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March 30, 2017

Ms. Glynis Carrosino
State of Washington, Department of Ecology
Northwest Regional Office
3190 160th Avenue, SE
Bellevue, Washington 98008-5452

Project No. 123155
Facility Site ID# 86856327
Cleanup Site ID# 10880
VCP Project No. NW2340

Confirmation Soil Sampling Report
Site No. 3520
4200 Wheaton Way
Bremerton, Washington

Dear Ms. Carrosino:

On behalf of Eagle Canyon Capital, LLC (Eagle), ES Engineering Services, LLC (ES) is pleased to provide this *Confirmation Soil Sampling Report* summarizing activities performed at the above referenced site (**Figure 1**). Site assessment activities were conducted on December 20 and 21, 2016, and consisted of advancing four confirmation soil borings (identified as CB-1 through CB-4) for the purpose of evaluating current soil conditions in follow-up to soil vapor extraction (SVE) remediation activities and to further assess groundwater conditions beneath the site. Borings were installed in areas where high hydrocarbon concentrations were identified during previous site investigations and soil samples were collected and analyzed for contaminants of concern (COCs). The activities were completed in general accordance with Task 4 of the *Site Closure Plan* (SCP), dated June 7, 2010, and the *Workplan for Confirmation Soil Sampling* (Workplan), dated February 10, 2014. Note that written opinion on the Workplan was requested from the Washington State Department of Ecology (Ecology) in February 2014, and was pending at the time of implementation of this scope of work; authorization to proceed with the Workplan was given by Eagle.

Confirmation soil sample analytical results show a decrease in fuel hydrocarbon levels in select borings when compared to the historical soil samples results. However, soil samples collected at depths between 10 feet and 30 feet below ground surface (bgs) in all four borings contained petroleum hydrocarbons in the gasoline range (TPH-Gx) at concentrations exceeding Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs). Additionally, soil samples collected at depths between 10 feet and 50 feet bgs contained concentrations of benzene, toluene, ethylbenzene and/or xylenes (BTEX compounds) that exceed their respective MTCA Method A CULs. All remaining samples analyzed either did not contain detectible levels of petroleum

hydrocarbon constituents or the concentrations of contaminants of concern (COCs) detected were below the MTCA Method A CULs.

Based on the results of the confirmation soil sampling, additional remediation is needed to reduce residual soil concentrations to levels that meet cleanup criteria. The confirmation borings have adequately delineated the vertical extent of soil impact which appears to be limited to the upper 60 feet of soil in the area of the dispenser islands and the UST cavity. Additionally, groundwater was not encountered to 60 feet bgs, the maximum depth explored.

Re-instatement of SVE remediation is recommended, including the installation of three additional extraction wells near the southernmost dispenser island and the southern perimeter of the existing USTs. SVE remediation is recommended to continue until COCs are reduced to soil concentrations that meet the cleanup criteria. Additional confirmation borings are also recommended when additional SVE is complete to evaluate soil conditions and obtain the data necessary to support case closure.

A summary of the field observations, findings and results of the present study are presented in the following sections.

If there are questions regarding this report, or if additional information is required, please do not hesitate to contact the undersigned at (714) 919-6500.

Sincerely,
ES ENGINEERING SERVICES

Nicholas Olivier, LG
Project Geologist

State of Washington
3121
Licensed Geologist
NICHOLAS J. OLIVIER

Laura Skow
Project Manager

SITE AND CONTRACTOR OVERVIEW

Site Location:	Site No. 3520 4200 Wheaton Way Bremerton, Washington
Environmental Consultant:	ES Engineering Services, LLC 1036 West Taft Avenue Orange, California 92865
Drilling Contractor and Waste Transporter:	Cascade Drilling and Technical Services 17270 Woodinville Redmond Road NE Ste 777 Woodinville, Washington 98072
Laboratory Contactor:	ESN Northwest, Inc. 1210 Eastside Street SE, Suite 200 Olympia, Washington 98501 WADOE Accreditation No. C574-11
Regulatory Agency:	State of Washington, Department of Ecology Northwest Regional Office 3190 160th Avenue, Southeast Bellevue, Washington 98008-5452

SITE DESCRIPTION

Historic Property Use

The site is located at 4200 Wheaton Way in Bremerton, Washington. It is an approximately 0.49-acre parcel located on the northeast corner of the intersection of State Route 303 (Wheaton Way) and Hollis Street. Historical records reviewed, including historical aerial photographs and maps, indicate that the site was originally developed as a farm. A retail fueling station was constructed at the site in 1986 with the addition of a retail convenience store in 1988. The site was owned and operated by Time Oil Company.

Current Property Use

The site is currently an active retail fueling station with a convenience store, three pump islands with two dispensers each and four underground storage tanks (USTs), including one 6,000-gallon tank used to store diesel fuel and three 12,000-gallon tanks used to store unleaded gasoline fuel. The site is located in a mixed land-use area, bordered to the south by Hollis Street and to the west by State Route 303 (Wheaton Way). The subject site is bordered to the east by a restaurant and to the north by a large parking lot associated with a closed down retail strip mall. A restaurant and retail cannabis store are located across Hollis Street to the

south. A clothing retailer, tattoo parlor and retail collectibles store is located across State Route 303 toward the west. Pertinent site features are shown on **Figure 2**.

The subject site lies at an elevation of approximately 300 feet above mean sea level (ft amsl) on a small peninsula within Puget Sound. It is located 2 miles from the Port Orchard Waterway and Dyes and Sinclair Inlets, which surround the peninsula to the east, west and south, respectively.

Future Property Use

The site will remain a retail fuel station for the foreseeable future. There are no known plans for redevelopment of the site at the time that this report was produced.

PREVIOUS FIELD INVESTIGATIONS

The following historical summary is based on a review of available documents and summaries provided in the *Site Assessment and Closure Report*, dated October 13, 1997 prepared by Clearwater Group, Inc. (Clearwater), and the *Focused Phase II Site Assessment Report,* dated May 30, 2010, the *Well Installation and Pilot Test Report*, dated June 21, 2011 and *Remediation System Status Reports* prepared by Environ Strategy Consultants, Inc. (Environ Strategy). For reference, a summary of soil sample analytical results from Environ Strategy's and Clearwater's site assessment activities is provided in **Table 2**. In addition, the soil boring locations for each assessment relative to pertinent site features are shown on **Figure 2**.

In September and October 1996, the fuel distribution system (USTs and pump islands) at the subject site was upgraded which included the installation of a 6,000 gallon diesel UST, replacing the existing product distribution system and pump islands as well as installing an oil/water separator. During system upgrades, hydrocarbon-affected soil was encountered. Approximately, 450 tons of impacted soil was excavated and transported to a disposal facility in Tacoma, Washington during the installation of the diesel UST. The release was reported to Ecology and five verification soil samples were collected from the tank cavity for laboratory analysis. In addition, five soil samples were collected from the beneath the product lines and pump islands. The samples were analyzed for BTEX compounds and total petroleum hydrocarbons quantified as gasoline (TPH-Gx). Hydrocarbon impacts in excess of MTCA Method A CULs were identified in all ten soil samples. Specifically, the highest levels of fuel hydrocarbons were reported in a composite sample (identified as N&E Wall-8'), which was collected from the north and east sidewall of the diesel tank cavity at a depth of 8 feet. Sample N&E Wall-8' contained TPH-Gx at 7,220 milligrams per kilogram (mg/kg), benzene at 27.6 mg/kg, toluene at 191 mg/kg, ethylbenzene at 111 mg/kg and total xylenes at 626 mg/kg. The soil samples collected were not analyzed for TPH quantified as diesel or for lead.

In June 1997, Clearwater conducted subsurface site assessment activities. During Clearwater's investigation, 17 soil borings (GP-1 through GP-17) were installed at various locations around

the site to delineate the extent of hydrocarbon-affected soil. Borings were terminated at a depth of 17 feet bgs due to refusal. Twenty-six (26) soil samples collected from the borings were analyzed for TPH-Gx and BTEX compounds. Hydrocarbon-affected soil was detected in a majority of the soil borings. The highest concentration of TPH-Gx (1,410 mg/kg) was in a 10-foot sample from boring GP-7 located near the southwest corner of the tank cavity. Similarly, benzene was detected at a maximum level of 11.9 mg/kg in a 10-foot sample collected from GP-5 located east of the existing tank cavity.

In May 2010, Environ Strategy conducted an additional site assessment to evaluate subsurface conditions in the vicinity of the fuel distribution system. Six soil borings (identified as SB-1 through SB-6) were advanced, of which, borings SB-1, SB-2 and SB-3 were located near the existing tank cavity and advanced to a depth of 30 feet. Borings SB-4, SB-5 and SB-6 were drilled at the west end of the southern, central and northern pump islands, respectively, and extended to a depth of 25 feet at SB-4 and to 20 feet bgs at SB-5 and SB-6. The assessment findings are summarized below.

- Hydrocarbon staining and/or odor were observed in subsurface soil collected from Borings SB-2 through SB-6 at depths between 10 to 25 feet bgs.
- Based on visual/olfactory observations, relatively low PID readings (up to 380 ppm at SB-4-10) and comparatively low toluene levels detected in the soil samples, fuel hydrocarbons in soil appeared weathered and are likely associated with impacted soil previously identified during fuel system upgrades and Clearwater's site assessment conducted in 1996 and 1997, respectively.
- TPH-Gx was detected at a maximum concentration of 19,000 mg/kg in sample SB-4-10 (Boring SB-4 at 10 feet bgs), which exceeds the CUL of 30 mg/kg. However, TPH-Gx results from deeper samples SB-4-20 (430 mg/kg) and SB-4-25 (<10 mg/kg), suggested that the vertical extent of impact did not extend beyond a depth of 25 feet. Note that the CUL for TPH-Gx with and without the presence of benzene in the sample matrix is 30 mg/kg and 100 mg/kg, respectively.
- Benzene was detected at a maximum concentration of 2.9 mg/kg in sample SB-5-10 (Boring SB-5 at 10 feet bgs) which is above the CUL of 0.03 mg/kg. Toluene was detected at concentrations up to 6.5 mg/kg (sample SB-3-25), which is below the CUL of 7 mg/kg. Sample SB-4-10 contained the highest levels of ethylbenzene at 160 mg/kg and xylenes at 590 mg/kg, which are above their respective CULs of 6 mg/kg and 9 mg/kg. However, deeper soil samples (SB-4-20 and SB-4-25) contained ethylbenzene and xylenes concentrations that are below CULs. Methyl tert-butyl ether (MTBE) was not detected in any of the samples analyzed.

- Soil samples SB-4-10, SB-4-20 and SB-4-25 were further analyzed for the full-list of volatile organic compounds (VOCs). Neither ethylene dibromide (EDB) nor ethylene dichloride (EDC) were detected in these samples. Naphthalene was detected at 76 mg/kg in SB-4-10, which is above the cleanup standard of 5 mg/kg. Sample SB-4-20 contained naphthalene at 0.74 mg/kg and was non-detect in sample SB-4-25. Detectable levels of additional VOCs were reported in samples SB-4-10, SB-4-20 and SB-4-25. The MTCA Cleanup Regulation Table 740-1, "Method A Soil Cleanup Levels for Unrestricted Land Uses" does not designate CULs for the additional VOCs detected.
- Samples SB-4-10 and SB-4-25 were further analyzed for total lead. Sample SB-4-10 contained lead at 19 mg/kg, which is below the CUL of 250 mg/kg. Sample SB-4-25 did not contain detections for total lead.

Due to elevated levels of TPH-Gx detected in soil samples SB-3-25, SB-4-10, SB-5-10 and SB-6-10, the samples were further analyzed for total petroleum hydrocarbons quantified as diesel (TPH-Dx) and oil-range petroleum hydrocarbons (ORPH). Neither TPH-Dx nor ORPH were detected in the samples analyzed. Soil analytical results from previous assessment borings are summarized in **Table 2** and shown on **Figure 3**.

In March 2011, four SVE remediation wells (VE-1 through VE-4) were installed at the site. In April 2011, remediation by SVE was tested at the site and shown to be effective at removing hydrocarbons from subsurface soil. Based on pilot testing results, a permanent SVE system was installed at the site and operations began in February 2012. From February 28, 2012 through February 28, 2014, an estimated 12,740 pounds of hydrocarbons were removed from the subsurface. Based on operational and monitoring (O&M) data, the SVE system was shut down on March 13, 2014 and confirmation soil sampling was proposed to evaluate soil conditions in follow-up to SVE operations and to further investigate groundwater conditions beneath the site.

The *Workplan for Confirmation Sampling* (Workplan), dated February 15, 2014, proposing the installation of four confirmation borings was submitted to Ecology for review and comment. Opinion from Ecology on the Workplan was pending at the time of implementation of this scope of work; authorization to proceed was given by Eagle.

CURRENT SCOPE OF WORK

Four confirmation soil borings (identified as CB-1 through CB-4) were advanced in the vicinity of the pump islands and the UST cavity near previously advanced soil boring locations to compare and evaluate current and historic soil conditions. The confirmation boring locations are shown on **Figure 2.**

The objective of this assessment was to evaluate current soil conditions in follow-up to SVE remediation and further assess groundwater conditions beneath the site. The MTCA Method A CULs for Unrestricted Land Use are the primary criteria for determining whether soil and groundwater been effectively remediated.

The following section provides a brief summary of the confirmation soil sampling field activities and analytical results. Subsequent sections provide a more detailed summary of the field activities, observations and findings and analytical results along with conclusions and recommendations.

SITE ASSESSMENT SUMMARY DATA

Field Activity Details

Drilling & Sampling Date(s):	December 10 & 21, 2016
One-Call Ticket No.:	16393519
Number of Borings:	4
Drilling Method:	Truck mounted CME-75 hollow stem auger
Depth to Groundwater:	Not encountered during drilling
Total Depth:	60 feet bgs(1)
Total Drums Generated:	16 (55-gallon, 12 soil and 4 decontamination water)

Soil Sampling Details

Sampling Method:	Dames & Moore sampler with EPA 5035 Preparation
Number of Samples:	26
Highest PID Reading:	1,117 ppmv (CB-4-10)
Sample Analyses:	TPH-Gx by EPA 5035/NWTPH-Gx B/T/E/X/MTBE/EDB by EPA 5035/8260 Naphthalenes by EPA 5035/8260 and 8270

Soil Analytical Results (see Table 1)

TPH-Gx Detects: 7	Maximum: 5,900 mg/kg (CB-2-15)
B/T/E/X Detects: 8/11/12/12	Maximum: 8.0 mg/kg/ 150 mg/kg/ 92 mg/kg/ 510 mg/kg (CB-4-10)

(1): Total depth of boring CB-1 was 60 feet bgs, boring CB-2 was 50 feet bgs, boring CB-3 was 45 feet bgs and boring CB-4 was 30 feet bgs.

FIELD ACTIVITIES

The following subsections provide a summary of the field activities conducted as part of the scope of work. Field activities were conducted in accordance with the Site Health and Safety Plan (HASP), dated December 2016. Before commencing field activities each day, a daily "tailgate" health and safety meeting was conducted by ES personnel with contracted employees. The daily site safety briefing forms and signed HASP acknowledgement page are

included as **Appendix B**. Upon request, an electronic copy of the HASP may be forwarded as a separate, stand-alone document.

Pre-marking, Permitting and Notifications

The proposed boring locations were pre-marked in white spray paint and cleared of potential subsurface utilities/structures using a private utility locator, ULS Services Corporation.

A Notice of Intent to Construct was submitted to Ecology by the drilling contractor (Cascade Drilling and Technical Services). Ecology was notified 72 hours before drilling commenced in accordance with the permit requirements. In addition, the State of Washington's mandatory underground utility locator, One-Call, was notified 72 hours before initiating field activities and requested to mark and delineate underground utilities servicing the site.

Drilling and Soil Sampling Activities

On October 20 and 21, 2016, four (4) confirmation soil borings (CB-1 through CB-4) were advanced using a truck mounted CME-75 drill rig equipped with 8-inch outside diameter hollow stem augers. Soil boring CB-1 was advanced at the west end of the southern dispenser island, adjacent to previous boring SB-4. Boring CB-2 was advanced near the southwest portion of the current UST cavity, adjacent to previous boring GP-7. CB-3 was advanced near the southeast side of the UST cavity, adjacent to previous boring SB-3. CB-4 was advanced at the west end of the central dispenser island, adjacent to previous boring GP-16 and extraction well VE-1. Boring locations are shown on **Figure 2**.

Each soil boring was cleared of potential subsurface utilities using a vacuum truck to a depth of 5 feet bgs. Following the hole clearing, each boring was advanced with the drill rig. During the advancement of each boring, soil samples were collected at 5-foot intervals using an 18-inch long, 3-inch outside diameter Dames and Moore sampler, driven with a 140-pound hammer falling 30 inches. Note, confirmation borings were originally proposed to be advanced to total depths of 30 to 45 feet bgs; however, based on field observations and photoionization detector (PID) readings, CB-1 was drilled to 60 feet bgs, CB-2 was drilled to 50 feet bgs, CB-3 was drilled to 45 feet bgs and CB-4 was drilled to 30 feet bgs.

