

DRAFT
REMEDIATION INVESTIGATION REPORT
JENSEN'S SHIPYARD AND MARINA
1293 TURN POINT ROAD
FRIDAY HARBOR, WASHINGTON

prepared for:

Port of Friday Harbor
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October 15, 2018



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October 15, 2018



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ACRONYMS AND ABBREVIATIONS

ARAR	-	Applicable and Relevant and Appropriate Requirements
AST	-	Aboveground Storage Tank
bgs	-	below ground surface
BTEX	-	Benzene, Toluene, Ethylbenzene, and Xylenes
COC	-	Contaminant/Chemical of Concern
CSID	-	Cleanup Site Identification Number
CSM	-	Conceptual Site Model
CUL	-	Clean-up levels
Ecology	-	Washington State Department of Ecology
EDB	-	1,2-Dibromoethane
EDC	-	1,2-Dichloroethane
ERNS	-	Emergency Response Notification System
ESA	-	Environmental Site Assessment
FOC	-	Fraction of Organic Carbon
FSID	-	Facility Site Identification Number
LUST	-	Leaking Underground Storage Tank
MTCA	-	Model Toxics Control Act
NFA	-	No Further Action
PAH	-	Polycyclic Aromatic Hydrocarbons
PCS	-	Petroleum Contaminated Soil
PID	-	Photoionization Detector
PCB	-	Polychlorinated Biphenyls
PTAP	-	Petroleum Technical Assistance Program
RCW	-	Revised Code of Washington
REC	-	Recognized Environmental Condition
TPH	-	Total Petroleum Hydrocarbons
TEE	-	Terrestrial Ecological Evaluation
UST	-	Underground Storage Tank
VCP	-	Voluntary Cleanup Program
VOC	-	Volatile Organic Compounds
WAC	-	Washington State Administrative Code
WCHD	-	Whatcom County Health Department

EXECUTIVE SUMMARY

A remedial investigation has been completed at the Jensen's Shipyard and Marina site located at 1293 Turn Point Drive in Friday Harbor, Washington.

Soil samples were collected from 71 upland locations at the site. Soil sample analytical data indicate that surficial soil contains contaminate concentrations which exceed the MTCA Method A cleanup levels and the indicator concentrations for protection of wildlife. Soil samples collected beneath the surface soil (3-5 feet bgs) generally contained contaminant concentrations below applicable cleanup levels with the exception of three samples, *BLWA-4 5ft*, *BLWA-6 5ft*, and *SRWA-7 3ft*.

Six groundwater wells were installed, and groundwater samples were collected for laboratory analysis. Groundwater samples did not contain concentrations of contaminants of concern which are a threat to the marine environment. One groundwater sample exceeded the MTCA Method A target cleanup level for arsenic. Site groundwater is not used for drinking water at the property or downgradient of the property.

The petroleum contaminated soil located near sample location AST-1 may impact indoor air quality in the shop building.

The stormwater pond sediment did not characterize as a dangerous or hazardous waste but the sediment does contain elevated concentrations of cadmium, copper, and lead (above MTCA Method A cleanup levels and MTCA Method B residential cleanup levels for direct contact).

The horizontal and vertical extent of elevated concentrations of chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans at the site is not known.

1.0 INTRODUCTION

1.1 GENERAL SITE INFORMATION

Jensen's Shipyard and Marina is located at 1293 Turn Point Road in Friday Harbor, Washington. The upland property encompasses approximately 4.88 acres, and the aquatic lands (including piers and docks) encompasses approximately 5 acres. The aquatic lands are located within Shipyard Cove, Friday Harbor. The upland portions of the facility are owned by the Port of Friday Harbor. The aquatic lands are owned by the State of Washington, managed by the Washington State Department of Natural Resources, and subject to a Port Management Agreement (PMA No. 20-080023).

The site is comprised of one parcel (351341005000) and is located in the northeast quarter of the southeast quarter of Section 13 in Township 35 North, Range 3 West. The median elevation of the site is approximately 16 feet above mean sea level. The property topography is relatively level, and the surrounding area generally slopes north towards Friday Harbor (USGS Friday Harbor, 2014). The site is located in an area characterized by marina, commercial, and industrial development. The site location and surrounding area is shown on Figure 1. The general layout of the facility is shown on Figure 2.

Contact information for the project consultant and property owner are included below.

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1.2 SITE HISTORY

The site was first developed as a shipyard prior to 1941 with anecdotal evidence suggesting operation beginning in 1910. The site was originally used to manufacture wooden boats in the early 20th century. As wooden boats were phased out in the middle of the 20th century, the site use moved from shipbuilding to boat repair and maintenance. Railways are present at the northern portion of the site, east of the current dock. The railways were originally used to launch boats and were later used to pull boats out for repair. A concrete pad present at the location of the rails was added later and is not original to the railway area.

A boat pullout is located in the northwest portion of the site. A wash pad is located at the end of the pullout, and both the pullout and wash pad are paved with concrete. Wash water generated during boat washing operations is collected and treated in a closed loop system using enzymes. A small building housing the pumping and treating equipment is located just east of the wash pad. No wash water is discharged from the site. When the washing is completed, the wash pad is cleaned and the drain on the wash pad is diverted to the onsite stormwater detention and evaporation pond.

1.3 SITE USE

The property has remained a shipyard since development. Minor changes to structures at the property have been made over time. Adjacent properties have historically been primarily marina/commercial/industrial.

2.0 FIELD INVESTIGATIONS

2.1 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

A brief summary of the historical remedial investigations completed at the site is provided below in chronological order.

2.1.1 2017 Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) was conducted at the site in November 2017. The ESA findings are summarized in a report titled "Phase I Environmental Site Assessment, Jensen's Shipyard, 1293 Turn Point Road, Friday Harbor, Washington" dated November 21, 2017. The Phase I ESA revealed evidence of several recognized environmental conditions at the subject property:

- The subject property has historically had several permit violations of the NPDES Boatyard General Permit including benchmark exceedances for copper, zinc, lead and total suspended solids.
- Sediment samples collected in the aquatic area northeast of the subject property exceeded the screening level for tributyltin (TBT).
- One underground storage tank was formerly located in the field south of the oil storage building. It is unknown if any soil contamination resulted from the use of the tank.
- A small dump site was identified north of the oil storage building. There is a potential that hazardous substances may have been released in the area of the dump.
- A floor drain was identified at the northwest corner of the machine shop building. Hazardous substances used in the machine shop may have made their way to the floor drain in the past and may have infiltrated into the ground beneath the machine shop depending on the setup/terminus of the floor drain.
- The laydown area, marine railways, and stormwater detention pond are all potential areas of concern for tributyltins and other heavy metals in soil/sediments due to their use for maintenance/repair of boats. Depending on the current and historic use of the site, additional hazardous chemicals

may be of concern for these areas including solvents and petroleum products.

2.1.2 2018 Initial Site Investigation

A soil investigation was conducted at the Jensen's Shipyard property in January 2018. Fifteen soil samples were collected during the investigation.

The soil sample results indicated that portions of the site are impacted by metals (primarily copper and lead), petroleum compounds, and carcinogenic polycyclic aromatic hydrocarbons (cPAHs).

Groundwater was not investigated during the initial investigation.

2.2 2018 UPLAND SITE CHARACTERIZATION

The subsurface conditions at the site were further investigated in August 2018 to delineate the extent of the upland impacts to soil (metals, petroleum compounds, and cPAHs) documented in the previous investigation. As part of the August 2018 upland site characterization, 25 soil borings were drilled, and soil samples were collected for laboratory analysis. Six groundwater monitoring wells were installed in select borings, and groundwater samples were collected for laboratory analysis. Soil boring and monitoring well locations are shown on Figure 2.

Subsurface utilities were located prior to drilling. The drill rig equipment was decontaminated prior to initiating each soil boring. The borings were continuously cored to the final depth. Soil cores were logged in the field and soil descriptions generally followed ASTM D 2487 'Unified Soil Classification System' procedures for description and identification of soils. Soil boring logs are included in Appendix A.

The soil cores were evaluated in the field for organic vapors using a photoionization detector (PID) and for petroleum products using sheen tests. Immediately after the soil cores were described, a portion of each sample was sheen tested and the remainder of the sample was placed in a labeled re-sealable bag. The PID was inserted into the re-sealable bag in order to evaluate the presence of organic vapors, and a headspace organic vapor detection in parts per million (ppm) was recorded on the boring

log. Sheen tests were recorded as: NS – no sheen, VSS – very slight sheen, SS – slight sheen, MS – moderate sheen, and HS – heavy sheen.

Groundwater monitoring wells were installed in six of the 2018 soil borings. The wells were identified as MW-1 through MW-6. The monitoring wells were installed to depths ranging from 13 to 40 feet bgs and were constructed with machine slotted, 2-inch diameter PVC pipe with pre-packed well screens. The well screen lengths are 10 feet and the top of the PVC well casings are protected with flush mounted well monuments. The monitoring wells were developed using disposable bailers prior to sampling. Water was bailed from each well until the turbidity decreased. The groundwater monitoring well construction diagrams are provided in Appendix B.

2.2.1 Soil Sampling and Analysis

The Sampling and Analysis Plan (SAP) for the 2018 Site Characterization was designed to further investigate and delineate the areal and vertical extent of the upland soil contaminants identified in the January 2018 initial investigation.

One or more soil samples were collected from each soil boring location. One sample was also collected from the stormwater pond. Soil samples were stored in sample containers provided by the lab on ice in a cooler immediately after collection. Standard industry protocols regarding sample collection, preservation, chain-of-custody, and shipping were followed. The samples were identified by both the boring number from which they originated and the depth from which they were collected (i.e. *BLWA-4 2-6in*).

Soil samples were analyzed at ALS Laboratory Group in Everett, Washington and Rainier Environmental Laboratory in Tacoma, Washington. ALS and Rainier are accredited by the Washington State Department of Ecology. Strict chain-of-custody and QA/QC protocols were followed for each sample. The following laboratory methods were used to analyze the soil samples:

NWTPH-Dx: Diesel and oil range TPH (with silica gel cleanup)

NWTPH-Gx: Gasoline (volatile) range TPH

EPA Method 8021: BTEX constituents

EPA Method 8270 SIM: Naphthalenes and cPAHs

EPA Method 6020: Lead, Arsenic, Cadmium, Chromium, Copper, and Zinc.

EPA Method 7471: Mercury

EPA Method 8082: PCBs

EPA Method 1613B: Dioxins and Furans

EPA Method 1311: Toxicity Characteristic Leaching Procedure (TCLP)

Ecology Method 80-12: Standard Fish Bioassay

2.2.2 Groundwater Sampling and Analysis

The Sampling and Analysis Plan (SAP) for the 2018 Site Characterization was designed to characterize the groundwater quality at the site.

The groundwater monitoring wells were sampled in August 2018. Each monitoring well was sampled using the low-flow sampling technique, recommended and approved by the U.S. Environmental Protection Agency (USEPA, 1998). The low-flow sampling technique minimizes the impact of the purging process on groundwater chemistry and provides an accurate representation of the groundwater's condition at the time of sampling. Prior to sampling, the depth-to-water was measured in each well, and the groundwater elevation was calculated for the sampling event. A YSI Model 556 multi probe meter was used in conjunction with a flow-through cell to monitor groundwater chemistry during the low-flow purging process. Purging was considered adequate and groundwater samples were collected when the water chemistry parameters had stabilized.

Groundwater samples were collected in sample bottles provided by the analytical laboratory and stored on ice in a cooler immediately after collection. Dissolved metals samples were filtered in the field using a disposable 0.45 µm in-line filter. One duplicate sample and one equipment blank sample were also collected. Standard industry protocols regarding sample collection, preservation, chain-of-custody, and shipping were followed. Groundwater samples were identified by the monitoring well identification number of the well from which they were collected.

All groundwater samples were analyzed at ALS Laboratory Group in Everett, Washington. Strict chain-of-custody and QA/QC protocols were followed for each sample. The following laboratory methods were used to analyze the groundwater samples:

NWTPH-Gx: Gasoline range TPH

NWTPH-Dx: Diesel and oil range TPH (with silica gel cleanup)

EPA Method 8021: BTEX

EPA Method 8270 SIM: Naphthalenes and cPAHs

EPA Method 200.8/245.1: Dissolved Arsenic, Cadmium, Chromium, Lead, Mercury, Copper, and Zinc

2.3 SAMPLING/ANALYTICAL RESULTS

The purpose of the site characterization sampling was to characterize the contamination discovered in the initial investigation at the site. Fifty-six soil samples were collected and analyzed during the 2018 site characterization. One sample was also collected from the stormwater pond sediment. Six monitoring wells were installed and sampled in August 2018. Results from the 2018 site characterization are provided below. All tables and figures include sample results from the initial site investigation and the site characterization sampling events.

2.3.1 Quality Analyses

All soil and groundwater samples were analyzed at ALS Laboratory Group in Everett, Washington except for the standard bioassay sample collected from the stormwater pond sediment which was analyzed by Rainier Environmental Laboratory in Tacoma, Washington. ALS Laboratory Group and Rainier Environmental Laboratory are accredited by the Washington State Department of Ecology. The laboratory quality assurance and quality control (QA/QC) standard practices include the analysis of method blank, duplicate, matrix spike, and duplicate matrix spike samples as appropriate with each batch of samples.

Laboratory data were reviewed by Whatcom Environmental staff for accuracy upon receipt. Whatcom Environmental staff verified that 1) the sample name and analyses match the chain-of-custody, 2) sample preservation and holding times were met, 3) required detection limits were achieved, and 4) reviewed any laboratory data qualifiers included with the data. Any data qualifiers provided by the lab, or discovered during the data review, are included as footnotes to the data tables provided in this report.

2.3.2 Results

The site investigation work described herein has provided further information related to the horizontal and vertical extent of contamination at the site.

2.3.2.1 Soil Sample Results

Seventy-one soil samples were collected in 2017 and 2018 during the initial site investigation and the site characterization. The soil boring and sample locations are shown on Figure 2. The soil sample descriptions, depths of collection and field screening results are included in Table 1, and the laboratory analytical data are summarized in Table 2. The original laboratory analytical data reports are provided in Appendix C. All samples were analyzed within the prescribed holding times, and sample analytical QA/QC results were within acceptable limits.

Based on the soil data collected in 2017 and 2018, contaminant impacts at the site are primarily located at the soil surface. Surface soil samples (2-6 inches bgs) collected at the site have elevated concentrations of diesel range TPH, arsenic, cadmium, copper, lead, mercury, zinc, and cPAHs. Deeper samples (collected 3-5 feet bgs) generally did not have concentrations of contaminants of concern above MTCA Method A cleanup levels. Two samples collected at a depth of greater than 6 inches (*BLWA-4 5ft* with a lead concentration of 540 mg/kg and *SRWA-7 3ft* with a cPAH TEQ of 0.215 mg/kg) exceeded MTCA Method A cleanup levels.

Two surface soil samples *MW-3 2-6in* and *MW-4 2-6in* were analyzed for chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans. The TEQ for both samples exceeded the published MTCA Method B direct contact cleanup level. No other samples were analyzed for dioxins and furans. The horizontal and vertical extent of the soil dioxin concentrations at the site has not been delineated.

2.3.2.2 Stormwater Pond Sediment

One sample was collected from the stormwater pond sediment. Analytical results from the sample collected from the stormwater sediment are provided in Table 3. The original laboratory reports are provided in Appendix C. The stormwater pond sediment did not characterize as a dangerous or hazardous waste, however the sediment does contain elevated levels of cadmium, copper, and lead (above MTCA Method A cleanup levels and MTCA Method B residential cleanup levels for direct contact).

2.3.2.3 Groundwater Sample Results

Groundwater samples were collected from monitoring wells in August 2018. The groundwater monitoring well locations are shown on Figure 2. The groundwater

laboratory analytical data are summarized in Table 4. The original laboratory analytical data report is provided in Appendix D.

The water quality indicator parameter measurements were collected immediately prior to sample collection as per the EPA recommended low-flow groundwater sampling method (USEPA 1998). The depth-to-water and final water quality indicator parameter measurements for each well are shown in Table 5.

There were no detections of contaminants of concern at concentrations which exceeded the MTCA Method A cleanup levels with the exception of arsenic which was detected at a concentration of 12 ug/L in well MW-1 which exceeded the MTCA Method A cleanup level of 5 ug/L.

2.3.2.4 Vapor Intrusion Analysis

An initial assessment for potential vapor intrusion was conducted at the site. There were petroleum impacts to soil at the AST location within 15 feet laterally and 6 feet vertically of the shop building. There is the potential for vapor intrusion into the shop building.

Based on the data collected near shop building, the contaminant source (contaminated soil) could potentially result in an exceedance of the indoor air screening levels. Soil gas samples may be required to confirm that contamination does not pose a threat to indoor air.

3.0 CONCEPTUAL SITE MODEL

A conceptual site model has been developed for the site to understand the potential sources of contamination, contaminants of concern, potentially affected media (soil, groundwater, and soil gas), and transport and exposure pathways that could impact human or ecological receptors. The conceptual site model integrates all information that is known to-date for the site. The conceptual site model is described below.

3.1 SITE GEOLOGY

Soils in the upland area of the subject property are described in the Soil Survey of San Juan County Area, Washington (U.S. Department of Agriculture [USDA], 2009). The Soil Survey designates the upland soil as a mixture of Beaches-Endoaquents, tidal-Xerorthents association; Mitchellbay-Rock Outcrop-Killebrew complex; and Cady-Rock Outcrop Complex. The soil is composed of approximately 38% Beaches-Endoaquents, tidal-Xerorthents association; 26% Mitchellbay-Rock Outcrop-Killebrew complex; and 36% Cady-Rock Outcrop Complex.

The Beaches-Endoaquents, tidal-Xerorthents association is 40% beaches; 25% Endoaquents, tidal, and similar soils; 25% Xerorthents and similar soils; and 10% dissimilar minor components. The material generally formed from beach sand and/or colluvium from glacial outwash. The material is very poorly to excessively drained, and the available water capacity is very low.

The Mitchellbay-Rock Outcrop-Killebrew complex is 45% Mitchellbay and similar soils; 25% rock outcrop; 20% Killebrew and similar soils; and 10% dissimilar minor components. The material generally formed from in glacial drift over dense glaciomarine deposits. The material is somewhat poorly drained, and the available water capacity is low to moderate.

The Cady-Rock Outcrop Complex is 45% Cady and similar soils; 35% rock outcrop; and 20% dissimilar minor components. The material generally formed in glacial drift mixed with colluvium derived from metasedimentary rock. The material is well drained, and the available water capacity is low.

The site is underlain by Marine outwash of the Everson Interstade of the Fraser Glaciation. The outwash consists of loose, moderately to well-sorted, sub angular to sub-rounded gravelly sand, sandy gravel, and sand with minor interbeds of silt and silty sand. Color is brown to gray, depending on oxidation state and lithologic content. Thickness ranges to as much as 230 feet (WSDNR, 2016).

3.2 SITE HYDROGEOLOGY

Six groundwater monitoring wells are currently located on the site. The elevations of the top of the monitoring well casings were surveyed by a licensed surveyor. Based on elevation data collected during the 2018 sampling event, groundwater has been found to flow north. The groundwater flow direction and gradient map is presented in Figure 2.

3.3 CONTAMINANT SOURCES

Results obtained from the site investigations indicated that petroleum and metals are present in soil at the site. Surface soil in the boatyard and old shipyard rail work area is impacted with metals and cPAHs likely due to historical work practices at the site. There is an area of soil impacted by petroleum at the suspected location of a former above ground storage tank (sample location AST-1).

3.4 EXPOSURE PATHWAYS

Based upon results obtained during the remedial investigation, the following media are of concern for the site.

3.4.1 Soil

Surface soil at the site has been found to contain arsenic, cadmium, copper, lead, mercury, zinc, diesel and oil range TPH, and cPAHs at concentrations which exceed the applicable MTCA Method A and B residential cleanup levels.

In order to visually display the potential areal extent of the contamination, surface soil concentration contour maps have been prepared as described below:

- Soil arsenic concentrations- Figure 3

- Soil cadmium concentrations- Figure 4
- Soil copper concentrations- Figure 5
- Soil lead concentrations- Figure 6
- Soil mercury concentrations- Figure 7
- Soil zinc concentrations- Figure 8
- Soil diesel range TPH concentrations- Figure 9
- Soil cPAH concentrations- Figure 10

The concentration maps include the Method A (or Method B for zinc and copper) residential cleanup levels and the Ecology indicator soil-wildlife concentrations (from MTCA Table 749-3).

During the 2018 investigation, samples were collected at the soil surface and at a depth of 3-5 feet below grade. The samples collected at 3-5 feet below grade did not contain concentrations of contaminants of concern above MTCA Method A residential cleanup levels with the exception of *BLWA-4 5ft*, *BLWA-6 5ft*, and *SRWA-7 3ft*. A simplified cross section is provided in Figure 11.

Soil sample *BLWA-4 5ft* contained lead at a concentration of 540 mg/kg which exceeded the MTCA Method A residential cleanup level for lead of 250 mg/kg. The lead impacts at this location extend deeper than 5 feet, however based on the sample results at other locations, it likely does not extend much deeper.

Soil sample *BLWA-6 5ft* contained lead at a concentration of 560 mg/kg which exceeded the MTCA Method A residential cleanup level for lead of 250 mg/kg. A soil sample collected at a depth of 10 feet in this location (*BLWA-6 10ft*) had a lead concentration of 1.9 mg/kg, indicating that soil impacts are limited.

Soil sample *SRWA-7 3ft* contained a concentration of cPAHs (based on TEQ) of 0.215 mg/kg which exceeded the MTCA Method A residential cleanup level of 0.1 mg/kg. Based on nearby soil sample results, there is not a significant cPAH plume at the 3-foot depth.

The stormwater pond sediment did not characterize as a dangerous or hazardous waste however the sediment does contain elevated levels of cadmium, copper, and lead (above MTCA Method A cleanup levels and MTCA Method B residential cleanup levels for direct contact).

Two surface soil samples (MW-3 2-6in and MW-4 2-6in) contained concentrations of chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans which exceeded the published MTCA Method B direct contact cleanup level. The horizontal and vertical extent of the soil dioxin concentrations at the site has not been delineated. The source of the dioxins is not known. Dioxins are created during combustion of organic compounds (especially uncontrolled open burning of wastes). It is not known whether dioxins were released from the site or a neighboring or a regional source. It is likely that dioxins are present in the soil due to areal deposition.

3.4.2 Groundwater

There were no detections of contaminants of concern at concentrations which exceeded the MTCA Method A cleanup levels with the exception of arsenic which was detected at a concentration of 12 ug/L in well MW-1 which exceeded the MTCA Method A cleanup level of 5 ug/L.

The elevated arsenic concentration could be the result of reducing conditions in the groundwater. The low oxidation/reduction potential of the groundwater causes arsenic-bearing ferric iron Fe(III) to be reduced to ferrous iron Fe(II), which allows the adsorbed arsenic to go into solution. The source of the dissolved arsenic is presumed to be desorption from mineral oxides in the aquifer matrix caused by the reducing conditions observed at the property.

The arsenic human health criteria for consumption of water (WAC 173-201A-240) in the state of Washington is 10 ug/L. The groundwater at the site is not used for drinking purposes. The groundwater likely mixes with the marine water but the arsenic aquatic life criteria for marine water (WAC 173-201A-240) is 36 ug/L (chronic exposure) therefore the groundwater does not pose a threat to the marine environment.

3.4.3 Vapor

Soil gas samples have not been collected at the site. Due to the proximity of the petroleum impacted soil to the shop building, a soil gas investigation may need to be completed in the future to address the vapor pathway. The only current building of concern for vapor intrusion from contamination at the site is the shop building.

The vapor intrusion pathway should be addressed as part of the Feasibility Study prior to redevelopment of the site, which may include complete removal of all contaminant sources, installation of a vapor barrier, or other methods to control for vapor intrusion.

3.5 RECEPTORS

3.5.1 Human Exposure Routes

The following potential human exposure routes for chemicals have been identified for the site:

- Dermal contact inhalation and ingestion of soil particulates
- Potential exposure to petroleum vapors in the shop building

The site groundwater is not currently used for domestic purposes and there are no plans for domestic use in the future.

3.5.2 Ecological Exposure Routes

The following ecological exposure routes for chemicals have been identified for the site:

- Wind deposition of soil particulates into the marine environment
- Ingestion and dermal contact of soil particulates

4.0 PROPOSED CLEANUP STANDARDS

The selected cleanup levels for the site are presented in the following sections.

4.1 TERRESTRIAL ECOLOGICAL EVALUATION

Due to the proximity of the site to Shipyard Cove (which might be considered a locally designated environmentally sensitive area), it is possible that Ecology may require a site specific terrestrial ecological evaluation (in accordance with WAC 173-340-7493) be conducted at the site. Otherwise, a simplified TEE (in accordance with WAC 173-340-7492) would be conducted at the site.

The most basic site-specific TEE methodology (WAC 173-340-7493(3)) that could be used at the site would be to compare the soil concentrations to the values listed in Table 749-3 in MTCA. These ecological indicator concentrations could be also used as cleanup levels for the site. Per WAC 173-340-7493(2)(a)(i), as the site is a commercial site, only the wildlife values were used. For comparison purposes, the Table 749-3 wildlife values are shown in Table 2.

4.2 SOIL CLEANUP STANDARDS

The MTCA Method A target cleanup levels for soil and the Method B residential cleanup levels for soil direct contact were selected as screening levels for this remedial investigation. Those levels have been established for unrestricted land use in accordance with WAC 173-340 and can be found in Table 740-1 (Ecology, 2013).

MTCA Method A and B soil cleanup levels were selected based on the following information about the site:

- Commercially zoned site
- Metals, dioxins, and petroleum components are the only contaminants of concern
- Protective of human health and the environment (TEE referenced above)
- Protective of groundwater quality

4.3 GROUNDWATER CLEANUP STANDARDS

The MTCA Method A target cleanup levels for groundwater were selected as screening levels for this remedial investigation. Those levels have been established for unrestricted land use in accordance with WAC 173-340 and can be found in Table 720-1 (Ecology, 2013).

MTCA Method A groundwater cleanup levels were selected based on the following information about the site:

- Commercially zoned site
- Site water is not used for or planned to be used for human consumption
- Metals and petroleum compounds are the only contaminants of concern
- Protective of human health and the environment

5.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A remedial investigation of soil and groundwater conditions has been completed at 1293 Turn Point Drive in Friday Harbor, Washington.

5.1 SUMMARY AND CONCLUSIONS

Soil samples were collected from 71 locations at the site. Six groundwater wells were installed and sampled. Soil sample results indicate that surficial soil is contaminated above MTCA Method A cleanup levels and the indicator concentrations for wildlife. Soil sample collected beneath the surface soil (3-5 feet bgs) were generally below applicable cleanup levels with the exception of three samples, *BLWA-4 5ft*, *BLWA-6 5ft*, and *SRWA-7 3ft*.

Groundwater samples did not contain concentrations of contaminants of concern which are a threat to the marine environment. One groundwater sample exceeded the MTCA Method A target cleanup level for arsenic but the detection could be due to natural causes. Site groundwater is not used for drinking water at the property or downgradient of the property.

The petroleum contaminated soil located near sample location AST-1 may impact indoor air quality in the shop building.

The stormwater pond sediment did not characterize as a dangerous or hazardous waste but the sediment does have elevated levels of cadmium, copper, and lead (above MTCA Method A cleanup levels and MTCA Method B residential cleanup levels for direct contact).

The horizontal and vertical extent of elevated concentrations of chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans at the site is not known.

5.2 RECOMMENDATIONS

Additional dioxin investigation including research of potential sources and additional soil sampling should be conducted at the site.

5.2.1 Soil Pathway

Further dioxin sampling should be conducted to determine the extent of dioxin contamination at the site.

5.2.2 Groundwater Pathway

Follow-up sampling for arsenic at MW-1 should be conducted to determine if the arsenic detection is confirmed.

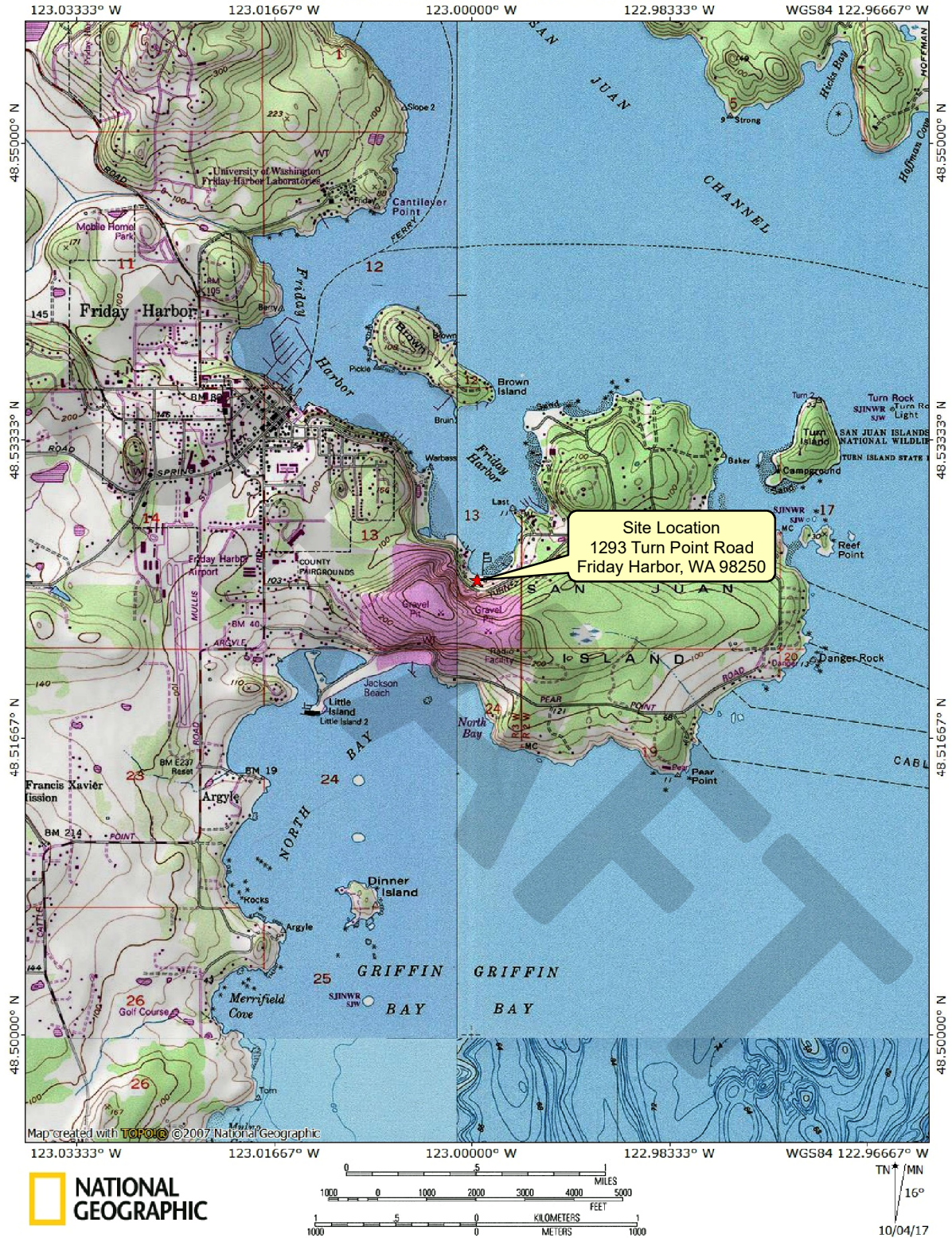
5.2.3 Vapor Pathway

The vapor intrusion pathway should be addressed as part of the Feasibility Study prior to redevelopment of the site, which may include complete removal of all contaminant sources, installation of a vapor barrier, or other methods to control for vapor intrusion.

6.0 REFERENCES

- U.S. Department of Agriculture (USDA). 2009. Soil Survey of San Juan County Area, Washington Soil Conservation Service.
- U.S. Environmental Protection Agency, Region 2. 1998. Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling, GW Sampling SOP Final. March 16, 1998.
- Washington State Department of Ecology (Ecology). 2013. Model Toxics Control Act Cleanup Regulation Chapter 173-340 WAC. Publication No. 94-06.
- U.S. Geological Survey (USGS). 2014. Friday Harbor, WA Quadrangle. 7.5 minute series topographic map.
- Washington State Department of Natural Resources, Division of Geology and Earth Resources (WSDNR). 2016. Earth Resource Permit Locations. <<http://www.dnr.wa.gov/geologyportal>>. Accessed September 29, 2017.
- Whatcom Environmental Services. November 21, 2017. Phase I Environmental Site Assessment, Jensen's Shipyard, 1293 Turn Point Road, Friday Harbor, Washington.
- Whatcom Environmental Services. April 2, 2018. Initial Investigation Report, Jensen's Shipyard, 1293 Turn Point Road, Friday Harbor, Washington.

TOPO! map printed on 10/04/17 from "Untitled.tpo"



Prepared for:



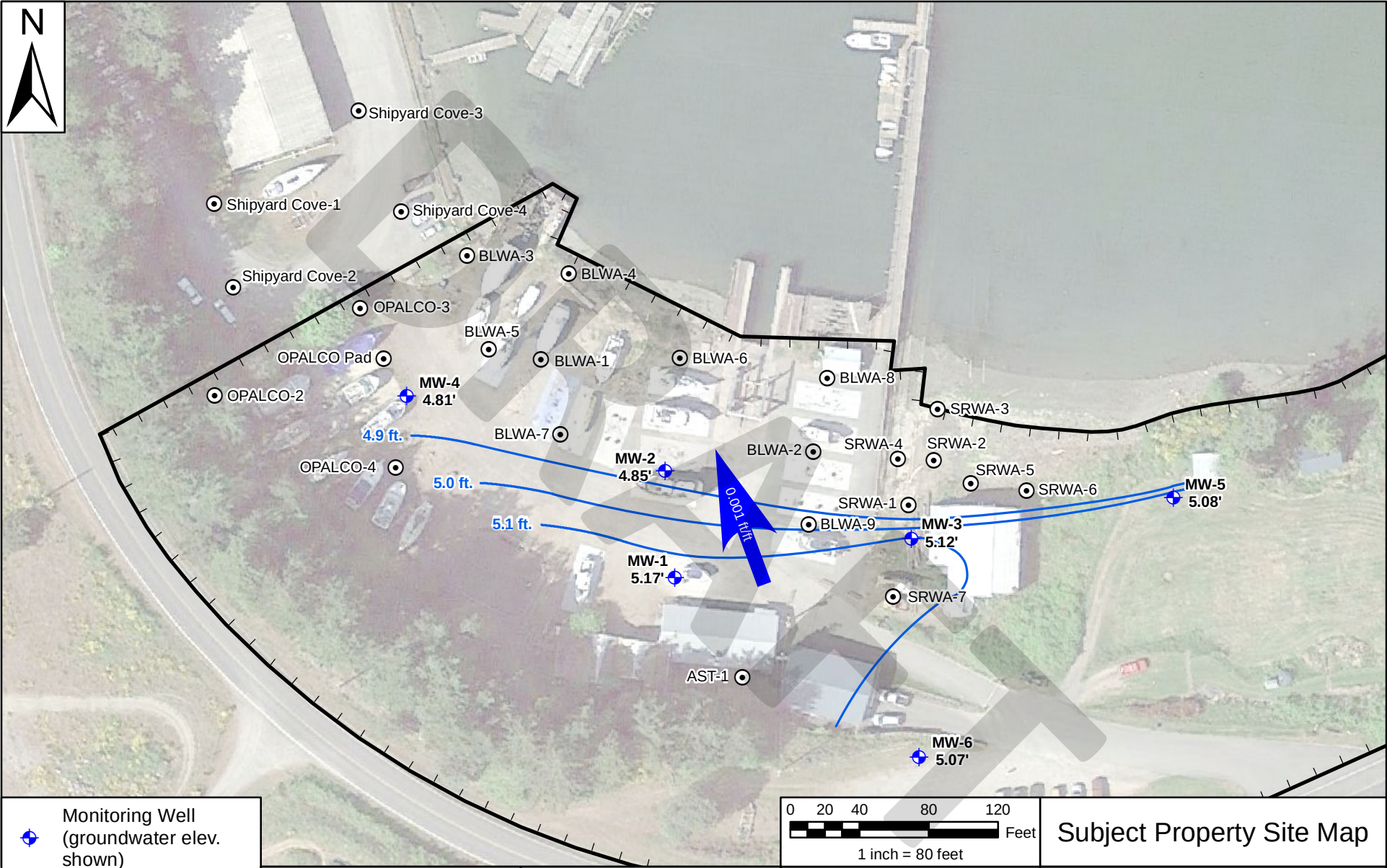
Prepared by:



Site Location Map

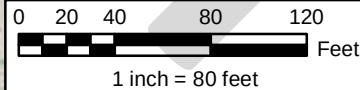
Jensen's Shipyard
Further Investigation
2/20/18

Figure 1



- Monitoring Well (groundwater elev. shown)
- Soil Sample
- Groundwater Elev. Contour (2018-08-29)
- Subject Property

All data are approximate and should be used for relative location reference only.
2015 aerial obtained from Google Earth.

