

**STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY**

In the Matter of Remedial Action by:

**Norton Industries, Inc., and TC  
Systems, Inc.**

FIRST AMENDMENT TO AGREED  
ORDER for  
**Remedial Investigation/Feasibility Study  
and Draft Cleanup Action Plan – TC  
Systems Inc Site**

No. DE **7818**

---

TO: Norton Industries, Inc.  
James B. Schack – President  
24615 142nd Ave SE  
Kent, Washington 98042-5153

and

TC Systems, Inc.  
Mary Utick, President  
1032 West Marine View Drive  
Everett, Washington 98201-1557

EXHIBIT B Amended Scope of Work and Schedule

EXHIBIT E Interim Action Work Plan

**INTRODUCTION**

Agreed Order No. DE 7818 (Order) entered into by the State of Washington, Department of Ecology (Ecology) and Norton Industries, Inc. (Norton), and TC Systems, Inc. (TC) on August 5, 2012 requires Norton and TC (collectively the potentially liable persons [PLPs]) to conduct a Remedial Investigation and Feasibility Study (RI/FS) per WAC 173-340-350 and WAC 173-204-560, and develop a draft Cleanup Action Plan per WAC 173-340-350 through 173-340-380 addressing both potential upland and in-water (i.e., nearby marine sediment) contamination for the Site.

Pursuant to Section VIII.L of the Order, Ecology and the PLPs hereby stipulate to amend the Order. By this amendment to the Order, the PLPs will perform an interim remedial action at a facility where there has been a release or threatened release of hazardous substances.

This amendment does not attempt to recite all of the provisions of the Order. Provisions of the Order not specifically changed in this amendment remain in full force and effect.

## **VI. ECOLOGY DETERMINATIONS**

F. Under WAC 173-340-430, an interim action (IA) is a remedial action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance, that corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed, or that is needed to provide for completion of a site hazard assessment, RI/FS study or design of a cleanup action. A general description of the IA is provided in the paragraph below.

The PLPs will conduct the IA to remove approximately 300 linear feet of degraded stormwater trunk line that borders the TC Systems Site and the North Marina Ameron/Hulbert Site. The poor condition of the trunk line provides a potential conduit for contaminated soil or groundwater from the TC Systems Site and the adjacent North Marina Ameron/Hulbert site to the south to impact marine surface water or marine sediment. The stormwater trunk line will be replaced with a new 24-inch-diameter solid-wall polyvinyl chloride (PVC) pipe along the same alignment. In addition to the removal of the trunk line, the PLPs will also remove and properly dispose of contaminated soils around the trunk lines. This interim action will be coordinated with the remedial actions taking place at the North Marina Ameron/Hulbert Site to the south, as outlined in Section 4.1.1 of the November 21, 2014 Cleanup Action Plan (CAP) for that Site.

## **VII. WORK TO BE PERFORMED**

A. Scope of Interim Action: The interim action is more fully described in **Exhibit B** (Amended Scope of Work and Schedule) and **Exhibit E** (Interim Action Work Plan) to this First Amendment to the Agreed Order.

Effective date of this Order: \_\_\_\_\_

**NORTON INDUSTRIES, INC.**

**STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY**

---

James B Schack  
President  
24615 142nd Avenue SE  
Kent, Washington 98042-5153  
253-631-3905

---

Barry Rogowski  
Manager of HQ Cleanup Section  
Toxics Cleanup Program  
Department of Ecology  
300 Desmond Drive Southeast  
Lacey, Washington 98504  
360-407-7226

**TC SYSTEMS, INC.**

---

Mary Utick  
President  
11541 Skyline Drive  
Santa Ana, California 92705  
714-544-4481

## EXHIBIT B

### AMENDED SCOPE OF WORK & SCHEDULE

The Scope of Work and Schedule for Agreed Order No. DE 7818 is amended to add the following provisions:

- **Interim Action** – The PLPs shall complete an interim action at the Site as described in the approved IA Work Plan. The interim action is expected to include replacing a degraded stormwater trunk line and disposal of the potentially contaminated materials around the trunk line at an approved landfill facility. The contaminated soil piles may contain concentrations of carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and metals that are greater than MTCA cleanup levels. Grading at the Site will be completed following removal of the contaminated soil and confirmation of the removal completeness through analytical testing of samples collected from the underlying surface. Environmental control measures will be implemented during the excavation activities, as appropriate (e.g., erosion control, stormwater pollution prevention, etc).
- **Reporting** – The results of the interim action shall be reported in both the remedial investigation/feasibility (RI/FS) report and the Cleanup Action Plan for the Site. These reports will include a description of the interim action activities and the current condition of the Site, the lateral and vertical limits of any excavations, the volume of contaminated soil removed from each excavation, and the results of post-excavation compliance monitoring.

#### Schedule

Work Element	Delivery Dates
Engineering Design (60 Days)/Permitting	Commence upon completion of public review, or another date mutually agreed to by Ecology and the PLPs.
Ecology Review	Within 2 weeks following submittal of the 95 % design package to Ecology.
Bidding and Contracting	Commencing within 2 weeks of Ecology approval of the 95 % design and obtaining any required permits or meeting permit substantive requirements, and contracting with the successful bidder within 45 days of issuing the request for bids.
Construction	Issuance of Contractor notice to proceed within 15 days of bid award, and

	completion of construction within 120 days of notice to proceed, or other timeline as mutually agreed to by Ecology and the PLPs.
--	---

# **Exhibit E**

# **DRAFT Interim Action Work Plan**

TCSYSTEMS  
1032 West Marine View Drive  
Everett, Washington 98201

Ecology Facility Site ID: 10587741  
Ecology Cleanup Site ID: 628  
Agreed Order (AO) ID: DE 7818



Prepared for Owner:  
Norton Industries Inc.  
PO Box 8289  
Covington, WA 98042-8289

Prepared by Consultant:  
Stantec Consulting Services Inc.  
11130 NE 33rd Place, Suite 200  
Bellevue, WA 98004  
Contact: Mr. Marc Sauze, PE

June 26, 2018

#185751089

## DRAFT INTERIM ACTION WORK PLAN

### Sign-off Sheet

This document entitled DRAFT Interim Action Work Plan was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of TCSystems (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

**Reviewed by:**

\_\_\_\_\_  
(signature)  
**Name / Title** Carol B. Shestak, LG, Senior Geologist

**Prepared by:**

\_\_\_\_\_  
(signature)  
**Name / Title** Patrick Vaughan, MS, CEM, Principal

**Approved by:**

\_\_\_\_\_  
(signature)  
**Name / Title** Marc Sauze, PE, Principal



# DRAFT INTERIM ACTION WORK PLAN

## Table of Contents

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>2.0</b>	<b>BACKGROUND INFORMATION .....</b>	<b>2</b>
2.1	SITE AND IA WORK AREA DESCRIPTION.....	2
2.2	HISTORICAL AND CURRENT SITE USE.....	2
2.3	GEOLOGY AND HYDROGEOLOGY .....	3
2.4	STORM DRAIN SYSTEM AND BACKGROUND.....	4
<b>3.0</b>	<b>PREVIOUS ENVIRONMENTAL INVESTIGATIONS .....</b>	<b>6</b>
3.1	INVESTIGATIONS CONDUCTED BY OTHERS .....	6
3.2.1	Initial Remedial Investigation - November 2011 .....	7
3.2.2	Supplemental Remedial Investigation to Address Data Gaps – 2012 to 2014 .....	8
3.2.3	Further Delineation Sampling – November 2015.....	9
3.2.4	Pre-IA Data Gap Sampling – November 2017 .....	9
<b>4.0</b>	<b>PRELIMINARY SCREENING LEVELS.....</b>	<b>10</b>
4.1	CURRENT AND LIKELY FUTURE LAND USE .....	10
4.2	EXPOSURE PATHWAYS .....	10
4.3	PRELIMINARY GROUNDWATER SCREENING LEVELS .....	10
4.4	PRELIMINARY SOIL SCREENING LEVELS.....	11
4.5	SITE-SPECIFIC GROUNDWATER CLEANUP LEVELS.....	11
4.6	SITE-SPECIFIC SOIL REMEDIATION LEVELS .....	12
4.7	POINT OF COMPLIANCE.....	13
<b>5.0</b>	<b>INTERIM ACTION .....</b>	<b>14</b>
5.1	BASIS FOR AND PURPOSE OF INTERIM ACTION .....	14
5.2	ADDITIONAL INFORMATION FOR DEFINING THE INTERIM ACTION AREA .....	15
5.3	DESCRIPTION OF THE INTERIM ACTION .....	15
5.4	INTERIM ACTION TIMING, WORK AREA ACCESS, AND PRE-FIELD PERMITTING .....	18
5.5	SOIL AND GROUNDWATER HANDLING, TREATMENT, AND DISPOSAL .....	18
5.6	COMPLIANCE MONITORING .....	19
5.6.1	Protection Monitoring/Health and Safety .....	19
5.6.2	Performance Monitoring .....	20
5.6.3	Confirmation Monitoring .....	20
5.7	INTERIM ACTION REPORTING .....	20
<b>6.0</b>	<b>APPLICABLE, RELEVANT, AND APPROPRIATE REGULATORY REQUIREMENTS.....</b>	<b>22</b>
<b>7.0</b>	<b>REFERENCES.....</b>	<b>23</b>

# DRAFT INTERIM ACTION WORK PLAN

## LIST OF FIGURES

Figure 1	Location Map
Figure 2	Vicinity Plan
Figure 3	Site Plan Showing Soil Borings and Groundwater Monitoring Wells
Figure 4	Detail of Southern Portion of Site
Figure 5	Geologic Cross Section A-A'
Figure 6	Trench Profile

## LIST OF TABLES

Table 1	Derivation of Interim Action (IA) Soil RELs
Table 2	Soil Analytical Results – Semi VOCs, Nov. 2017
Table 3	Soil Analytical Results - TPH, Nov. 2017
Table 4	Soil Analytical Results – PCBs, Nov. 2017
Table 5	Soil Analytical Results – Metals, Nov. 2017
Table 6	Soil Analytical Results – PAHs, Nov. 2017

## LIST OF APPENDICES

Appendix A	Ameron's Cleanup Action Plan (November 21, 2014) – Table 3, CULs
Appendix B	Soil Analytical Results – TC-MW-7, TC-MW-7V, and TC-SB-7

# DRAFT INTERIM ACTION WORK PLAN

## 1.0 INTRODUCTION

This document presents an *Interim Action (IA) Work Plan* for activities to be conducted by Norton Industries Inc and TCSystems, Inc to facilitate the removal and replacement of a trunkline storm drain (trunkline). The trunkline is situated along the south border of the TCSystems Site (Site) located at 1032 West Marine View Drive, Everett, Snohomish County, Washington (Figure 1). The Site is owned by Norton Industries. The neighboring site to the south is the Port of Everett-owned North Marina Ameron Hulbert site. Storm drain laterals from the Site and from other nearby parcels connect to the trunkline which drains westerly towards the 12<sup>th</sup> Street Marina (Figure 2). The trunkline is in poor condition and in need of repairs/replacement.

The trunkline straddles the property line between the TCSystems Site and the Ameron Hubert site. As such the removal/replacement work needs to be coordinated between the two site owners (Norton Industries and the Port of Everett). The Port will lead the removal/replacement of the trunkline in accordance with the Corrective Action Plan (CAP) dated 11/21/2014 and as required by Agreed Order DE 6677 executed between the Port of Everett, Ameron International, and the Hulberts, (the potentially liable parties [PLPs]), and the Washington State Department of Ecology (Ecology, June 2009). This Work Plan covers only the activities associated with the TCSystems Site. Activities to be conducted in association with the Ameron Hulbert site are detailed in a separate document.

A draft remedial investigation and feasibility study (Draft RI/FS 2016) for the Site was completed in accordance with the Agreed Order DE 7818 between Norton Industries, TCSystems, and the Washington State Department of Ecology (Ecology, August 2010). This *IA Work Plan* was prepared in accordance with Washington Administration Code (WAC) 173-340-430 and will be part of an amendment to the Agreed Order.

### 2.0 BACKGROUND INFORMATION

This section presents a description of the Site and the IA work area (Section 2.1), a summary of historical and current uses (Section 2.2), a description of the geologic and hydrogeologic conditions (Section 2.3), and a description of the existing storm drain system at the Site and the immediate surrounding area. Further details were provided in prior Stantec documents previously submitted to Ecology.

#### 2.1 SITE AND IA WORK AREA DESCRIPTION

The interim action (IA) work area is located along the south border of the TCSystems Site, adjacent to the North Marina Ameron/Hubert parcel. The TCSystems Site is located in an industrial and commercial area of northwest Everett, near Port Gardner Bay, at 1032 West Marine View Drive. The 12<sup>th</sup> Street Marina at Port Gardner Bay is located approximately 350 feet west of the Site. The IA work area is a relatively flat, asphalt-paved area used for employee vehicle parking and temporary trailered boat parking. The ground surface at the IA work area is approximately 15 feet above sea level. Based on prior drilling in the IA work area, there is concrete immediately beneath the surface asphalt. The concrete is not continuous, and where present, its thickness varies from approximately 2 to 18 inches.

#### 2.2 HISTORICAL AND CURRENT SITE USE

The Site is constructed on former tidelands and was originally occupied by a portion of the Jamison Shingle Mill (Jamison) from approximately 1910 until the mid-1960s. Other surrounding and nearby parcels from the 1930s to the 1960s also contained shingle mills and other lumber-related businesses. Portions of the Jamison Mill were constructed on a pier that extended westerly over the nearby Bay with the mill's drying kilns and wood storage sheds located at the Site. Fire apparently destroyed the southern part of the Jamison Mill in approximately 1956 with the remainder of the facility destroyed by another fire in approximately 1967 (this second fire reportedly also destroyed the adjacent Hulbert Mill [to the south] and the nearby Pilchuck Shake & Lumber Company). Jamison had ceased operations in approximately 1960 and Site ownership passed to Saginaw Shingle Company in the mid-1960s.

Following the 1967 fire and until 1974, rubbish and other fill materials (including wastes from Scott Paper Company and industrial fill from a nearby boat-building business) were hauled in and spread at the Site and at the nearby former Pilchuck parcel. By approximately 1967, the southern portion of the Site (where the first 1956 fire occurred) had been filled.

In 1969, Saginaw leased the Site to Aretco, Inc. (later known as Cruise-A-Home) who occupied the Site until 1976. An April 1969 lease stated that Aretco shall not interfere with the Scott Paper dumping operations at the Site.

Dredge and fill operations at the nearby Port Gardner Bay occurred in the early to mid-1970s. Dredged material generated during the construction of the navigation channel was used as fill for a boat launch facility located a short distance west of the Site. Extra dredged material was

## DRAFT INTERIM ACTION WORK PLAN

reportedly brought to the Site. A 1976 aerial photograph shows the Site as undeveloped (except for a small rectangular structure near the southern boundary) but with visible stockpiles and dirt pathways.

In 1976, Cruise-A-Home (who designed and built fiberglass mobile houseboats and other surface craft) purchased the Site and built the two Site buildings (Buildings B and C) between 1978 and 1980. Near-surface fill for support of the buildings consisted of silty sand on several inches of gravelly base material. Buildings B and C were leased to and occupied by Marpac Products Inc. (Marpac) beginning in 1980. Marpac manufactured windows and railings for the marine industry.

In 1983, Norton Industries (Norton) purchased the Site (and the adjacent east and west parcels), continuing to lease Buildings B and C to Marpac. In 1984 and 1985, Norton completed additions to Buildings B and C, bringing them to their present-day square footage. In 1985, Marpac formed a division called Tri Coatings which performed industrial metal coating operations in Building B. In 1992, Marpac's name was changed to TCSystems which continued to operate in Buildings B and C until May 2010 when TCSystems operations at the Site ceased.

TCSystems (formerly Tri Coating and Marpac) specialized in preparing and finishing metal surfaces for powder-coating, primarily for aviation and boating industries. Metal surfaces or parts were prepared for powder coating by removing previously-applied finishes. Powder coatings were applied in powder-coat ("paint") booths located in both Buildings B and C. TCSystems ceased operations in May 2010.

The Site is owned by Norton and is currently leased to Harbor Marine Maintenance & Supply (Harbor Marine), a boating and fishing retail supply business providing boat engine/transmission repair services.

### 2.3 GEOLOGY AND HYDROGEOLOGY

The Site lies within the Puget Lowland, part of a regional north-south trending trough that extends from southwestern British Columbia to near Eugene, Oregon. The Puget Lowland is bounded to the west by the Olympic Mountains and to the east by the Cascade Mountains. North of Olympia, Washington, the lowland is glacially carved, with a depositional and erosional history revealing at least four glacial advances/retreats. The lowland is filled with glacial and non-glacial sediments consisting of interbedded gravel, sand, silt, till, and peat lenses. The Geologic Map of the Marysville Quadrangle indicates that the Site is underlain by Vashon Advance Outwash deposits.

Drilling at the Site reveals that the Site is underlain by various types of fill, beach/tidal flat deposits, and at depth by Vashon Advance Outwash and/or Pre-Fraser deposits. Most of soil borings and groundwater monitoring wells have been drilled to depths of 10 to 15 feet below ground surface (bgs) with several borings extending to slightly greater depths of 16.5 feet bgs.

Native tidal flat sediments beneath the Site consist of fine silty sand to fine sandy silt with variable amount of organic (peat) material and shells. In the IA work area, these native tidal flat materials

## DRAFT INTERIM ACTION WORK PLAN

have been encountered are present at depths of approximately 12 to 13 feet. Locally, the native advance outwash deposits consist of fine- to medium-grained sand with trace amounts of gravel and silt.

Multiple non-native fill events have occurred at the Site, including the hydraulically-dredged bay materials (similar in composition and appearance to the native tidal flat sediments but containing wood debris), non-Site-related land-based rubbish, potentially Site-related fill, wood piles, and vertical wood pilings/pier supports. The potential Site-related debris includes sawdust, wood pulp (possibly prior Jamison mill or imported Scott Paper Company rubbish), metal debris and slag, small white gritty debris (possibly peen-blast material or dredged, crushed shells), and brick/construction debris. As noted above, it is difficult to determine the exact source of the different fills. A geologic cross-section through the IA work area is provided as Figure 5. This fill-and-native lithology is consistent with those subsurface materials encountered at adjacent parcels.

Shallow groundwater is present beneath the Site and has been encountered in all borings at depths ranging from 5 to 12 feet. Static groundwater as measured in the Site's groundwater monitoring wells ranges in depth from 3.30 to 5.50 feet below existing Site grades (equivalent groundwater elevations ranging from 8.93 to 9.54 feet above sea level). We interpret groundwater beneath the Site to be unconfined and influenced by seasonal precipitation and surface water infiltration into the near-surface soils. As measured in the Site's monitoring wells, groundwater flows south-southwesterly beneath the Site at gradients ranging from approximately 0.00017 to 0.002 feet/foot during both wet (winter/spring) and dry (summer) seasons.

### 2.4 STORM DRAIN SYSTEM AND BACKGROUND

The trunkline runs east to west along the south property line adjacent North Marina Ameron/Hulbert parcel. Laterals to the main trunkline originate at the Site and from other nearby parcels and connect to the trunkline.

The trunkline was installed sometime between the mid-1970s and the early 1980s and constructed in sections of 18- to 24-inch-diameter corrugated metal pipe (CMP). The trunkline drains westerly towards the outfall at the 12<sup>th</sup> Street Marina (Figure 2). Until 2006 when a tide gate was installed at the outfall to minimize seawater encroachment into the trunkline, marine water would flow into the trunkline and, due to the relatively flat gradient of the pipe, migrate upgradient almost the entire length of the pipe (Landau Associates, September 2012). This seawater encroachment likely enhanced the corrosion and degradation of the CMP. As documented in video surveys by others (Landau Associates, September 2012), the trunkline is in poor shape, partially filled by sediment, and in need of repairs/replacement.

In December 2013, the Port of Everett and Norton Industries completed an emergency action and replaced the western portion of the trunkline from the southwest portion of the Site westerly to a manhole immediately upstream of the storm drain outfall (Aspect Consulting, February 2014), including a smaller lateral on the adjacent North Ameron/Hulbert parcel. The old segment

## DRAFT INTERIM ACTION WORK PLAN

was abandoned in place and a new 24-inch-diameter solid-wall polyvinyl chloride (PVC) pipe was installed in a nearby trench.

The planned removal and replacement of the trunkline as described herein will provide the following benefits:

- Improved surface water drainage;
- Less leakage from within the trunkline to surrounding soils and groundwater;
- Depth to groundwater on the Site is at the same approximate depth as the trunkline and there is currently a potential path for groundwater from the Site to reach Gardner Bay. The porous material surrounding the trunkline serves as a conduit and groundwater can run along the trunkline from east to west. Replacement of the trunkline will include installation of an impermeable barrier within the trunkline bedding at the west end of the property thus eliminating the potential path for groundwater to reach Gardner Bay.

### 3.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Several environmental investigations have been conducted in phases as part of Site characterization.

#### 3.1 INVESTIGATIONS CONDUCTED BY OTHERS

In May 2009, E3RA performed a Phase I Environmental Site Assessment (ESA). At the time of the ESA, the Site was occupied by TCSystems and was reportedly in active use as a metal finishing plant. The ESA documented three RECs at the Site: 1) multiple above ground storage tanks (ASTs) on-Site; 2) the compressor oil leak between Buildings B and C; and 3) dye penetrant in contact with the concrete slab in Building B.

Dye penetrant was documented to be leaking from application tanks in the northeast corner of Building B and in direct contact with the concrete slab. A sump cut into the concrete to collect and re-use the penetrant, was also observed. The dye penetrant in contact with the floor was considered a REC. Several ASTs were observed inside and outside of the TCSystems buildings, including process dip tanks and batch tanks for waste water processing and acid and base bulk storage. At the time of the reconnaissance, the ASTs appeared to be in good condition with no leaks observed, however the ASTs were considered a REC. No underground storage tanks (USTs) were observed at the Site. Compressor oil from a continuing compressor leak was observed on the pavement between Buildings B and C.

In August 2009, E3RA performed a limited Phase II ESA at the Site. Five borings were advanced to shallow depths with collection of soil and groundwater samples. Three borings (SB-1, -2 and -3) were advanced near the compressor shed in the area between Buildings B and C. Locations were selected to evaluate possible impacts of oil (leaking from an air compressor) to soil and groundwater in that area. Two additional borings (SB-4 and SB-5) were advanced near the northeast corner of building B to evaluate the impacts of dye-penetrant (used inside building B) to soil and groundwater in that area (see Figure 4). Soil samples were analyzed for TPH-diesel and oil and chromium. Groundwater samples were analyzed for TPH-diesel and oil. Diesel was reported at concentrations of 1,200 µg/L; oil at concentrations of 860 µg/L in the groundwater sample collected from boring SB-4.

In September 2009, Ecology collected a grab sample of solids accumulated in the bottom of a storm water catch basin located on the asphalt-paved area between Buildings B and C, near the area of the former wastewater treatment and utilities area (see Figure 4). Analytical data indicated that the sample contained heavy metals (including cadmium, chromium, copper, lead and zinc); polychlorinated biphenyl (PCB) Aroclors (1248 and 1254); total petroleum hydrocarbons (in the lube-oil range); and various semi-volatile organic compounds including some polycyclic aromatic hydrocarbons (PAHs).

In October 2010, limited near-surface (0.5 to 1-foot bgs) soil sampling was conducted by Kane Environmental, Inc. (Kane 2010) concurrent with construction activities at the Site, which included roof and storm water conveyance maintenance and repair. The work was described in two separate technical memos submitted to Ecology (dated November 19 and



## DRAFT INTERIM ACTION WORK PLAN

December 15, 2010), which were subsequently combined by Stantec as Interim Action 001 (April 15, 2011). All soil samples were analyzed for Volatile Organic Constituents (VOCs) by Environmental Protection Agency (EPA) Method 8260; Diesel-Range (TPH-D) and Heavy Oil-Range (TPH-O) petroleum hydrocarbons by Ecology Method NWTPH-Dx; Semi-Volatile Organic Compounds (SVOCs) by EPA Method 8270; and, Total and Dissolved Metals (PP-13) by EPA Method 6020. The results indicated the presence of metals (arsenic, copper, and zinc); 1-methylnaphthalene; di-nitrotoluene; and, phenanthrene and carcinogenic PAHs (one sample only) at concentrations above the preliminary screening levels (PSLs) set forth in the subsequent RI/FS Work Plan (Stantec 2011).

### 3.2 INVESTIGATIONS CONDUCTED BY STANTEC

#### 3.2.1 Initial Remedial Investigation - November 2011

The initial Remedial Investigation (RI) consisted of collecting soil samples from 17, direct-push soil borings. Boring locations were selected based on then-current knowledge of historical site operations; reports of previous chemical releases; and, observations of potential impacted media. Soil samples were analyzed for the following:

- The shallowest sample interval at each boring location was analyzed for priority pollutant metals (antimony, arsenic, barium, cadmium, chromium (total), copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) using EPA Method 6020/7470; SVOCs, including PAHs by EPA Method 8270; VOCs by EPA Method 8260B; and TPH-diesel and TPH-heavy oil by NWTPH-Dx.
- Any sample displaying visual evidence of abrasive grit (e.g. blasting material) was submitted for organotin (tributyltin ion) analysis.
- If the TPH-Dx results indicated detections in the oil range, PCB analysis by EPA Method 8082 was added to the follow-on analyses for that soil interval. In addition, if the gas chromatograph (GC) indicated detections in the gasoline range, TPH-Gx was added to the analyses for that interval.
- If contaminants were detected in the shallow sample interval at concentrations above the PSLs, the next deepest sample was analyzed for the constituents that were reported above the PSLs.

Laboratory analysis identified the presence of certain semi-volatile organic compounds (SVOCs) in borings TC-MW-1, TC-MW-3, TC-MW-4, TC-MW-7 and TC-MW-17; certain metals in borings TC-MW-1, TC-MW-3 through TC-MW-12 and TC-MW-15 through TC-MW-17, and; carcinogenic polycyclic aromatic hydrocarbons (cPAHs) in borings TC-MW-1 through TC-MW-4 and borings TC-MW-7, -10, -16 and -17 at concentrations above PSLs.

Each soil boring location was completed as a groundwater monitoring well. Following well development, and purging, groundwater samples were collected and submitted for laboratory analysis of the same constituents analyzed for soil. To minimize possible effects of tidal influence,

## DRAFT INTERIM ACTION WORK PLAN

sampling was conducted at a time corresponding to low-tide conditions. Groundwater samples with chemical concentrations exceeding PSLs included:

- TC-MW-6 – Arsenic(As);
- TC-MW-7 – PCBs, phenanthrene, cPAHs;
- TC-MW-12 – PCBs and As;
- TC-MW-14 – 1-methylnaphthalene, pentachlorophenol, phenanthrene, Ni and DRO;
- TC-MW-16 – As;
- TC-MW-17 – 1-methylnaphthalene, phenanthrene, and PCBs; and
- All Wells - Copper.