During hole clearing and drilling, the retrieved soil was inspected and logged in accordance with the Unified Soil Classification System by a licensed geologist within the State of Washington. Soil samples were screened in the field for undifferentiated VOCs using a PID. In general, PID field screening was performed during hole clearing and drilling activities beginning at 5 feet bgs and continuing to the total depth drilled. PID field screening was performed by placing a disaggregated portion of each sample in a sealed container and monitoring the soil for head-space volatility. PID readings ranged from non-detect (0.0 parts per million by volume [ppmV]) to a maximum of 1,117 ppmV (CB-4-10), see **Table 1**). Lithologic descriptions, PID readings and

other visual and olfactory observations were recorded on boring logs and are presented as **Appendix C.** Subsurface soils described consisted of silty sand, silt with sand, poorly graded sand and well graded sand with varying amounts and sizes of gravels to approximately 60 feet bgs, the maximum depth explored during this assessment. Soils encountered during previous assessments were generally the same as soils encountered during this assessment.

Soil samples were collected from each boring at select intervals during the advancement of each boring for laboratory analysis. Soil samples submitted for laboratory analysis were collected in accordance with EPA Method 5035 using laboratory-prepared VOA (volatile organic analysis) vials. Each soil sample was comprised of three VOA vials, each filled with a 5-gram soil aliquot, and one 4-ounce glass soil jar. Sample containers were capped, labeled, immediately stored on ice in a cooler and delivered to the analytical laboratory under chain-of-custody protocol.

Down-hole drilling and sampling equipment was cleaned using a decontamination process consisting of either a non-phosphate, laboratory-grade detergent wash and triple-rinsed, or cleaned with high temperature, high pressure washing. Tools and drilling rods were allowed to dry prior to use.

Soil borings were backfilled with hydrated bentonite chips and capped with concrete at the surface to match surrounding surface conditions. Additional details regarding the general field procedures used during the assessment are provided in **Appendix D**.

Laboratory Analysis

Soil samples were submitted under chain-of-custody to ESN Northwest, Inc., of Olympia, Washington for chemical analysis. Soil samples were analyzed for TPH-Gx by Method NWTPH-Gx, BTEX constituents by Method 8260 and naphthalenes including 2-methylnaphthalene and 1-methylnaphthalene by Method 8270.

A copy of the laboratory analytical report is provided as **Appendix E.** The soil analytical results are summarized in **Table 1** and illustrated in **Figure 4, Figure 6 and Figure 7**.

Waste Management

Soil cuttings and decontamination fluids generated during the field activities were placed into sixteen (16) Department of Transportation (DOT) approved drums. The drums were appropriately sealed, labeled and staged in a secure location onsite pending waste characterization.

The drums are currently pending removal by a certified waste hauler. A copy of the non-hazardous waste manifest documenting the transportation and disposal of the waste material will be provided upon request.

ASSESSMENT FINDINGS

The results of the confirmation soil sampling are bulleted below. For discussion purposes, analytical results are evaluated based on Ecology's *MTCA Chapter 70.105D RCW and Cleanup Regulation Chapter 173-340 WAC* (Publication No. 94-06, revised October 2007). Specifically, the soil analytical results from this assessment are summarized in **Table 1** and are compared to the respective MTCA Method A CULs for Unrestricted Land Use (Table 740-1). Historical soil analytical results are summarized in **Table 2**.

- Soil encountered during this assessment predominately consisted of silty sand, poorly graded sand and well graded sand with silt to approximately 60 feet bgs, the maximum depth explored. Generally, individual geologic units were too small and numerous to differentiate and were therefore not indicated as so on the geologic cross sections **Figure 6** and **Figure 7.** Regional representative groundwater was not encountered during drilling activities.

  Geologic maps of the area indicate that site sediments consist of Quaternary Glacial Till deposits (Qgt). Soils and sediments encountered during drilling match the characteristics of glacial till however were generally medium to very dense and rust brown in color. This may indicate that the material that underlies the site is highly weathered.

  Regional, representative groundwater was not encountered during recent drilling. A limited amount of isolated, perched groundwater was encountered in three of the four borings. The groundwater encountered during drilling appeared to be contained within pockets and seams of relatively coarse grained sediments and quickly disappeared with depth as drilling continued. Consequently, groundwater samples were not collected from the temporary borings. Note, that boring CB-1 was advanced to a depth of 60 feet bgs and remained open temporarily to screen for groundwater prior to backfilling; no groundwater was observed to accumulate in the boring. Existing extraction wells were also checked on the day of drilling and groundwater accumulation was not observed in the wells. Well logs for a nearby in-active water well and a decommissioned well indicate static water was present at 142 feet bgs (located less than 0.1 mile south) and 45 bgs (located 0.25 miles southwest), respectively (Environ, 2010).

- As shown in the boring logs for CB-1 through CB-4, evidence of petroleum hydrocarbon impacts was observed in all four borings. Additionally, VOCs were detected in the field by PID screening. Moderate hydrocarbon odors were noted in boring CB-1 at depths between 20 and 25 feet bgs. The PID reading at 20 feet bgs was 1,023 ppm. Slight to

moderate hydrocarbon odors were noted in boring CB-2 from 15 feet bgs to the 45 feet bgs. Odors were noted in boring CB-3 at 10 feet bgs, and again at depths between 30 and 40 feet bgs, possibly indicating two distinct zones of petroleum impacts. Hydrocarbon odors were detected in boring CB-4 at depth from 10 feet (1,117 ppm, the highest PID reading recorded) to 20 feet bgs. Evidence of petroleum impacts was observed at generally greater depths than previous assessments.

- A total of 26 soil samples were submitted for laboratory analysis of TPH-Gx, BTEX compounds and naphthalenes (including naphthalenes, 1-methyl, 2-methyl). As shown in **Table 1**, TPH-Gx was detected in seven of the 26 soil samples at concentrations ranging from 10 mg/kg (CB-3-35 and CB-4-20) to 5,900 mg/kg (CB-2-15). The TPH-Gx detections in samples CB-1-20 (85 mg/kg), CB-2-15 (5,900 mg/kg), CB-3-30 (230 mg/kg) and CB-4-10 (4,600 mg/kg) exceed the MTCA Method A CUL. BTEX was detected at concentrations exceeding CULs in samples collected from all four borings, with maximum concentrations detected in sample CB-4-10 at concentrations of 8.0 mg/kg, 150 mg/kg, 92 mg/kg and 510 mg/kg, respectively. Naphthalenes were detected in borings CB-1, CB-2 and CB-4, however, all concentrations were below MTCA Method A CULs. The highest concentration of naphthalenes occurred in sample CB-4-10 collected at 10 feet bgs in boring CB-4; naphthalene 1.1 mg/kg, 2-methylnaphthalene 1.2 mg/kg and 1-methylnaphthalene 0.63 mg/kg.
- A site plan showing historical soil analytical results for TPH-Gx are presented on **Figure 3.** Specifically, **Figure 3** shows the highest detected concentrations of TPH-Gx in soil. Recent soil analytical results for TPH-Gx and benzene are presented in **Figure 4** for comparison. A site plan showing geologic cross section traces is presented as **Figure 5** and geologic cross sections displaying current and historical soil analytical results are presented as **Figure 6** and **Figure 7**. As shown in **Figure 4, Figure 6 and Figure 7**, analytical results for confirmation soil samples indicate that current adsorbed-phase petroleum hydrocarbon concentrations both increased and decreased from pre-remediation levels. For example, pre-remediation sample SB-4-10, located just west of the southern-most dispenser island, contained TPH-Gx at 19,000 mg/kg; whereas field PID readings for the corresponding boring CB-1 were 0.5 ppmV at 15 feet bgs and TPH-Gx was non-detect (<10 mg/kg) in sample CB-1-15 (see **Tables 1 and 2**). However, a few recent samples collected contained higher concentrations of hydrocarbons then previously detected. The pre-remediation sample SB-5-10, collected at the west end of the central dispenser island contained TPH-Gx at 510 mg/kg, while the corresponding confirmation boring sample CB-4-10 contained TPH-Gx at 4,600 mg/kg. Additionally, the pre-remediation sample GP-7, collected from the southwest corner of the USTs at a depth of 15 feet bgs contained TPH-Gx at 30.8 mg/kg whereas the corresponding

confirmation boring sample CB-4-15, also collected from 15 feet bgs at the southwest corner of the USTs contained TPH-Gx at 4,600 mg/kg. PID readings from shallow soils (3 and 5 feet bgs) at confirmation borings CB-1 through CB-4 were non-detect (0.0 ppm) and define the upper vertical limit of soil impacts. However, PID field screening and analytical results show that residual impacts exceeding CULs exist at depths up to 55 feet bgs. Benzene was detected at 0.84 mg/kg in sample CB-1-55, which is above the CUL of 0.03 mg/kg. TPH-Gx was detected as deep as 35 feet bgs in confirmation boring CB-3 (10 mg/kg), although the concentration is well below the CUL of 30 mg/kg with benzene present. Overall, concentrations of TPH-Gx appear to attenuate with respect to depth. Soil impacts are not fully defined laterally, however, appear to be limited vertically to the upper 60 feet of soil in the area of the dispenser islands and the UST cavity, with the zone of primary impacts extending from 10 feet to 30 feet bgs.

CONCLUSIONS AND RECOMMENDATIONS

Confirmation borings CB-1 through CB-4 have further characterized the nature and extent of soil contamination beneath the site. Residual hydrocarbons detected in soil appear to have originated from the fuel distribution system. Historical site assessment data (**Table 2**) shows the highest levels of fuel hydrocarbons were detected near the USTs and pump islands. The historical site assessment data pre-dates the SVE remediation performed at the site between late 2011 and March 2013. Approximately 12,740 pounds of petroleum hydrocarbons were removed during active remediation. The results of this current assessment confirm that SVE was successful at reducing the concentrations of adsorbed phase hydrocarbons in the areas where the system operated, but also indicate that residual impacts at concentrations above MTCA Method A CULs remain within the impact zone and at depths deeper than previously investigated. Recent data show that the vertical extent of soil impact appears to be limited to the upper 60 feet of soils. Additionally, regional, representative groundwater was not encountered to 60 feet bgs, the maximum depth explored.

The *Site Closure Plan* (SCP), dated June 7, 2010, presented a remedial strategy to address the cleanup of residual soil contamination through short-term SVE remediation, and requesting site closure with the assumption that confirmation soil sampling was supportive. Based on confirmation sampling results, ES recommends modifying the closure plan for the continuation of SVE remediation at the site. The remediation system equipment located at the site will require rehabilitation/repair along with repairs to surface PVC extraction piping to be brought back online.

Analytical results show that soil samples collected from boring CB-1, located near the southernmost dispenser island, contain benzene at concentrations exceeding CULs at depths of 40 feet to 55 feet bgs, which is below the current screened interval of nearby extraction

well VE-2. Soil samples collected from boring CB-3 contain TPH-Gx at a concentration of 230 mg/kg at 30 feet bgs and TPH-Gx and benzene at 10 mg/kg and 0.47 mg/kg, respectively, at 35 feet bgs. Also, soil sample CB-2-15, collected from confirmation boring CB-2 at 15 feet bgs, contain TPH-Gx at a concentration of 5,900 mg/kg. Both confirmation borings CB-2 and CB-3 are located along the southern perimeter of the existing USTs. Based on the findings, ES recommends installation of three additional SVE wells to provide additional coverage for vapor extraction. One SVE well is proposed to be located near the southernmost dispenser island and screened from 40 feet to 55 feet bgs, and the other two wells proposed to be located in the vicinity of borings CB-2 and CB-3 and screened from approximately 25 feet to 40 feet bgs to remediate soil containing residual COCs. The additional SVE wells can be relatively easily plumbed into existing conduits and brought online with re-instatement of SVE operations.

SVE remediation is recommended to continue until COCs are reduced to levels that meet cleanup criteria. SVE operational and monitoring data will used to evaluate site cleanup progress. Once the concentrations of influent COCs are sufficiently reduced, ES may recommend additional soil borings to confirm successful remediation efforts and to fully characterize the site.

ES is pleased to be of service to Eagle. If there are questions regarding this report or if additional site information is required, please do not hesitate to contact ES at (714) 919-6500.

REFERENCES:

Clearwater Group, Inc. (Clearwater) 1997**,** *Site Assessment and Closure Report for Time Oil Company Property No. 01-352 at 4200 Wheaton Way, Bremerton, Washington,* October.

Dracovich, J.D., Logan, R.L., Schasse, H.W., Walsh, T.J., Lingley, W.S., Jr., Norman, D.K., Gerstel, WlJ., Lapen, T.J., Schuster, J.E., and Meyers, K.D., 2002, *Geologic map of Washington-Northwest Quadrant*: Washington Division of Geology and Earth Resources, Geologic Map GM-50.

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Environ Strategy Consultants, Inc. (Environ Strategy), 2011, *Soil Vapor Extraction Well Installation and Pilot Test Report, Site 01-352, 4200 Wheaton Way, Bremerton, Washington,* dated June 21, 2011.

Environ Strategy Consultants, Inc. (Environ Strategy), 2014, *Workplan For Confirmation Sampling, Site 01-352, 4200 Wheaton Way, Bremerton, Washington,* dated February 10, 2014.

Washington State Department of Ecology (Ecology) 2005, *Model Toxics Control Act Chapter 70.105D RCW (Amended 2005) and Cleanup Regulation Chapter 173-340 WAC (Amended February 12, 2001)*, Publication No. 94-06, October 2005.

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FIGURES

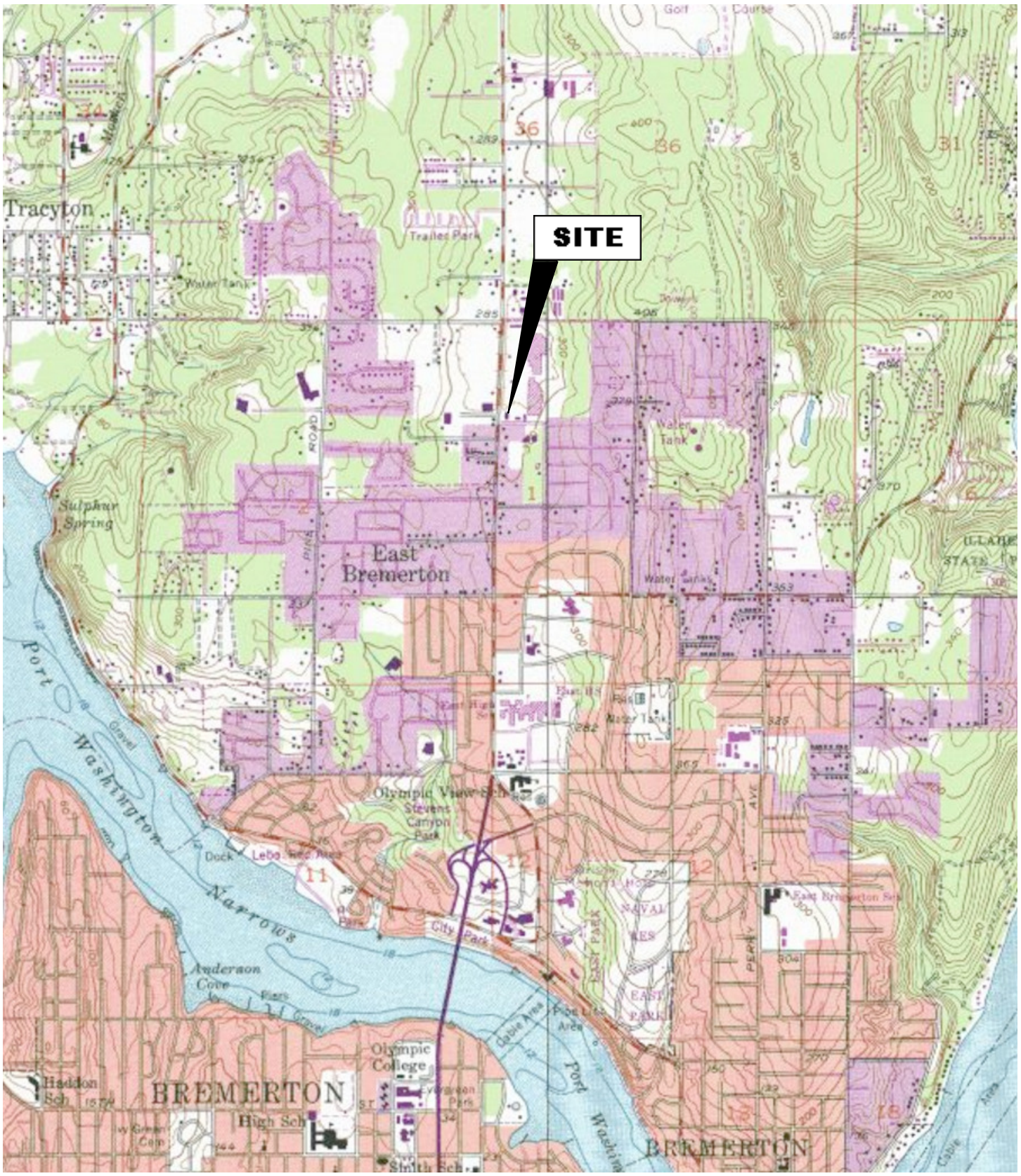
TABLES

APPENDICES

ACRONYMS

amsl:	above mean sea level
bgs:	below ground surface
BTEX:	benzene, toluene, ethylbenzene and total xylenes
btoc:	below top of casing
CB:	confirmation soil boring
CUL:	cleanup level
DO:	dissolved oxygen
DOT:	Department of Transportation
Ecology:	Department of Ecology
EPA:	Environmental Protection Agency
ft:	feet
ft/ft:	feet per foot
GW:	groundwater
µg/L:	micrograms per Liter
HASP:	health and safety plan
MDL:	Method detection limit
mg/kg:	milligrams per kilogram
mg/L	milligrams per Liter
MTBE:	methyl tert-butyl ether
MW:	monitoring well
nm:	not measured
na:	not applicable
ND:	not detected
ORC:	oxygen release compound
Pb:	lead
pH:	potential Hydrogen level
PID:	photo-ionization detector
ppb:	parts per billion
ppm:	parts per million
TPH-Dx:	total diesel-range petroleum hydrocarbons
TPH-Gx:	total gasoline-range petroleum hydrocarbons
TPH-Ox:	total lube oil-range petroleum hydrocarbons
UST:	underground storage tank
VOA:	volatile organic analysis
VOCs:	volatile organic compounds

