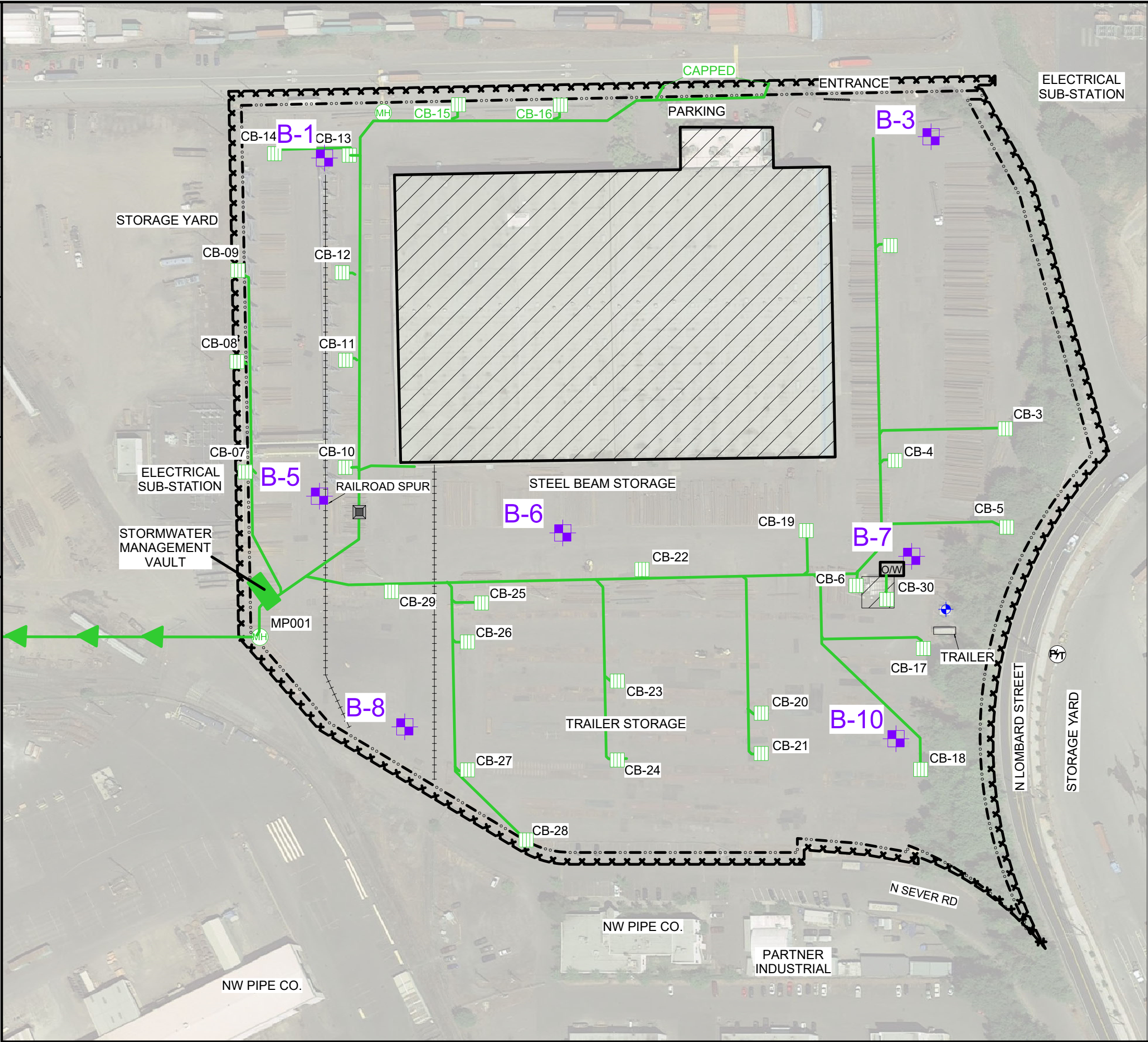
FIGURE 2  
SITE PLAN  
LAMPROS STEEL  
9040 N BURGARD WAY  
PORTLAND, OREGON

DRAWN BY  
C. ROSEBROOK 07/26/2021

CHECKED BY  
E. BRUGGEMAN 07/01/2021

APPROVED BY  
L. GREEN 11/27/2023

DRAWING NUMBER  
1355-19001(v01)