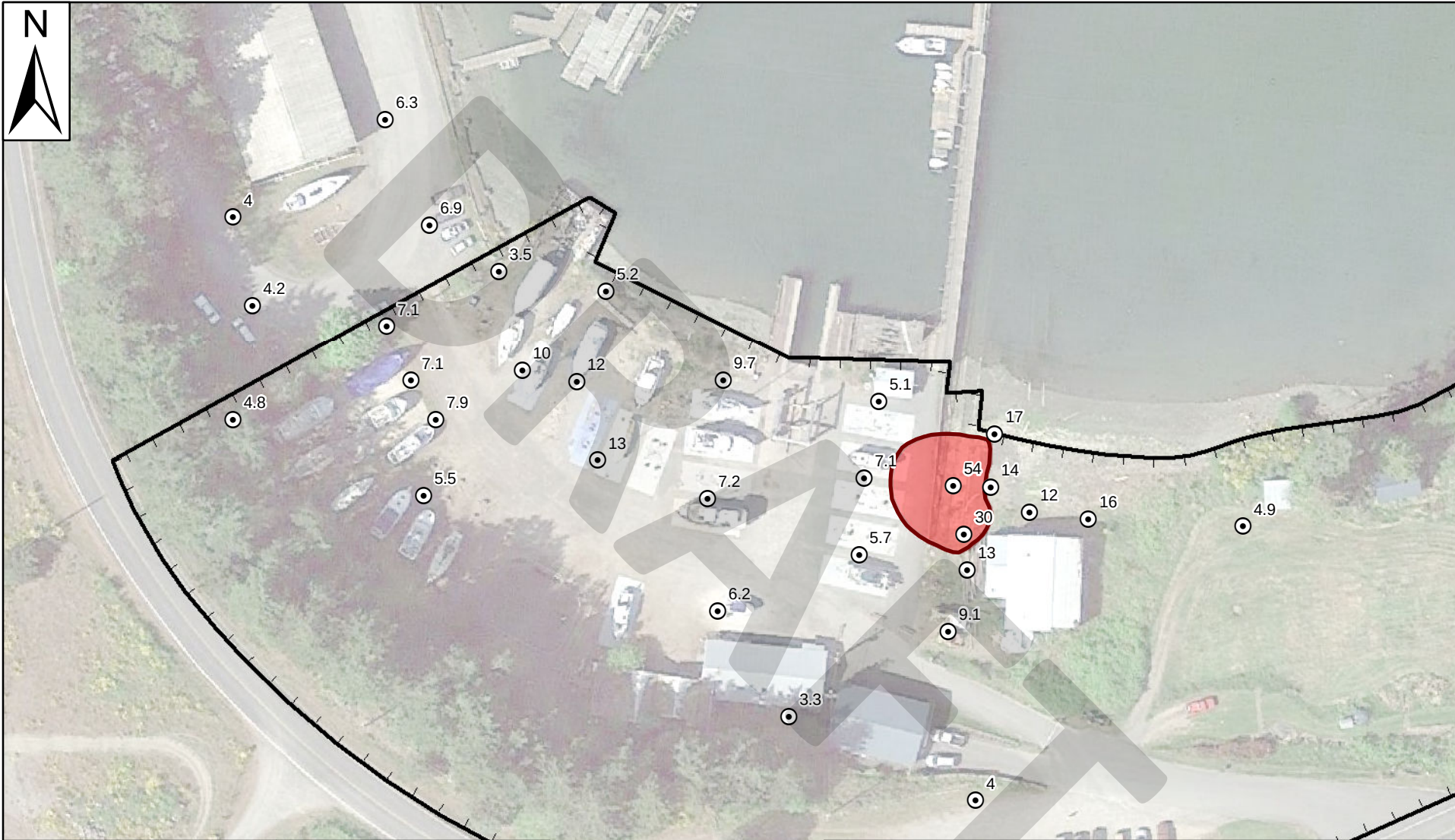


Prepared by:
nwhatcom
ENVIRONMENTAL

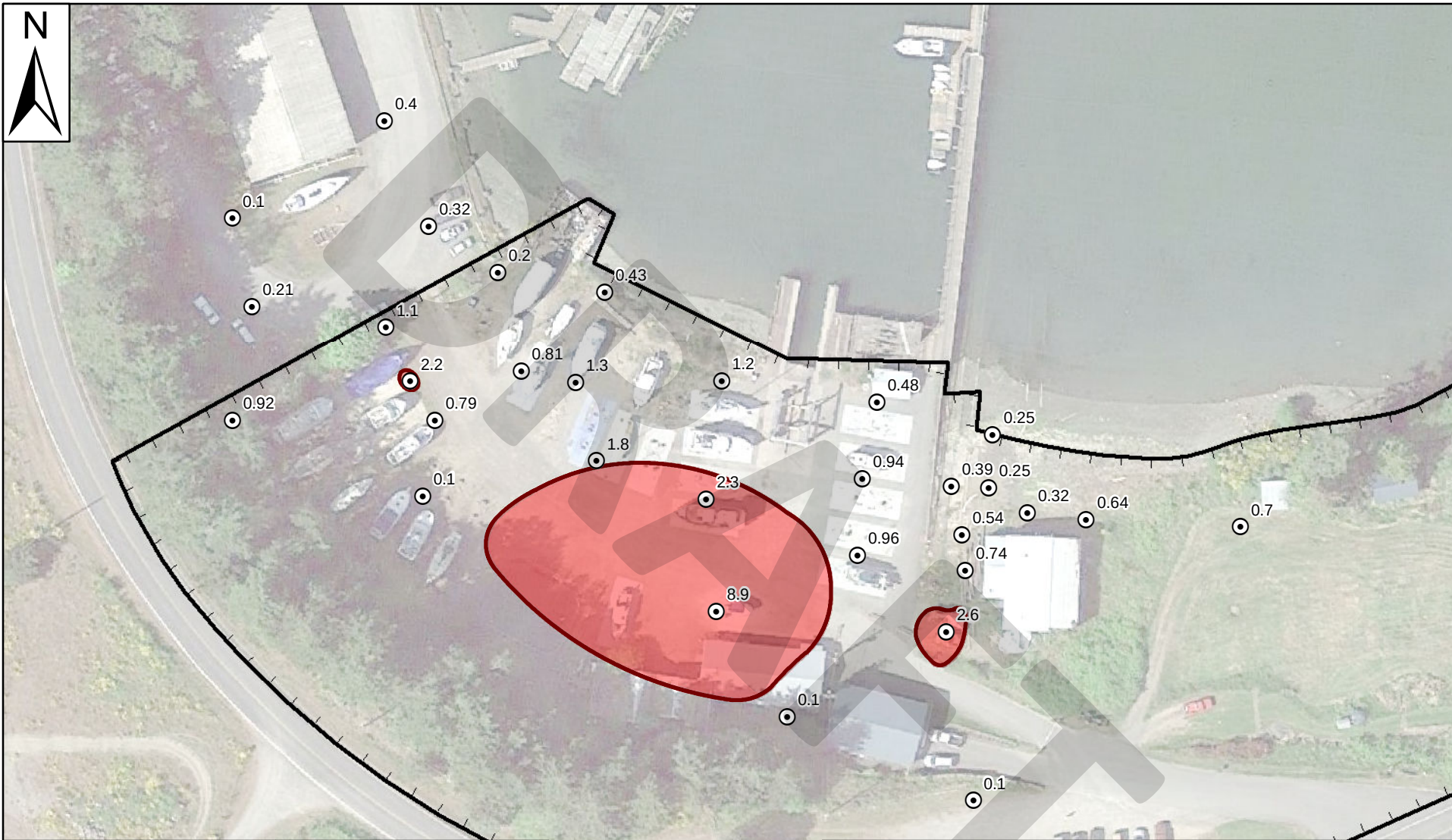
Subject Property Site Map

1293 Turn Point Road
Friday Harbor, WA 98250

Jensen's Shipyard 10/12/18	Figure 2
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Soil Sample (data shown in mg/kg) MTCA Method A CUL (20 mg/kg) Ecology Indicator - Wildlife (132 mg/kg) Subject Property	All data are approximate and should be used for relative location reference only. 2015 aerial obtained from Google Earth. Contaminant data shown are from surface samples, generally 2 to 6 inches bgs.	Prepared for: PORT OF FRIDAY HARBOR	0204080120 Feet 1 inch = 80 feet Prepared by: nwhatcom ENVIRONMENTAL	Surficial Soil Arsenic Concentration Map 1293 Turn Point Road Friday Harbor, WA 98250 Jensen's Shipyard 10/12/18 Figure 3
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Soil Sample (data shown in mg/kg) MTCA Method A CUL (2.0 mg/kg) Ecology Indicator - Wildlife (14.0 mg/kg) Subject Property	All data are approximate and should be used for relative location reference only. 2015 aerial obtained from Google Earth. Contaminant data shown are from surface samples, generally 2 to 6 inches bgs.	0204080120 Feet 1 inch = 80 feet Prepared for: PORT OF FRIDAY HARBOR	Prepared by: nwhatcom ENVIRONMENTAL	Surficial Soil Cadmium Concentration Map 1293 Turn Point Road Friday Harbor, WA 98250 Jensen's Shipyard 10/12/18 Figure 4
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Soil Sample (data shown in mg/kg)



MTCA Method A CUL (3200 mg/kg)



Ecology Indicator - Wildlife (217 mg/kg)



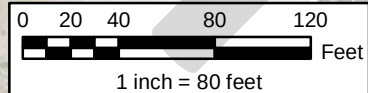
Subject Property

All data are approximate and should be used for relative location reference only.

2015 aerial obtained from Google Earth.

Contaminant data shown are from surface samples, generally 2 to 6 inches bgs.

Prepared for:



Prepared by:

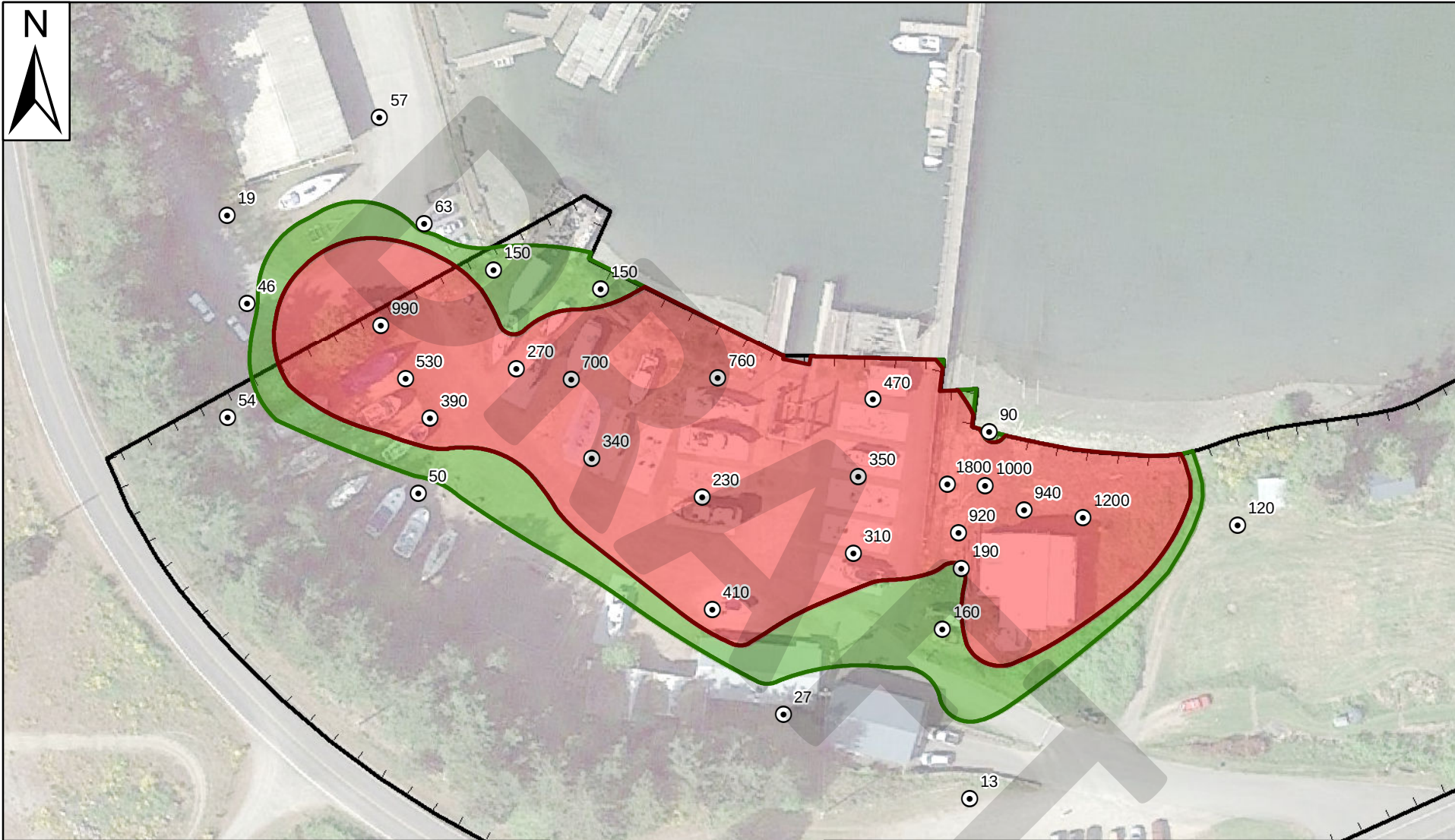


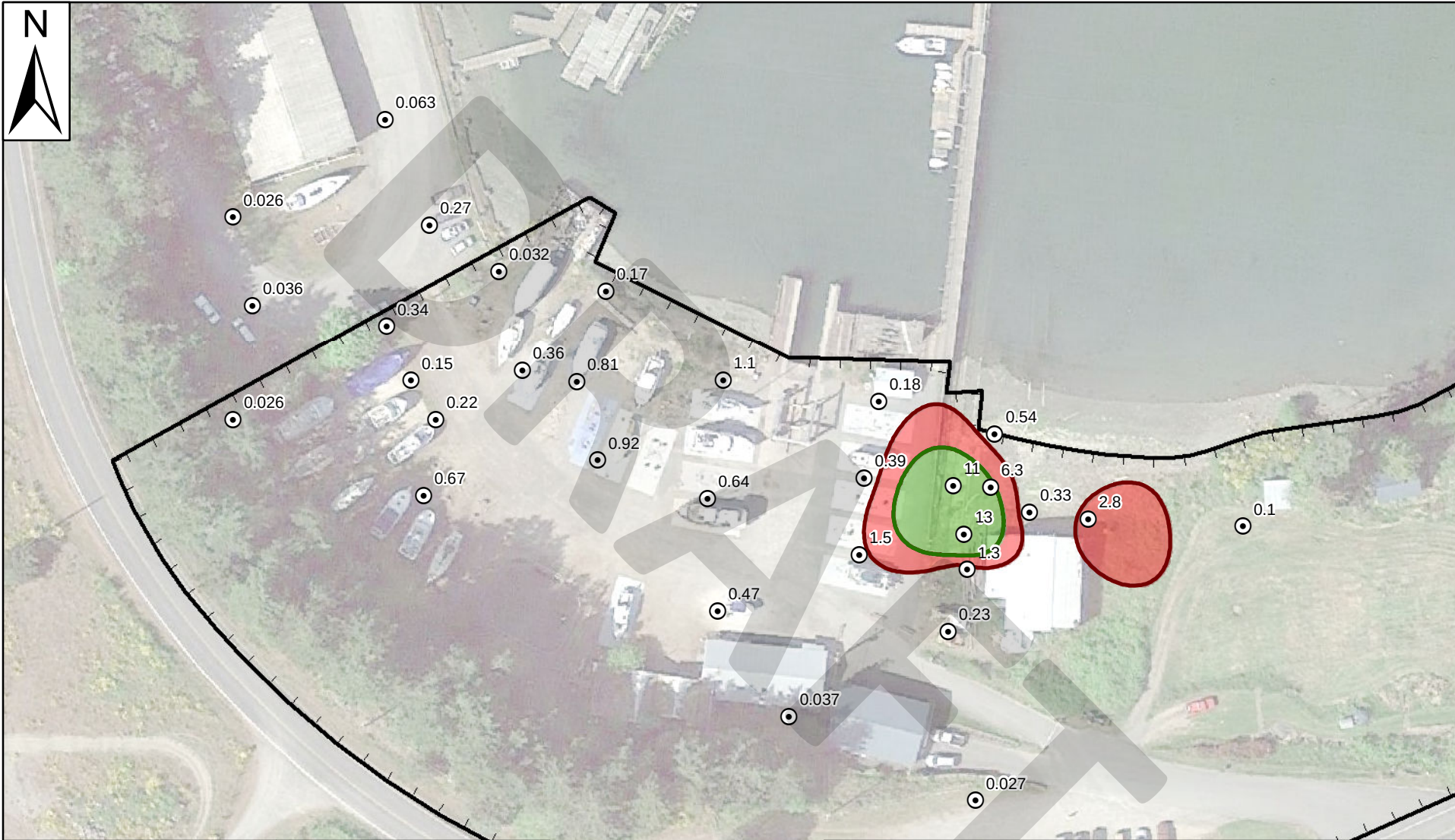
Surficial Soil Copper Concentration Map

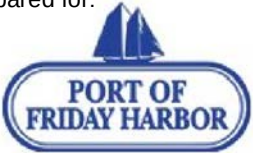
1293 Turn Point Road
Friday Harbor, WA 98250

Jensen's
Shipyard
10/12/18

Figure 5



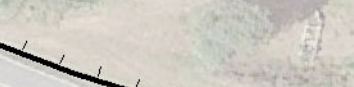


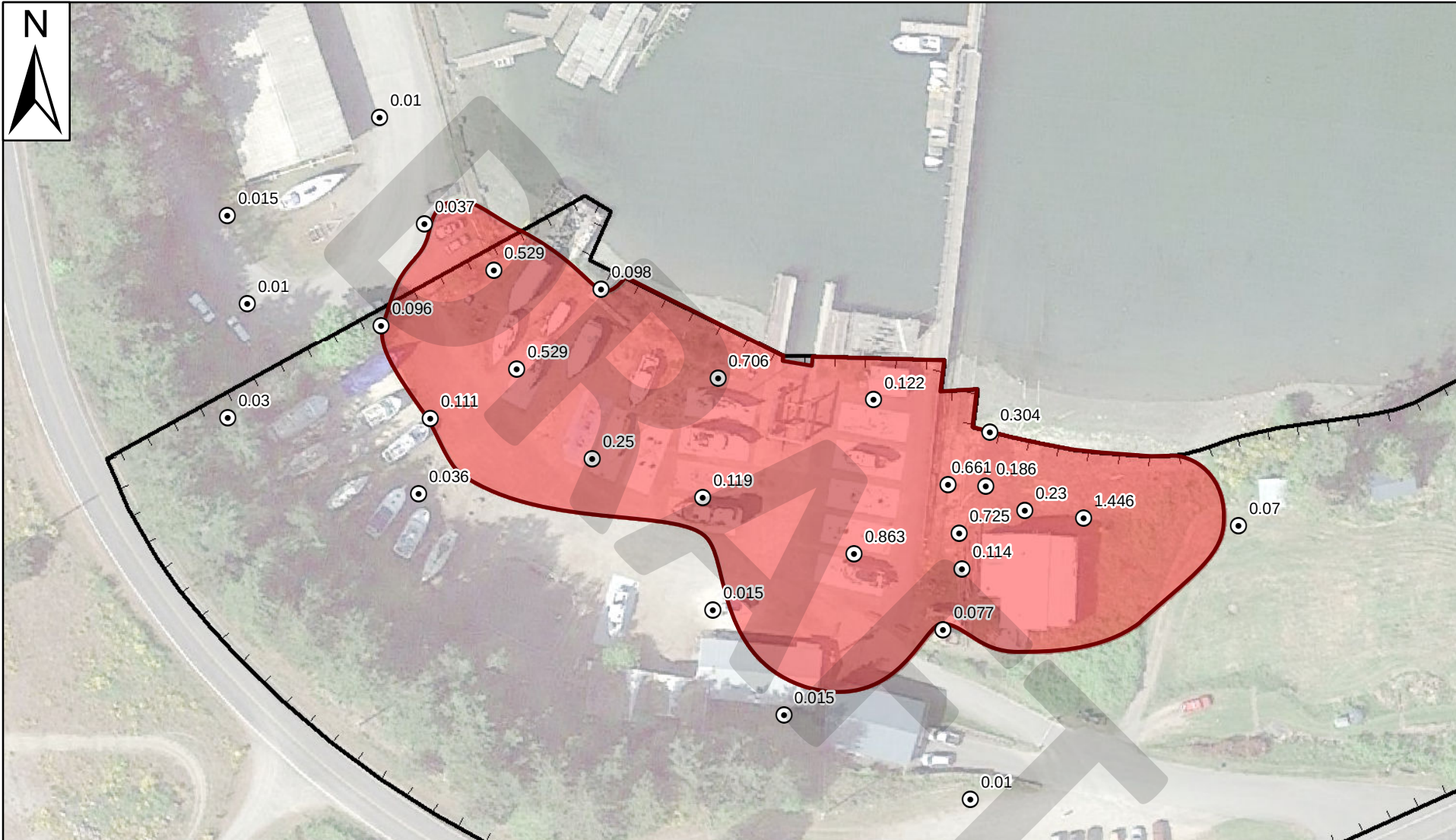
⊙ Soil Sample (data shown in mg/kg) MTCA Method A CUL (2.0 mg/kg) Ecology Indicator - Wildlife (5.5 mg/kg) Subject Property	All data are approximate and should be used for relative location reference only. 2015 aerial obtained from Google Earth. Contaminant data shown are from surface samples, generally 2 to 6 inches bgs.	Prepared for: 	Prepared by: 	Surficial Soil Mercury Concentration Map 1293 Turn Point Road Friday Harbor, WA 98250 Jensen's Shipyard 10/12/18 Figure 7	
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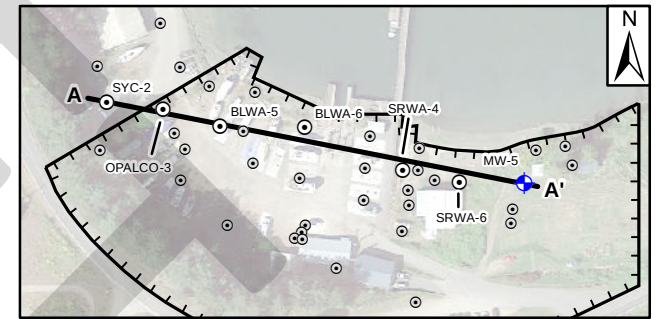
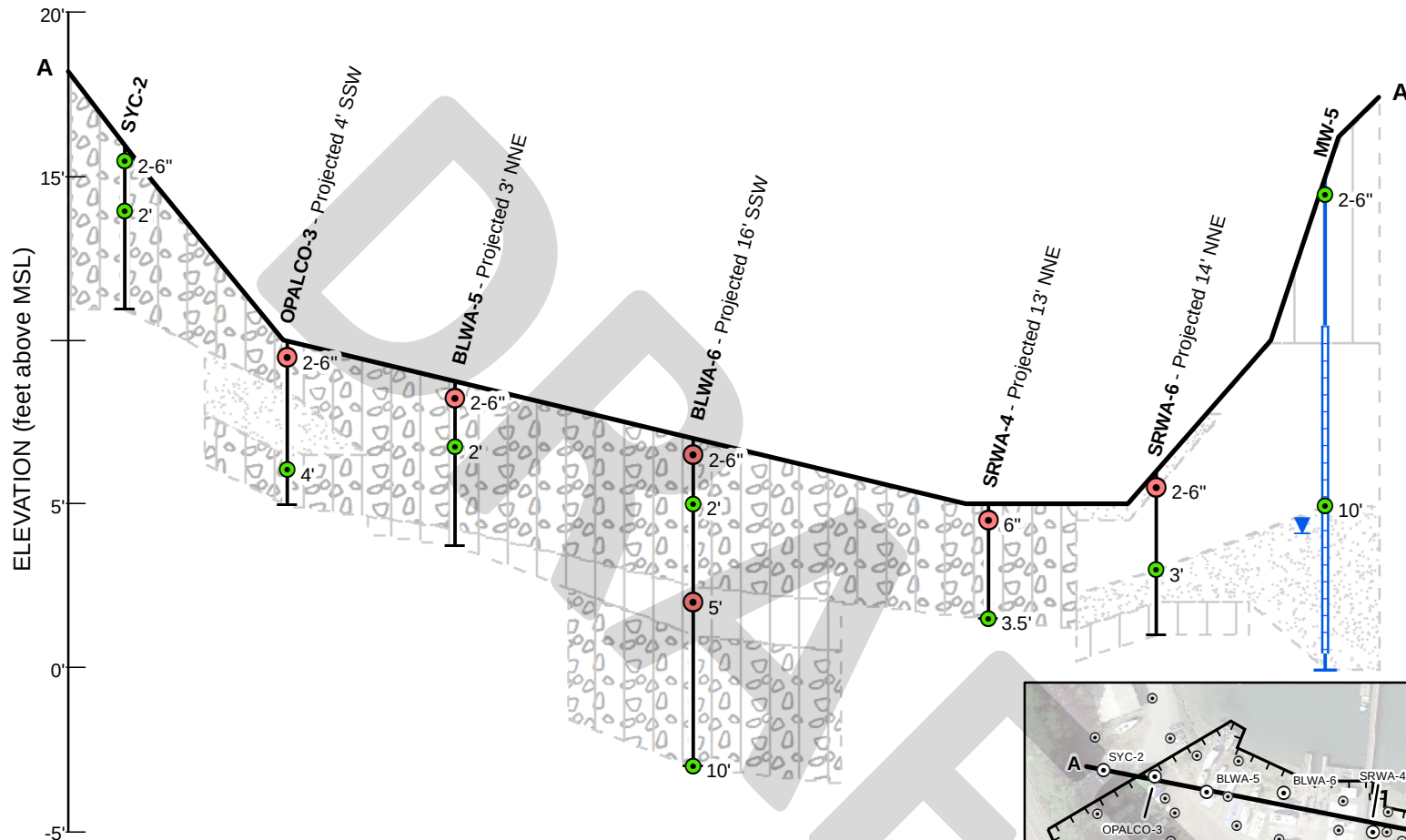
Soil Sample (data shown in mg/kg) MTCA Method A CUL (24,000 mg/kg) Ecology Indicator - Wildlife (360 mg/kg) Subject Property	All data are approximate and should be used for relative location reference only. 2015 aerial obtained from Google Earth. Contaminant data shown are from surface samples, generally 2 to 6 inches bgs.	Prepared for: PORT OF FRIDAY HARBOR	0204080120 Feet 1 inch = 80 feet Prepared by: whatcom ENVIRONMENTAL	Surficial Soil Zinc Concentration Map 1293 Turn Point Road Friday Harbor, WA 98250 Jensen's Shipyard 10/12/18 Figure 8
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Soil Sample (data shown in mg/kg) MTCA Method A CUL (2000 mg/kg) Ecology Indicator - Wildlife (6000 mg/kg) Subject Property	All data are approximate and should be used for relative location reference only. 2015 aerial obtained from Google Earth. Contaminant data shown are from surface samples, generally 2 to 6 inches bgs.	 Prepared for: 	0204080120 Feet 1 inch = 80 feet Prepared by: 	Surficial Soil TPH-Dx Diesel Concentration Map 1293 Turn Point Road Friday Harbor, WA 98250 Jensen's Shipyard 10/12/18 Figure 9
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Soil Sample (data shown in mg/kg) MTCA Method A CUL (0.1 mg/kg) Ecology Indicator - Wildlife (12 mg/kg) Subject Property	All data are approximate and should be used for relative location reference only. 2015 aerial obtained from Google Earth. Contaminant data shown are from surface samples, generally 2 to 6 inches bgs.	Prepared for:	0204080120 Feet 1 inch = 80 feet Prepared by:	Surficial Soil cPAH TEq Concentration Map 1293 Turn Point Road Friday Harbor, WA 98250 Jensen's Shipyard 10/12/18 Figure 10	
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All data are approximate and should be used for relative location reference only.

SCALE: HORZ. 1" = 80'
VERT. 1" = 5.3'
(15x Vertical Exaggeration)

Cross-Section A-A'

Prepared for:



Prepared by:



1293 Turn Point Road
Friday Harbor, WA 98250

Jensen's
Shipyard
09/25/18

Figure 11

Table 1. Upland Soil Sample Descriptions

Sample ID	Date	Location and Description	PID (ppm)	Sheen Test^a
Shop Floor Drain-1	1/24/2018	Collected using a hand auger 1 foot west of the northwest corner of the shop at 3.5 feet bgs. Coarse sand with gravel, brown, loose, moist.	0	VSS
Shop Floor Drain-2	1/24/2018	Collected using a hand auger 2 feet east, and 2 feet north of the northwest corner of the shop at 3.5 feet bgs. Silty sand with organics, dark brown, firm, dry.	0	NS
OPALCO Pad	1/24/2018	Collected as a composite sample from 1 to 4 inches bgs, 15 feet west of the northeast corner of the old OPALCO pad. Coarse gravel with sand and organics, brown, loose, dry.	0	SS
OPALCO-2 2-6in	7/31/2018	Collected as a composite sample from 2 to 6 inches bgs, adjacent to the west corner of the old OPALCO pad. Gravelly sand with silt, brown, soft to slightly firm, dry.	1.5	NS
OPALCO-2 5ft	7/31/2018	Collected as a grab sample from 5 feet bgs, adjacent to the west corner of the old OPALCO pad. Sandy gravel, brown, soft, dry.	2.1	VSS
OPALCO-3 2-6in	7/31/2018	Collected as a composite sample from 2 to 6 inches bgs, adjacent to the north corner of the old OPALCO pad. Silty sandy gravel, brown/gray, soft, dry.	0	VSS
OPALCO-3 4ft	7/31/2018	Collected as a grab sample from 4 feet bgs, adjacent to the north corner of the old OPALCO pad. Silty sandy gravel, brown, soft, dry.	1	VSS
OPALCO-4 2-6in	7/31/2018	Collected as a composite sample from 2 to 6 inches bgs, approximately 45 feet south of the eastern corner of the old OPALCO pad. Silty fine sand, brown, soft, dry.	0	VSS
OPALCO-4 5ft	7/31/2018	Collected as a grab sample from 5 feet bgs, approximately 45 feet south of the eastern corner of the old OPALCO pad. Silty medium sand, brown, soft, dry.	0	NS
SYC-1 2-6in	7/31/2018	Collected as a composite sample from 2 to 6 inches bgs, off the east side of the entrance road above the southwest corner of the covered storage structure. Silty fine sand with gravel, brown, soft, dry.	0	VSS
SYC-1 2ft	7/31/2018	Collected as a grab sample from 2 feet bgs, off the east side of the entrance road above the southwest corner of the covered storage structure. Silty fine sand with gravel, brown, soft, dry.	0	VSS
SYC-2 2-6in	7/31/2018	Collected as a composite sample from 2 to 6 inches bgs, off the west side of the entry road in the gravel parking area. Silty sandy gravel with organics, gray to brown, soft, dry.	0	SS

Table 1. Upland Soil Sample Descriptions

Sample ID	Date	Location and Description	PID (ppm)	Sheen Test^a
SYC-2 2ft	7/31/2018	Collected as a grab sample from 2 feet bgs, off the west side of the entry road in the gravel parking area. Sandy gravel with minor silt, brown, soft, dry.	0	SS
SYC-3 2-6in	7/31/2018	Collected as a composite sample from 2 to 6 inches bgs, off the west side of the road at the southeast corner of the covered storage structure. Silty sandy gravel with organics, gray, soft, dry.	0	VSS
SYC-3 3ft	7/31/2018	Collected as a grab sample from 3 feet bgs, off the west side of the road at the southeast corner of the covered storage structure. Gravelly sand, brown, soft, moist to dry.	0	VSS
SYC-4 2-6in	7/31/2018	Collected as a composite sample from 2 to 6 inches bgs, off the east side of the road near the gate between the properties. Sandy silty gravel, brown to gray, soft, dry to moist.	0	VSS
SYC-4 2ft	7/31/2018	Collected as a grab sample from 2 feet bgs, off the east side of the road near the gate between the properties. Sandy silty gravel, brown to gray, soft, dry to moist.	0	SS
MW-4 2-6in	7/31/2018	Collected as a composite sample from 2 to 6 inches bgs, adjacent to the east corner of the old OPALCO pad at monitoring well location. Silty sandy gravel, brown, soft, dry.	0	NS
MW-4 11ft	7/31/2018	Collected as a grab sample from 11 feet bgs, adjacent to the east corner of the old OPALCO pad at monitoring well location. Gravelly silty coarse sand, reddish brown, slightly firm, wet.	0	NS
MW-5 2-6in	8/1/2018	Collected as a composite sample from 2 to 6 inches bgs, located in the grassy area to the east of the shipyard at monitoring well location. Fine sandy silt with gravel, tan to brown, soft, dry.	0	VSS
MW-5 10ft	8/1/2018	Collected as a grab sample from 10 feet bgs, located in the grassy area to the east of the shipyard at monitoring well location. Silty clayey medium sand with gravel, olive brown, hard to firm, wet.	0	VSS
MW-6 2-6in	7/31/2018	Collected as a composite sample from 2 to 6 inches bgs, adjacent to the north edge of the upper parking area at monitoring well location. Gravelly silt to silty gravel, tan to brown, soft, dry.	0	VSS
MW-6 40ft	7/31/2018	Collected as a grab sample from 40 feet bgs, adjacent to the north edge of the upper parking area at monitoring well location. Coarse sandy gravel, brown to olive brown, firm, wet.	0	NS
Stormwater Pond	1/24/2018	Collected as a composite sample from soil at the bottom of the stormwater retention pond.	0	NS

Table 1. Upland Soil Sample Descriptions

Sample ID	Date	Location and Description	PID (ppm)	Sheen Test^a
		Silt with decayed leaves and pine needles, black, loose, saturated.		
BLWA-1	1/24/2018	Collected as a composite sample from surficial gravel throughout the western half of the boat lift work area. Sandy gravel with paint chips and shell fragments, brown, loose, moist.	0	NS
BLWA-2	1/24/2018	Collected as a composite sample from surficial gravel throughout the eastern half of the boat lift work area. Sandy gravel with paint chips and shell fragments, brown, loose, moist.	0	NS
BLWA-3 2-6in	7/30/2018	Collected as a composite sample from 2 to 6 inches bgs from soil located at the west side of the boat lift area Silty sandy gravel, brown, soft, dry.	0	NS
BLWA-3 2ft	7/30/2018	Collected as a grab sample from 2 feet bgs from soil located at the west side of the boat lift area Silty sandy gravel, brown, soft, dry.	0	NS
BLWA-4 2-6"	7/30/2018	Collected as a composite sample from 2 to 6 inches bgs in the northwest quadrant of the boat lift area. Silty sandy gravel, brown, soft, dry.	0	NS
BLWA-4 5ft	7/30/2018	Collected as a grab sample from 5 feet bgs in the northwest quadrant of the boat lift area. Sandy silt with gravel, dark brown, soft to slightly firm, moist.	0	NS
BLWA-5 2-6in	7/30/2018	Collected as a composite sample from 2 to 6 inches bgs in the southwest quadrant of the boat lift area. Silty sandy gravel, brown, soft, dry.	0.5	NS
BLWA-5 2ft	7/30/2018	Collected as a grab sample from 2 feet bgs in the southwest quadrant of the boat lift area. Silty sandy gravel, brown, soft, dry.	0	NS
BLWA-6 2-6in	7/30/2018	Collected as a composite sample from 2 to 6 inches bgs in the northern center of the boat lift area. Silty sandy gravel, brown, soft, dry.	2.1	NS
BLWA-6 2ft	7/30/2018	Collected as a grab sample from 2 feet bgs in the northern center of the boat lift area. Silty sandy gravel, brown, soft, dry.	4.2	VSS
BLWA-6 5ft	7/30/2018	Collected as a grab sample from 5 feet bgs in the northern center of the boat lift area. Sandy silt with gravel, woody debris, dark brown, slightly firm, moist.	186	MS
BLWA-6 10ft	7/30/2018	Collected as a grab sample from 10 feet bgs in the northern center of the boat lift area. Sandy gravel with woody debris, reddish brown, soft, wet.	8	VSS