FIGURES



Map Information: Maptech
Terrain Navigator—2nd Ed.—San Juan Island
Olympic Peninsula/Sea—Tac (WA)
42°36'10"N 122°37'42"W

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N

0 2000

APPROX. SCALE: 1" = 2000'

FIGURE 1

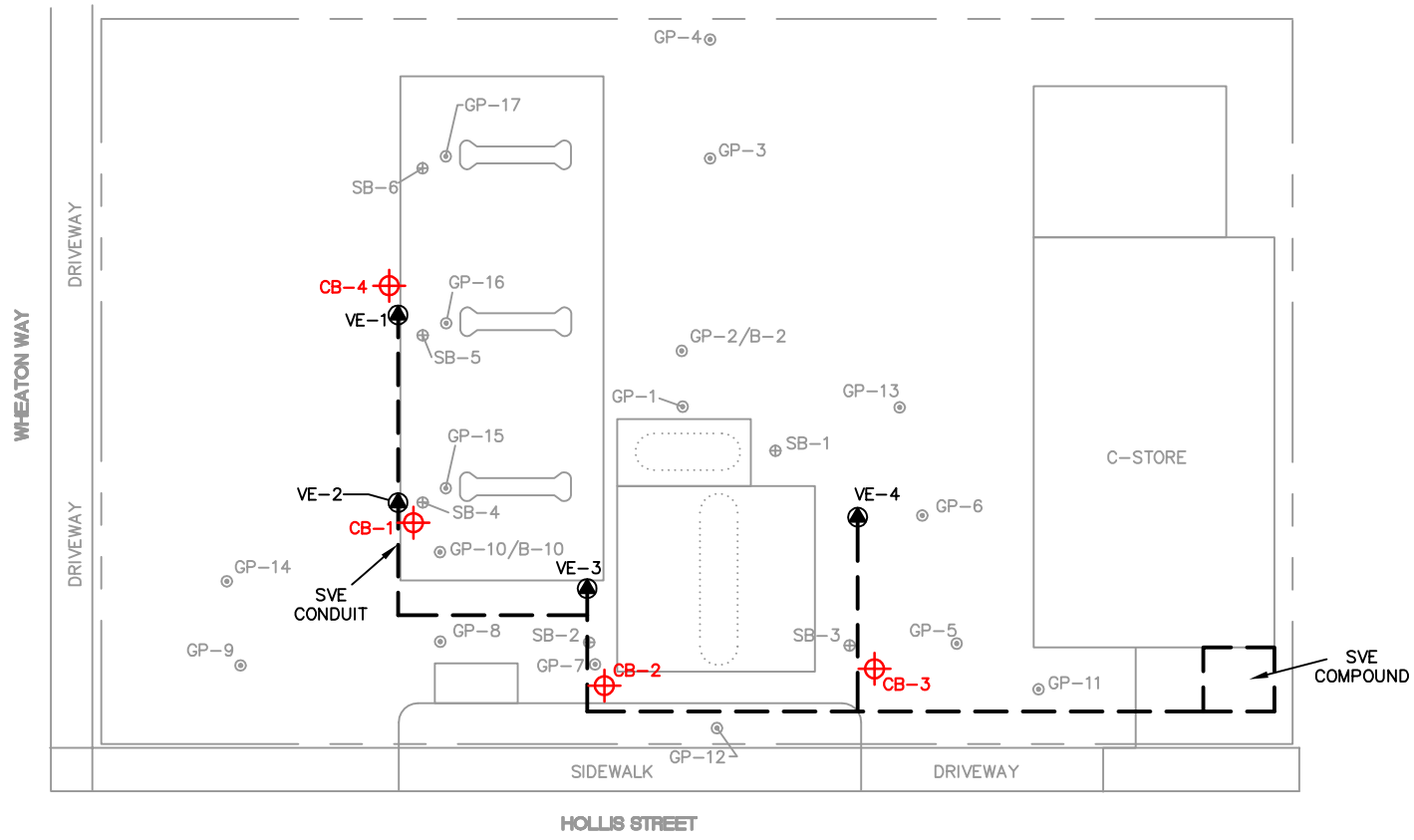
SITE LOCATION MAP

Site No. 3520
4200 Wheaton Way
Bremerton, Washington

DATE DRAWN
01/10/2017

PROJECT NO.
623

FILE NO.
623F1—SLM



LEGEND

SB-1 ⊕	Soil Boring (Environ Strategy, 2010)
GP-1 ⊙	Soil Boring (Clearwater, 1997)
▲	Soil Vapor Extraction Well
▭	Underground Storage Tank
▭	Pump Island
⊕	Confirmation Soil Boring (ES Engineering, 2016)
SVE	Soil Vapor Extraction

N

30 0 30

APPROXIMATE SCALE: 1" = 30'

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FIGURE 2

SITE PLAN PLAN SHOWING SOIL BORING AND WELL LOCATIONS

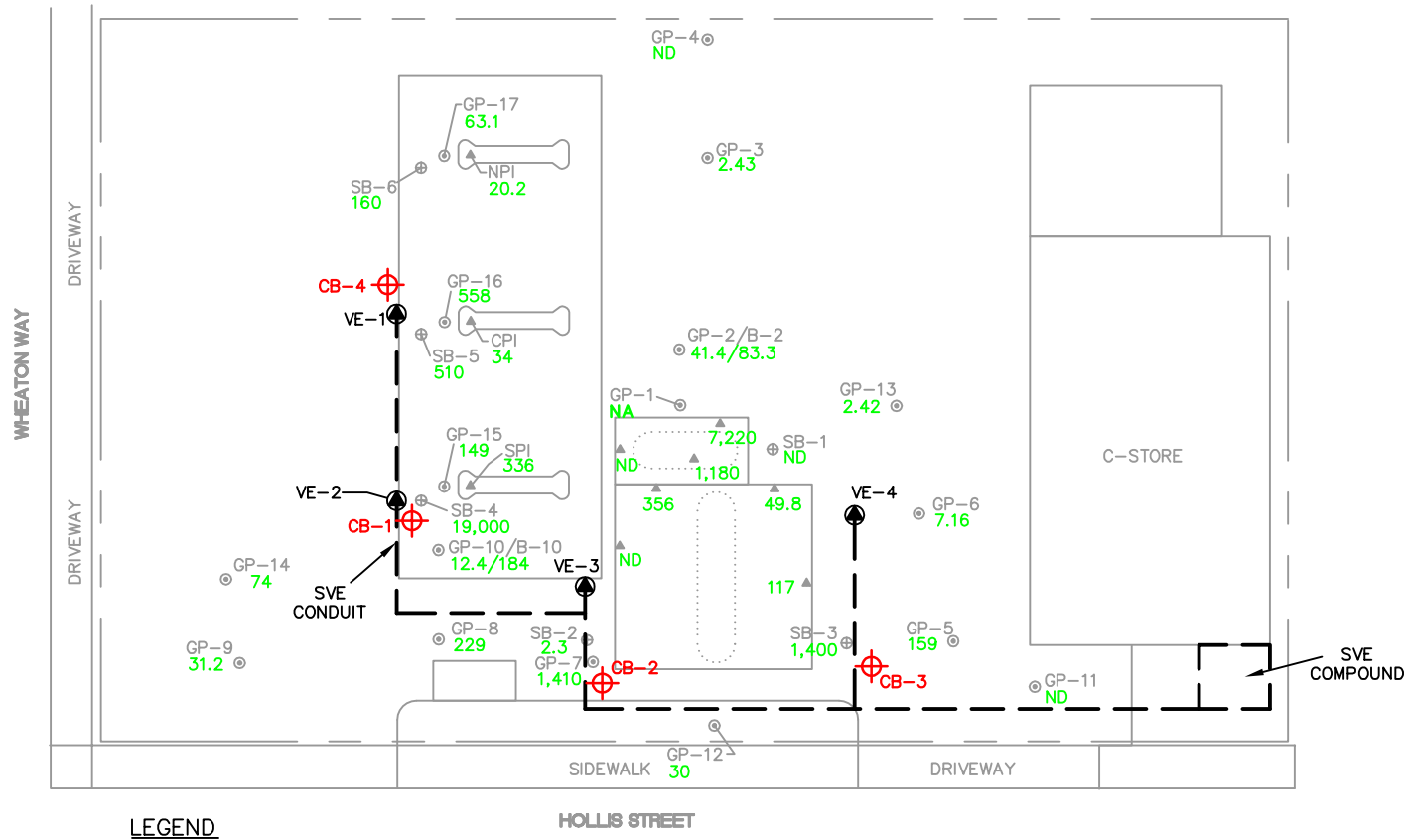
Site No. 3520
4200 Wheaton Way
Bremerton, Washington

DATE DRAWN 01/31/2017

PROJECT NO. 623

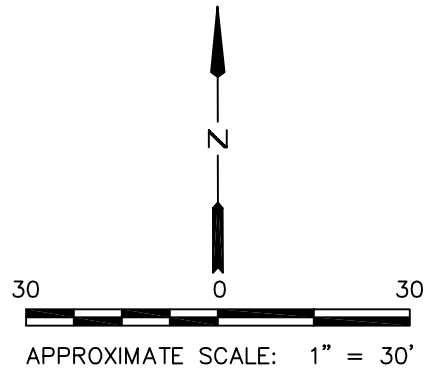
FILE NO. 623F2-SP

W:\03_Site Assessment & Remediation\Eagle Canyon (PC&F)\01-3520 - Wheaton Way, Bremerton WA (#623)\Reports\2016 Confirmation Soil Sampling Report\DWGs\623.dwg



LEGEND

SB–1 ⊕	Soil Boring (Environ Strategy, 2010)
GP–1 ⊙	Soil Boring (Clearwater, 1997)
▲	Soil Vapor Extraction Well
▲	Verification Soil Sample (Clearwater, 1997)
⬭	Underground Storage Tank
▭	Pump Island
⌖	Confirmation Soil Boring (ES Engineering, 2016)
74	Highest TPH–Gx Concentration in Soil (See Table 2 For Additional Details)
mg/kg	Milligrams per Kilogram
ND	Not Detected At or Above The Listed Laboratory Method Detection Limit
NA	Not Analyzed/Not Available
SVE	Soil Vapor Extraction



APPROXIMATE SCALE: 1" = 30'

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FIGURE 3

SITE PLAN PLAN SHOWING HIGHEST HISTORICAL TPH–Gx CONCENTRATIONS IN SOIL

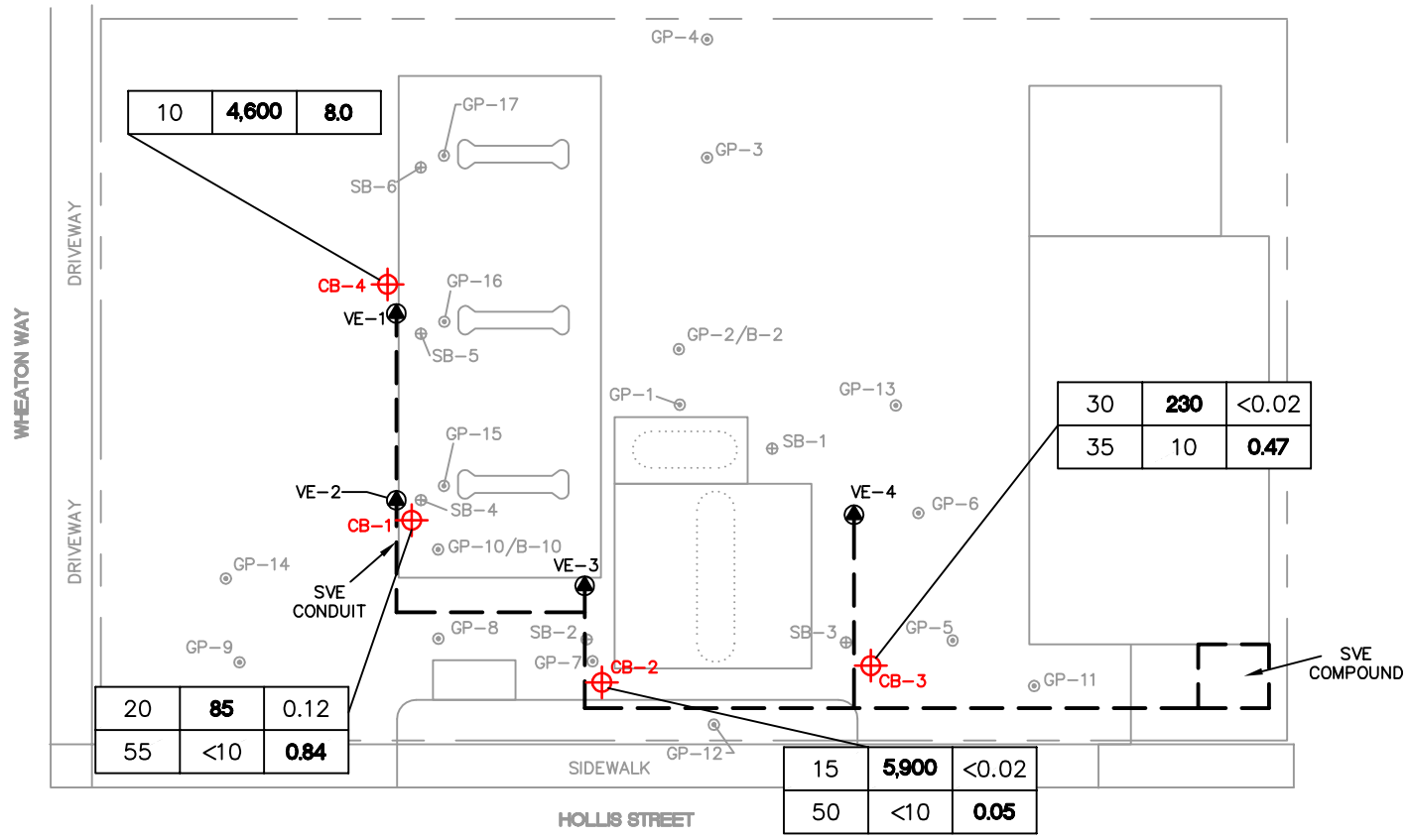
Site No. 3520
4200 Wheaton Way
Bremerton, Washington

DATE DRAWN 02/06/2017

PROJECT NO. 623

FILE NO. 623F3–TPH

W:\03_Site Assessment & Remediation\Eagle Canyon (PC&F)\01–3520 – Wheaton Way, Bremerton WA (#623)\Reports\2016 Confirmation Soil Sampling Report\DWGs\623.dwg



LEGEND

SB–1 ⊕	Soil Boring (Environ Strategy, 2010)
GP–1 ⊙	Soil Boring (Clearwater, 1997)
▲	Soil Vapor Extraction Well
⬭	Underground Storage Tank
▭	Pump Island
⌖	Confirmation Soil Boring (ES Engineering, 2016)
TPH–Gx	Total Petroleum Hydrocarbons as Gasoline
Conc.	Concentration
ft bgs	Feet Below Ground Surface
SVE	Soil Vapor Extraction
<10	Not Detected At or Above The Listed Laboratory Method Detection Limits

Depth ft bgs	TPH–Gx Conc.	Benzene Conc.
15	5,900	<0.02
50	<10	0.05

Concentrations measured in milligrams per kilogram (mg/kg)

Concentrations in **BOLD** exceed MTCA cleanup levels

N

30 0 30

APPROXIMATE SCALE: 1" = 30'