- LEGEND:
- SUBJECT BUILDINGS
  - SUBJECT PROPERTY BOUNDARIES
  - CATCH BASIN
  - POLE TRANSFORMER
  - PAD TRANSFORMER
  - CHAIN LINK FENCE
  - WELL
  - FORMER CASCADIA SOIL BORING WITH GROUND WATER SAMPLE 2019
  - ON-SITE STORM WATER SEWER

- 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

0 140 280 FEET

environmental natural resource consultants

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

FIGURE 3

SAMPLE LOCATION DIAGRAM

LAMPROS STEEL  
9040 N BURGARD WAY  
PORTLAND, OREGON



Table 1 - Summary of Analytical Data, Reconnaissance Ground Water

| Location ID                               |        | B-1            |              | B-3            |             | B-5            |             | B-6           |             | B-7            |             | B-8                      |             |
|-------------------------------------------|--------|----------------|--------------|----------------|-------------|----------------|-------------|---------------|-------------|----------------|-------------|--------------------------|-------------|
| Sample ID                                 |        | B-1            | B-1          | B-3            | B-3         | B-5            | B-5         | B-6           | B-6         | B-7            | B-7         | B-8                      | B-8         |
| Date Sampled                              |        | 2/15/2019      |              | 2/15/2019      |             | 2/15/2019      |             | 2/14/2019     |             | 2/14/2019      |             | 2/14/2019                |             |
| Sampled By                                |        | Cascadia       |              | Cascadia       |             | Cascadia       |             | Cascadia      |             | Cascadia       |             | Cascadia                 |             |
| Location                                  |        | NW of building |              | NE of building |             | SW of building |             | S of building |             | SE of building |             | SW along southern border |             |
| Constituent of Interest                   |        | Note           | µg/L (ppb)   |                | µg/L (ppb)  | µg/L (ppb)     | µg/L (ppb)  | µg/L (ppb)    | µg/L (ppb)  | µg/L (ppb)     | µg/L (ppb)  | µg/L (ppb)               | µg/L (ppb)  |
| Pesticides                                |        |                |              |                |             |                |             |               |             |                |             |                          |             |
| Aldrin                                    | c, v   | ---            | ---          | ---            | ---         | ---            | ---         | ---           | ---         | ---            | ---         | ---                      | ---         |
| Chlordane                                 | c, v   | ---            | ---          | ---            | ---         | ---            | ---         | ---           | ---         | ---            | ---         | ---                      | ---         |
| DDE (4,4'-Dichlorodiphenyldichloroethene) | c, v   | ---            | ---          | ---            | ---         | ---            | ---         | ---           | ---         | ---            | ---         | ---                      | ---         |
| Dieldrin                                  | c, nv  | ---            | ---          | ---            | ---         | ---            | ---         | ---           | ---         | ---            | ---         | ---                      | ---         |
| Metals                                    |        |                |              |                |             |                |             |               |             |                |             |                          |             |
| Total / Dissolved                         |        | Total          | Dissolved    | Total          | Dissolved   | Total          | Dissolved   | Total         | Dissolved   | Total          | Dissolved   | Total                    | Dissolved   |
| Arsenic                                   | c, nv  | 42.8           | <10.0 (ND)   | 28.4           | <10.0 (ND)  | 335            | <10.0 (ND)  | 80.3          | <10.0 (ND)  | 103            | <10.0 (ND)  | 171                      | <10.0 (ND)  |
| Cadmium                                   | nc, nv | <2.00 (ND)     | <2.00 (ND)   | <2.00 (ND)     | <2.00 (ND)  | <20.0 (ND)     | <2.00 (ND)  | <10.0 (ND)    | <2.00 (ND)  | <2.00 (ND)     | <2.00 (ND)  | <10.0 (ND)               | <2.00 (ND)  |
| Chromium (III)                            | nc, nv | 246            | <10.0 (ND)   | 117            | <10.0 (ND)  | 3730           | <10.0 (ND)  | 775           | <10.0 (ND)  | 183            | <10.0 (ND)  | 1930                     | <10.0 (ND)  |
| Copper                                    | nc, nv | 270            | <10.0 (ND)   | 108            | <10.0 (ND)  | 3590           | <10.0 (ND)  | 705           | <10.0 (ND)  | 202            | <10.0 (ND)  | 2010                     | <10.0 (ND)  |
| Lead                                      | NA, nv | 102            | <5.00 (ND)   | 32.4           | <5.00 (ND)  | 1120           | <5 (ND)     | 202           | <5 (ND)     | 67.3           | <5.0 (ND)   | 674                      | <5.00 (ND)  |
| Manganese                                 | nc, nv | 5110           | 619          | 3320           | 1430        | 88300          | 589         | 15800         | 984         | 5570           | 2550        | 44800                    | 871         |
| Mercury                                   | nc, nv | <0.200 (ND)    | <0.200 (ND)  | <0.200 (ND)    | <0.200 (ND) | <0.200 (ND)    | <0.200 (ND) | <0.200 (ND)   | <0.200 (ND) | <0.200 (ND)    | <0.200 (ND) | <0.200 (ND)              | <0.200 (ND) |
| Nickel                                    | c, nv  | 250            | <10.0 (ND)   | 107            | <10.0 (ND)  | 4060           | <10.0 (ND)  | 713           | <10.0 (ND)  | 133            | <10.0 (ND)  | 2290                     | <10.0 (ND)  |
| Silver                                    | nc, nv | <5.00 (ND)     | <5.00 (ND)   | <5.00 (ND)     | <5.00 (ND)  | <50 (ND)       | <5.00 (ND)  | <25 (ND)      | <5.00 (ND)  | <5.00 (ND)     | <5.0 (ND)   | <25.0 (ND)               | <5.00 (ND)  |