Table 1. Upland Soil Sample Descriptions

Sample ID	Date	Location and Description	PID (ppm)	Sheen Test^a
BLWA-7 2-6in	7/30/2018	Collected as a composite sample from 2 to 6 inches bgs in the southern center of the boat lift area. Silty sandy gravel, brown, soft to slightly firm, dry.	0	NS
BLWA-7 2ft	7/30/2018	Collected as a grab sample from 2 feet bgs in the southern center of the boat lift area. Silty sandy gravel, brown, soft to slightly firm, dry.	0	NS
BLWA-7 5ft	7/30/2018	Collected as a grab sample from 5 feet bgs in the southern center of the boat lift area. Sandy silt with gravel and minor clay, dark brown, firm, moist.	0	NS
BLWA-8 2-6in	7/30/2018	Collected as a composite sample from 2 to 6 inches bgs in the northeast quadrant of the boat lift area. Silty sandy gravel, brown, soft, dry.	3.8	VSS
BLWA-8 2ft	7/30/2018	Collected as a grab sample from 2 feet bgs in the northeast quadrant of the boat lift area. Silty sandy gravel, brown, soft, dry.	3.4	VSS
BLWA-8 5ft	7/30/2018	Collected as a grab sample from 5 feet bgs in the northeast quadrant of the boat lift area. Gravelly silty sand, reddish brown, soft to slightly firm, moist.	0	NS
BLWA-9 2-6in	7/30/2018	Collected as a composite sample from 2 to 6 inches bgs in the southeast quadrant of the boat lift area. Silty sandy gravel, brown, soft, dry.	0.2	NS
BLWA-9 2ft	7/30/2018	Collected as a grab sample from 2 feet bgs in the southeast quadrant of the boat lift area. Silty sandy gravel, brown, soft, dry.	4.1	VSS
BLWA-9 5ft	7/30/2018	Collected as a grab sample from 5 feet bgs in the southeast quadrant of the boat lift area. Gravelly sandy silt, reddish brown, soft, moist.	2.9	NS
AST-1 2ft	7/30/2018	Collected as a grab sample from approximately 2 feet bgs at a location south of the shop building where evidence of a removed AST was observed. Gravelly sandy silt. dark brown to black, slightly firm, moist.	91	HS
MW-1 2-6in	7/30/2018	Collected as a composite sample from 2 to 6 inches bgs at a location north of the shop building at monitoring well location. Silty sandy gravel, brown, soft, dry.	0	VSS
MW-1 12ft	7/30/2018	Collected as a grab sample from 12 feet bgs at a location north of the shop building at monitoring well location. Sandy gravel, gray, soft, wet.	407	SS
MW-1 15ft	7/30/2018	Collected as a grab sample from 15 feet bgs at a location north of the shop building at monitoring well location. Sandy gravel, gray, soft, wet.	5.6	NS

Table 1. Upland Soil Sample Descriptions

Sample ID	Date	Location and Description	PID (ppm)	Sheen Test^a
MW-2 6in	7/30/2018	Collected as a grab sample from 6 inches bgs at a location approximately 90 feet south/southwest of the boat lift dock at monitoring well location. Silty sandy gravel, brown, soft, dry.	0	VSS
MW-2 7ft	7/30/2018	Collected as a grab sample from 7 feet bgs at a location approximately 90 feet south/southwest of the boat lift dock at monitoring well location. Organic silty sandy gravel, dark brown to black, slightly firm, wet.	0	NS
FDA-1	1/24/2018	Collected from a test pit excavated in the former dumping area, 9 feet west, and 4 feet north of the northwest corner of the old wood shed at 2 feet bgs. Organic rich silty clay, dark brown, firm, moist.	0	NS
FDA-2	1/24/2018	Collected as a composite sample from the surface to 6 inches bgs at the base of the bluff of the former dumping area using a hand auger 15 feet north of FDA-1 location. Coarse sand, brown with heavy iron staining, loose, wet.	0	NS
FDA-3	1/24/2018	Collected as a composite sample from the base of the bluff at the former dumping area, augered into the bluff 6 inches at 2.5 feet bgs from the top of the bluff, 25 feet west of FDA-2 location. Silty sand with gravel, brown, loose, wet.	0	NS
UST-1	1/24/2018	Collected from a test pit excavated at the northern side of the estimated former UST location, 20 feet east of gravel path at 5 feet bgs. Silty clay with fine sand, brown, loose to firm, moist.	0	NS
UST-2	1/24/2018	Collected from a test pit excavated at the southern side of the estimated former UST location, 15 feet north of UST-1 at 3 feet bgs. Silty clay with fine sand, brown, loose, moist.	0.0	NS
SRWA-1	1/24/2018	Collected as composite sample from 3 to 6 inches bgs using a hand auger along the sides of the old wood rails at the old shipyard rail work area, 12 feet west of the northwest corner of the old boat building. Coarse sand with gravel and organics, dark brown, loose, wet.	0.0	NS
SRWA-2	1/24/2018	Collected as composite sample from 3 to 6 inches bgs using a hand auger from the old shipyard rail work area, 25 feet north of the northwest corner of the old boat building. Coarse sand with gravel, dark brown, loose, wet.	0.0	NS
SRWA-3	1/24/2018	Collected as a composite sample from the surface to 6 inches bgs using a hand auger from the old shipyard rail work area, 50 feet north, and 10 feet west of the northwest corner of the old boat building. Sand with silts, gray, loose, saturated.	52.7	HS

Table 1. Upland Soil Sample Descriptions

Sample ID	Date	Location and Description	PID (ppm)	Sheen Test^a
SRWA-4 6in	8/1/2018	Collected as a grab sample from 6 inches bgs at a location in the northwest quadrant of the old rail works area; in rail track groove. Sandy gravel, gray, soft, moist.	0	NS
SRWA-4 3.5ft	8/1/2018	Collected as a grab sample from 3.5 feet bgs at a location in the northwest quadrant of the old rail works area; in rail track groove. Highly organic sandy silty gravel, reddish brown, soft, wet.	0	NS
SRWA-5 2-6in	8/1/2018	Collected as a composite sample from 2 to 6 inches bgs in the northern center of the old rail works area. Organic silty sand and gravel, brown, soft, moist.	1.5	VSS
SRWA-5 3.5 ft	8/1/2018	Collected as a grab sample from 3.5 feet bgs in the northern center of the old rail works area. Highly organic silty sand with gravel, dark brown to black, soft, wet.	36.7	NS
SRWA-5 5ft	8/1/2018	Collected as a grab sample from 5 feet bgs in the northern center of the old rail works area. Highly organic silty sand with gravel, dark brown to black, soft, wet.	24.1	VSS
SRWA-6 2-6in	8/1/2018	Collected as a composite sample from 2 to 6 inches bgs in the southern portion of the northeast quadrant of the old rail works area. Gravelly medium sand with heavy organics, reddish brown to brown, soft, dry.	0.7	NS
SRWA-6 3ft	8/1/2018	Collected as a grab sample from 3 feet bgs in the southern portion of the northeast quadrant of the old rail works area. Silty medium sand with gravel, reddish brown, soft, wet.	0	VSS
SRWA-7 2-6in	8/1/2018	Collected as a composite sample from 2 to 6 inches bgs in the southwest quadrant of the old rail works area. Silty gravelly sand, reddish brown to brown, slightly firm, moist to dry.	0	VSS
SRWA-7 3ft	8/1/2018	Collected as a grab sample from 3 feet bgs in the southwest quadrant of the old rail works area. Silty gravelly sand, reddish brown to brown, slightly firm, moist to dry.	0	VSS
MW-3 2-6in	8/1/2018	Collected as a composite sample from 2 to 6 inches bgs in the northern portion of the southwest quadrant of the old rail works area at monitoring well location. Fine sandy silt with gravel, tan, soft, dry.	0	NS
MW-3 5.5ft	8/1/2018	Collected as a grab sample from 5.5 feet bgs in the northern portion of the southwest quadrant of the old rail works area at monitoring well location. Saturated coarse sand with gravel, brown, soft, wet.	0	NS

^a - NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

Table 2. Upland Soil Sample Results

Sample ID	MTCA Method A Cleanup Level (or Method B as noted):	Ecology Indicator Soil Concentrations- Wildlife (Table 749-3)	Shop Floor Drain-1 3.5ft	Shop Floor Drain-2 3.5ft	OPALCO Pad 1-4in	OPALCO-2 2-6in	OPALCO-2 5ft	OPALCO-3 2-6in	OPALCO-3 4ft	OPALCO-4 2-6in	OPALCO-4 5ft	SYC-1 2-6in	SYC-1 2ft	SYC-2 2-6in	SYC-2 2ft	SYC-3 2-6in	SYC-3 3ft	SYC-4 2-6in	SYC-4 2ft	MW-4 2-6in	MW-4 11ft
Date			1/24/2018	1/24/2018	1/24/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018	7/31/2018
TPH (mg/kg)																					
NWTPH-Gx Volatile Range	100/30 ^a	5,000	ND(<3.0)	ND(<3.0)	ND(<3.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx Diesel Range	2,000	6,000	190	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)
NWTPH-Dx Oil-Range	2,000	6,000	ND(<50)	ND(<50)	130	ND(<50)	ND(<50)	ND(<50)	ND(<50)	ND(<50)	ND(<50)	120	ND(<50)	130	ND(<50)	70	ND(<50)	140	ND(<50)	120	ND(<50)
EPA-8021 Benzene	0.03	-	ND(<0.03)	ND(<0.03)	ND(<0.03)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA-8021 Toluene	7	200	ND(<0.05)	ND(<0.05)	ND(<0.05)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA-8021 Ethylbenzene	6	-	ND(<0.05)	ND(<0.05)	ND(<0.05)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA-8021 Xylenes	9	-	ND(<0.20)	ND(<0.20)	ND(<0.20)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (EPA-6020/7471) (mg/kg)																					
Arsenic	20.0	132	2.2	1.9	7.1	4.8	3.2	7.1	4.1	5.5	3.3	4	4.2	4.2	4.2	6.3	3.9	6.9	4.6	7.9	8.4
Cadmium	2.0	14	ND(<0.50)	ND(<0.50)	2.2	0.92	ND(<0.19)	1.1	ND(<0.19)	ND(<0.19)	ND(<0.19)	ND(<0.19)	ND(<0.19)	0.21	ND(<0.19)	0.4	ND(<0.19)	0.32	ND(<0.19)	0.79	ND(<0.23)
Chromium	19/2000 ^c	67	19	12	40	17	16	30	16	18	15	24	21	21	22	29	14	22	22	43	64
Copper	3,200 ^d	217	56	29	1,100	68	45	1,300	44	120	34	42	26	48	37	99	33	140	63	590	31
Lead	250.0	118	2.9	1.9	530	54	2.1	990	4.5	50	2.2	19	6.6	46	8.3	57	2.9	63	51	390	3.4
Mercury	2.0	5.5	ND(<0.02)	0.021	0.15	0.026	ND(<0.02)	0.34	0.025	0.67	ND(<0.02)	0.026	0.026	0.036	0.022	0.063	ND(<0.02)	0.27	0.23	0.22	ND(<0.02)
Zinc	24,000 ^a	360	100	29	2,300	2,600	250	720	39	74	31	74	54	87	46	1,000	34	140	76	620	45
PCBs (EPA-8082) (mg/kg)																					
Total PCBs	1.0	0.65	NA	NA	ND(<0.10)	ND(<0.10)	ND(<0.10)	ND(<0.10)	ND(<0.10)	ND(<0.10)	ND(<0.10)	NA	NA	NA	NA	NA	NA	NA	NA	0.1	ND(<0.10)
Dioxins and Furans (EPA-1613B) (ug/kg)																					
Chlorinated dibenzo-p-dioxins TEQ	0.0128 ^d	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0217	NA
Semi-Volatile Organic Compounds (SVOCs) (EPA-8270 SIM) (mg/kg)																					
Naphthalene	5 ^b	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	0.04	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
2-Methylnaphthalene	5 ^b	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	0.032	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
1-Methylnaphthalene	5 ^b	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Acenaphthylene	-	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Acenaphthene	4,800 ^d	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Fluorene	3,200 ^d	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Phenanthrene	-	-	NA	NA	NA	0.034	ND(<0.02)	0.24	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.15	ND(<0.02)
Anthracene	24,000 ^d	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	0.044	ND(<0.02)	0.024	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.045	ND(<0.02)
Fluoranthene	3,200 ^d	-	NA	NA	NA	0.072	ND(<0.02)	0.34	ND(<0.02)	0.059	ND(<0.02)	0.02	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.031	ND(<0.02)	0.045	0.049	0.24	ND(<0.02)
Pyrene	2,400 ^d	-	NA	NA	NA	0.055	ND(<0.02)	0.21	ND(<0.02)	0.041	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.03	ND(<0.02)	0.04	0.048	0.17	ND(<0.02)
Benzo[A]Anthracene	1.37 ^d	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	0.095	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.022	0.024	0.095	ND(<0.02)
Chrysene	137 ^d	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	0.16	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.024	0.03	0.092	ND(<0.02)
Benzo[B]Fluoranthene	1.37 ^d	-	NA	NA	NA	0.039	ND(<0.02)	0.17	ND(<0.02)	0.057	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.054	0.043	0.17	ND(<0.02)
Benzo[K]Fluoranthene	13.7 ^d	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Benzo[A]Pyrene	0.1	12	NA	NA	NA	0.022	ND(<0.02)	0.061	ND(<0.02)	0.024	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.025	0.027	0.076	ND(<0.02)
Indeno[1,2,3-Cd]Pyrene	-	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	0.045	ND(<0.02)	0.035	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.026	0.021	0.058	ND(<0.02)
Dibenz[A,H]Anthracene	0.137 ^d	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Benzo[G,H,I]perylene	1.37 ^d	-	NA	NA	NA	ND(<0.02)	ND(<0.02)	0.06	ND(<0.02)	0.041	ND(<0.02)	0.025	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.043	0.026	0.07	ND(<0.02)
Total cPAH Equivalent (TEQ)	0.1	-	NA	NA	NA	0.030	ND(<0.02)	0.096	ND(<0.02)	0.036	ND(<0.02)	0.015	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.037	0.038	0.111	ND(<0.02)

^a - Cleanup level dependent on BTEX concentrations

^b - indicates sum of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene

^c - indicates cleanup level is dependant on Chromium(VI) concentrations.

^d - indicates Method B direct contact cleanup level

ND - indicates analyte was not detected at level above reporting limit (shown in parentheses)

NA - indicates sample was not analyzed for the constituent

BOLD - indicates that the concentration in the sample exceeds the MTCA Method A or Method B target cleanup levels

Table 2. Upland Soil Sample Results

Sample ID	MTCA Method A Cleanup Level (or Method B as noted):	Ecology Indicator Soil Concentrations- Wildlife (Table 749-3)	MW-5 2-6in	MW-5 10ft	MW-6 2-6in	MW-6 40ft	BLWA-1 0-3in	BLWA-2 0-3in	BLWA-3 2-6in	BLWA-3 2ft	BLWA-4 2-6"	BLWA-4 5ft	BLWA-5 2-6in	BLWA-5 2ft	BLWA-6 2-6in	BLWA-6 2ft	BLWA-6 5ft	BLWA-6 10ft	BLWA-7 2-6in	BLWA-7 2ft	BLWA-7 5ft
Date			7/31/2018	7/31/2018	7/31/2018	7/31/2018	1/24/2018	1/24/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018
TPH (mg/kg)																					
NWTPH-Gx Volatile Range	100/30 ^a	5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND(<3.0)	ND(<3.0)	NA	NA	NA
NWTPH-Dx Diesel Range	2,000	6,000	ND(<25)	ND(<25)	ND(<25)	ND(<25)	160	170	ND(<25)	ND(<25)	ND(<25)	ND(<25)	91	ND(<25)	95	350	1,400	ND(<25)	ND(<25)	ND(<25)	ND(<25)
NWTPH-Dx Oil-Range	2,000	6,000	96	ND(<50)	ND(<50)	ND(<50)	470	300	ND(<50)	ND(<50)	81	ND(<50)	180	ND(<50)	260	710	940	ND(<50)	180	ND(<50)	ND(<50)
EPA-8021 Benzene	0.03	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND(<0.03)	ND(<0.03)	NA	NA	NA
EPA-8021 Toluene	7	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND(<0.05)	ND(<0.05)	NA	NA	NA
EPA-8021 Ethylbenzene	6	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND(<0.05)	ND(<0.05)	NA	NA	NA
EPA-8021 Xylenes	9	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND(<0.20)	ND(<0.20)	NA	NA	NA
Metals (EPA-6020/7471) (mg/kg)																					
Arsenic	20.0	132	4.9	2.4	4	3	12	7.1	3.5	3	5.2	3.9	10	3.1	9.7	150	3.7	4.6	13	3.7	NA
Cadmium	2.0	14	0.7	ND(<0.22)	ND(<0.19)	ND(<0.2)	1.3	0.94	0.2	ND(<0.2)	0.43	ND(<0.19)	0.81	ND(<0.19)	1.2	2.6	ND(<0.19)	ND(<0.19)	1.8	ND(<0.19)	NA
Chromium	19/2000 ^c	67	39	18	19	14	35	20	28	15	21	17	29	15	31	78	18	11	30	21	NA
Copper	3,200 ^d	217	140	14	28	16	6,700	6,100	180	32	680	86	1,100	28	9,300	3,500	84	20	2100	50	NA
Lead	250.0	118	120	2.1	13	1.5	700	350	150	3	150	540	270	3.2	760	3,400	560	1.9	340	3	NA
Mercury	2.0	5.5	0.1	ND(<0.02)	0.027	ND(<0.02)	0.81	0.39	0.032	0.028	0.17	0.18	0.36	0.038	1.1	0.31	0.11	ND(<0.02)	0.92	ND(<0.02)	NA
Zinc	24,000 ^a	360	190	26	65	23	950	1,700	99	29	260	110	390	31	1,400	3,800	72	47	630	39	NA
PCBs (EPA-8082) (mg/kg)																					
Total PCBs	1.0	0.65	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins and Furans (EPA-1613B) (ug/kg)																					
Chlorinated dibenzo-p-dioxins TEQ	0.0128 ^d	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (SVOCs) (EPA-8270 SIM)																					
Naphthalene	5 ^b	-	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	ND(<0.02)	ND(<0.02)	0.031	ND(<0.02)	0.14	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA
2-Methylnaphthalene	5 ^b	-	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	ND(<0.02)	ND(<0.02)	0.093	ND(<0.02)	0.13	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.45	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA
1-Methylnaphthalene	5 ^b	-	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	ND(<0.02)	ND(<0.02)	0.039	ND(<0.02)	0.095	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.91	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA
Acenaphthylene	-	-	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	0.095	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.031	ND(<0.02)	0.14	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.031	ND(<0.02)	NA
Acenaphthene	4,800 ^d	-	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.13	ND(<0.02)	0.027	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA
Fluorene	3,200 ^d	-	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.13	ND(<0.02)	0.042	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA
Phenanthrene	-	-	0.031	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	0.1	ND(<0.02)	0.12	0.025	0.86	ND(<0.02)	0.35	ND(<0.02)	0.71	ND(<0.02)	0.091	ND(<0.02)	NA
Anthracene	24,000 ^d	-	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	0.17	ND(<0.02)	0.027	0.022	0.24	ND(<0.02)	0.27	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.058	ND(<0.02)	NA
Fluoranthene	3,200 ^d	-	0.096	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	1	ND(<0.02)	0.17	0.14	0.79	ND(<0.02)	1.2	0.066	ND(<0.02)	ND(<0.02)	0.34	ND(<0.02)	NA
Pyrene	2,400 ^d	-	0.088	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	1.9	ND(<0.02)	0.14	0.086	0.79	ND(<0.02)	0.86	0.081	ND(<0.02)	ND(<0.02)	0.25	ND(<0.02)	NA
Benzo[A]Anthracene	1.37 ^d	-	0.048	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	0.82	ND(<0.02)	0.067	0.036	0.45	ND(<0.02)	0.5	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA
Chrysene	137 ^d	-	0.053	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	1	ND(<0.02)	ND(<0.02)	0.098	0.59	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA
Benzo[B]Fluoranthene	1.37 ^d	-	0.09	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	0.83	ND(<0.02)	0.16	0.14	0.6	ND(<0.02)	1.4	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.59	ND(<0.02)	NA
Benzo[K]Fluoranthene	13.7 ^d	-	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA
Benzo[A]Pyrene	0.1	12	0.05	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	0.33	ND(<0.02)	0.065	0.037	0.38	ND(<0.02)	0.46	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.16	ND(<0.02)	NA
Indeno[1,2,3-Cd]Pyrene	-	-	0.039	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	0.17	ND(<0.02)	0.068	0.036	0.28	ND(<0.02)	0.42	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.22	ND(<0.02)	NA
Dibenz[A,H]Anthracene	0.137 ^d	-	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	0.064	ND(<0.02)	0.024	ND(<0.02)	0.091	ND(<0.02)	0.13	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.066	ND(<0.02)	NA
Benzo[G,H,I]perylene	1.37 ^d	-	0.048	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	0.17	ND(<0.02)	0.08	0.041	0.34	ND(<0.02)	0.43	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.25	ND(<0.02)	NA
Total cPAH Equivalent (TEQ)	0.1	-	0.070	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	0.529	ND(<0.02)	0.098	0.061	0.529	ND(<0.02)	0.706	0.015	ND(<0.02)	ND(<0.02)	0.250	ND(<0.02)	NA

^a - Cleanup level dependent on BTEX concentrations

^b - indicates sum of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene

^c - indicates cleanup level is dependant on Chromium(VI) concentrations.

^d - indicates Method B direct contact cleanup level

ND - indicates analyte was not detected at level above reporting limit (show

NA - indicates sample was not analyzed for the constituent

BOLD - indicates that the concentration in the sample exceeds the MTCA M

Table 2. Upland Soil Sample Results

Sample ID	MTCA Method A Cleanup Level (or Method B as noted):	Ecology Indicator Soil Concentrations- Wildlife (Table 749-3)	BLWA-8 2-6in	BLWA-8 2ft	BLWA-8 5ft	BLWA-9 2-6in	BLWA-9 2ft	BLWA-9 5ft	AST-1 2ft	MW-1 2-6in	MW-1 12ft	MW-1 15ft	MW-2 6in	MW-2 7ft	FDA-1 2ft	FDA-2 0-6in	FDA-3 2.5ft	UST-1 5ft	UST-2 3ft	SRWA-1 3-6in	SRWA-2 3-6in
Date			7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	7/30/2018	1/24/2018	1/24/2018	1/24/2018	1/24/2018	1/24/2018	1/24/2018	1/24/2018
TPH (mg/kg)																					
NWTPH-Gx Volatile Range	100/30 ^a	5,000	NA	NA	NA	NA	NA	NA	NA	NA	32	ND(<3.0)	NA	NA	NA	NA	NA	ND(<3.0)	ND(<3.0)	NA	NA
NWTPH-Dx Diesel Range	2,000	6,000	ND(<25)	ND(<25)	ND(<25)	61	ND(<25)	ND(<25)	8,000	2,600	ND(<25)	ND(<25)	32	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	ND(<25)	180	91
NWTPH-Dx Oil-Range	2,000	6,000	56	290	98	160	ND(<50)	ND(<50)	10,000	8,200	ND(<50)	ND(<50)	160	ND(<50)	ND(<50)	ND(<50)	420	ND(<50)	ND(<50)	1,100	220
EPA-8021 Benzene	0.03	-	NA	NA	NA	NA	NA	NA	ND(<0.03)	NA	ND(<0.03)	ND(<0.03)	NA	NA	NA	NA	NA	ND(<0.03)	ND(<0.03)	NA	NA
EPA-8021 Toluene	7	200	NA	NA	NA	NA	NA	NA	ND(<0.05)	NA	ND(<0.05)	ND(<0.05)	NA	NA	NA	NA	NA	ND(<0.05)	ND(<0.05)	NA	NA
EPA-8021 Ethylbenzene	6	-	NA	NA	NA	NA	NA	NA	ND(<0.05)	NA	ND(<0.05)	ND(<0.05)	NA	NA	NA	NA	NA	ND(<0.05)	ND(<0.05)	NA	NA
EPA-8021 Xylenes	9	-	NA	NA	NA	NA	NA	NA	ND(<0.20)	NA	ND(<0.20)	ND(<0.20)	NA	NA	NA	NA	NA	ND(<0.20)	ND(<0.20)	NA	NA
Metals (EPA-6020/7471) (mg/kg)																					
Arsenic	20.0	132	5.1	6.2	NA	5.7	3.3	NA	3.3	6.2	3.4	2.1	7.2	6.2	3.5	8.7	3.5	NA	NA	30	14
Cadmium	2.0	14	0.48	0.23	NA	0.96	ND(<0.19)	NA	ND(<0.2)	8.9	ND(<0.2)	ND(<0.2)	2.3	0.67	ND(<0.5)	ND(<0.5)	ND(<0.5)	NA	NA	0.54	ND(<0.5)
Chromium	19/2000 ^c	67	19	23	NA	25	18	NA	17	44	18	12	27	12	41	21	22	NA	NA	29	18
Copper	3,200 ^d	217	1100	170	NA	2900	49	NA	40	1700	32	23	2,100	24	16	79	29	NA	NA	2,400	1,100
Lead	250.0	118	470	200	NA	310	11	NA	27	410	4.4	1.8	230	29	6.4	52	190	NA	NA	920	1,000
Mercury	2.0	5.5	0.18	0.12	NA	1.5	0.048	NA	0.037	0.47	ND(<0.02)	ND(<0.02)	0.64	0.024	0.028	ND(<0.02)	0.16	NA	NA	13	6.3
Zinc	24,000 ^a	360	350	110	NA	690	92	NA	100	1,200	30	24	540	37	30	270	220	NA	NA	840	330
PCBs (EPA-8082) (mg/kg)																					
Total PCBs	1.0	0.65	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins and Furans (EPA-1613B) (ug/kg)																					
Chlorinated dibenzo-p-dioxins TEQ	0.0128 ^d	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semi-Volatile Organic Compounds (SVOCs) (EPA-8270 SIM)																					
Naphthalene	5 ^b	-	ND(<0.02)	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	NA	ND(<0.02)	0.029	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	NA	NA	NA	0.12	0.0071
2-Methylnaphthalene	5 ^b	-	ND(<0.02)	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	NA	0.4	0.08	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	NA	NA	NA	0.0067	0.0041
1-Methylnaphthalene	5 ^b	-	ND(<0.02)	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	NA	0.78	0.027	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	NA	NA	NA	0.0052	0.0052
Acenaphthylene	-	-	ND(<0.02)	ND(<0.02)	NA	0.13	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.033	ND(<0.02)	NA	NA	NA	NA	NA	0.095	0.077
Acenaphthene	4,800 ^d	-	ND(<0.02)	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	NA	NA	NA	0.012	ND(<0.00002)
Fluorene	3,200 ^d	-	ND(<0.02)	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	NA	NA	NA	ND(<0.12)	ND(<0.12)
Phenanthrene	-	-	0.07	0.029	NA	0.13	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.1	0.021	NA	NA	NA	NA	NA	0.25	0.13
Anthracene	24,000 ^d	-	ND(<0.02)	ND(<0.02)	NA	0.076	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.066	ND(<0.02)	NA	NA	NA	NA	NA	0.11	0.053
Fluoranthene	3,200 ^d	-	0.13	0.073	NA	0.52	ND(<0.02)	NA	ND(<0.02)	0.12	ND(<0.02)	ND(<0.02)	0.29	0.075	NA	NA	NA	NA	NA	0.67	0.21
Pyrene	2,400 ^d	-	0.12	0.052	NA	0.4	ND(<0.02)	NA	1.3	0.21	ND(<0.02)	ND(<0.02)	0.18	0.072	NA	NA	NA	NA	NA	0.65	0.21
Benzo[A]Anthracene	1.37 ^d	-	0.081	0.035	NA	0.32	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.05	NA	NA	NA	NA	NA	0.4	0.11
Chrysene	137 ^d	-	0.13	0.032	NA	ND(<0.02)	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.045	NA	NA	NA	NA	NA	0.53	0.12
Benzo[B]Fluoranthene	1.37 ^d	-	0.18	0.055	NA	1.2	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.38	0.06	NA	NA	NA	NA	NA	0.81	0.2
Benzo[K]Fluoranthene	13.7 ^d	-	ND(<0.02)	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	NA	NA	NA	NA	NA	0.28	ND(<0.11)
Benzo[A]Pyrene	0.1	12	0.083	0.029	NA	0.61	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.064	0.048	NA	NA	NA	NA	NA	0.52	0.14
Indeno[1,2,3-Cd]Pyrene	-	-	0.078	0.028	NA	0.8	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.11	0.035	NA	NA	NA	NA	NA	0.4	0.12
Dibenz[A,H]Anthracene	0.137 ^d	-	0.028	ND(<0.02)	NA	0.2	ND(<0.02)	NA	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.035	ND(<0.02)	NA	NA	NA	NA	NA	0.11	ND(<0.10)
Benzo[G,H,I]perylene	1.37 ^d	-	0.093	0.035	NA	0.95	ND(<0.02)	NA	0.46	0.12	ND(<0.02)	ND(<0.02)	0.12	0.04	NA	NA	NA	NA	NA	0.57	0.19
Total cPAH Equivalent (TEQ)	0.1	-	0.122	0.043	NA	0.863	ND(<0.02)	NA	0.015	0.015	ND(<0.02)	ND(<0.02)	0.119	0.065	NA	NA	NA	NA	NA	0.725	0.186

^a - Cleanup level dependent on BTEX concentrations

^b - indicates sum of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene

^c - indicates cleanup level is dependant on Chromium(VI) concentrations.

^d - indicates Method B direct contact cleanup level

ND - indicates analyte was not detected at level above reporting limit (show

NA - indicates sample was not analyzed for the constituent

BOLD - indicates that the concentration in the sample exceeds the MTCA M

Table 2. Upland Soil Sample Results

Sample ID	MTCA Method A Cleanup Level (or Method B as noted):	Ecology Indicator Soil Concentrations- Wildlife (Table 749-3)	SRWA-3 0-6in	SRWA-4 6in	SRWA-4 3.5ft	SRWA-5 2-6in	SRWA-5 3.5 ft	SRWA-5 5ft	SRWA-6 2-6in	SRWA-6 3ft	SRWA-7 2-6in	SRWA-7 3ft	MW-3 2-6in	MW-3 5.5ft
Date			1/24/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018	8/1/2018
TPH (mg/kg)														
NWTPH-Gx Volatile Range	100/30 ^a	5,000	84	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx Diesel Range	2,000	6,000	3,900	79	ND(<25)	ND(<25)	ND(<25)	ND(<25)	120	ND(<25)	170	40	ND(<25)	ND(<25)
NWTPH-Dx Oil-Range	2,000	6,000	940	190	ND(<50)	72	ND(<50)	ND(<50)	640	ND(<50)	690	230	280	ND(<50)
EPA-8021 Benzene	0.03	-	ND(<0.03)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA-8021 Toluene	7	200	ND(<0.05)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA-8021 Ethylbenzene	6	-	ND(<0.05)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA-8021 Xylenes	9	-	ND(<0.20)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (EPA-6020/7471) (mg/kg)														
Arsenic	20.0	132	17	54	7.7	12	4.2	5.1	16	5	9.1	4.3	13	5.6
Cadmium	2.0	14	ND(<0.5)	0.39	ND(<0.22)	0.32	1.5	ND(<0.23)	0.64	ND(<0.21)	2.6	0.38	0.74	ND(<0.21)
Chromium	19/2000 ^c	67	21	35	24	20	11	20	36	20	25	19	29	28
Copper	3,200 ^d	217	690	2,000	35	420	43	16	220	11	920	63	400	82
Lead	250.0	118	90	1,800	15	940	21	3.6	1,200	11	160	110	190	25
Mercury	2.0	5.5	0.54	11	0.098	0.33	0.04	ND(<0.02)	2.8	ND(<0.02)	0.23	0.1	1.3	0.16
Zinc	24,000 ^a	360	580	450	64	460	58	55	1,100	32	400	140	310	110
PCBs (EPA-8082) (mg/kg)														
Total PCBs	1.0	0.65	0.35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins and Furans (EPA-1613B) (ug/kg)														
Chlorinated dibenzo-p-dioxins TEQ	0.0128 ^d	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.132	NA
Semi-Volatile Organic Compounds (SVOCs) (EPA-8270 SIM)														
Naphthalene	5 ^b	-	ND(<0.10)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.036	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
2-Methylnaphthalene	5 ^b	-	1.2	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.022	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
1-Methylnaphthalene	5 ^b	-	0.9	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Acenaphthylene	-	-	ND<0.00002)	0.16	ND(<0.02)	0.037	ND(<0.02)	ND(<0.02)	0.26	ND(<0.02)	ND(<0.02)	ND(<0.02)	0.022	ND(<0.02)
Acenaphthene	4,800 ^d	-	ND<0.00002)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Fluorene	3,200 ^d	-	ND(<0.12)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Phenanthrene	-	-	0.62	0.24	ND(<0.02)	0.14	0.057	ND(<0.02)	1.2	ND(<0.02)	0.074	0.091	0.071	ND(<0.02)
Anthracene	24,000 ^d	-	ND	0.1	ND(<0.02)	0.051	ND(<0.02)	ND(<0.02)	0.37	ND(<0.02)	0.024	0.023	0.026	ND(<0.02)
Fluoranthene	3,200 ^d	-	0.62	0.71	ND(<0.02)	0.34	0.13	ND(<0.02)	2.2	ND(<0.02)	0.15	0.3	0.15	0.033
Pyrene	2,400 ^d	-	0.57	0.73	ND(<0.02)	0.33	0.12	ND(<0.02)	1.9	ND(<0.02)	0.16	0.29	0.14	0.028
Benzo[A]Anthracene	1.37 ^d	-	0.21	0.54	ND(<0.02)	0.18	0.065	ND(<0.02)	1.2	ND(<0.02)	ND(<0.02)	0.17	0.076	ND(<0.02)
Chrysene	137 ^d	-	0.34	0.5	ND(<0.02)	0.19	ND(<0.02)	ND(<0.02)	1.3	ND(<0.02)	ND(<0.02)	0.18	0.11	ND(<0.02)
Benzo[B]Fluoranthene	1.37 ^d	-	0.43	0.59	ND(<0.02)	0.24	ND(<0.02)	ND(<0.02)	1.3	ND(<0.02)	ND(<0.02)	0.23	0.15	0.042
Benzo[K]Fluoranthene	13.7 ^d	-	ND(<0.00002)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Benzo[A]Pyrene	0.1	12	0.22	0.5	ND(<0.02)	0.17	0.06	ND(<0.02)	1.1	ND(<0.02)	0.065	0.16	0.081	ND(<0.02)
Indeno[1,2,3-Cd]Pyrene	-	-	0.15	0.32	ND(<0.02)	0.12	0.042	ND(<0.02)	0.62	ND(<0.02)	0.079	0.11	0.071	ND(<0.02)
Dibenz[A,H]Anthracene	0.137 ^d	-	ND(<0.00002)	0.098	ND(<0.02)	0.035	ND(<0.02)	ND(<0.02)	0.2	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Benzo[G,H,I]perylene	1.37 ^d	-	0.17	0.41	ND(<0.02)	0.15	0.05	ND(<0.02)	0.68	ND(<0.02)	0.13	0.15	0.1	0.022
Total cPAH Equivalent (TEQ)	0.1	-	0.304	0.661	ND(<0.02)	0.230	0.074	ND(<0.02)	1.446	ND(<0.02)	0.077	0.215	0.114	0.018

^a - Cleanup level dependent on BTEX concentrations

^b - indicates sum of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene

^c - indicates cleanup level is dependant on Chromium(VI) concentrations.

^d - indicates Method B direct contact cleanup level

ND - indicates analyte was not detected at level above reporting limit (show as zero)

NA - indicates sample was not analyzed for the constituent

BOLD - indicates that the concentration in the sample exceeds the MTCA Method A cleanup level

Table 3. Stormwater Pond Sediment Analytical Results

Sample ID	MTCA Method A Cleanup Level:	Dangerous Waste Toxicity Criteria	Stormwater Pond	Storm Sed.-1
Date			1/24/2018	7/30/2018
Metals (EPA-6020/7471) (mg/kg)				
Arsenic	20.0	NL	10	NA
Cadmium	2.0	NL	10	NA
Chromium	19/2000 ^a	NL	43	NA
Copper	3,200 ^b	NL	12,000	NA
Lead	250.0	NL	450	NA
Mercury	2.0	NL	0.15	NA
Zinc	24,000 ^b	NL	2,400	NA
TCLP Metals (EPA-1311) (mg/L)				
Arsenic	NL	5	NA	ND (<0.025)
Barium	NL	100	NA	1.1
Cadmium	NL	1	NA	ND (<0.025)
Chromium	NL	5	NA	ND (<0.025)
Lead	NL	5	NA	0.36
Mercury	NL	0.2	NA	ND (<0.0002)
Selenium	NL	1.0	NA	ND (<0.025)
Silver	NL	5	NA	ND (<0.025)
DW Bioassay (Ecology 80-12)	NL	NL	NA	Not Dangerous

^a - indicates cleanup level is dependant on Chromium(VI) concentrations.