### 3.2.2 Supplemental Remedial Investigation to Address Data Gaps – 2012 to 2014

Based on discussions with Ecology, Stantec developed a path forward to address the identified data gaps noted following implementation of the initial RI in a Memorandum to Ecology dated May 14, 2012 (Stantec, 2012). The scope of work was subsequently detailed in a work plan entitled 'Phase 2 RI to Address Data Gaps,' dated October 3, 2012. Implementation was completed shortly thereafter in mid-October 2012, consisting of borings TC-SB-1 through TC-SB-21 and the results were submitted to Ecology. Upon review by Ecology, further assessment was requested. Stantec provided a revised work plan, dated February 12, 2014, to address Ecology's request for further delineation. Implementation was completed in March 2014.

Twenty-one (21) soil borings (TC-SB-1 through TC-SB-21) were drilled to depths ranging from 5 to 15-feet bgs in mid-October 2012. Soil samples were collected from variable depth intervals where further assessment of soil quality was needed. Two additional groundwater monitoring wells (TC-MW 18 and TC-MW-19) were installed in July 2012 to assess groundwater quality at off-Site and upgradient locations. In March 2014, five additional soil borings (TC-SB-22 through TC-SB-26) and two additional wells (TC-MW-20 and TC-MW-21) were installed.

Copper was detected above the PSL in 23 of 30 soil boring/monitoring well locations. Concentrations ranged from below the PSL to 248 mg/kg (MW-9R); arsenic was detected above the screening level in 8 of 31 soil boring/monitoring well locations (SB-1, SB-7, SB-9 to SB-11, SB-14, MW-9R, and SB-22); and, lead was detected above the screening level in 2 of 23 soil boring/monitoring well locations (SB-6 and SB-8). Borings SB-6 and SB-8 are located in the southeastern portion of the site. Analytical results show that cPAHs exceeded the PSL expressed as the benzo(a)pyrene toxicity equivalent concentration, in all 23 soil boring locations where depth interval samples were analyzed for cPAHs. Only one exceedance of the Method A Soil PSL for hydrocarbons was identified (soil sample TC-SB-21 [2,100 mg/kg]) which was collected at the northwest corner of the site.

Groundwater sampling and analysis identified exceedance of PSLs for arsenic, copper, cPAHs, diesel-range organics (1 sample only), 1-methylnaphthalene, bis (ethylhexyl) phthalate, and 4-methylphenol.

## DRAFT INTERIM ACTION WORK PLAN

### 3.2.3 Further Delineation Sampling – November 2015

Following Ecology approval of the Revised Work Plan for Soil Sampling (Stantec 2015), Stantec collected soil samples using a direct-push drill rig (Geoprobe) to further delineate metals (e.g. copper, and arsenic) and PAHs near formerly-sampled locations (TC-MW-6, TC-MW-7, TC-MW-9R, TC-SB-6, TC-SB-8, and TC-SB-12) near the storm water trunk line scheduled for replacement. Soil was continuously sampled at approximately 2-foot intervals from approximately 4-foot bgs to a maximum depth of approximately 15-foot bgs and selected intervals analyzed for RCRA 8 metals by EPA Method 6010 and PAHs by EPA Method 8270(SIM). Further soil sampling and analysis was proposed to assist estimation of soil volume and FS alternative costing.

Of the 28 samples submitted for laboratory analysis, cPAHs were reported above the PSL at two locations (TC-MW-9R (6') and TC-MW-7-V (5')), copper was detected above its PSL in all but 3 samples, and arsenic was detected above its PSL in one sample (TC-SB-12-V (3')). Review of the analytical results indicated that the vertical distribution of the chemicals analyzed had not been fully defined at all locations. The methodologies used, and the results obtained are included in the July 22, 2016 Draft Remedial Investigation/Feasibility Study (Stantec 2016).

Results of these environmental investigations are summarized in documents available on Ecology's website at: <https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=628>.

### 3.2.4 Pre-IA Data Gap Sampling – November 2017

To further refine estimates of impacted soil which may be encountered during the proposed IA and to resolve data gaps associated with the November 2015 Further Delineation Sampling, nine soil borings were drilled along the trunkline alignment (TC-SB-27 through TC-SB-35; see Figures 3 and 4). Soil samples were collected at depths of 3, 5, 7.5, 10, 12.5, and/or 15 feet below ground surface (bgs). Soil samples were analyzed for semi-volatile organic compounds (SVOCs using EPA Method 8270), PAHs using EPA Method 8270SIM, PCBs using EPA Method 8082, RCRA 8 Priority Pollutants metals (EPA Methods 6020 and 7471), and/or Total Petroleum Hydrocarbons using NWTPH-HCID (with NWTPH-Dx/NWTPH-Gx confirmation, as needed). Soil samples below 8 feet at boring TC-SB-33 and soil below 10 feet at boring TC-SB-35 were attempted but not successfully recovered. Analytical results were compared to remediation levels (RELs) developed as part of this IA Workplan (see Section 4.6). The analytical results of soil sampling are provided in Tables 1 through 5 of this document.

### 4.0 PRELIMINARY SCREENING LEVELS

PSLs were developed for soil and groundwater as part of the RI/FS Work Plan (Stantec 2011) to assess significance of analytical results and to guide the need and direction of further assessment. In general, the Method B CULs for unrestricted use obtained from Ecology's April 1, 2011 Cleanup Levels and Risk Calculations (CLARC) database were used as Site soil and groundwater PSLs because Site uses included commercial activities and public access that did not comply with MTCA criteria for industrial sites [WAC 173-340-745(1)(a)]. However, Method A CULs were applied to certain constituents for which Method B CULs had not been established (e.g., lead and petroleum hydrocarbons), and for constituents with unique considerations addressed by Ecology in development of the Method A values (e.g., arsenic).

Comparison of existing data with PSLs, indicate that historical activities at and near the Site have resulted in soil/fill and/or shallow groundwater impacted with several PAHs, diesel, heavy oil, several metals, and one PCB. These constituents are the chemicals of potential concern (COPCs).

#### 4.1 CURRENT AND LIKELY FUTURE LAND USE

Harbor Marine Maintenance & Supply (Harbor Marine), a boating and fishing retail supply business providing boat engine/transmission repair services currently leases the Site from Norton Industries. Based on Site location and type of buildings and infrastructure present, it is anticipated that future land use will continue as a combination of commercial/retail, and light industrial use.

#### 4.2 EXPOSURE PATHWAYS

Under current and reasonably anticipated future Site use, exposure to contaminated soil by commercial/industrial on-Site workers is not considered to be a complete exposure pathway due to the presence of on-Site buildings and paved surfaces across the Site. Groundwater at the Site is not considered potable due to the proximity of the Site to the marine environment (WAC 173-340-720(2)(b)(ii)) and a City of Everett ordinance requiring hook-up to the municipal water supply. Exposure to both contaminated soil and groundwater is considered a complete exposure pathway during construction/excavation activities during which soil and/or groundwater disturbance occurs.

#### 4.3 PRELIMINARY GROUNDWATER SCREENING LEVELS

The proximity of the Site to the marine environment and the potential groundwater to surface water exposure pathway indicated that surface water standards are considered applicable to the Site for initial screening purposes. As such, the PSLs for groundwater were determined by selecting the most restrictive benchmark for of each of the following criteria:

- Surface water standards as described in MTCA Method A (WAC 173-340-730(2)) and Method B (WAC 173-340-730(3)).

## DRAFT INTERIM ACTION WORK PLAN

- Potable drinking water standards (if an applicable surface water standard was not available) as described in MTCA Method A (WAC 173-340-720(3)) and Method B (WAC 173-340-720(4)).

### 4.4 PRELIMINARY SOIL SCREENING LEVELS

The PSLs for soil were determined by selecting the most protective levels for each of the following criteria:

- Human Health Direct Contact – PSLs were developed based on protection of human health direct contact with soil using MTCA Method B (340-740(3)(b)(ii)). MTCA Method B PSLs for direct contact are based on an excess cancer risk (CR) level of  $1 \times 10^{-6}$  or a hazard quotient of 1 (the minimum lower value was selected as the PSL). Note that in the absence of MTCA Method B values, MTCA Method A values (340-740 (2)(B)(II)) were used for certain chemicals (e.g., arsenic). Finally, published background concentrations were considered.
- Protection of Groundwater – Soil values protective of groundwater as marine surface water were based upon Ecology's 3-phase model per WAC 173-340-747(2) using default equation values. Because groundwater is not a current or likely future source of drinking water and because it potentially discharges to marine surface water, groundwater PSLs were developed based on marine surface water cleanup levels protective of human health and aquatic organisms in accordance with WAC 173-340-730. However, in the absence of an applicable marine surface water cleanup level, MTCA Method B potable groundwater PSLs were used for screening. The 3-phase model provides a conservative estimate of the concentration of a contaminant in soil that is protective of groundwater.

To develop a single preliminary soil cleanup level for each constituent, the lowest protective criterion was selected as the PSL, with the following exception:

- Soil screening levels may be adjusted to be no less than the practical quantitation limit (PQL) in accordance with WAC 173-340-730(5)(c) and/or no less than natural background levels in accordance with WAC 173-340-740(5)(c).

### 4.5 SITE-SPECIFIC GROUNDWATER CLEANUP LEVELS

Final cleanup levels for groundwater will be established in the RI/FS. The IA work described in this work plan is not intended to restore site groundwater to final CULs. Final groundwater CULs will be established in accordance with the following:

- Modified Method B (WAC 173-340-720(6)), based on human health risk assessment calculations which are protective of trench workers being exposed to contaminated groundwater through dermal contact and inhalation during construction/excavation activities;
- Groundwater MTCA Method A (WAC 173-340-720(3)), if a human health risk assessment cannot be performed due to lack of toxicity values, or with Ecology's approval;

## DRAFT INTERIM ACTION WORK PLAN

- No less than the chemical-specific PQL or natural background levels.

### 4.6 SITE-SPECIFIC SOIL REMEDIATION LEVELS

Remediation levels (RELs) are not the same as cleanup levels (CULs) and as such approved RELs may be higher or lower than the final site cleanup levels (CULs). The CULs for groundwater and soil will be developed in the final RI/FS. The IA work is not intended to restore site soil to levels consistent with site-specific CULs.

RELs are generally defined in MTCA 173-340-355 as the concentration of a hazardous substance above which a particular cleanup action component will be used. RELs may be used at sites where containment of soils as provided in WAC 173-340-740 (6)(i) is used and at sites conducting an interim action. Simple or complex quantitative or qualitative methods may be used as appropriate for the site to develop potential RELs including a human health risk assessment in accordance with WAC 173-340-357 and 173-340-708.

For the IA, the receptors of concern are trench workers, so cleanup actions would be determined to be protective if the soil exceeding remediation levels (RELs) protective of trench workers is removed and treated. The pathways of concern are ingestion, dermal contact, and inhalation of contaminated soil, and inhalation of volatile hazardous substances emitted by soil during excavation scenario. Also, the final soil RELs should not cause contamination of groundwater at levels which exceed groundwater cleanup levels (CULs). Soil RELs were established to be the more protective of:

- Concentrations that are protective of trench workers being exposed to contaminated soil during construction/excavation work, which are established using human health risk assessment;
- Concentrations that do not cause contamination of groundwater at levels exceeding groundwater CULs, which is demonstrated using 3-phase model provided by MTCA or other methods in MCTA (173-340-747(3));
- Method A soil cleanup levels for unrestricted land use (WAC 173-340-740(2)) were used if human health-based risk assessment could not be performed due to lack of toxicity value, or with Ecology's approval (e.g. total petroleum hydrocarbons);
- For some chemicals present in soil but not detected in groundwater at concentrations above their respective groundwater CULs, concentrations that are protective of trench workers were selected regardless if they were higher than CULs based on protection of groundwater, with provided empirical demonstration; and
- RELs were adjusted to be no less than PQL or natural background

Evaluation of the foregoing criteria resulted in the development of the following soil RELs for the proposed interim action.

## DRAFT INTERIM ACTION WORK PLAN

### Soil Remediation Levels (RELs; milligrams per kilogram [mg/kg])

Arsenic	Copper	BaP <sup>1</sup>	Other cPAHs	Mercury	1-Methyl-naphthalene	Naphthalene	Lead	TPHg	TPHd	PCBs
20	24,000	11	TEQ <sup>2</sup>	15	28	5	250	100	2,000	1

<sup>1</sup> BaP-Benzo(a)pyrene

<sup>2</sup> cPAHs consist of a subset of seven PAHs which are classified as probable human carcinogens: benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Individual PAH concentrations were summed, using toxicity equivalency (TEQ) factors, resulting in a calculated carcinogenic PAH total (cPAH TEQ) for each sample (WAC 173-340-708(8)(e)).

Table 1 presents the toxicity values, cancer and non-cancer RELs, results of the Ecology three-phase model for soil to groundwater, and the final REL selected. The table also includes exposure assumptions and calculations used to develop RELs based on potential human health risk to trench workers.

## 4.7 POINT OF COMPLIANCE

This work plan is being prepared to address the degraded trunkline and contaminated soil associated with the excavation work only. A point of compliance will be determined as part of the RI/FS process.

## DRAFT INTERIM ACTION WORK PLAN

### 5.0 INTERIM ACTION

This section describes the interim action (IA). Implementation of the IA will result in the following benefits:

- Improved surface water drainage;
- Less leakage from within the trunkline to surrounding soils and groundwater;
- Elimination of a potential path for groundwater to reach Gardner Bay.

These benefits will result in protecting human health and the environment; with the particularly important benefit of protecting environmental receptors in the nearby marine surface water and sediment of Port Gardner Bay.

### 5.1 BASIS FOR AND PURPOSE OF INTERIM ACTION

An interim action as described in MTCA only partially addresses the cleanup at a site and achieves one of the following purposes (WAC 173-340-430[1]):

- Reduces the threat to human health and the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance (WAC 173-340-430(1)(a));
- Corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed (WAC 173-340-430 (1)(b)); or
- Is needed to complete a site hazard assessment, RI/FS, or design a cleanup action (WAC 173-340-430(1)(c)).

Under MTCA WAC 173-340-430(2), an interim action may:

- Achieve cleanup standards for a portion of the Site;
- Provide partial cleanup of hazardous substances but not achieve cleanup standards; or
- Provide partial cleanup of hazardous substances and not achieve cleanup standards, but provide information on how to achieve cleanup standards.

The proposed IA is necessary to substantially reduce the threat to human health and the environment by effectively reducing at least one exposure pathway to a hazardous substance and to provide partial cleanup of hazardous substances. The proposed IA meets the requirements of MTCA described above by removing a conduit (the corroded trunkline) along which potentially hazardous substances may travel from the Site to a marine environment (the 12<sup>th</sup> Street Marina at Port Gardner Bay via the trunkline outfall at the marina). The results of the



## DRAFT INTERIM ACTION WORK PLAN

proposed IA will be used to finalize the existing Draft RI/FS and correct a problem that may be substantially worse if remedial action is delayed.

### 5.2 ADDITIONAL INFORMATION FOR DEFINING THE INTERIM ACTION AREA

Results of the November 2017 soil investigation are provided in Tables 1 through 5, and shown on Figure 5. The data were compared to the soil remediation levels (RELs) based on a site-specific human health risk assessment (see Section 4.6 for further soil REL discussion). The data reveal that only two metals (arsenic and lead) were detected in four soil samples above their soil RELs: TC-SB-27-7.5' (arsenic at 21.3 milligrams per kilogram [mg/kg]); TC-SB-30-3' (arsenic at 34.8 mg/kg); TC-SB-32-3' (arsenic at 34.8 mg/kg); and TC-SB-35-5' (lead at 256 mg/kg). These four soil samples did not contain any other COPCs above their RELs. Additionally, no other soil samples contained any COPCs at or above their RELs.

Except for TC-SB-33 and TC-SB-35 where soil sample collection was unsuccessful at 15 feet bgs and the four shallow soil samples (above the proposed depth of the planned excavation, where arsenic and/or lead were present above their respective RELs), compliance with RELs was met from the surface to a depth of 15 feet.

### 5.3 DESCRIPTION OF THE INTERIM ACTION

The interim action includes soil excavation to expose the degraded storm drain CMP trunkline, remove approximately 300 linear feet of degraded trunkline, replace that segment with new 24-inch-diameter solid-wall polyvinyl chloride (PVC) pipe along the same alignment, and properly dispose of impacted soil/fill excavated during the trunkline removal/replacement.

The trunkline replacement and IA activities will be coordinated with the adjacent Port-owned Ameron site to the south, as outlined in Section 5.4. Ameron's *Cleanup Action Plan (CAP)* (dated 11/21/2014) shows the trunkline, its degraded condition and its associated potential as a conduit for contaminants. In addition, the CAP shows prior trunkline segment replacement work, and planned cleanup for the Ameron site. Specifically, as described in Section 4.1.1 and shown on Figure 10 of the Ameron CAP, the trunkline is located in the northern portion of Area G-2, one of several Ameron areas identified for cleanup.

In accordance with Ecology's February 23, 2018 email, impacted soil will be excavated and removed at TC-MW-7 to a depth of 4 feet and within a 2-foot radius of TC-MW-7. The concentrations of naphthalene and cPAHs are significantly higher than their RELs, while arsenic and lead are also exceeding their RELs at TC-MW-7, evidenced by the soil sample collected from 3 ft bgs (Appendix B). Monitoring well TC-MW-7 will be properly abandoned prior to excavation and will be replaced at a nearby location after completion of the replacement trunkline installation. TC-MW-7 will be the sole location to remove impacted soil beyond the width of the trench boxes.

As noted in Section 2.4 and according to available trunkline data, the existing trunkline is 18- to 24-inches in diameter and drains westerly. At the east end of the pipe replacement, the existing pipe invert is present at a depth of 6 feet below grade (bg). As such, the proposed excavation

## DRAFT INTERIM ACTION WORK PLAN

at the east end is planned to extend to 8 feet bg. At the west end of the pipe replacement, the existing pipe invert is present at a depth of 7.5 feet bg and the proposed excavation is planned to extend to 9.5 feet bg.

The IA includes the following:

- Erecting temporary security fencing around the IA excavation area;
- Saw-cutting, stockpiling, and disposing of pavement along the trunkline replacement alignment;
- Installing trench boxes to allow access to the trunkline for replacement. Installation will involve initial excavation to a depth of approximately 4 feet (equivalent to top of shallow groundwater and/or saturated materials), followed by trench box installation. Trench boxes will be installed in the 4-foot-deep excavation for slope and sidewall stability below an approximate depth of 4 feet. Trench boxes will be 6' wide x 20' long x 6' to 8' high. The width of the upper portion of the excavation trench is expected to be approximately 10 feet (the 6-foot width of the trench box plus the expected 1:1 slope for the upper approximate 4 feet). Below 4 feet, the width of the excavated trench is expected to be approximately 6 feet wide (e.g., the width of the trench box). The trench box sidewalls preclude lateral excavation beyond the sidewalls.

Excavation with concurrent trench box installation will proceed vertically to expose the top and sides of the trunkline, extending along the sides of the trunkline to the depth of the trunkline invert to facilitate trunkline removal. Following trunkline removal, the excavation will extend down approximately two additional feet. Soils at the vertical limit of the excavation will be field-screened for the presence of contamination. In addition, soil samples will be collected at approximate 25-foot intervals and submitted for rush-turnaround laboratory analysis (details of analytes provided below). If field screening or analytical results indicate the continued presence of contamination, the excavation will be extended vertically one or two feet in depth or as practical (caving may prevent this) to remove impacted soils. A soil sample will be collected from the extended vertical limit and submitted for analysis. We do not anticipate excavation beyond the extended vertical limit due to soil sloughing/caving. Excavation will be overseen by an environmental professional and all excavated soils will be disposed of at an appropriate facility. Field segregation of excavated soil is not planned;

- Exposing, removing, and disposing the existing CMP trunkline pipe and the three existing surface catch basins;
- Collecting confirmation soil samples from the base of the open excavation. This will be done after the excavation has been extended two feet below the former trunkline invert. Confirmation soil samples will be collected as follows: 12 from the base of the 300-foot length of the trunkline excavation (at approximate 25-foot intervals from the base of the 300-foot length of the trunkline excavation); one from the east end trench wall; one from the west end trench wall; and one from the base of the TC-MW-7 location. This sampling program results in 15 soil samples, meeting the statistical compliance evaluation in accordance with

## DRAFT INTERIM ACTION WORK PLAN

WAC 173-340-740[7]). Soil samples from the November 2017 pre-IA investigation will be used as IA sidewall confirmation samples, as needed. Confirmation soil samples will be collected, handled, and analyzed for metals, SVOCs, PAHs, PCBs, and/or TPH (diesel and oil), consistent with prior analytical programs at the Site and in accordance with the Site's existing Sampling and Analysis Plan (SAP);

- For vertical compliance evaluation, excavation will proceed vertically as deeply as possible without caving or sloughing issues below the depth of the trench boxes. A combination of confirmation soil sample data (see above bullet) and pre-existing soil sample data from the November 2017 investigation will be used as the final compliance data for this IA project;
- Placing new pipe bedding material (Controlled Density Fill, CDF) in the lower two feet, and installing the new PVC pipe. HPDE pipe is not recommended as the pipe needs to be a smooth wall because it will be easier to bed and backfill using CDF. Sewer-grade PVC pipe (recommended as SDR 35 D3034 or equivalent) will be installed. It is anticipated that the new pipe will be installed in 20-foot-long sections (consistent with the length of a conventional trench box). The new pipe will be field-tested for integrity and proper flow/usage. Install three, replacement catch basins, consistent with the City of Everett Public Works Department (PWD) current specifications/Drawings 402-404;
- Backfilling the trench with a combination of environmentally-clean, geotechnically-appropriate backfill materials in the upper 4-feet of the excavation and CDF below a depth of 4 feet. In the upper 4 feet, compaction will be completed per the City PWD specifications, current Standard Drawings 614 and 615. For the upper 4 feet, an off-Site backfill source will be identified, several representative samples will be collected (at its source) that will be composited into a single sample that will be analyzed for metals, SVOCs, PAHs, PCBs, and TPHd/TPHo whose results will be compared to MTCA Method A and B soil Cleanup Levels (CULs). Only materials that comply with MTCA Method A and B CULs will be transported to the Site and used as backfill in the upper 4 feet. Prior to backfilling the upper approximate 4 feet, geofabric will be installed to minimize mixing/contact of clean backfill and potentially impacted soil beyond the lateral limits of the trench boxes, and to provide a marker layer between the clean backfill and potentially contaminated soil. An impermeable barrier on both sides of the excavation to minimize mixing/contact of clean backfill and potentially impacted materials in the saturated zone throughout the entire length of the excavation is not planned or recommended based on the likelihood of such a barrier affecting natural groundwater flow. At the west end of the excavation, place a low-permeability barrier (bentonite-amended granular fill) completely around the western-most approximate 5 feet of the exterior portion of the new pipe to further minimize westerly migration of groundwater towards 12 Street Marina outfall/Port Gardner Bay;
- Constructing temporary dewatering sump(s) to dewater the trench (trench segments) during excavation and pipe replacement activities;
- Containing the extracted groundwater in one or more temporary baker tanks and treating the groundwater as needed for discharge into the sanitary sewer per the City's sanitary sewer discharge permit specifications; and

## DRAFT INTERIM ACTION WORK PLAN

- Re-paving the trench area with asphalt per the City's PWD current pavement patching specification/Drawing 326.

### 5.4 INTERIM ACTION TIMING, WORK AREA ACCESS, AND PRE-FIELD PERMITTING

Norton Industries (the Site owner) wishes to complete the IA as soon as possible while avoiding the current winter/spring rains. An anticipated summer 2018 IA timeframe is desired. Note that the trunkline straddles the TCSystems Site and the Port of Everett-owned Ameron site to the south. Therefore, participation from the Port of Everett is required for access purposes and to facilitate the jointly-owned trunkline replacement. Norton and Port of Everett will work together to jointly replace the trunkline. The Port of Everett will be the lead in managing the project engineering, permitting and project management to comply with the Port of Everett's procurement protocol. The approach outlined herein assumes that the Port of Everett will facilitate access to the Ameron site to allow placement of the trench box and therefore timing of the implementation of the IA will depend on access to the Ameron site.

### 5.5 SOIL AND GROUNDWATER HANDLING, TREATMENT, AND DISPOSAL

Excavated soil from the trunkline trench will be temporarily stockpiled at the Ameron site, pending offsite transportation and disposal at a licensed Washington State disposal facility. The soil will be placed on and covered by plastic sheeting, the top cover of which will be secured using sandbags or equivalent to minimize erosion by wind or rain. The temporary stockpile(s) will be located at distance from catch basins and the catch basins in the overall work area will be protected from inadvertent migration of soil or water from the project activities. The base(s) of the stockpile(s) will be lined with straw bales or wattles to minimize inadvertent spreading of stockpiled materials beyond the limits of the stockpile(s) in accordance with best management practices (BMPs). Prior to placement into the temporary stockpile(s), water from excavated saturated soil will be allowed to drain back into the trench for a short time. For visible dust control at the trench, stockpile, and loading areas, a fine water mist will be sprayed, as needed.

The soil will be profiled for disposal using the existing soil analytical data (current profiling data reveals that the soil may be taken to a local licensed landfill). The soil will be loaded into trucks and will be covered with tarps prior to offsite transportation. All manifests will be properly generated and maintained for the excavated soil.

Shallow groundwater pumped during excavation dewatering activities will be temporarily contained in onsite rental baker tanks. Groundwater analytical data from the closest nearby monitoring wells (TC-MW-6, TC-MW-7, TC-MW-8, and TC-MW-20) will be used to design a temporary groundwater treatment system prior to discharge to the City of Everett sanitary sewer in accordance with the City's discharge permit. The treatment system may include several excavation dewatering pumps, two water-storage baker tanks (connected in series), an electrical submersible pump with a float control, bag filters to remove sediment (connected in parallel), two treatment media vessels (one to treat metals and another to treat hydrocarbons), and a flow totalizer.

## **DRAFT INTERIM ACTION WORK PLAN**

Preliminary communication with a City of Everett Public Works sanitary division's professional engineer reveals that the City accepts treated wastewater (including treated groundwater from excavation dewatering activities) and it was confirmed that the permitting process for discharge authorization is through the City of Everett. A location map of TC Systems' sewer line and clean-outs (discharge points) was provided to Stantec by the City's engineer.

### **5.6 COMPLIANCE MONITORING**

Compliance monitoring will be conducted to demonstrate the effectiveness of the IA. MTCA requires compliance monitoring for all cleanup actions, including IAs, as described in WAC 173-340-410. Compliance monitoring is required to be conducted for the following three purposes which are identified and further described below:

- Protection monitoring – to confirm that human health and the environment are adequately protected during construction, operation, and maintenance associated with the cleanup action;
- Performance monitoring – to confirm that the cleanup action has attained compliance with cleanup and/or other performance standards; in this case, the soil RELs provided in Section 4.6;
- Confirmation monitoring – to confirm the long-term effectiveness of the cleanup action once the cleanup and/or other performance standards (soil RELs) has been met.

#### **5.6.1 Protection Monitoring/Health and Safety**

Protection monitoring addresses worker health and safety related to IA construction activities, as well as protection of the general public, if conditions are encountered that indicate that workers or the general public could be exposed to hazardous substances. It is not expected that hazardous concentrations will be encountered except in areas where the four soil samples containing arsenic and lead levels exceeded RELs were collected. These soils are part of the planned IA excavation and will be properly handled during excavation, stockpiling, loading, and offsite transportation & disposal. It is not anticipated that the general public would be affected by any of the planned IA activities as the work is being performed on secured, fenced properties away from public streets and sidewalks, and the work area itself on those secured lots will be also fenced.