| Semivolatile Organic Constituents         |        |                |              |                |             |                |             |               |             |                |             |                          |             |
| Bis(2-ethylhexyl)phthalate                | c, nv  | --             | --           | --             | --          | --             | --          | --            | --          | --             | --          | --                       | --          |
| Butylbenzylphthalate                      |        | --             | --           | --             | --          | --             | --          | --            | --          | --             | --          | --                       | --          |
| Diethylphthalate                          |        | --             | --           | --             | --          | --             | --          | --            | --          | --             | --          | --                       | --          |
| Dimethylphthalate                         |        | --             | --           | --             | --          | --             | --          | --            | --          | --             | --          | --                       | --          |
| Di-n-butylphthalate                       |        | --             | --           | --             | --          | --             | --          | --            | --          | --             | --          | --                       | --          |
| Di-n-octylphthalate                       |        | --             | --           | --             | --          | --             | --          | --            | --          | --             | --          | --                       | --          |
| Polychlorinated biphenyls (Total PCBs)    | c, v   | <0.500 (ND)    | --           | <0.500 (ND)    | --          | <0.500 (ND)    | --          | <0.500 (ND)   | --          | <0.500 (ND)    | --          | <0.500 (ND)              | --          |
| Polycyclic Aromatic Hydrocarbons          |        |                |              |                |             |                |             |               |             |                |             |                          |             |
| Acenaphthene                              | nc, v  | 0.0637         | --           | 0.0621         | --          | 5.55           | --          | 0.0261 J      | --          | <0.0500 (ND)   | --          | 3.67                     | --          |
| Acenaphthylene                            |        | --             | --           | --             | --          | --             | --          | --            | --          | --             | --          | --                       | --          |
| Anthracene                                | nc, v  | 0.0926         | --           | 0.073          | --          | 3.17           | --          | 0.0349 J      | --          | <0.0500 (ND)   | --          | 1.76                     | --          |
| Benzo[a]anthracene                        | c, v   | 0.0996         | --           | 0.045 J        | --          | 0.658          | --          | 0.0171 J      | --          | <0.0500 (ND)   | --          | 0.454                    | --          |
| Benzo[a]pyrene (BaP equivalents)          | c, nv  | 0.123          | --           | 0.0408 J       | --          | 0.628          | --          | <0.0500 (ND)  | --          | 0.0135 J       | --          | 0.493                    | --          |
| Benzo[b]fluoranthene                      | c, nv  | 0.128          | --           | 0.0412 J       | --          | 0.604          | --          | 0.00928 J     | 0.0136 J    | 0.0136 J       | --          | 0.469                    | --          |
| Benzo[k]fluoranthene                      | c, nv  | 0.0337 J       | --           | <0.0500 (ND)   | --          | 0.157          | --          | <0.0500 (ND)  | --          | <0.0500 (ND)   | --          | 0.124                    | --          |
| Chrysene                                  | c, nv  | 0.123          | --           | 0.047 J        | --          | 0.783          | --          | 0.0115 J      | --          | <0.0500 (ND)   | --          | 0.572                    | --          |
| Dibenz[a,h]anthracene                     | c, nv  | <0.0500 (ND)   | <0.0500 (ND) | <0.0500 (ND)   | --          | 0.0176 J       | --          | <0.0500 (ND)  | --          | <0.0500 (ND)   | --          | 0.0128 J                 | --          |
| Fluoranthene                              | nc, nv | 0.389          | --           | 0.272          | --          | 7.26           | --          | 0.083         | --          | <0.0500 (ND)   | --          | 3.98                     | --          |
| Fluorene                                  | nc, v  | 0.128          | --           | 0.123          | --          | 9.57           | --          | 0.0537        | --          | <0.0500 (ND)   | --          | 6.06                     | --          |
| Indeno[1,2,3-cd]pyrene                    | c, nv  | 0.077          | --           | 0.0235 J       | --          | 0.34           | --          | <0.0500 (ND)  | --          | <0.0500 (ND)   | --          | 0.263                    | --          |
| Naphthalene                               | c, v   | <0.25 (ND)     | --           | 0.0918 J       | --          | 9.84           | --          | 1.12 J        | --          | <0.250 (ND)    | --          | 80.8                     | --          |
| Phenanthrene                              |        | --             | --           | --             | --          | --             | --          | --            | --          | --             | --          | --                       | --          |
| 1-Methylnaphthalene                       | ---    | --             | --           | --             | --          | --             | --          | --            | --          | --             | --          | --                       | --          |
| 2-Methylnaphthalene                       | ---    | --             | --           | --             | --          | --             | --          | --            | --          | --             | --          | --                       | --          |
| Pyrene                                    | nc, v  | 0.434          | --           | 0.263          | --          | 6.66           | --          | 0.0885        | --          | 0.0175 J       | --          | 3.75                     | --          |