^b - indicates Method B direct contact cleanup level

ND - indicates analyte was not detected at level above reporting limit (shown in parentheses)

NA - indicates sample was not analyzed for the constituent

NL - indicates there is no target cleanup level

BOLD - indicates that the concentration in the sample exceeds the MTCA Method A or Method B target cleanup levels

Table 4. Groundwater Monitoring Well Sample Analytical Results

Sample ID	MTCA Method A Cleanup Level:	MW-1	MW-2	MW-3	MW-3	MW-4	MW-5	MW-6	Equipment Blank
Date		8/28/2018	8/28/2018	8/28/2018	duplicate	8/28/2018	8/29/2018	8/29/2018	8/29/2018
TPH (ug/L)									
NWTPH-Gx Gasoline Range	1,000/800 ^a	ND(<50)	200	ND(<50)	ND(<50)	ND(<50)	ND(<50)	ND(<50)	ND(<50)
NWTPH-Dx Diesel Range	500	180	210	ND(<130)	ND(<130)	ND(<130)	ND(<130)	ND(<130)	ND(<130)
NWTPH-Dx Oil Range	500	ND(<250)	ND(<250)	ND(<250)	ND(<250)	ND(<250)	ND(<250)	ND(<250)	ND(<250)
EPA-8021 Benzene	5	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)
EPA-8021 Toluene	1,000	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)
EPA-8021 Ethylbenzene	700	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)
EPA-8021 Xylenes	1,000	ND(<3)	ND(<3)	ND(<3)	ND(<3)	ND(<3)	ND(<3)	ND(<3)	ND(<3)
Dissolved Metals (EPA-200.8/245.1) (ug/L)									
Mercury (Dissolved)	2	ND(<0.2)	ND(<0.2)	ND(<0.2)	ND(<0.2)	ND(<0.2)	ND(<0.2)	ND(<0.2)	ND(<0.2)
Arsenic (Dissolved)	5	12	ND(<1)	2.3	2.3	1.1	1.2	ND(<1)	ND(<1)
Cadmium (Dissolved)	5	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)
Chromium (Dissolved)	50	ND(<2)	ND(<2)	4.9	5.0	ND(<2)	ND(<2)	ND(<2)	ND(<2)
Copper (Dissolved)	NA	8.0	ND(<2)	3.2	3.2	3.2	ND(<2)	ND(<2)	ND(<2)
Lead (Dissolved)	15	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)	ND(<1)
Zinc (Dissolved)	NA	3.2	ND(<2.5)	9.8	8.6	3.0	ND(<2.5)	ND(<2.5)	ND(<2.5)
Semi-Volatile Organic Compounds (SVOCs) (EPA-8270 SIM) (ug/L)									
Naphthalenes ^b	160	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Benzo[a]pyrene	1	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Benzo[a]anthracene	0.1	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Benzo[b]fluoranthene	0.1	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Benzo[k]fluoranthene	0.1	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Chrysene	0.01	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Dibenz[a,h]anthracene	0.1	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
Indeno[1,2,3-cd]pyrene	0.1	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)	ND(<0.02)
cPAH Equivalent (TEq) ^c	0.1 ^d	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015

^a - Cleanup level dependent on BTEX concentrations

^b - Sum of naphthalene, 1-methyl naphthalene, and 2-mehtlynaphthalene

^c - cPAH level calculated using Toxicity equivalency methodology provided in WAC 173-340-708(8)

^d - Method A cleanup level of Benzo(a)pyrene

ND - indicates analyte was not detected at level above reporting limit (shown in parentheses)

NA - indicates that there is no MTCA Method A target cleanup level

BOLD - indicates that the concentration in the sample exceeds the MTCA Method A target cleanup levels

TEq - Toxicity Equivalency to benzo(a)pyrene, calculated by multiplying result by appropriate TEF.

Table 5. Groundwater Chemistry Parameters

Well ID	Date	DTW ^a (ft)	GW Elevation (ft)	Temp (°C)	EC (mS/cm)	TDS	Salinity	DO (mg/L)	pH	ORP (mV)	Turbidity ^b NTU
MW-1	8/28/2018	8.23	5.17	16.27	0.364	0.237	0.18	0.26	7.76	-58.4	7.8
MW-2	8/28/2018	5.99	4.85	18.26	5.854	3.808	3.20	0.20	8.02	-57.1	2.9
MW-3	8/28/2018	4.57	5.12	15.39	4.839	3.145	2.61	0.24	8.29	-14.9	2.8
MW-4	8/28/2018	8.09	4.81	15.60	0.351	0.228	0.17	0.28	7.99	-8.2	4.7
MW-5	8/29/2018	10.81	5.08	12.96	0.513	0.333	0.25	0.82	7.42	-55.1	48.0
MW-6	8/29/2018	28.62	5.07	NA - sample collected using hand bailer due to groundwater depth.							381

^a - Depth to water readings presented here were all collected on the same day for comparison purposes.

^b - Turbidity readings collected with HACH portable turbidity meter. Reading shown at time of sample collection.

APPENDIX A

Soil Borelogs

DRAFT

GeoProbe Boring Log

Total Depth: 5.0 ft.

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
0.0 to 4.5 ft.	Silty sandy gravel, brown, soft, dry		0.0	NS	2 to 6 in.
4.5 to 5.0 ft.	Silty fine sand with gravel, reddish brown to dark brown, soft, moist.		0.0	NS	2 ft. 5 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-4	Logged by: Thom Davis - WES
Location: West side to the north along shoreline	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Drilled by: Kyle Ceruti - Cascade

First Encountered Water: None

Total Depth: 5.0 ft.

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
0.0 to 4.75 ft.	Silty sandy gravel, brown, soft, dry.		0.0	NS	0 to 6 in.
4.75 to 5.0 ft.	Sandy silt with gravel, dark brown, soft to slightly firm, moist.		0.0	NS	5 ft.
Soil Sample Collection Depth					
* - indicates a weathered sheen					

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-5	Logged by: Thom Davis - WES
Location: West side to the south	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-5	Logged by: Thom Davis - WES
Location: West side to the south	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-5	Logged by: Thom Davis - WES
Location: West side to the south	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-5	Logged by: Thom Davis - WES
Location: West side to the south	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-5	Logged by: Thom Davis - WES
Location: West side to the south	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-5	Logged by: Thom Davis - WES
Location: West side to the south	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

[illegible]

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GeoProbe Boring Log

Total Depth: 10.0 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-7	Logged by: Thom Davis - WES
Location: Center south side of lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-7	Logged by: Thom Davis - WES
Location: Center south side of lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-8	Logged by: Thom Davis - WES
Location: Northeast corner of lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-8	Logged by: Thom Davis - WES
Location: Northeast corner of lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-9	Logged by: Thom Davis - WES
Location: Southeast boring in lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: BLWA-9	Logged by: Thom Davis - WES
Location: Southeast boring in lift area	First Encountered Water: None
Date Completed: 7/30/2018	Total Depth: 5.0 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: OPALCO-2	Logged by: Thom Davis - WES
Location: East corner of slab	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Drilled by: Kyle Ceruti - Cascade

First Encountered Water: None

Client: Port of Friday Harbor

Location: East corner of slab

Date Completed: 7/31/2018

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: OPALCO-3	Logged by: Thom Davis - WES
Location: North corner of slab	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Drilled by: Kyle Ceruti - Cascade

First Encountered Water: None

Total Depth: 5.0 ft.

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GeoProbe Boring Log

Total Depth: 5.0 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment Client: Port of Friday Harbor Boring Number: SYC-1 Location: East boring - west side of entrance road Date Completed: 7/31/2018	Sheet: 1 of 1 Drilled by: Kyle Ceruti - Cascade Logged by: Thom Davis - WES First Encountered Water: None Total Depth: 4.0 ft.
---	--

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-1	Logged by: Thom Davis - WES
Location: East boring - west side of entrance road	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 4.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-1	Logged by: Thom Davis - WES
Location: East boring - west side of entrance road	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 4.0 ft.

Project: Jensen's Shipyard Assessment Client: Port of Friday Harbor Boring Number: SYC-1 Location: East boring - west side of entrance road Date Completed: 7/31/2018	Sheet: 1 of 1 Drilled by: Kyle Ceruti - Cascade Logged by: Thom Davis - WES First Encountered Water: None Total Depth: 4.0 ft.
---	--

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-1	Logged by: Thom Davis - WES
Location: East boring - west side of entrance road	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 4.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-1	Logged by: Thom Davis - WES
Location: East boring - west side of entrance road	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 4.0 ft.

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
0.0 to 4.0 ft.	Silty fine sand with gravel, brown, soft, dry		0.0	VSS	2 to 6 in.
	- lost bottom 1 foot pulling probe sleeve to surface				2 ft.
					4 ft.

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Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-2	Logged by: Thom Davis - WES
Location: South boring - east of entrance road at upper parking area	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-2	Logged by: Thom Davis - WES
Location: South boring - east of entrance road at upper parking area	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-2	Logged by: Thom Davis - WES
Location: South boring - east of entrance road at upper parking area	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-2	Logged by: Thom Davis - WES
Location: South boring - east of entrance road at upper parking area	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-2	Logged by: Thom Davis - WES
Location: South boring - east of entrance road at upper parking area	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-2	Logged by: Thom Davis - WES
Location: South boring - east of entrance road at upper parking area	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
0.0 to 1.5 ft.	Silty sandy gravel with organics, gray to brown, soft, dry.		0.0	SS	2 to 6 in.
1.5 to 4.0 ft.	Sandy gravel with minor silt, brown, soft, dry.		0.0	SS	2 ft.
4.0 to 5.0 ft.	Gravel with silt and sand, light brown, soft, dry.		0.0	VSS	5 ft.
Soil Sample Collection Depth					
* - indicates a weathered sheen.					

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GeoProbe Boring Log

Total Depth: 5.0 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-4	Logged by: Thom Davis - WES
Location: West boring - off west edge of lower road	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-4	Logged by: Thom Davis - WES
Location: West boring - off west edge of lower road	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-4	Logged by: Thom Davis - WES
Location: West boring - off west edge of lower road	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-4	Logged by: Thom Davis - WES
Location: West boring - off west edge of lower road	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-4	Logged by: Thom Davis - WES
Location: West boring - off west edge of lower road	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SYC-4	Logged by: Thom Davis - WES
Location: West boring - off west edge of lower road	First Encountered Water: None
Date Completed: 7/31/2018	Total Depth: 5.0 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-4	Logged by: Thom Davis - WES
Location: In the rail line at NW corner of area	First Encountered Water: 2.0 ft.
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-4	Logged by: Thom Davis - WES
Location: In the rail line at NW corner of area	First Encountered Water: 2.0 ft.
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample	
Surface	Concrete below wood rail		0.0	NS		
	- 6-in. of sandy gravel below concrete layer				6 in.	
	Poor Recovery - only retrieved to ~3.5 ft. bgs					
2.0 to 3.5 ft.	Highly organic sandy silty gravel, reddish brown, soft, wet.			0.0	NS	3.5 ft.

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GeoProbe Boring Log

Total Depth: 5.0 ft.

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
0.0 to ~2.0 ft.	Driller noted limited recovery from 0 to 2 ft. Organic silty sand and gravel, brown, soft, moist.		1.5	VSS	2 to 6 in.
2.0 to 3.5 ft.	Woody debris and organic silt.				3.5 ft.
3.5 to 5.0 ft.	Highly organic silty sand with gravel, dark brown to black, soft, wet.		24.1	VSS*	5 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-6	Logged by: Thom Davis - WES
Location: East side near the center	First Encountered Water: 3.0 ft.
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-6	Logged by: Thom Davis - WES
Location: East side near the center	First Encountered Water: 3.0 ft.
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-6	Logged by: Thom Davis - WES
Location: East side near the center	First Encountered Water: 3.0 ft.
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-6	Logged by: Thom Davis - WES
Location: East side near the center	First Encountered Water: 3.0 ft.
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-6	Logged by: Thom Davis - WES
Location: East side near the center	First Encountered Water: 3.0 ft.
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-6	Logged by: Thom Davis - WES
Location: East side near the center	First Encountered Water: 3.0 ft.
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
0.0 to 3.0 ft.	Driller noted limited recovery from 0 to 3 ft.		0.7	NS	2 to 6 in.
- Surface	Gravelly medium sand with heavy organics, reddish brown to brown, soft, dry.				
3.0 to 4.0 ft.	Silty medium sand with gravel, reddish brown, soft, wet.		0.0	VSS*	3 ft.
4.0 to 5.0 ft.	Organic fine sandy silt with gravel, dark brown to black, soft, dry.		0.0	VSS*	4.5 ft.
Soil Sample Collection Depth					
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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-7	Logged by: Thom Davis - WES
Location: Southwest corner of rail area	First Encountered Water: None
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: SRWA-7	Logged by: Thom Davis - WES
Location: Southwest corner of rail area	First Encountered Water: None
Date Completed: 8/1/2018	Total Depth: 5.0 ft.

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GeoProbe Boring Log

Total Depth: 15.0 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: MW-2	Logged by: Thom Davis - WES
Location: South side of boat lift work area	First Encountered Water: 7.0 ft.
Date Completed: 7/30/2018	Total Depth: 15.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: MW-2	Logged by: Thom Davis - WES
Location: South side of boat lift work area	First Encountered Water: 7.0 ft.
Date Completed: 7/30/2018	Total Depth: 15.0 ft.

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Total Depth: 15.0 ft.

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GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: MW-4	Logged by: Thom Davis - WES
Location: At OPALCO pad, east corner	First Encountered Water: ~8.0 ft.
Date Completed: 7/31/2018	Total Depth: 15.0 ft.

Sheet: 1 of 1
 Drilled by: Kyle Ceruti - Cascade
 Logged by: Thom Davis - WES
 First Encountered Water: ~8.0 ft.
 Total Depth: 15.0 ft.

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample
0.0 to 3.0 ft.	Silty sandy gravel, brown, soft, dry.		0.0	NS	2 to 6 in.
3.0 to 6.0 ft.	Gravelly silty sand, brown to reddish brown , soft, moist.		0.0	NS	
6.0 to 7.0 ft.	Silty gravel, brown, soft, moist.		0.0	NS	
7.0 to 10.5 ft.	Organic sandy silt with gravel, dark brown to black, firm, moist to wet.		0.0	NS	
10.5 to 15.0 ft.	Gravelly silty coarse sand, reddish brown, slightly firm, wet.		0.0	NS	

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NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

GeoProbe Boring Log

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: MW-5	Logged by: Thom Davis - WES
Location: Upland area to the east of shipyard	First Encountered Water: ~10.0 ft.
Date Completed: 8/1/2018	Total Depth: 15.0 ft.

Project: Jensen's Shipyard Assessment	Sheet: 1 of 1
Client: Port of Friday Harbor	Drilled by: Kyle Ceruti - Cascade
Boring Number: MW-5	Logged by: Thom Davis - WES
Location: Upland area to the east of shipyard	First Encountered Water: ~10.0 ft.
Date Completed: 8/1/2018	Total Depth: 15.0 ft.

Depth	Description	Screening Depth	PID (ppm)	Sheen	Sample	
0.0 to 1.0 ft.	Fine sandy silt with gravel, tan to brown, soft, dry.		0.0	VSS	2 to 6 in.	
1.0 to 5.0 ft.	Clayey silt with minor coarse sand and gravel, brown, hard, dry to moist.		0.0	VSS		
No recovery from 5.0 to 10.0 ft. interval - material stuck in probe sleeve						
10.0 to 15.0 ft.	Silty clayey medium sand with gravel, olive brown, hard to firm, wet.		0.0	VSS		10'

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NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

GeoProbe Boring Log

Total Depth: 40.0 ft.

[illegible]

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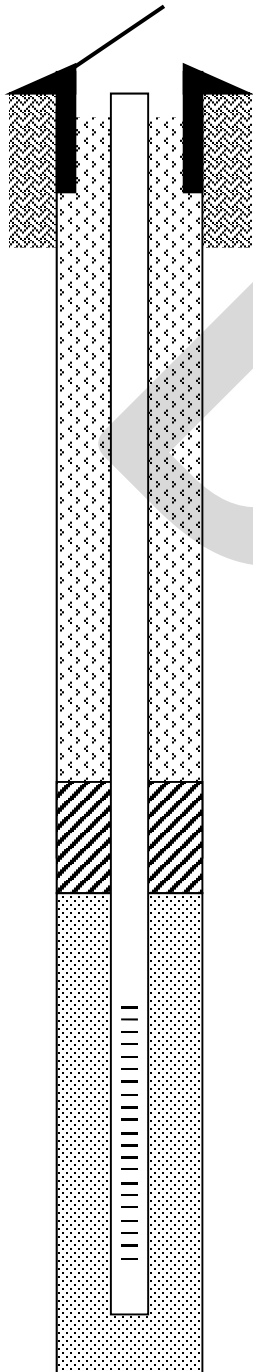
NS = No Sheen; VSS = Very Slight Sheen; SS = Slight Sheen; MS = Moderate Sheen; HS = Heavy Sheen

APPENDIX B

Well Construction Diagrams

DRAFT

Well Design Specifications



Elevations (feet):
Mean Sea Level (MSL)

Top of Casing: 13.40 ft
Ground Elevation: 13.80 ft

Coordinates:

563866.1635 E 1115539.121 N

Coordinate System:

Type of Casing:

PVC (Pre-Packed Well Screen)

Casing Diameter:

2 inches

Screen Slot:

0.01 inch

Screen Style:

Machine cut

Sand Pack:

2/12 Silica

Bentonite Seal:

Medium Chip

Grout Type:

N/A

Weight:

Bore Hole Diameter:

4.0 inches

Drill Rig:

GeoProbe

Drilled by:

Kyle Ceruti - Cascade Drilling

Logged by:

Thom Davis - Whatcom Env.

Completion Date:

7/30/2018

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
8/28/2018	8.23	5.17	7.76	0.364

Comments:

Project:

Jensen's Shipyard Assessment

Location:

North of Shop Building

Whatcom Environmental Services

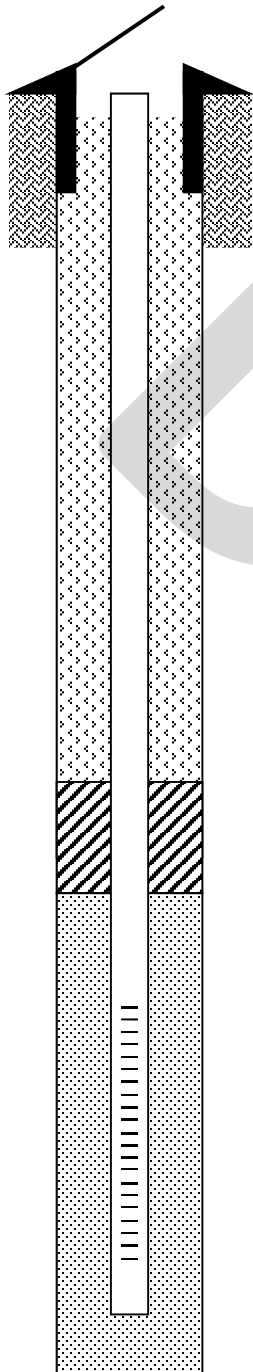
228 East Champion Street #101
Bellingham, WA 98225
(360) 752-9571

MW-1

Ecology Well ID:

BKF-620

Well Design Specifications



Not to Scale

Elevations (feet):
Mean Sea Level (MSL)

Top of Casing: 10.84 ft
Ground Elevation: 11.30 ft

Coordinates: 563927.7653 E 1115534.623 N

Coordinate System:

Type of Casing: PVC (Pre-Packed Well Screen)

Casing Diameter: 2 inches

Screen Slot: 0.01 inch

Screen Style: Machine cut

Sand Pack: 2/12 Silica

Bentonite Seal: Medium Chip

Grout Type: N/A **Weight:**

Bore Hole Diameter: 4.0 inches

Drill Rig: GeoProbe

Drilled by: Kyle Ceruti - Cascade Drilling

Logged by: Thom Davis - Whatcom Env.

Completion Date: 7/30/2018

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
8/28/2018	5.99	4.85	8.02	5.854

Comments:

Project: Jensen's Shipyard Assessment

Location: Center of Property

Whatcom Environmental Services

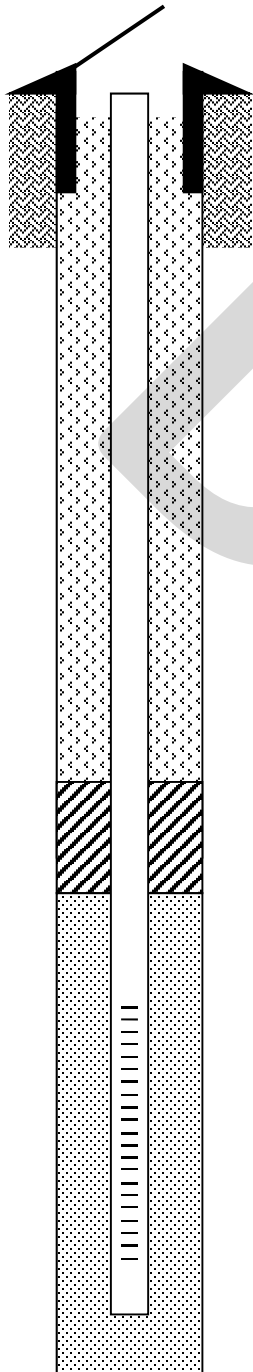
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Bellingham, WA 98225
(360) 752-9571

MW-2

Ecology Well ID:

BKF-621

Well Design Specifications



Depths in
Feet Below
Ground
Surface

1.5
2
3
12.5
13
13

Elevations (feet):
Mean Sea Level (MSL)

Top of Casing: 9.69 ft
Ground Elevation: 10.00 ft

Coordinates: 563889.1659 E 1115676.466 N

Coordinate System:

Type of Casing: PVC (Pre-Packed Well Screen)

Casing Diameter: 2 inches

Screen Slot: 0.01 inch

Screen Style: Machine cut

Sand Pack: 2/12 Silica

Bentonite Seal: Medium Chip

Grout Type: N/A **Weight:**

Bore Hole Diameter: 4.0 inches

Drill Rig: GeoProbe

Drilled by: Kyle Ceruti - Cascade Drilling

Logged by: Thom Davis - Whatcom Env.

Completion Date: 8/1/2018

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
8/28/2018	4.57	5.12	8.29	4.839

Comments:

Project: Jensen's Shipyard Assessment

Location: At Rail Works Area

Not to Scale

Whatcom Environmental Services

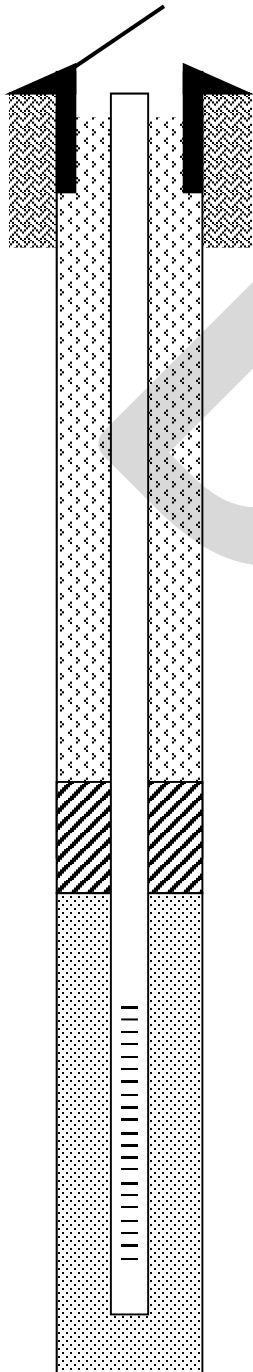
228 East Champion Street #101
Bellingham, WA 98225
(360) 752-9571

MW-3

Ecology Well ID:

BKF-625

Well Design Specifications



Not to Scale

Elevations (feet):
Mean Sea Level (MSL)

Top of Casing: 12.90 ft
Ground Elevation: 13.30 ft

Coordinates: 563970.725 E 1115384.588 N

Coordinate System:

Type of Casing: PVC (Pre-Packed Well Screen)

Casing Diameter: 2 inches

Screen Slot: 0.01 inch

Screen Style: Machine cut

Sand Pack: 2/12 Silica

Bentonite Seal: Medium Chip

Grout Type: N/A **Weight:**

Bore Hole Diameter: 4.0 inches

Drill Rig: GeoProbe

Drilled by: Kyle Ceruti - Cascade Drilling

Logged by: Thom Davis - Whatcom Env.

Completion Date: 7/31/2018

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
8/28/2018	8.09	4.81	7.99	0.351

Comments:

Project: Jensen's Shipyard Assessment

Location: Esatern corner of the OPALCO Pad

Whatcom Environmental Services

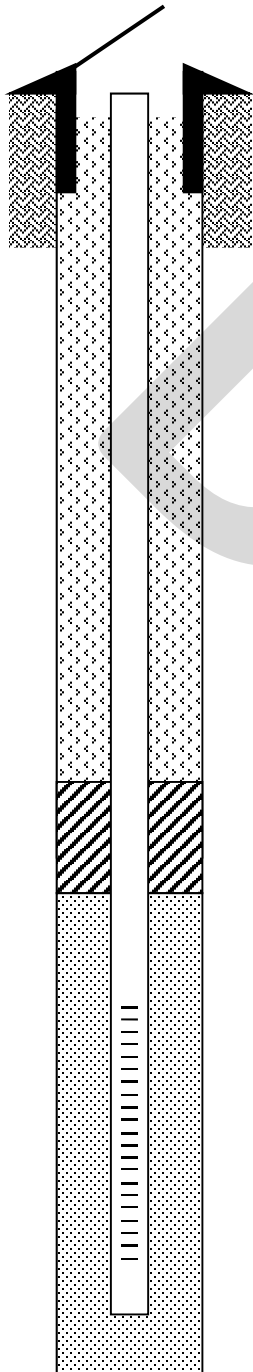
228 East Champion Street #101
Bellingham, WA 98225
(360) 752-9571

MW-4

Ecology Well ID:

BKF-622

Well Design Specifications



Elevations (feet): Top of Casing: 15.89 ft
Mean Sea Level (MSL) Ground Elevation: 16.20 ft

Coordinates: 563912.3454 E 1115827.778 N

Coordinate System:

Type of Casing: PVC (Pre-Packed Well Screen)

Casing Diameter: 2 inches

Screen Slot: 0.01 inch

Screen Style: Machine cut

Sand Pack: 2/12 Silica

Bentonite Seal: Medium Chip

Grout Type: N/A **Weight:**

Bore Hole Diameter: 4.0 inches

Drill Rig: GeoProbe

Drilled by: Kyle Ceruti - Cascade Drilling

Logged by: Thom Davis - Whatcom Env.

Completion Date: 8/1/2018

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
8/29/2018	10.81	5.08	7.42	0.513

Comments:

Project: Jensen's Shipyard Assessment

Location: In grass east of shipyard

Whatcom Environmental Services

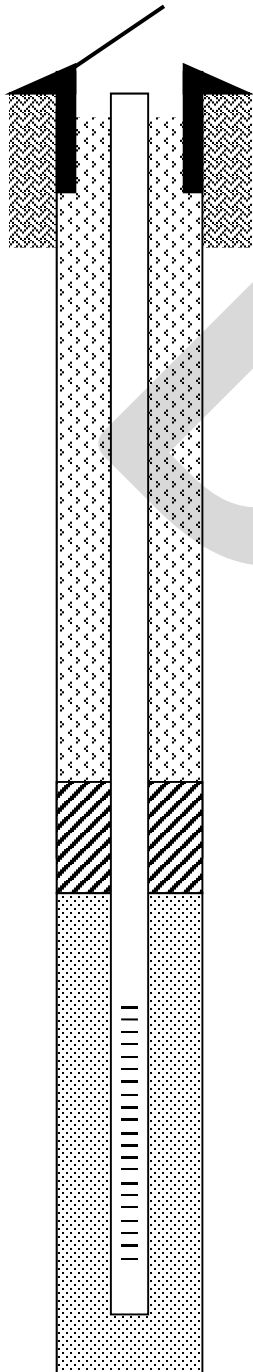
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Bellingham, WA 98225
(360) 752-9571

MW-5

Ecology Well ID:

BKF-624

Well Design Specifications



Depths in
Feet Below
Ground
Surface

Elevations (feet):
Mean Sea Level (MSL)

Top of Casing: 33.69 ft
Ground Elevation: 34.30 ft

Coordinates: 563762.4971 E 1115680.978 N

Coordinate System:

Type of Casing: PVC (Pre-Packed Well Screen)

Casing Diameter: 2 inches

Screen Slot: 0.01 inch

Screen Style: Machine cut

Sand Pack: 2/12 Silica

Bentonite Seal: Medium Chip

Grout Type: N/A **Weight:**

Bore Hole Diameter: 4.0 inches

Drill Rig: GeoProbe

Drilled by: Kyle Ceruti - Cascade Drilling

Logged by: Thom Davis - Whatcom Env.

Completion Date: 7/31/2018

Date of Measurement	D-T-W (ft. bgs)	Water Level (ft. MSL)	Field pH	Field EC (mS/cm)
8/29/2018	28.62	5.07	-	-

Comments:

Project: Jensen's Shipyard Assessment

Location: Upper Parking Lot - Background well

Not to Scale

Whatcom Environmental Services

228 East Champion Street #101
Bellingham, WA 98225
(360) 752-9571

MW-6

Ecology Well ID:

BKF-623

APPENDIX C

Soil Laboratory Analytical Data

DRAFT



August 27, 2018

Mr. Thom Davis
Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

Dear Mr. Davis,

On August 3rd, 71 samples were received by our laboratory and assigned our laboratory project number EV18080025. The project was identified as your Jensen's Shipyard Assessment. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 8/27/2018

ALS JOB#: EV18080025

ALS SAMPLE#: EV18080025-01

CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

DATE RECEIVED: 08/03/2018

COLLECTION DATE: 7/30/2018 9:15:00 AM

CLIENT SAMPLE ID BLWA-3 2-6in

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/06/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	95	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	100	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	170	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	1000	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	1900	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	820	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	1000	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	830	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	330	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	170	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	64	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	170	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.032	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	3.5	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.20	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	28	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	180	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	150	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	99	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	73.0	08/06/2018	EBS
Terphenyl-d14	EPA-8270 SIM	87.2	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc. DATE: 8/27/2018
228 E. Champion St., Suite 101 ALS JOB#: EV18080025
Bellingham, WA 98225 ALS SAMPLE#: EV18080025-02
CLIENT CONTACT: Thom Davis DATE RECEIVED: 08/03/2018
CLIENT PROJECT: Jensen's Shipyard Assessment COLLECTION DATE: 7/30/2018 9:20:00 AM
CLIENT SAMPLE ID: BLWA-3 2ft WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/06/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.028	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	3.0	0.64	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.20	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	15	0.32	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	32	0.21	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	3.0	0.21	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	29	2.2	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	73.9	08/06/2018	EBS
Terphenyl-d14	EPA-8270 SIM	94.3	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-04
CLIENT SAMPLE ID	BLWA-4 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 9:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	81	50	1	MG/KG	08/06/2018	EBS
Naphthalene	EPA-8270 SIM	31	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	93	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	39	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	120	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	27	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	170	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	140	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	67	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	160	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	65	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	68	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	24	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	80	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.17	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	5.2	0.60	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.43	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	21	0.30	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	680	0.19	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	150	0.19	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	260	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	76.3	08/06/2018	EBS
Terphenyl-d14	EPA-8270 SIM	81.7	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

**CERTIFICATE OF ANALYSIS**

CLIENT: Whatcom Environmental Svcs., Inc. DATE: 8/27/2018
228 E. Champion St., Suite 101 ALS JOB#: EV18080025
Bellingham, WA 98225 ALS SAMPLE#: EV18080025-05
CLIENT CONTACT: Thom Davis DATE RECEIVED: 08/03/2018
CLIENT PROJECT: Jensen's Shipyard Assessment COLLECTION DATE: 7/30/2018 9:55:00 AM
CLIENT SAMPLE ID: BLWA-4 5ft WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/06/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	25	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	22	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	140	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	86	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	36	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	98	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	140	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	37	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	36	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	41	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.18	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	3.9	0.62	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	17	0.32	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	86	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	540	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	110	2.2	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	68.8	08/06/2018	EBS
Terphenyl-d14	EPA-8270 SIM	85.5	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

**CERTIFICATE OF ANALYSIS**

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-06
CLIENT SAMPLE ID	BLWA-5 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	91	25	1	MG/KG	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	180	50	1	MG/KG	08/06/2018	EBS
Naphthalene	EPA-8270 SIM	140	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	130	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	95	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	31	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	130	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	130	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	860	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	240	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	790	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	790	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	450	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	590	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	600	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	380	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	280	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	91	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	340	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.36	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	10	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.81	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	29	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	1100	0.99	5	MG/KG	08/09/2018	RAL
Lead	EPA-6020	270	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	390	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	84.1	08/06/2018	EBS
Terphenyl-d14	EPA-8270 SIM	86.6	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-07
CLIENT SAMPLE ID	BLWA-5 2ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 10:15:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/06/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.038	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	3.1	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	15	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	28	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	3.2	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	31	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	76.1	08/06/2018	EBS
Terphenyl-d14	EPA-8270 SIM	95.1	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-09
CLIENT SAMPLE ID	BLWA-6 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 10:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	95	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	260	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	140	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	27	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	42	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	350	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	270	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	1200	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	860	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	500	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	1400	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	460	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	420	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	130	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	430	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	1.1	0.10	5	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	9.7	0.60	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	1.2	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	31	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	9300	4.9	25	MG/KG	08/09/2018	RAL
Lead	EPA-6020	760	0.19	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	1400	52	25	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	72.9	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	88.1	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-10
CLIENT SAMPLE ID	BLWA-6 2ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 11:02:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	350	25	1	MG/KG	08/16/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	710	50	1	MG/KG	08/16/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Fluoranthene	EPA-8270 SIM	66	20	1	UG/KG	08/16/2018	PAB
Pyrene	EPA-8270 SIM	81	20	1	UG/KG	08/16/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/16/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	44	20	1	UG/KG	08/16/2018	PAB
Mercury	EPA-7471	0.31	0.020	1	MG/KG	08/23/2018	RAL
Arsenic	EPA-6020	150	0.64	1	MG/KG	08/22/2018	RAL
Cadmium	EPA-6020	2.6	0.20	1	MG/KG	08/22/2018	RAL
Chromium	EPA-6020	78	0.32	1	MG/KG	08/22/2018	RAL
Copper	EPA-6020	3500	2.1	10	MG/KG	08/22/2018	RAL
Lead	EPA-6020	3400	2.1	10	MG/KG	08/22/2018	RAL
Zinc	EPA-6020	3800	22	10	MG/KG	08/22/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	85.9	08/16/2018	EBS
Terphenyl-d14	EPA-8270 SIM	85.9	08/16/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered diesel and lube oil.
Diesel range product results biased high due to oil range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-11
CLIENT SAMPLE ID	BLWA-6 5ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 11:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	30	4	MG/KG	08/09/2018	JMK
Benzene	EPA-8021	U	0.030	1	MG/KG	08/10/2018	JMK
Toluene	EPA-8021	U	0.050	1	MG/KG	08/10/2018	JMK
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	08/10/2018	JMK
Xylenes	EPA-8021	U	0.20	1	MG/KG	08/10/2018	JMK
TPH-Diesel Range	NWTPH-DX w/ SGA	1400	50	2	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	940	100	2	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	450	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	910	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	710	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.11	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	3.7	0.63	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	18	0.32	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	84	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	560	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	72	2.2	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 4X Dilution	NWTPH-GX	66.6	08/09/2018	JMK
TFT	EPA-8021	93.0	08/10/2018	JMK
C25 2X Dilution	NWTPH-DX w/ SGA	82.2	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	97.3	08/08/2018	PAB

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-11
CLIENT SAMPLE ID	BLWA-6 5ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 11:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains diesel and lube oil.
Gasoline range reporting limit raised due to semivolatile range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-12
CLIENT SAMPLE ID	BLWA-6 10ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 11:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/09/2018	JMK
Benzene	EPA-8021	U	0.030	1	MG/KG	08/09/2018	JMK
Toluene	EPA-8021	U	0.050	1	MG/KG	08/09/2018	JMK
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	08/09/2018	JMK
Xylenes	EPA-8021	U	0.20	1	MG/KG	08/09/2018	JMK
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/06/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	4.6	0.62	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	11	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	20	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	1.9	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	47	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	89.0	08/09/2018	JMK
TFT	EPA-8021	87.1	08/09/2018	JMK
C25	NWTPH-DX w/ SGA	74.4	08/06/2018	EBS
Terphenyl-d14	EPA-8270 SIM	89.3	08/08/2018	PAB

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-12
CLIENT SAMPLE ID	BLWA-6 10ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 11:20:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.