Worker health and safety will be addressed by updating the existing site-specific health and safety plan (HASP) with the planned construction activities, which will be included in the project construction documents, and which will address physical and chemical hazards consistent with WAC 173-340-810 as they relate to and associated with the IA scope of work. Field monitoring will be conducted to evaluate the potential exposure to chemical hazards and to confirm that potential chemical hazards do not exceed health-based limits. The general contractor will also prepare their own HASP for their worker health and safety.

## **DRAFT INTERIM ACTION WORK PLAN**

Anticipated potential physical hazards include working in proximity of heavy equipment (including the associated noise and limited visibility), heat stress during the summer months, and truck traffic in the work area. Anticipated potential chemical hazards include exposure to the identified site contaminants through direct contact, inhalation, and ingestion but would be minimized or eliminated by strict adherence to the site-specific HASP. Based on November 2017 sampling and analysis, chemical exposure is only expected to be the arsenic and lead at the identified four sampling locations; however, small pockets of other detected compounds (PAHs, other metals, and diesel or heavy oil) could be encountered. Field screening of work zone vapor conditions by Stantec's environmental professional will be conducted using visual and olfactory methods by an environmental professional.

### **5.6.2 Performance Monitoring**

Performance monitoring typically consists of collecting and analyzing samples of affected media to evaluate whether the cleanup action has achieved cleanup standards. In this case, analytical results from confirmation soil samples collected from the base and accessible sidewalls of the excavation will be compared to the project's soil RELs provided by Ecology (see Sections 4.7 and 5.2).

Additionally, performance monitoring will include construction quality assurance (CQA) to ensure that the IA activities are implemented in accordance with the IA design plans and specifications. CQA monitoring will include construction observations and the new pipeline integrity testing as required by the City of Everett Public Works Department.

### **5.6.3 Confirmation Monitoring**

Confirmation monitoring may be conducted to confirm the long-term effectiveness of the IA work. This may include the collection and analysis of occasional fluid samples from the new trunkline (via the Site's western-most catch basin upstream of the intersection with Ameron's storm drain lateral coming in from the south) and groundwater monitoring at the Site. Confirmation monitoring by review of analytical data from outfall sampling at the 12<sup>th</sup> Street Marina is not recommended as any outfall data includes flow from various area land parcels & storm drain laterals, not just TCSystems.

## **5.7 INTERIM ACTION REPORTING**

In accordance with Ecology's September 20, 2017 email, detailed results of the pre-IA November 2017 soil sampling and the completed IA activities will be prepared and submitted as an update to the July 22, 2016 RI/FS report.

## **5.8 CULTURAL AND HISTORIC RESOURCES**

In the unlikely event that historic or cultural resources are encountered during excavation, ground-disturbing activities will be suspended within a specific radius of the discovery and work will be relocated to another area. The proper authorities will be notified. Prior to field work,

## **DRAFT INTERIM ACTION WORK PLAN**

cultural resources sensitivity training will be given to all field crew members and a record of the training will be retained in the project files.

## **6.0 APPLICABLE, RELEVANT, AND APPROPRIATE REGULATORY REQUIREMENTS**

The following federal, state, and local Applicable, Relevant, and Appropriate Regulations (ARARs) are expected for this IA work which will be performed under the umbrella of Agreed Order DE 7818:

- Federal - Resource Conservation and Recovery Act (RCRA for the proper handling of Investigation/IA Derived Wastes [IDW]); Department of Transportation (for proper off-Site IDW hauling); Endangered Species Act (for a pre-construction threatened and endangered species [TES] survey); and Migratory Bird Treaty Act (for a pre-construction bird survey, to be conducted at the same time as the TES survey).
- State – Washington State Environmental Policy Act (SEPA evaluation) and MTCA (including applicable sections of WAC 173-340-400 for design and construction; WAC 173-340-410 for compliance monitoring; and WAC 173-340-810 for health and safety). Under WAC 173-340-710(9)(b)(vii) and (c), the interim action is exempt from procedural requirements of Revised Code of Washington (RCW) Chapters 70.94, 70.95, and 70.105, but still must comply with the substantive requirement of these laws.
- Local – City of Everett Public Works Department (divisions of Grading for the excavation work, Sanitary Sewer for the treated groundwater discharge, and likely Building/Engineering for the installation of the replacement trunkline).



## DRAFT INTERIM ACTION WORK PLAN

### 7.0 REFERENCES

Kane 2010. Memorandum, Surface Soil Sampling, Interim Action, Building Footprint Repairs. Kane Environmental, Inc. Submitted to Ecology November 19, 2010.

Stantec 2011a. Remedial Investigation and Feasibility Study Work Plan-Final, 1032 West Marine View Drive, Everett, Washington. Stantec Consulting Services, Inc. January 31, 2011.

Stantec 2011b. Initial Remedial Investigation Technical Memorandum, 1032 West Marine View Drive, Everett, Washington. Stantec Consulting Services, Inc. November 7, 2011.

Stantec 2012. Work Plan-Supplemental RI to Address Data Gaps. Norton Industries/TCSYSTEMS, 1032 West Marine View Drive, Everett, Washington. Stantec Consulting Services, Inc. August 21, 2012.

Stantec 2014. Data Gaps Amendment, 1032 West Marine View Drive, Everett, Washington. Stantec Consulting Services, Inc. July 30, 2014.

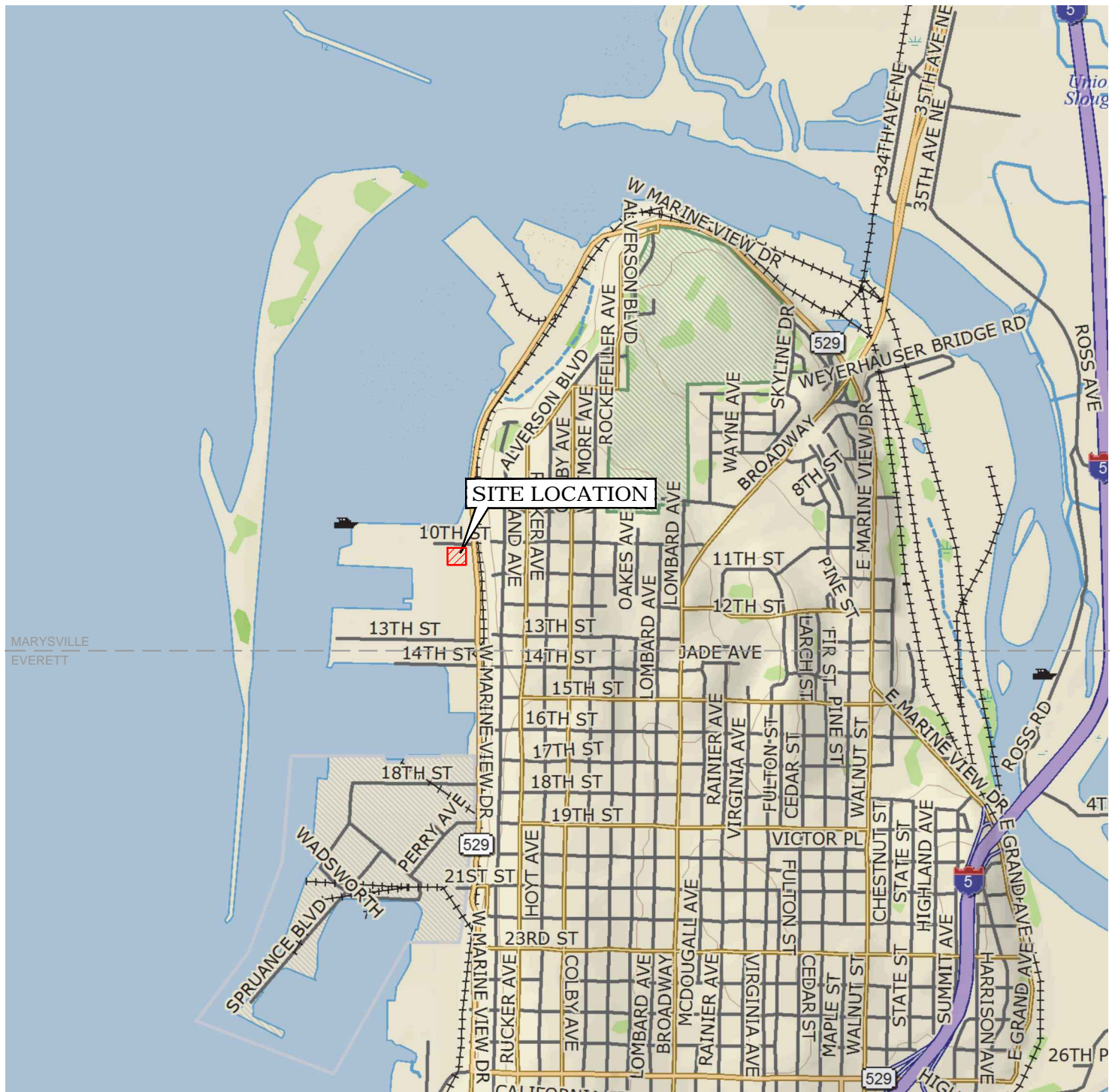
Stantec 2015. Memorandum, Work Plan for Soil Sampling, TCSYSTEMS. Stantec Consulting Services, Inc. Submitted to Ecology October 30, 2015, and revised November 10, 2015.

Stantec 2016. Draft Remedial Investigation/Feasibility Study - TCSYSTEMS, 1032 West Marine View Drive, Everett, Washington. Stantec Consulting Services, Inc. July 22, 2016.

Stantec 2017a. Conceptual Approach for Interim Action – TCSYSTEMS, Everett, WA. Stantec Consulting Services, Inc. August 14, 2017.

Stantec 2017b. Work Plan for Soil Sampling – TCSYSTEMS, Everett, WA. Stantec Consulting Services, Inc. October 2, 2017 and revised October 13, 2017.

FIGURES

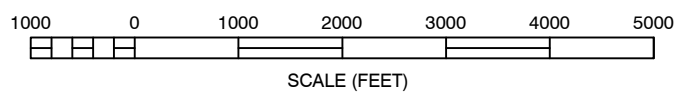
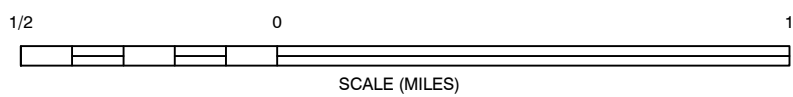


**SITE LOCATION**

MARYSVILLE  
EVERETT



WASHINGTON



REFERENCE: USGS 7.5 MINUTE QUADRANGLE, MARYSVILLE/EVERETT, WASHINGTON



11130 NE 33RD PLACE, SUITE 200  
BELLEVUE, WASHINGTON  
PHONE: (425) 869-9448 FAX: (425) 869-1190

FOR:  
**REMEDIAL INVESTIGATION/  
FEASIBILITY STUDY**  
1032 WEST MARINE VIEW DRIVE  
EVERETT, WASHINGTON

**PROPERTY LOCATION  
MAP**

FIGURE:  
**1**

JOB NUMBER: 18570302	DRAWN BY: MDR	CHECKED BY: PV	APPROVED BY: PF	DATE: JAN 2014
-------------------------	------------------	-------------------	--------------------	-------------------





10th STREET

TC SYSTEMS PROPERTY

BUILDING D

BUILDING C

BUILDING B

BUILDING A

WEST MARINE VIEW DR

APPROXIMATE LOCATION OF TRUNK LINE TO BE REMOVED

ADJACENT NORTH MARINA AMERON / HULBERT PARCEL

STORM SEWER SYSTEM DRAINS TO 12th STREET MARINA

12th STREET MARINA

**LEGEND**

- PROPERTY BOUNDARY
- STORM DRAIN CATCH BASIN
- STOM DRAIN LINE

0      80      160

APPROXIMATE SCALE IN FEET

No warranty is made by Stantec as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and or information.



11130 NE 33RD PLACE, SUITE200  
 BELLEVUE, WASHINGTON  
 PHONE: (425) 869-9448 FAX: (425) 869-1190

FOR:  
 INTERIM ACTION WORK PLAN  
 TC SYSTEMS  
 1032 WEST MARINE VIEW DRIVE  
 EVERETT, WASHINGTON

JOB NUMBER:  
 185750593

DRAWN BY:  
 RWW

VICINITY MAP  
 TC SYSTEMS  
 STORM DRAIN TRUNK LINE REMOVAL

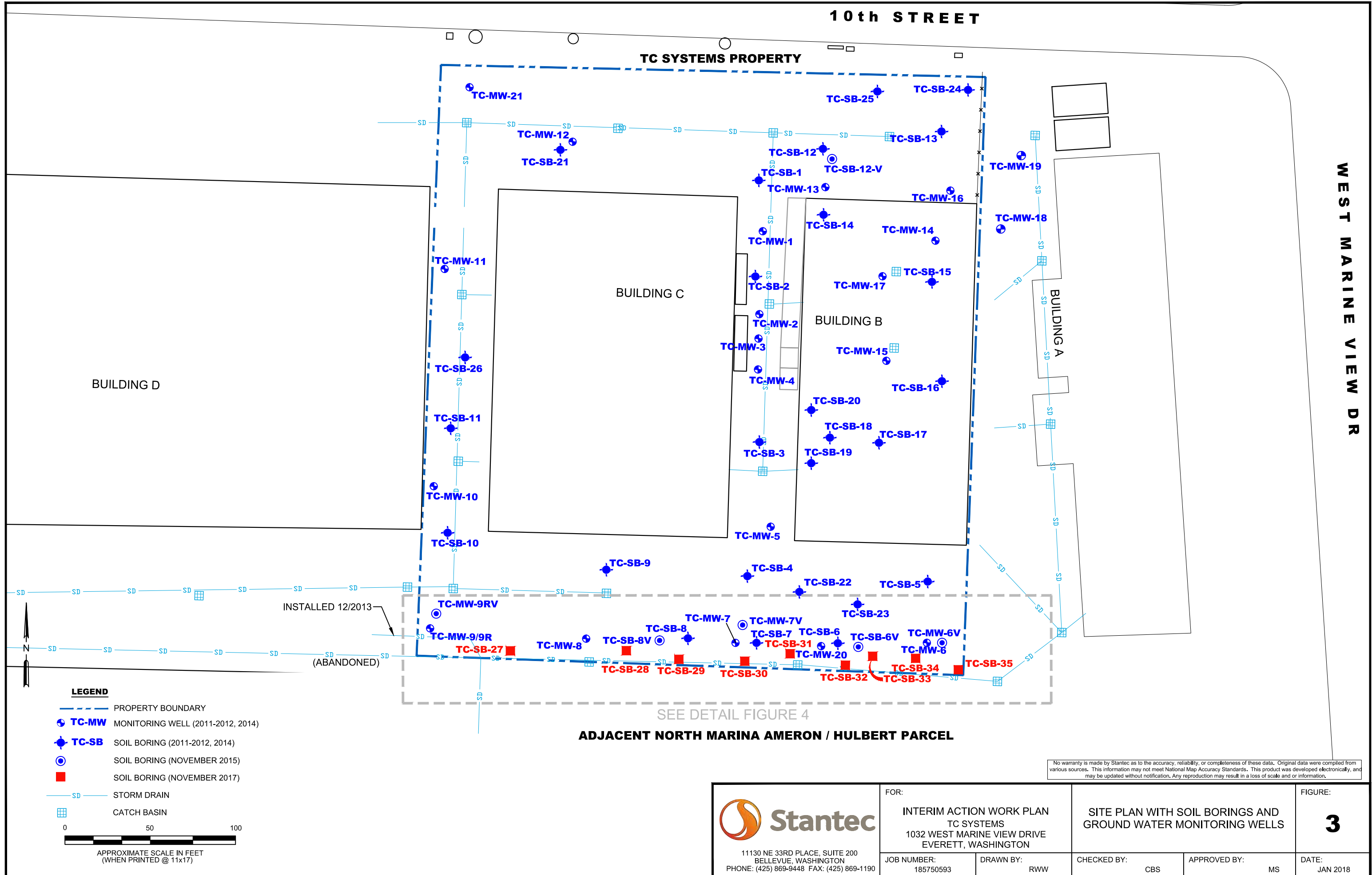
CHECKED BY:  
 CBS

APPROVED BY:  
 MS

FIGURE:  
**2**

DATE:  
 JAN 2018

Data SIO, NOAA, U.S. Navy, NGA



**LEGEND**

- PROPERTY BOUNDARY
- **TC-MW** MONITORING WELL (2011-2012, 2014)
- ◆ **TC-SB** SOIL BORING (2011-2012, 2014)
- ⊙ SOIL BORING (NOVEMBER 2015)
- SOIL BORING (NOVEMBER 2017)
- **SD** STORM DRAIN
- CATCH BASIN

0 50 100  
 APPROXIMATE SCALE IN FEET  
 (WHEN PRINTED @ 11x17)

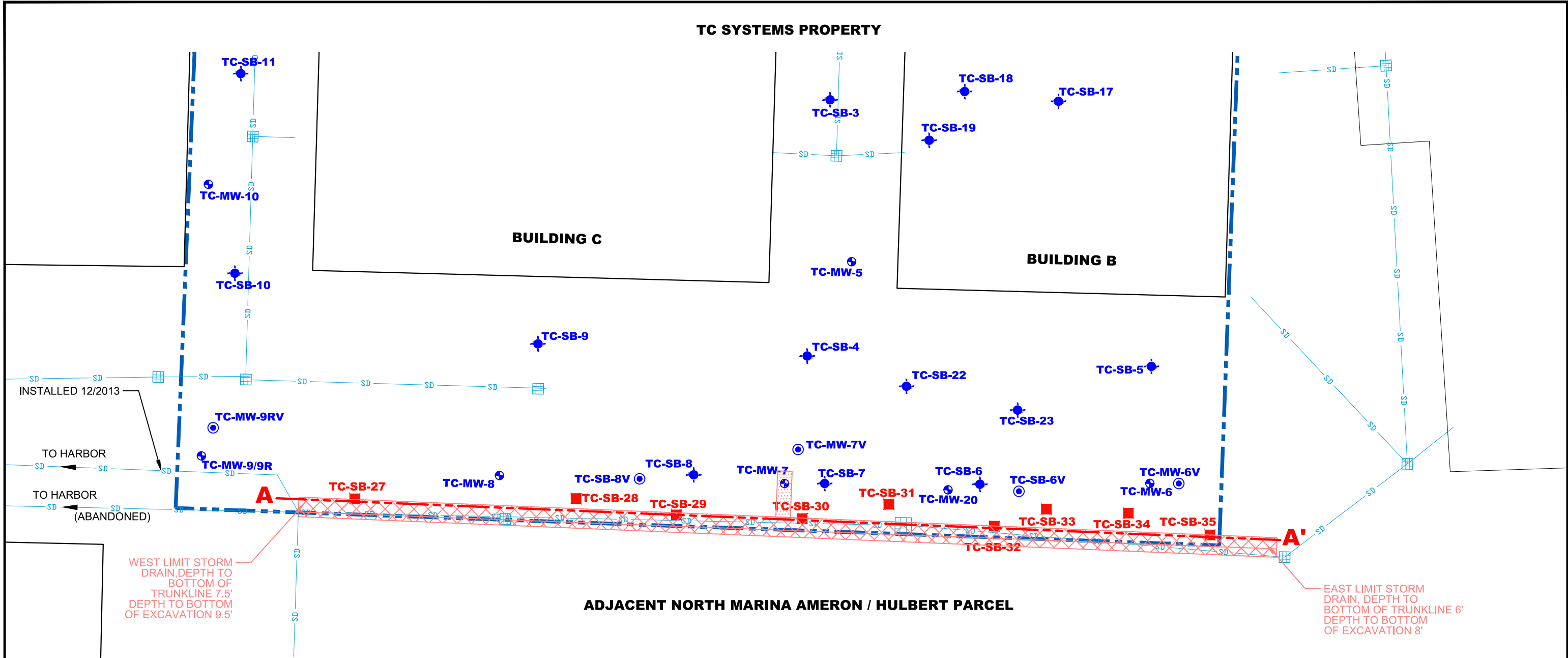
SEE DETAIL FIGURE 4  
**ADJACENT NORTH MARINA AMERON / HULBERT PARCEL**

No warranty is made by Stantec as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and or information.

<p>11130 NE 33RD PLACE, SUITE 200          BELLEVUE, WASHINGTON          PHONE: (425) 869-9448 FAX: (425) 869-1190</p>	FOR:		FIGURE:	
	INTERIM ACTION WORK PLAN TC SYSTEMS 1032 WEST MARINE VIEW DRIVE EVERETT, WASHINGTON		<b>3</b>	
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185750593	RWW	CBS	MS	JAN 2018



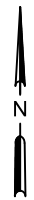
**TC SYSTEMS PROPERTY**



WEST LIMIT STORM DRAIN, DEPTH TO BOTTOM OF TRUNKLINE 7.5' DEPTH TO BOTTOM OF EXCAVATION 9.5'

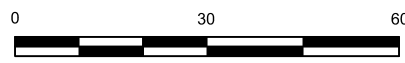
EAST LIMIT STORM DRAIN, DEPTH TO BOTTOM OF TRUNKLINE 6' DEPTH TO BOTTOM OF EXCAVATION 8'

**ADJACENT NORTH MARINA AMERON / HULBERT PARCEL**



**LEGEND**

- PROPERTY BOUNDARY
- TC-MW** MONITORING WELL (2011-2012, 2014)
- TC-SB** SOIL BORING (2011-2012, 2014)
- SOIL BORING (NOVEMBER 2015)
- SOIL BORING (NOVEMBER 2017)
- STORM DRAIN
- CATCH BASIN
- TRUNKLINE PROPOSED EXCAVATION (≈ 6' WIDE x 300' LONG)
- TC-MW-7 PROPOSED EXCAVATION (≈ 8' WIDE x 15' LONG x 4' DEEP)



APPROXIMATE SCALE IN FEET (WHEN PRINTED @ 11x17)

No warranty is made by Stantec as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and/or information.

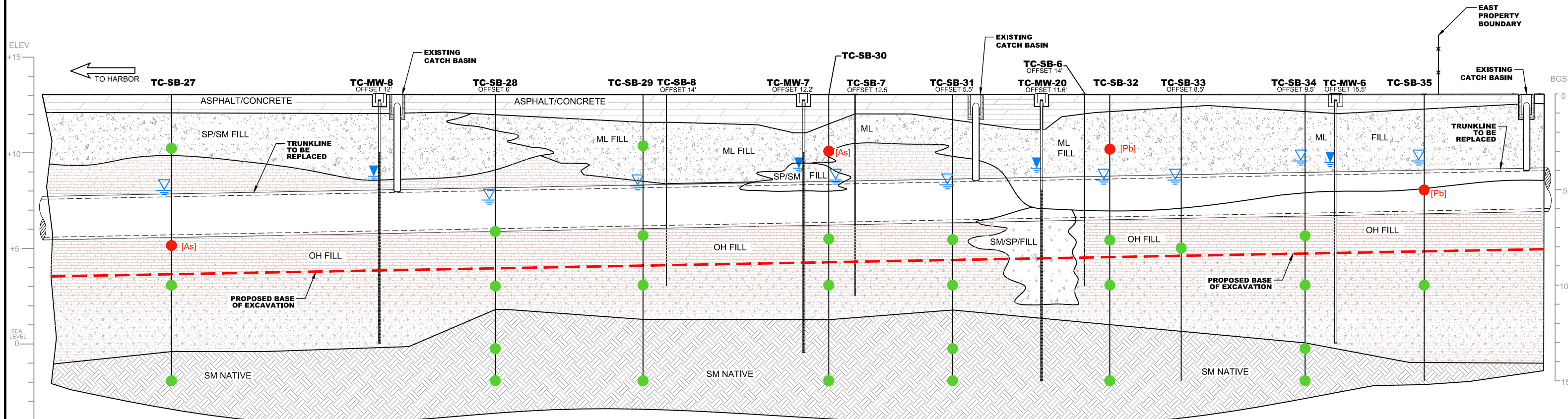
<p>11130 NE 33RD PLACE, SUITE 200 BELLEVUE, WASHINGTON PHONE: (425) 869-9448 FAX: (425) 869-1190</p>	FOR:	DETAIL OF THE SOUTHERN PORTION OF TC PROPERTY FOR STORM DRAIN TRUNKLINE REMOVAL & REPLACEMENT		FIGURE:
	INTERIM ACTION WORK PLAN TC SYSTEMS 1032 WEST MARINE VIEW DRIVE EVERETT, WASHINGTON			<b>4</b>
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185750593	RWW	CBS	MS	JAN 2018

WEST

EAST

A ----- A'

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315

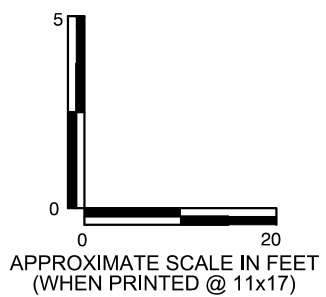


**LEGEND:**

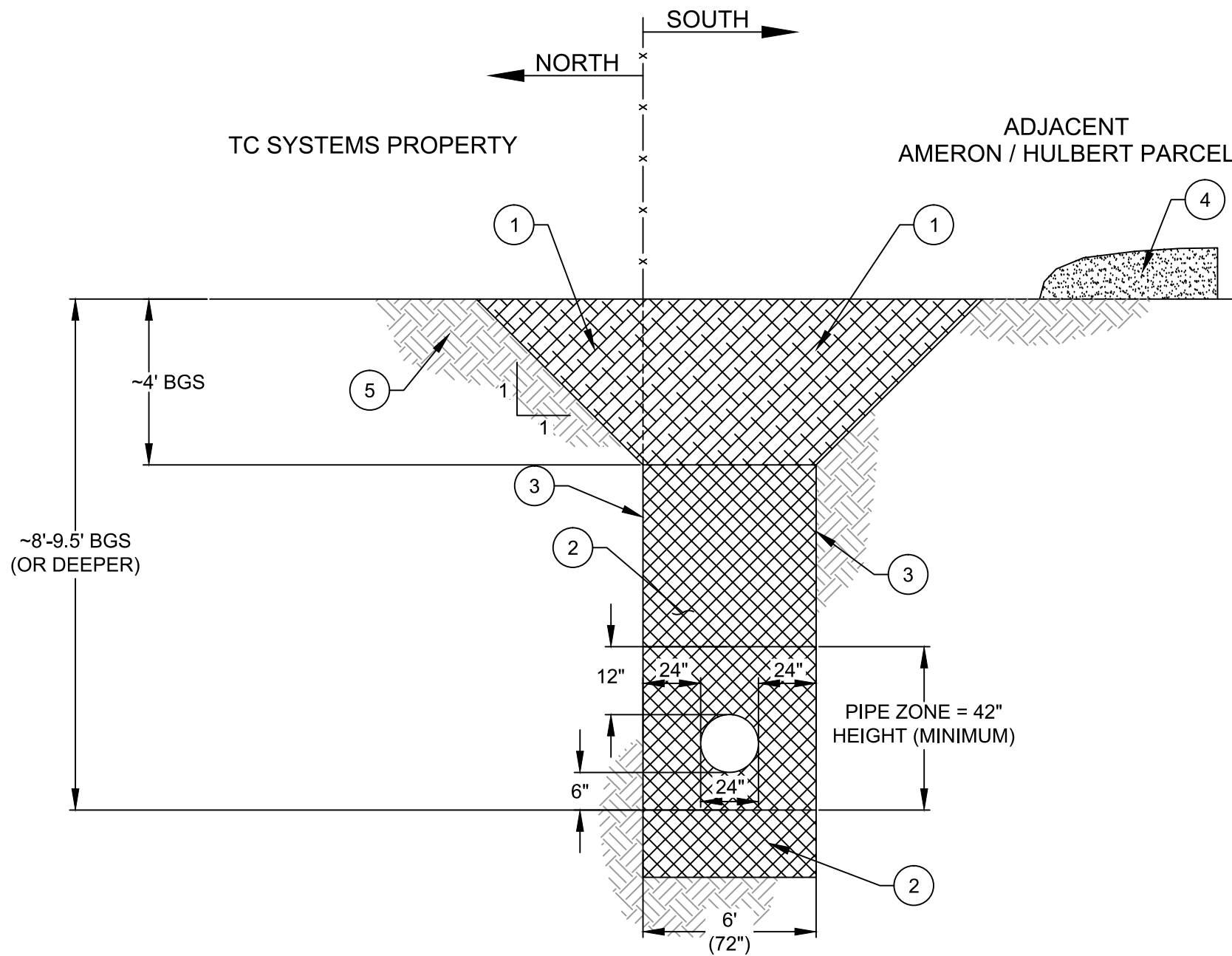
- WELL CASING
- SCREENED INTERVAL FOR MONITORING WELLS
- SOIL BORING
- GROUNDWATER ENCOUNTERED DURING DRILLING (MEASURED NOVEMBER 2017)
- STATIC GROUNDWATER (MEASURED MARCH 2014)
- ONE OR MORE CONSTITUENTS ABOVE SOIL REL [As=ARSENIC, Pb=LEAD]
- NO CHEMICALS OF POTENTIAL CONCERNS DETECTED ABOVE REL
- ASPHALT/CONCRETE
- SP/SM - POORLY GRADED SAND TO SILTY SAND FILL W/ DEBRIS
- ML - SANDY SILT FILL W/ DEBRIS
- OH - ORGANIC SOIL FILL W/ DEBRIS
- SM NATIVE

ELEV = FEET RELATIVE TO SEA LEVEL  
 BGS = BELOW GROUND SURFACE (FEET)

INTERPRETED SOIL STRATGRAPHIC BOUNDARY




<p>11130 NE 33RD PLACE, SUITE 200          BELLEVUE, WASHINGTON          PHONE: (425) 869-9448 FAX: (425) 869-1190</p>	FOR: INTERIM ACTION WORK PLAN TC SYSTEMS 1032 WEST MARINE VIEW DRIVE EVERETT, WASHINGTON		<b>GEOLOGIC CROSS SECTION          A-A'</b>		FIGURE: <b>5</b>
	JOB NUMBER: 185750593	DRAWN BY: RWW	CHECKED BY: CBS	APPROVED BY: MS	DATE: JAN 2018



**KEY NOTES:**

- ① SUITABLE IMPORTED SANDY MATERIAL. COMPACT TO 90% MAXIMUM DENSITY.
- ② CONTROLLED DENSITY FILL (CDF).
- ③ VERTICAL TRENCH WALLS BELOW APPROXIMATELY 4' WITH SHORING TO CONFORM TO O.S.H.A. REGULATIONS. PLANNED SHORING = TRENCH BOX (6' WIDE x 20' LONG x 6'-8' HIGH)
- ④ EXCAVATED NATIVE MATERIAL OR STOCKPILED BACKFILL MATERIAL.
- ⑤ UNDISTURBED MATERIAL (NOT PART OF EXCAVATION)

No warranty is made by Stantec as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and or information.