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FIGURE 4

SITE PLAN PLAN SHOWING MAXIMUM TPH–Gx AND BENZENE CONCENTRATIONS IN SOIL

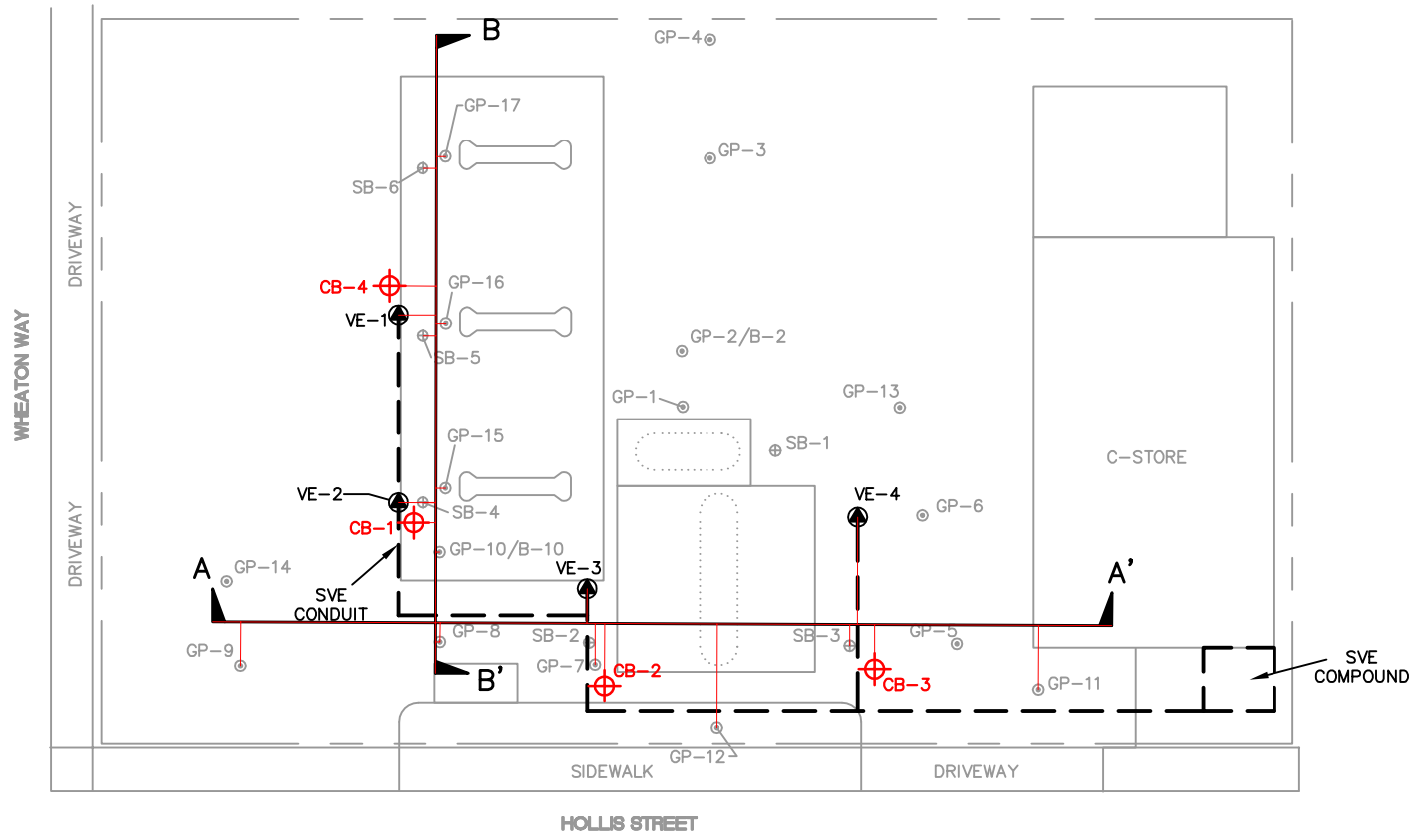
Site No. 3520
4200 Wheaton Way
Bremerton, Washington

DATE DRAWN 02/06/2017

PROJECT NO. 623

FILE NO. 623F4–TPHB

W:\03_Site Assessment & Remediation\Eagle Canyon (PC&F)\01–3520 – Wheaton Way, Bremerton WA (#623)\Reports\2016 Confirmation Soil Sampling Report\DWGs\623.dwg



LEGEND

SB-1 ⊕	Soil Boring (Environ Strategy, 2010)
GP-1 ⊙	Soil Boring (Clearwater, 1997)
▲	Soil Vapor Extraction Well
▭	Underground Storage Tank
▭	Pump Island
⊕	Confirmation Soil Boring (ES Engineering, 2016)
A A'	Cross Section Trace
SVE	Soil Vapor Extraction

N

30 0 30

APPROXIMATE SCALE: 1" = 30'

ES ENGINEERING SERVICES
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FIGURE 5

SITE PLAN PLAN SHOWING CROSS SECTION TRACES

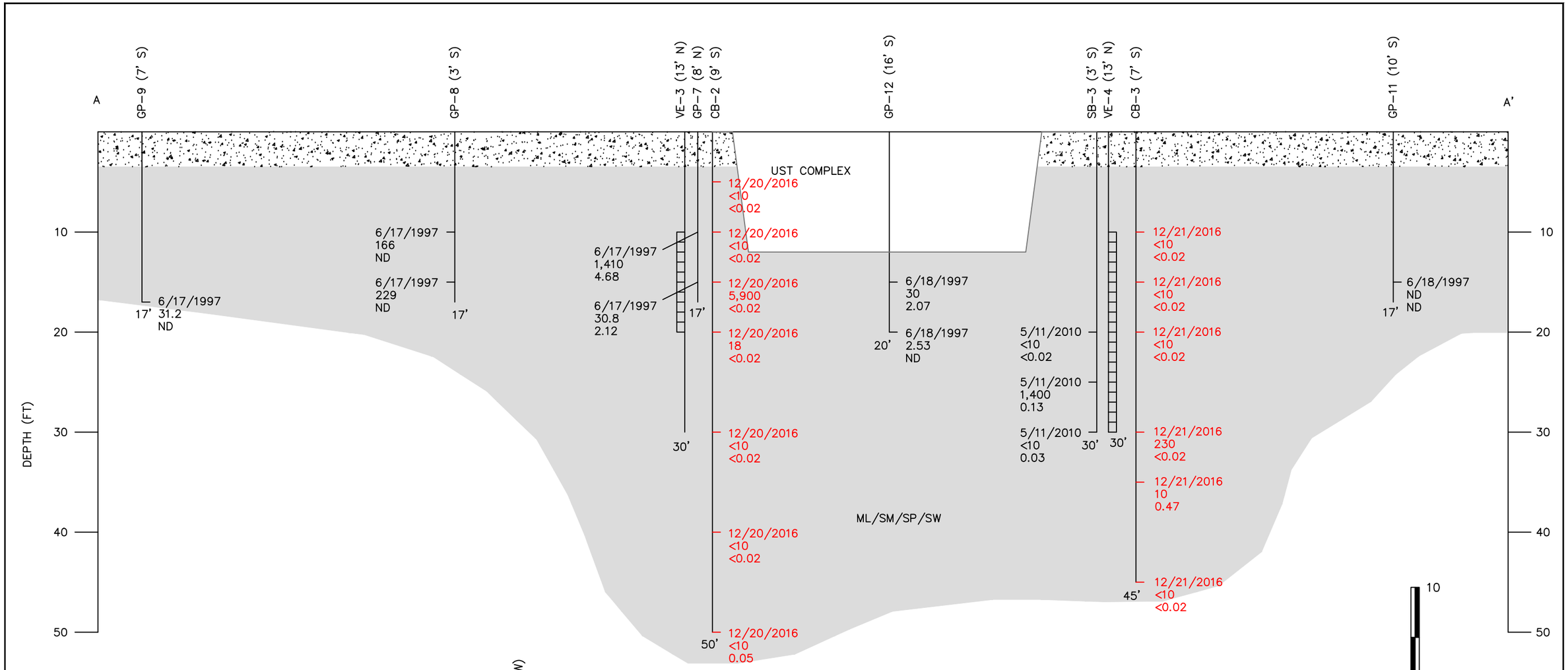
Site No. 3520
4200 Wheaton Way
Bremerton, Washington

DATE DRAWN 02/01/2017

PROJECT NO. 623

FILE NO. 623F5-SPX

W:\03_Site Assessment & Remediation\Eagle Canyon (PC&F)\01-3520 - Wheaton Way, Bremerton WA (#623)\Reports\2016 Confirmation Soil Sampling Report\DWGs\623.dwg



LEGEND

- SURFACE ASPHALT/PREVIOUSLY PLACED FILL
- SILT (ML)/SILTY SAND (SM)/POORLY GRADED SAND (SP)/WELL GRADED SAND (SW) MIXTURE
- TPH-Gx — TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- ND — NON-DETECT AT OR ABOVE LABORATORY DETECTION LIMITS, DETECTION LIMITS UNKNOWN
- APPROXIMATE GROUNDWATER SURFACE
- FT — FEET
- < — NOT DETECTED AT OR ABOVE THE LISTED LABORATORY DETECTION LIMIT

MW-4 (21.0' W)
12/20/2016
2.6
ND
20.0'

WELL/BORING DESIGNATION (OFFSET POSITION RELATIVE TO TRACE LINE)

SAMPLE COLLECTION DATE
TPH-Gx CONCENTRATION DETECTED IN SOIL
BENZENE CONCENTRATION DETECTED IN SOIL

WELL SCREEN INTERVAL

TOTAL BORING/WELL DEPTH (FT)

NOTES
SOIL CONCENTRATIONS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg).

RED TEXT INDICATES MOST RECENT SOIL ANALYTICAL RESULTS.

INDIVIDUAL MATERIAL CONTACTS ARE TOO SMALL AND NUMEROUS TO DIFFERENTIATE.

10
0
10

APPROXIMATE VERTICAL SCALE: 1" = 10'

10 0 10

APPROXIMATE HORIZONTAL SCALE: 1" = 10'

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FIGURE 6

GEOLOGIC CROSS SECTION A-A'

Site No. 3520
4200 Wheaton Way
Bremerton, Washington

DATE DRAWN 04/12/2017

PROJECT NO. 623

FILE NO. 623F6-XSA

W:\03_Site Assessment & Remediation\Eagle Canyon (PC&F)\01-3520 - Wheaton Way, Bremerton WA (#623)\Reports\2016 Confirmation Soil Sampling Report\DWGs\623.dwg

LEGEND

- SURFACE ASPHALT/PREVIOUSLY PLACED FILL
- SILT (ML)/SILTY SAND (SM)/POORLY GRADED SAND (SP)/WELL GRADED SAND (SW) MIXTURE
- TPH–Gx — TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- ND — NON–DETECT AT OR ABOVE LABORATORY DETECTION LIMITS, DETECTION LIMITS UNKNOWN
- APPROXIMATE GROUNDWATER SURFACE
- FT — FEET
- < — NOT DETECTED AT OR ABOVE THE LISTED LABORATORY DETECTION LIMIT

MW–4 (21.0' W) — WELL/BORING DESIGNATION (OFFSET POSITION RELATIVE TO TRACE LINE)

12/20/2016 — SAMPLE COLLECTION DATE
2.6 — TPH–Gx CONCENTRATION DETECTED IN SOIL
ND — BENZENE CONCENTRATION DETECTED IN SOIL

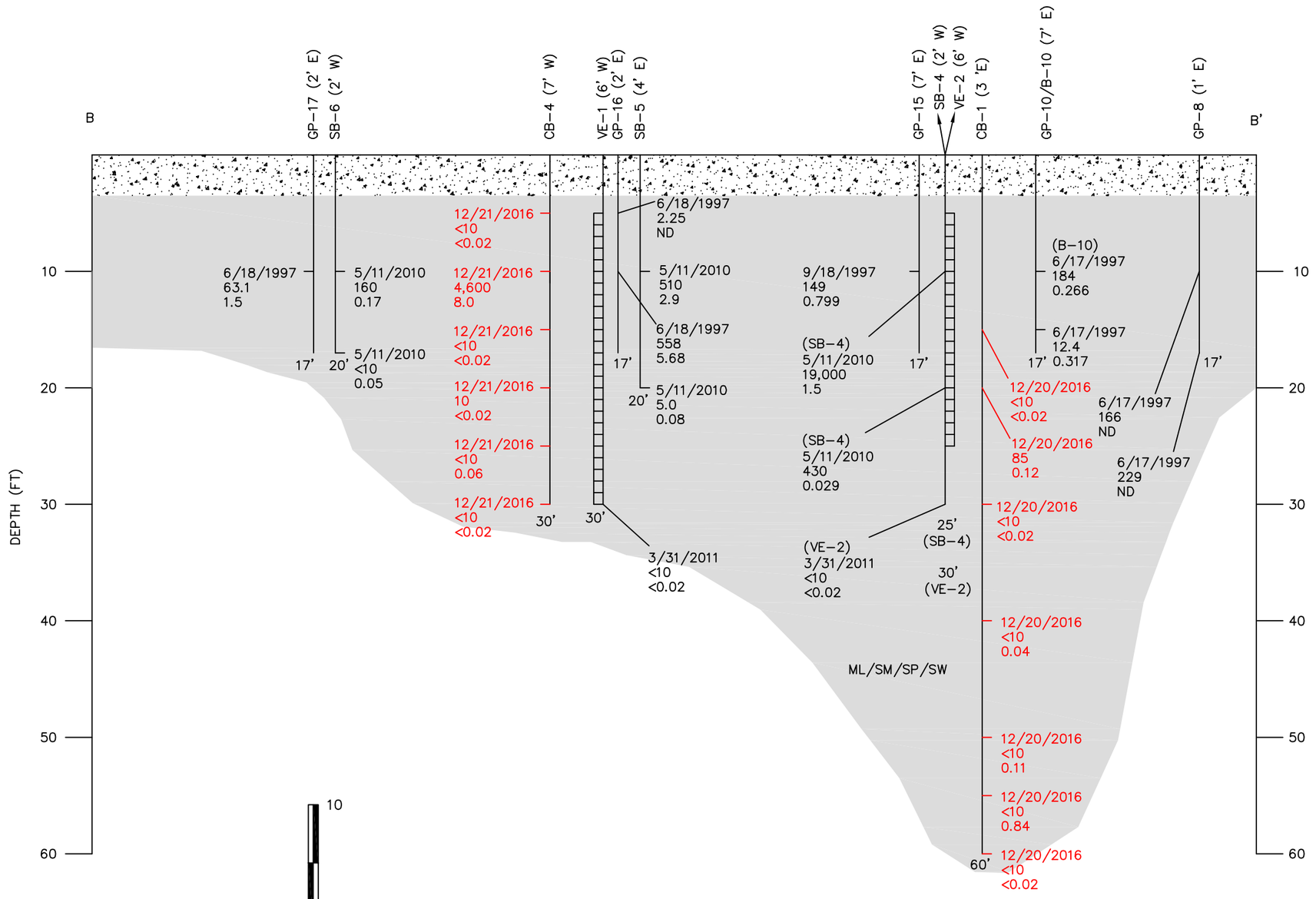
WELL SCREEN INTERVAL

20.0' — TOTAL BORING/WELL DEPTH (FT)

NOTES
SOIL CONCENTRATIONS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg).

RED TEXT INDICATES MOST RECENT SOIL ANALYTICAL RESULTS.

INDIVIDUAL MATERIAL CONTACTS ARE TOO SMALL AND NUMEROUS TO DIFFERENTIATE.