Table 1 - Summary of Analytical Data, Reconnaissance Ground Water

| Location ID                          |  | B-1            |            | B-3            |            | B-5            |            | B-6           |            | B-7            |            | B-8                      |            |
|--------------------------------------|--|----------------|------------|----------------|------------|----------------|------------|---------------|------------|----------------|------------|--------------------------|------------|
| Sample ID                            |  | B-1            | B-1        | B-3            | B-3        | B-5            | B-5        | B-6           | B-6        | B-7            | B-7        | B-8                      | B-8        |
| Date Sampled                         |  | 2/15/2019      |            | 2/15/2019      |            | 2/15/2019      |            | 2/14/2019     |            | 2/14/2019      |            | 2/14/2019                |            |
| Sampled By                           |  | Cascadia       |            | Cascadia       |            | Cascadia       |            | Cascadia      |            | Cascadia       |            | Cascadia                 |            |
| Location                             |  | NW of building |            | NE of building |            | SW of building |            | S of building |            | SE of building |            | SW along southern border |            |
| Constituent of Interest              |  | Note           | µg/L (ppb) |                | µg/L (ppb) | µg/L (ppb)     | µg/L (ppb) | µg/L (ppb)    | µg/L (ppb) | µg/L (ppb)     | µg/L (ppb) | µg/L (ppb)               | µg/L (ppb) |
| Total Petroleum Hydrocarbons         |  |                |            |                |            |                |            |               |            |                |            |                          |            |
| Generic Gasoline (GRO)               |  | nc, v          | <100 (ND)  | --             | <100 (ND)  | --             | <100 (ND)  | --            | <100 (ND)  | --             | <100 (ND)  | --                       | <100 (ND)  |
| Generic Diesel / Heating Oil (DRO)   |  | nc, v          | <100 (ND)  | --             | <100 (ND)  | --             | 488        | --            | <100 (ND)  | --             | <100 (ND)  | --                       | 100 J      |
| Generic Mineral Insulating Oil (RRO) |  | nc, nv         | 110 J      | --             | 105 J      | --             | 765        | --            | <250 (ND)  | --             | 94.7 J     | --                       | <250 (ND)  |

Notes:

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

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

NE = not established.

— = not analyzed or not applicable.

c = carcinogenic

nc = noncarcinogenic

v = volatile

nv = nonvolatile

GRO = gasoline-range organics.

DRO = diesel-range organics.

RRO = residual-range organics.

**Bolded** concentrations exceed Soil Screening Level (SLV) for Portland Harbor.

Shaded concentrations exceed both Portland Harbor SLV and ROD Table 17 Cleanup Level.

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

J = indicates the internal standard associated with the analyte is out of control limits; the reported concentration is an estimate.