 <p>11130 NE 33RD PLACE, SUITE 200 BELLEVUE, WASHINGTON PHONE: (425) 869-9448 FAX: (425) 869-1190</p>	FOR: INTERIM ACTION WORK PLAN TC SYSTEMS 1032 WEST MARINE VIEW DRIVE EVERETT, WASHINGTON		TRENCH PROFILE		FIGURE: <b>6</b>
	JOB NUMBER: 185750593	DRAWN BY: RWW	CHECKED BY: CBS	APPROVED BY: MS	DATE: JUNE 2018



TABLES

Table 1 - TC Systems - Derivation of Soil RELs-Trunkline Replacement Interim Action

CAS No.	Chemical	SFO (mg/kg-day) <sup>-1</sup>	IUR (ug/m <sup>3</sup> ) <sup>-1</sup>	RfD <sub>d</sub> (mg/kg-day)	RfC <sub>i</sub> (mg/m <sup>3</sup> )	SFD <sub>i</sub> (mg/kg-day) <sup>-1</sup>	RfD <sub>d</sub> (mg/kg-day)	GI <sub>ABS</sub>	REL-cancer (mg/kg)	REL-non cancer (mg/kg)	Soil to Groundwater (mg/kg) MTCA 3-Phase Model	Selected REL
50-32-8	Benzo[a]pyrene	1	6.00E-04	3.00E-04	2.00E-06	1	3.00E-04	1	31.1		11.4	11
7440-38-2	Arsenic, Inorganic	1.5	4.30E-03	3.00E-04	1.50E-05	1.5	3.00E-04	1	20	32.2	869.5	20 <sup>1</sup>
7440-50-08	Copper	nc	nc	4.00E-02	--	nc	4.00E-02	1	nc	--	24,000	24,000
--	Other cPAHs	TEQ	various	various	various	various	various	1	TEQ	--	--	TEQ
7439-97-6	Mercury- Elemental	nc	nc	--	3.50E-03	nc	--	1	nc	26.8	15	15
90-12-0	1, Methylnaphthalene	2.90E-02	ntv	0.07	--	2.90E-02	ntv	1	1,108	29,992	28	28
91-20-3	Naphthalene	nv <sup>2</sup>	3.40E-05	2.00E-02	3.00E-03	nc <sup>2</sup>	ntv	1	730.8	340	4.9	4
7439-92-1	Lead	--	--	--	--	--	--	--	--	--	--	250 <sup>1</sup>
--	TPHg	--	--	--	--	--	--	--	--	--	--	100 <sup>1</sup>
--	TPHd	--	--	--	--	--	--	--	--	--	--	2,000 <sup>1</sup>
--	PCBs	2	5.70E-04	2.00E-05	ntv	2	2.00E-05	1	15.2	--	0.8	1 <sup>1</sup>

Notes:

- 1. = Method A CUL
- 2. Naphthalene REL based on inhalation. Naphthalene not carcinogenic by other routes of exposure.
- nc = non-carcinogen
- ntv = no toxicity value available

$REL_{soil\ carcinogens} (mg/kg) = ARLc * ATc * BW / ED * EF * [ET * (1d/24hr) * (Vfsoil * IUR * BW) + SAsoil * SFO * 1E-03]$   
 $REL_{soil\ non-carcinogens} (mg/kg) = ARLnc * ATnc * BW / (ED * EF) * [ET * (1d/24hrs) * (Vf * BW) / RfC] + SA / RfDo * 1E+03 (\mu g/mg)$

Where:

- ARLc = 1.0E-06 (unitless)
- ARLnc = 1 (unitless)
- ATc = 2.7E+04 (365 days x 75 years)
- ATnc = 3.7E+02 (ED \* 365 days)
- ED = 1 yr.
- EF = 6.5E+01 Exposure frequency = 65 d/yr
- Vfsoil = Chem specific Volatilization factor (m3/kg)
- IUR = Chem specific Inhalation unit risk factor (ug/m<sup>3</sup>)
- SA<sub>w</sub> = 5.7E+03 Skin surface contact area (cm<sup>2</sup>)-head arms, lower legs and feet-source; EPA 2011.
- RfD = Chem specific Reference dose-dermal = RfDo since GI<sub>ABS</sub> is assumed to be 1.
- RfC = Chem specific Reference concentration
- Sfd = Chem specific Slope factor dermal (mg/kg-day)= SFO since GI<sub>ABS</sub> is assumed to be 1.

Equations Source: Risk Assessment Guidance for Superfund Volume I. Development of Preliminary Remediation Goals. USEPA 1991.

Sources of Toxicity Data: USEPA Regional Screening Levels, November 2017.

Table 2 - Laboratory Data for Soil - November 2017  
Semi-volatile organic compounds by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)	Sample ID: TC-SB-27-3'	Sample ID: TC-SB-27-7.5'	Sample ID: Field Dup #2 (TC-SB-27-7.5')	Sample ID: TC-SB-27-10'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 15:50	Time: 16:00	Time: 16:00	Time: 16:15
		Depth: 3'	Depth: 7.5'	Depth: 7.5'	Depth: 10'
		Comments:	Comments:	Comments:	Comments:
1,2,4-Trichlorobenzene	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
1,2-Dichlorobenzene	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
1,3-Dichlorobenzene	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
1,3-Dinitrobenzene	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
1,4-Dichlorobenzene	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2,3,4,6-Tetrachlorophenol	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2,3,5,6-Tetrachlorophenol	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2,4,5-Trichlorophenol	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2,4,6-Trichlorophenol	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2,4-Dichlorophenol	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2,4-Dimethylphenol	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2,4-Dinitrophenol	NE	ND<0.0385	ND<0.0671	ND<0.0720 Q	ND<0.0692
2,4-Dinitrotoluene	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2,6-Dinitrotoluene	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2-Chlorophenol	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2-Methylphenol (o-cresol)	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2-Nitroaniline	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
2-Nitrophenol	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
3-Methylphenol (p-cresol)	NE	ND<0.0224	ND<0.0390	ND<0.0419	ND<0.0403
3-Nitroaniline	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
4,6-Dinitro-2-methylphenol	NE	ND<0.0257	ND<0.0448	ND<0.0481 Q	ND<0.0462
4-Bromophenyl phenyl ether	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
4-Chloro-3-methylphenol	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
4-Chloroaniline	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
4-Chlorophenyl phenyl ether	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
4-Methylphenol (m-cresol)	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
4-Nitrophenol	NE	ND<0.0447 Q	ND<0.0780 Q	ND<0.0838	ND<0.0806 Q
Aniline	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
Azobenzene	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
Benzoic Acid	NE	ND<0.0327	ND<0.0570	ND<0.0612	ND<0.0589
Benzyl alcohol	NE	ND<0.0171 Q	ND<0.0298 Q	ND<0.0319 Q	ND<0.0307 Q
bis (2-Ethylhexyl) adipate	NE	0.168 BQ	0.551 BQ	ND<0.0838	0.419 BQ
Bis(2-chloroethoxy)methane	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
Bis(2-chloroethyl)ether	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
Bis(2-chloroisopropyl)ether	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
Diphenylamine	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
Hexachlorobenzene	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
Hexachlorocyclopentadiene	NE	ND<0.0447 Q	ND<0.0780 Q	ND<0.0838 Q	ND<0.0806 Q
Hexachloroethane	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
Isophorone	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
Nitrobenzene	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
N-Nitroso-di-propylamine	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806
Phenol	NE	ND<0.0447	ND<0.0780	ND<0.0838	ND<0.0806

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

Q = Analyte with an initial or continuing calibration that does not meet established criteria (<20% RSD, <20% Drift, or minimum RRF)

B = Analyte detected in the associated Method Blank

na = not analyzed

ns = no sample (sample attempted but no recovery)

Table 2 - Laboratory Data for Soil - November 2017  
Semi-volatile organic compounds by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)	Sample ID: TC-SB-27-10'	Sample ID: TC-SB-28-7.5'	Sample ID: TC-SB-28-10'	Sample ID: TC-SB-28-13'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 16:30	Time: 15:00	Time: 15:10	Time: 15:20
		Depth: 15'	Depth: 7.5'	Depth: 10'	Depth: 13'
		Comments:	Comments:	Comments:	Comments:
1,2,4-Trichlorobenzene	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
1,2-Dichlorobenzene	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
1,3-Dichlorobenzene	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
1,3-Dinitrobenzene	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
1,4-Dichlorobenzene	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2,3,4,6-Tetrachlorophenol	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2,3,5,6-Tetrachlorophenol	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2,4,5-Trichlorophenol	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2,4,6-Trichlorophenol	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2,4-Dichlorophenol	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2,4-Dimethylphenol	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2,4-Dinitrophenol	NE	ND<0.0483	ND<0.0524	ND<0.0415	ns
2,4-Dinitrotoluene	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2,6-Dinitrotoluene	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2-Chlorophenol	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2-Methylphenol (o-cresol)	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2-Nitroaniline	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
2-Nitrophenol	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
3-Methylphenol (p-cresol)	NE	ND<0.0281	ND<0.0305	ND<0.0241	ns
3-Nitroaniline	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
4,6-Dinitro-2-methylphenol	NE	ND<0.0323	ND<0.0350	ND<0.0277	ns
4-Bromophenyl phenyl ether	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
4-Chloro-3-methylphenol	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
4-Chloroaniline	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
4-Chlorophenyl phenyl ether	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
4-Methylphenol (m-cresol)	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
4-Nitrophenol	NE	ND<0.0562 Q	ND<0.0609 Q	ND<0.0483 Q	ns
Aniline	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
Azobenzene	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
Benzoic Acid	NE	ND<0.0411	ND<0.0445	ND<0.0353	ns
Benzyl alcohol	NE	ND<0.0214 Q	ND<0.0232 Q	ND<0.0184 Q	ns
bis (2-Ethylhexyl) adipate	NE	0.245 BQ	0.299 BQ	0.208 BQ	ns
Bis(2-chloroethoxy)methane	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
Bis(2-chloroethyl)ether	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
Bis(2-chloroisopropyl)ether	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
Diphenylamine	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
Hexachlorobenzene	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
Hexachlorocyclopentadiene	NE	ND<0.0562 Q	ND<0.0609 Q	ND<0.0483 Q	ns
Hexachloroethane	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
Isophorone	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
Nitrobenzene	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
N-Nitroso-di-propylamine	NE	ND<0.0562	ND<0.0609	ND<0.0483	ns
Phenol	NE	ND<0.0562	0.0984	ND<0.0483	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

Q = Analyte with an initial or continuing calibration that does not meet established criteria (<20% RSD, <20% Drift, or minimum RRF)

B = Analyte detected in the associated Method Blank

na = not analyzed

ns = no sample (sample attempted but no recovery)

Table 2 - Laboratory Data for Soil - November 2017  
Semi-volatile organic compounds by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)	Sample ID: TC-SB-28-15'	Sample ID: TC-SB-29-3'	Sample ID: TC-SB-29-7.5'	Sample ID: TC-SB-29-10'
		Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 15:30	Time: 14:10	Time: 14:30	Time: 14:40
		Depth: 15'	Depth: 3'	Depth: 7.5'	Depth: 10'
		Comments:	Comments:	Comments:	Comments:
1,2,4-Trichlorobenzene	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
1,2-Dichlorobenzene	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
1,3-Dichlorobenzene	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
1,3-Dinitrobenzene	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
1,4-Dichlorobenzene	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2,3,4,6-Tetrachlorophenol	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2,3,5,6-Tetrachlorophenol	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2,4,5-Trichlorophenol	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2,4,6-Trichlorophenol	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2,4-Dichlorophenol	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2,4-Dimethylphenol	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2,4-Dinitrophenol	NE	ND<0.0494	ND<0.0364	ND<0.0456	ND<0.0559
2,4-Dinitrotoluene	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2,6-Dinitrotoluene	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2-Chlorophenol	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2-Methylphenol (o-cresol)	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2-Nitroaniline	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
2-Nitrophenol	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
3-Methylphenol (p-cresol)	NE	ND<0.0287	ND<0.0212	ND<0.0266	ND<0.0325
3-Nitroaniline	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
4,6-Dinitro-2-methylphenol	NE	ND<0.0330	ND<0.0243	ND<0.0305	ND<0.0373
4-Bromophenyl phenyl ether	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
4-Chloro-3-methylphenol	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
4-Chloroaniline	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
4-Chlorophenyl phenyl ether	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
4-Methylphenol (m-cresol)	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
4-Nitrophenol	NE	ND<0.0575 Q	ND<0.0424 Q	ND<0.0531 Q	ND<0.0650 Q
Aniline	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
Azobenzene	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
Benzoic Acid	NE	ND<0.0420	ND<0.0310	ND<0.0388	ND<0.0475
Benzyl alcohol	NE	ND<0.0219 Q	ND<0.0162 Q	ND<0.0202 Q	ND<0.0248 Q
bis (2-Ethylhexyl) adipate	NE	0.316 BQ	0.184 BQ	0.245 BQ	0.319 BQ
Bis(2-chloroethoxy)methane	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
Bis(2-chloroethyl)ether	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
Bis(2-chloroisopropyl)ether	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
Diphenylamine	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
Hexachlorobenzene	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
Hexachlorocyclopentadiene	NE	ND<0.0575 Q	ND<0.0424 Q	ND<0.0531 Q	ND<0.0650 Q
Hexachloroethane	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
Isophorone	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
Nitrobenzene	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
N-Nitroso-di-propylamine	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650
Phenol	NE	ND<0.0575	ND<0.0424	ND<0.0531	ND<0.0650

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

Q = Analyte with an initial or continuing calibration that does not meet established criteria (<20% RSD, <20% Drift, or minimum RRF)

B = Analyte detected in the associated Method Blank

na = not analyzed

ns = no sample (sample attempted but no recovery)

Table 2 - Laboratory Data for Soil - November 2017  
Semi-volatile organic compounds by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)	Sample ID: TC-S8-29-15'	Sample ID: TC-S8-30-3'	Sample ID: TC-S8-30-7.5'	Sample ID: TC-S8-30-10'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 14:50	Time: 13:35	Time: 13:45	Time: 13:55
		Depth: 15'	Depth: 3'	Depth: 7.5'	Depth: 10'
		Comments:	Comments:	Comments:	Comments:
1,2,4-Trichlorobenzene	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
1,2-Dichlorobenzene	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
1,3-Dichlorobenzene	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
1,3-Dinitrobenzene	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
1,4-Dichlorobenzene	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2,3,4,6-Tetrachlorophenol	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2,3,5,6-Tetrachlorophenol	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2,4,5-Trichlorophenol	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2,4,6-Trichlorophenol	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2,4-Dichlorophenol	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2,4-Dimethylphenol	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2,4-Dinitrophenol	NE	ND<0.0569	ND<0.0391	ND<0.0495	ND<0.0719
2,4-Dinitrotoluene	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2,6-Dinitrotoluene	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2-Chlorophenol	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2-Methylphenol (o-cresol)	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2-Nitroaniline	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
2-Nitrophenol	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
3-Methylphenol (p-cresol)	NE	ND<0.0331	ND<0.0228	ND<0.0288	ND<0.0418
3-Nitroaniline	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
4,6-Dinitro-2-methylphenol	NE	ND<0.0380	ND<0.0261	ND<0.0331	ND<0.0480
4-Bromophenyl phenyl ether	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
4-Chloro-3-methylphenol	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
4-Chloroaniline	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
4-Chlorophenyl phenyl ether	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
4-Methylphenol (m-cresol)	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
4-Nitrophenol	NE	ND<0.0662 Q	ND<0.0455 Q	ND<0.0577 Q	ND<0.0837 Q
Aniline	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
Azobenzene	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
Benzoic Acid	NE	ND<0.0484	ND<0.0333	ND<0.0421	ND<0.0612
Benzyl alcohol	NE	ND<0.0252 Q	ND<0.0174 Q	ND<0.0220 Q	ND<0.0319 Q
bis (2-Ethylhexyl) adipate	NE	0.322 BQ	0.222 BQ	0.371 BQ	0.383 BQ
Bis(2-chloroethoxy)methane	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
Bis(2-chloroethyl)ether	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
Bis(2-chloroisopropyl)ether	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
Diphenylamine	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
Hexachlorobenzene	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
Hexachlorocyclopentadiene	NE	ND<0.0662 Q	ND<0.0455 Q	ND<0.0577 Q	ND<0.0837 Q
Hexachloroethane	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
Isophorone	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
Nitrobenzene	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
N-Nitroso-di-propylamine	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837
Phenol	NE	ND<0.0662	ND<0.0455	ND<0.0577	ND<0.0837

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

Q = Analyte with an initial or continuing calibration that does not meet established criteria (<20% RSD, <20% Drift, or minimum RRF)

B = Analyte detected in the associated Method Blank

na = not analyzed

ns = no sample (sample attempted but no recovery)

Table 2 - Laboratory Data for Soil - November 2017  
Semi-volatile organic compounds by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)	Sample ID: TC-SB-30-15'	Sample ID: TC-SB-31-7.5'	Sample ID: TC-SB-31-10'	Sample ID: TC-SB-31-12.5'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 14:00	Time: 13:00	Time: 13:10	Time: 13:20
		Depth: 15'	Depth: 7.5'	Depth: 10'	Depth: 12.5'
		Comments:	Comments:	Comments:	Comments:
1,2,4-Trichlorobenzene	NE	ND<0.0495	na	na	na
1,2-Dichlorobenzene	NE	ND<0.0495	na	na	na
1,3-Dichlorobenzene	NE	ND<0.0495	na	na	na
1,3-Dinitrobenzene	NE	ND<0.0495	na	na	na
1,4-Dichlorobenzene	NE	ND<0.0495	na	na	na
2,3,4,6-Tetrachlorophenol	NE	ND<0.0495	na	na	na
2,3,5,6-Tetrachlorophenol	NE	ND<0.0495	na	na	na
2,4,5-Trichlorophenol	NE	ND<0.0495	na	na	na
2,4,6-Trichlorophenol	NE	ND<0.0495	na	na	na
2,4-Dichlorophenol	NE	ND<0.0495	na	na	na
2,4-Dimethylphenol	NE	ND<0.0495	na	na	na
2,4-Dinitrophenol	NE	ND<0.0425	na	na	na
2,4-Dinitrotoluene	NE	ND<0.0495	na	na	na
2,6-Dinitrotoluene	NE	ND<0.0495	na	na	na
2-Chlorophenol	NE	ND<0.0495	na	na	na
2-Methylphenol (o-cresol)	NE	ND<0.0495	na	na	na
2-Nitroaniline	NE	ND<0.0495	na	na	na
2-Nitrophenol	NE	ND<0.0495	na	na	na
3-Methylphenol (p-cresol)	NE	ND<0.0248	na	na	na
3-Nitroaniline	NE	ND<0.0495	na	na	na
4,6-Dinitro-2-methylphenol	NE	ND<0.0284	na	na	na
4-Bromophenyl phenyl ether	NE	ND<0.0495	na	na	na
4-Chloro-3-methylphenol	NE	ND<0.0495	na	na	na
4-Chloroaniline	NE	ND<0.0495	na	na	na
4-Chlorophenyl phenyl ether	NE	ND<0.0495	na	na	na
4-Methylphenol (m-cresol)	NE	ND<0.0495	na	na	na
4-Nitrophenol	NE	ND<0.0495 Q	na	na	na
Aniline	NE	ND<0.0495	na	na	na
Azobenzene	NE	ND<0.0495	na	na	na
Benzoic Acid	NE	ND<0.0362	na	na	na
Benzyl alcohol	NE	ND<0.0189 Q	na	na	na
bis (2-Ethylhexyl) adipate	NE	0.222 BQ	na	na	na
Bis(2-chloroethoxy)methane	NE	ND<0.0495	na	na	na
Bis(2-chloroethyl)ether	NE	ND<0.0495	na	na	na
Bis(2-chloroisopropyl)ether	NE	ND<0.0495	na	na	na
Diphenylamine	NE	ND<0.0495	na	na	na
Hexachlorobenzene	NE	ND<0.0495	na	na	na
Hexachlorocyclopentadiene	NE	ND<0.0495 Q	na	na	na
Hexachloroethane	NE	ND<0.0495	na	na	na
Isophorone	NE	ND<0.0495	na	na	na
Nitrobenzene	NE	ND<0.0495	na	na	na
N-Nitroso-di-propylamine	NE	ND<0.0495	na	na	na
Phenol	NE	ND<0.0495	na	na	na

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

Q = Analyte with an initial or continuing calibration that does not meet established criteria (<20% RSD, <20% Drift, or minimum RRF)

B = Analyte detected in the associated Method Blank

na = not analyzed

ns = no sample (sample attempted but no recovery)

Table 2 - Laboratory Data for Soil - November 2017  
Semi-volatile organic compounds by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)	Sample ID: TC-SB-31-15'	Sample ID: TC-SB-32-3'	Sample ID: TC-SB-32-7.5'	Sample ID: Field Dup #1 (TC-SB-32-7.5')
		Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 13:30	Time: 12:30	Time: 11:30	Time: 11:30
		Depth: 15'	Depth: 3'	Depth: 7.5'	Depth: 7.5'
		Comments:	Comments:	Comments:	Comments:
1,2,4-Trichlorobenzene	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
1,2-Dichlorobenzene	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
1,3-Dichlorobenzene	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
1,3-Dinitrobenzene	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
1,4-Dichlorobenzene	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2,3,4,6-Tetrachlorophenol	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2,3,5,6-Tetrachlorophenol	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2,4,5-Trichlorophenol	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2,4,6-Trichlorophenol	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2,4-Dichlorophenol	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2,4-Dimethylphenol	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2,4-Dinitrophenol	NE	na	ND<0.0478	ND<0.0541	ND<0.0738 Q
2,4-Dinitrotoluene	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2,6-Dinitrotoluene	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2-Chlorophenol	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2-Methylphenol (o-cresol)	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2-Nitroaniline	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
2-Nitrophenol	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
3-Methylphenol (p-cresol)	NE	na	ND<0.0278	ND<0.0315	ND<0.0430
3-Nitroaniline	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
4,6-Dinitro-2-methylphenol	NE	na	ND<0.0319	ND<0.0361	ND<0.0493 Q
4-Bromophenyl phenyl ether	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
4-Chloro-3-methylphenol	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
4-Chloroaniline	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
4-Chlorophenyl phenyl ether	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
4-Methylphenol (m-cresol)	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
4-Nitrophenol	NE	na	ND<0.0556 Q	ND<0.0630 Q	ND<0.0859
Aniline	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
Azobenzene	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
Benzoic Acid	NE	na	ND<0.0406	ND<0.0460	ND<0.0628
Benzyl alcohol	NE	na	ND<0.0212 Q	ND<0.0240 Q	ND<0.0328 Q
bis (2-Ethylhexyl) adipate	NE	na	0.256 BQ	ND<0.0630	ND<0.0859
Bis(2-chloroethoxy)methane	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
Bis(2-chloroethyl)ether	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
Bis(2-chloroisopropyl)ether	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
Diphenylamine	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
Hexachlorobenzene	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
Hexachlorocyclopentadiene	NE	na	ND<0.0556 Q	ND<0.0630 Q	ND<0.0859 Q
Hexachloroethane	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
Isophorone	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
Nitrobenzene	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
N-Nitroso-di-propylamine	NE	na	ND<0.0556	ND<0.0630	ND<0.0859
Phenol	NE	na	ND<0.0556	ND<0.0630	ND<0.0859

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

Q = Analyte with an initial or continuing calibration that does not meet established criteria (<20% RSD, <20% Drift, or minimum RRF)

B = Analyte detected in the associated Method Blank

na = not analyzed

ns = no sample (sample attempted but no recovery)