10 0 10

APPROXIMATE VERTICAL SCALE: 1" = 10'

10 0 10

APPROXIMATE HORIZONTAL SCALE: 1" = 10'

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FIGURE 7

GEOLOGIC CROSS SECTION B–B'

Site No. 3520
4200 Wheaton Way
Bremerton, Washington

DATE DRAWN 03/15/2017
PROJECT NO. 623
FILE NO. 623F7–XSB

W:\03_Site Assessment & Remediation\Eagle Canyon (PC&F)\01–3520 – Wheaton Way, Bremerton WA (#623)\Reports\2016 Confirmation Soil Sampling Report\DWGs\623.dwg

TABLES

Table 1
Summary of Confirmaiton Soil Sample Results
Site No. 3520
Bremerton, Washington

Boring ID	Sample ID	Date Sampled	Depth (ft bgs)	PID Readings (ppmv)	TPH-Dx (mg/kg)	TPH-Ox (mg/kg)	TPH-Gx (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	Naph (mg/kg)	2-Methyl (mg/kg)	1-Methyl (mg/kg)	Total Pb (mg/kg)
					NWTPH-Dx Ext		NWTPH-Gx	Method 8260[1]					Method 8270			6020A/3050B
CB-1	CB-1-15	12/20/16	15	0.0	--	--	<10	<0.02	<0.05	<0.05	<0.15	--	<0.02	<0.02	<0.02	--
	CB-1-20	12/20/16	20	1,023	--	--	**85**	**0.12**	**1.1**	0.53	3.1	--	0.08	<0.02	<0.02	--
	CB-1-30	12/20/16	30	21.3	--	--	<10	<0.02	0.08	<0.05	<0.15	--	<0.02	<0.02	<0.02	--
	CB-1-40	12/20/16	40	233.0	--	--	<10	**0.04**	0.46	0.15	0.97	--	<0.02	<0.02	<0.02	--
	CB-1-50	12/20/16	50	269.5	--	--	<10	**0.11**	0.33	0.19	1.0	--	<0.02	<0.02	<0.02	--
	CB-1-55	12/20/16	55	83.9	--	--	<10	**0.84**	<0.05	0.28	<0.15	--	<0.02	<0.02	<0.02	--
	CB-1-60	12/20/16	60	8.0	--	--	<10	<0.02	<0.05	<0.05	<0.15	--	<0.02	<0.02	<0.02	--
CB-2	CB-2-5	12/20/16	5	0.0	--	--	<10	<0.02	<0.05	<0.05	<0.15	--	<0.02	<0.02	<0.02	--
	CB-2-10	12/20/16	10	0.0	--	--	<10	<0.02	<0.05	<0.05	<0.15	--	<0.02	<0.02	<0.02	--
	CB-2-15	12/20/16	15	333.2	--	--	**5,900**	<0.02	4.9	**40**	**240**	--	0.97	1.0	0.63	--
	CB-2-20	12/20/16	20	633.4	--	--	18	<0.02	<0.05	<0.05	0.16	--	<0.02	<0.02	<0.02	--
	CB-2-30	12/20/16	30	87.8	--	--	<10	<0.02	<0.05	<0.05	<0.15	--	<0.02	<0.02	<0.02	--
	CB-2-40	12/20/16	40	74.1	--	--	<10	<0.02	<0.05	<0.05	0.19	--	<0.02	<0.02	<0.02	--
	CB-2-50	12/20/16	50	8.3	--	--	<10	**0.05**	<0.05	0.12	<0.15	--	<0.02	<0.02	<0.02	--
CB-3	CB-3-10	12/21/16	10	35.8	--	--	<10	<0.02	<0.05	0.05	<0.15	--	<0.02	<0.02	<0.02	--
	CB-3-15	12/21/16	15	0.4	--	--	<10	<0.02	<0.05	<0.05	<0.15	--	<0.02	<0.02	<0.02	--
	CB-3-20	12/21/16	20	1.5	--	--	<10	<0.02	<0.05	<0.05	<0.15	--	<0.02	<0.02	<0.02	--
	CB-3-30	12/21/16	30	118.6	--	--	**230**	<0.02	0.74	2.5	**15**	--	<0.02	<0.02	<0.02	--
	CB-3-35	12/21/16	35	163.0	--	--	10	**0.47**	0.51	0.12	0.75	--	<0.02	<0.02	<0.02	--
	CB-3-45	12/21/16	45	2.1	--	--	<10	<0.02	<0.05	<0.05	<0.15	--	<0.02	<0.02	<0.02	--
CB-4	CB-4-5	12/21/16	5	0.0	--	--	<10	<0.02	<0.05	<0.05	<0.15	--	<0.02	<0.02	<0.02	--
	CB-4-10	12/21/16	10	1,117	--	--	**4,600**	**8.0**	**150**	**92**	**510**	--	1.1	1.2	0.63	--
	CB-4-15	12/21/16	15	33.0	--	--	<10	<0.02	0.14	0.09	0.52	--	<0.02	<0.02	<0.02	--
	CB-4-20	12/21/16	20	85.6	--	--	10	<0.02	0.14	0.09	0.63	--	<0.02	<0.02	<0.02	--
	CB-4-25	12/21/16	25	2.4	--	--	<10	**0.06**	0.13	<0.05	0.13	--	<0.02	<0.02	<0.02	--
	CB-4-30	12/21/16	30	2.0	--	--	<10	<0.02	<0.05	<0.05	<0.15	--	<0.02	<0.02	<0.02	--
MTCA Method A Cleanup Levels[2]					2,000	2,000	100/30[3]	0.03	7	6	9	0.1	5			250

Notes:

Results in **BOLD** indicate detections that exceed MTCA Method A cleanup levels for soil
[1]: All soil samples analyzed for full scan VOCs by Method 8260. See lab report for complete list of analytes (Appendix H)
[2]: MTCA Method A Table 740-1 for unrestricted land use, WAC 173-340-900 Tables
[3]: 100 mg/kg when benzene is absent and 30 mg/kg when benzene is present
<: not detected at or above stated reporting limit (RL)
--: not analyzed
1-Methyl: 1-Methylnaphthalene
2-Methyl: 2-Methylnaphthalene
BTEX: benzene, toluene, ethylbenzene, total xylenes
EDB: 1,2 dibromoethane
Ext: extended
ft bgs: feet below ground surface
mg/kg: milligrams per kilogram
MTBE: methyl tert-butyl ether
MTCA: Model Toxics Control Act
Naph: naphthalene
Pb: lead
PID: photoionization detector
ppmv: parts per million by volume
SB: soil boring
TPH-Dx: total diesel-range petroleum hydrocarbons
TPH-Gx: total gasoline-range petroleum hydrocarbons
TPH-Ox: total oil-range petroleum hydrocarbons
VOCs: volatile organic compounds

Table 2
Summary of Historical Soil Sample Results
Site No. 3520
Bremerton, Washington
Page 1 of 2

Sample ID	Sample Date	Depth (ft bgs)	TPH-Ox (mg/kg)	TPH-Dx (mg/kg)	TPH-Gx (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	Total Pb (mg/kg)
			NWTPH-Dx		NWTPH-Gx	EPA Method 8020/8021B				
SB-1-15	5/11/10	15	--	--	<10	0.03	<0.05	<0.05	0.09	--
SB-1-30	5/11/10	30	--	--	<10	0.02	<0.05	<0.05	0.09	--
SB-2-15	5/11/10	15	--	--	2.3	**0.20**	0.78	0.12	0.55	--
SB-2-30	5/11/10	30	--	--	<10	0.03	<0.05	<0.05	0.06	--
SB-3-20	5/11/10	20	--	--	<10	<0.02	0.07	0.06	0.32	--
SB-3-25	5/11/10	25	<100	<50	**1,400**	**0.13**	6.5	**11**	**51**	--
SB-3-30	5/11/10	30	--	--	<10	0.03	0.11	0.05	0.24	--
SB-4-10	5/11/10	10	<100	<50	**19,000**	**1.5**	0.19	**160**	**590**	19
SB-4-20	5/11/10	20	--	--	**430**	0.029	0.024	0.55	3.6	--
SB-4-25	5/11/10	25	--	--	<10	0.021	<0.05	0.055	0.24	<5.0
SB-5-10	5/11/10	10	<100	<50	**510**	**2.9**	4.0	6.0	**30**	--
SB-5-20	5/11/10	20	--	--	5.0	**0.08**	0.26	0.09	0.47	--
SB-6-10	5/11/10	10	<100	<50	**160**	**0.17**	<0.05	1.7	1.4	--
SB-6-20	5/11/10	20	--	--	<10	**0.05**	<0.05	<0.05	0.05	--
VE-1-30	3/31/11	30	<100	<50	<10	<0.02	<0.05	<0.05	0.17	--
VE-2-30	3/31/11	30	<100	<50	<10	<0.02	0.082	<0.05	0.18	<5.0
GP-1	6/17/97	0-4	--	--	--	--	--	--	--	
GP-1	6/17/97	4-8	--	--	--	--	--	--	--	
GP-1	6/17/97	8-12	--	--	--	--	--	--	--	
GP-2	6/17/97	0-4	--	--	--	--	--	--	--	
GP-2	6/17/97	4-8	--	--	--	--	--	--	--	
GP-2	6/17/97	8-12	--	--	--	--	--	--	--	
GP-2	6/17/97	12-15.5	--	--	41.4	ND	ND	0.0846	0.854	
B-2	6/17/97	10	--	--	83.3	ND	0.0886	0.141	0.14	
GP-3	6/17/97	0-4	--	--	--	--	--	--	--	
GP-3	6/17/97	4-8	--	--	--	--	--	--	--	
GP-3	6/17/97	8-12	--	--	2.43	ND	ND	ND	ND	
GP-3	6/17/97	12-14	--	--	ND	ND	ND	ND	ND	
GP-4	6/17/97	0-4	--	--	--	--	--	--	--	
GP-4	6/17/97	4-8	--	--	--	--	--	--	--	
GP-4	6/17/97	8-9.5	--	--	ND	ND	ND	ND	ND	
GP-5	6/17/97	5	--	--	--	--	--	--	--	
GP-5	6/17/97	10	--	--	**159**	**11.9**	**26.5**	2.66	**14.5**	
GP-5	6/17/97	15	--	--	ND	ND	ND	ND	ND	
GP-6	6/17/97	5	--	--	--	--	--	--	--	
GP-6	6/17/97	10	--	--	7.16	ND	0.254	0.101	0.692	
GP-7	6/17/97	5	--	--	--	--	--	--	--	
GP-7	6/17/97	10	--	--	**1,410**	**4.68**	**37.1**	**19.3**	**135**	
GP-7	6/17/97	15	--	--	**30.8**	**2.12**	3.95	0.492	3.19	
GP-8	6/17/97	5	--	--	--	--	--	--	--	
GP-8	6/17/97	10	--	--	**166**	ND	0.767	2.18	**13.8**	
GP-8	6/17/97	15	--	--	**229**	ND	4.25	3.99	**23.3**	
GP-9	6/17/97	5	--	--	--	--	--	--	--	
GP-9	6/17/97	10	--	--	31.2	ND	ND	ND	ND	
GP-10	6/17/97	5	--	--	--	--	--	--	--	
GP-10	6/17/97	10	--	--	**184**	**0.266**	2.36	1.68	**9.11**	
GP-10	6/17/97	15	--	--	12.4	**0.317**	2.08	0.223	1.42	
GP-11	6/18/97	5	--	--	--	--	--	--	--	
GP-11	6/18/97	10	--	--	--	--	--	--	--	
GP-11	6/18/97	15	--	--	ND	ND	ND	ND	ND	

Table 2
Summary of Historical Soil Sample Results
Site No. 3520
Bremerton, Washington
Page 2 of 2

Sample ID	Sample Date	Depth (ft bgs)	TPH-Ox (mg/kg)	TPH-Dx (mg/kg)	TPH-Gx (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	Total Pb (mg/kg)
			NWTPH-Dx		NWTPH-Gx	EPA Method 8020/8021B				
GP-12	6/18/97	5	--	--	--	--	--	--	--	
GP-12	6/18/97	10	--	--	--	--	--	--	--	
GP-12	6/18/97	15	--	--	**30**	**2.07**	6.21	0.248	3.13	
GP-12	6/18/97	20	--	--	2.53	ND	0.0809	ND	0.113	
GP-13	6/18/97	5	--	--	--	--	--	--	--	
GP-13	6/18/97	10	--	--	2.42	ND	ND	ND	ND	
GP-14	6/18/97	5	--	--	--	--	--	--	--	
GP-14	6/18/97	10	--	--	**74**	**0.186**	0.298	0.819	3.52	
GP-15	6/18/97	5	--	--	--	--	--	--	--	
GP-15	6/18/97	10	--	--	**149**	**0.799**	6.1	1.61	**9.59**	
GP-16	6/18/97	5	--	--	2.25	ND	ND	ND	ND	
GP-16	6/18/97	10	--	--	**558**	**5.68**	**23.3**	**8.47**	**44.1**	
GP-17	6/18/97	5	--	--	--	--	--	--	--	
GP-17	6/18/97	10	--	--	**63.1**	**1.5**	1.08	0.765	3.15	
SS-1	9/26/97	--	--	--	**2,110**	**2.61**	**77.9**	**40.9**	**230**	
SS-2	9/26/97	--	--	--	11.7	ND	ND	ND	0.520	
FLOOR-12'	9/26/97	12	--	--	**1,180**	**6.87**	**49.7**	**17.2**	**72.6**	
SW WALL-8'	9/26/97	8	--	--	**356**	**4.85**	**13.5**	5.4	**30.3**	
SE WALL-8'	9/26/97	8	--	--	**49.8**	**6.95**	5.67	0.83	5.01	
N&E WALL-8'	9/26/97	8	--	--	**7,220**	**27.6**	**191**	**111**	**626**	
E WALL-8'	9/26/97	8	--	--	ND	**1.16**	0.358	0.134	0.546	
E TANK-5.5'	1/10/96	5.5	--	--	**117**	**1.07**	**12.9**	2.68	**13.4**	
W TANK-5.5'	10/10/96	5.5	--	--	ND	**0.278**	0.0642	ND	1.85	
SPI-2'	10/1/96	2	--	--	**336**	ND	0.246	0.54	4.75	
CPI-2'	10/1/96	2	--	--	34	ND	ND	0.11	0.613	
NPI-2'	10/1/96	2	--	--	20.2	ND	0.103	0.0872	1.06	
MTCA Method A Cleanup Goals[1]			2,000	2,000	100/30[2]	0.03	7	6	9	250

Notes:

Bold where detections exceed MTCA Method A Cleanup levels

(1): MTCA Method A Table 740-1 for unrestricted land use, WAC 173-340-900 Tables

(2): 100 mg/kg when benzene is absent and 30 mg/kg when present

(3): The hydrocarbons present in this sample are a complex mixture of both gasoline and diesel range organics

*: result to be confimed by advancing confirmation soil borings

--: not analyzed / not measured

<: not detected at or above laboratory reporting limit

BTEX: benzene, toluene, ethylbenzene, total xylenes; analyzed by EPA Methods 5030/8020, samples collected after 1992 analyzed by EPA Method 8021B

ft bgs: feet below ground surface

ND: not detected at or above laboratory reporting limit, no reporting limit listed

mg/kg: milligrams per kilogram

MTCA: Washinton State Model Toxics Control Act Method A Cleanuo Guidelines

Total Pb: total lead analyzed by EPA Method 7420, samples collected after 1992 analyzed using EPA Method 6020

TPH-Gx: total gasoline-range petroleum hydrocarbons, analyzed by Northwest Method NWTPH-Gx, EPA Methods 5030/8015

TPH-Dx: total diesel-range petroleum hydrocarbons, analyzed by Northwest Method NWTPH-Dx, EPA Methods 3550/8015

TPH-Ox: total oil-range petroleum hydrocarbons, analyzed by Northwest Method NWTPH-Dx, EPA Method 418.1 Modified

APPENDIX A

SITE BACKGROUND INFORMATION

SITE BACKGROUND

Site 01-352
4200 Wheaton Way
Bremerton, Washington

The subject site is located at 4200 Wheaton Way in Bremerton, Washington and is approximately a 0.5-acre rectangular-shaped, outparcel of commercial land located on the northeast corner of Wheaton Way and Hollis Street. The site is a fuel retail station with four underground storage tanks (USTs) and three pump islands that are located near (west of) a single-story convenience store. The USTs include one 6,000-gallon tank (diesel), two 12,000-gallon tanks (regular gasoline) and one 12,000-gallon tank (premium gasoline). The site is relatively flat, covered with asphalt and concrete, and is part of a larger retail shopping center. Surrounding land use includes commercial properties including retail shops and restaurants.

The site lies at an elevation of approximately 300 feet above mean sea level (ft amsl) on a small peninsula within Puget Sound. It is located approximately 2 miles from Port Orchard Waterway, Dyes Inlet and Sinclair Inlet, which surround the peninsula to the east, west and south, respectively. A site location map is provided as Figure 1. Pertinent site features are shown on Figure 2.

In September and October 1996, the fuel distribution system at the subject site was upgraded. During system upgrades, hydrocarbon-affected soil was encountered in the tank cavity and 450 tons of impacted soil was excavated and transported to a disposal facility in Tacoma, Washington. The release was reported to the Washington Department of Ecology (DOE) and five verification soil samples were collected from the tank cavity for laboratory analysis. In addition, five soil samples were collected from the beneath the product lines and pump islands. The samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds and total petroleum hydrocarbons quantified as gasoline (TPH-Gx). Hydrocarbon impacts in excess of Model Toxics Cleanup Act (MTCA) Method A Cleanup Levels were identified in all ten soil samples. Specifically, the highest levels of fuel hydrocarbons were reported in a composite sample (identified as N&E Wall-8'), which was collected from the north and east sidewall of the diesel tank cavity at a depth of 8 feet. Sample N&E Wall-8' contained TPH-Gx at 7,220 milligrams per kilogram (mg/kg), benzene at 27.6 mg/kg, toluene at 191 mg/kg, ethylbenzene at 111 mg/kg and total xylenes at 626 mg/kg.

In June 1997, Clearwater conducted subsurface site assessment activities. During Clearwater's investigation, 17 soil borings (GP-1 through GP-17) were installed at various locations around the site to delineate the extent of hydrocarbon-affected soil. Borings were terminated at a depth of 17 feet bgs due to refusal. Twenty-six (26) soil samples collected from the borings were analyzed for TPH-Gx and BTEX compounds. Hydrocarbon-affected soil was detected in a majority of the soil borings. The highest concentration of TPH-Gx (1,410 mg/kg) was in a 10-foot sample from boring

GP-7 located near the southwest corner of the tank cavity. Similarly, benzene was detected at a maximum level of 11.9 mg/kg in a 10-foot sample collected from GP-5 located east of the existing tank cavity.