Table 1 - Summary of Analytical Data, Reconnaissance Ground Water

| Location ID                               |        | B-10                     |            | SW Manhole               |            | Maximum Detected Ground Water Concentration (Dissolved for metals ground water, total for SW Manhole) | ROD Table 17 Cleanup Levels | SLV for Portland Harbor | Background Concentrations (metals, surface water) | Exceeds Background Concentrations (metals)? | COPC (exceeds ROD Table 17 Cleanup Levels or SLV for Portland Harbor)? |
|-------------------------------------------|--------|--------------------------|------------|--------------------------|------------|-------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------|---------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------|
| Sample ID                                 |        | B-10                     | B-10       | ML004B                   |            |                                                                                                       |                             |                         |                                                   | TRUE OR Y<br>FALSE OR N                     | TRUE OR Y<br>FALSE OR N                                                |
| Date Sampled                              |        | 2/15/2021                |            | 3/4/21                   |            |                                                                                                       |                             |                         |                                                   |                                             |                                                                        |
| Sampled By                                |        | Cascadia                 |            | ENW                      |            |                                                                                                       |                             |                         |                                                   |                                             |                                                                        |
| Location                                  |        | SE along southern border |            | southwest manhole ML004B |            |                                                                                                       |                             |                         |                                                   |                                             |                                                                        |
| Constituent of Interest                   | Note   | µg/L (ppb)               | µg/L (ppb) | µg/L (ppb)               | µg/L (ppb) | µg/L (ppb)                                                                                            |                             |                         |                                                   |                                             |                                                                        |
| Pesticides                                |        |                          |            |                          |            |                                                                                                       |                             |                         |                                                   |                                             |                                                                        |
| Aldrin                                    | c, v   | ---                      | ---        | <0.1 (ND)                | ---        | <0.1 (ND)                                                                                             | ---                         | 0.00005                 | NE                                                | N                                           | (Y)                                                                    |
| Chlordane                                 | c, v   | ---                      | ---        | <0.1 (ND)                | ---        | <0.1 (ND)                                                                                             | ---                         | 0.00081                 | NE                                                | N                                           | (Y)                                                                    |
| DDE (4,4'-Dichlorodiphenyldichloroethene) | c, v   | ---                      | ---        | <0.1 (ND)                | ---        | <0.1 (ND)                                                                                             | 0.000018                    | 0.00022                 | NE                                                | N                                           | (Y)                                                                    |
| Dieldrin                                  | c, nv  | ---                      | ---        | <0.1 (ND)                | ---        | <0.1 (ND)                                                                                             | --                          | 0.000054                | NE                                                | N                                           | (Y)                                                                    |
| Metals                                    |        |                          |            |                          |            |                                                                                                       |                             |                         |                                                   |                                             |                                                                        |
| Total / Dissolved                         |        | Total                    | Dissolved  | Total                    | Dissolved  |                                                                                                       |                             |                         |                                                   |                                             |                                                                        |
| Arsenic                                   | c, nv  | 175                      | <10.0 (ND) | 8.86                     | ---        | 8.9                                                                                                   | 0.018                       | 0.045                   | 2                                                 | Y                                           | Y                                                                      |
| Cadmium                                   | nc, nv | <10.0 (ND)               | <2.00 (ND) | <1 (ND)                  | ---        | <2.00 (ND)                                                                                            | 0.94                        | 0.38                    | 1                                                 | Y                                           | (Y)                                                                    |
| Chromium (III)                            | nc, nv | 1140                     | 19.7       | <1 (ND)                  | ---        | 19.7                                                                                                  | 11                          | 100                     | 1                                                 | Y                                           | Y                                                                      |