Table 2 - Laboratory Data for Soil - November 2017  
Semi-volatile organic compounds by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)	Sample ID: TC-SB-32-10'	Sample ID: TC-SB-32-15'	Sample ID: TC-SB-33-8'	Sample ID: TC-SB-33-10'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 11:40	Time: 11:50	Time: 10:30	Time: 10:40
		Depth: 10'	Depth: 15'	Depth: 8'	Depth: 10'
		Comments:	Comments:	Comments:	Comments:
1,2,4-Trichlorobenzene	NE	ND<0.0250	ND<0.0439	na	ns
1,2-Dichlorobenzene	NE	ND<0.0287	ND<0.0439	na	ns
1,3-Dichlorobenzene	NE	ND<0.0463	ND<0.0439	na	ns
1,3-Dinitrobenzene	NE	ND<0.0125	ND<0.0439	na	ns
1,4-Dichlorobenzene	NE	ND<0.0192	ND<0.0439	na	ns
2,3,4,6-Tetrachlorophenol	NE	ND<0.0180	ND<0.0439	na	ns
2,3,5,6-Tetrachlorophenol	NE	ND<0.0133	ND<0.0439	na	ns
2,4,5-Trichlorophenol	NE	ND<0.0317	ND<0.0439	na	ns
2,4,6-Trichlorophenol	NE	ND<0.0386	ND<0.0439	na	ns
2,4-Dichlorophenol	NE	ND<0.0255	ND<0.0439	na	ns
2,4-Dimethylphenol	NE	ND<0.0121	ND<0.0439	na	ns
2,4-Dinitrophenol	NE	ND<0.0943 Q	ND<0.0377 Q	na	ns
2,4-Dinitrotoluene	NE	ND<0.0503	ND<0.0439	na	ns
2,6-Dinitrotoluene	NE	ND<0.0469	ND<0.0439	na	ns
2-Chlorophenol	NE	ND<0.0321	ND<0.0439	na	ns
2-Methylphenol (o-cresol)	NE	ND<0.0213	ND<0.0439	na	ns
2-Nitroaniline	NE	ND<0.0354	ND<0.0439	na	ns
2-Nitrophenol	NE	ND<0.0414	ND<0.0439	na	ns
3-Methylphenol (p-cresol)	NE	ND<0.0168	ND<0.0219	na	ns
3-Nitroaniline	NE	ND<0.0265	ND<0.0439	na	ns
4,6-Dinitro-2-methylphenol	NE	ND<0.0630 Q	ND<0.0252 Q	na	ns
4-Bromophenyl phenyl ether	NE	ND<0.0491	ND<0.0439	na	ns
4-Chloro-3-methylphenol	NE	ND<0.0216	ND<0.0439	na	ns
4-Chloroaniline	NE	ND<0.0185	ND<0.0439	na	ns
4-Chlorophenyl phenyl ether	NE	ND<0.0214	ND<0.0439	na	ns
4-Methylphenol (m-cresol)	NE	ND<0.0163	ND<0.0439	na	ns
4-Nitrophenol	NE	ND<0.0414	ND<0.0439	na	ns
Aniline	NE	ND<0.0171	ND<0.0439	na	ns
Azobenzene	NE	ND<0.0194	ND<0.0439	na	ns
Benzoic Acid	NE	ND<0.0802	ND<0.0321	na	ns
Benzyl alcohol	NE	ND<0.0418 Q	ND<0.0167 Q	na	ns
bis (2-Ethylhexyl) adipate	NE	ND<0.0545	ND<0.0439	na	ns
Bis(2-chloroethoxy)methane	NE	ND<0.0162	ND<0.0439	na	ns
Bis(2-chloroethyl)ether	NE	ND<0.0317	ND<0.0439	na	ns
Bis(2-chloroisopropyl)ether	NE	ND<0.0333	ND<0.0439	na	ns
Diphenylamine	NE	ND<0.0151	ND<0.0439	na	ns
Hexachlorobenzene	NE	ND<0.0536	ND<0.0439	na	ns
Hexachlorocyclopentadiene	NE	ND<0.0594 Q	ND<0.0439 Q	na	ns
Hexachloroethane	NE	ND<0.0359	ND<0.0439	na	ns
Isophorone	NE	ND<0.0195	ND<0.0439	na	ns
Nitrobenzene	NE	ND<0.0357	ND<0.0439	na	ns
N-Nitroso-di-propylamine	NE	ND<0.0377	ND<0.0439	na	ns
Phenol	NE	ND<0.0386	ND<0.0439	na	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

Q = Analyte with an initial or continuing calibration that does not meet established criteria (<20% RSD, <20% Drift, or minimum RRF)

B = Analyte detected in the associated Method Blank

na = not analyzed

ns = no sample (sample attempted but no recovery)

Table 2 - Laboratory Data for Soil - November 2017  
Semi-volatile organic compounds by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)	Sample ID: TC-SB-33-12.5'	Sample ID: TC-SB-33-15'	Sample ID: TC-SB-34-7.5'	Sample ID: TC-SB-34-10'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 10:50	Time: 10:55	Time: 9:40	Time: 9:50
		Depth: 12.5'	Depth: 15'	Depth: 7.5'	Depth: 10'
		Comments:	Comments:	Comments:	Comments:
1,2,4-Trichlorobenzene	NE	ns	ns	na	na
1,2-Dichlorobenzene	NE	ns	ns	na	na
1,3-Dichlorobenzene	NE	ns	ns	na	na
1,3-Dinitrobenzene	NE	ns	ns	na	na
1,4-Dichlorobenzene	NE	ns	ns	na	na
2,3,4,6-Tetrachlorophenol	NE	ns	ns	na	na
2,3,5,6-Tetrachlorophenol	NE	ns	ns	na	na
2,4,5-Trichlorophenol	NE	ns	ns	na	na
2,4,6-Trichlorophenol	NE	ns	ns	na	na
2,4-Dichlorophenol	NE	ns	ns	na	na
2,4-Dimethylphenol	NE	ns	ns	na	na
2,4-Dinitrophenol	NE	ns	ns	na	na
2,4-Dinitrotoluene	NE	ns	ns	na	na
2,6-Dinitrotoluene	NE	ns	ns	na	na
2-Chlorophenol	NE	ns	ns	na	na
2-Methylphenol (o-cresol)	NE	ns	ns	na	na
2-Nitroaniline	NE	ns	ns	na	na
2-Nitrophenol	NE	ns	ns	na	na
3-Methylphenol (p-cresol)	NE	ns	ns	na	na
3-Nitroaniline	NE	ns	ns	na	na
4,6-Dinitro-2-methylphenol	NE	ns	ns	na	na
4-Bromophenyl phenyl ether	NE	ns	ns	na	na
4-Chloro-3-methylphenol	NE	ns	ns	na	na
4-Chloroaniline	NE	ns	ns	na	na
4-Chlorophenyl phenyl ether	NE	ns	ns	na	na
4-Methylphenol (m-cresol)	NE	ns	ns	na	na
4-Nitrophenol	NE	ns	ns	na	na
Aniline	NE	ns	ns	na	na
Azobenzene	NE	ns	ns	na	na
Benzoic Acid	NE	ns	ns	na	na
Benzyl alcohol	NE	ns	ns	na	na
bis (2-Ethylhexyl) adipate	NE	ns	ns	na	na
Bis(2-chloroethoxy)methane	NE	ns	ns	na	na
Bis(2-chloroethyl)ether	NE	ns	ns	na	na
Bis(2-chloroisopropyl)ether	NE	ns	ns	na	na
Diphenylamine	NE	ns	ns	na	na
Hexachlorobenzene	NE	ns	ns	na	na
Hexachlorocyclopentadiene	NE	ns	ns	na	na
Hexachloroethane	NE	ns	ns	na	na
Isophorone	NE	ns	ns	na	na
Nitrobenzene	NE	ns	ns	na	na
N-Nitroso-di-propylamine	NE	ns	ns	na	na
Phenol	NE	ns	ns	na	na

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

Q = Analyte with an initial or continuing calibration that does not meet established criteria (<20% RSD, <20% Drift, or minimum RRF)

B = Analyte detected in the associated Method Blank

na = not analyzed

ns = no sample (sample attempted but no recovery)

Table 2 - Laboratory Data for Soil - November 2017  
Semi-volatile organic compounds by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)	Sample ID: TC-SB-34-13'	Sample ID: TC-SB-34-15'	Sample ID: TC-SB-35-5'	Sample ID: TC-SB-35-7.5'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017
		Time: 10:00	Time: 10:10	Time: 11:10	Time: 11:15
		Depth: 13'	Depth: 15'	Depth: 5'	Depth: 7.5'
		Comments:	Comments:	Comments:	Comments:
1,2,4-Trichlorobenzene	NE	na	na	ND<0.0770	ns
1,2-Dichlorobenzene	NE	na	na	ND<0.0770	ns
1,3-Dichlorobenzene	NE	na	na	ND<0.0770	ns
1,3-Dinitrobenzene	NE	na	na	ND<0.0770	ns
1,4-Dichlorobenzene	NE	na	na	ND<0.0770	ns
2,3,4,6-Tetrachlorophenol	NE	na	na	ND<0.0770	ns
2,3,5,6-Tetrachlorophenol	NE	na	na	ND<0.0770	ns
2,4,5-Trichlorophenol	NE	na	na	ND<0.0770	ns
2,4,6-Trichlorophenol	NE	na	na	ND<0.0770	ns
2,4-Dichlorophenol	NE	na	na	ND<0.0770	ns
2,4-Dimethylphenol	NE	na	na	ND<0.0770	ns
2,4-Dinitrophenol	NE	na	na	ND<0.0662 Q	ns
2,4-Dinitrotoluene	NE	na	na	ND<0.0770	ns
2,6-Dinitrotoluene	NE	na	na	ND<0.0770	ns
2-Chlorophenol	NE	na	na	ND<0.0770	ns
2-Methylphenol (o-cresol)	NE	na	na	ND<0.0770	ns
2-Nitroaniline	NE	na	na	ND<0.0770	ns
2-Nitrophenol	NE	na	na	ND<0.0770	ns
3-Methylphenol (p-cresol)	NE	na	na	ND<0.0385	ns
3-Nitroaniline	NE	na	na	ND<0.0770	ns
4,6-Dinitro-2-methylphenol	NE	na	na	ND<0.0442 Q	ns
4-Bromophenyl phenyl ether	NE	na	na	ND<0.0770	ns
4-Chloro-3-methylphenol	NE	na	na	ND<0.0770	ns
4-Chloroaniline	NE	na	na	ND<0.0770	ns
4-Chlorophenyl phenyl ether	NE	na	na	ND<0.0770	ns
4-Methylphenol (m-cresol)	NE	na	na	ND<0.0770	ns
4-Nitrophenol	NE	na	na	ND<0.0770	ns
Aniline	NE	na	na	ND<0.0770	ns
Azobenzene	NE	na	na	ND<0.0770	ns
Benzoic Acid	NE	na	na	ND<0.0563	ns
Benzyl alcohol	NE	na	na	ND<0.0294 Q	ns
bis (2-Ethylhexyl) adipate	NE	na	na	ND<0.0770	ns
Bis(2-chloroethoxy)methane	NE	na	na	ND<0.0770	ns
Bis(2-chloroethyl)ether	NE	na	na	ND<0.0770	ns
Bis(2-chloroisopropyl)ether	NE	na	na	ND<0.0770	ns
Diphenylamine	NE	na	na	ND<0.0770	ns
Hexachlorobenzene	NE	na	na	ND<0.0770	ns
Hexachlorocyclopentadiene	NE	na	na	ND<0.0770 Q	ns
Hexachloroethane	NE	na	na	ND<0.0770	ns
Isophorone	NE	na	na	ND<0.0770	ns
Nitrobenzene	NE	na	na	ND<0.0770	ns
N-Nitroso-di-propylamine	NE	na	na	ND<0.0770	ns
Phenol	NE	na	na	ND<0.0770	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

Q = Analyte with an initial or continuing calibration that does not meet established criteria (<20% RSD, <20% Drift, or minimum RRF)

B = Analyte detected in the associated Method Blank

na = not analyzed

ns = no sample (sample attempted but no recovery)

Table 2 - Laboratory Data for Soil - November 2017  
Semi-volatile organic compounds by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)	Sample ID: TC-SB-35-10'	Sample ID: TC-SB-35-15'
		Date: 11/8/2017	Date: 11/8/2017
		Time: 11:20	Time: 11:30
		Depth: 10'	Depth: 15'
		Comments:	Comments:
1,2,4-Trichlorobenzene	NE	ND<0.0245	ns
1,2-Dichlorobenzene	NE	ND<0.0245	ns
1,3-Dichlorobenzene	NE	ND<0.0429	ns
1,3-Dinitrobenzene	NE	ND<0.0116	ns
1,4-Dichlorobenzene	NE	ND<0.0178	ns
2,3,4,6-Tetrachlorophenol	NE	ND<0.0167	ns
2,3,5,6-Tetrachlorophenol	NE	ND<0.0124	ns
2,4,5-Trichlorophenol	NE	ND<0.0294	ns
2,4,6-Trichlorophenol	NE	ND<0.0358	ns
2,4-Dichlorophenol	NE	ND<0.0237	ns
2,4-Dimethylphenol	NE	ND<0.0112	ns
2,4-Dinitrophenol	NE	ND<0.0874 Q	ns
2,4-Dinitrotoluene	NE	ND<0.0435	ns
2,6-Dinitrotoluene	NE	ND<0.0466	ns
2-Chlorophenol	NE	ND<0.0298	ns
2-Methylphenol (o-cresol)	NE	ND<0.0197	ns
2-Nitroaniline	NE	ND<0.0328	ns
2-Nitrophenol	NE	ND<0.0384	ns
3-Methylphenol (p-cresol)	NE	ND<0.0155	ns
3-Nitroaniline	NE	ND<0.0245	ns
4,6-Dinitro-2-methylphenol	NE	ND<0.0584 Q	ns
4-Bromophenyl phenyl ether	NE	ND<0.0455	ns
4-Chloro-3-methylphenol	NE	ND<0.0200	ns
4-Chloroaniline	NE	ND<0.0171	ns
4-Chlorophenyl phenyl ether	NE	ND<0.0198	ns
4-Methylphenol (m-cresol)	NE	ND<0.0151	ns
4-Nitrophenol	NE	ND<0.0369	ns
Aniline	NE	ND<0.0159	ns
Azobenzene	NE	ND<0.0179	ns
Benzoic Acid	NE	ND<0.0743	ns
Benzyl alcohol	NE	ND<0.0388 Q	ns
bis (2-Ethylhexyl) adipate	NE	ND<0.0505	ns
Bis(2-chloroethoxy)methane	NE	ND<0.0150	ns
Bis(2-chloroethyl)ether	NE	ND<0.0294	ns
Bis(2-chloroisopropyl)ether	NE	ND<0.0309	ns
Diphenylamine	NE	ND<0.0140	ns
Hexachlorobenzene	NE	ND<0.0497	ns
Hexachlorocyclopentadiene	NE	ND<0.0550 Q	ns
Hexachloroethane	NE	ND<0.0333	ns
Isophorone	NE	ND<0.0181	ns
Nitrobenzene	NE	ND<0.0331	ns
N-Nitroso-di-propylamine	NE	ND<0.0349	ns
Phenol	NE	ND<0.0358	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

Q = Analyte with an initial or continuing calibration that does not meet established criteria (<20% RSD, <20% Drift, or minimum RRF)

B = Analyte detected in the associated Method Blank

na = not analyzed

ns = no sample (sample attempted but no recovery)

Table 3 - Laboratory Data for Soil - November 2017  
Hydrocarbons by NWTPH Methods

Diesel range petroleum hydrocarbons by NWTPH-Dx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-27-3'	Sample ID: TC-SB-27-7.5'	Sample ID: TC-SB-27-10'	Sample ID: TC-SB-27-15'	Sample ID: TC-SB-28-7.5'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 15:50	Time: 16:00	Time: 16:15	Time: 16:30	Time: 15:00
		Depth: 3'	Depth: 7.5'	Depth: 10'	Depth: 10'	Depth: 7.5'
		Comments:	Comments:	Comments:	Comments:	Comments:
Diesel (Fuel Oil)	2,000	na (ND<51.2 by HCID)	ND (<38.8)	ND (<38.2)	na (ND<67.5 by HCID)	na (ND<85.8 by HCID)
Heavy Oil	2,000	na (ND<102 by HCID)	ND (<96.9)	ND (<95.4)	na (ND<135 by HCID)	na (ND<172 by HCID)
Diesel Range Organics	2,000	na	500	651	na	na
Gasoline range petroleum hydrocarbons by NWTPH-Gx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-MW-1-1'	Sample ID: TC-MW-1-2'	Sample ID: TC-MW-1-3'	Sample ID: TC-MW-1-8'	Sample ID: TC-MW-2-1'
		Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011
		Time: 11:40	Time: 11:45	Time: 11:50	Time: 12:25	Time: 13:20
		Depth: 1'	Depth: 2'	Depth: 3'	Depth: 8'	Depth: 1'
		Comments:	Comments:	Comments:	Comments:	Comments:
Gasoline	100 <sup>a</sup>	na (ND<20.5 by HCID)	na (ND<38.8 by HCID)	na (ND<38.2 by HCID)	na (ND<27.0 by HCID)	na (ND<34.3 by HCID)

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = Non-detect value of analyte exceeds remediation level.

a = by NWTPH-Gx benzene not detected.

Table 3 - Laboratory Data for Soil - November 2017  
Hydrocarbons by NWTPH Methods

Diesel range petroleum hydrocarbons by NWTPH-Dx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-28-10'	Sample ID: TC-SB-28-13'	Sample ID: TC-SB-28-15'	Sample ID: TC-SB-29-3'	Sample ID: TC-SB-29-7.5'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017
		Time: 15:10	Time: 15:20	Time: 15:30	Time: 14:10	Time: 14:30
		Depth: 10'	Depth: 13'	Depth: 15'	Depth: 3'	Depth: 7.5'
		Comments:	Comments:	Comments:	Comments:	Comments:
Diesel (Fuel Oil)	2,000	na (ND<61.3 by HCID)	na (ND<86.8 by HCID)	ND (<28.0)	na (ND<50.3 by HCID)	na (ND<60.8 by HCID)
Heavy Oil	2,000	na (ND<123 by HCID)	na (ND<174 by HCID)	ND (<70.0)	na (ND<101 by HCID)	na (ND<122 by HCID)
Diesel Range Organics	2,000	na	na	165	na	na
Gasoline range petroleum hydrocarbons by NWTPH-Gx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-MW-3-1'	Sample ID: TC-MW-3-2'	Sample ID: TC-MW-3-3'	Sample ID: TC-MW-4-1'	Sample ID: DUP-2 (DUP of TC-MW-4-1')
		Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/27/2011	Date: 4/27/2011
		Time: 14:45	Time: 14:50	Time: 15:10	Time: 7:50	Time: 7:50
		Depth: 1'	Depth: 2'	Depth: 3'	Depth: 1'	Depth: 1'
		Comments:	Comments:	Comments:	Comments:	Comments:
Gasoline	100 <sup>a</sup>	na (ND<24.5 by HCID)	na (ND<34.7 by HCID)	na (ND<28.0 by HCID)	na (ND<20.1 by HCID)	na (ND<24.3 by HCID)

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = Non-detect value of analyte exceeds remediation level.

a = by NWTPH-Gx benzene not detected.

Table 3 - Laboratory Data for Soil - November 2017  
Hydrocarbons by NWTPH Methods

Diesel range petroleum hydrocarbons by NWTPH-Dx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-29-10'	Sample ID: TC-SB-29-15'	Sample ID: TC-SB-30-3'	Sample ID: TC-SB-30-7.5'	Sample ID: TC-SB-30-10'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 14:40	Time: 14:50	Time: 13:35	Time: 13:45	Time: 13:55
		Depth: 10'	Depth: 15'	Depth: 3'	Depth: 7.5'	Depth: 10'
		Comments:	Comments:	Comments:	Comments:	Comments:
Diesel (Fuel Oil)	2,000	ND (<32.0)	na (ND<79.8 by HCID)	na (ND<54.6 by HCID)	ND (<27.5)	ND (<41.9)
Heavy Oil	2,000	ND (<80.1)	na (ND<160 by HCID)	na (ND<109 by HCID)	ND (<68.7)	ND (<105)
Diesel Range Organics	2,000	138	na	na	83.1	1,120
Gasoline range petroleum hydrocarbons by NWTPH-Gx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-MW-4-2'	Sample ID: TC-MW-4-3'	Sample ID: TC-MW-4-10'	Sample ID: TC-MW-5-1'	Sample ID: TC-MW-5-2'
		Date: 4/27/2011	Date: 4/26/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011
		Time: 7:55	Time: 8:00	Time: 8:25	Time: 14:35	Time: 14:40
		Depth: 2'	Depth: 3'	Depth: 10'	Depth: 1'	Depth: 2'
		Comments:	Comments:	Comments:	Comments:	Comments:
Gasoline	100 <sup>a</sup>	na (ND<32.0 by HCID)	na (ND<31.9 by HCID)	na (ND<21.8 by HCID)	na (ND<27.5 by HCID)	na (ND<41.9 by HCID)

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = Non-detect value of analyte exceeds remediation level.

a = by NWTPH-Gx benzene not detected.

Table 3 - Laboratory Data for Soil - November 2017  
Hydrocarbons by NWTPH Methods

Diesel range petroleum hydrocarbons by NWTPH-Dx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-30-15'	Sample ID: TC-SB-31-7.5'	Sample ID: TC-SB-31-10'	Sample ID: TC-SB-31-12.5'	Sample ID: TC-SB-31-15'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 14:00	Time: 13:00	Time: 13:10	Time: 13:20	Time: 13:30
		Depth: 15'	Depth: 7.5'	Depth: 10'	Depth: 12.5'	Depth: 15'
		Comments:	Comments:	Comments:	Comments:	Comments:
Diesel (Fuel Oil)	2,000	na (ND<59.4 by HCID)	ND (<35.3)	ND (<33.1)	ND (<30.1)	na (ND<53.6 by HCID)
Heavy Oil	2,000	na (ND<119 by HCID)	ND (<88.4)	278	268	na (ND<107 by HCID)
Diesel Range Organics	2,000	na	849	na	na	na
Gasoline range petroleum hydrocarbons by NWTPH-Gx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-MW-6-1'	Sample ID: TC-MW-6-2'	Sample ID: TC-MW-6-3'	Sample ID: TC-MW-7-1'	Sample ID: TC-MW-7-2'
		Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011
		Time: 14:35	Time: 15:00	Time: 15:05	Time: 10:00	Time: 10:05
		Depth: 1'	Depth: 2'	Depth: 3'	Depth: 1'	Depth: 2'
		Comments:	Comments:	Comments:	Comments:	Comments:
Gasoline	100 <sup>a</sup>	na (ND<23.8 by HCID)	na (ND<35.3 by HCID)	na (ND<33.1 by HCID)	na (ND<30.1 by HCID)	na (ND<21.5 by HCID)

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = Non-detect value of analyte exceeds remediation level.

a = by NWTPH-Gx benzene not detected.



Table 3 - Laboratory Data for Soil - November 2017  
Hydrocarbons by NWTPH Methods

Diesel range petroleum hydrocarbons by NWTPH-Dx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-32-3'	Sample ID: TC-SB-32-7.5'	Sample ID: TC-SB-32-10'	Sample ID: TC-SB-32-15'	Sample ID: TC-SB-33-8'
		Date: 11/7/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 12:30	Time: 11:30	Time: 11:40	Time: 11:50	Time: 10:30
		Depth: 3'	Depth: 7.5'	Depth: 10'	Depth: 15'	Depth: 8'
		Comments:	Comments:	Comments:	Comments:	Comments:
Diesel (Fuel Oil)	2,000	ND (<25.9)	ND (<29.5)	ND (<34.9)	na (ND<59.9 by HCID)	ND (<36.9)
Heavy Oil	2,000	332	158	213	na (ND<120 by HCID)	ND (<92.2)
Diesel Range Organics	2,000	146	165	na	na	397
Gasoline range petroleum hydrocarbons by NWTPH-Gx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-MW-7-3'	Sample ID: TC-MW-8-1'	Sample ID: TC-MW-8-2'	Sample ID: TC-MW-8-3'	Sample ID: TC-MW-9-1'
		Date: 4/27/2011	Date: 4/28/2011	Date: 4/28/2011	Date: 4/28/2011	Date: 4/28/2011
		Time: 10:10	Time: 12:00	Time: 12:07	Time: 12:10	Time: 10:30
		Depth: 3'	Depth: 1'	Depth: 2'	Depth: 3'	Depth: 1'
		Comments:	Comments:	Comments:	Comments:	Comments:
Gasoline	100 <sup>a</sup>	na (ND<25.9 by HCID)	na (ND<29.5 by HCID)	na (ND<34.9 by HCID)	na (ND<24.0 by HCID)	na (ND<36.9 by HCID)

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = Non-detect value of analyte exceeds remediation level.

a = by NWTPH-Gx benzene not detected.

Table 3 - Laboratory Data for Soil - November 2017  
Hydrocarbons by NWTPH Methods

Diesel range petroleum hydrocarbons by NWTPH-Dx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-33-10'	Sample ID: TC-SB-33-12.5'	Sample ID: TC-SB-33-15'	Sample ID: TC-SB-34-7.5'	Sample ID: TC-SB-34-10'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 10:40	Time: 10:50	Time: 10:55	Time: 9:40	Time: 9:50
		Depth: 10'	Depth: 12.5'	Depth: 15'	Depth: 7.5'	Depth: 10'
		Comments:	Comments:	Comments:	Comments:	Comments:
Diesel (Fuel Oil)	2,000	ns	ns	ns	ND (<21.2)	ND (<41.4)
Heavy Oil	2,000	ns	ns	ns	110	1,350
Diesel Range Organics	2,000	ns	ns	ns	na	na
Gasoline range petroleum hydrocarbons by NWTPH-Gx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-MW-9-3'	Sample ID: TC-MW-10-1'	Sample ID: TC-MW-10-2'	Sample ID: TC-MW-11-1'	Sample ID: TC-MW-11-2'
		Date: 4/28/2011	Date: 4/25/2011	Date: 4/25/2011	Date: 4/28/2011	Date: 4/27/2011
		Time: 10:40	Time: 14:30	Time: 14:50	Time: 9:10	Time: 9:15
		Depth: 1'	Depth: 1'	Depth: 2'	Depth: 1'	Depth: 2'
		Comments:	Comments:	Comments:	Comments:	Comments:
Gasoline	100 <sup>a</sup>	ns	ns	ns	na (ND<21.2 by HCID)	na (ND<41.4 by HCID)

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = Non-detect value of analyte exceeds remediation level.

a = by NWTPH-Gx benzene not detected.