In May 2010, Environ Strategy conducted an additional site assessment to evaluate subsurface conditions in the vicinity of the fuel distribution system (USTs and pump islands). Six soil borings (identified as SB-1 through SB-6) were advanced, of which, Borings SB-1, SB-2 and SB-3 were located near the existing tank cavity and advanced to a depth of 30 feet. Borings SB-4, SB-5 and SB-6 were drilled at the west end of the southern, central and northern pump islands, respectively, and extended to a depth of 25 feet at SB-4 and to 20 feet bgs at SB-5 and SB-6. Assessment findings are detailed in the *Focused Phase II Site Assessment Report,* dated May 30, 2010.

Based on the results of site assessment, an SVE system was designed and vapor extraction wells VE-1 through VE-4 were installed from March 29 to 31, 2011. Remediation by SVE was pilot tested at the site from April 4 to 7, 2011, and proved effective at removing hydrocarbons from subsurface soil, as detailed in the *Soil Vapor Extraction Well Installation and Pilot Test Report,* dated June 21, 2011. An application for an air discharge permit for the operation of SVE equipment at the site for the remediation of hydrocarbons in soil was submitted on June 6, 2011.

The air discharge permit for the operation of SVE equipment at the site was received from the Puget Sound Clean Air Agency on November 7, 2011, and following system installation, baseline samples were collected on February 15, 2012, to demonstrate compliance with the air discharge permit requirements.

On February 28, 2012, the SVE system began continuous operation for the remediation of hydrocarbons in subsurface soil. Environ Strategy began bi-monthly site visits for operation and maintenance (O&M) of the system. Vapor flow rates, vacuum, system temperatures, and concentrations of unspeciated hydrocarbons in vapor in system influent, effluent, and individual wells are recorded at each visit. Vapor samples are collected monthly from system influent and effluent sample ports and submitted for laboratory analysis.

As reported in the *Remediation System Status Report,* dated October 15, 2012, field observations and laboratory test results demonstrate that soil vapor extraction is effective at removing petroleum constituents from subsurface soil beneath the site. During the first six months of system operation an estimated total of 7,461 pounds of petroleum hydrocarbons were extracted from the site subsurface. Based on the results of the first six months of system operation, Environ Strategy recommended continued operation of the SVE system until hydrocarbon removal rates reached asymptotic levels.

As of September 30, 2013, an estimated total of 12,179 pounds of petroleum hydrocarbons had been extracted from the site subsurface, treated and discharged. Hydrocarbon concentrations in system influent vapor exhibit have fluctuated since system start-up but show a decreasing trend as select extraction wells are opened/closed to optimize system performance. Field PID readings from the individual extraction wells show hydrocarbon concentrations have fluctuated over time and exhibit an increase during dry seasons. O&M data and analytical results are presented in the

Remediation System Status Report, dated October 15, 2013. Similar trends in O&M data were observed from October 2013 through January 2014, therefore, confirmation soil sampling was recommended to evaluate current soil conditions.

APPENDIX B

SITE SAFETY BRIEFING FORMS

SITE SAFETY BRIEFING FORM

Site: 352

Date: 12/20/2016 Time: 0800

Project No:

Task: Confirmation Borings Health/Safety Officer: Laura Skow

Person Providing Briefing: Nick Olivier

Topics:

- [x] Site HASP
- [x] Chemical Hazards
- [x] Equipment Hazards
- [x] Electrical Hazards
- [ ] Heat Stress
- [x] Personal Decontamination
- [x] Personal Hygiene
- [x] Employee Rights/Responsibilities
- [x] Hazard Evaluations
- [x] Emergency Response Procedures

Persons in Attendance: (Name/Organization)

Nick Olivier (ES Eng.)
Wesley Kennedy (Cascade Drilling)
Paul Tamsehd (Cascade Drilling)
Cody Henderson (Cascade)
Kody Brooks Cascade

Persons in Attendance: (Name/Organization)

Jimes Crable (Cascade)

Notes/Comments:

- Traffic is main hazard-
- Think through each task before starting-
- Walk around vehicles before moving-
- Underground utilities (Geo markout).

environmental services

SITE SAFETY BRIEFING FORM

Site: EAGLE #3520

Date: 12/21/2016 Time: 0745

Project No:

Task: Confirmation Borings Health/Safety Officer: Laura Skow

Person Providing Briefing: Nick Olivier

Topics:

- ☐ Site HASP
- ☒ Chemical Hazards
- ☒ Equipment Hazards
- ☐ Electrical Hazards
- ☐ Heat Stress
- ☒ Personal Decontamination
- ☒ Personal Hygiene
- ☒ Employee Rights/Responsibilities
- ☒ Hazard Evaluations
- ☐ Emergency Response Procedures

Persons in Attendance: (Name/Organization)

Nick Olivier ES ENG.
James Goble Cascade
Kodey Brooks Cascade
Wesley Kennedy Cascade

Persons in Attendance: (Name/Organization)

Notes/Comments:

- Importance of exclusion zones - Traffic & pedestrian control.

environmental services

14.0 ACKNOWLEDGMENT AND UNDERSTANDING OF PLAN

This health & safety plan was prepared by the undersigned, having successfully completed OSHA standard 29 CFR 1910.120 40-hour hazardous materials health & safety training.

Site Health & Safety Officer: Laura Skow
Laura Skow

Program Manager:
Dane Nygaard

I UNDERSTAND AND AGREE TO THE ABOVE PLAN

	Name & Company	Date
Contractors:		
Geologist/Field Technicians:	Nick Olivier	12/20/2016
	Cody Henderson	12/20/2016
	Paul Tannard Jenkins	12/20/2016
	Wesley Kennedy	12/20/2016
Other:	Cody Brooks	12/20/2016
	James Gobe	12/20/16

APPENDIX C

BORING LOGS

SOIL BORING LOG

Boring/Well Number: CB-1

Sheet 1 of 3

Client/Site:	Eagle Canyon Capital, LLC - Site No. 7290	Start date: 12/20/2016	Completion date: 12/20/2016
Address:	4200 Wheaton Way	Drilling Contractor: Cascade Drilling LP	
	Bremerton, Washington	Drilling Foreman: James Goble	
Project No.	191	Rig Type: CME 75 truck mounted	
Logged by:	Nick Olivier	Drilling Method: hollow stem auger	Hole diameter (inches): 8.0

WELL FILTER PACK AND BACKFILL

sand (#10/20):	from (ft.)	n/a	to	n/a
bentonite chips:	from (ft.)	1.5	to	60
bentonite chips:	from (ft.)	n/a	to	n/a
bentonite grout:	from (ft.)	n/a	to	n/a
concrete:	from (ft.)	0	to	1.5

WELL CONSTRUCTION

riser material: n/a — riser diameter: n/a

screen material: n/a — screen diameter: n/a — screen slot size: n/a

screened interval (ft): n/a

depth to GW during drilling: n/a

Depth to GW after stabilization: n/a

Drilling Sample Type	Drilling Sample Recovery	Blow Count	Analytical Sample Time	Analytical Sample ID	Well Construction	Depth Scale (feet)	USCS Symbol	Descriptions of Materials and Conditions	PID (PPM)
						1	FILL	4 inch thick asphalt surface, crushed rock base, previously placed, moist, silty, gravelly fill material to 3.5 feet depth (FILL). No hydrocarbon odor or staining.	0.0
SS	100%	3 3				5	SM	Medium brown, mottled, wet, loose SILTY SAND with few fine to medium semi-angular gravels. No hydrocarbon odor or staining.	0.0
		4							
SS	100%	6 8				10	SP	Medium grey, moist, medium dense poorly graded medium SAND with trace silt and trace fine gravels. No hydrocarbon odor or staining.	0.0
		7							
SS	100%	11 30	15:10	CB-1-15		15	SP	Same as above. No hydrocarbon odor or staining.	0.5
		26							

concrete

bentonite chips

water level at time of drilling

nr = not recorded

Comments: Samples collected with 18 inch long, 2.5 inch inside diameter split spoon (SS) Dames & Moore sampler driven with a 140 lbs. hammer.

SOIL BORING LOG **Boring/Well Number: CB-1** **Sheet 2 of 3**

Client/Site:	Eagle Canyon Capital, LLC - Site No. 7290	Start date:	12/20/2016	Completion date:	12/20/2016
Address:	4200 Wheaton Way	Drilling Contractor:	Cascade Drilling LP		
	Bremerton, Washington	Drilling Foreman:	James Goble		
Project No.	191	Rig Type:	CME 75 truck mounted		
Logged by:	Nick Olivier	Drilling Method:	hollow stem auger	Hole diameter (inches):	8.0

WELL FILTER PACK AND BACKFILL

sand (#10/20):	from (ft.)	n/a	to	n/a
bentonite chips:	from (ft.)	1.5	to	60
bentonite chips:	from (ft.)	n/a	to	n/a
bentonite grout:	from (ft.)	n/a	to	n/a
concrete:	from (ft.)	0	to	1.5

WELL CONSTRUCTION

riser material: n/a riser diameter: n/a
screen material: n/a screen diameter: n/a screen slot size: n/a
screened interval (ft): n/a
depth to GW during drilling: n/a
Depth to GW after stabilization: n/a

Drilling Sample Type	Drilling Sample Recovery	Blow Count	Analytical Sample Time	Analytical Sample ID	Well Construction	Depth Scale (feet)	USCS Symbol	Descriptions of Materials and Conditions	PID (PPM)
SS	50%	20 50/4	15:15	CB-1-20		21	SP	Orange brown to grey, oxidized, moist, very dense, gravelly, poorly graded medium SAND with trace silt. Moderate hydrocarbon odor, no staining.	1023
						22			
						23			
						24			
SS	50%	44 50/6				25	SP	Same as above. Slight hydrocarbon odor, no staining.	68.2
						26		Increase in rig chatter, possible seam of gravels.	
						27			
						28			
						29		Dramatic decrease in rig chatter.	
SS	100%	23 26	15:18	CB-1-30		30	SP	Medium to dark grey, medium to very dense, moist, poorly graded medium SAND with trace silt, no gravels. Very slight hydrocarbon odor, no staining.	21.3
		25				31			
						32			
						33			
						34			
						35	▽	Limited perched groundwater.	
SS	100%	31 21					SP	Same as above. No hydrocarbon odor or staining.	102.6
		37				36			
						37			
						38			
						39			
						40			

concrete

bentonite chips

water level at time of drilling

nr = not recorded

Comments: Samples collected with 18 inch long, 2.5 inch inside diameter split spoon (SS) Dames & Moore sampler driven with a 140 lbs. hammer.

SOIL BORING LOG **Boring/Well Number: CB-1** **Sheet 3 of 3**

Client/Site: Eagle Canyon Capital, LLC - Site No. 7290
Address: 4200 Wheaton Way
Bremerton, Washington
Project No. 191
Logged by: Nick Olivier

Start date: 12/20/2016 Completion date: 12/20/2016
Drilling Contractor: Cascade Drilling LP
Drilling Foreman: James Goble
Rig Type: CME 75 truck mounted
Drilling Method: hollow stem auger Hole diameter (inches): 8.0

WELL FILTER PACK AND BACKFILL

sand (#10/20):	from (ft.)	n/a	to	n/a
bentonite chips:	from (ft.)	1.5	to	60
bentonite chips:	from (ft.)	n/a	to	n/a
bentonite grout:	from (ft.)	n/a	to	n/a
concrete:	from (ft.)	0	to	1.5

WELL CONSTRUCTION

riser material: n/a riser diameter: n/a
screen material: n/a screen diameter: n/a screen slot size: n/a
screened interval (ft): n/a
depth to GW during drilling: n/a
Depth to GW after stabilization: n/a

Drilling Sample Type	Drilling Sample Recovery	Blow Count	Analytical Sample Time	Analytical Sample ID	Well Construction	Depth Scale (feet)	USCS Symbol	Descriptions of Materials and Conditions	PID (PPM)
SS	100%	31 27	15:25	CB-1-40		41	SP	Medium to dark grey, medium to very dense, moist, poorly graded medium SAND with trace silt, no gravels. Moderate hydrocarbon odor, no staining.	233.0
		32				42			
						43			
						44			
						45			
SS	100%	21 21				46	SP	Same as above. Moderate hydrocarbon odor, no staining.	180.7
		25				47			
						48			
						49			
						50			
SS	100%	21 23	15:30	CB-1-40		51	SP	Same as above. Moderate hydrocarbon odor, no staining.	269.5
		27				52			
						53			
						54			
						55			
SS	100%	21 30	15:35	CB-1-55		56	SP	Medium grey, medium dense, moist, poorly graded fine SAND with trace silt, no gravels. Slight hydrocarbon odor, no staining.	83.9
		25				57			
						58			
						59			
SS	100%	24	15:40	CB-1-60		60		Same as above. No hydrocarbon odor or staining. Bottom of boring at 60.0 feet.	8.0
		25 27							

concrete
bentonite chips
water level at time of drilling

nr = not recorded

Comments: Samples collected with 18 inch long, 2.5 inch inside diameter split spoon (SS) Dames & Moore sampler driven with a 140 lbs. hammer. Boring terminated at 60.0 feet below ground surface.

SOIL BORING LOG **Boring/Well Number: CB-2** **Sheet 1 of 3**

Client/Site:	Eagle Canyon Capital, LLC - Site No. 7290	Start date:	12/20/2016	Completion date:	12/20/2016
Address:	4200 Wheaton Way	Drilling Contractor:	Cascade Drilling LP		
	Bremerton, Washington	Drilling Foreman:	James Goble		
Project No.	191	Rig Type:	CME 75 truck mounted		
Logged by:	Nick Olivier	Drilling Method:	hollow stem auger	Hole diameter (inches):	8.0

WELL FILTER PACK AND BACKFILL

sand (#10/20):	from (ft.)	n/a	to	n/a
bentonite chips:	from (ft.)	1.5	to	50
bentonite chips:	from (ft.)	n/a	to	n/a
bentonite grout:	from (ft.)	n/a	to	n/a
concrete:	from (ft.)	0	to	1.5

WELL CONSTRUCTION

riser material: n/a riser diameter: n/a
screen material: n/a screen diameter: n/a screen slot size: n/a
screened interval (ft): n/a
depth to GW during drilling: n/a
Depth to GW after stabilization: n/a

Drilling Sample Type	Drilling Sample Recovery	Blow Count	Analytical Sample Time	Analytical Sample ID	Well Construction	Depth Scale (feet)	USCS Symbol	Descriptions of Materials and Conditions	PID (PPM)
					concrete	1	FILL	4 inch thick asphalt surface, crushed rock base, previously placed, moist, silty, gravelly fill material to 3.5 feet depth (FILL). Woody debris present. No hydrocarbon odor or staining.	0.0
SS	100%	5 4	12:15	CB-2-5	bentonite chips	5	SM	Medium brown, mottled, moist, loose SILTY SAND with few fine to medium semi-angular gravels. No hydrocarbon odor or staining.	0.0
		5				6			
SS	100%	3 3	12:20	CB-2-10		10	SM	Same as above. No hydrocarbon odor or staining.	0.6
		4				11			
SS	100%	4 5	12:35	CB-2-15		15	SP/SM	Medium grey, moist, loose, poorly graded medium SAND with SILT and trace fine to medium, sub-angular to sub-rounded gravels. Moderate hydrocarbon odor in cuttings and samples. No soil staining.	333.2
		4				16			
						20		Increased rig chatter.	

concrete

bentonite chips

water level at time of drilling

nr = not recorded

Comments: Samples collected with 18 inch long, 2.5 inch inside diameter split spoon (SS) Dames & Moore sampler driven with a 140 lbs. hammer.

SOIL BORING LOG **Boring/Well Number: CB-2** **Sheet 2 of 3**

Client/Site: Eagle Canyon Capital, LLC - Site No. 7290
Address: 4200 Wheaton Way
Bremerton, Washington
Project No. 191
Logged by: Nick Olivier

Start date: 12/20/2016 Completion date: 12/20/2016
Drilling Contractor: Cascade Drilling LP
Drilling Foreman: James Goble
Rig Type: CME 75 truck mounted
Drilling Method: hollow stem auger Hole diameter (inches): 8.0

WELL FILTER PACK AND BACKFILL

sand (#10/20):	from (ft.)	n/a	to	n/a
bentonite chips:	from (ft.)	1.5	to	50
bentonite chips:	from (ft.)	n/a	to	n/a
bentonite grout:	from (ft.)	n/a	to	n/a
concrete:	from (ft.)	0	to	1.5

WELL CONSTRUCTION

riser material: n/a riser diameter: n/a
screen material: n/a screen diameter: n/a screen slot size: n/a
screened interval (ft): n/a
depth to GW during drilling: n/a
Depth to GW after stabilization: n/a

Drilling Sample Type	Drilling Sample Recovery	Blow Count	Analytical Sample Time	Analytical Sample ID	Well Construction	Depth Scale (feet)	USCS Symbol	Descriptions of Materials and Conditions	PID (PPM)
SS	100%	18 19	12:37	CB-2-20		21	SP/SM	Medium grey, wet, loose, poorly graded medium SAND with SILT and few medium to coarse, sub-angular to sub-rounded gravels. Moderate hydrocarbon odor in cuttings and samples. No soil staining. Possible perched groundwater at 21.0 feet.	633.4
		21				22			
						23			
						24			
						25			
SS	50%	16 18				26	SP	Medium to light grey, moist, medium dense, poorly graded medium SAND with trace fine sub-angular gravels and no fines. Slight hydrocarbon odor, no staining.	26.4
		25				27			
						28			
						29			
						30			
SS	100%	21 25	12:42	CB-2-40		31	SP	Same as above. Slight hydrocarbon odor, no staining.	87.8
		25				32			
						33			
						34			
						35			
SS	100%	22 23				36	SP	Same as above. Slight hydrocarbon odor, no staining.	29.1
		29				37			
						38			
						39			
						40			

concrete

bentonite chips

water level at time of drilling

nr = not recorded

Comments: Samples collected with 18 inch long, 2.5 inch inside diameter split spoon (SS) Dames & Moore sampler driven with a 140 lbs. hammer.