| Copper                                    | nc, nv | 978                      | 22.8       | <5 (ND)                  | <5 (ND)    | 22.8                                                                                                  | 2.74                        | 3.6                     | 9                                                 | Y                                           | Y                                                                      |
| Lead                                      | NA, nv | 357                      | 3.23 J     | <1 (ND) J                | <1 (ND) J  | 4.46                                                                                                  | 0.54                        | 0.54                    | 13.3                                              | N                                           | Y                                                                      |
| Manganese                                 | nc, nv | 28500                    | 350        | 1750                     | ---        | 2550                                                                                                  | 430                         | 50                      | NE                                                | N                                           | Y                                                                      |
| Mercury                                   | nc, nv | 0.879                    | 0.0618 J   | <1 (ND) J                | ---        | 0.0618 J                                                                                              | --                          | 0.012                   | 0.1                                               | N                                           | Y                                                                      |
| Nickel                                    | c, nv  | 762                      | 8.65 J     | 2.07                     | ---        | 8.65 J                                                                                                | --                          | 48                      | 5.5                                               | Y                                           | N                                                                      |
| Silver                                    | nc, nv | <25.0 (ND)               | <5.00 (ND) | <0.2 (ND)                | ---        | <5.00 (ND)                                                                                            | 36.5                        | 33                      | 1                                                 | (Y)                                         | N                                                                      |
| Semivolatile Organic Constituents         |        |                          |            |                          |            |                                                                                                       |                             |                         |                                                   |                                             |                                                                        |
| Bis(2-ethylhexyl)phthalate                | c, nv  | --                       | --         | <3.2 (ND)                | --         | <3.2 (ND)                                                                                             | ---                         | 2.2                     | NE                                                | --                                          | (Y)                                                                    |
| Butylbenzylphthalate                      |        | --                       | --         | <2 (ND)                  | --         | <2 (ND)                                                                                               | --                          | 3                       | NE                                                | --                                          | N                                                                      |
| Diethylphthalate                          |        | --                       | --         | <2 (ND)                  | --         | <2 (ND)                                                                                               | --                          | 3                       | NE                                                | --                                          | N                                                                      |
| Dimethylphthalate                         |        | --                       | --         | <2 (ND)                  | --         | <2 (ND)                                                                                               | --                          | 3                       | NE                                                | --                                          | N                                                                      |
| Di-n-butylphthalate                       |        | --                       | --         | <2 (ND)                  | --         | <2 (ND)                                                                                               | --                          | 3                       | NE                                                | --                                          | N                                                                      |
| Di-n-octylphthalate                       |        | --                       | --         | <2 (ND) ca               | --         | <2 (ND) ca                                                                                            | --                          | 3                       | NE                                                | --                                          | N                                                                      |
| Polychlorinated biphenyls (Total PCBs)    | c, v   | <0.500 (ND)              | --         | <0.100 (ND)              | --         | <0.095 (ND)                                                                                           | 0.014                       | 0.0000064               | NE                                                | --                                          | (Y)                                                                    |
| Polycyclic Aromatic Hydrocarbons          |        |                          |            |                          |            |                                                                                                       |                             |                         |                                                   |                                             |                                                                        |
| Acenaphthene                              | nc, v  | <0.200 (ND)              | --         | 0.051                    | --         | 5.55                                                                                                  | 23                          | 0.2                     | NE                                                | --                                          | Y                                                                      |