DRAFT



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-13
CLIENT SAMPLE ID	BLWA-7 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 10:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	180	50	1	MG/KG	08/06/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	31	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	91	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	58	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	340	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	250	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	590	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	160	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	220	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	66	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	250	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.92	0.10	5	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	13	0.60	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	1.8	0.18	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	30	0.30	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	2100	1.9	10	MG/KG	08/09/2018	RAL
Lead	EPA-6020	340	0.19	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	630	21	10	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	73.7	08/06/2018	EBS
Terphenyl-d14	EPA-8270 SIM	97.2	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-14
CLIENT SAMPLE ID	BLWA-7 2ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 10:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/06/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	3.7	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	21	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	50	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	3.0	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	39	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	80.5	08/06/2018	EBS
Terphenyl-d14	EPA-8270 SIM	102	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-15
CLIENT SAMPLE ID	BLWA-7 5ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/16/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/16/2018	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	89.1	08/16/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225
DATE: 8/27/2018
ALS JOB#: EV18080025
ALS SAMPLE#: EV18080025-16
CLIENT CONTACT: Thom Davis
DATE RECEIVED: 08/03/2018
CLIENT PROJECT: Jensen's Shipyard Assessment
COLLECTION DATE: 7/30/2018 12:15:00 PM
CLIENT SAMPLE ID: BLWA-8 2-6in
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	56	50	1	MG/KG	08/06/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	70	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	130	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	120	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	81	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	130	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	180	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	83	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	78	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	28	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	93	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.18	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	5.1	0.59	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.48	0.18	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	19	0.30	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	1100	0.94	5	MG/KG	08/09/2018	RAL
Lead	EPA-6020	470	0.19	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	350	2.0	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	78.3	08/06/2018	EBS
Terphenyl-d14	EPA-8270 SIM	94.8	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-17
CLIENT SAMPLE ID	BLWA-8 2ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 12:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	290	50	1	MG/KG	08/06/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	29	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	73	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	52	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	35	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	32	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	55	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	29	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	28	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	35	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.12	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	6.2	0.62	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.23	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	23	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	170	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	200	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	110	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	80.6	08/06/2018	EBS
Terphenyl-d14	EPA-8270 SIM	90.7	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-18
CLIENT SAMPLE ID	BLWA-8 5ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 12:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/16/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	98	50	1	MG/KG	08/16/2018	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	93.4	08/16/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
		ALS JOB#:	EV18080025
CLIENT CONTACT:	Thom Davis	ALS SAMPLE#:	EV18080025-19
CLIENT PROJECT:	Jensen's Shipyard Assessment	DATE RECEIVED:	08/03/2018
CLIENT SAMPLE ID	BLWA-9 2-6in	COLLECTION DATE:	7/30/2018 11:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	61	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	160	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	130	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	130	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	76	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	520	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	400	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	320	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	1200	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	610	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	800	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	200	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	950	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	1.5	0.20	10	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	5.7	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.96	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	25	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	2900	2.0	10	MG/KG	08/09/2018	RAL
Lead	EPA-6020	310	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	690	21	10	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	81.7	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	91.0	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-20
CLIENT SAMPLE ID	BLWA-9 2ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 11:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.048	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	3.3	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	18	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	49	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	11	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	92	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	82.9	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	94.7	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
		ALS JOB#:	EV18080025
CLIENT CONTACT:	Thom Davis	ALS SAMPLE#:	EV18080025-21
CLIENT PROJECT:	Jensen's Shipyard Assessment	DATE RECEIVED:	08/03/2018
CLIENT SAMPLE ID	BLWA-9 5ft	COLLECTION DATE:	7/30/2018 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/16/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/16/2018	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	95.0	08/16/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-22
CLIENT SAMPLE ID	AST-1 2ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 9:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	0.030	1	MG/KG	08/10/2018	JMK
Toluene	EPA-8021	U	0.050	1	MG/KG	08/10/2018	JMK
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	08/10/2018	JMK
Xylenes	EPA-8021	U	0.20	1	MG/KG	08/10/2018	JMK
TPH-Diesel Range	NWTPH-DX w/ SGA	8000	500	20	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	10000	1000	20	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	400	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	780	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	1300	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	460	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.037	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	3.3	0.64	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.20	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	17	0.32	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	40	0.21	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	27	0.21	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	100	2.2	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	EPA-8021	93.0	08/10/2018	JMK
C25 20X Dilution	NWTPH-DX w/ SGA	104	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	105	08/08/2018	PAB

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-22
CLIENT SAMPLE ID	AST-1 2ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 9:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered diesel and lube oil.
Diesel range product results biased high due to oil range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-23
CLIENT SAMPLE ID	Storm Sed.-1	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 3:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury (TCLP)	EPA-7470/1311	U	0.00020	1	MG/L	08/13/2018	RAL
Arsenic (TCLP)	EPA-6020/1311	U	0.025	5	MG/L	08/10/2018	RAL
Barium (TCLP)	EPA-6020/1311	1.1	0.025	5	MG/L	08/10/2018	RAL
Cadmium (TCLP)	EPA-6020/1311	U	0.025	5	MG/L	08/10/2018	RAL
Chromium (TCLP)	EPA-6020/1311	U	0.025	5	MG/L	08/10/2018	RAL
Lead (TCLP)	EPA-6020/1311	0.36	0.025	5	MG/L	08/10/2018	RAL
Selenium (TCLP)	EPA-6020/1311	U	0.025	5	MG/L	08/10/2018	RAL
Silver (TCLP)	EPA-6020/1311	U	0.025	5	MG/L	08/10/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-24
CLIENT SAMPLE ID	MW-1 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 1:10:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	2600	250	10	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	8200	500	10	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	29	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	80	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	27	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	120	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	210	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	120	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.47	0.040	2	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	6.2	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	8.9	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	44	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	1700	2.0	10	MG/KG	08/09/2018	RAL
Lead	EPA-6020	410	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	1200	21	10	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25 10X Dilution	NWTPH-DX w/ SGA	159 SUR12	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	87.4	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
 SUR12 -Surrogate recoveries were outside of the control limits due to matrix interference.
 Chromatogram indicates that it is likely that sample contains light oil/lube oil.

**CERTIFICATE OF ANALYSIS**

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 8/27/2018

ALS JOB#: EV18080025

ALS SAMPLE#: EV18080025-25

CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

DATE RECEIVED: 08/03/2018

COLLECTION DATE: 7/30/2018 12:50:00 PM

CLIENT SAMPLE ID MW-1 12ft

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	32	3.0	1	MG/KG	08/09/2018	JMK
Benzene	EPA-8021	U	0.030	1	MG/KG	08/09/2018	JMK
Toluene	EPA-8021	U	0.050	1	MG/KG	08/09/2018	JMK
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	08/09/2018	JMK
Xylenes	EPA-8021	U	0.20	1	MG/KG	08/09/2018	JMK
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	3.4	0.66	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.20	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	18	0.33	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	32	0.21	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	4.4	0.21	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	30	2.3	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	90.0	08/09/2018	JMK
TFT	EPA-8021	87.4	08/09/2018	JMK
C25	NWTPH-DX w/ SGA	72.4	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	103	08/08/2018	PAB

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-25
CLIENT SAMPLE ID	MW-1 12ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 12:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified gasoline range product.

DRAFT

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-26
CLIENT SAMPLE ID	MW-1 15ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 1:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	08/09/2018	JMK
Benzene	EPA-8021	U	0.030	1	MG/KG	08/09/2018	JMK
Toluene	EPA-8021	U	0.050	1	MG/KG	08/09/2018	JMK
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	08/09/2018	JMK
Xylenes	EPA-8021	U	0.20	1	MG/KG	08/09/2018	JMK
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	2.1	0.64	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.20	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	12	0.33	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	23	0.21	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	1.8	0.21	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	24	2.2	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	91.8	08/09/2018	JMK
TFT	EPA-8021	94.5	08/09/2018	JMK
C25	NWTPH-DX w/ SGA	66.7	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	103	08/08/2018	PAB

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-26
CLIENT SAMPLE ID	MW-1 15ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 1:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.

DRAFT



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 8/27/2018

ALS JOB#: EV18080025

ALS SAMPLE#: EV18080025-27

CLIENT CONTACT: Thom Davis

DATE RECEIVED: 08/03/2018

CLIENT PROJECT: Jensen's Shipyard Assessment

COLLECTION DATE: 7/30/2018 1:55:00 PM

CLIENT SAMPLE ID MW-2 6in

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	32	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	160	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	33	20	1	UG/KG	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	100	20	1	UG/KG	08/08/2018	PAB
Anthracene	EPA-8270 SIM	66	20	1	UG/KG	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	290	20	1	UG/KG	08/08/2018	PAB
Pyrene	EPA-8270 SIM	180	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	380	20	1	UG/KG	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	64	20	1	UG/KG	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	110	20	1	UG/KG	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	35	20	1	UG/KG	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	120	20	1	UG/KG	08/08/2018	PAB
Mercury	EPA-7471	0.64	0.080	4	MG/KG	08/08/2018	RAL
Arsenic	EPA-6020	7.2	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	2.3	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	27	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	2100	2.0	10	MG/KG	08/09/2018	RAL
Lead	EPA-6020	230	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	540	21	10	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	74.7	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	83.0	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-28
CLIENT SAMPLE ID	MW-2 7ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 2:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	21	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	75	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	72	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	50	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	45	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	60	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	48	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	35	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	40	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.024	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	6.2	0.74	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.67	0.23	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	13	0.38	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	24	0.24	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	29	0.24	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	37	2.6	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	77.5	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	81.2	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-29
CLIENT SAMPLE ID	WES-Dup.-1	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 9:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	41	3.0	1	MG/KG	08/09/2018	JMK
Benzene	EPA-8021	U	0.030	1	MG/KG	08/09/2018	JMK
Toluene	EPA-8021	U	0.050	1	MG/KG	08/09/2018	JMK
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	08/09/2018	JMK
Xylenes	EPA-8021	U	0.20	1	MG/KG	08/09/2018	JMK
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	2.8	0.66	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.20	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	15	0.34	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	28	0.21	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	3.4	0.21	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	27	2.3	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	86.7	08/09/2018	JMK
TFT	EPA-8021	90.3	08/09/2018	JMK
C25	NWTPH-DX w/ SGA	82.0	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	81.6	08/09/2018	PAB

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-29
CLIENT SAMPLE ID	WES-Dup.-1	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/30/2018 9:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified gasoline range product.

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CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-30
CLIENT SAMPLE ID	OPALCO-2 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 10:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	34	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	72	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	55	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	39	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	22	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.026	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	4.8	0.63	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.92	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	17	0.32	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	68	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	54	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	2600	22	10	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	81.9	08/07/2018	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-30
CLIENT SAMPLE ID	OPALCO-2 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 10:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
Terphenyl-d14	EPA-8270 SIM	81.0	08/09/2018	PAB
TCMX	EPA-8082	87.7	08/09/2018	PAB
DCB	EPA-8082	93.2	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

**CERTIFICATE OF ANALYSIS**

CLIENT: Whatcom Environmental Svcs., Inc. DATE: 8/27/2018
228 E. Champion St., Suite 101 ALS JOB#: EV18080025
Bellingham, WA 98225 ALS SAMPLE#: EV18080025-32
CLIENT CONTACT: Thom Davis DATE RECEIVED: 08/03/2018
CLIENT PROJECT: Jensen's Shipyard Assessment COLLECTION DATE: 7/31/2018 10:30:00 AM
CLIENT SAMPLE ID: OPALCO-2 5ft WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	3.2	0.62	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	16	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	45	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	2.1	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	250	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	85.7	08/07/2018	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-32
CLIENT SAMPLE ID	OPALCO-2 5ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
Terphenyl-d14	EPA-8270 SIM	81.6	08/09/2018	PAB
TCMX	EPA-8082	90.3	08/09/2018	PAB
DCB	EPA-8082	96.4	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225
DATE: 8/27/2018
ALS JOB#: EV18080025
ALS SAMPLE#: EV18080025-33
CLIENT CONTACT: Thom Davis
DATE RECEIVED: 08/03/2018
CLIENT PROJECT: Jensen's Shipyard Assessment
COLLECTION DATE: 7/31/2018 10:55:00 AM
CLIENT SAMPLE ID: OPALCO-3 2-6in
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	110	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	40	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	32	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	240	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	44	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	340	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	210	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	95	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	160	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	170	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	61	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	45	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	60	20	1	UG/KG	08/09/2018	PAB
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.34	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	7.1	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	1.1	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	30	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	1300	0.99	5	MG/KG	08/09/2018	RAL
Lead	EPA-6020	990	0.99	5	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	720	11	5	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	83.2	08/07/2018	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-33
CLIENT SAMPLE ID	OPALCO-3 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 10:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
Terphenyl-d14	EPA-8270 SIM	79.8	08/09/2018	PAB
TCMX	EPA-8082	86.2	08/09/2018	PAB
DCB	EPA-8082	88.5	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

**CERTIFICATE OF ANALYSIS**

CLIENT: Whatcom Environmental Svcs., Inc. DATE: 8/27/2018
228 E. Champion St., Suite 101 ALS JOB#: EV18080025
Bellingham, WA 98225 ALS SAMPLE#: EV18080025-35
CLIENT CONTACT: Thom Davis DATE RECEIVED: 08/03/2018
CLIENT PROJECT: Jensen's Shipyard Assessment COLLECTION DATE: 7/31/2018 11:10:00 AM
CLIENT SAMPLE ID: OPALCO-3 4ft WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.025	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	4.1	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	16	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	44	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	4.5	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	39	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	81.1	08/07/2018	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-35
CLIENT SAMPLE ID	OPALCO-3 4ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 11:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
Terphenyl-d14	EPA-8270 SIM	90.0	08/09/2018	PAB
TCMX	EPA-8082	88.8	08/09/2018	PAB
DCB	EPA-8082	94.1	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-36
CLIENT SAMPLE ID	OPALCO-4 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 9:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	24	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	59	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	41	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	57	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	24	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	35	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	41	20	1	UG/KG	08/09/2018	PAB
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/13/2018	PAB
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/13/2018	PAB
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/13/2018	PAB
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/13/2018	PAB
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/13/2018	PAB
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/13/2018	PAB
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/13/2018	PAB
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/13/2018	PAB
Mercury	EPA-7471	0.67	0.080	4	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	5.5	0.60	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	18	0.30	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	120	0.19	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	40	0.19	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	74	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	82.4	08/07/2018	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-36
CLIENT SAMPLE ID	OPALCO-4 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 9:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
Terphenyl-d14	EPA-8270 SIM	84.4	08/09/2018	PAB
TCMX	EPA-8082	61.5	08/13/2018	PAB
DCB	EPA-8082	60.3	08/13/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 8/27/2018

ALS JOB#: EV18080025

ALS SAMPLE#: EV18080025-38

CLIENT CONTACT: Thom Davis

DATE RECEIVED: 08/03/2018

CLIENT PROJECT: Jensen's Shipyard Assessment

COLLECTION DATE: 7/31/2018 9:50:00 AM

CLIENT SAMPLE ID OPALCO-4 5ft

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	3.3	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	15	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	34	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	2.2	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	31	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	86.6	08/07/2018	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-38
CLIENT SAMPLE ID	OPALCO-4 5ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 9:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
Terphenyl-d14	EPA-8270 SIM	89.3	08/09/2018	PAB
TCMX	EPA-8082	88.2	08/09/2018	PAB
DCB	EPA-8082	72.5	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-39
CLIENT SAMPLE ID	SYC-1 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 12:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	120	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	20	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	25	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.026	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	4.0	0.62	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	24	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	42	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	19	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	74	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	70.7	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	86.7	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-40
CLIENT SAMPLE ID	SYC-1 2ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 12:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.026	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	4.2	0.62	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	21	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	26	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	6.6	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	54	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	78.9	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	88.2	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
		ALS JOB#:	EV18080025
CLIENT CONTACT:	Thom Davis	ALS SAMPLE#:	EV18080025-42
CLIENT PROJECT:	Jensen's Shipyard Assessment	DATE RECEIVED:	08/03/2018
CLIENT SAMPLE ID	SYC-2 2-6in	COLLECTION DATE:	7/31/2018 12:40:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	130	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	34	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.036	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	4.2	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.21	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	21	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	48	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	46	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	87	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	79.9	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	88.6	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-43
CLIENT SAMPLE ID	SYC-2 2ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 12:45:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Mercury	EPA-7471	0.022	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	4.2	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	22	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	37	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	8.3	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	46	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	85.3	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	75.6	08/10/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225
DATE: 8/27/2018
ALS JOB#: EV18080025
ALS SAMPLE#: EV18080025-45
CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment
DATE RECEIVED: 08/03/2018
COLLECTION DATE: 7/31/2018 1:00:00 PM
CLIENT SAMPLE ID: SYC-3 2-6in
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	70	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluoranthene	EPA-8270 SIM	31	20	1	UG/KG	08/10/2018	PAB
Pyrene	EPA-8270 SIM	30	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Mercury	EPA-7471	0.063	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	6.3	0.60	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.40	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	29	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	99	0.19	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	57	0.19	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	1000	10	5	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	80.2	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	89.6	08/10/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-46
CLIENT SAMPLE ID	SYC-3 3ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 1:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	3.9	0.61	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	14	0.31	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	33	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	2.9	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	34	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	83.7	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	44.1	08/10/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-48
CLIENT SAMPLE ID	SYC-4 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 1:20:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	140	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	45	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	40	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	22	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	24	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	54	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	25	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	26	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	43	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.27	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	6.9	0.60	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.32	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	22	0.30	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	140	0.19	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	63	0.19	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	140	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	83.2	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	103	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225
DATE: 8/27/2018
ALS JOB#: EV18080025
ALS SAMPLE#: EV18080025-49
CLIENT CONTACT: Thom Davis
DATE RECEIVED: 08/03/2018
CLIENT PROJECT: Jensen's Shipyard Assessment
COLLECTION DATE: 7/31/2018 1:25:00 PM
CLIENT SAMPLE ID: SYC-4 2ft
WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	49	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	48	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	24	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	30	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	43	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	27	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	21	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	26	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.23	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	4.6	0.62	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	22	0.32	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	63	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	51	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	76	2.2	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	77.8	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	83.8	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-51
CLIENT SAMPLE ID	MW-4 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	120	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	150	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	45	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	240	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	170	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	95	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	92	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	170	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	76	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	58	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	70	20	1	UG/KG	08/09/2018	PAB
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1254	EPA-8082	0.10	0.10	1	MG/KG	08/09/2018	PAB
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.22	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	7.9	0.60	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.79	0.19	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	43	0.30	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	590	0.19	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	390	0.19	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	620	2.1	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	75.8	08/07/2018	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-51
CLIENT SAMPLE ID	MW-4 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
Terphenyl-d14	EPA-8270 SIM	76.7	08/09/2018	PAB
TCMX	EPA-8082	84.5	08/09/2018	PAB
DCB	EPA-8082	76.0	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-52
CLIENT SAMPLE ID	MW-4 11ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
PCB-1016	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1221	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1232	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1242	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1248	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1254	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1260	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
PCB-1268	EPA-8082	U	0.10	1	MG/KG	08/09/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	8.4	0.74	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.23	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	64	0.38	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	31	0.24	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	3.4	0.24	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	45	2.6	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	76.9	08/07/2018	EBS

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-52
CLIENT SAMPLE ID	MW-4 11ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 8:50:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

SURROGATE	METHOD	%REC	ANALYSIS	ANALYSIS
			DATE	BY
Terphenyl-d14	EPA-8270 SIM	81.0	08/09/2018	PAB
TCMX	EPA-8082	167 GS4	08/09/2018	PAB
DCB	EPA-8082	153	08/09/2018	PAB

GS4 - Surrogate outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.
 U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-53
CLIENT SAMPLE ID	MW-5 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 4:30:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	96	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	31	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	96	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	88	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	48	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	53	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	90	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	50	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	39	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	48	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.10	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	4.9	0.63	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	0.70	0.20	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	39	0.32	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	140	0.20	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	120	0.20	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	190	2.2	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	81.4	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	89.8	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-54
CLIENT SAMPLE ID	MW-5 10ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 5:25:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/09/2018	RAL
Arsenic	EPA-6020	2.4	0.71	1	MG/KG	08/09/2018	RAL
Cadmium	EPA-6020	U	0.22	1	MG/KG	08/09/2018	RAL
Chromium	EPA-6020	18	0.36	1	MG/KG	08/09/2018	RAL
Copper	EPA-6020	14	0.23	1	MG/KG	08/09/2018	RAL
Lead	EPA-6020	2.1	0.23	1	MG/KG	08/09/2018	RAL
Zinc	EPA-6020	26	2.4	1	MG/KG	08/09/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	88.0	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	97.3	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-55
CLIENT SAMPLE ID	MW-6 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.027	0.020	1	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	4.0	0.60	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	U	0.19	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	19	0.30	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	28	0.19	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	13	0.19	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	65	2.1	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	75.4	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	74.3	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-56
CLIENT SAMPLE ID	MW-6 40ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	7/31/2018 3:15:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	3.0	0.65	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	U	0.20	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	14	0.33	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	16	0.21	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	1.5	0.21	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	23	2.2	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	77.1	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	97.1	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-57
CLIENT SAMPLE ID	SRWA-4 6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	8/1/2018 9:55:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	79	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	190	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	160	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	240	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	100	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	710	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	730	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	540	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	500	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	590	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	500	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	320	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	98	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	410	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	11	1.0	50	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	54	0.68	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	0.39	0.21	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	35	0.34	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	2000	4.4	20	MG/KG	08/14/2018	RAL
Lead	EPA-6020	1800	4.4	20	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	450	47	20	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	80.7	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	92.0	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-58
CLIENT SAMPLE ID	SRWA-4 3.5ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	8/1/2018 10:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/08/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/08/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.098	0.020	1	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	7.7	0.72	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	U	0.22	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	24	0.36	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	35	0.23	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	15	0.23	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	64	2.5	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	82.7	08/08/2018	EBS
Terphenyl-d14	EPA-8270 SIM	66.9	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 8/27/2018

ALS JOB#: EV18080025

ALS SAMPLE#: EV18080025-59

CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

DATE RECEIVED: 08/03/2018

COLLECTION DATE: 8/1/2018 9:30:00 AM

CLIENT SAMPLE ID SRWA-5 2-6in

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/08/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	72	50	1	MG/KG	08/08/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	37	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	140	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	51	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	340	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	330	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	180	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	190	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	240	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	170	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	120	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	35	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	150	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.33	0.020	1	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	12	0.68	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	0.32	0.21	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	20	0.35	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	420	0.22	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	940	2.2	10	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	460	2.4	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	77.3	08/08/2018	EBS
Terphenyl-d14	EPA-8270 SIM	96.4	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-60
CLIENT SAMPLE ID	SRWA-5 3.5ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	8/1/2018 9:35:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	31	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	62	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	57	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	130	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	120	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	65	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	60	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	42	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	50	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.040	0.020	1	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	4.2	1.2	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	1.5	0.38	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	11	0.62	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	43	0.39	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	21	0.39	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	58	4.2	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	88.1	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	91.6	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-61
CLIENT SAMPLE ID	SRWA-5 5ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	8/1/2018 9:40:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	5.1	0.76	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	U	0.23	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	20	0.38	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	16	0.24	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	3.6	0.24	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	55	2.6	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	83.4	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	98.9	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-62
CLIENT SAMPLE ID	SRWA-6 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	8/1/2018 9:00:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	120	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	640	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	36	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	22	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	260	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	1200	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	370	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	2200	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	1900	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	1200	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	1300	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	1300	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	1100	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	620	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	200	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	680	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	2.8	0.20	10	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	16	0.73	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	0.64	0.23	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	36	0.37	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	550	0.24	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	1200	0.24	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	1100	25	10	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	81.3	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	80.2	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-63
CLIENT SAMPLE ID	SRWA-6 3ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	8/1/2018 9:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	U	0.020	1	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	5.0	0.67	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	U	0.21	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	20	0.34	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	11	0.22	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	11	0.22	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	32	2.3	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	91.4	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	89.8	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-65
CLIENT SAMPLE ID	SRWA-7 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	8/1/2018 10:10:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	170	25	1	MG/KG	08/08/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	690	50	1	MG/KG	08/08/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	74	20	1	UG/KG	08/09/2018	PAB
Anthracene	EPA-8270 SIM	24	20	1	UG/KG	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	150	20	1	UG/KG	08/09/2018	PAB
Pyrene	EPA-8270 SIM	160	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	65	20	1	UG/KG	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	79	20	1	UG/KG	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	130	20	1	UG/KG	08/09/2018	PAB
Mercury	EPA-7471	0.23	0.020	1	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	9.1	0.69	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	2.6	0.21	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	25	0.35	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	920	0.22	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	160	0.22	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	400	2.4	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	92.8	08/08/2018	EBS
Terphenyl-d14	EPA-8270 SIM	90.8	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.

**CERTIFICATE OF ANALYSIS**

CLIENT: Whatcom Environmental Svcs., Inc. DATE: 8/27/2018
228 E. Champion St., Suite 101 ALS JOB#: EV18080025
Bellingham, WA 98225 ALS SAMPLE#: EV18080025-66
CLIENT CONTACT: Thom Davis DATE RECEIVED: 08/03/2018
CLIENT PROJECT: Jensen's Shipyard Assessment COLLECTION DATE: 8/1/2018 10:15:00 AM
CLIENT SAMPLE ID: SRWA-7 3ft WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	40	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	230	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Phenanthrene	EPA-8270 SIM	91	20	1	UG/KG	08/10/2018	PAB
Anthracene	EPA-8270 SIM	23	20	1	UG/KG	08/10/2018	PAB
Fluoranthene	EPA-8270 SIM	300	20	1	UG/KG	08/10/2018	PAB
Pyrene	EPA-8270 SIM	290	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	170	20	1	UG/KG	08/10/2018	PAB
Chrysene	EPA-8270 SIM	180	20	1	UG/KG	08/10/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	230	20	1	UG/KG	08/10/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	160	20	1	UG/KG	08/10/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	110	20	1	UG/KG	08/10/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	150	20	1	UG/KG	08/10/2018	PAB
Mercury	EPA-7471	0.10	0.020	1	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	4.3	0.60	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	0.38	0.19	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	19	0.31	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	63	0.19	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	110	0.19	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	140	2.1	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	72.2	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	89.7	08/10/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains light oil/lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-68
CLIENT SAMPLE ID	MW-3 2-6in	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	8/1/2018 10:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	280	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthylene	EPA-8270 SIM	22	20	1	UG/KG	08/10/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Phenanthrene	EPA-8270 SIM	71	20	1	UG/KG	08/10/2018	PAB
Anthracene	EPA-8270 SIM	26	20	1	UG/KG	08/10/2018	PAB
Fluoranthene	EPA-8270 SIM	150	20	1	UG/KG	08/10/2018	PAB
Pyrene	EPA-8270 SIM	140	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	76	20	1	UG/KG	08/10/2018	PAB
Chrysene	EPA-8270 SIM	110	20	1	UG/KG	08/10/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	150	20	1	UG/KG	08/10/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	81	20	1	UG/KG	08/10/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	71	20	1	UG/KG	08/10/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	100	20	1	UG/KG	08/10/2018	PAB
Mercury	EPA-7471	1.3	0.10	5	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	13	0.67	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	0.74	0.21	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	29	0.34	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	400	0.22	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	190	0.22	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	310	2.3	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	81.5	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	88.4	08/10/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-70
CLIENT SAMPLE ID	MW-3 5.5ft	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	8/1/2018 10:45:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Phenanthrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluoranthene	EPA-8270 SIM	33	20	1	UG/KG	08/10/2018	PAB
Pyrene	EPA-8270 SIM	28	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Chrysene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	42	20	1	UG/KG	08/10/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	22	20	1	UG/KG	08/10/2018	PAB
Mercury	EPA-7471	0.16	0.020	1	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	5.6	0.67	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	U	0.21	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	28	0.34	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	82	0.22	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	25	0.22	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	110	2.3	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	75.7	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	87.7	08/10/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
CLIENT CONTACT:	Thom Davis	ALS JOB#:	EV18080025
CLIENT PROJECT:	Jensen's Shipyard Assessment	ALS SAMPLE#:	EV18080025-71
CLIENT SAMPLE ID	WES-Dup.-2	DATE RECEIVED:	08/03/2018
		COLLECTION DATE:	8/1/2018 8:30:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX w/ SGA	U	25	1	MG/KG	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX w/ SGA	U	50	1	MG/KG	08/07/2018	EBS
Naphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Acenaphthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluorene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Phenanthrene	EPA-8270 SIM	21	20	1	UG/KG	08/10/2018	PAB
Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Fluoranthene	EPA-8270 SIM	89	20	1	UG/KG	08/10/2018	PAB
Pyrene	EPA-8270 SIM	78	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	55	20	1	UG/KG	08/10/2018	PAB
Chrysene	EPA-8270 SIM	63	20	1	UG/KG	08/10/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	100	20	1	UG/KG	08/10/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	57	20	1	UG/KG	08/10/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	47	20	1	UG/KG	08/10/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	20	1	UG/KG	08/10/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	54	20	1	UG/KG	08/10/2018	PAB
Mercury	EPA-7471	0.16	0.020	1	MG/KG	08/13/2018	RAL
Arsenic	EPA-6020	4.8	0.70	1	MG/KG	08/14/2018	RAL
Cadmium	EPA-6020	U	0.21	1	MG/KG	08/14/2018	RAL
Chromium	EPA-6020	24	0.35	1	MG/KG	08/14/2018	RAL
Copper	EPA-6020	80	0.22	1	MG/KG	08/14/2018	RAL
Lead	EPA-6020	26	0.22	1	MG/KG	08/14/2018	RAL
Zinc	EPA-6020	100	2.4	1	MG/KG	08/14/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX w/ SGA	79.7	08/07/2018	EBS
Terphenyl-d14	EPA-8270 SIM	94.7	08/10/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
 228 E. Champion St., Suite 101
 Bellingham, WA 98225
CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

DATE: 8/27/2018
ALS SDG#: EV18080025
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS
MBG-080918S2 - Batch 131381 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	MG/KG	3.0	08/09/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080918S2 - Batch 131381 - Soil by EPA-8021

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	MG/KG	0.030	08/09/2018	JMK
Toluene	EPA-8021	U	MG/KG	0.050	08/09/2018	JMK
Ethylbenzene	EPA-8021	U	MG/KG	0.050	08/09/2018	JMK
Xylenes	EPA-8021	U	MG/KG	0.20	08/09/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080618S2 - Batch 131349 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	MG/KG	25	08/06/2018	EBS
TPH-Oil Range	NWTPH-DX	U	MG/KG	50	08/06/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080618S3 - Batch 131354 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	MG/KG	25	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX	U	MG/KG	50	08/07/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080718S - Batch 131346 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	MG/KG	25	08/07/2018	EBS
TPH-Oil Range	NWTPH-DX	U	MG/KG	50	08/07/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-081618S - Batch 131585 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	MG/KG	25	08/16/2018	EBS
TPH-Oil Range	NWTPH-DX	U	MG/KG	50	08/16/2018	EBS



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 8/27/2018
ALS SDG#: EV18080025
WDOE ACCREDITATION: C601

CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

LABORATORY BLANK RESULTS

MB-081618S - Batch 131585 - Soil by NWTPH-DX

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080718S - Batch 131446 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Pyrene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080718S2 - Batch 131482 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Acenaphthene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Fluorene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Phenanthrene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Anthracene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Pyrene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Chrysene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 8/27/2018
ALS SDG#: EV18080025
WDOE ACCREDITATION: C601

CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

LABORATORY BLANK RESULTS

MB-080718S2 - Batch 131482 - Soil by EPA-8270 SIM

Benzo[K]Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	UG/KG	20	08/08/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080918S - Batch 131491 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Acenaphthene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Fluorene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Phenanthrene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Anthracene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Pyrene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Chrysene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	UG/KG	20	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

MB-081618S - Batch 131664 - Soil by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
2-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
1-Methylnaphthalene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Acenaphthylene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Acenaphthene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Fluorene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Phenanthrene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB

CERTIFICATE OF ANALYSIS

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CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

LABORATORY BLANK RESULTS
MB-081618S - Batch 131664 - Soil by EPA-8270 SIM

Anthracene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Pyrene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Benzo[A]Anthracene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Chrysene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Benzo[B]Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Benzo[K]Fluoranthene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Benzo[A]Pyrene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	UG/KG	20	08/16/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080818S - Batch 131428 - Soil by EPA-8082

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
PCB-1016	EPA-8082	U	MG/KG	0.10	08/09/2018	PAB
PCB-1221	EPA-8082	U	MG/KG	0.10	08/09/2018	PAB
PCB-1232	EPA-8082	U	MG/KG	0.10	08/09/2018	PAB
PCB-1242	EPA-8082	U	MG/KG	0.10	08/09/2018	PAB
PCB-1248	EPA-8082	U	MG/KG	0.10	08/09/2018	PAB
PCB-1254	EPA-8082	U	MG/KG	0.10	08/09/2018	PAB
PCB-1260	EPA-8082	U	MG/KG	0.10	08/09/2018	PAB
PCB-1268	EPA-8082	U	MG/KG	0.10	08/09/2018	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-321921 - Batch R321921 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	MG/KG	0.020	08/08/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-321924 - Batch R321924 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	MG/KG	0.020	08/09/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

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CLIENT CONTACT: Thom Davis
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LABORATORY BLANK RESULTS
MBLK-321925 - Batch R321925 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	MG/KG	0.020	08/13/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-R322340 - Batch R322340 - Soil by EPA-7471

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7471	U	MG/KG	0.020	08/23/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-321927 - Batch R321927 - TCLP Extract by EPA-7470

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury	EPA-7470	U	MG/L	0.00020	08/13/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080718S - Batch 131537 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	MG/KG	0.20	08/09/2018	RAL
Cadmium	EPA-6020	U	MG/KG	0.10	08/09/2018	RAL
Chromium	EPA-6020	U	MG/KG	0.10	08/09/2018	RAL
Copper	EPA-6020	U	MG/KG	0.10	08/09/2018	RAL
Lead	EPA-6020	U	MG/KG	0.10	08/09/2018	RAL
Zinc	EPA-6020	U	MG/KG	0.88	08/09/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-080818S - Batch 131538 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	MG/KG	0.20	08/09/2018	RAL
Cadmium	EPA-6020	U	MG/KG	0.10	08/09/2018	RAL
Chromium	EPA-6020	U	MG/KG	0.10	08/09/2018	RAL
Copper	EPA-6020	U	MG/KG	0.10	08/09/2018	RAL
Lead	EPA-6020	U	MG/KG	0.10	08/09/2018	RAL
Zinc	EPA-6020	U	MG/KG	0.88	08/09/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

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 228 E. Champion St., Suite 101
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CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

DATE: 8/27/2018
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WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS
MB-081018S - Batch 131556 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	MG/KG	0.20	08/14/2018	RAL
Cadmium	EPA-6020	U	MG/KG	0.10	08/14/2018	RAL
Chromium	EPA-6020	U	MG/KG	0.10	08/14/2018	RAL
Copper	EPA-6020	U	MG/KG	0.10	08/14/2018	RAL
Lead	EPA-6020	U	MG/KG	0.10	08/14/2018	RAL
Zinc	EPA-6020	U	MG/KG	0.88	08/14/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-082118S - Batch 131751 - Soil by EPA-6020

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	MG/KG	0.20	08/22/2018	RAL
Cadmium	EPA-6020	U	MG/KG	0.10	08/22/2018	RAL
Chromium	EPA-6020	U	MG/KG	0.10	08/22/2018	RAL
Copper	EPA-6020	U	MG/KG	0.10	08/22/2018	RAL
Lead	EPA-6020	U	MG/KG	0.10	08/22/2018	RAL
Zinc	EPA-6020	U	MG/KG	0.88	08/22/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MBLK-321929 - Batch R321929 - TCLP Extract by EPA-6020

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	EPA-6020	U	MG/L	0.0050	08/10/2018	RAL
Barium	EPA-6020	U	MG/L	0.0050	08/10/2018	RAL
Cadmium	EPA-6020	U	MG/L	0.0050	08/10/2018	RAL
Chromium	EPA-6020	U	MG/L	0.0050	08/10/2018	RAL
Lead	EPA-6020	U	MG/L	0.0050	08/10/2018	RAL
Selenium	EPA-6020	U	MG/L	0.0050	08/10/2018	RAL
Silver	EPA-6020	U	MG/L	0.0050	08/10/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

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Bellingham, WA 98225

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CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 131381 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Volatile Range - BS	NWTPH-GX	105			66.5	122.7	08/09/2018	JMK
TPH-Volatile Range - BSD	NWTPH-GX	111	5		66.5	122.7	08/09/2018	JMK

ALS Test Batch ID: 131381 - Soil by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Benzene - BS	EPA-8021	94.7			67.7	124	08/09/2018	JMK
Benzene - BSD	EPA-8021	95.0	0		67.7	124	08/09/2018	JMK
Toluene - BS	EPA-8021	98.7			71	123	08/09/2018	JMK
Toluene - BSD	EPA-8021	100	2		71	123	08/09/2018	JMK
Ethylbenzene - BS	EPA-8021	99.6			69.8	117	08/09/2018	JMK
Ethylbenzene - BSD	EPA-8021	100	1		69.8	117	08/09/2018	JMK
Xylenes - BS	EPA-8021	99.7			70	119	08/09/2018	JMK
Xylenes - BSD	EPA-8021	101	1		70	119	08/09/2018	JMK

ALS Test Batch ID: 131346 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	104			75.5	122.1	08/08/2018	EBS
TPH-Diesel Range - BSD	NWTPH-DX	99.9	4		75.5	122.1	08/08/2018	EBS

ALS Test Batch ID: 131349 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	97.1			75.5	122.1	08/06/2018	EBS
TPH-Diesel Range - BSD	NWTPH-DX	106	9		75.5	122.1	08/06/2018	EBS

ALS Test Batch ID: 131354 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	104			75.5	122.1	08/07/2018	EBS
TPH-Diesel Range - BSD	NWTPH-DX	99.8	4		75.5	122.1	08/07/2018	EBS

ALS Test Batch ID: 131585 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	98.2			75.5	122.1	08/16/2018	EBS
TPH-Diesel Range - BSD	NWTPH-DX	95.6	3		75.5	122.1	08/16/2018	EBS