SOIL BORING LOG **Boring/Well Number: CB-2** **Sheet 3 of 3**

Client/Site: Eagle Canyon Capital, LLC - Site No. 7290
Address: 4200 Wheaton Way
Bremerton, Washington
Project No. 191
Logged by: Nick Olivier

Start date: 12/20/2016 Completion date: 12/20/2016
Drilling Contractor: Cascade Drilling LP
Drilling Foreman: James Goble
Rig Type: CME 75 truck mounted
Drilling Method: hollow stem auger Hole diameter (inches): 8.0

WELL FILTER PACK AND BACKFILL

sand (#10/20):	from (ft.)	n/a	to	n/a
bentonite chips:	from (ft.)	1.5	to	50
bentonite chips:	from (ft.)	n/a	to	n/a
bentonite grout:	from (ft.)	n/a	to	n/a
concrete:	from (ft.)	0	to	1.5

WELL CONSTRUCTION

riser material: n/a riser diameter: n/a
screen material: n/a screen diameter: n/a screen slot size: n/a
screened interval (ft): n/a
depth to GW during drilling: n/a
Depth to GW after stabilization: n/a

Drilling Sample Type	Drilling Sample Recovery	Blow Count	Analytical Sample Time	Analytical Sample ID	Well Construction	Depth Scale (feet)	USCS Symbol	Descriptions of Materials and Conditions	PID (PPM)
SS	100%	20 21	12:50	CB-2-40		41	SP	Medium to light grey, medium dense, moist, poorly graded medium SAND with trace silt and trace fine to medium sub-angular to sub-rounded gravels. Slight hydrocarbon odor, no staining.	74.1
		20				42			
						43			
						44			
						45			
SS	100%	21 22					SP	Same as above. Slight hydrocarbon odor, no staining.	45.0
		22				46			
						47			
						48			
						49			
								Same as above. No hydrocarbon odor, no staining.	
SS	100%	18 20	12:40	CB-2-50		50	SP		8.3
		19				51			
						52			
						53			
						54			
						55			
						56			
						57			
						58			
						59			
						60			

concrete nr = not recorded

bentonite chips

water level at time of drilling

Comments: Samples collected with 18 inch long, 2.5 inch inside diameter split spoon (SS) Dames & Moore sampler driven with a 140 lbs. hammer. Boring terminated at 50.0 feet below ground surface.

SOIL BORING LOG **Boring/Well Number: CB-3** **Sheet 1 of 3**

Client/Site:	Eagle Canyon Capital, LLC - Site No. 7290	Start date:	12/21/2016	Completion date:	12/21/2016
Address:	4200 Wheaton Way	Drilling Contractor:	Cascade Drilling LP		
	Bremerton, Washington	Drilling Foreman:	James Goble		
Project No.	191	Rig Type:	CME 75 truck mounted		
Logged by:	Nick Olivier	Drilling Method:	hollow stem auger	Hole diameter (inches):	8.0

WELL FILTER PACK AND BACKFILL

sand (#10/20):	from (ft.)	n/a	to	n/a
bentonite chips:	from (ft.)	1.5	to	45
bentonite chips:	from (ft.)	n/a	to	n/a
bentonite grout:	from (ft.)	n/a	to	n/a
concrete:	from (ft.)	0	to	1.5

WELL CONSTRUCTION

riser material: n/a riser diameter: n/a
screen material: n/a screen diameter: n/a screen slot size: n/a
screened interval (ft): n/a
depth to GW during drilling: n/a
Depth to GW after stabilization: n/a

Drilling Sample Type	Drilling Sample Recovery	Blow Count	Analytical Sample Time	Analytical Sample ID	Well Construction	Depth Scale (feet)	USCS Symbol	Descriptions of Materials and Conditions	PID (PPM)
						1	FILL	4 inch thick asphalt surface, crushed rock base, previously placed, moist, silty, gravelly fill material to 3.5 feet depth (FILL). No hydrocarbon odor or staining.	0.0
SS	100%	3 4				5	SM/ML	Medium brown and grey, mottled, moist, loose SILTY SAND and SILT with few fine to medium semi-angular gravels. No hydrocarbon odor or staining.	0.0
		4				6			
SS	100%	nr nr	12:00	CB-3-10		10	SM/ML	Same as above. Slight hydrocarbon odor, no staining.	35.8
		nr				11			
SS	100%	12 16	12:05	CB-3-15		15	SW	Medium grey, moist, medium dense, medium to coarse, well graded SAND, no fines and no gravels. No hydrocarbon odor, no staining.	0.4
		18				16			
						17		Increased rig chatter	
						18			
						19			
						20			

concrete

bentonite chips

water level at time of drilling

nr = not recorded

Comments: Samples collected with 18 inch long, 2.5 inch inside diameter split spoon (SS) Dames & Moore sampler driven with a 140 lbs. hammer.

SOIL BORING LOG **Boring/Well Number: CB-3** **Sheet 2 of 3**

Client/Site:	Eagle Canyon Capital, LLC - Site No. 7290	Start date:	12/21/2016	Completion date:	12/21/2016
Address:	4200 Wheaton Way	Drilling Contractor:	Cascade Drilling LP		
	Bremerton, Washington	Drilling Foreman:	James Goble		
Project No.	191	Rig Type:	CME 75 truck mounted		
Logged by:	Nick Olivier	Drilling Method:	hollow stem auger	Hole diameter (inches):	8.0

WELL FILTER PACK AND BACKFILL

sand (#10/20):	from (ft.)	n/a	to	n/a
bentonite chips:	from (ft.)	1.5	to	45
bentonite chips:	from (ft.)	n/a	to	n/a
bentonite grout:	from (ft.)	n/a	to	n/a
concrete:	from (ft.)	0	to	1.5

WELL CONSTRUCTION

riser material: n/a riser diameter: n/a
screen material: n/a screen diameter: n/a screen slot size: n/a
screened interval (ft): n/a
depth to GW during drilling: n/a
Depth to GW after stabilization: n/a

Drilling Sample Type	Drilling Sample Recovery	Blow Count	Analytical Sample Time	Analytical Sample ID	Well Construction	Depth Scale (feet)	USCS Symbol	Descriptions of Materials and Conditions	PID (PPM)
SS	50%	22 50/6	12:10	CB-3-20		21	SW	Rust/orange brown, moist, very dense, medium to coarse, well graded SAND with few fine to medium sub-angular gravels and trace fines. No hydrocarbon odor, no staining.	1.5
						22		Rig chatter	
						23			
						24			
SS	50%	19 50/5				25	SW	Same as above, no hydrocarbon odor, no staining.	2.2
						26			
						27	▽	Drilling becomes more difficult, rig chatter, reduction in penetration rate. Possible perched groundwater at 27.0 feet depth.	
						28			
						29			
SS	100%	14 27 29	12:20	CB-3-30		30	SW	Same as above, decrease in gravel content to trace. Moderate hydrocarbon odor, no staining.	118.6
						31			
						32			
						33			
						34			
SS	100%	19 25 29	12:35	CB-3-35		35	ML	Medium to light grey, moist, medium dense, SILT of low plasticity, few fine sand, no gravels. Moderate hydrocarbon odor, no staining.	163.0
						36			
						37			
						38			
						39			
						40	SP		

concrete

bentonite chips

water level at time of drilling

nr = not recorded

Comments: Samples collected with 18 inch long, 2.5 inch inside diameter split spoon (SS) Dames & Moore sampler driven with a 140 lbs. hammer.

SOIL BORING LOG **Boring/Well Number: CB-3** **Sheet 3 of 3**

Client/Site: Eagle Canyon Capital, LLC - Site No. 7290
Address: 4200 Wheaton Way
Bremerton, Washington
Project No. 191
Logged by: Nick Olivier

Start date: 12/21/2016 Completion date: 12/21/2016
Drilling Contractor: Cascade Drilling LP
Drilling Foreman: James Goble
Rig Type: CME 75 truck mounted
Drilling Method: hollow stem auger Hole diameter (inches): 8.0

WELL FILTER PACK AND BACKFILL

sand (#10/20):	from (ft.)	n/a	to	n/a
bentonite chips:	from (ft.)	1.5	to	45
bentonite chips:	from (ft.)	n/a	to	n/a
bentonite grout:	from (ft.)	n/a	to	n/a
concrete:	from (ft.)	0	to	1.5

WELL CONSTRUCTION

riser material: n/a riser diameter: n/a
screen material: n/a screen diameter: n/a screen slot size: n/a
screened interval (ft): n/a
depth to GW during drilling: n/a
Depth to GW after stabilization: n/a

Drilling Sample Type	Drilling Sample Recovery	Blow Count	Analytical Sample Time	Analytical Sample ID	Well Construction	Depth Scale (feet)	USCS Symbol	Descriptions of Materials and Conditions	PID (PPM)
SS	100%	20 26				41	SP	Medium to light grey, moist, medium dense, poorly graded fine SAND, trace silt, no gravels. Slight hydrocarbon odor, no staining.	25.5
		27				42			
						43			
						44			
						45		Same as above. No hydrocarbon odor, no staining.	
SS	100%	17 25	12:50	CB-3-45		46			2.1
		26				47			
						48			
						49			
						50			
						51			
						52			
						53			
						54			
						55			
						56			
						57			
						58			
						59			
						60			

concrete

bentonite chips

water level at time of drilling

nr = not recorded

Comments: Samples collected with 18 inch long, 2.5 inch inside diameter split spoon (SS) Dames & Moore sampler driven with a 140 lbs. hammer. Boring terminated at 45.0 feet below ground surface.

SOIL BORING LOG **Boring/Well Number: CB-4** **Sheet 1 of 2**

Client/Site:	Eagle Canyon Capital, LLC - Site No. 7290	Start date:	12/21/2016	Completion date:	12/21/2016
Address:	4200 Wheaton Way	Drilling Contractor:	Cascade Drilling LP		
	Bremerton, Washington	Drilling Foreman:	James Goble		
Project No.	191	Rig Type:	CME 75 truck mounted		
Logged by:	Nick Olivier	Drilling Method:	hollow stem auger	Hole diameter (inches):	8.0

WELL FILTER PACK AND BACKFILL

sand (#10/20):	from (ft.)	n/a	to	n/a
bentonite chips:	from (ft.)	1.5	to	30
bentonite chips:	from (ft.)	n/a	to	n/a
bentonite grout:	from (ft.)	n/a	to	n/a
concrete:	from (ft.)	0	to	1.5

WELL CONSTRUCTION

riser material: n/a riser diameter: n/a
screen material: n/a screen diameter: n/a screen slot size: n/a
screened interval (ft): n/a
depth to GW during drilling: n/a
Depth to GW after stabilization: n/a

Drilling Sample Type	Drilling Sample Recovery	Blow Count	Analytical Sample Time	Analytical Sample ID	Well Construction	Depth Scale (feet)	USCS Symbol	Descriptions of Materials and Conditions	PID (PPM)
						1	FILL	4 inch thick asphalt surface, crushed rock base, previously placed, moist, silty, gravelly fill material to 3.5 feet depth (FILL). No hydrocarbon odor or staining.	0.0
SS	100%	2 3	9:15	CB-4-5		5	SM/ML	Medium brown and grey, mottled, moist, loose SILTY SAND and SILT with few fine to medium semi-angular gravels. No hydrocarbon odor or staining.	0.0
		3				6			
SS	100%	4 5	9:20	CB-4-10		10	SM/ML	Same as above. Slight hydrocarbon odor, no staining.	1117
		5				11			
						12			
						13			
						14		Slight rig chatter	
SS	100%	21 21	9:25	CB-4-15		15	SP	Medium grey, moist, medium dense, poorly graded medium SAND, no fines and no gravels. No hydrocarbon odor, no staining.	33.0
		19				16			
						17			
						18			
						19			
						20			

concrete

bentonite chips

water level at time of drilling

nr = not recorded

Comments: Samples collected with 18 inch long, 2.5 inch inside diameter split spoon (SS) Dames & Moore sampler driven with a 140 lbs. hammer.

SOIL BORING LOG **Boring/Well Number: CB-4** **Sheet 2 of 2**

Client/Site: Eagle Canyon Capital, LLC - Site No. 7290
Address: 4200 Wheaton Way
Bremerton, Washington
Project No. 191
Logged by: Nick Olivier

Start date: 12/21/2016 Completion date: 12/21/2016
Drilling Contractor: Cascade Drilling LP
Drilling Foreman: James Goble
Rig Type: CME 75 truck mounted
Drilling Method: hollow stem auger Hole diameter (inches): 8.0

WELL FILTER PACK AND BACKFILL

sand (#10/20):	from (ft.)	n/a	to	n/a
bentonite chips:	from (ft.)	1.5	to	30
bentonite chips:	from (ft.)	n/a	to	n/a
bentonite grout:	from (ft.)	n/a	to	n/a
concrete:	from (ft.)	0	to	1.5

WELL CONSTRUCTION

riser material: n/a riser diameter: n/a
screen material: n/a screen diameter: n/a screen slot size: n/a
screened interval (ft): n/a
depth to GW during drilling: n/a
Depth to GW after stabilization: n/a

Drilling Sample Type	Drilling Sample Recovery	Blow Count	Analytical Sample Time	Analytical Sample ID	Well Construction	Depth Scale (feet)	USCS Symbol	Descriptions of Materials and Conditions	PID (PPM)
SS	100%	19 23	9:30	CB-4-20		21	SP	Medium grey, moist, medium dense, poorly graded medium SAND, no fines and no gravels. No hydrocarbon odor, no staining.	85.6
		25				22			
						23			
						24			
						25			
SS	50%	21 25	9:35	CB-4-25		26		Same as above, no hydrocarbon odor, no staining.	2.4
		25				27			
						28			
						29			
						30		Same as above. No hydrocarbon odor, no staining.	
SS	100%	17 22	9:45	CB-4-30		31			2.0
		23				32			
						33			
						34			
						35			
						36			
						37			
						38			
						39			
						40			

concrete
bentonite chips
water level at time of drilling

nr = not recorded

Comments: Samples collected with 18 inch long, 2.5 inch inside diameter split spoon (SS) Dames & Moore sampler driven with a 140 lbs. hammer. Boring terminated at 30.0 feet below ground surface.

APPENDIX D

GENERAL FIELD PROCEDURES

GENERAL FIELD PROCEDURES

General procedures used by ES Engineering Services, LLC (ES) in site assessments for drilling exploratory borings and collecting samples are described herein. The general procedures may be modified as appropriate based on site conditions. A Professional state-registered geologist supervises the following procedures.

PRE-FIELD WORK ACTIVITIES

Health and Safety Plan

Field work performed by ES at the site is conducted according to guidelines established in a Site Health and Safety Plan (HASP). The HASP is a document that describes the hazards that may be encountered in the field and specifies protective equipment, work procedures, and emergency information. A copy of the HASP is at the site and available for reference by appropriate parties during field work.

Locating Underground Utilities

Before commencement of subsurface work, the location of the excavation, boring, etc., is marked with white spray paint as required by law. An underground locating service such as One-Call is contacted 72-hours before initiating field work. The locating company contacts the owners of the various utilities in the vicinity of the site to mark the locations of their underground utilities. Invasive work is preceded by hand augering to a minimum depth of five feet below surface grade to avoid contacting potential underground utilities or structures.

FIELD METHODS AND PROCEDURES

Exploratory Soil Borings

Soil borings will be drilled using a truck-mounted, hollow stem auger (HSA) drill rig or using hydraulically actuated “direct-push” and percussion equipment, e.g. Geoprobe®. If HSA drilling techniques are utilized, soil samples for logging will be obtained from auger-return materials and by advancing a modified split-spoon sampler equipped with stainless steel liners or equivalent into undisturbed soil beyond the tip of the auger. Similarly, if direct-push technology (DPT) is used, soil samples will be retrieved from the borings using a 3-foot-long, 2-inch diameter continuous-core split-barrel sampler lined with six stainless steel/brass sleeves or a 4-foot-long acetate liner. Soils will be logged by a geologist according to the Unified Soil Classification System using standard geological techniques. Drill cuttings will be screened using a portable photoionization detector (PID) or a flame ionization detector (FID). Exploratory soil borings not used for monitoring well installation will be backfilled to the surface with bentonite-cement slurry and/or hydrated bentonite chips and capped at the surface to match surrounding conditions.