Table 3 - Laboratory Data for Soil - November 2017  
Hydrocarbons by NWTPH Methods

Diesel range petroleum hydrocarbons by NWTPH-Dx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-34-13'	Sample ID: TC-SB-34-15'	Sample ID: TC-SB-35-5'	Sample ID: TC-SB-35-7.5'	Sample ID: TC-SB-35-10'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 10:00	Time: 10:10	Time: 11:10	Time: 11:15	Time: 11:20
		Depth: 13'	Depth: 15'	Depth: 5'	Depth: 7.5'	Depth: 10'
		Comments:	Comments:	Comments:	Comments:	Comments:
Diesel (Fuel Oil)	2,000	ND (<27.7)	na (ND<61.4 by HCID)	na (ND<88.9 by HCID)	ns	ND (<47.5)
Heavy Oil	2,000	607	na (ND<123 by HCID)	na (ND<178 by HCID)	ns	654
Diesel Range Organics	2,000	66	na	na	ns	na
Gasoline range petroleum hydrocarbons by NWTPH-Gx						
Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-MW-11-3'	Sample ID: TC-MW-12-1'	Sample ID: Dup-3	Sample ID: TC-MW-12-2'	Sample ID: TC-MW-13-1'
		Date: 4/28/2011	Date: 4/28/2011	Date: 4/28/2011	Date: 4/28/2011	Date: 4/26/2011
		Time: 9:20	Time: 7:45	Time: 7:45	Time: 7:50	Time: 9:50
		Depth: 3'	Depth: 1'	Depth: 1'	Depth: 2'	Depth: 1'
		Comments:	Comments:	Comments:	Comments:	Comments:
Gasoline	100 <sup>a</sup>	na (ND<27.7 by HCID)	na (ND<24.6 by HCID)	na (ND<35.5 by HCID)	ns	na (ND<47.5 by HCID)

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = Non-detect value of analyte exceeds remediation level.

a = by NWTPH-Gx benzene not detected.

Table 3 - Laboratory Data for Soil - November 2017  
Hydrocarbons by NWTPH Methods

<b>Diesel range petroleum hydrocarbons by NWTPH-Dx</b>		
<b>Analyte</b>	<b>Soil Remediation Level (mg/kg)*</b>	<b>Sample ID: TC-SB-35-15'</b>
		<b>Date: 11/8/2017</b>
		<b>Time: 11:30</b>
		<b>Depth: 15'</b>
		<b>Comments:</b>
Diesel (Fuel Oil)	2,000	ns
Heavy Oil	2,000	ns
Diesel Range Organics	2,000	ns
<b>Gasoline range petroleum hydrocarbons by NWTPH-Gx</b>		
<b>Analyte</b>	<b>Soil Remediation Level (mg/kg)*</b>	<b>Sample ID: TC-MW-14-1'</b>
		<b>Date: 4/29/2011</b>
		<b>Time: 8:05</b>
		<b>Depth: 1'</b>
		<b>Comments:</b>
Gasoline	100 <sup>a</sup>	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = Non-detect value of analyte exceeds remediation level.

a = by NWTPH-Gx benzene not detected.

Table 4 - Laboratory Data for Soil - November 2017  
 Polychlorinated biphenyls (PCBs) by EPA Method 8082

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-27-3'	Sample ID: TC-SB-27-7.5'	Sample ID: Field Dup #2 (dup of TC-SB-27-7.5)'	Sample ID: TC-SB-27-10'	Sample ID: TC-SB-27-15'	Sample ID: TC-SB-28-7.5'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 15:50	Time: 16:00	Time: 16:00	Time: 16:15	Time: 16:30	Time: 15:00
		Depth: 3'	Depth: 7.5'	Depth: 7.5'	Depth: 10'	Depth: 15'	Depth: 7.5'
		Comments:	Comments:		Comments:	Comments:	Comments:
Aroclor 1016	Total PCBs	ND (<0.0118)	ND (<0.0197)	ND (<0.199)	na	na	ND (<0.0163)
Aroclor 1221	Total PCBs	ND (<0.0118)	ND (<0.0197)	ND (<0.199)	na	na	ND (<0.0163)
Aroclor 1232	Total PCBs	ND (<0.0118)	ND (<0.0197)	ND (<0.199)	na	na	ND (<0.0163)
Aroclor 1242	Total PCBs	ND (<0.0118)	ND (<0.0197)	ND (<0.199)	na	na	ND (<0.0163)
Aroclor 1248	Total PCBs	ND (<0.0118)	ND (<0.0197)	ND (<0.199)	na	na	ND (<0.0163)
Aroclor 1254	Total PCBs	ND (<0.0118)	ND (<0.0197)	ND (<0.199)	na	na	ND (<0.0163)
Aroclor 1260	Total PCBs	ND (<0.0118)	ND (<0.0197)	ND (<0.199)	na	na	ND (<0.0163)
Aroclor 1268	Total PCBs	ND (<0.0118)	ND (<0.0197)	ND (<0.199)	na	na	ND (<0.0163)
Total PCBs	1	ND (<0.0118)	ND (<0.0197)	ND (<0.199)	na	na	ND (<0.0163)

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

ND (<PQL) = Non-Detect less than Laboratory Practical Quantification Limit

na = not analyzed

ns = no soil sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.

Table 4 - Laboratory Data for Soil - November 2017  
 Polychlorinated biphenyls (PCBs) by EPA Method 8082

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-28-10'	Sample ID: TC-SB-28-13'	Sample ID: TC-SB-28-15'	Sample ID: TC-SB-29-3'	Sample ID: TC-SB-29-7.5'	Sample ID: TC-SB-29-10'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 15:10	Time: 15:20	Time: 15:30	Time: 14:10	Time: 14:30	Time: 14:40
		Depth: 10'	Depth: 13'	Depth: 15'	Depth: 3'	Depth: 7.5'	Depth: 10'
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Aroclor 1016	Total PCBs	ND (<0.0120)	ND (<0.0162)	ND (<0.0146)	ND (<0.0110)	ND (<0.0132)	ND (<0.153)
Aroclor 1221	Total PCBs	ND (<0.0120)	ND (<0.0162)	ND (<0.0146)	ND (<0.0110)	ND (<0.0132)	ND (<0.153)
Aroclor 1232	Total PCBs	ND (<0.0120)	ND (<0.0162)	ND (<0.0146)	ND (<0.0110)	ND (<0.0132)	ND (<0.153)
Aroclor 1242	Total PCBs	ND (<0.0120)	ND (<0.0162)	ND (<0.0146)	ND (<0.0110)	ND (<0.0132)	ND (<0.153)
Aroclor 1248	Total PCBs	ND (<0.0120)	ND (<0.0162)	ND (<0.0146)	ND (<0.0110)	ND (<0.0132)	ND (<0.153)
Aroclor 1254	Total PCBs	ND (<0.0120)	ND (<0.0162)	ND (<0.0146)	ND (<0.0110)	0.209	ND (<0.153)
Aroclor 1260	Total PCBs	ND (<0.0120)	ND (<0.0162)	ND (<0.0146)	ND (<0.0110)	ND (<0.0132)	ND (<0.153)
Aroclor 1268	Total PCBs	ND (<0.0120)	ND (<0.0162)	ND (<0.0146)	ND (<0.0110)	ND (<0.0132)	ND (<0.153)
Total PCBs	1	ND (<0.0120)	ND (<0.0162)	ND (<0.0146)	ND (<0.0110)	0.209	ND (<0.153)

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

ND (<PQL) = Non-Detect less than Laboratory Practical Quantification Limit

na = not analyzed

ns = no soil sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.

Table 4 - Laboratory Data for Soil - November 2017  
 Polychlorinated biphenyls (PCBs) by EPA Method 8082

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-29-15'	Sample ID: TC-SB-30-3'	Sample ID: TC-SB-30-7.5'	Sample ID: TC-SB-30-10'	Sample ID: TC-SB-30-15'	Sample ID: TC-SB-31-7.5'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 14:50	Time: 13:35	Time: 13:45	Time: 13:55	Time: 14:00	Time: 13:00
		Depth: 15'	Depth: 3'	Depth: 7.5'	Depth: 10'	Depth: 15'	Depth: 7.5'
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Aroclor 1016	Total PCBs	na	ND (<0.0993)	ND (<0.0133)	na	na	ND (<0.0191)
Aroclor 1221	Total PCBs	na	ND (<0.0993)	ND (<0.0133)	na	na	ND (<0.0191)
Aroclor 1232	Total PCBs	na	ND (<0.0993)	ND (<0.0133)	na	na	ND (<0.0191)
Aroclor 1242	Total PCBs	na	ND (<0.0993)	ND (<0.0133)	na	na	ND (<0.0191)
Aroclor 1248	Total PCBs	na	ND (<0.0993)	ND (<0.0133)	na	na	ND (<0.0191)
Aroclor 1254	Total PCBs	na	ND (<0.0993)	ND (<0.0133)	na	na	ND (<0.0191)
Aroclor 1260	Total PCBs	na	ND (<0.0993)	ND (<0.0133)	na	na	ND (<0.0191)
Aroclor 1268	Total PCBs	na	ND (<0.0993)	ND (<0.0133)	na	na	ND (<0.0191)
Total PCBs	1	na	ND (<0.0993)	ND (<0.0133)	na	na	ND (<0.0191)

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

ND (<PQL) = Non-Detect less than Laboratory Practical Quantification Limit

na = not analyzed

ns = no soil sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.

Table 4 - Laboratory Data for Soil - November 2017  
 Polychlorinated biphenyls (PCBs) by EPA Method 8082

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-31-10'	Sample ID: TC-SB-31-12.5'	Sample ID: TC-SB-31-15'	Sample ID: TC-SB-32-3'	Sample ID: TC-SB-32-7.5'	Sample ID: Field Dup #1 (dup of TC-SB-32-7.5')
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 13:10	Time: 13:20	Time: 13:30	Time: 12:30	Time: 11:30	Time: 11:30
		Depth: 10'	Depth: 12.5'	Depth: 15'	Depth: 3'	Depth: 7.5'	Depth: 7.5'
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Aroclor 1016	Total PCBs	ND (<0.178)	ND (<0.142)	ND (<0.105)	ND (<0.138)	ND (<0.167)	ND (<0.222)
Aroclor 1221	Total PCBs	ND (<0.178)	ND (<0.142)	ND (<0.105)	ND (<0.138)	ND (<0.167)	ND (<0.222)
Aroclor 1232	Total PCBs	ND (<0.178)	ND (<0.142)	ND (<0.105)	ND (<0.138)	ND (<0.167)	ND (<0.222)
Aroclor 1242	Total PCBs	ND (<0.178)	ND (<0.142)	ND (<0.105)	ND (<0.138)	ND (<0.167)	ND (<0.222)
Aroclor 1248	Total PCBs	ND (<0.178)	ND (<0.142)	ND (<0.105)	ND (<0.138)	ND (<0.167)	ND (<0.222)
Aroclor 1254	Total PCBs	ND (<0.178)	ND (<0.142)	ND (<0.105)	ND (<0.138)	ND (<0.167)	ND (<0.222)
Aroclor 1260	Total PCBs	ND (<0.178)	ND (<0.142)	ND (<0.105)	ND (<0.138)	ND (<0.167)	ND (<0.222)
Aroclor 1268	Total PCBs	ND (<0.178)	ND (<0.142)	ND (<0.105)	ND (<0.138)	ND (<0.167)	ND (<0.222)
Total PCBs	1	ND (<0.178)	ND (<0.142)	ND (<0.105)	ND (<0.138)	ND (<0.167)	ND (<0.222)

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

ND (<PQL) = Non-Detect less than Laboratory Practical Quantification Limit

na = not analyzed

ns = no soil sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.



Table 4 - Laboratory Data for Soil - November 2017  
 Polychlorinated biphenyls (PCBs) by EPA Method 8082

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-32-10'	Sample ID: TC-SB-32-15'	Sample ID: TC-SB-33-8'	Sample ID: TC-SB-33-10'	Sample ID: TC-SB-33-12.5'	Sample ID: TC-SB-33-15'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 11:40	Time: 11:50	Time: 10:30	Time: 10:40	Time: 10:50	Time: 11:00
		Depth: 10'	Depth: 15'	Depth: 8'	Depth: 10'	Depth: 12.5'	Depth: 15'
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Aroclor 1016	Total PCBs	na	na	ND (<0.191)	ns	ns	ns
Aroclor 1221	Total PCBs	na	na	ND (<0.191)	ns	ns	ns
Aroclor 1232	Total PCBs	na	na	ND (<0.191)	ns	ns	ns
Aroclor 1242	Total PCBs	na	na	ND (<0.191)	ns	ns	ns
Aroclor 1248	Total PCBs	na	na	ND (<0.191)	ns	ns	ns
Aroclor 1254	Total PCBs	na	na	ND (<0.191)	ns	ns	ns
Aroclor 1260	Total PCBs	na	na	ND (<0.191)	ns	ns	ns
Aroclor 1268	Total PCBs	na	na	ND (<0.191)	ns	ns	ns
Total PCBs	1	na	na	ND (<0.191)	ns	ns	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)  
 \* based on Ecology's October 17, 2017 email  
 ND (<PQL) = Non-Detect less than Laboratory Practical Quantification Limit  
 na = not analyzed  
 ns = no soil sample (sample attempted but no recovery)  
**Bold** = concentration exceeds remediation level.

Table 4 - Laboratory Data for Soil - November 2017  
 Polychlorinated biphenyls (PCBs) by EPA Method 8082

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-34-7.5'	Sample ID: TC-SB-34-10'	Sample ID: TC-SB-34-13'	Sample ID: TC-SB-34-15'	Sample ID: TC-SB-35-5'	Sample ID: TC-SB-35-7.5'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 9:40	Time: 9:50	Time: 10:00	Time: 10:10	Time: 11:10	Time: 11:20
		Depth: 7.5'	Depth: 10'	Depth: 13'	Depth: 15'	Depth: 5'	Depth: 7.5'
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Aroclor 1016	Total PCBs	ND (<0.111)	ND (<0.221)	ND (<0.136)	ND (<0.120)	ND (<0.186)	ns
Aroclor 1221	Total PCBs	ND (<0.111)	ND (<0.221)	ND (<0.136)	ND (<0.120)	ND (<0.186)	ns
Aroclor 1232	Total PCBs	ND (<0.111)	ND (<0.221)	ND (<0.136)	ND (<0.120)	ND (<0.186)	ns
Aroclor 1242	Total PCBs	ND (<0.111)	ND (<0.221)	ND (<0.136)	ND (<0.120)	ND (<0.186)	ns
Aroclor 1248	Total PCBs	ND (<0.111)	ND (<0.221)	ND (<0.136)	ND (<0.120)	ND (<0.186)	ns
Aroclor 1254	Total PCBs	ND (<0.111)	ND (<0.221)	ND (<0.136)	ND (<0.120)	ND (<0.186)	ns
Aroclor 1260	Total PCBs	ND (<0.111)	ND (<0.221)	ND (<0.136)	ND (<0.120)	ND (<0.186)	ns
Aroclor 1268	Total PCBs	ND (<0.111)	ND (<0.221)	ND (<0.136)	ND (<0.120)	ND (<0.186)	ns
Total PCBs	1	ND (<0.111)	ND (<0.221)	ND (<0.136)	ND (<0.120)	ND (<0.186)	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

ND (<PQL) = Non-Detect less than Laboratory Practical Quantification Limit

na = not analyzed

ns = no soil sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.

Table 4 - Laboratory Data for Soil - November 2017  
 Polychlorinated biphenyls (PCBs) by EPA Method 8082

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-35-10'	Sample ID: TC-SB-35-15'
		Date: 11/8/2017	Date: 11/8/2017
		Time: 11:30	Time: 11:40
		Depth: 10'	Depth: 15'
		Comments:	Comments:
Aroclor 1016	Total PCBs	na	ns
Aroclor 1221	Total PCBs	na	ns
Aroclor 1232	Total PCBs	na	ns
Aroclor 1242	Total PCBs	na	ns
Aroclor 1248	Total PCBs	na	ns
Aroclor 1254	Total PCBs	na	ns
Aroclor 1260	Total PCBs	na	ns
Aroclor 1268	Total PCBs	na	ns
Total PCBs	1	na	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

ND (<PQL) = Non-Detect less than Laboratory Practical Quantification Limit

na = not analyzed

ns = no soil sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.

Table 5 - Laboratory Data for Soil - November 2017  
Metals in soil by EPA Method 6020/7421

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-27-3'	Sample ID: TC-SB-27-7.5'	Sample ID: TC-SB-27-7.5' (Field Dup #2)	Sample ID: TC-SB-27-10'	Sample ID: TC-SB-27-15'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 15:50	Time: 16:00	Time: 16:00	Time: 16:15	Time: 16:30
		Depth: 3'	Depth: 7.5'	Depth: 7.5'	Depth: 10'	Depth: 15'
		Comments:	Comments:	Comments:	Comments:	Comments:
Arsenic	20	15.1	<b>21.3</b>	16.5	4.42	17.2
Barium	NE	99.3	70.8	102	13.1	65.2
Cadmium	NE	ND (<0.184)	0.412	0.354	0.359	0.561
Chromium	NE	41.4	107	32.9	8	93.3
Lead	250	18	86	40.5	12.3	10.2
Mercury	15	0.0605	0.0887	0.0565	ND (<0.0205)	0.106
Selenium	NE	1.12	0.76	ND (<0.829)	0.298	2.81
Silver	NE	0.126	0.167	ND (<0.166)	0.0856	0.268

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

NE = not established

B = Analyte detected in associated Method Blank

J = Estimated value

D = Dilution was required

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.

Table 5 - Laboratory Data for Soil - November 2017  
 Metals in soil by EPA Method 6020/7421

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-28-7.5'	Sample ID: TC-SB-28-10'	Sample ID: TC-SB-28-13'	Sample ID: TC-SB-28-15'	Sample ID: TC-SB-29-3'	Sample ID: TC-SB-29-7.5'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017
		Time: 15:00	Time: 15:10	Time: 15:20	Time: 15:30	Time: 14:10	Time: 14:30
		Depth: 7.5'	Depth: 10'	Depth: 13'	Depth: 15'	Depth: 3'	Depth: 7.5'
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Arsenic	20	11	8.5	na	15.9	11.2	12.1
Barium	NE	49.2	37.5	na	61.2	301 D	149
Cadmium	NE	0.0823 J	0.138 J	na	0.543	0.391	0.446
Chromium	NE	13.5	46.2 B	na	91.3 B	39.1 B	52.8 B
Lead	250	19.3	7.63	na	9.97	244 D	24.8
Mercury	15	0.0504	0.0343	na	0.103	0.0835	0.0805
Selenium	NE	0.402 J	1.26	na	2.79	1.06	1.11
Silver	NE	0.0971 BJ	0.0571 BJ	na	0.157	0.576	0.152

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

NE = not established

B = Analyte detected in associated Method Blank

J = Estimated value

D = Dilution was required

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.

Table 5 - Laboratory Data for Soil - November 2017  
Metals in soil by EPA Method 6020/7421

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-29-10'	Sample ID: TC-SB-29-15'	Sample ID: TC-SB-30-3'	Sample ID: TC-SB-30-7.5'	Sample ID: TC-SB-30-10'	Sample ID: TC-SB-30-15'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 14:40	Time: 14:50	Time: 13:35	Time: 13:45	Time: 13:55	Time: 14:00
		Depth: 10'	Depth: 15'	Depth: 3'	Depth: 7.5'	Depth: 10'	Depth: 15'
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Arsenic	20	7.08	18.8	<b>34.8</b>	19.1	3.63	13.9
Barium	NE	32.9	71.3	120	92.1	14.4	25.2
Cadmium	NE	1.06	0.521	0.266	0.321	0.0936 J	0.0727 J
Chromium	NE	27.1	105	44.2 B	23.2 B	4.4	45.9 B
Lead	250	49.7	13.7	49.5	56	19	8.65
Mercury	15	0.315	0.0993	0.358	0.214	ND (<0.0218)	0.033
Selenium	NE	0.931	2.76	1.38	0.545 J	0.178 J	1.49
Silver	NE	0.139	0.18	ND (<0.0912)	0.0763 BJ	ND (<0.00229)	0.0465 BJ

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

NE = not established

B = Analyte detected in associated Method Blank

J = Estimated value

D = Dilution was required

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.

Table 5 - Laboratory Data for Soil - November 2017  
 Metals in soil by EPA Method 6020/7421

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-31-7.5'	Sample ID: TC-SB-31-10'	Sample ID: TC-SB-31-12.5'	Sample ID: TC-SB-31-15'	Sample ID: TC-SB-32-3'	Sample ID: TC-SB-32-7.5'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017
		Time: 13:00	Time: 13:10	Time: 13:20	Time: 13:30	Time: 12:30	Time: 11:30
		Depth: 7.5'	Depth: 10'	Depth: 12.5'	Depth: 15'	Depth: 3'	Depth: 7.5'
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Arsenic	20	na	na	na	na	<b>34.8</b>	5.56
Barium	NE	na	na	na	na	205	80.4
Cadmium	NE	na	na	na	na	0.414	0.124 J
Chromium	NE	na	na	na	na	44.4	19.2
Lead	250	na	na	na	na	112	14.3
Mercury	15	na	na	na	na	0.19	0.033
Selenium	NE	na	na	na	na	1.1	0.791
Silver	NE	na	na	na	na	0.184	0.0729 BJ

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

NE = not established

B = Analyte detected in associated Method Blank

J = Estimated value

D = Dilution was required

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.

Table 5 - Laboratory Data for Soil - November 2017  
Metals in soil by EPA Method 6020/7421

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-32-7.5' (Field Dup #1)	Sample ID: TC-SB-32-10'	Sample ID: TC-SB-32-15'	Sample ID: TC-SB-33-8'	Sample ID: TC-SB-33-10'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 11:30	Time: 11:40	Time: 11:50	Time: 10:30	Time: 10:35
		Depth: 7.5'	Depth: 10'	Depth: 15'	Depth: 8'	Depth: 10'
		Comments:	Comments:	Comments:	Comments:	Comments:
Arsenic	20	3.19	18.3	9.69	na	ns
Barium	NE	115	14	26	na	ns
Cadmium	NE	ND (<0.357)	0.173 J	ND (<0.186)	na	ns
Chromium	NE	13.8	16.1	49 B	na	ns
Lead	250	18.2	10	8.46	na	ns
Mercury	15	0.0217	ND (<0.0194)	0.0272	na	ns
Selenium	NE	ND (0.893)	0.676 J	1.48	na	ns
Silver	NE	ND (<0.179)	0.0438 BJ	ND (<0.0929)	na	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

NE = not established

B = Analyte detected in associated Method Blank

J = Estimated value

D = Dilution was required

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.



Table 5 - Laboratory Data for Soil - November 2017  
Metals in soil by EPA Method 6020/7421

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-33-12.5'	Sample ID: TC-SB-33-15'	Sample ID: TC-SB-34-7.5'	Sample ID: TC-SB-34-10'	Sample ID: TC-SB-34-13'	Sample ID: TC-SB-34-15'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 10:45	Time: 10:55	Time: 9:40	Time: 9:50	Time: 10:00	Time: 10:10
		Depth: 12.5'	Depth: 15'	Depth: 7.5'	Depth: 10'	Depth: 10'	Depth: 15'
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Arsenic	20	ns	ns	na	na	na	5.41
Barium	NE	ns	ns	na	na	na	21.6
Cadmium	NE	ns	ns	na	na	na	0.0476 J
Chromium	NE	ns	ns	na	na	na	37.8 B
Lead	250	ns	ns	na	na	na	6.91
Mercury	15	ns	ns	na	na	na	0.0173
Selenium	NE	ns	ns	na	na	na	1.61
Silver	NE	ns	ns	na	na	na	0.0256 BJ

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

NE = not established

B = Analyte detected in associated Method Blank

J = Estimated value

D = Dilution was required

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.

Table 5 - Laboratory Data for Soil - November 2017  
 Metals in soil by EPA Method 6020/7421

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-35-5'	Sample ID: TC-SB-35-7.5'	Sample ID: TC-SB-35-10'	Sample ID: TC-SB-35-15'
		Date: 11/7/2017	Date: 11/7/2017	Date: 11/7/2017	Date: 11/7/2017
		Time: 11:10	Time: 11:15	Time: 11:20	Time: 11:30
		Depth: 5'	Depth: 7.5'	Depth: 10'	Depth: 15'
		Comments:	Comments:	Comments:	Comments:
Arsenic	20	10.8	ns	4.19	ns
Barium	NE	1,580 D	ns	32.5	ns
Cadmium	NE	2.26	ns	0.299 J	ns
Chromium	NE	67.8	ns	17.5	ns
Lead	250	<b>256 D</b>	ns	137	ns
Mercury	15	0.198	ns	0.0529	ns
Selenium	NE	1.16	ns	0.596 J	ns
Silver	NE	0.205	ns	0.0823 BJ	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on Ecology's October 17, 2017 email

NE = not established

B = Analyte detected in associated Method Blank

J = Estimated value

D = Dilution was required

na = not analyzed

ns = no sample (sample attempted but no recovery)

**Bold** = concentration exceeds remediation level.

Table 6. Laboratory Data for Soil Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-27-3'	Sample ID: TC-SB-27-7.5'	Sample ID: Field Dup #2 (TC-SB-27-7.5')	Sample ID: TC-SB-27-10'	Sample ID: TC-SB-27-15'	Sample ID: TC-SB-28-7.5'	Sample ID: TC-SB-28-10'	Sample ID: TC-SB-28-13'	
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 15:50	Time: 16:00	Time: 16:00	Time: 16:15	Time: 16:30	Time: 15:00	Time: 15:10	Time: 15:20	
		Depth: 3'	Depth: 7.5'	Depth: 7.5'	Depth: 10'	Depth: 15'	Depth: 7.5'	Depth: 10'	Depth: 13'	
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	
Acenaphthene	NE	ND (<0.0224)	0.089	0.0857	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Acenaphthylene	NE	ND (<0.0224)	ND (<0.039)	ND (<0.0419)	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Anthracene	NE	ND (<0.0224)	0.0896	0.0971	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Benzo(a)anthracene	TEQ	ND (<0.0224)	0.309	0.368	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
benzo(a)pyrene	11.4	0.0225	0.304	0.35	ND (<0.0403)	ND (<0.0281)	0.126	ND (<0.0241)	na	
benzo(b)fluoranthene	TEQ	ND (<0.0224)	0.26	0.249	ND (<0.0403)	ND (<0.0281)	0.0414	ND (<0.0241)	na	
benzo(k)fluoranthene	TEQ	ND (<0.0224)	0.256	0.298	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Chrysene	TEQ	0.0297	0.513 Q	0.538	ND (<0.0403)	ND (<0.0281)	0.0828 Q	ND (<0.0241)	na	
Dibenzo(a,h)anthracene	TEQ	ND (<0.0224)	0.0773	0.0602	ND (<0.0403)	ND (<0.0281)	0.034	ND (<0.0241)	na	
Indeno(1,2,3-cd)pyrene	TEQ	ND (<0.0224)	0.157 Q	0.121	ND (<0.0403)	ND (<0.0281)	0.0408	ND (<0.0241)	na	
Benzo(g,h,i)perylene	NE	ND (<0.0224)	0.218	0.147 Q	ND (<0.0403)	ND (<0.0281)	0.138	ND (<0.0241)	na	
Bis(2-ethylhexyl)phthalate	NE	ND (<0.0224)	ND (<0.039)	ND (<0.0419)	0.0459	ND (<0.0281)	0.0822	ND (<0.0241)	na	
Butyl benzyl phthalate	NE	ND (<0.0224)	ND (<0.039)	ND (<0.0419)	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Carbazole	NE	ND (<0.0224)	ND (<0.039)	ND (<0.0419)	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Dibenzofuran	NE	ND (<0.0224)	ND (<0.039)	ND (<0.0419)	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Diethyl phthalate	NE	ND (<0.0224)	ND (<0.039)	ND (<0.0419)	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Dimethyl phthalate	NE	ND (<0.0224)	ND (<0.039)	ND (<0.0419)	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Di-n-butyl phthalate	NE	ND (<0.0224)	0.172	0.172	0.824	ND (<0.0281)	0.0421	ND (<0.0241)	na	
Di-n-octyl phthalate	NE	ND (<0.0224)	ND (<0.039)	ND (<0.0419)	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Fluoranthene	NE	0.0354	0.869	0.879	0.176	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Fluorene	NE	ND (<0.0224)	0.0713	0.0861	ND (<0.0403)	ND (<0.0281)	0.0478	ND (<0.0241)	na	
Naphthalene	4	ND (<0.0224)	0.0487	0.115	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
1-Methylnaphthalene	28	ND (<0.0224)	0.071	0.0733	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
2-Methylnaphthalene	NE	ND (<0.0224)	0.064	0.077	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
2-Chloronaphthalene	NE	ND (<0.0224)	ND (<0.039)	ND (<0.0419)	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Pentachlorophenol	NE	ND (<0.0224)	ND (<0.039)	ND (<0.0419)	ND (<0.0403)	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Phenanthrene	NE	0.0256	0.705	0.774	0.493	ND (<0.0281)	ND (<0.0305)	ND (<0.0241)	na	
Pyrene	NE	0.048	1.03	1.01	ND (<0.0403)	ND (<0.0281)	0.071	ND (<0.0241)	na	
<b>TEQ Conversion for carcinogenic PAHs<sup>a</sup></b>										
Benzo(a)anthracene	TEQ	0.000224	0.0309	0.0368	ND (<0.00403)	ND (<0.00281)	0.00305	ND (<0.00241)	na	
benzo(a)pyrene	11.4	0.0225	0.304	0.35	ND (<0.0403)	ND (<0.0281)	0.126	ND (<0.0241)	na	
benzo(b)fluoranthene	TEQ	0.000224	0.0026	0.0249	ND (<0.00403)	ND (<0.00281)	0.00414	ND (<0.00241)	na	
benzo(k)fluoranthene	TEQ	0.000224	0.00256	0.0298	ND (<0.00403)	ND (<0.00281)	0.00305	ND (<0.00241)	na	
Chrysene	TEQ	0.000297	0.000513	0.00538	ND (<0.000403)	ND (<0.000281)	0.000828	ND (<0.000241)	na	
Dibenzo(a,h)anthracene	TEQ	0.000224	0.000773	0.00602	ND (<0.00403)	ND (<0.00281)	0.0034	ND (<0.00241)	na	
Indeno(1,2,3-cd)pyrene	TEQ	0.000224	0.00157	0.0121	ND (<0.00403)	ND (<0.00281)	0.00408	ND (<0.00241)	na	
<b>TTEC<sup>b</sup></b>	--	<b>0.0228</b>	<b>0.3425</b>	<b>0.4650</b>	--	--	<b>0.1384</b>	--	na	
<b>TTEC<sup>c</sup></b>		<b>0.0239</b>					<b>0.1445</b>			

**Notes:**

All results expressed in milligrams per kilogram (mg/kg), converted from µg/Kd-dry weight

\* based on Ecology's October 17, 2017 email

ND (value) = Not detected above Laboratory Method Reporting Limit (Practical Quantitation Limit-PQL).