CERTIFICATE OF ANALYSIS

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WDOE ACCREDITATION: C601

CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

LABORATORY CONTROL SAMPLE RESULTS
ALS Test Batch ID: 131446 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Naphthalene - BS	EPA-8270 SIM	84.6			20	150	08/08/2018	PAB
Naphthalene - BSD	EPA-8270 SIM	83.6	1		20	150	08/08/2018	PAB
2-Methylnaphthalene - BS	EPA-8270 SIM	87.8			20	150	08/08/2018	PAB
2-Methylnaphthalene - BSD	EPA-8270 SIM	87.2	1		20	150	08/08/2018	PAB
1-Methylnaphthalene - BS	EPA-8270 SIM	82.8			20	150	08/08/2018	PAB
1-Methylnaphthalene - BSD	EPA-8270 SIM	82.2	1		20	150	08/08/2018	PAB
Acenaphthylene - BS	EPA-8270 SIM	83.0			20	150	08/08/2018	PAB
Acenaphthylene - BSD	EPA-8270 SIM	82.7	0		20	150	08/08/2018	PAB
Acenaphthene - BS	EPA-8270 SIM	87.3			41	107	08/08/2018	PAB
Acenaphthene - BSD	EPA-8270 SIM	86.7	1		41	107	08/08/2018	PAB
Fluorene - BS	EPA-8270 SIM	92.4			20	150	08/08/2018	PAB
Fluorene - BSD	EPA-8270 SIM	92.5	0		20	150	08/08/2018	PAB
Phenanthrene - BS	EPA-8270 SIM	92.0			20	150	08/08/2018	PAB
Phenanthrene - BSD	EPA-8270 SIM	91.1	1		20	150	08/08/2018	PAB
Anthracene - BS	EPA-8270 SIM	84.7			20	150	08/08/2018	PAB
Anthracene - BSD	EPA-8270 SIM	84.5	0		20	150	08/08/2018	PAB
Fluoranthene - BS	EPA-8270 SIM	83.1			20	150	08/08/2018	PAB
Fluoranthene - BSD	EPA-8270 SIM	81.3	2		20	150	08/08/2018	PAB
Pyrene - BS	EPA-8270 SIM	75.0			18	136	08/08/2018	PAB
Pyrene - BSD	EPA-8270 SIM	75.2	0		18	136	08/08/2018	PAB
Benzo[A]Anthracene - BS	EPA-8270 SIM	83.3			20	150	08/08/2018	PAB
Benzo[A]Anthracene - BSD	EPA-8270 SIM	82.4	1		20	150	08/08/2018	PAB
Chrysene - BS	EPA-8270 SIM	85.8			20	150	08/08/2018	PAB
Chrysene - BSD	EPA-8270 SIM	84.4	2		20	150	08/08/2018	PAB
Benzo[B]Fluoranthene - BS	EPA-8270 SIM	84.8			20	150	08/08/2018	PAB
Benzo[B]Fluoranthene - BSD	EPA-8270 SIM	82.8	2		20	150	08/08/2018	PAB
Benzo[K]Fluoranthene - BS	EPA-8270 SIM	80.3			20	150	08/08/2018	PAB
Benzo[K]Fluoranthene - BSD	EPA-8270 SIM	79.5	1		20	150	08/08/2018	PAB
Benzo[A]Pyrene - BS	EPA-8270 SIM	83.7			20	150	08/08/2018	PAB
Benzo[A]Pyrene - BSD	EPA-8270 SIM	82.2	2		20	150	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene - BS	EPA-8270 SIM	97.5			20	150	08/08/2018	PAB
Indeno[1,2,3-Cd]Pyrene - BSD	EPA-8270 SIM	94.7	3		20	150	08/08/2018	PAB
Dibenz[A,H]Anthracene - BS	EPA-8270 SIM	99.8			20	150	08/08/2018	PAB
Dibenz[A,H]Anthracene - BSD	EPA-8270 SIM	96.8	3		20	150	08/08/2018	PAB
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	91.9			20	150	08/08/2018	PAB
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	89.7	2		20	150	08/08/2018	PAB

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CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

LABORATORY CONTROL SAMPLE RESULTS
ALS Test Batch ID: 131482 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Naphthalene - BS	EPA-8270 SIM	84.8			20	150	08/09/2018	PAB
Naphthalene - BSD	EPA-8270 SIM	80.9	5		20	150	08/09/2018	PAB
2-Methylnaphthalene - BS	EPA-8270 SIM	87.6			20	150	08/09/2018	PAB
2-Methylnaphthalene - BSD	EPA-8270 SIM	84.5	4		20	150	08/09/2018	PAB
1-Methylnaphthalene - BS	EPA-8270 SIM	83.5			20	150	08/09/2018	PAB
1-Methylnaphthalene - BSD	EPA-8270 SIM	80.2	4		20	150	08/09/2018	PAB
Acenaphthylene - BS	EPA-8270 SIM	85.5			20	150	08/09/2018	PAB
Acenaphthylene - BSD	EPA-8270 SIM	81.0	5		20	150	08/09/2018	PAB
Acenaphthene - BS	EPA-8270 SIM	89.0			41	107	08/09/2018	PAB
Acenaphthene - BSD	EPA-8270 SIM	84.3	5		41	107	08/09/2018	PAB
Fluorene - BS	EPA-8270 SIM	98.1			20	150	08/09/2018	PAB
Fluorene - BSD	EPA-8270 SIM	93.3	5		20	150	08/09/2018	PAB
Phenanthrene - BS	EPA-8270 SIM	92.8			20	150	08/09/2018	PAB
Phenanthrene - BSD	EPA-8270 SIM	88.1	5		20	150	08/09/2018	PAB
Anthracene - BS	EPA-8270 SIM	88.0			20	150	08/09/2018	PAB
Anthracene - BSD	EPA-8270 SIM	84.1	5		20	150	08/09/2018	PAB
Fluoranthene - BS	EPA-8270 SIM	89.6			20	150	08/09/2018	PAB
Fluoranthene - BSD	EPA-8270 SIM	83.7	7		20	150	08/09/2018	PAB
Pyrene - BS	EPA-8270 SIM	76.9			18	136	08/09/2018	PAB
Pyrene - BSD	EPA-8270 SIM	72.8	5		18	136	08/09/2018	PAB
Benzo[A]Anthracene - BS	EPA-8270 SIM	89.4			20	150	08/09/2018	PAB
Benzo[A]Anthracene - BSD	EPA-8270 SIM	84.6	6		20	150	08/09/2018	PAB
Chrysene - BS	EPA-8270 SIM	83.9			20	150	08/09/2018	PAB
Chrysene - BSD	EPA-8270 SIM	79.7	5		20	150	08/09/2018	PAB
Benzo[B]Fluoranthene - BS	EPA-8270 SIM	85.0			20	150	08/09/2018	PAB
Benzo[B]Fluoranthene - BSD	EPA-8270 SIM	81.1	5		20	150	08/09/2018	PAB
Benzo[K]Fluoranthene - BS	EPA-8270 SIM	78.8			20	150	08/09/2018	PAB
Benzo[K]Fluoranthene - BSD	EPA-8270 SIM	75.6	4		20	150	08/09/2018	PAB
Benzo[A]Pyrene - BS	EPA-8270 SIM	81.9			20	150	08/09/2018	PAB
Benzo[A]Pyrene - BSD	EPA-8270 SIM	78.7	4		20	150	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene - BS	EPA-8270 SIM	85.7			20	150	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene - BSD	EPA-8270 SIM	83.2	3		20	150	08/09/2018	PAB
Dibenz[A,H]Anthracene - BS	EPA-8270 SIM	87.9			20	150	08/09/2018	PAB
Dibenz[A,H]Anthracene - BSD	EPA-8270 SIM	85.5	3		20	150	08/09/2018	PAB
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	80.5			20	150	08/09/2018	PAB
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	78.1	3		20	150	08/09/2018	PAB

CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 8/27/2018
ALS SDG#: EV18080025
WDOE ACCREDITATION: C601

CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

LABORATORY CONTROL SAMPLE RESULTS
ALS Test Batch ID: 131491 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Naphthalene - BS	EPA-8270 SIM	66.6			20	150	08/10/2018	PAB
Naphthalene - BSD	EPA-8270 SIM	83.4	22		20	150	08/09/2018	PAB
2-Methylnaphthalene - BS	EPA-8270 SIM	66.4			20	150	08/10/2018	PAB
2-Methylnaphthalene - BSD	EPA-8270 SIM	86.8	27		20	150	08/09/2018	PAB
1-Methylnaphthalene - BS	EPA-8270 SIM	68.5			20	150	08/10/2018	PAB
1-Methylnaphthalene - BSD	EPA-8270 SIM	83.3	20		20	150	08/09/2018	PAB
Acenaphthylene - BS	EPA-8270 SIM	64.1			20	150	08/10/2018	PAB
Acenaphthylene - BSD	EPA-8270 SIM	82.8	25		20	150	08/09/2018	PAB
Acenaphthene - BS	EPA-8270 SIM	70.9			41	107	08/10/2018	PAB
Acenaphthene - BSD	EPA-8270 SIM	86.9	20		41	107	08/09/2018	PAB
Fluorene - BS	EPA-8270 SIM	70.6			20	150	08/10/2018	PAB
Fluorene - BSD	EPA-8270 SIM	92.5	27		20	150	08/09/2018	PAB
Phenanthrene - BS	EPA-8270 SIM	72.6			20	150	08/10/2018	PAB
Phenanthrene - BSD	EPA-8270 SIM	93.4	25		20	150	08/09/2018	PAB
Anthracene - BS	EPA-8270 SIM	67.9			20	150	08/10/2018	PAB
Anthracene - BSD	EPA-8270 SIM	86.0	23		20	150	08/09/2018	PAB
Fluoranthene - BS	EPA-8270 SIM	68.7			20	150	08/10/2018	PAB
Fluoranthene - BSD	EPA-8270 SIM	86.2	23		20	150	08/09/2018	PAB
Pyrene - BS	EPA-8270 SIM	79.3			18	136	08/10/2018	PAB
Pyrene - BSD	EPA-8270 SIM	86.5	9		18	136	08/09/2018	PAB
Benzo[A]Anthracene - BS	EPA-8270 SIM	62.7			20	150	08/10/2018	PAB
Benzo[A]Anthracene - BSD	EPA-8270 SIM	86.7	32		20	150	08/09/2018	PAB
Chrysene - BS	EPA-8270 SIM	74.3			20	150	08/10/2018	PAB
Chrysene - BSD	EPA-8270 SIM	87.7	17		20	150	08/09/2018	PAB
Benzo[B]Fluoranthene - BS	EPA-8270 SIM	65.6			20	150	08/10/2018	PAB
Benzo[B]Fluoranthene - BSD	EPA-8270 SIM	87.7	29		20	150	08/09/2018	PAB
Benzo[K]Fluoranthene - BS	EPA-8270 SIM	67.9			20	150	08/10/2018	PAB
Benzo[K]Fluoranthene - BSD	EPA-8270 SIM	81.4	18		20	150	08/09/2018	PAB
Benzo[A]Pyrene - BS	EPA-8270 SIM	67.6			20	150	08/10/2018	PAB
Benzo[A]Pyrene - BSD	EPA-8270 SIM	84.5	22		20	150	08/09/2018	PAB
Indeno[1,2,3-Cd]Pyrene - BS	EPA-8270 SIM	71.8			20	150	08/10/2018	PAB
Indeno[1,2,3-Cd]Pyrene - BSD	EPA-8270 SIM	92.7	25		20	150	08/09/2018	PAB
Dibenz[A,H]Anthracene - BS	EPA-8270 SIM	73.2			20	150	08/10/2018	PAB
Dibenz[A,H]Anthracene - BSD	EPA-8270 SIM	94.6	26		20	150	08/09/2018	PAB
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	68.6			20	150	08/10/2018	PAB
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	87.2	24		20	150	08/09/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	8/27/2018
		ALS SDG#:	EV18080025
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Thom Davis		
CLIENT PROJECT:	Jensen's Shipyard Assessment		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 131664 - Soil by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Naphthalene - BS	EPA-8270 SIM	88.2			20	150	08/16/2018	PAB
Naphthalene - BSD	EPA-8270 SIM	93.6	6		20	150	08/17/2018	PAB
2-Methylnaphthalene - BS	EPA-8270 SIM	94.0			20	150	08/16/2018	PAB
2-Methylnaphthalene - BSD	EPA-8270 SIM	99.8	6		20	150	08/17/2018	PAB
1-Methylnaphthalene - BS	EPA-8270 SIM	90.3			20	150	08/16/2018	PAB
1-Methylnaphthalene - BSD	EPA-8270 SIM	97.0	7		20	150	08/17/2018	PAB
Acenaphthylene - BS	EPA-8270 SIM	89.7			20	150	08/16/2018	PAB
Acenaphthylene - BSD	EPA-8270 SIM	95.1	6		20	150	08/17/2018	PAB
Acenaphthene - BS	EPA-8270 SIM	94.0			41	107	08/16/2018	PAB
Acenaphthene - BSD	EPA-8270 SIM	101	7		41	107	08/17/2018	PAB
Fluorene - BS	EPA-8270 SIM	97.6			20	150	08/16/2018	PAB
Fluorene - BSD	EPA-8270 SIM	107	9		20	150	08/17/2018	PAB
Phenanthrene - BS	EPA-8270 SIM	99.9			20	150	08/16/2018	PAB
Phenanthrene - BSD	EPA-8270 SIM	106	5		20	150	08/17/2018	PAB
Anthracene - BS	EPA-8270 SIM	90.2			20	150	08/16/2018	PAB
Anthracene - BSD	EPA-8270 SIM	97.7	8		20	150	08/17/2018	PAB
Fluoranthene - BS	EPA-8270 SIM	92.1			20	150	08/16/2018	PAB
Fluoranthene - BSD	EPA-8270 SIM	99.7	8		20	150	08/17/2018	PAB
Pyrene - BS	EPA-8270 SIM	87.4			18	136	08/16/2018	PAB
Pyrene - BSD	EPA-8270 SIM	100	14		18	136	08/17/2018	PAB
Benzo[A]Anthracene - BS	EPA-8270 SIM	89.0			20	150	08/16/2018	PAB
Benzo[A]Anthracene - BSD	EPA-8270 SIM	88.7	0		20	150	08/17/2018	PAB
Chrysene - BS	EPA-8270 SIM	91.7			20	150	08/16/2018	PAB
Chrysene - BSD	EPA-8270 SIM	102	11		20	150	08/17/2018	PAB
Benzo[B]Fluoranthene - BS	EPA-8270 SIM	92.2			20	150	08/16/2018	PAB
Benzo[B]Fluoranthene - BSD	EPA-8270 SIM	93.4	1		20	150	08/17/2018	PAB
Benzo[K]Fluoranthene - BS	EPA-8270 SIM	90.0			20	150	08/16/2018	PAB
Benzo[K]Fluoranthene - BSD	EPA-8270 SIM	97.6	8		20	150	08/17/2018	PAB
Benzo[A]Pyrene - BS	EPA-8270 SIM	86.9			20	150	08/16/2018	PAB
Benzo[A]Pyrene - BSD	EPA-8270 SIM	90.9	5		20	150	08/17/2018	PAB
Indeno[1,2,3-Cd]Pyrene - BS	EPA-8270 SIM	92.7			20	150	08/16/2018	PAB
Indeno[1,2,3-Cd]Pyrene - BSD	EPA-8270 SIM	86.6	7		20	150	08/17/2018	PAB
Dibenz[A,H]Anthracene - BS	EPA-8270 SIM	92.9			20	150	08/16/2018	PAB
Dibenz[A,H]Anthracene - BSD	EPA-8270 SIM	84.9	9		20	150	08/17/2018	PAB
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	88.8			20	150	08/16/2018	PAB
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	85.3	4		20	150	08/17/2018	PAB



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 8/27/2018
ALS SDG#: EV18080025
WDOE ACCREDITATION: C601

CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 131428 - Soil by EPA-8082

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
PCB-1016 - BS	EPA-8082	78.2			50	150	08/09/2018	PAB
PCB-1016 - BSD	EPA-8082	78.7	1		50	150	08/09/2018	PAB
PCB-1260 - BS	EPA-8082	87.9			50	150	08/09/2018	PAB
PCB-1260 - BSD	EPA-8082	89.0	1		50	150	08/09/2018	PAB

ALS Test Batch ID: R321921 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury - BS	EPA-7471	105			81.8	117	08/08/2018	RAL
Mercury - BSD	EPA-7471	105	0		81.8	117	08/08/2018	RAL

ALS Test Batch ID: R321924 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury - BS	EPA-7471	105			81.8	117	08/09/2018	RAL
Mercury - BSD	EPA-7471	107	2		81.8	117	08/09/2018	RAL

ALS Test Batch ID: R321925 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury - BS	EPA-7471	104			81.8	117	08/13/2018	RAL
Mercury - BSD	EPA-7471	104	0		81.8	117	08/13/2018	RAL

ALS Test Batch ID: R322340 - Soil by EPA-7471

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury - BS	EPA-7471	102			81.8	117	08/23/2018	RAL
Mercury - BSD	EPA-7471	103	1		81.8	117	08/23/2018	RAL

ALS Test Batch ID: R321927 - TCLP Extract by EPA-7470

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury - BS	EPA-7470	108			85	115	08/13/2018	RAL
Mercury - BSD	EPA-7470	109	1		85	115	08/13/2018	RAL

ALS Test Batch ID: 131537 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-6020	99.1			80	120	08/09/2018	RAL



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 8/27/2018
ALS SDG#: EV18080025
WDOE ACCREDITATION: C601

CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BSD	EPA-6020	96.3	3		80	120	08/09/2018	RAL
Cadmium - BS	EPA-6020	102			80	120	08/09/2018	RAL
Cadmium - BSD	EPA-6020	100	2		80	120	08/09/2018	RAL
Chromium - BS	EPA-6020	99.8			80	120	08/09/2018	RAL
Chromium - BSD	EPA-6020	96.5	3		80	120	08/09/2018	RAL
Copper - BS	EPA-6020	102			80	120	08/09/2018	RAL
Copper - BSD	EPA-6020	99.9	2		80	120	08/09/2018	RAL
Lead - BS	EPA-6020	101			80	120	08/09/2018	RAL
Lead - BSD	EPA-6020	100	0		80	120	08/09/2018	RAL
Zinc - BS	EPA-6020	102			80	119	08/09/2018	RAL
Zinc - BSD	EPA-6020	98.4	3		80	119	08/09/2018	RAL

ALS Test Batch ID: 131538 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-6020	99.8			80	120	08/09/2018	RAL
Arsenic - BSD	EPA-6020	97.2	3		80	120	08/09/2018	RAL
Cadmium - BS	EPA-6020	105			80	120	08/09/2018	RAL
Cadmium - BSD	EPA-6020	102	3		80	120	08/09/2018	RAL
Chromium - BS	EPA-6020	99.0			80	120	08/09/2018	RAL
Chromium - BSD	EPA-6020	96.3	3		80	120	08/09/2018	RAL
Copper - BS	EPA-6020	104			80	120	08/09/2018	RAL
Copper - BSD	EPA-6020	101	3		80	120	08/09/2018	RAL
Lead - BS	EPA-6020	103			80	120	08/09/2018	RAL
Lead - BSD	EPA-6020	100	2		80	120	08/09/2018	RAL
Zinc - BS	EPA-6020	103			80	119	08/09/2018	RAL
Zinc - BSD	EPA-6020	98.1	5		80	119	08/09/2018	RAL

ALS Test Batch ID: 131556 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-6020	102			80	120	08/14/2018	RAL
Arsenic - BSD	EPA-6020	103	1		80	120	08/14/2018	RAL
Cadmium - BS	EPA-6020	105			80	120	08/14/2018	RAL
Cadmium - BSD	EPA-6020	105	1		80	120	08/14/2018	RAL
Chromium - BS	EPA-6020	103			80	120	08/14/2018	RAL
Chromium - BSD	EPA-6020	102	1		80	120	08/14/2018	RAL
Copper - BS	EPA-6020	107			80	120	08/14/2018	RAL
Copper - BSD	EPA-6020	107	0		80	120	08/14/2018	RAL
Lead - BS	EPA-6020	105			80	120	08/14/2018	RAL

CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
 228 E. Champion St., Suite 101
 Bellingham, WA 98225
CLIENT CONTACT: Thom Davis
CLIENT PROJECT: Jensen's Shipyard Assessment

DATE: 8/27/2018
ALS SDG#: EV18080025
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Lead - BSD	EPA-6020	104	1		80	120	08/14/2018	RAL
Zinc - BS	EPA-6020	104			80	119	08/14/2018	RAL
Zinc - BSD	EPA-6020	103	1		80	119	08/14/2018	RAL

ALS Test Batch ID: 131751 - Soil by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-6020	101			80	120	08/22/2018	RAL
Arsenic - BSD	EPA-6020	100	1		80	120	08/22/2018	RAL
Cadmium - BS	EPA-6020	103			80	120	08/22/2018	RAL
Cadmium - BSD	EPA-6020	102	0		80	120	08/22/2018	RAL
Chromium - BS	EPA-6020	103			80	120	08/22/2018	RAL
Chromium - BSD	EPA-6020	103	0		80	120	08/22/2018	RAL
Copper - BS	EPA-6020	105			80	120	08/22/2018	RAL
Copper - BSD	EPA-6020	106	1		80	120	08/22/2018	RAL
Lead - BS	EPA-6020	104			80	120	08/22/2018	RAL
Lead - BSD	EPA-6020	102	2		80	120	08/22/2018	RAL
Zinc - BS	EPA-6020	101			80	119	08/22/2018	RAL
Zinc - BSD	EPA-6020	101	0		80	119	08/22/2018	RAL

ALS Test Batch ID: R321929 - TCLP Extract by EPA-6020

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic - BS	EPA-6020	96.0			89.1	110	08/10/2018	RAL
Arsenic - BSD	EPA-6020	99.0	3		89.1	110	08/10/2018	RAL
Barium - BS	EPA-6020	99.0			88.5	108	08/10/2018	RAL
Barium - BSD	EPA-6020	100	1		88.5	108	08/10/2018	RAL
Cadmium - BS	EPA-6020	97.0			89.4	109	08/10/2018	RAL
Cadmium - BSD	EPA-6020	101	4		89.4	109	08/10/2018	RAL
Chromium - BS	EPA-6020	95.0			86.2	107	08/10/2018	RAL
Chromium - BSD	EPA-6020	98.0	3		86.2	107	08/10/2018	RAL
Lead - BS	EPA-6020	100			87.5	107	08/10/2018	RAL
Lead - BSD	EPA-6020	101	1		87.5	107	08/10/2018	RAL
Selenium - BS	EPA-6020	97.0			90.2	113	08/10/2018	RAL
Selenium - BSD	EPA-6020	100	3		90.2	113	08/10/2018	RAL
Silver - BS	EPA-6020	97.0			80	120	08/10/2018	RAL
Silver - BSD	EPA-6020	101	4		80	120	08/10/2018	RAL

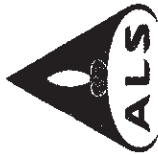
CERTIFICATE OF ANALYSIS

APPROVED BY



Laboratory Director

DRAFT



ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
<http://www.alsglobal.com>

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

EV1808025

Date 8/2/18 Page 1 Of 8

PROJECT ID: Jensen's Shipyard Assessment				ANALYSIS REQUESTED														OTHER (Specify)	RECEIVED IN GOOD CONDITION?							
REPORT TO COMPANY: Whatcom Euv. Svcs																										
PROJECT MANAGER: Thom - Erre																										
ADDRESS: 228 E. Champion #101																										
ADDRESS: 13ham' WA 98225																										
PHONE: _____																										
E-MAIL: _____																										
INVOICE TO COMPANY: _____																										
ATTENTION: _____																										
ADDRESS: _____																										
SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ silica gel c.c.	NWTPH-GX	BTEX by EPA 8021 ☐	MTBE by EPA 8021 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐	Pesticides by EPA 8081 ☐	Metals-MTCA-5 RCRA-9 ☐	TAL ☐	Metals Other (Specify) <u>Copper and Zinc</u>	TCLP-Metals ☐	VOA ☐	Semi-Vol ☐	Pest ☐	Herbs ☐	
1. BLWA-3 2-6in	7/30/18	915	Soil	1	X									X	X			X	X	X	X	X	X	X	X	X
2. BLWA-3 2ft		920		2	X									X	X			X	X	X	X	X	X	X	X	X
3. BLWA-3 5ft		925		3											X											
4. BLWA-4 2-6in		950		4	X									X	X			X	X	X	X	X	X	X	X	X
5. BLWA-4 5ft		955		5	X									X	X			X	X	X	X	X	X	X	X	X
6. BLWA-5 2-6in		1000		6	X									X	X			X	X	X	X	X	X	X	X	X
7. BLWA-5 2ft		1015		7	X									X	X			X	X	X	X	X	X	X	X	X
8. BLWA-5 5ft		1020		8											X											
9. BLWA-6 2-6in		1055		9	X										X			X	X	X	X	X	X	X	X	X
10. BLWA-6 2ft		1102		10	X										X			X	X	X	X	X	X	X	X	X

SPECIAL INSTRUCTIONS: * Hold for follow-up Analysis - preserve As needed. * Added 8/15/18 Studied TAT

SIGNATURES (Name, Company, Date, Time):

- Relinquished By: [Signature] WES on 8/2/18 @ 11:55
- Received By: [Signature] MS 8/3/18 2:30
- Relinquished By: _____
- Received By: _____

TURNAROUND REQUESTED IN BUSINESS DAYS*

OTHER:

Specify:

Organic, Metals & Inorganic Analysis	10	5	3	2	1	SAME DAY
Fuels & Hydrocarbon Analysis	5	3	1	1	1	SAME DAY

*Turnaround request less than standard may incur Rush Charges



ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
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Chain Of Custody/ Laboratory Analysis Request

ALS Job#

CV18080025

Date

8/2/18

Page

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Of

8

PROJECT ID: Jensen's Shipyard Assessment				ANALYSIS REQUESTED																											
REPORT TO COMPANY: Thom - Eric				OTHER (Specify)																											
PROJECT MANAGER: Whatcom Env.																															
ADDRESS: 228 E. Champion																															
B'ham, WA																															
PHONE: P.O. #:																															
E-MAIL:																															
INVOICE TO COMPANY:																															
ATTENTION:																															
ADDRESS:																															
SAMPLE I.D.				DATE	TIME	TYPE	LAB#																								
1. BLWA-6 5ft				7/30/18	1110	soil	11	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021	MTBE by EPA 8021	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 (soil)	EDB / EDC by EPA 8260 SIM (water)	Semivolatile Organic Compounds by EPA 8270	Polyyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082	Pesticides by EPA 8081	Metals-MTCA-5	Metals Other (Specify)	TCLP-Metals	VOA	Semi-Vol	Pest	Herbs	RECEIVED IN GOOD CONDITION?			
2. BLWA-6 10ft				1120			12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3. BLWA-7 2-6in				1035			13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4. BLWA-7 2ft				1040			14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5. BLWA-7 5ft				1045			15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6. BLWA-8 2-6in				1215			16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7. BLWA-8 2ft				1220			17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8. BLWA-8 5ft				1225			18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9. BLWA-9 2-6in				1150			19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10. BLWA-9 2ft				1155			20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

SPECIAL INSTRUCTIONS: * Hold for follow-up Analysis - preserve As needed. added 8/15/18 per Eric

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: [Signature] WES on 8/2/18 @ 1155

Received By: [Signature] ALS 8/3/18 230

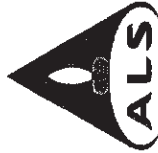
2. Relinquished By: _____

Received By: _____

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis: 10 5 3 2 1
Fuels & Hydrocarbon Analysis: 5 3 1

Specify: _____

OTHER: _____



ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
<http://www.alsglobal.com>

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

EV18060025

Date

8/2/18

Page

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Of

8

PROJECT ID: Jensen's Shipyard
REPORT TO COMPANY: W. E. S.
PROJECT MANAGER: Thorne - Eric
ADDRESS: 228 E Champion #101
B. ham WA 98225
PHONE: P.O. #:
E-MAIL:
INVOICE TO COMPANY:
ATTENTION:
ADDRESS:

Same

ANALYSIS REQUESTED				OTHER (Specify)			
SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NTPH-HCID	NTPH-DX	NTPH-GX
1. BLWA-9 5ft	7-30-18	1200	Soil	21			
2. AST-1 2ft		935		22			
3. Storm Sed.-1		3pm		23			
4. MW-1 2-6 in		110p		24			
5. MW-1 12ft		1750		25			
6. MW-1 15ft		115p		26			
7. MW-2 26 in		155p		27			
8. MW-2 7ft		2pm		28			
9. WES-Dup.-1		910		29			
10.							

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OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
TCLEP: MICA-5, Copper, Zinc	1	
CPAHs	4	
Naphthalenes 8270	1	
	1	
	4	
	3	
	1	
	2	

Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082	Metals-MITCA-5	Metals Other (Specify)	TCLEP-Metals	OTHER (Specify)
☒	☐	☒	Copper & Zinc	☒	
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ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
<http://www.alsglobal.com>

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

CVI8060025

Date 8/2/18 Page 5 Of 8

PROJECT ID: Jensen's Shipyard Assessment
REPORT TO COMPANY: W.E.S.
PROJECT MANAGER: Thom - Fritz
ADDRESS: 228 E. Champion #101
Spokane, WA 99225
PHONE: _____ P.O. #: _____
E-MAIL: _____
INVOICE TO COMPANY: _____
ATTENTION: _____
ADDRESS: _____

Same

PROJECT ID: Jensen's Shipyard Assessment					ANALYSIS REQUESTED										OTHER (Specify)									
REPORT TO COMPANY: W.E.S.					PROJECT MANAGER: Thom - Fritz										TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐									
ADDRESS: 228 E. Champion #101					ADDRESS: 228 E. Champion #101										Metals Other (Specify) Copper & Zinc									
PHONE: 98225					ADDRESS: 228 E. Champion #101										Metals-MTCA-5 ☒ RCRA-8 ☐ PII Pol ☐ TAL ☐									
E-MAIL:					ADDRESS: 228 E. Champion #101										PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐									
INVOICE TO COMPANY:					ADDRESS: 228 E. Champion #101										Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM									
ATTENTION:					ADDRESS: 228 E. Champion #101										Semivolatile Organic Compounds by EPA 8270									
ADDRESS:					ADDRESS: 228 E. Champion #101										EDB / EDC by EPA 8260 (soil)									
ADDRESS:					ADDRESS: 228 E. Champion #101										EDB / EDC by EPA 8260 SIM (water)									
ADDRESS:					ADDRESS: 228 E. Champion #101										Volatile Organic Compounds by EPA 8260									
ADDRESS:					ADDRESS: 228 E. Champion #101										Halogenated Volatiles by EPA 8260									
ADDRESS:					ADDRESS: 228 E. Champion #101										MTBE by EPA 8021 ☐ MTBE by EPA 8260 ☐									
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ADDRESS:					ADDRESS: 228 E. Champion #101										NWTPH-DX Silica Gel									
ADDRESS:					ADDRESS: 228 E. Champion #101										NWTPH-HCID									
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ADDRESS:					ADDRESS: 228 E. Champion #101										NWTPH-HCID									
ADDRESS:					ADDRESS: 228 E. Champion #101										NWTPH-HCID									
ADDRESS:					ADDRESS: 228 E. Champion #1																			

SPECIAL INSTRUCTIONS *Hold for follow-up analysis - preserve as needed

SIGNATURES (Name, Company, Date, Time):

- Relinquished By: [Signature] WES on 8/2/18 @ 11:56
- Received By: [Signature] 8/3/18 2:30
- Relinquished By: _____
- Received By: _____

TURNAROUND REQUESTED IN BUSINESS DAYS*
Organic, Metals & Inorganic Analysis

Specify: 1 2 3 5 10 15 30 60 90 180 360 720 1440 2880 5760 11520 23040 46080 92160 184320 368640 737280 1474560 2949120 5898240 11796480 23592960 47185920 94371840 188743680 377487360 754974720 1509949440 3019898880 6039797760 12079595520 24159191040 48318382080 96636764160 193273528320 386547056640 773094113280 1546188226560 3092376453120 6184752906240 12369505812480 24739011624960 49478023249920 98956046499840 197912092999680 395824185999360 791648371998720 1583296743997440 3166593487994880 6333186975989760 12666373951979520 25332747903959040 50665495807918080 101330991615836160 202661983231672320 405323966463344640 810647932926689280 1621295865853378560 3242591731706757120 6485183463413514240 12970366926827028480 25940733853654056960 51881467707308113920 103762935414616227840 207525870829232455680 415051741658464911360 830103483316929822720 1660206966633859645440 3320413933267719290880 6640827866535438581760 13281655733070877163520 26563311466141754327040 53126622932283508654080 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5387679635684841825826063813663079164291558277120 10775359271369683651652127627326158285823116554240 21550718542739367303304255254652316571646233108480 43101437085478734606608510509304633143292466216960 86202874170957469213217021018609266286584932433920 172405748341914938426434042037218532573169864867840 344811496683829876852868084074437065146339729735680 689622993367659753705736168148874130292679459471360 1379245986735319507411472336297748260585358918942720 2758491973470639014822944672595496521170717837885440 5516983946941278029645889345190993042341435675770880 11033967893882556059291778690381986084682871351541760 22067935787765112118583557380763972169365742703083520 44135871575530224237167114761527944338731485406167040 88271743151060448474334229523055888677462970812334080 176543486302120896948668459046111777354925941624668160 353086972604241793897336918092223554709851883249336320 706173945208483587794673836184447109419703766498672640 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ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
<http://www.alsglobal.com>

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

CV18080025

Date 8/2/18 Page 6 Of 8

PROJECT ID: Jensen's Shipyard Ass.
REPORT TO COMPANY: WES
PROJECT MANAGER: Thom - Eric
ADDRESS: 228 E. Champion #101
B'ham, WA 98225
PHONE: _____ FAX: _____
P.O. #: _____ E-MAIL: _____
INVOICE TO COMPANY: Same
ATTENTION: _____
ADDRESS: _____

PROJECT ID: Jensen's Shipyard Ass.					ANALYSIS REQUESTED										OTHER (Specify)									
REPORT TO COMPANY: WES																								
PROJECT MANAGER: Thom - Eric																								
ADDRESS: 228 E. Champion #101 B'ham, WA 98225																								
PHONE:					FAX:																			
P.O. #:					E-MAIL:																			
INVOICE TO COMPANY:																								
ATTENTION:																								
ADDRESS:																								
SAMPLE I.D.					DATE		TIME		TYPE		LAB#													
1. SYC-4 5ft					7/31/18		130		Soil		50													
2. MW-4 2-6in					830						51													
3. MW-4 11ft					850						52													
4. MW-5 2-6in					430						53													
5. MW-5 10ft					525						54													
6. MW-6 2-6in					155						55													
7. MW-6 40ft					315						56													
8.																								
9.																								
10.																								
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Silica Gel

CPHs - 12
Naphthalenes - 8270
Dioxins

NUMBER OF CONTAINERS
RECEIVED IN GOOD CONDITION?

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

- Relinquished By: [Signature] WES on 8-2-18 @ 11:56
- Received By: [Signature] 8/2/18 2:30
- Relinquished By: _____
- Received By: _____

TURNAROUND REQUESTED IN Business Days*
Organic, Metals & Inorganic Analysis

Specify: _____

1	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10

Fuels & Hydrocarbon Analysis

Received By: _____

*Turnaround request less than standard may incur Rush Charges



ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

CV18060025

Date 8/2/18 Page 7 of 8

PROJECT ID: Jensen's Shipyard Assessment
REPORT TO: WES
COMPANY: Thom - Eric
PROJECT MANAGER: B'ham, WA 98225
ADDRESS: 228 E. Champion #101
PHONE: FAX:
P.O. #: E-MAIL:
INVOICE TO COMPANY: Same
ATTENTION:
ADDRESS:

PROJECT ID: Jensen's Shipyard Assessment				ANALYSIS REQUESTED										OTHER (Specify)									
REPORT TO COMPANY: WES				Halogenated Volatiles by EPA 8260										GPAHs									
PROJECT MANAGER: Thom - Eric				Volatile Organic Compounds by EPA 8260										Metals Other (Specify) Copper & Zinc									
ADDRESS: 28 E. Champion #101				EDB / EDC by EPA 8260 (water)										Pesticides by EPA 8081									
B'ham, AL 35225				EDB / EDC by EPA 8260 (soil)										PCB by EPA 8082									
PHONE:				Semi-volatile Organic Compounds by EPA 8270										Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM									
FAX:				MTBE by EPA 8021										Metals-MTCA-5									
E-MAIL:				BTEX by EPA 8021										RCRA-8									
INVOICE TO COMPANY:				NWTPH-HCID										TAL									
ATTENTION:				NWTPH-DX										P4 Pol									
ADDRESS:				NWTPH-GX										P4 Pol									
				Silica Gel										P4 Pol									
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SPECIAL INSTRUCTIONS # Add for follow-up Analysis - preserve as needed

SIGNATURES (Name, Company, Date, Time):

- Relinquished By: [Signature] WES on 8/2/18 @ 1157
Received By: [Signature] ALS 8/3/18 2:30
- Relinquished By: [Signature]
Received By: [Signature]

TURNAROUND REQUESTED IN Business Days*
Organic, Metals & Inorganic Analysis
Specify: 1 2 3 4 5 6 7 8 9 10 11 12
Fuels & Hydrocarbon Analysis
Specify: 1 2 3 4 5 6 7 8 9 10 11 12

*Turnaround request less than standard may incur Rush Charges



ALS Job# (Laboratory Use Only)

(Laboratory Use Only)

EV18080025

<http://www.alsglobal.com>

Date 8/2/18 Page 8 Of

ANALYSIS REQUESTED	OTHER (Specify)
NWTPH-HCID	
NWTPH-DX	Silica Gel
NWTPH-GX	
BTEX by EPA 8021 ☐	BTEX by EPA 8260 ☐
MTBE by EPA 8021 ☐	MTBE by EPA 8260 ☐
Haloogenated Volatiles by EPA 8260	
Volatile Organic Compounds by EPA 8260	
EDB / EDC by EPA 8260 SIM (water)	
EDB / EDC by EPA 8260 (soil)	
Semivolatile Organic Compounds by EPA 8270	
Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	
PCB by EPA 8082 ☐	Pesticides by EPA 8081 ☐
Metals-MTCA-9 ☒ RCRA-9 ☐ Pt Pol ☐ TAL ☐	Metals Other (Specify) Copper & Zinc
TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	
NUMBER OF CONTAINERS	
RECEIVED IN GOOD CONDITION?	