Soil Sample Collection

Auger Sampling: During drilling, soil samples will be collected in clean steel/brass, two by six inch tubes. The tubes will be set in an 18-inch-long split-barrel sampler. The sampler will be conveyed to the bottom of the borehole attached to a wire-line hammer device on the drill rig. When possible, the split-barrel sampler will be driven its entire length, either hydraulically or by repeatedly pounding a 140-pound hammer using a 30-inch drop. The number of drops (blows) used to drive the sampler will be recorded on the boring log. The sampler will be extracted from the borehole, and the tubes containing the soil samples will be removed. Upon removal, the ends of the lowermost tube will be sealed with Teflon sheets and plastic caps. Soil samples for chemical analysis will be labeled, placed on ice, and delivered to a state-certified analytical laboratory, along with the appropriate chain-of-custody documentation.

Geoprobe Sampling: The push-probe system is driven by a hydraulic hammer or vibrator. Each boring will be sampled at a minimum of 5-foot intervals. Shorter sampling intervals or continuous core sampling techniques may be employed to provide subsurface definition. As the core barrel is advanced, soil is driven into an inner 1¾-inch diameter core barrel, which is either lined with steel/brass or acetate sleeves. After being driven 5 feet, the rods are removed from the borehole. Upon removal, the ends of the lowermost sleeve will be sealed with Teflon sheets and plastic caps. Soil samples for chemical analysis will be labeled, placed on ice, and delivered to a state-certified analytical laboratory, along with the appropriate chain-of-custody documentation.

Soil Classification

As the samples are obtained in the field, they will be classified by the field geologist in accordance with the Unified Soil Classification System. Representative portions of the samples will be retained for further examination and for verification of the field classification. Logs of the borings indicating the depth and identification of the various strata and pertinent information regarding the method of maintaining and advancing the borehole will be prepared. Specifically, for each sampling interval, field estimates of soil type, density/consistency, plasticity, grading, moisture, color, and any other pertinent information will be recorded on the boring log.

Soil Sample Screening and Sampling

Soil samples selected for chemical analysis will be determined from a headspace analysis using a PID or an FID. The soil will be placed in a Ziploc® bag or equivalent, sealed, and allowed to reach ambient temperature, at which time the PID probe will be inserted into the Ziploc bag. The total volatile hydrocarbons present are detected in parts per million (ppm). The PID will be calibrated daily to an isobutylene standard. Additionally, a water trap will be fixed to the end of the PID sampling wand to minimize potential interference from entrained soil moisture.

Generally two soil samples from each soil boring will be submitted for chemical analysis unless otherwise specified in the scope of work (See applicable workplan or the client's specified scope of work). Soil samples selected for analysis typically represent the boring bottom sample or the sample just above the first-occurrence of groundwater and sample that exhibits the highest PID reading.

Important: Environmental Protection Agency 5035 sampling methodology will be followed for the collection of samples involving the analysis of volatile organic compounds.

HydroPunch® Sampling

A grab groundwater sample is collected using a Hydropunch® sampling device or equivalent. The hydropunch can be used with either a HSA drill or DPT rig. The hydropunch consists of a stainless steel probe, which is advanced in to the water-yielding zone then withdrawn to expose an internal screen. Once the probe is opened, groundwater enters while soil particles larger than silt are prevented from entering by a screen. A decontaminated stainless steel bailer or equivalent is inserted down the center of the well screen to obtain a "grab-type" groundwater sample for analysis. The samples are carefully transferred from the bailer to zero headspace, 40 milliliter glass vials fitted with Teflon-lined caps. The groundwater sample is labeled, placed on ice (i.e. chilled at approximately 4 degrees Celsius), and delivered to a state-certified analytical laboratory, along with the appropriate chain-of-custody documentation. The boring is backfilled with a cement/bentonite slurry and capped at the surface to match surface conditions.

Chain-of-Custody Protocol

Chain-of-Custody protocol is followed for all soil and groundwater samples selected for laboratory analysis. The Chain-of-Custody form(s) accompanies the samples to the laboratory and provides a continuous record of possession at all times.

Decontamination

Drill cuttings generated during the drilling procedure will be contained in labeled and marked, DOT-approved 55-gallon drums and placed in a secured onsite location. Drilling equipment is decontaminated by steam cleaning before being brought onsite. The augers are also steam cleaned before proceeding with each new boring/well. Before use, the sampler and sampling sleeves are brushed-scrubbed in a Liqui-nox and potable water solution and rinsed twice in clean potable water. Sampling equipment and sleeves are also decontaminated before each sample is collected to avoid cross-contamination between borings.

Waste Management

Soil cuttings, decontamination and/or development water will be contained in DOT-approved, 55-gallon drums. Each drum will be appropriately labeled, marked and temporarily stored in a

secured onsite location pending waste characterization. Upon receipt of analytical results, contained waste will be transported offsite to an appropriate disposal/recycling facility.

Exceptions

Additional tasks or non-standard practices/procedures, if any, that may be requested or required for a particular site will be documented in the field notes on the following pages.

APPENDIX E

LABORATORY ANALYTICAL REPORT

ESN NORTHWEST
Environmental Services Network

January 9, 2017

Laura Skow
ES Engineering
1036 West Taft Avenue
Orange, CA 92865

Dear Ms. Skow:

Please find enclosed the analytical data report for the Site #3520 Project in Bremerton, Washington. Soil samples were analyzed for Gasoline by NWTPH-Gx BTEX by Method 8260, and Naphthalene's by Method 6020 on December 28-30, 2016.

The results of the analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this analytical work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to ES Engineering for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A Korosec

Michael A. Korosec
President

1210 Eastside Street SE, Suite 200 ■ Olympia, Washington 98501 ■ 360.459.4670 ■ FAX 360.459.3432
Web Site: *www.esnnw.com* E-Mail: *info@esnnw.com*

ESN NORTHWEST CHEMISTRY LABORATORY

ES Engineering Services
PROJECT SITE NO 3520
PROJECT #PROJ100191
Bremerton, Washington

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lab@esnnw.com

Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	12/29/2016	12/29/2016	nd	nd	nd	nd	nd	116
LCS	12/29/2016	12/29/2016	93%	82%	88%	89%	113%	109
LCSD	12/29/2016	12/29/2016	114%	113%	115%	121%	---	97
CB-1-20	12/20/2016	12/29/2016	**0.12**	**1.1**	**0.53**	**3.1**	**85**	119
CB-1-30	12/20/2016	12/29/2016	nd	**0.08**	nd	nd	nd	113
CB-1-40	12/20/2016	12/29/2016	**0.04**	**0.46**	**0.15**	**0.97**	nd	113
CB-1-50	12/20/2016	12/29/2016	**0.11**	**0.33**	**0.19**	**1.0**	nd	115
CB-1-55	12/20/2016	12/29/2016	**0.84**	nd	**0.28**	nd	nd	113
CB-1-60	12/20/2016	12/30/2016	nd	nd	nd	nd	nd	116
CB-2-5	12/20/2016	12/29/2016	nd	nd	nd	nd	nd	117
CB-2-10	12/20/2016	12/29/2016	nd	nd	nd	nd	nd	113
CB-2-15	12/20/2016	12/29/2016	nd	**4.9**	**40**	**240**	**5900**	111
CB-2-20	12/20/2016	12/29/2016	nd	nd	nd	**0.16**	**18**	119
CB-2-30	12/20/2016	12/30/2016	nd	nd	nd	nd	nd	121
CB-2-40	12/20/2016	12/30/2016	nd	nd	nd	**0.19**	nd	107
CB-2-50	12/20/2016	12/30/2016	**0.05**	nd	**0.12**	nd	nd	111
CB-3-10	12/20/2016	12/30/2016	nd	nd	**0.05**	nd	nd	113
CB-3-15	12/20/2016	12/30/2016	nd	nd	nd	nd	nd	110
CB-3-20	12/20/2016	12/30/2016	nd	nd	nd	nd	nd	111
CB-3-30	12/20/2016	12/30/2016	nd	**0.74**	**2.5**	**15**	**230**	110
CB-3-35	12/20/2016	12/30/2016	**0.47**	**0.51**	**0.12**	**0.75**	**10**	113
CB-3-45	12/20/2016	12/30/2016	nd	nd	nd	nd	nd	112
CB-4-5	12/21/2016	12/30/2016	nd	nd	nd	nd	nd	114
CB-4-10	12/21/2016	12/30/2016	**8.0**	**150**	**92**	**510**	**4600**	115
CB-4-15	12/21/2016	12/30/2016	nd	**0.14**	**0.09**	**0.52**	nd	116
CB-4-20	12/21/2016	12/30/2016	nd	**0.14**	**0.09**	**0.63**	**10**	118
CB-4-25	12/21/2016	12/30/2016	**0.06**	**0.13**	nd	**0.13**	nd	115
CB-4-30	12/21/2016	12/30/2016	nd	nd	nd	nd	nd	108
CB-1-15	12/20/2016	12/29/2016	nd	nd	nd	nd	nd	115
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.
"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromoflurorbenzene) & LCS : 65% TO 135%

ESN NORTHWEST CHEMISTRY LABORATORY

ES Engineering Services
PROJECT SITE NO 3520
PROJECT #PROJ100191
Bremerton, Washington

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lab@esnnw.com

Analysis of Naphthalenes in Soil by Method 8270

Analytical Results

		MB	LCS	CB-1-20	CB-1-30	CB-1-40	CB-1-50	CB-1-55	CB-1-60	CB-2-5
Date extracted	Reporting	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16
Date analyzed	Limits	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16
Moisture, %	(mg/kg)			10%	13%	17%	17%	18%	18%	30%
Naphthalene	0.02	nd	57%	**0.08**	nd	nd	nd	nd	nd	nd
2-Methylnaphthalene	0.02	nd	59%	nd	nd	nd	nd	nd	nd	nd
1-Methylnaphthalene	0.02	nd	ns	nd	nd	nd	nd	nd	nd	nd
Surrogate recoveries:										
2-Fluorobiphenyl		91%	74%	88%	95%	82%	82%	87%	93%	92%
p-Terphenyl-d14		93%	74%	96%	103%	89%	90%	93%	101%	101%

Data Qualifiers and Analytical Comments

* - Carcinogenic Analyte
nd - not detected at listed reporting limits
ns - not spiked
Results reported on dry-weight basis
Acceptable Recovery limits: 50% TO 150%
Acceptable RPD limit: 35%

ESN NORTHWEST CHEMISTRY LABORATORY

ES Engineering Services
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Bremerton, Washington

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lab@esnnw.com

Analysis of Naphthalenes in Soil by Method 8270

Analytical Results

		CB-2-10	CB-2-15	CB-2-20	CB-2-30	CB-2-40	CB-2-50	CB-3-10	CB-3-15	CB-3-20	CB-3-30
Date extracted	Reporting	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16
Date analyzed	Limits	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16
Moisture, %	(mg/kg)	19%	20%	15%	14%	16%	17%	26%	16%	8%	15%
Naphthalene	0.02	nd	**0.97**	nd	nd	nd	nd	nd	nd	nd	nd
2-Methylnaphthalene	0.02	nd	**1.0**	nd	nd	nd	nd	nd	nd	nd	nd
1-Methylnaphthalene	0.02	nd	**0.63**	nd	nd	nd	nd	nd	nd	nd	nd
Surrogate recoveries:											
2-Fluorobiphenyl		85%	93%	90%	89%	90%	91%	86%	89%	84%	84%
p-Terphenyl-d14		92%	100%	93%	93%	96%	97%	91%	95%	90%	91%

Data Qualifiers and Analytical Comments
* - Carcinogenic Analyte
nd - not detected at listed reporting limits
ns - not spiked
Results reported on dry-weight basis
Acceptable Recovery limits: 50% TO 150%
Acceptable RPD limit: 35%

ESN NORTHWEST CHEMISTRY LABORATORY

ES Engineering Services
PROJECT SITE NO 3520
PROJECT #PROJ100191
Bremerton, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Naphthalenes in Soil by Method 8270

Analytical Results

		CB-3-35	CB-3-45	CB-4-5	CB-4-10	CB-4-15	CB-4-20	CB-4-25	CB-4-30	CB-1-15
Date extracted	Reporting	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16
Date analyzed	Limits	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16	12/28/16
Moisture, %	(mg/kg)	16%	17%	29%	19%	5%	10%	11%	19%	6%
Naphthalene	0.02	nd	nd	nd	**1.1**	nd	nd	nd	nd	nd
2-Methylnaphthalene	0.02	nd	nd	nd	**1.2**	nd	nd	nd	nd	nd
1-Methylnaphthalene	0.02	nd	nd	nd	**0.63**	nd	nd	nd	nd	nd
Surrogate recoveries:										
2-Fluorobiphenyl		89%	88%	85%	77%	83%	85%	89%	88%	94%
p-Terphenyl-d14		97%	96%	90%	83%	90%	92%	95%	94%	100%

Data Qualifiers and Analytical Comments

* - Carcinogenic Analyte
nd - not detected at listed reporting limits
ns - not spiked
Results reported on dry-weight basis
Acceptable Recovery limits: 50% TO 150%
Acceptable RPD limit: 35%

ESN NORTHWEST, INC. | Environmental Services Network

PO1005463

CHAIN-OF-CUSTODY RECORD

CLIENT: ES Engineering Services
ADDRESS: 4150 B Pl. NW Ste. 106 Auburn WA
PHONE: 253-508-1085 FAX:
CLIENT PROJECT #: PROJ100191 PROJECT MANAGER: Laura SKow

DATE: 12/21/2016 PAGE 1 OF 2
PROJECT NAME: Site No. 3520
LOCATION: 4200 Wheaton Way Bremerton WA
COLLECTOR: Nick Olivier DATE OF COLLECTION: 12/20-21/16

Sample Number	Depth	Time	Sample Type	Container Type	TPH - HCID	TPH - Diesel & Oil	TPH - Gasoline	BTEX	VOC 8260CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	Naphs 8270 SPLP	NOTES	Total Number of Containers	Laboratory Note Number
1. CB-1-20	20	1515	SOIL	MIX			X	X													X	X	Hold SPLP		
2. CB-1-30	30	1518					X	X													X				
3. CB-1-40	40	1525					X	X													X				
4. CB-1-50	50	1530					X	X													X				
5. CB-1-55	55	1535					X	X													X				
6. CB-1-60	60	1540					X	X													X				
7. CB-2-5	5	1215					X	X													X				
8. CB-2-10	10	1220					X	X													X				
9. CB-2-15	15	1235					X	X													X				
10. CB-2-20	20	1237					X	X													X	X	Hold SPLP		
11. CB-2-30	30	1242					X	X													X				
12. CB-2-40	40	1250					X	X													X				
13. CB-2-50	50	1240					X	X													X				
14. CB-3-10	10	1200					X	X													X				
15. CB-3-15	15	1205					X	X													X				
16. CB-3-20	20	1210					X	X													X				
17. CB-3-30	30	1220					X	X													X				
18. CB-3-35	35	1235	↓	↓			X	X													X	X	Hold SPLP		

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
	12/22/16		12/22/16
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Turn Around Time: 24 HR 48 HR 5 DAY

1210 Eastside Street SE, Suite 200
Olympia, Washington 98501
Phone: 360-459-4670
Fax: 360-459-3432
Website: www.esnnw.com
E-Mail: info@esnnw.com

ESN NORTHWEST, INC. Environmental Services Network

PO1005463

CHAIN-OF-CUSTODY RECORD

CLIENT: ES Eng. SVCS
ADDRESS: 4150 B Pl NW Ste 106 Auburn WA
PHONE: 253-508-1085 FAX:
CLIENT PROJECT #: PROJ100191 PROJECT MANAGER: Lauren Skow

DATE: 12/21/16 PAGE 2 OF 2
PROJECT NAME: Site NO. 3520
LOCATION: 4200 Wheaton Way Bremerton
COLLECTOR: Nick Olivier DATE OF COLLECTION: 12/20-21/16

Sample Number	Depth	Time	Sample Type	Container Type	TPH - HCID	TPH - Diesel & Oil	TPH - Gasoline	BTEX	VOC 8260CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	Naphs. 8270	SPLP	NOTES	Total Number of Containers	Laboratory Note Number
1. CB-3-45	45	1250	SOIL	MIX			X	X													X					
2. CB-4-5	5	0915					X	X													X					
3. CB-4-10	10	0920					X	X													X					
4. CB-4-15	15	0925					X	X													X	X		Hold SPLP		
5. CB-4-20	20	0930					X	X													X					
6. CB-4-25	25	0935					X	X													X					
7. CB-4-30	30	0945					X	X													X					
8. CB-1-15	15	1510					X	X													X					
9.																										
10.																										
11.																										
12.																										
13.																										
14.																										
15.																										
16.																										
17.																										
18.																										

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
	12/22/16		12/22/16
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Turn Around Time: 24 HR 48 HR 5 DAY

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