Q = Indicates analyte with initial or continuing calibration outside acceptance criteria.

na = not analyzed

ns = no sample (sample attempted but no recovery)

<sup>a</sup> = TEQ values calculated using Ecology's published guidance "Evaluating the Toxicity and Assessing the Carcinogenic Risk of Environmental Mixtures" using the following Toxicity Equivalency Factors".

Benzo(a)anthracene	0.1
benzo(a)pyrene	1
benzo(b)fluoranthene	0.1
benzo(k)fluoranthene	0.1
Chrysene	0.01
Dibenzo(a,h)anthracene	0.1
Indeno(1,2,3-cd)pyrene	0.1

<sup>b</sup> = **TTEC Bold** = total toxicity equivalent concentration (TTEC) based on detected values only.

<sup>c</sup> = **TTEC Bold** = total toxicity equivalent concentration (TTEC) with non-detected values.

Table 6. Laboratory Data for Soil  
Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-28-15'	Sample ID: TC-SB-29-3'	Sample ID: TC-SB-29-7.5'	Sample ID: TC-SB-29-10'	Sample ID: TC-SB-29-15'	Sample ID: TC-SB-30-3'	Sample ID: TC-SB-30-7.5'	Sample ID: TC-SB-30-10'	Sample ID: TC-SB-30-15'	Sample ID: TC-SB-31-7.5'	
		Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 15:30	Time: 14:10	Time: 14:30	Time: 14:40	Time: 14:50	Time: 13:35	Time: 13:45	Time: 13:55	Time: 14:00	Time: 13:00	
		Depth: 15'	Depth: 3'	Depth: 7.5'	Depth: 10'	Depth: 15'	Depth: 3'	Depth: 7.5'	Depth: 10'	Depth: 15'	Depth: 7.5'	
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	
Acenaphthene	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Acenaphthylene	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Anthracene	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Benzo(a)anthracene	TEQ	ND (<0.0287)	0.0329	ND (<0.0266)	0.124	ND (<0.0331)	0.0238	0.0588	ND (<0.0418)	ND (<0.0248)	na	
benzo(a)pyrene	11.4	ND (<0.0287)	0.0503	ND (<0.0266)	0.124	ND (<0.0331)	0.0345	0.0667	ND (<0.0418)	ND (<0.0248)	na	
benzo(b)fluoranthene	TEQ	ND (<0.0287)	0.033	ND (<0.0266)	0.0688	ND (<0.0331)	0.0317	0.0588	ND (<0.0418)	ND (<0.0248)	na	
benzo(k)fluoranthene	TEQ	ND (<0.0287)	0.0375	ND (<0.0266)	0.0895	ND (<0.0331)	0.0289	0.0738	ND (<0.0418)	ND (<0.0248)	na	
Chrysene	TEQ	ND (<0.0287)	0.0526 Q	ND (<0.0266)	0.159 Q	ND (<0.0331)	0.0425	0.0792 Q	ND (<0.0418)	ND (<0.0248)	na	
Dibenzo(a,h)anthracene	TEQ	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Indeno(1,2,3-cd)pyrene	TEQ	ND (<0.0287)	0.0376	ND (<0.0266)	0.0535	ND (<0.0331)	0.0243	0.0395	ND (<0.0418)	ND (<0.0248)	na	
Benzo(g,h,i)perylene	NE	ND (<0.0287)	0.0502	ND (<0.0266)	0.0741	ND (<0.0331)	0.0312	0.0447	ND (<0.0418)	ND (<0.0248)	na	
Bis(2-ethylhexyl)phthalate	NE	ND (<0.0287)	0.101	0.0276	0.0748	0.101	ND (<0.0331)	0.0374	0.059	0.177	na	
Butyl benzyl phthalate	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	0.0516	0.0777	ND (<0.0248)	na	
Carbazole	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Dibenzofuran	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Diethyl phthalate	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Dimethyl phthalate	NE	ND (<0.0287)	0.0295	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Di-n-butyl phthalate	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	0.417	0.400	ND (<0.0248)	na	
Di-n-octyl phthalate	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Fluoranthene	NE	ND (<0.0287)	0.0749	ND (<0.0266)	0.216	0.0479	0.0546	0.0922	0.105	ND (<0.0248)	na	
Fluorene	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Naphthalene	4	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	0.0525	0.0378	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
1-Methylnaphthalene	28	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
2-Methylnaphthalene	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
2-Chloronaphthalene	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Pentachlorophenol	NE	ND (<0.0287)	ND (<0.0212)	ND (<0.0266)	ND (<0.0325)	ND (<0.0331)	ND (<0.0228)	ND (<0.0288)	ND (<0.0418)	ND (<0.0248)	na	
Phenanthrene	NE	ND (<0.0287)	0.0276	ND (<0.0266)	0.125	0.0413	ND (<0.0228)	0.0333	ND (<0.0418)	ND (<0.0248)	na	
Pyrene	NE	ND (<0.0287)	0.0854	ND (<0.0266)	0.249	0.0494	0.0586	0.117	ND (<0.0418)	ND (<0.0248)	na	
<b>TEQ Conversion for carcinogenic PAHs<sup>a</sup></b>												
Benzo(a)anthracene	TEQ	ND (<0.00287)	0.00329	ND (<0.00266)	0.0124	ND (<0.00331)	0.00238	0.00588	ND (<0.00418)	ND (<0.00248)	na	
benzo(a)pyrene	11.4	ND (<0.0287)	0.0503	ND (<0.0266)	0.124	ND (<0.0331)	0.0345	0.0667	ND (<0.0418)	ND (<0.0248)	na	
benzo(b)fluoranthene	TEQ	ND (<0.00287)	0.0033	ND (<0.00266)	0.00688	ND (<0.00331)	0.00317	0.00588	ND (<0.00418)	ND (<0.00248)	na	
benzo(k)fluoranthene	TEQ	ND (<0.00287)	0.00375	ND (<0.00266)	0.00895	ND (<0.00331)	0.00289	0.00738	ND (<0.00418)	ND (<0.00248)	na	
Chrysene	TEQ	ND (<0.000287)	0.000526	ND (<0.000266)	0.00159	ND (<0.000331)	0.000425	0.000792	ND (<0.000418)	ND (<0.000248)	na	
Dibenzo(a,h)anthracene	TEQ	ND (<0.00287)	0.00212	ND (<0.00266)	0.00325	ND (<0.00331)	0.00228	0.00288	ND (<0.00418)	ND (<0.00248)	na	
Indeno(1,2,3-cd)pyrene	TEQ	ND (<0.00287)	0.061166	ND (<0.00266)	0.00535	ND (<0.00331)	0.00243	0.00395	ND (<0.00418)	ND (<0.00248)	na	
<b>TTEC<sup>b</sup></b>	--	--	<b>0.1223</b>	--	<b>0.1576</b>	--	<b>0.0458</b>	<b>0.0906</b>	--	--	na	
<b>TTEC<sup>c</sup></b>			<b>0.1245</b>		<b>0.1624</b>		<b>0.0481</b>	<b>0.0935</b>				

**Notes:**  
 All results expressed in milligrams per kilogram (mg/kg), converted from µg/Kd-dry weight  
 \* based on Ecology's October 17, 2017 email  
 ND (value) = Not detected above Laboratory Method Reporting Limit (Practical Quantitation Limit-PQL).  
 Q = Indicates analyte with initial or continuing calibration outside acceptance criteria.  
 na = not analyzed  
 ns = no sample (sample attempted but no recovery)  
<sup>a</sup> = TEQ values calculated using Ecology's published guidance "Evaluating the Toxicity and Assessing the Carcinogenic Risk of Environmental Mixtures" using the following Toxicity Equivalency Factors".

Benzo(a)anthracene	0.1
benzo(a)pyrene	1
benzo(b)fluoranthene	0.1
benzo(k)fluoranthene	0.1
Chrysene	0.01
Dibenzo(a,h)anthracene	0.1
Indeno(1,2,3-cd)pyrene	0.1

<sup>b</sup> = TTEC Bold = total toxicity equivalent concentration (TTEC) based on detected values only.  
<sup>c</sup> = TTEC Bold = total toxicity equivalent concentration (TTEC) with non-detected values.

Table 6. Laboratory Data for Soil  
Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-31-10'	Sample ID: TC-SB-31-12.5'	Sample ID: TC-SB-31-15'	Sample ID: TC-SB-32-3'	Sample ID: TC-SB-32-7.5'	Sample ID: Field Dup #1 (TC-SB-32-7.5')	Sample ID: TC-SB-32-10'	Sample ID: TC-SB-32-15'	Sample ID: TC-SB-33-8'	Sample ID: TC-SB-33-10'	
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 13:10	Time: 13:20	Time: 13:30	Time: 12:30	Time: 11:30	Time: 11:30	Time: 11:30	Time: 11:40	Time: 11:50	Time: 10:30	Time: 10:40
		Depth: 10'	Depth: 12.5'	Depth: 15'	Depth: 3'	Depth: 7.5'	Depth: 7.5'	Depth: 7.5'	Depth: 10'	Depth: 15'	Depth: 8'	Depth: 10'
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	
Acenaphthene	NE	na	na	na	0.0464	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Acenaphthylene	NE	na	na	na	ND (<0.0278)	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Anthracene	NE	na	na	na	0.0659	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Benzo(a)anthracene	TEQ	na	na	na	0.298	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
benzo(a)pyrene	11.4	na	na	na	0.279	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
benzo(b)fluoranthene	TEQ	na	na	na	0.273	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
benzo(k)fluoranthene	TEQ	na	na	na	0.253	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Chrysene	TEQ	na	na	na	0.361 Q	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Dibenzo(a,h)anthracene	TEQ	na	na	na	0.0806	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Indeno(1,2,3-cd)pyrene	TEQ	na	na	na	0.149 Q	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Benzo(g,h,i)perylene	NE	na	na	na	0.157	ND (<0.0315) Q	ND (<0.0430) Q	ND (<0.0549) Q	ND (<0.0219) Q	na	ns	
Bis(2-ethylhexyl)phthalate	NE	na	na	na	0.114	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Butyl benzyl phthalate	NE	na	na	na	ND (<0.0278)	0.043	0.0723	ND (<0.0549)	ND (<0.0219)	na	ns	
Carbazole	NE	na	na	na	ND (<0.0278)	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Dibenzofuran	NE	na	na	na	ND (<0.0278)	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Diethyl phthalate	NE	na	na	na	ND (<0.0278)	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Dimethyl phthalate	NE	na	na	na	ND (<0.0278)	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Di-n-butyl phthalate	NE	na	na	na	ND (<0.0278)	0.116	0.379	ND (<0.0549)	ND (<0.0219)	na	ns	
Di-n-octyl phthalate	NE	na	na	na	ND (<0.0278)	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Fluoranthene	NE	na	na	na	0.635	ND (<0.0315)	ND (<0.0430)	0.138	ND (<0.0219)	na	ns	
Fluorene	NE	na	na	na	0.0393	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Naphthalene	4	na	na	na	ND (<0.0278)	ND (<0.0315)	ND (<0.0430)	0.666	ND (<0.0219)	na	ns	
1-Methylnaphthalene	28	na	na	na	ND (<0.0278)	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
2-Methylnaphthalene	NE	na	na	na	ND (<0.0278)	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
2-Chloronaphthalene	NE	na	na	na	ND (<0.0278)	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Pentachlorophenol	NE	na	na	na	ND (<0.0278)	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
Phenanthrene	NE	na	na	na	0.377	ND (<0.0315)	ND (<0.0430)	0.0567	ND (<0.0219)	na	ns	
Pyrene	NE	na	na	na	0.539	ND (<0.0315)	ND (<0.0430)	0.107	ND (<0.0219)	na	ns	
<b>TEQ Conversion for carcinogenic PAHs<sup>a</sup></b>												
Benzo(a)anthracene	TEQ	na	na	na	0.0298	ND (<0.00315)	ND (<0.00430)	ND (<0.00549)	ND (<0.00219)	na	ns	
benzo(a)pyrene	11.4	na	na	na	0.279	ND (<0.0315)	ND (<0.0430)	ND (<0.0549)	ND (<0.0219)	na	ns	
benzo(b)fluoranthene	TEQ	na	na	na	0.0273	ND (<0.00315)	ND (<0.00430)	ND (<0.00549)	ND (<0.00219)	na	ns	
benzo(k)fluoranthene	TEQ	na	na	na	0.0253	ND (<0.00315)	ND (<0.00430)	ND (<0.00549)	ND (<0.00219)	na	ns	
Chrysene	TEQ	na	na	na	0.00361	ND (<0.000315)	ND (<0.000430)	ND (<0.000549)	ND (<0.000219)	na	ns	
Dibenzo(a,h)anthracene	TEQ	na	na	na	0.00806	ND (<0.00315)	ND (<0.00430)	ND (<0.00549)	ND (<0.00219)	na	ns	
Indeno(1,2,3-cd)pyrene	TEQ	na	na	na	0.0149	ND (<0.00315)	ND (<0.00430)	ND (<0.00549)	ND (<0.00219)	na	ns	
<b>TTEC<sup>b</sup></b>	--	na	na	na	<b>0.3880</b>	na	--	--	--	na	na	
<b>TTEC<sup>c</sup></b>												

**Notes:**

All results expressed in milligrams per kilogram (mg/kg), converted from µg/Kd-dry weight

\* based on Ecology's October 17, 2017 email

ND (value) = Not detected above Laboratory Method Reporting Limit (Practical Quantitation Limit-PQL).

Q = Indicates analyte with initial or continuing calibration outside acceptance criteria.

na = not analyzed

ns = no sample (sample attempted but no recovery)

<sup>a</sup> = TEQ values calculated using Ecology's published guidance "Evaluating the Toxicity and Assessing the Carcinogenic Risk of Environmental Mixtures" using the following Toxicity Equivalency Factors<sup>a</sup>:

Benzo(a)anthracene	0.1
benzo(a)pyrene	1
benzo(b)fluoranthene	0.1
benzo(k)fluoranthene	0.1
Chrysene	0.01
Dibenzo(a,h)anthracene	0.1
Indeno(1,2,3-cd)pyrene	0.1

<sup>b</sup> = TTEC Bold = total toxicity equivalent concentration (TTEC) based on detected values only.

<sup>c</sup> = TTEC Bold = total toxicity equivalent concentration (TTEC) with non-detected values.

Table 6. Laboratory Data for Soil Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270

Analyte	Soil Remediation Level (mg/kg)*	Sample ID: TC-SB-33-12.5'	Sample ID: TC-SB-33-15'	Sample ID: TC-SB-34-7.5'	Sample ID: TC-SB-34-10'	Sample ID: TC-SB-34-13'	Sample ID: TC-SB-34-15'	Sample ID: TC-SB-35-5'	Sample ID: TC-SB-35-7.5'	Sample ID: TC-SB-35-10'	Sample ID: TC-SB-35-15'
		Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/7/2017	Date: 11/8/2017	Date: 11/8/2017	Date: 11/8/2017
		Time: 10:50	Time: 10:55	Time: 9:40	Time: 9:50	Time: 10:00	Time: 10:10	Time: 11:10	Time: 11:15	Time: 11:20	Time: 11:25
		Depth: 12.5'	Depth: 15'	Depth: 7.5'	Depth: 10'	Depth: 13'	Depth: 15'	Depth: 5'	Depth: 7.5'	Depth: 10'	Depth: 15'
		Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Acenaphthene	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Acenaphthylene	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Anthracene	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Benzo(a)anthracene	TEQ	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
benzo(a)pyrene	11.4	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
benzo(b)fluoranthene	TEQ	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
benzo(k)fluoranthene	TEQ	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Chrysene	TEQ	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Dibenzo(a,h)anthracene	TEQ	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Indeno(1,2,3-cd)pyrene	TEQ	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Benzo(g,h,i)perylene	NE	ns	ns	na	na	na	na	ND (<0.0385) Q	ns	ND (<0.0508) Q	ns
Bis(2-ethylhexyl)phthalate	NE	ns	ns	na	na	na	na	0.301	ns	0.662	ns
Butyl benzyl phthalate	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Carbazole	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Dibenzofuran	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Diethyl phthalate	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Dimethyl phthalate	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Di-n-butyl phthalate	NE	ns	ns	na	na	na	na	0.101	ns	ND (<0.0508)	ns
Di-n-octyl phthalate	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Fluoranthene	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	0.103	ns
Fluorene	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Naphthalene	4	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
1-Methylnaphthalene	28	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
2-Methylnaphthalene	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
2-Chloronaphthalene	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Pentachlorophenol	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
Phenanthrene	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	0.0727	ns
Pyrene	NE	ns	ns	na	na	na	na	ND (<0.0385)	ns	0.0871	ns
<b>TEQ Conversion for carcinogenic PAHs<sup>a</sup></b>											
Benzo(a)anthracene	TEQ	ns	ns	na	na	na	na	ND (<0.00385)	ns	ND (<0.00508)	ns
benzo(a)pyrene	11.4	ns	ns	na	na	na	na	ND (<0.0385)	ns	ND (<0.0508)	ns
benzo(b)fluoranthene	TEQ	ns	ns	na	na	na	na	ND (<0.00385)	ns	ND (<0.00508)	ns
benzo(k)fluoranthene	TEQ	ns	ns	na	na	na	na	ND (<0.00385)	ns	ND (<0.00508)	ns
Chrysene	TEQ	ns	ns	na	na	na	na	ND (<0.000385)	ns	ND (<0.000508)	ns
Dibenzo(a,h)anthracene	TEQ	ns	ns	na	na	na	na	ND (<0.00385)	ns	ND (<0.00508)	ns
Indeno(1,2,3-cd)pyrene	TEQ	ns	ns	na	na	na	na	ND (<0.00385)	ns	ND (<0.00508)	ns
<b>TTEC<sup>b</sup></b>	--	na	na	na	na	na	na	--	na	--	na
<b>TTEC<sup>c</sup></b>											

**Notes:**  
 All results expressed in milligrams per kilogram (mg/kg), converted from µg/Kd-dry weight  
 \* based on Ecology's October 17, 2017 email  
 ND (value) = Not detected above Laboratory Method Reporting Limit (Practical Quantitation Limit-PQL).  
 Q = Indicates analyte with initial or continuing calibration outside acceptance criteria.  
 na = not analyzed  
 ns = no sample (sample attempted but no recovery)  
<sup>a</sup> = TEQ values calculated using Ecology's published guidance "Evaluating the Toxicity and Assessing the Carcinogenic Risk of Environmental Mixtures" using the following Toxicity Equivalency Factors".

Benzo(a)anthracene	0.1
benzo(a)pyrene	1
benzo(b)fluoranthene	0.1
benzo(k)fluoranthene	0.1
Chrysene	0.01
Dibenzo(a,h)anthracene	0.1
Indeno(1,2,3-cd)pyrene	0.1

<sup>b</sup> = **TTEC Bold** = total toxicity equivalent concentration (TTEC) based on detected values only.  
<sup>c</sup> = **TTEC Bold** = total toxicity equivalent concentration (TTEC) with non-detected values.

**Appendix A    Adjacent Ameron Cleanup Levels (CULS – TABLE 3;  
from Ameron’s Final Cleanup Action Plan, Dated November 21, 2014)**

**TABLE 3**  
**SOIL AND GROUNDWATER CLEANUP LEVELS**  
**NORTH MARINA AMERON/HULBERT SITE**  
**PORT OF EVERETT, WASHINGTON**

	Proposed Soil Cleanup Level (mg/kg)	Proposed Groundwater Cleanup Level (µg/L)
Antimony	32	--
Arsenic	20	5
Copper	--	3.1
Lead	250	--
cPAH TEQ	0.14	--
bis(2-Ethylhexyl)phthalate	--	2.2
1,1-dichloroethylene	--	3.2
TPH-Dx	2,000	500
TPH-Oil	--	500
TPH-Gx	100	--

---

-- = Constituent is not a contaminant of concern for this media.

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

cPAH = carcinogenic polycyclic aromatic hydrocarbons

TEQ = Toxicity Equivalency Factor

TPH-Dx = total petroleum hydrocarbons - diesel range

TPH-Oil = total petroleum hydrocarbons - oil range

TPH-Gx = total petroleum hydrocarbons - gasoline range



**Appendix B      Soil Analytical Data from TC System Borings SB-7,  
MW-7, and MW-7V (From Stantec's Draft July 22, 2016 RIFs)**





Table 21. Laboratory Data for Soil Hydrocarbons by NWTPH Methods

Diesel range petroleum hydrocarbons by NWTPH-Dx				Sample ID: TC-MW-7-1'	Sample ID: TC-MW-7-2'	Sample ID: TC-MW-7-3'	Sample ID: TC-MW-8-1'	Sample ID: TC-MW-8-2'	Sample ID: TC-MW-8-3'
Analyte	Soil MRL mg/kg	Soil MDL mg/kg	Preliminary Screening Level (mg/kg)*	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/28/2011	Date: 4/28/2011	Date: 4/28/2011
				Time: 10:00	Time: 10:05	Time: 10:10	Time: 12:00	Time: 12:07	Time: 12:10
				Depth: 1'	Depth: 2'	Depth: 3'	Depth: 1'	Depth: 2'	Depth: 3'
				Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Diesel (Fuel Oil)	20	9.6	2,000	ND (<21.8)	ns	ND (<23.2)	ND (<19.9)	ns	ns
Heavy Oil	50	16	2,000	1,170	ns	ND (<58) <sup>b</sup>	ND (<49.9)	ns	ns
Diesel Range Organics	25.1	lab	2,000	75.6	ns	ns	ns	ns	ns
Gasoline range petroleum hydrocarbons by NWTPH-Gx				Sample ID: TC-MW-7-1'	Sample ID: TC-MW-7-2'	Sample ID: TC-MW-7-3'	Sample ID: TC-MW-8-1'	Sample ID: TC-MW-8-2'	Sample ID: TC-MW-8-3'
Analyte	Soil MRL mg/kg	Soil MDL mg/kg	Preliminary Screening Level (mg/kg)*	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/28/2011	Date: 4/28/2011	Date: 4/28/2011
				Time: 10:00	Time: 10:05	Time: 10:10	Time: 12:00	Time: 12:07	Time: 12:10
				Depth: 1'	Depth: 2'	Depth: 3'	Depth: 1'	Depth: 2'	Depth: 3'
				Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Gasoline	5.0	0.405	100 <sup>a</sup>	ND (<6.09)	ns	ns	ns	ns	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on April 1, 2011 updated CLARC value

MRL = Laboratory Method Reporting Limit

MDL = Laboratory Method Detection Limit

H = Holding time for sample preparation or analysis exceeded

J = Estimated value

ns = not sampled

**Bold** = Non-detection value of analyte in exceedance of preliminary :

Analyte detected above MRL and Preliminary Screening Level

a = No benzene was detected in any sample as part of this sampling

b = Cresote detected in sample TC-MW-7-3' at a concentration of 15;

c = Creosote detected in sample TC-SB-6-6'-7' at a concentration of 4

d = Creosote detected in sample TC-SB-6-9'-10' at a concentration of

**Table 21. Laboratory Data for Soil Hydrocarbons by NWTPH Methods**

Diesel range petroleum hydrocarbons by NWTPH-Dx				Sample ID: TC-SB-6-9'-10'	Sample ID: TC-SB-7-3'-4'	Sample ID: TC-SB-7-6'-7'	Sample ID: TC-SB-7-9'-10'	Sample ID: TC-SB-8-3'-4'	Sample ID: TC-SB-8-6'-7'
Analyte	Soil MRL mg/kg	Soil MDL mg/kg	Preliminary Screening Level (mg/kg)*	Date: 10/17/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/10	Date: 10/17/12	Date: 10/17/12
				Time: 8:45	Time: 9:30	Time: 9:35	Time: 9:40	Time: 10:35	Time: 10:40
				Depth: 9'-10'	Depth: 3'-4'	Depth: 6'-7'	Depth: 9'-10'	Depth: 3'-4'	Depth: 6'-7'
				Comments: H	Comments:	Comments:	Comments: H	Comments:	Comments:
Diesel (Fuel Oil)	20	9.6	2,000	ND (<4.7) H	ND (<7.53)	ND (<4.02)	ND (<4.51) H	ns	ND (<5.76)
Heavy Oil	50	16	2,000	ND (<10.3) H <sup>a</sup>	1,500	270	798 H	ns	135
Diesel Range Organics	25.1	lab	2,000	ns	ns	ns	ns	ns	ns
Gasoline range petroleum hydrocarbons by NWTPH-Gx				Sample ID: TC-SB-6-9'-10'	Sample ID: TC-SB-7-3'-4'	Sample ID: TC-SB-7-6'-7'	Sample ID: TC-SB-7-9'-10'	Sample ID: TC-SB-8-3'-4'	Sample ID: TC-SB-8-6'-7'
Analyte	Soil MRL mg/kg	Soil MDL mg/kg	Preliminary Screening Level (mg/kg)*	Date: 10/17/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/10	Date: 10/17/12	Date: 10/17/12
				Time: 8:45	Time: 9:30	Time: 9:35	Time: 9:40	Time: 10:35	Time: 10:40
				Depth: 9'-10'	Depth: 3'-4'	Depth: 6'-7'	Depth: 9'-10'	Depth: 3'-4'	Depth: 6'-7'
				Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Gasoline	5.0	0.405	100 <sup>a</sup>	ns	ns	ns	ns	ns	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on April 1, 2011 updated CLARC value