| Acenaphthylene                            |        | --                       | --         | <0.02 (ND)               | --         | 0.02                                                                                                  | --                          | 0.2                     | NE                                                | --                                          | N                                                                      |
| Anthracene                                | nc, v  | <0.200 (ND)              | --         | <0.02 (ND)               | --         | 3.17                                                                                                  | 0.73                        | 0.2                     | NE                                                | --                                          | Y                                                                      |
| Benzo[a]anthracene                        | c, v   | <0.200 (ND)              | --         | <0.02 (ND)               | --         | 0.658                                                                                                 | 0.0012                      | 0.018                   | NE                                                | --                                          | Y                                                                      |
| Benzo[a]pyrene (BaP equivalents)          | c, nv  | <0.200 (ND)              | --         | <0.02 (ND)               | --         | 0.628                                                                                                 | 0.00012                     | 0.018                   | NE                                                | --                                          | Y                                                                      |
| Benzo[b]fluoranthene                      | c, nv  | 0.0624 J                 | --         | <0.02 (ND)               | --         | 0.604                                                                                                 | 0.0012                      | 0.018                   | NE                                                | --                                          | Y                                                                      |
| Benzo[k]fluoranthene                      | c, nv  | <0.200 (ND)              | --         | <0.02 (ND)               | --         | 0.157                                                                                                 | 0.0013                      | 0.018                   | NE                                                | --                                          | Y                                                                      |
| Chrysene                                  | c, nv  | <0.200 (ND)              | --         | <0.02 (ND)               | --         | 0.783                                                                                                 | 0.0013                      | 0.018                   | NE                                                | --                                          | Y                                                                      |
| Dibenz[a,h]anthracene                     | c, nv  | <0.200 (ND)              | --         | <0.02 (ND)               | --         | 0.0176 J                                                                                              | 0.00012                     | 0.018                   | NE                                                | --                                          | Y                                                                      |
| Fluoranthene                              | nc, nv | 0.0635 J                 | --         | 0.12                     | --         | 7.26                                                                                                  | 6.2                         | 0.2                     | NE                                                | --                                          | Y                                                                      |
| Fluorene                                  | nc, v  | <0.200 (ND)              | --         | 0.030                    | --         | 9.57                                                                                                  | 3.9                         | 0.2                     | NE                                                | --                                          | Y                                                                      |
| Indeno[1,2,3-cd]pyrene                    | c, nv  | <0.200 (ND)              | --         | <0.02 (ND)               | --         | 0.34                                                                                                  | 0.0012                      | 0.018                   | NE                                                | --                                          | Y                                                                      |
| Naphthalene                               | c, v   | <1.00 (ND)               | --         | <0.2 (ND)                | --         | 80.8                                                                                                  | 12                          | 0.2                     | NE                                                | --                                          | Y                                                                      |
| Phenanthrene                              |        | --                       | --         | 0.14                     | --         | 0.14                                                                                                  | 6.3                         | 0.2                     | NE                                                | --                                          | N                                                                      |
| 1-Methylnaphthalene                       | ---    | --                       | --         | <0.2 (ND)                | --         | <0.2 (ND)                                                                                             | --                          | --                      | NE                                                | --                                          | (Y)                                                                    |
| 2-Methylnaphthalene                       | ---    | --                       | --         | <0.2 (ND)                | --         | <0.2 (ND)                                                                                             | 2.1                         | 0.2                     | NE                                                | --                                          | N                                                                      |
| Pyrene                                    | nc, v  | 0.0784 J                 | --         | <0.21 (ND)               | --         | 6.66                                                                                                  | 10                          | 0.2                     | NE                                                | --                                          | Y                                                                      |