SAMPLE I.D.	DATE	TIME	TYPE	LAB#
1. SRWA-7 5ft	8/1/18	1020	Soil	67
2. MW-3 2-6 in		1030		68
3. MW-3 4ft		1040		69
4. MW-3 5.5ft		1045		70
5. WES-Dup-2		830		71
6.				
7.				
8.				
9.				
10.				

* Hold for follow-up Analysis - preserve as needed

SIGNATURES (Name, Company, Date, Time):

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: [Signature] WES on 8/2/18 @ 11:57

Received By:

Mr. X Ban
AB
8/3/18
230

2. Relinquished By:

1

Received By:

TURNAROUND
Organic, Metals & Inorganic Analysis

Specific:

10	5	3	2	1	SAME DAY
----	---	---	---	---	----------

Fuels & Hydrocarbon Analysis

5	3	1	SAME DAY
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****Turnaround request less than standard may incur Rush Charges**



August 29, 2018

Service Request No:E1800729

Rick Bagan
ALS Environmental
8620 Holly Drive #100
Everett, WA 98208

Laboratory Results for: EV18080025 Dioxins Furans Analysis

Dear Rick,

Enclosed are the results of the sample(s) submitted to our laboratory August 07, 2018
For your reference, these analyses have been assigned our service request number **E1800729**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My number is 281-530-2284. You may also contact me via email at Nicole.Brown@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Nicole Brown
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099

PHONE +1 281 530 5656 | FAX +1 281 561 6125

ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: ALS Environmental - Everett.
Project: EV18080025
Sample Matrix: Soil

Service Request No.: E1800729
Date Received: 08/07/18

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Two soil samples were received for analysis at ALS Environmental in Houston on 08/07/18.

The samples were received at 0.9°C in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Re-extraction

Samples EV180080025-51 (E1800729-001) and EV180080025-68 (E1800729-002) were originally extracted on batch EQ1800321, but required re-extraction due to failed QC. The samples were re-extracted on batch EQ1800327. The valid results are reported from the second extraction. The results from the first extraction are not included in this report.

Precision and Accuracy:

EQ1800327: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS and DLCS recoveries are within control limits.

B flags – Method Blanks

The Method Blank EQ1800327-01 contained low levels of various target compounds above the EDL however below the Method Reporting Limit (MRL).

The associated compounds in the samples are not flagged with a 'B' flag as the sample results are greater than ten times the level detected in the method blank.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

E flags

When OCDD exceeds the upper method calibration limit (MCL), the laboratory uses an 'E' flag on the Sample Analytical Report results page when the detector is not saturated. OCDD in samples EV180080025-51 (E1800729-001) and EV180080025-68 (E1800729-002) are reported with an 'E' flag to denote that they had concentration greater than the highest calibration point. The process of dilution is counter to the isotopic dilution technique that the laboratory uses to determine recovery and produces variability in the final value. The laboratory only dilutes when detector saturation occurs.

P flag

Chlorodiphenyl ether interference was present at the retention time of the target analyte 1,2,3,6,7,8-HxCDF. The reported result should be considered an estimate.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlaysis

Service Request:E1800729

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E1800729-001	EV18080025-51 MW-4 2-6 in	7/31/2018	0830
E1800729-002	EV18080025-68 MW-3 2-6 in	8/1/2018	1030

DRAFT

Service Request Summary

Folder #: E1800729
Client Name: ALS Environmental - Everett
Project Name: EV18080025 Dioxins Furans Analysis
Project Number:

Report To: Rick Bagan
ALS Environmental
8620 Holly Drive #100
Everett, WA 98208
USA

Phone Number: 425-356-2600

Cell Number:

Fax Number:

E-mail: rick.bagan@alsglobal.com

Project Chemist: Nicole Brown
Originating Lab: HOUSTON
Logged By: NBROWN
Date Received: 08/07/18
Internal Due Date: 8/17/2018
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N, Y
Report to MDL?: Y
P.O. Number: EV18080025
EDD: No EDD Specified

2 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 2E

Pressure Gas:

Rush

				HOUSTON	
Lab Samp No.	Client Samp No	Matrix	Collected	Dioxins Furans/1613B	Total Solids/ALS SOP
E1800729-001	EV18080025-51	Soil	07/31/18 0830	II	II
E1800729-002	EV18080025-68	Soil	08/01/18 1030	II	II

Service Request Summary

Folder #: E1800729
Client Name: ALS Environmental - Everett
Project Name: EV18080025 Dioxins Furans Anlalysis
Project Number:

Report To: Rick Bagan
ALS Environmental
8620 Holly Drive #100
Everett, WA 98208
USA

Phone Number: 425-356-2600

Cell Number:

Fax Number:

E-mail: rick.bagan@alsglobal.com

Project Chemist: Nicole Brown
Originating Lab: HOUSTON
Logged By: NBROWN
Date Received: 08/07/18
Internal Due Date: 8/17/2018
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N, Y
Report to MDL?: Y
P.O. Number: EV18080025
EDD: No EDD Specified

2 4 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved

Location: EHRMS-WIC 2E

Pressure Gas:

Rush

Test Comments:

Group	Test/Method	Samples	Comments
Semivola GCMS	Dioxins Furans/1613B	4	
Semivola GCMS	Total Solids/ALS SOP	2	

Data Qualifiers

HRMS Qualifier Set

- B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
- E Estimated value. The reported concentration is above the calibration range of the instrument.
- H Sample extracted and/or analyzed out of suggested holding time.
- J Estimated value. The reported concentration is below the MRL.
- K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits. The concentration of this analyte should be considered as an estimate.
- P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
- Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
- S Signal saturated detector. Result reported from dilution.
- U Compound was analyzed for, but was not detected (ND).
- X See Case Narrative.
- Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-noise ratios are greater than 10:1, making the recoveries acceptable.
 - i The MDL/MRL have been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCetration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01	11/30/2019
Arizona Department of Health Services	AZ0793	5/27/2019
Arkansas Department of Environmental Quality	17-027-0	3/27/2019
California Department of Health Services	2452	4/30/2019
Florida Department of Health	E87611	7/31/2019
Illinois Environmental Protection Agency	004112	5/29/2019
Kansas Department of Health and Environment	E-10406	7/31/2019
Louisiana Department of Environmental Quality	03048	6/30/2019
Louisiana Department of Health and Hospitals	LA150026	12/31/2018
Maine Center for Disease Control and Prevention	2014019	6/5/2020
Minnesota Department of Health	840911	12/31/2018
New Jersey Department of Environmental Protection	NLC140001	6/30/2019
New York Department of Health	11707	4/1/2019
Oklahoma Department of Environmental Quality	2014 124	8/31/2019
Pennsylvania Department of Environmental Protection	68-03441	6/30/2019
Tennessee Department of Environment and Conservation	04016	6/30/2019
Texas Commission on Environmental Quality	TX104704231-17-18	4/30/2019
Utah Department of Health Environmental Laboratory Certification	TX02694	7/3/2019
Washington Department of Health	c819	11/14/2018
West Virginia Department of Environmental Protection	347	6/30/2019

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID

E1800729

DB-5MSUI

SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:

08/28/18

Analyst:

Jc

Samples:

001RE, 002RE

Second Level - Data Review – to be filled by person doing peer review

Date:

08/29/18

Analyst:

LKL

Samples:

001RE, 002RE

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
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 8620 Holly Drive, Suite 100
 Everett, WA 98208
 Phone (425) 356-2600
 Fax (425) 356-2626
 http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

E1800729

ALS Environmental
Dioxin

5



Date 8/6/18 Page 1 Of 1

PROJECT ID: <u>EV18080025</u>					ANALYSIS REQUESTED															OTHER (Specify)				
REPORT TO COMPANY: <u>ALS Environmental</u>					☐ NWTPH-HCID ☐ NWTPH-DX ☐ NWTPH-GX ☐ BTEX by EPA 8021 ☐ BTEX by EPA 8260 ☐ MTBE by EPA 8021 ☐ MTBE by EPA 8260 ☐ Halogenated Volatiles by EPA 8260 ☐ Volatile Organic Compounds by EPA 8260 ☐ EDB / EDC by EPA 8260 SIM (water) ☐ EDB / EDC by EPA 8260 (soil) ☐ Semivolatile Organic Compounds by EPA 8270 ☐ Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM ☐ PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐ Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐ Metals Other (Specify) ☐ TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐ Dioxin by EPA-1613																			
PROJECT MANAGER: <u>Rick Bagan</u>																								
ADDRESS: <u>8620 Holly Drive #100</u>																								
<u>Everett WA 98208</u>																								
PHONE: <u>(425) 356-2600</u> P.O. #: <u>32-EV18080025</u>																								
E-MAIL: <u>rick.bagan@alsglobal.com</u>																								
INVOICE TO COMPANY:																								
ATTENTION: <u>Same</u>																								
ADDRESS:																								
SAMPLE I.D.	DATE	TIME	TYPE	LAB#																				
1. <u>EV18080025-51</u>	<u>7/31/18</u>	<u>0830</u>	<u>S</u>																					
2. <u>EV18080025-68</u>	<u>8/1/18</u>	<u>1030</u>	<u>S</u>																					
3.																								
4.																								
5.																								
6.																								
7.																								
8.																								
9.																								
10.																								

SPECIAL INSTRUCTIONS Please email results by noon 8/17/18. Thank you.

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Shawn Robinson ALS 8/6/18 8:40 am
 Received By: _____
 2. Relinquished By: Mike Burt ALS Houston 8/7/18 0815
 Received By: _____

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis

10 5 3 2 1 SAME DAY
Standard

Fuels & Hydrocarbon Analysis

5 3 1 SAME DAY
Standard

OTHER:

Specify: Please return cooler and ice pack.

*Turnaround request less than standard may incur Rush Charges

Cooler Receipt Form

Project Chemist

UB

Client/Project

ALS EVERETT

Thermometer ID

SM 04

Date/Time Received:

8/7/18 0845

Initials:

UB

Date/Time Logged in:

8/7/18

Initials

UB

1. Method of delivery:

☐ US Mail

☒ Fed Ex

☐ UPS

☐ DHL

☐ Courier

☐ Client

2. Samples received in:

☒ Cooler

☐ Box

☐ Envelope

☐ Other

3. Were custody seals on coolers?

☐ Yes

☒ No

If yes, how many and where?

Were they intact?

☐ Yes

☐ No

☒ N/A

Were they signed and dated?

☐ Yes

☐ No

☒ N/A

4. Packing Material:

☐ Inserts

☐ Baggies

☐ Bubble Wrap

☐ Gel Packs

☐ Wet Ice

☐ Sleeves

☐ Other

5. Foreign or Regulated Soil?

☐ Yes

☒ No

Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
8085 2716 6157		8/7/18	1215	UB	0.5/0.9	☐
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)?

☒ Yes

☐ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)?

☒ Yes

☐ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)?

☒ Yes

☐ No

9. Were appropriate bottles/containers and volumes received for the requested tests?

☒ Yes

☐ No

10. Did sample labels and tags agree with custody documents?

☒ Yes

☐ No

Notes, Discrepancies, & Resolutions:

Service request Label:

E1800729
5

ALS Environmental
Dioxin




SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report.

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 320081
Team: Semivoa GCMS/ALOPEZ

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 8/21/18 09:02 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1800396-002	P4 SOLID MDL #2	.02	1613B/Dioxins Furans			Soil	10.000g	Sodium Sulfate
2	E1800720-001RE	Sludge - Full Test	.01	1613B/Dioxins Furans			Sludge, Solid	10.256g	Brown Mud
3	E1800724-001RE	18194B01BA	.01	1613B/Dioxins Furans			Misc. Solid	5.260g	White Powder
4	E1800729-001RE	EV18080025-51	.01	1613B/Dioxins Furans			Soil	10.273g	Brown Dirt + Rocks
5	E1800729-002RE	EV18080025-68	.01	1613B/Dioxins Furans			Soil	10.299g	Brown Dirt + Rocks
6	E1800745-001RE	EV18070141-01	.01	1613B/Dioxins Furans			Soil	10.403g	Black Dirt + Rocks
7	E1800745-002RE	EV18070141-02	.01	1613B/Dioxins Furans			Soil	10.408g	Grey Sand + Rocks
8	E1800745-003RE	EV18070141-03	.01	1613B/Dioxins Furans			Soil	10.249g	Black Dirt + Rocks
9	E1800745-004RE	EV18070141-04	.01	1613B/Dioxins Furans			Soil	10.378g	Black Dirt + Rocks
10	E1800745-005RE	EV18070141-05	.01	1613B/Dioxins Furans			Soil	10.440g	Black Dirt + Rocks
11	EQ1800327-04	MB		1613B/Dioxins Furans			Solid	10.000g	
12	EQ1800327-05	LCS		1613B/Dioxins Furans			Solid	10.000g	
13	EQ1800327-06	DLCS		1613B/Dioxins Furans			Solid	10.000g	
14	J1805461-001RE	Fluff	.01	1613B/Dioxins Furans			Misc. Solid	10.092g	White Paper
15	J1805480-001RE	Lighthouse and Lighthouse X Untreated F	.02	1613B/Dioxins Furans			Misc. Solid	10.865g	White Paper

Spiking Solutions

Name:	8290/1613B Cleanup Working Standard	Inventory ID	191999	Logbook Ref:	tw 07/27/18 8ng/ml	Expires On:	10/27/2018
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EQ1800327-04 100.00µL

Name:	1613B Labeled Working Standard	Inventory ID	192316	Logbook Ref:	192316 AL 8/8/18 2-4 ng/mL	Expires On:	01/09/2019
-------	--------------------------------	--------------	--------	--------------	----------------------------	-------------	------------

EQ1800327-04 1,000.00µL

Name:	1613B Matrix Working Standard	Inventory ID	192373	Logbook Ref:	192373 AL 8/9/18 2-20 ng/mL	Expires On:	02/05/2019
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EQ1800327-05 100.00µL EQ1800327-06 100.00µL

Name:	1613B Labeled Working Standard	Inventory ID	192473	Logbook Ref:	192471 2-4NGML JG 8/15/18	Expires On:	01/09/2019
-------	--------------------------------	--------------	--------	--------------	---------------------------	-------------	------------

EQ1800327-05 1,000.00µL EQ1800327-06 1,000.00µL

Name:	8290/1613B Cleanup Working Standard	Inventory ID	192605	Logbook Ref:	TW 08/20/18 192605 8NG/ML	Expires On:	10/27/2018
-------	-------------------------------------	--------------	--------	--------------	---------------------------	-------------	------------

E1800720-001 100.00µL E1800724-001 100.00µL E1800729-001 100.00µL E1800729-002 100.00µL E1800745-001 100.00µL E1800745-002 100.00µL
E1800745-003 100.00µL E1800745-004 100.00µL E1800745-005 100.00µL EQ1800327-05 100.00µL EQ1800327-06 100.00µL J1805461-001 100.00µL
J1805480-001 100.00µL
E1800729

Preparation Information Benchsheet

Prep Run#: 320081
Team: Semivoa GCMS/ALOPEZ

Prep WorkFlow: OrgExtS(365)
Prep Method: Method Soxhlet

Status: Prepped
Prep Date/Time: 8/21/18 09:02 AM

Name:	1613B Labeled Working Standard			Inventory ID	192640	Logbook Ref:	192640 AL 8/21/18 2-4 ng/mL			Expires On:	01/09/2019
E1800720-001	1,000.00µL	E1800724-001	1,000.00µL	E1800729-001	1,000.00µL	E1800729-002	1,000.00µL	E1800745-001	1,000.00µL	E1800745-002	1,000.00µL
E1800745-003	1,000.00µL	E1800745-004	1,000.00µL	E1800745-005	1,000.00µL	J1805461-001	1,000.00µL	J1805480-001	1,000.00µL		

Preparation Materials

Carbon, High Purity	AL 8/10/18 (192392)	Ethyl Acetate 99.9% Minimum EtOAc	tw ethyl acet 080218 (192158)	Glass Wool	GLASS WOOL (190875)
Hexanes 95%	AL 7/30/18 (192056)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	AL 6/28/18 (191236)	Sodium Hydroxide 1N NaOH	TW 6/14/18 (191093)
Sodium Sulfate Anhydrous Reagent Grade Na2SO4	AL 7/30/18 (192040)	Tridecane (n-Tridecane)	AL 7/30/18 (192037)	Silica Gel	AL 7/30/18 (192039)
sulfuric acid	SULFURIC ACID (190871)	Toluene 99.9% Minimum	AL 8/20/18 (192601)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	8/21/18 09:02	Started:	8/22/18 07:00	Started:	8/22/18 08:00	Started:	8/23/18 07:00
Finished:	8/22/18 07:00	Finished:	8/22/18 08:00	Finished:	8/22/18 11:00	Finished:	8/23/18 10:00
By:	ALOPEZ	By:	ALOPEZ	By:	ALOPEZ	By:	ALOPEZ
Comments		Comments		Comments		Comments	

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By:	_____	Date:	_____	<u>Extracts Examined</u>
Received By:	_____	Date:	_____	Yes No

E1800729

Page 18 of 40

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlaysis
Sample Matrix: Soil
Sample Name: EV18080025-51
Lab Code: E1800729-001

Service Request: E1800729
Date Collected: 07/31/18 08:30
Date Received: 08/07/18 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.273g
Data File Name: P517209
ICAL Date: 01/24/18

Date Analyzed: 08/25/18 15:15
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	1.24		0.368	0.496	0.82	1.001	1
1,2,3,7,8-PeCDD	3.93K		0.0851	2.48	1.19	1.001	1
1,2,3,4,7,8-HxCDD	5.74		0.108	2.48	1.31	1.000	1
1,2,3,6,7,8-HxCDD	22.4		0.118	2.48	1.27	1.000	1
1,2,3,7,8,9-HxCDD	12.8		0.110	2.48	1.27	1.007	1
1,2,3,4,6,7,8-HpCDD	568		0.698	2.48	1.04	1.000	1
OCDD	5590E		0.139	4.96	0.89	1.000	1
2,3,7,8-TCDF	2.19		0.173	0.496	0.78	1.001	1
1,2,3,7,8-PeCDF	1.67J		0.168	2.48	1.36	1.001	1
2,3,4,7,8-PeCDF	4.79		0.173	2.48	1.51	1.001	1
1,2,3,4,7,8-HxCDF	5.85		0.351	2.48	1.30	1.000	1
1,2,3,6,7,8-HxCDF	4.49		0.338	2.48	1.08	1.000	1
1,2,3,7,8,9-HxCDF	1.73J		0.340	2.48	1.13	1.001	1
2,3,4,6,7,8-HxCDF	7.13		0.361	2.48	1.18	1.000	1
1,2,3,4,6,7,8-HpCDF	124		0.310	2.48	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	6.80		0.374	2.48	1.03	1.000	1
OCDF	469		0.221	4.96	0.87	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlaysis
Sample Matrix: Soil
Sample Name: EV18080025-51
Lab Code: E1800729-001

Service Request: E1800729
Date Collected: 07/31/18 08:30
Date Received: 08/07/18 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.273g
Data File Name: P517209
ICAL Date: 01/24/18

Date Analyzed: 08/25/18 15:15
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	16.0		0.368	0.496	0.76		1
Total Penta-Dioxins	37.4		0.0851	2.48	1.60		1
Total Hexa-Dioxins	184		0.112	2.48	1.26		1
Total Hepta-Dioxins	1290		0.698	2.48	1.03		1
Total Tetra-Furans	45.8		0.173	0.496	0.66		1
Total Penta-Furans	64.6		0.170	2.48	1.48		1
Total Hexa-Furans	151		0.347	2.48	1.12		1
Total Hepta-Furans	450		0.339	2.48	1.02		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: 07/31/18 08:30
Date Received: 08/07/18 08:45

Sample Name: EV18080025-51
Lab Code: E1800729-001

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.273g

Date Analyzed: 08/25/18 15:15
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Data File Name: P517209
ICAL Date: 01/24/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	926.652	46		25-164	0.80	1.026
13C-1,2,3,7,8-PeCDD	2000	1410.296	71		25-181	1.58	1.228
13C-1,2,3,4,7,8-HxCDD	2000	1229.762	61		32-141	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1112.846	56		28-130	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1204.680	60		23-140	1.07	1.069
13C-OCDD	4000	1734.954	43		17-157	0.90	1.140
13C-2,3,7,8-TCDF	2000	1009.832	50		24-169	0.79	0.989
13C-1,2,3,7,8-PeCDF	2000	1271.457	64		24-185	1.55	1.177
13C-2,3,4,7,8-PeCDF	2000	1200.893	60		21-178	1.59	1.216
13C-1,2,3,4,7,8-HxCDF	2000	962.714	48		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	960.842	48		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1123.567	56		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1001.542	50		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	933.227	47		28-143	0.44	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1052.735	53		26-138	0.44	1.082
37Cl-2,3,7,8-TCDD	800	542.177	68		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: 07/31/18 08:30
Date Received: 08/07/18 08:45

Sample Name: EV18080025-51
Lab Code: E1800729-001

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	1.24	0.368	0.496	1	1	1.24
1,2,3,7,8-PeCDD	3.93	0.0851	2.48	1	1	3.93
1,2,3,4,7,8-HxCDD	5.74	0.108	2.48	1	0.1	0.574
1,2,3,6,7,8-HxCDD	22.4	0.118	2.48	1	0.1	2.24
1,2,3,7,8,9-HxCDD	12.8	0.110	2.48	1	0.1	1.28
1,2,3,4,6,7,8-HpCDD	568	0.698	2.48	1	0.01	5.68
OCDD	5590	0.139	4.96	1	0.0003	1.68
2,3,7,8-TCDF	2.19	0.173	0.496	1	0.1	0.219
1,2,3,7,8-PeCDF	1.67	0.168	2.48	1	0.03	0.0501
2,3,4,7,8-PeCDF	4.79	0.173	2.48	1	0.3	1.44
1,2,3,4,7,8-HxCDF	5.85	0.351	2.48	1	0.1	0.585
1,2,3,6,7,8-HxCDF	4.49	0.338	2.48	1	0.1	0.449
1,2,3,7,8,9-HxCDF	1.73	0.340	2.48	1	0.1	0.173
2,3,4,6,7,8-HxCDF	7.13	0.361	2.48	1	0.1	0.713
1,2,3,4,6,7,8-HpCDF	124	0.310	2.48	1	0.01	1.24
1,2,3,4,7,8,9-HpCDF	6.80	0.374	2.48	1	0.01	0.0680
OCDF	469	0.221	4.96	1	0.0003	0.141
Total TEQ						21.7

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Analysis
Sample Matrix: Soil
Sample Name: EV18080025-51
Lab Code: E1800729-001

Service Request: E1800729
Date Collected: 07/31/18 08:30
Date Received: 08/07/18 08:45
Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
 8.793g

Date Analyzed: 08/24/18 09:48
 NA
 E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	98.2		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlaysis
Sample Matrix: Soil
Sample Name: EV18080025-68
Lab Code: E1800729-002

Service Request: E1800729
Date Collected: 08/01/18 10:30
Date Received: 08/07/18 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.299g
Data File Name: P517210
ICAL Date: 01/24/18

Date Analyzed: 08/25/18 16:04
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	1.16K		0.233	0.501	0.58	1.001	1
1,2,3,7,8-PeCDD	12.6		0.0869	2.51	1.34	1.001	1
1,2,3,4,7,8-HxCDD	14.2		0.111	2.51	1.18	1.000	1
1,2,3,6,7,8-HxCDD	54.3		0.119	2.51	1.23	1.000	1
1,2,3,7,8,9-HxCDD	34.0		0.112	2.51	1.22	1.008	1
1,2,3,4,6,7,8-HpCDD	759		0.982	2.51	1.04	1.000	1
OCDD	6610E		0.239	5.01	0.90	1.000	1
2,3,7,8-TCDF	11.9		0.386	0.501	0.72	1.001	1
1,2,3,7,8-PeCDF	4.83		0.458	2.51	1.45	1.001	1
2,3,4,7,8-PeCDF	252		0.490	2.51	1.52	1.002	1
1,2,3,4,7,8-HxCDF	14.2		1.06	2.51	1.12	1.000	1
1,2,3,6,7,8-HxCDF	50.1P		0.992	2.51	1.18	1.000	1
1,2,3,7,8,9-HxCDF	8.79		0.998	2.51	1.25	1.001	1
2,3,4,6,7,8-HxCDF	104		1.04	2.51	1.15	1.000	1
1,2,3,4,6,7,8-HpCDF	303		0.231	2.51	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	14.0		0.269	2.51	1.00	1.000	1
OCDF	921		0.138	5.01	0.88	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlaysis
Sample Matrix: Soil
Sample Name: EV18080025-68
Lab Code: E1800729-002

Service Request: E1800729
Date Collected: 08/01/18 10:30
Date Received: 08/07/18 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.299g
Data File Name: P517210
ICAL Date: 01/24/18

Date Analyzed: 08/25/18 16:04
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	21.4		0.233	0.501	0.78		1
Total Penta-Dioxins	102		0.0869	2.51	1.55		1
Total Hexa-Dioxins	392		0.114	2.51	1.23		1
Total Hepta-Dioxins	1430		0.982	2.51	1.04		1
Total Tetra-Furans	1630		0.386	0.501	0.78		1
Total Penta-Furans	2830		0.474	2.51	1.48		1
Total Hexa-Furans	1470		1.02	2.51	1.19		1
Total Hepta-Furans	958		0.248	2.51	1.04		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlalysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: 08/01/18 10:30
Date Received: 08/07/18 08:45

Sample Name: EV18080025-68
Lab Code: E1800729-002

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.299g

Date Analyzed: 08/25/18 16:04
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Data File Name: P517210
ICAL Date: 01/24/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	934.643	47		25-164	0.79	1.027
13C-1,2,3,7,8-PeCDD	2000	1413.714	71		25-181	1.58	1.228
13C-1,2,3,4,7,8-HxCDD	2000	1149.238	57		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1108.325	55		28-130	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1113.574	56		23-140	1.06	1.069
13C-OCDD	4000	1448.227	36		17-157	0.90	1.140
13C-2,3,7,8-TCDF	2000	1019.657	51		24-169	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	1258.987	63		24-185	1.59	1.177
13C-2,3,4,7,8-PeCDF	2000	1210.982	61		21-178	1.56	1.216
13C-1,2,3,4,7,8-HxCDF	2000	936.459	47		26-152	0.52	0.969
13C-1,2,3,6,7,8-HxCDF	2000	944.550	47		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1078.775	54		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	960.333	48		28-136	0.52	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	863.479	43		28-143	0.44	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	961.940	48		26-138	0.44	1.081
37Cl-2,3,7,8-TCDD	800	528.799	66		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: 08/01/18 10:30
Date Received: 08/07/18 08:45

Sample Name: EV18080025-68
Lab Code: E1800729-002

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	1.16	0.233	0.501	1	1	1.16
1,2,3,7,8-PeCDD	12.6	0.0869	2.51	1	1	12.6
1,2,3,4,7,8-HxCDD	14.2	0.111	2.51	1	0.1	1.42
1,2,3,6,7,8-HxCDD	54.3	0.119	2.51	1	0.1	5.43
1,2,3,7,8,9-HxCDD	34.0	0.112	2.51	1	0.1	3.40
1,2,3,4,6,7,8-HpCDD	759	0.982	2.51	1	0.01	7.59
OCDD	6610	0.239	5.01	1	0.0003	1.98
2,3,7,8-TCDF	11.9	0.386	0.501	1	0.1	1.19
1,2,3,7,8-PeCDF	4.83	0.458	2.51	1	0.03	0.145
2,3,4,7,8-PeCDF	252	0.490	2.51	1	0.3	75.6
1,2,3,4,7,8-HxCDF	14.2	1.06	2.51	1	0.1	1.42
1,2,3,6,7,8-HxCDF	50.1	0.992	2.51	1	0.1	5.01
1,2,3,7,8,9-HxCDF	8.79	0.998	2.51	1	0.1	0.879
2,3,4,6,7,8-HxCDF	104	1.04	2.51	1	0.1	10.4
1,2,3,4,6,7,8-HpCDF	303	0.231	2.51	1	0.01	3.03
1,2,3,4,7,8,9-HpCDF	14.0	0.269	2.51	1	0.01	0.140
OCDF	921	0.138	5.01	1	0.0003	0.276
Total TEQ						132

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Analysis
Sample Matrix: Soil
Sample Name: EV18080025-68
Lab Code: E1800729-002

Service Request: E1800729
Date Collected: 08/01/18 10:30
Date Received: 08/07/18 08:45
Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
 8.188g

Date Analyzed: 08/24/18 09:48
 NA
 E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	96.9	-	-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlaysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ1800327-04

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.000g

Data File Name: P614222
ICAL Date: 03/29/18

Date Analyzed: 08/25/18 06:27
Date Extracted: 8/21/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P614219

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.101	0.500			1
1,2,3,7,8-PeCDD	ND	U	0.0369	2.50			1
1,2,3,4,7,8-HxCDD	ND	U	0.0174	2.50			1
1,2,3,6,7,8-HxCDD	0.0270JK		0.0195	2.50	1.53	1.001	1
1,2,3,7,8,9-HxCDD	0.0344J		0.0169	2.50	1.43	1.007	1
1,2,3,4,6,7,8-HpCDD	0.198JK		0.0162	2.50	1.29	1.000	1
OCDD	2.77J		0.0672	5.00	0.92	1.000	1
2,3,7,8-TCDF	ND	U	0.0365	0.500			1
1,2,3,7,8-PeCDF	ND	U	0.0263	2.50			1
2,3,4,7,8-PeCDF	ND	U	0.0277	2.50			1
1,2,3,4,7,8-HxCDF	ND	U	0.0147	2.50			1
1,2,3,6,7,8-HxCDF	0.0239J		0.0138	2.50	1.11	1.000	1
1,2,3,7,8,9-HxCDF	0.0283JK		0.0187	2.50	4.08	1.000	1
2,3,4,6,7,8-HxCDF	ND	U	0.0148	2.50			1
1,2,3,4,6,7,8-HpCDF	0.0610JK		0.0209	2.50	1.55	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.0286	2.50			1
OCDF	0.265JK		0.0851	5.00	1.03	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlaysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ1800327-04

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.000g

Date Analyzed: 08/25/18 06:27
Date Extracted: 8/21/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P614219

Data File Name: P614222
ICAL Date: 03/29/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.101	0.500			1
Total Penta-Dioxins	ND	U	0.0369	2.50			1
Total Hexa-Dioxins	ND	U	0.0178	2.50			1
Total Hepta-Dioxins	0.271J		0.0162	2.50	1.08		1
Total Tetra-Furans	ND	U	0.0365	0.500			1
Total Penta-Furans	ND	U	0.0270	2.50			1
Total Hexa-Furans	0.0239J		0.0153	2.50	1.11		1
Total Hepta-Furans	ND	U	0.0241	2.50			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ1800327-04

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.000g

Date Analyzed: 08/25/18 06:27
Date Extracted: 8/21/18
Instrument Name: E-HRMS-08
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P614219

Data File Name: P614222
ICAL Date: 03/29/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	826.254	41		25-164	0.78	1.027
13C-1,2,3,7,8-PeCDD	2000	952.279	48		25-181	1.56	1.230
13C-1,2,3,4,7,8-HxCDD	2000	1237.005	62		32-141	1.31	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1058.361	53		28-130	1.19	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1049.247	52		23-140	1.06	1.070
13C-OCDD	4000	1217.918	30		17-157	0.90	1.141
13C-2,3,7,8-TCDF	2000	1064.693	53		24-169	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	1110.442	56		24-185	1.59	1.179
13C-2,3,4,7,8-PeCDF	2000	987.537	49		21-178	1.58	1.218
13C-1,2,3,4,7,8-HxCDF	2000	1245.296	62		26-152	0.53	0.969
13C-1,2,3,6,7,8-HxCDF	2000	1165.947	58		26-123	0.53	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1128.713	56		29-147	0.53	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1180.089	59		28-136	0.53	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	974.864	49		28-143	0.46	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	956.649	48		26-138	0.45	1.082
37Cl-2,3,7,8-TCDD	800	488.525	61		35-197	NA	1.028

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800729
Date Analyzed: 08/25/18
Date Extracted: 08/21/18

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet

Units: ng/Kg
Basis: Dry
Analysis Lot: 604590

Lab Control Sample
EQ1800327-05

Duplicate Lab Control Sample
EQ1800327-06

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1,2,3,4,6,7,8-HpCDD	81.6	100	82	83.9	100	84	70-140	3	50
1,2,3,4,7,8-HxCDD	89.2	100	89	90.9	100	91	70-164	2	50
1,2,3,6,7,8-HxCDD	96.3	100	96	98.0	100	98	76-134	2	50
1,2,3,7,8,9-HxCDD	90.6	100	91	93.6	100	94	64-162	3	50
1,2,3,7,8-PeCDD	95.6	100	96	98.0	100	98	70-142	2	50
2,3,7,8-TCDD	23.6	20.0	118	24.5	20.0	123	67-158	4	50
OCDD	195	200	97	193	200	97	78-144	<1	50
1,2,3,4,6,7,8-HpCDF	94.9	100	95	95.1	100	95	82-122	<1	50
1,2,3,4,7,8,9-HpCDF	96.6	100	97	98.3	100	98	78-138	2	50
1,2,3,4,7,8-HxCDF	93.7	100	94	96.8	100	97	72-134	3	50
1,2,3,6,7,8-HxCDF	92.8	100	93	93.8	100	94	84-130	1	50
1,2,3,7,8,9-HxCDF	90.7	100	91	90.2	100	90	78-130	<1	50
1,2,3,7,8-PeCDF	88.6	100	89	89.8	100	90	80-134	1	50
2,3,4,6,7,8-HxCDF	92.5	100	93	95.9	100	96	70-156	4	50
2,3,4,7,8-PeCDF	95.5	100	96	99.6	100	100	68-160	4	50
2,3,7,8-TCDF	18.8	20.0	94	19.2	20.0	96	75-158	2	50
OCDF	201	200	101	187	200	94	63-170	7	50

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlaysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ1800327-05

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.000g

Date Analyzed: 08/25/18 17:41
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Data File Name: P517212
ICAL Date: 01/24/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	23.6		0.317	0.500	0.79	1.001	1
1,2,3,7,8-PeCDD	95.6		0.0627	2.50	1.59	1.001	1
1,2,3,4,7,8-HxCDD	89.2		0.0580	2.50	1.27	1.000	1
1,2,3,6,7,8-HxCDD	96.3		0.0636	2.50	1.28	1.000	1
1,2,3,7,8,9-HxCDD	90.6		0.0593	2.50	1.22	1.007	1
1,2,3,4,6,7,8-HpCDD	81.6		0.0822	2.50	1.08	1.000	1
OCDD	195		0.130	5.00	0.89	1.000	1
2,3,7,8-TCDF	18.8		0.170	0.500	0.75	1.001	1
1,2,3,7,8-PeCDF	88.6		0.0927	2.50	1.54	1.001	1
2,3,4,7,8-PeCDF	95.5		0.0988	2.50	1.47	1.001	1
1,2,3,4,7,8-HxCDF	93.7		0.0166	2.50	1.16	1.000	1
1,2,3,6,7,8-HxCDF	92.8		0.0168	2.50	1.18	1.000	1
1,2,3,7,8,9-HxCDF	90.7		0.0214	2.50	1.17	1.000	1
2,3,4,6,7,8-HxCDF	92.5		0.0181	2.50	1.21	1.000	1
1,2,3,4,6,7,8-HpCDF	94.9		0.218	2.50	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	96.6		0.266	2.50	1.04	1.000	1
OCDF	201		0.169	5.00	0.87	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlaysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ1800327-05

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.000g

Date Analyzed: 08/25/18 17:41
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Data File Name: P517212
ICAL Date: 01/24/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	23.6		0.317	0.500	0.79		1
Total Penta-Dioxins	95.6		0.0627	2.50	1.59		1
Total Hexa-Dioxins	276		0.0602	2.50	1.27		1
Total Hepta-Dioxins	82.3		0.0822	2.50	1.08		1
Total Tetra-Furans	18.8		0.170	0.500	0.75		1
Total Penta-Furans	187		0.0956	2.50	1.75		1
Total Hexa-Furans	370		0.0181	2.50	1.16		1
Total Hepta-Furans	192		0.241	2.50	1.01		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Analysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ1800327-05

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.000g

Date Analyzed: 08/25/18 17:41
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Data File Name: P517212
ICAL Date: 01/24/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	786.101	39		25-164	0.81	1.026
13C-1,2,3,7,8-PeCDD	2000	1265.902	63		25-181	1.58	1.228
13C-1,2,3,4,7,8-HxCDD	2000	1162.940	58		32-141	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1077.037	54		28-130	1.29	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1157.845	58		23-140	1.05	1.069
13C-OCDD	4000	1545.814	39		17-157	0.91	1.140
13C-2,3,7,8-TCDF	2000	886.517	44		24-169	0.80	0.989
13C-1,2,3,7,8-PeCDF	2000	1132.846	57		24-185	1.57	1.177
13C-2,3,4,7,8-PeCDF	2000	1090.918	55		21-178	1.59	1.215
13C-1,2,3,4,7,8-HxCDF	2000	914.485	46		26-152	0.52	0.968
13C-1,2,3,6,7,8-HxCDF	2000	942.029	47		26-123	0.52	0.972
13C-1,2,3,7,8,9-HxCDF	2000	928.602	46		29-147	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	925.545	46		28-136	0.53	0.986
13C-1,2,3,4,6,7,8-HpCDF	2000	865.456	43		28-143	0.44	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	993.950	50		26-138	0.43	1.082
37Cl-2,3,7,8-TCDD	800	454.907	57		35-197	NA	1.027

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlaysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ1800327-06

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.000g

Date Analyzed: 08/25/18 18:30
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Data File Name: P517213
ICAL Date: 01/24/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	24.5		0.252	0.500	0.78	1.001	1
1,2,3,7,8-PeCDD	98.0		0.0624	2.50	1.53	1.001	1
1,2,3,4,7,8-HxCDD	90.9		0.0501	2.50	1.22	1.000	1
1,2,3,6,7,8-HxCDD	98.0		0.0550	2.50	1.27	1.000	1
1,2,3,7,8,9-HxCDD	93.6		0.0513	2.50	1.31	1.008	1
1,2,3,4,6,7,8-HpCDD	83.9		0.0399	2.50	1.05	1.000	1
OCDD	193		0.0754	5.00	0.90	1.000	1
2,3,7,8-TCDF	19.2		0.133	0.500	0.71	1.001	1
1,2,3,7,8-PeCDF	89.8		0.0624	2.50	1.51	1.001	1
2,3,4,7,8-PeCDF	99.6		0.0652	2.50	1.51	1.001	1
1,2,3,4,7,8-HxCDF	96.8		0.0341	2.50	1.23	1.000	1
1,2,3,6,7,8-HxCDF	93.8		0.0322	2.50	1.13	1.000	1
1,2,3,7,8,9-HxCDF	90.2		0.0399	2.50	1.19	1.000	1
2,3,4,6,7,8-HxCDF	95.9		0.0339	2.50	1.18	1.000	1
1,2,3,4,6,7,8-HpCDF	95.1		0.240	2.50	1.02	1.000	1
1,2,3,4,7,8,9-HpCDF	98.3		0.275	2.50	0.98	1.000	1
OCDF	187		0.114	5.00	0.86	1.004	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlaysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ1800327-06

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.000g

Date Analyzed: 08/25/18 18:30
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Data File Name: P517213
ICAL Date: 01/24/18

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	24.5		0.252	0.500	0.78		1
Total Penta-Dioxins	98.6		0.0624	2.50	1.53		1
Total Hexa-Dioxins	282		0.0521	2.50	1.22		1
Total Hepta-Dioxins	83.9		0.0399	2.50	1.05		1
Total Tetra-Furans	19.7		0.133	0.500	0.86		1
Total Penta-Furans	190		0.0637	2.50	1.59		1
Total Hexa-Furans	377		0.0348	2.50	1.23		1
Total Hepta-Furans	193		0.256	2.50	1.02		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Everett
Project: EV18080025 Dioxins Furans Anlysis
Sample Matrix: Soil

Service Request: E1800729
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ1800327-06

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 1613B
Prep Method: Method Soxhlet
Sample Amount: 10.000g

Date Analyzed: 08/25/18 18:30
Date Extracted: 8/21/18
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P614222
Cal Ver. File Name: P517200

Data File Name: P517213
ICAL Date: 01/24/18

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	900.571	45		25-164	0.80	1.027
13C-1,2,3,7,8-PeCDD	2000	1397.190	70		25-181	1.60	1.228
13C-1,2,3,4,7,8-HxCDD	2000	1268.347	63		32-141	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1179.663	59		28-130	1.29	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1293.452	65		23-140	1.08	1.070
13C-OCDD	4000	1964.909	49		17-157	0.88	1.140
13C-2,3,7,8-TCDF	2000	1008.488	50		24-169	0.79	0.990
13C-1,2,3,7,8-PeCDF	2000	1264.612	63		24-185	1.59	1.177
13C-2,3,4,7,8-PeCDF	2000	1221.224	61		21-178	1.60	1.216
13C-1,2,3,4,7,8-HxCDF	2000	964.257	48		26-152	0.51	0.968
13C-1,2,3,6,7,8-HxCDF	2000	1025.817	51		26-123	0.51	0.972
13C-1,2,3,7,8,9-HxCDF	2000	1050.201	53		29-147	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1032.212	52		28-136	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	953.990	48		28-143	0.45	1.045
13C-1,2,3,4,7,8,9-HpCDF	2000	1107.831	55		26-138	0.44	1.082
37Cl-2,3,7,8-TCDD	800	530.443	66		35-197	NA	1.028

Dangerous Waste Characterization

Sample ID: Storm Sed.-1

Report date: August 15, 2018

Submitted to:

Whatcom Environmental
228 E. Champion Suite 101
Bellingham, WA 98225

1.0 INTRODUCTION

A dangerous waste characterization using the test organism *Oncorhynchus mykiss* (rainbow trout) was conducted on one sample submitted by Whatcom Environmental to Rainier Environmental. Testing was conducted following the Washington State Department of Ecology Publication 80-12.