MRL = Laboratory Method Reporting Limit

MDL = Laboratory Method Detection Limit

H = Holding time for sample preparation or analysis exceeded

J = Estimated value

ns = not sampled

**Bold** = Non-detection value of analyte in exceedance of preliminary :

Analyte detected above MRL and Preliminary Screening Level

a = No benzene was detected in any sample as part of this sampling

b = Cresote detected in sample TC-MW-7-3' at a concentration of 15;

c = Creosote detected in sample TC-SB-6-6'-7' at a concentration of 4

d = Creosote detected in sample TC-SB-6-9'-10' at a concentration of

**Table 22. Laboratory Data for Soil  
Polychlorinated biphenyls (PCBs) by EPA Method 8082**

Analyte	Soil MRL mg/kg	Soil MDL mg/kg	Preliminary Screening Level (mg/kg)*	Sample ID: TC-MW-5-2'	Sample ID: TC-MW-6-1'	Sample ID: TC-MW-6-2'	Sample ID: TC-MW-6-3'	Sample ID: TC-MW-7-1'	Sample ID: TC-MW-7-2'	Sample ID: TC-MW-7-3'
				Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011
				Time: 14:40	Time: 14:55	Time: 15:00	Time: 15:05	Time: 10:00	Time: 10:05	Time: 10:10
				Depth: 2'	Depth: 1'	Depth: 2'	Depth: 3'	Depth: 1'	Depth: 2'	Depth: 3'
Comments:				Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Aroclor 1016	0.1	0.051	Total PCBs	ns	0.219	ns	ns	ND (<0.129)	ns	ns
Aroclor 1221	0.1	0.043	Total PCBs	ns	ND (<0.0977)	ns	ns	ND (<0.129)	ns	ns
Aroclor 1232	0.1	0.008	Total PCBs	ns	ND (<0.0977)	ns	ns	ND (<0.129)	ns	ns
Aroclor 1242	0.1	0.067	Total PCBs	ns	ND (<0.0977)	ns	ns	ND (<0.129)	ns	ns
Aroclor 1248	0.1	0.044	Total PCBs	ns	ND (<0.0977)	ns	ns	ND (<0.129)	ns	ns
Aroclor 1254	0.1	0.088	Total PCBs	ns	0.219	ns	ns	0.193	ns	ns
Aroclor 1260	0.1	0.051	Total PCBs	ns	ND (<0.0977)	ns	ns	ND (<0.129)	ns	ns
Total PCBs	0.1	0.088	1	ns	ND (<0.0977)	ns	ns	ND (<0.129)	ns	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on April 1, 2011 updated CLARC value

MRL = Laboratory Method Reporting Limit

MDL = Laboratory Method Detection Limit

H = Holding time for sample preparation or analysis exceeded

J = Estimated value

ns = not sampled

**ND** = Non-detection value of analyte in exceedance of prelim

**Table 22. Laboratory Data for Soil  
Polychlorinated biphenyls (PCBs) by EPA Method 8082**

Analyte	Soil MRL mg/kg	Soil MDL mg/kg	Preliminary Screening Level (mg/kg)*	Sample ID: TC-SB-6-3'-4'	Sample ID: TC-SB-6-6'-7'	Sample ID: TC-SB-6-9'-10'	Sample ID: TC-SB-7-3'-4'	Sample ID: TC-SB-7-6'-7'	Sample ID: TC-SB-7-9'-10'	Sample ID: TC-SB-8-3'-4'
				Date: 10/17/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/10	Date: 10/17/12
				Time: 8:35	Time: 8:40	Time: 8:45	Time: 9:30	Time: 9:35	Time: 9:40	Time: 10:35
				Depth: 3'-4'	Depth: 6'-7'	Depth: 9'-10'	Depth: 3'-4'	Depth: 6'-7'	Depth: 9'-10'	Depth: 3'-4'
				Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Aroclor 1016	0.1	0.051	Total PCBs	ns	ND (<0.0170)	ns	ND (<0.0115)	ND (<0.0127)	ns	ND (<0.00915)
Aroclor 1221	0.1	0.043	Total PCBs	ns	ND (<0.0170)	ns	ND (<0.0115)	ND (<0.0127)	ns	ND (<0.00915)
Aroclor 1232	0.1	0.008	Total PCBs	ns	ND (<0.0170)	ns	ND (<0.0115)	ND (<0.0127)	ns	ND (<0.00915)
Aroclor 1242	0.1	0.067	Total PCBs	ns	ND (<0.0171)	ns	ND (<0.0115)	ND (<0.0127)	ns	ND (<0.00915)
Aroclor 1248	0.1	0.044	Total PCBs	ns	ND (<0.0108)	ns	ND (<0.00729)	ND (<0.00801)	ns	ND (<0.00579)
Aroclor 1254	0.1	0.088	Total PCBs	ns	ND (<0.0144)	ns	ND (<0.00978)	ND (<0.0107)	ns	0.113
Aroclor 1260	0.1	0.051	Total PCBs	ns	ND (<0.0163)	ns	ND (<0.0111)	ND (<0.0122)	ns	ND (<0.00878)
Total PCBs	0.1	0.088	1	ns	ND (<0.0170)	ns	ND (<0.0115)	ND (<0.0127)	ns	0.113

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on April 1, 2011 updated CLARC value

MRL = Laboratory Method Reporting Limit

MDL = Laboratory Method Detection Limit

H = Holding time for sample preparation or analysis exceeded

J = Estimated value

ns = not sampled

**ND** = Non-detection value of analyte in exceedance of prelim

**Table 23. Laboratory Data for Soil  
Metals in soil by EPA Method  
6020/200.8**

Analyte	Soil MRL mg/kg	Soil MDL mg/kg	Preliminary Screening Level (mg/kg)*	Sample ID: TC-MW-7-1'	Sample ID: TC-MW-7-2'	Sample ID: TC-MW-7-3'	Sample ID: TC-MW-8-1'	Sample ID: TC-MW-8-2'	Sample ID: TC-MW-8-3'
				Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/28/2011	Date: 4/28/2011	Date: 4/28/2011
				Time: 10:00	Time: 10:05	Time: 10:10	Time: 12:00	Time: 12:07	Time: 12:10
				Depth:	Depth:	Depth:	Depth: 1'	Depth:	Depth:
				Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Antimony	0.2	4.1	32	3.71	ns	9.96	0.341	1.61	1.45
Arsenic	0.1	93.7	20	34	ns	54.3	9.52	16.9	14
Beryllium	0.2	21.4	160	0.495	ns	0.348	10.6	0.422	0.182
Cadmium	0.2	21.7	1.2	0.809	ns	1.48	0.479	0.439	0.261
Chromium	0.1	57.0	120,000	61.1	ns	49.7	45	42.1	22.5
Copper	0.2	36.0	36	256	ns	945	95.1	60.9	38
Lead	0.2	19.4	250	213	ns	555	25.5	121	33.2
Mercury	0.2	5.2	0.2	1.33	ns	4.85	<b>ND (&lt;0.272)</b>	<b>ND (&lt;0.244)</b>	<b>ND (&lt;0.257)</b>
Nickel	0.1	37.9	47.8	65.9	ns	45	129	47.9	29
Selenium	0.5	370.5	7.4	ND (<0.534)	ns	ND (<0.460)	5.97	ND (<0.513)	ND (<0.455)
Silver	0.1	3.6	400	ND (<0.107)	ns	0.103	ND (<0.106)	0.111	ND (<0.091)
Thallium	0.2	2.9	0.7	1.3	ns	2.41	0.414	0.819	ND (<0.182)
Zinc	0.4	114.2	100.8	244	ns	542	84.4	103	67.9

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on April 1, 2011 updated CLARC value

NE = not established

MRL = Laboratory Method Reporting Limit

MDL = Laboratory Method Detection Limit

H = Holding time for sample preparation or analysis exceeded

J = Estimated value

ns = not sampled

**Bold** = Non-detection value of analyte in exceedance of CLARC value



**Table 23. Laboratory Data for Soil  
Metals in soil by EPA Method  
6020/200.8**

Analyte	Soil MRL mg/kg	Soil MDL mg/kg	Preliminary Screening Level (mg/kg)*	Sample ID: TC-SB-6-3'-4'	Sample ID: TC-SB-6-6'-7'	Sample ID: TC-SB-6-9'-10'	Sample ID: TC-SB-7-3'-4'	Sample ID: TC-SB-7-6'-7'	Sample ID: TC-SB-7-9'-10'
				Date: 10/17/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/10
				Time: 8:35	Time: 8:40	Time: 8:45	Time: 9:30	Time: 9:35	Time: 9:40
				Depth: 3'-4'	Depth: 6'-7'	Depth: 9'-10'	Depth: 3'-4'	Depth: 6'-7'	Depth: 9'-10'
				Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Antimony	0.2	4.1	32	ns	ns	ns	ns	ns	ns
Arsenic	0.1	93.7	20	ns	9.96	ns	24.3	17.5	ns
Beryllium	0.2	21.4	160	ns	ns	ns	ns	ns	ns
Cadmium	0.2	21.7	1.2	ns	ns	ns	ns	ns	ns
Chromium	0.1	57.0	120,000	ns	ns	ns	ns	ns	ns
Copper	0.2	36.0	36	ns	50.7	133	98.9	58.2	51.0
Lead	0.2	19.4	250	ns	34.7	ns	81.0	27.9	ns
Mercury	0.2	5.2	0.2	ns	ns	ns	ns	ns	ns
Nickel	0.1	37.9	47.8	ns	ns	ns	ns	ns	ns
Selenium	0.5	370.5	7.4	ns	ns	ns	ns	ns	ns
Silver	0.1	3.6	400	ns	ns	ns	ns	ns	ns
Thallium	0.2	2.9	0.7	ns	ns	ns	ns	ns	ns
Zinc	0.4	114.2	100.8	ns	ns	ns	ns	ns	ns

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on April 1, 2011 updated CLARC value

NE = not established

MRL = Laboratory Method Reporting Limit

MDL = Laboratory Method Detection Limit

H = Holding time for sample preparation or analysis exceeded

J = Estimated value

ns = not sampled

**Bold** = Non-detection value of analyte in exceedance of CLARC

**Table 24. Laboratory Data for Soil  
Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270**

Analyte	Soil MRL mg/kg	Preliminary Screening Level (mg/kg)*	Sample ID: TC-MW-5-2'	Sample ID: TC-MW-6-1'	Sample ID: TC-MW-6-2'	Sample ID: TC-MW-6-3'	Sample ID: TC-MW-7-1'	Sample ID: TC-MW-7-2'	Sample ID: TC-MW-7-3'
			Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011
			Time: 14:40	Time: 14:55	Time: 15:00	Time: 15:05	Time: 10:00	Time: 10:05	Time: 10:10
			Depth: 2'	Depth: 1'	Depth: 2'	Depth: 3'	Depth: 1'	Depth: 2'	Depth: 3'
			Comments:	Comments:	Comments:	Comments:	Comments:	Comments:	Comments:
Acenaphthene	0.1	65.5	ns	ND (<0.104)	ns	ns	ND (<1.03)	ND (<0.107)	14.100
Acenaphthylene	0.1	0.1	ns	<b>ND (&lt;0.104)</b>	ns	ns	<b>ND (&lt;1.03)</b>	<b>ND (&lt;0.107)</b>	17.300
Anthracene	0.1	12,285.40	ns	ND (<0.104)	ns	ns	ND (<1.03)	0.617	157.000
Benzo(a)anthracene	0.08	TEQ	ns	<b>ND (&lt;0.0833)</b>	ns	ns	<b>ND (&lt;0.827)</b>	1.460	290.000
benzo(a)pyrene	0.08	TEQ	ns	<b>ND (&lt;0.0833)</b>	ns	ns	<b>ND (&lt;0.827)</b>	0.631	169.000
benzo(b)fluoranthene	0.08	TEQ	ns	<b>ND (&lt;0.0833)</b>	ns	ns	0.869	1.420	337.000
Benzo(g,h,i)perylene	0.08	0.08	ns	<b>ND (&lt;0.0833)</b>	ns	ns	<b>ND (&lt;0.827)</b>	0.400	61.900
benzo(k)fluoranthene	0.08	TEQ	ns	<b>ND (&lt;0.0833)</b>	ns	ns	0.858	1.300	333.000
Chrysene	0.08	TEQ	ns	<b>ND (&lt;0.0833)</b>	ns	ns	<b>ND (&lt;0.827)</b>	0.603	256.000
Dibenzo(a,h)anthracene	0.08	TEQ	ns	<b>ND (&lt;0.0833)</b>	ns	ns	<b>ND (&lt;0.827)</b>	0.135	19.500
Fluoranthene	0.1	88.9	ns	ND (<0.104)	ns	ns	ND (<1.03)	1.110	816.000
Fluorene	0.1	546.7	ns	ND (<0.104)	ns	ns	ND (<1.03)	ND (<0.107)	275.000
Indeno(1,2,3-cd)pyrene	0.08	TEQ	ns	<b>ND (&lt;0.0833)</b>	ns	ns	<b>ND (&lt;0.827)</b>	0.646	55.500
Naphthalene	0.1	138	ns	ND (<0.104)	ns	ns	ND (<1.03)	ND (<0.107)	157.000
Phenanthrene	0.1	0.1	ns	<b>ND (&lt;0.104)</b>	ns	ns	<b>ND (&lt;1.03)</b>	<b>ND (&lt;0.107)</b>	739.000
Pyrene	0.1	2,400	ns	ND (<0.104)	ns	ns	ND (<1.03)	1.590	792.000
TEQ <sup>a</sup>	--	--	--	0.0629	--	--	0.7144	1.1331	275.06

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on April 1, 2011 updated CLARC value

MRL = Laboratory Method Reporting Limit

H = Holding time for sample preparation or analysis exc

J = Estimated value

ns = not sampled

**Bold = Non-detection value of analyte in exceedance**

<sup>a</sup> = TEQ values calculated using Ecology's published gu Mixtures Using Toxicity Equivalency Factors." Available the detection limit was used for calculation of the TEQ.

**Table 24. Laboratory Data for Soil  
Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270**

Analyte	Soil MRL  mg/kg	Preliminary Screening Level (mg/kg)*	Sample ID: TC-SB-5-4'-5'	Sample ID: TC-SB-6-2'-3'	Sample ID: TC-SB-6-3'-4'	Sample ID: TC-SB-6-6'-7'	Sample ID: TC-SB-6-9'-10'	Sample ID: TC-SB-7-3'-4'	Sample ID: TC-SB-7-6'-7'
			Date: 10/16/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/12	Date: 10/17/12
			Time: 14:55	Time: 8:30	Time: 8:35	Time: 8:40	Time: 8:45	Time: 9:30	Time: 9:35
			Depth: 4'-5'	Depth: 2'-3'	Depth: 3'-4'	Depth: 6'-7'	Depth: 9'-10'	Depth: 3'-4'	Depth: 6'-7'
			Comments:	Comments:	Comments:	Comments:	Comments: H	Comments:	Comments:
Acenaphthene	0.1	65.5	ns	0.0104 (J)	ns	8.15	152 H	0.247	0.487
Acenaphthylene	0.1	0.1	ns	0.0264 (J)	ns	0.0828 (J)	2.24 H	0.0223 (J)	ND (<0.00106)
Anthracene	0.1	12,285.40	ns	0.0223 (J)	ns	1.87	89 H	0.0592 (J)	0.0511 (J)
Benzo(a)anthracene	0.08	TEQ	ns	0.0623 (J)	ns	1.16	24.6 H	0.113	0.0568 (J)
benzo(a)pyrene	0.08	TEQ	ns	0.1520	ns	0.380	6.6 H	0.141	0.0612 (J)
benzo(b)fluoranthene	0.08	TEQ	ns	0.193	ns	0.715	8.84 H	0.206	0.100
Benzo(g,h,i)perylene	0.08	0.08	ns	0.4110	ns	0.105 (J)	ns	0.128	0.0406 (J)
benzo(k)fluoranthene	0.08	TEQ	ns	0.0332 (J)	ns	0.18	3.73 (J) H	0.0517 (J)	0.0277 (J)
Chrysene	0.08	TEQ	ns	0.0950	ns	0.99	21.4 (J) H	0.145	0.0671 (J)
Dibenzo(a,h)anthracene	0.08	TEQ	ns	0.0539 (J)	ns	0.0454 (J)	0.521 (J) H	ND (<0.0136)	0.0143 (J)
Fluoranthene	0.1	88.9	ns	0.271	ns	7.82	168 (J) H	0.352	0.277
Fluorene	0.1	546.7	ns	0.0201 (J)	ns	7.42	152 (J) H	0.129	0.299
Indeno(1,2,3-cd)pyrene	0.08	TEQ	ns	0.135	ns	0.105 (J)	1.35 (J) H	0.102	0.0471 (J)
Naphthalene	0.1	138	ns	0.158	ns	24.6	492 (J) H	0.158	0.0904
Phenanthrene	0.1	0.1	ns	0.263	ns	16.40	383 (J) H	0.397	0.108
Pyrene	0.1	2,400	ns	0.218	ns	4.74	102 (J) H	0.334	0.222
TEQ <sup>a</sup>	--	--	--	0.2007	--	0.6104	10.7181	0.1904	0.0865

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on April 1, 2011 updated CLARC value

MRL = Laboratory Method Reporting Limit

H = Holding time for sample preparation or analysis exc

J = Estimated value

ns = not sampled

**Bold = Non-detection value of analyte in exceedance**

<sup>a</sup> = TEQ values calculated using Ecology's published gu Mixtures Using Toxicity Equivalency Factors." Available the detection limit was used for calculation of the TEQ.

**Table 24. Laboratory Data for Soil  
Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270**

Analyte	Soil MRL mg/kg	Preliminary Screening Level (mg/kg)*	Sample ID: TC-SB-7-9'-10'	Sample ID: TC-SB-8-3'-4'	Sample ID: TC-SB-8-6'-7'	Sample ID: TC-SB-8-9'-10'	Sample ID: TC-SB-9-2'-3'	Sample ID: DUP of TC-SB-9-2'-3'	Sample ID: TC-SB-9-4'-5'
			Date: 10/17/10	Date: 10/17/12	Date:10/17/12	Date: 10/17/12	Date: 10/16/12	Date: 10/16/12	Date: 10/16/12
			Time: 9:40	Time: 10:35	Time: 10:40	Time: 10:45	Time: 11:35	Time: 11:40	Time: 11:45
			Depth: 9'-10'	Depth: 3'-4'	Depth: 6'-7'	Depth: 9'-10'	Depth: 2'-3'	Depth: 2'-3'	Depth: 4'-5'
			Comments: H	Comments:	Comments:	Comments: H	Comments:	Comments:	Comments: H
Acenaphthene	0.1	65.5	ns	0.0126 (J)	0.053 (J)	ND (<0.0013) H	2.110	2.730	0.251 H
Acenaphthylene	0.1	0.1	ns	ND (<0.000738)	0.0778 (J)	0.0429 (J) H	0.0381 (J)	0.0474 (J)	ND (<0.00111) H
Anthracene	0.1	12,285.40	ns	ND (<0.00274)	0.0558 (J)	0.03 (J)H	1.790	1.850	0.0266 (J) H
Benzo(a)anthracene	0.08	TEQ	0.0782 (J) H	0.0149 (J)	0.249	0.0887 H	1.180	1.400	0.707 (J) H
benzo(a)pyrene	0.08	TEQ	0.0842 (J) H	0.0176 (J)	0.379	0.111 H	0.401	0.491	0.0803 (J) H
benzo(b)fluoranthene	0.08	TEQ	0.105 H	0.0315 (J)	0.457	0.151 H	0.897	1.060	0.186 H
Benzo(g,h,i)perylene	0.08	0.08	ns	0.0213 (J)	0.296	ns	0.0971	0.110	0.0854 (J) H
benzo(k)fluoranthene	0.08	TEQ	0.0511 (J) H	0.0102 (J)	0.122 (J)	0.0489 (J) H	0.223	0.260	0.0462 (J) H
Chrysene	0.08	TEQ	0.0937 (J) H	0.0143 (J)	0.339	0.137 (J) H	0.954	1.090	0.124 (J) H
Dibenzo(a,h)anthracene	0.08	TEQ	ND (<0.0138) H	ND (<0.00917)	0.0715	0.0165 (J) H	0.0385 (J)	0.0435 (J)	ND (<0.0138) H
Fluoranthene	0.1	88.9	ns	0.0376 (J)	0.67 (J)	0.308 (J) H	5.460	6.870	0.194 (J) H
Fluorene	0.1	546.7	ns	0.00738 (J)	0.0424 (J)	0.017 (J) H	3.460	4.160	0.0898 (J) H
Indeno(1,2,3-cd)pyrene	0.08	TEQ	0.0444 (J) H	0.018 (J)	0.261	0.0781 (J) H	0.102	0.116	0.0732 (J) H
Naphthalene	0.1	138	ns	0.0229 (J)	0.216	0.296 (J) H	0.130	0.230	0.169 (J) H
Phenanthrene	0.1	0.1	ns	0.0351 (J)	0.480	0.245 (J) H	11.600	14.100	0.144 (J) H
Pyrene	0.1	2,400	ns	0.0297 (J)	0.670	0.297 (J) H	5.100	4.330	0.195 (J) H
TEQ <sup>a</sup>	--	--	0.1147	0.0257	0.4984	0.1507	0.6546	0.7980	0.1835

**Notes:**

All results expressed in milligrams per kilogram (mg/kg)

\* based on April 1, 2011 updated CLARC value

MRL = Laboratory Method Reporting Limit

H = Holding time for sample preparation or analysis exc

J = Estimated value

ns = not sampled

**Bold = Non-detection value of analyte in exceedance**

<sup>a</sup> = TEQ values calculated using Ecology's published gu Mixtures Using Toxicity Equivalency Factors." Available the detection limit was used for calculation of the TEQ.

Table 35. November 2015 Additional Soil Sampling

TCSystems  
Everett, Washington

Analyte	CUL (mg/kg)	TC-SB-12-V (7.5')		TC-SB-12-V (9.5')		TC-SB-12-V (12')		TC-SB-12-V (15')		TC-MW-7-V (3')		TC-MW-7-V (5')		TC-MW-7-V (7.5')		TC-MW-7-V (10')		TC-MW-7-V (12.5')		TC-MW-7-V (15')	
		ns	--	ns	--	ns	--	ns	--	ns	--	ns	--	ns	--	ns	--	ns	--	ns	--
2-Methylnaphthalene	320	ns	--	ns	--	ns	--	ns	--	ns	--	0.226		0.115	U	0.065	U	0.063	U	0.090	U
1-Methylnaphthalene	34.5	ns	--	ns	--	ns	--	ns	--	ns	--	0.365		0.115	U	0.065	U	0.063	U	0.090	U
Acenaphthene	4,800	ns	--	ns	--	ns	--	ns	--	ns	--	2.260		0.115	U	0.065	U	0.063	U	0.090	U
Acenaphthylene	NE	ns	--	ns	--	ns	--	ns	--	ns	--	0.116		0.115	U	0.065	U	0.063	U	0.090	U
Anthracene	24,000	ns	--	ns	--	ns	--	ns	--	ns	--	4.160		0.115	U	0.065	U	0.063	U	0.090	U
Benzo(a)anthracene	0.129	ns	--	ns	--	ns	--	ns	--	ns	--	3.070		0.117		0.065	U	0.063	U	0.090	U
benzo(a)pyrene	0.349	ns	--	ns	--	ns	--	ns	--	ns	--	2.030		0.136		0.065	U	0.063	U	0.090	U
benzo(b)fluoranthene	1.37	ns	--	ns	--	ns	--	ns	--	ns	--	2.610		0.150		0.065	U	0.063	U	0.090	U
benzo(k)fluoranthene	13.7	ns	--	ns	--	ns	--	ns	--	ns	--	1.090		0.115	U	0.065	U	0.063	U	0.090	U
Chrysene	0.143	ns	--	ns	--	ns	--	ns	--	ns	--	4.100		0.118		0.065	U	0.063	U	0.090	U
Dibenzo(a,h)anthracene	0.644	ns	--	ns	--	ns	--	ns	--	ns	--	0.184		0.115	U	0.065	U	0.063	U	0.090	U
Indeno(1,2,3-cd)pyrene	1.37	ns	--	ns	--	ns	--	ns	--	ns	--	0.503		0.115	U	0.065	U	0.063	U	0.090	U
Benzo(g,h,i)perylene	NE	ns	--	ns	--	ns	--	ns	--	ns	--	0.557		0.115	U	0.065	U	0.063	U	0.090	U
Fluoranthene	3,200	ns	--	ns	--	ns	--	ns	--	ns	--	12.400		0.223		0.065	U	0.063	U	0.090	U
Fluorene	3,200	ns	--	ns	--	ns	--	ns	--	ns	--	2.190		0.115	U	0.065	U	0.063	U	0.090	U
Naphthalene	1,600	ns	--	ns	--	ns	--	ns	--	ns	--	0.785		0.115	U	0.065	U	0.063	U	0.090	U
Phenanthrene	NE	ns	--	ns	--	ns	--	ns	--	ns	--	7.290		0.170		0.065	U	0.063	U	0.090	U
Pyrene	2,400	ns	--	ns	--	ns	--	ns	--	ns	--	10.100		0.224		0.065	U	0.063	U	0.090	U
TEQ		ns	--		--	ns	--	ns	--		--	2.82		0.16			U		U		U

Arsenic (mg/kg)	24			21.4						14.3		18.4		13.9		9.30		22.9		13.3	
Copper (mg/kg)	36			173						93.2		95.8		62.1		37.7		80.1		52.5	
soil pH	--			7.37						9.76											

Arsenic-SPLP (µg/L)
Copper-SPLP (µg/L)

		5.00	U							57.3		ns	--	ns	--	ns	--	ns	--	ns	--
		3.21								11.6		ns	--	ns	--	ns	--	ns	--	ns	--

Soil Description
Dry bulk density (kg/L)
Total Porosity
Water-filled porosity
Cation Exchange Capacity
foc (mg/kg)

2	3
0.45	1.38
78%	50%
44%	45%
20	3.4
130,000	49,000

Denotes carcinogenic PAH