Table 1 - Summary of Analytical Data, Reconnaissance Ground Water

| Location ID                          |        | B-10                     |            | SW Manhole               |            | Maximum Detected Ground Water Concentration (Dissolved for mettals ground water, total for SW Manhole) | ROD Table 17 Cleanup Levels | SLV for Portland Harbor | Background Concentrations (metals, surface water) | Exceeds Background Concentrations (metals)? | COPC (exceeds ROD Table 17 Cleanup Levels or SLV for Portland Harbor)? |
|--------------------------------------|--------|--------------------------|------------|--------------------------|------------|--------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------|---------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------|
| Sample ID                            |        | B-10                     | B-10       | ML004B                   |            |                                                                                                        |                             |                         |                                                   | TRUE OR Y<br>FALSE OR N                     | TRUE OR Y<br>FALSE OR N                                                |
| Date Sampled                         |        | 2/15/2021                |            | 3/4/21                   |            |                                                                                                        |                             |                         |                                                   |                                             |                                                                        |
| Sampled By                           |        | Cascadia                 |            | ENW                      |            |                                                                                                        |                             |                         |                                                   |                                             |                                                                        |
| Location                             |        | SE along southern border |            | southwest manhole ML004B |            |                                                                                                        |                             |                         |                                                   |                                             |                                                                        |
| Constituent of Interest              |        | Note                     | µg/L (ppb) | µg/L (ppb)               | µg/L (ppb) | µg/L (ppb)                                                                                             | µg/L (ppb)                  |                         |                                                   |                                             |                                                                        |
| Total Petroleum Hydrocarbons         |        |                          |            |                          |            |                                                                                                        |                             |                         |                                                   |                                             |                                                                        |
| Generic Gasoline (GRO)               | nc, v  | <100 (ND)                | --         | --                       | --         | <100 (ND)                                                                                              | --                          | --                      | NE                                                | --                                          | N                                                                      |
| Generic Diesel / Heating Oil (DRO)   | nc, v  | <110 (ND)                | --         | --                       | --         | 488                                                                                                    | --                          | --                      | NE                                                | --                                          | N                                                                      |
| Generic Mineral Insulating Oil (RRO) | nc, nv | 426                      | --         | --                       | --         | 765                                                                                                    | --                          | --                      | 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.  
NE = not established.  
— = not analyzed or not applicable.  
c = carcinogenic  
nc = noncarcinogenic  
v = volatile  
nv = nonvolatile  
GRO = gasoline-range organics.  
DRO = diesel-range organics.  
RRO = residual-range organics.  
**Bolded** concentrations exceed Soil Screening Level (SLV) for Portland Harbor.  
Shaded concentrations exceed both Portland Harbor SLV and ROD Table 17 Cleanup Level.  
(Y) indicates analyte not detected, but detection limit is above screening concentration.  
  
J = inidicates the internal standard associated with the analyte is out of control limits; the reported concentration is an estimate.