2.0 METHODS

The sample, identified as Storm Sed.-1, was received in the laboratory on August 3, 2018. Upon arrival at the laboratory the sample was inspected and contents verified against information provided on the chain-of-custody form. The sample was stored at 4°C in the dark until use. The test procedure is outlined in Table 1.

Table 1. Summary of Dangerous Waste Characterization Test Conditions

Parameter	Standard Fish Toxicity Test
Test number	1808-012
Sample ID	Storm Sed.-1
Test initiation date; time	8/9/2018; 1000h
Test termination date; time	8/13/2018; 0945h
Endpoint	Mortality at 96-hours
Test chamber	7.5 L Plastic tank
Test temperature	12 ± 1°C
Dilution water	Moderately hard synthetic water
Test solution volume	6 L
Test concentrations (mg/L)	100, 10, 0
Number of organisms/ chamber	10
Number of replicates	3
Test organism	<i>Oncorhynchus mykiss</i> (rainbow trout)
Feeding	No feeding during test
Photoperiod	16 hours light/ 8 hours dark
Extraction	Rotary agitation (30 +/- 2 rpm) for 18 hours
Reference Toxicant	Copper sulfate
Deviations	None

The test organisms used in the test are outlined in Table 2. The sample was tested using fish received on July 20, 2018.

Table 2. Test organisms (*Oncorhynchus mykiss*)

Test organism age	43 days post swim-up (hatch date 6/3/2018)
Mean weight	0.35 g
Mean length	34 mm
Ratio of longest to shortest	1.2
Loading	0.58 g/L
Test organism source	Trout Lodge; Sumner, WA

3.0 RESULTS

A summary of results for the dangerous waste characterization conducted on sample Storm Sed.-1 is contained in Table 3. There was no mortality during the test. Based on these results, the sample does not designate as either a dangerous or extremely hazardous waste. Copies of the laboratory bench sheets, statistical summaries of reference toxicant tests, and chain-of-custody form are provided in Appendices A through C.

Table 3. Summary of Results

Sample ID	Concentration (mg/L)	Survival (# fish, N=30)	Percent Mortality	Dangerous Waste Designation
Control	0	30	0	NA
Storm Sed.-1	10	30	0	None
	100	30	0	

4.0 QUALITY ASSURANCE

The most recently completed reference toxicant test was initiated July 25, 2018. The LC₅₀ of 159 µg/L copper fell within the acceptable range of mean ± two standard deviations of historical test results indicating that the test organisms were of an appropriate degree of sensitivity. The coefficient of variation (CV) for the last 21 tests was 26.6 percent, which is considered excellent by the Biomonitoring Science Advisory Board.

5.0 REFERENCES

- WDOE. 2008. Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria. Washington State Department of Ecology. Water Quality Program. Publication number: WQ-R-95-80, Revised December 2008.
- WDOE. 2009. Biological Testing Methods 80-12 for the Designation of Dangerous Waste. Washington State Department of Ecology. Hazardous Waste and Toxics Reduction Program. Publication number: 80-12, Revised June 2009.

DRAFT

Appendix A
***Oncorhynchus mykiss* Dangerous Waste Toxicity Test**
Raw Bench Sheets

Appendix B
Reference Toxicant Test
Control Chart and Statistical Summary

Fish 96-h Acute Survival Test

Rainier Environmental Laboratory

Test Type: Survival (96h)

Organism: Oncorhynchus mykiss (Rainbow Tro

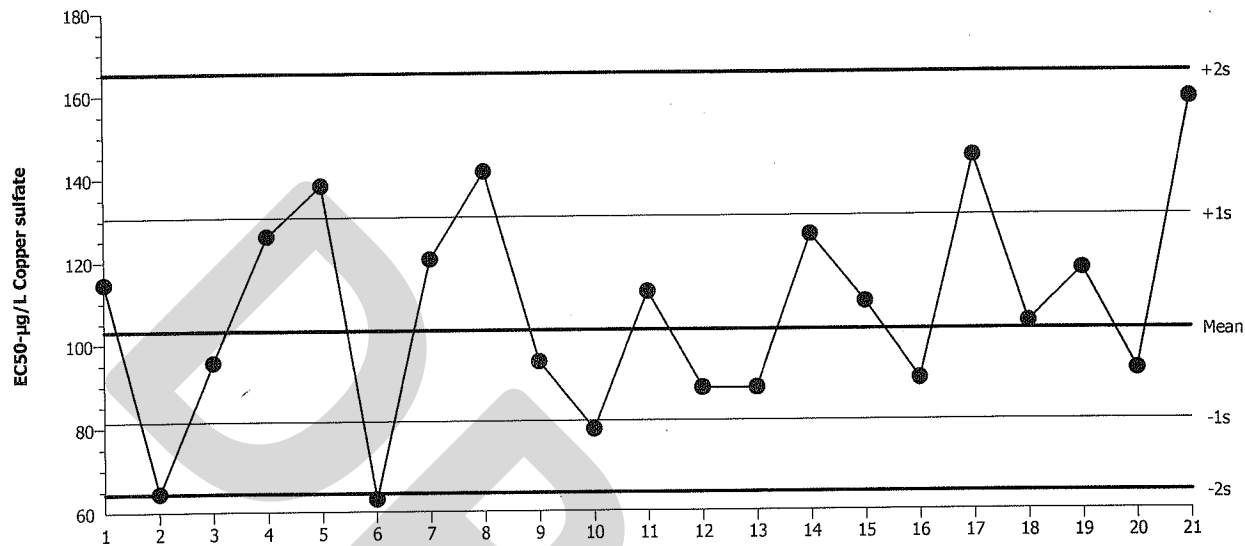
Material: Copper sulfate

Protocol: Not Applicable

Endpoint: 96h Survival Rate

Source: Reference Toxicant-REF

Fish 96-h Acute Survival Test



Mean: 103.1

Count: 20

-1s Warning Limit: 81.48

-2s Action Limit: 64.37

Sigma: NA

CV: 26.60%

+1s Warning Limit: 130.5

+2s Action Limit: 165.2

Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2016	Oct	13	114.5	11.33	0.4424			01-3356-4134	03-9174-4425
2		Nov	16	64.47	-38.66	-1.993	(-)		00-9981-0415	01-2788-3133
3		Dec	21	95.48	-7.647	-0.3269			00-4678-3392	07-2943-2050
4	2017	Jan	25	126	22.86	0.8495			00-0066-8952	04-6372-2628
5		Mar	2	138.2	35.06	1.242	(+)		06-3918-0228	07-9779-4134
6		Apr	4	63	-40.13	-2.091	(-)	(-)	03-6593-7512	17-2989-4259
7		May	3	120.3	17.17	0.6534			11-5596-3648	06-1016-9279
8		Jun	2	141.4	38.29	1.34	(+)		12-4358-3517	15-4391-5735
9		Jul	5	95.48	-7.647	-0.3269			15-6974-4640	17-7171-1787
10		Aug	9	79.37	-23.76	-1.111	(-)		14-0940-5366	14-5578-7811
11		Sep	6	112.2	9.115	0.3593			20-3302-1945	19-8536-6321
12		Oct	10	89.09	-14.04	-0.6209			16-6680-8798	20-0898-2992
13		Nov	14	89.09	-14.04	-0.6209			03-8806-4974	08-0487-5780
14		Dec	17	126	22.86	0.8495			21-2907-2796	14-7957-6406
15	2018	Jan	16	109.7	6.552	0.2613			07-7088-1157	16-4889-5798
16		Feb	15	91.17	-11.96	-0.5229			06-6357-5370	00-6522-6981
17		Mar	17	144.7	41.6	1.438	(+)		00-4331-1834	10-4388-1035
18		Apr	21	104.7	1.598	0.06525			00-5606-6972	09-2556-2363
19		May	23	117.6	14.42	0.5554			20-2785-4749	16-3316-3415
20		Jun	20	93.3	-9.828	-0.4249			05-6858-8909	21-3433-5668
21		Jul	25	158.7	55.61	1.83	(+)		03-7661-5860	05-4916-3169

CETIS Summary Report

Report Date: 31 Jul-18 12:33 (p 1 of 1)
Test Code: RA072518OM | 03-7661-5860

Fish 96-h Acute Survival Test

Rainier Environmental Laboratory

Batch ID: 12-6840-1667
Start Date: 25 Jul-18 13:40
Ending Date: 29 Jul-18 13:30
Duration: 96h
Test Type: Survival (96h)
Protocol: Not Applicable
Species: Oncorhynchus mykiss
Source: Trout Lodge Fish Farm

Analyst: Eric Tollefson
Diluent: Mod-Hard Synthetic Water
Brine:
Age: 56

Sample ID: 16-8255-9348
Sample Date: 25 Jul-18
Receive Date: 25 Jul-18
Sample Age: 14h
Code: RA072518OM
Material: Copper sulfate
Source: Reference Toxicant
Station: In House

Client: Internal Lab
Project:

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
11-2369-9174	96h Survival Rate	50	100	70.71	20.2%		Dunnett Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	µg/L	95% LCL	95% UCL	TU	Method
05-4916-3169	96h Survival Rate	LC50	158.7	134.8	187		Spearman-Kärber

96h Survival Rate Summary

C-µg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	3	1	1	1	1	1	0	0	0.0%	0.0%
25		3	1	1	1	1	1	0	0	0.0%	0.0%
50		3	1	1	1	1	1	0	0	0.0%	0.0%
100		3	0.7667	0.7451	0.7882	0.7	0.8	0.03333	0.05774	7.53%	23.33%
200		3	0.4	0.288	0.512	0.1	0.7	0.1732	0.3	75.0%	60.0%
400		3	0	0	0	0	0	0	0		100.0%

96h Survival Rate Detail

C-µg/L	Control Type	Rep 1	Rep 2	Rep 3
0	Dilution Water	1	1	1
25		1	1	1
50		1	1	1
100		0.7	0.8	0.8
200		0.7	0.1	0.4
400		0	0	0

96h Survival Rate Binomials

C-µg/L	Control Type	Rep 1	Rep 2	Rep 3
0	Dilution Water	10/10	10/10	10/10
25		10/10	10/10	10/10
50		10/10	10/10	10/10
100		7/10	8/10	8/10
200		7/10	1/10	4/10
400		0/10	0/10	0/10

DRAFT

Appendix C
Chain-of-Custody Form



Washington
5013 Pacific Highway East, Suite 20 Fife,
WA 98424
Phone 253.922.8898

Chain of Custody

Date 8/2/18 Page 1 of 1

Sample Collection By: <u>Thom Davis</u>						ANALYSES REQUIRED												Receipt Temperature (°C)						
Report to:						Invoice To:																		
Company <u>Whatcom Environmental Services</u>						Company <u></u>																		
Address <u>228 E Champion #101</u>						Address <u></u>																		
City/State/Zip <u>B'ham, WA 98225</u>						City/State/Zip <u></u>																		
Contact <u>Thom Davis</u>						Contact <u></u>																		
Phone <u>360-752-9571</u>						Phone <u></u>																		
Email <u>tdavis@whatcomenvironmental.com</u>						Email <u></u>																		
SAME as Reporting																								
SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NO. OF CONTAINERS	COMMENTS																		
1 Storm Sed.-1	7/30/18	3pm	SOIL	4-oz Jar	1																			
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
PROJECT INFORMATION						SAMPLE RECEIPT						RELINQUISHED BY (CLIENT)						RELINQUISHED BY (COURIER)						
Client: <u>Jensen's Shipyard</u>						Total No. of Containers <u>1</u>						(Signature) <u>[Signature]</u> (Time) <u>1253p</u>						(Signature) <u></u> (Time) <u></u>						
PO No.: <u>—</u>						Received Good Condition? <u>Y</u>						(Printed Name) <u>Thom Davis</u> (Date) <u>8/2/18</u>						(Printed Name) <u></u> (Date) <u></u>						
Shipped Via: <u>U.P.S.</u>						Matches Test Schedule? <u>Y</u>						(Company) <u>Whatcom Env. Svc.</u>						(Company) <u></u>						
SPECIAL INSTRUCTIONS/COMMENTS:												RECEIVED BY (COURIER)						RECEIVED BY (LABORATORY)						
												(Signature) <u></u> (Time) <u></u>						(Signature) <u>[Signature]</u> (Time) <u>1240</u>						
												(Printed Name) <u></u> (Date) <u></u>						(Printed Name) <u>Annie Tran</u> (Date) <u>8/3/18</u>						
												(Company) <u></u>						(Log in #) <u>118-196</u>						

APPENDIX D

Groundwater Laboratory Analytical Data

DRAFT



September 7, 2018

Mr. Dan Heimbigner
Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

Dear Mr. Heimbigner,

On August 29th, 8 samples were received by our laboratory and assigned our laboratory project number EV18080166. The project was identified as your Jensen's Shipyard. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 9/7/2018

ALS JOB#: EV18080166

ALS SAMPLE#: EV18080166-01

CLIENT CONTACT: Dan Heimbigner

DATE RECEIVED: 08/29/2018

CLIENT PROJECT: Jensen's Shipyard

COLLECTION DATE: 8/28/2018 2:36:00 PM

CLIENT SAMPLE ID MW-1

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	09/04/2018	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	09/04/2018	DLC
TPH-Diesel Range	NWTPH-DX	180	130	1	UG/L	08/30/2018	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	08/30/2018	EBS
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	08/31/2018	RAL
Arsenic (Dissolved)	EPA-200.8	12	1.0	1	UG/L	09/04/2018	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	09/04/2018	RAL
Copper (Dissolved)	EPA-200.8	8.0	2.0	1	UG/L	09/04/2018	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Zinc (Dissolved)	EPA-200.8	3.2	2.5	1	UG/L	09/04/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	90.6	09/04/2018	DLC
TFT	EPA-8021	98.1	09/04/2018	DLC
C25	NWTPH-DX	109	08/30/2018	EBS
Terphenyl-d14	EPA-8270 SIM	94.3	08/31/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered diesel.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 9/7/2018

ALS JOB#: EV18080166

ALS SAMPLE#: EV18080166-02

CLIENT CONTACT: Dan Heimbigner

DATE RECEIVED: 08/29/2018

CLIENT PROJECT: Jensen's Shipyard

COLLECTION DATE: 8/28/2018 3:37:00 PM

CLIENT SAMPLE ID MW-2

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	200	50	1	UG/L	09/04/2018	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	09/04/2018	DLC
TPH-Diesel Range	NWTPH-DX	210	130	1	UG/L	08/30/2018	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	08/30/2018	EBS
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	08/31/2018	RAL
Arsenic (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	09/04/2018	RAL
Copper (Dissolved)	EPA-200.8	U	2.0	1	UG/L	09/04/2018	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Zinc (Dissolved)	EPA-200.8	U	2.5	1	UG/L	09/04/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	93.3	09/04/2018	DLC
TFT	EPA-8021	97.9	09/04/2018	DLC
C25	NWTPH-DX	105	08/30/2018	EBS
Terphenyl-d14	EPA-8270 SIM	96.7	08/31/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

Chromatogram indicates that it is likely that sample contains extremely weathered gasoline and highly weathered diesel.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 9/7/2018

ALS JOB#: EV18080166

ALS SAMPLE#: EV18080166-03

CLIENT CONTACT: Dan Heimbigner

DATE RECEIVED: 08/29/2018

CLIENT PROJECT: Jensen's Shipyard

COLLECTION DATE: 8/28/2018 5:53:00 PM

CLIENT SAMPLE ID MW-3

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	09/04/2018	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	09/04/2018	DLC
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	08/30/2018	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	08/30/2018	EBS
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	08/31/2018	RAL
Arsenic (Dissolved)	EPA-200.8	2.3	1.0	1	UG/L	09/04/2018	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Chromium (Dissolved)	EPA-200.8	4.9	2.0	1	UG/L	09/04/2018	RAL
Copper (Dissolved)	EPA-200.8	3.2	2.0	1	UG/L	09/04/2018	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Zinc (Dissolved)	EPA-200.8	9.8	2.5	1	UG/L	09/04/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	91.3	09/04/2018	DLC
TFT	EPA-8021	98.4	09/04/2018	DLC
C25	NWTPH-DX	114	08/30/2018	EBS
Terphenyl-d14	EPA-8270 SIM	113	08/31/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 9/7/2018

ALS JOB#: EV18080166

ALS SAMPLE#: EV18080166-04

CLIENT CONTACT: Dan Heimbigner

DATE RECEIVED: 08/29/2018

CLIENT PROJECT: Jensen's Shipyard

COLLECTION DATE: 8/28/2018 4:40:00 PM

CLIENT SAMPLE ID MW-4

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	09/04/2018	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	09/04/2018	DLC
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	08/30/2018	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	08/30/2018	EBS
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	08/31/2018	RAL
Arsenic (Dissolved)	EPA-200.8	1.1	1.0	1	UG/L	09/04/2018	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	09/04/2018	RAL
Copper (Dissolved)	EPA-200.8	3.2	2.0	1	UG/L	09/04/2018	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Zinc (Dissolved)	EPA-200.8	3.0	2.5	1	UG/L	09/04/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	90.7	09/04/2018	DLC
TFT	EPA-8021	91.6	09/04/2018	DLC
C25	NWTPH-DX	106	08/30/2018	EBS
Terphenyl-d14	EPA-8270 SIM	109	08/31/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 9/7/2018

ALS JOB#: EV18080166

ALS SAMPLE#: EV18080166-05

CLIENT CONTACT: Dan Heimbigner

DATE RECEIVED: 08/29/2018

CLIENT PROJECT: Jensen's Shipyard

COLLECTION DATE: 8/29/2018 9:15:00 AM

CLIENT SAMPLE ID MW-5

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	09/04/2018	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	09/04/2018	DLC
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	08/31/2018	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	08/31/2018	EBS
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	08/31/2018	RAL
Arsenic (Dissolved)	EPA-200.8	1.2	1.0	1	UG/L	09/04/2018	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	09/04/2018	RAL
Copper (Dissolved)	EPA-200.8	U	2.0	1	UG/L	09/04/2018	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Zinc (Dissolved)	EPA-200.8	U	2.5	1	UG/L	09/04/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	90.7	09/04/2018	DLC
TFT	EPA-8021	94.0	09/04/2018	DLC
C25	NWTPH-DX	80.8	08/31/2018	EBS
Terphenyl-d14	EPA-8270 SIM	104	08/31/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

**CERTIFICATE OF ANALYSIS**

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 9/7/2018

ALS JOB#: EV18080166

ALS SAMPLE#: EV18080166-06

CLIENT CONTACT: Dan Heimbigner

DATE RECEIVED: 08/29/2018

CLIENT PROJECT: Jensen's Shipyard

COLLECTION DATE: 8/29/2018 7:45:00 AM

CLIENT SAMPLE ID MW-6

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	09/04/2018	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	09/04/2018	DLC
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	08/30/2018	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	08/30/2018	EBS
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	08/31/2018	RAL
Arsenic (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	09/04/2018	RAL
Copper (Dissolved)	EPA-200.8	U	2.0	1	UG/L	09/04/2018	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Zinc (Dissolved)	EPA-200.8	U	2.5	1	UG/L	09/04/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	90.5	09/04/2018	DLC
TFT	EPA-8021	93.7	09/04/2018	DLC
C25	NWTPH-DX	101	08/30/2018	EBS
Terphenyl-d14	EPA-8270 SIM	87.8	08/31/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Whatcom Environmental Svcs., Inc. 228 E. Champion St., Suite 101 Bellingham, WA 98225	DATE:	9/7/2018
CLIENT CONTACT:	Dan Heimbigner	ALS JOB#:	EV18080166
CLIENT PROJECT:	Jensen's Shipyard	ALS SAMPLE#:	EV18080166-07
CLIENT SAMPLE ID	WES-DUP-1	DATE RECEIVED:	08/29/2018
		COLLECTION DATE:	8/28/2018 12:00:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	09/04/2018	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	09/04/2018	DLC
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	08/31/2018	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	08/31/2018	EBS
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	08/31/2018	RAL
Arsenic (Dissolved)	EPA-200.8	2.3	1.0	1	UG/L	09/04/2018	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Chromium (Dissolved)	EPA-200.8	5.0	2.0	1	UG/L	09/04/2018	RAL
Copper (Dissolved)	EPA-200.8	3.2	2.0	1	UG/L	09/04/2018	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Zinc (Dissolved)	EPA-200.8	8.6	2.5	1	UG/L	09/04/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	91.0	09/04/2018	DLC
TFT	EPA-8021	94.0	09/04/2018	DLC
C25	NWTPH-DX	100	08/31/2018	EBS
Terphenyl-d14	EPA-8270 SIM	103	08/31/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

**CERTIFICATE OF ANALYSIS**

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 9/7/2018

ALS JOB#: EV18080166

ALS SAMPLE#: EV18080166-08

CLIENT CONTACT: Dan Heimbigner

DATE RECEIVED: 08/29/2018

CLIENT PROJECT: Jensen's Shipyard

COLLECTION DATE: 8/29/2018 9:30:00 AM

CLIENT SAMPLE ID WES-EB-1

WDOE ACCREDITATION: C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	09/04/2018	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	09/04/2018	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	09/04/2018	DLC
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	08/31/2018	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	08/31/2018	EBS
Naphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Chrysene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Benzo[A]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	0.020	1	UG/L	08/31/2018	JMK
Mercury (Dissolved)	EPA-245.1	U	0.20	1	UG/L	08/31/2018	RAL
Arsenic (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Cadmium (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Chromium (Dissolved)	EPA-200.8	U	2.0	1	UG/L	09/04/2018	RAL
Copper (Dissolved)	EPA-200.8	U	2.0	1	UG/L	09/04/2018	RAL
Lead (Dissolved)	EPA-200.8	U	1.0	1	UG/L	09/04/2018	RAL
Zinc (Dissolved)	EPA-200.8	U	2.5	1	UG/L	09/04/2018	RAL

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	91.6	09/04/2018	DLC
TFT	EPA-8021	94.5	09/04/2018	DLC
C25	NWTPH-DX	85.7	08/31/2018	EBS
Terphenyl-d14	EPA-8270 SIM	91.0	08/31/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 9/7/2018
ALS SDG#: EV18080166
WDOE ACCREDITATION: C601

CLIENT CONTACT: Dan Heimbigner
CLIENT PROJECT: Jensen's Shipyard

LABORATORY BLANK RESULTS

MBG-083118W - Batch 132144 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	UG/L	50	08/31/2018	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-083118W - Batch 132144 - Water by EPA-8021

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	UG/L	1.0	08/31/2018	DLC
Toluene	EPA-8021	U	UG/L	1.0	08/31/2018	DLC
Ethylbenzene	EPA-8021	U	UG/L	1.0	08/31/2018	DLC
Xylenes	EPA-8021	U	UG/L	3.0	08/31/2018	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-083018W - Batch 132043 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	130	08/30/2018	EBS
TPH-Oil Range	NWTPH-DX	U	UG/L	250	08/30/2018	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-083018W - Batch 132121 - Water by EPA-8270 SIM

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	EPA-8270 SIM	U	UG/L	0.020	08/31/2018	JMK
2-Methylnaphthalene	EPA-8270 SIM	U	UG/L	0.020	08/31/2018	JMK
1-Methylnaphthalene	EPA-8270 SIM	U	UG/L	0.020	08/31/2018	JMK
Benzo[A]Anthracene	EPA-8270 SIM	U	UG/L	0.020	08/31/2018	JMK
Chrysene	EPA-8270 SIM	U	UG/L	0.020	08/31/2018	JMK
Benzo[B]Fluoranthene	EPA-8270 SIM	U	UG/L	0.020	08/31/2018	JMK
Benzo[K]Fluoranthene	EPA-8270 SIM	U	UG/L	0.020	08/31/2018	JMK
Benzo[A]Pyrene	EPA-8270 SIM	U	UG/L	0.020	08/31/2018	JMK
Indeno[1,2,3-Cd]Pyrene	EPA-8270 SIM	U	UG/L	0.020	08/31/2018	JMK
Dibenz[A,H]Anthracene	EPA-8270 SIM	U	UG/L	0.020	08/31/2018	JMK
Benzo[G,H,I]Perylene	EPA-8270 SIM	U	UG/L	0.020	08/31/2018	JMK

U - Analyte analyzed for but not detected at level above reporting limit.

CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
 228 E. Champion St., Suite 101
 Bellingham, WA 98225
CLIENT CONTACT: Dan Heimbigner
CLIENT PROJECT: Jensen's Shipyard

DATE: 9/7/2018
ALS SDG#: EV18080166
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS
MBLK-R323018 - Batch R323018 - Water by EPA-245.1

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Mercury (Dissolved)	EPA-245.1	U	UG/L	0.20	08/31/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-083118W - Batch 132079 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved)	EPA-200.8	U	UG/L	1.0	09/04/2018	RAL
Cadmium (Dissolved)	EPA-200.8	U	UG/L	1.0	09/04/2018	RAL
Chromium (Dissolved)	EPA-200.8	U	UG/L	2.0	09/04/2018	RAL
Copper (Dissolved)	EPA-200.8	U	UG/L	2.0	09/04/2018	RAL
Lead (Dissolved)	EPA-200.8	U	UG/L	1.0	09/04/2018	RAL
Zinc (Dissolved)	EPA-200.8	U	UG/L	2.5	09/04/2018	RAL

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 9/7/2018
ALS SDG#: EV18080166
WDOE ACCREDITATION: C601

CLIENT CONTACT: Dan Heimbigner
CLIENT PROJECT: Jensen's Shipyard

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 132144 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Volatile Range - BS	NWTPH-GX	97.8			66.5	122.7	09/04/2018	DLC
TPH-Volatile Range - BSD	NWTPH-GX	101	3		66.5	122.7	09/04/2018	DLC

ALS Test Batch ID: 132144 - Water by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Benzene - BS	EPA-8021	99.4			83	120	08/31/2018	DLC
Benzene - BSD	EPA-8021	103	4		83	120	08/31/2018	DLC
Toluene - BS	EPA-8021	96.1			85	115	08/31/2018	DLC
Toluene - BSD	EPA-8021	103	7		85	115	08/31/2018	DLC
Ethylbenzene - BS	EPA-8021	97.5			85	113	08/31/2018	DLC
Ethylbenzene - BSD	EPA-8021	104	6		85	113	08/31/2018	DLC
Xylenes - BS	EPA-8021	98.5			85	116	08/31/2018	DLC
Xylenes - BSD	EPA-8021	105	6		85	116	08/31/2018	DLC

ALS Test Batch ID: 132043 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	88.6			67	125.2	08/30/2018	EBS
TPH-Diesel Range - BSD	NWTPH-DX	90.2	2		67	125.2	08/30/2018	EBS

ALS Test Batch ID: 132121 - Water by EPA-8270 SIM

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Naphthalene - BS	EPA-8270 SIM	64.3			36	118	08/31/2018	JMK
Naphthalene - BSD	EPA-8270 SIM	53.9	18		36	118	08/31/2018	JMK
2-Methylnaphthalene - BS	EPA-8270 SIM	65.7			20	150	08/31/2018	JMK
2-Methylnaphthalene - BSD	EPA-8270 SIM	56.6	15		20	150	08/31/2018	JMK
1-Methylnaphthalene - BS	EPA-8270 SIM	66.3			20	150	08/31/2018	JMK
1-Methylnaphthalene - BSD	EPA-8270 SIM	57.0	15		20	150	08/31/2018	JMK
Benzo[A]Anthracene - BS	EPA-8270 SIM	73.0			20	150	08/31/2018	JMK
Benzo[A]Anthracene - BSD	EPA-8270 SIM	73.6	1		20	150	08/31/2018	JMK
Chrysene - BS	EPA-8270 SIM	87.1			20	150	08/31/2018	JMK
Chrysene - BSD	EPA-8270 SIM	86.6	1		20	150	08/31/2018	JMK
Benzo[B]Fluoranthene - BS	EPA-8270 SIM	73.5			20	150	08/31/2018	JMK
Benzo[B]Fluoranthene - BSD	EPA-8270 SIM	74.5	1		20	150	08/31/2018	JMK
Benzo[K]Fluoranthene - BS	EPA-8270 SIM	85.9			20	150	08/31/2018	JMK
Benzo[K]Fluoranthene - BSD	EPA-8270 SIM	83.6	3		20	150	08/31/2018	JMK
Benzo[A]Pyrene - BS	EPA-8270 SIM	78.6			20	150	08/31/2018	JMK



CERTIFICATE OF ANALYSIS

CLIENT: Whatcom Environmental Svcs., Inc.
228 E. Champion St., Suite 101
Bellingham, WA 98225

DATE: 9/7/2018
ALS SDG#: EV18080166
WDOE ACCREDITATION: C601

CLIENT CONTACT: Dan Heimbigner
CLIENT PROJECT: Jensen's Shipyard

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Benzo[A]Pyrene - BSD	EPA-8270 SIM	79.5	1		20	150	08/31/2018	JMK
Indeno[1,2,3-Cd]Pyrene - BS	EPA-8270 SIM	77.2			20	150	08/31/2018	JMK
Indeno[1,2,3-Cd]Pyrene - BSD	EPA-8270 SIM	78.4	2		20	150	08/31/2018	JMK
Dibenz[A,H]Anthracene - BS	EPA-8270 SIM	78.9			20	150	08/31/2018	JMK
Dibenz[A,H]Anthracene - BSD	EPA-8270 SIM	80.1	1		20	150	08/31/2018	JMK
Benzo[G,H,I]Perylene - BS	EPA-8270 SIM	75.1			43	140	08/31/2018	JMK
Benzo[G,H,I]Perylene - BSD	EPA-8270 SIM	75.2	0		43	140	08/31/2018	JMK

ALS Test Batch ID: R323018 - Water by EPA-245.1

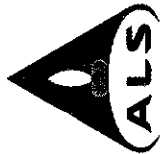
SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Mercury (Dissolved) - BS	EPA-245.1	109			80.6	118	08/31/2018	RAL
Mercury (Dissolved) - BSD	EPA-245.1	112	3		80.6	118	08/31/2018	RAL

ALS Test Batch ID: 132079 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Arsenic (Dissolved) - BS	EPA-200.8	102			89.1	110	09/04/2018	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	103	1		89.1	110	09/04/2018	RAL
Cadmium (Dissolved) - BS	EPA-200.8	103			89.4	109	09/04/2018	RAL
Cadmium (Dissolved) - BSD	EPA-200.8	104	1		89.4	109	09/04/2018	RAL
Chromium (Dissolved) - BS	EPA-200.8	103			88.3	110.2	09/04/2018	RAL
Chromium (Dissolved) - BSD	EPA-200.8	104	1		86.2	107	09/04/2018	RAL
Copper (Dissolved) - BS	EPA-200.8	104			85.4	109	09/04/2018	RAL
Copper (Dissolved) - BSD	EPA-200.8	106	2		85.4	109	09/04/2018	RAL
Lead (Dissolved) - BS	EPA-200.8	104			87.5	107	09/04/2018	RAL
Lead (Dissolved) - BSD	EPA-200.8	106	1		87.5	107	09/04/2018	RAL
Zinc (Dissolved) - BS	EPA-200.8	104			88.2	111	09/04/2018	RAL
Zinc (Dissolved) - BSD	EPA-200.8	105	1		88.2	111	09/04/2018	RAL

APPROVED BY

Laboratory Director



ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
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<http://www.alsglobal.com>

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

61820166

Date 8/29/18 Page 1 Of 1

PROJECT ID: JENSEN'S SHIPYARD
REPORT TO COMPANY: WHATCOM ENVIRONMENTAL SERVICES
PROJECT MANAGER: DAN HEMBINGER
ADDRESS: 228 E. CAMPION ST #101
BELLINGHAM, WA 98225
PHONE: (360) 752-9157 P.O. #:
E-MAIL:
INVOICE TO COMPANY: SAME AS ABOVE
ATTENTION:
ADDRESS:

ANALYSIS REQUESTED		OTHER (Specify)																																	
		NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 ☒	MTBE by EPA 8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	Pesticides by EPA 8081 ☐	Metals-MTCA-5 ☒	RCRA-8 ☐	Pb ☐	TAL ☐	Metals Other (Specify) <u>COPPER & ZINC</u>	TCLP-Metals ☐	VOA ☐	Semi-Vol ☐	Pest ☐	Herbs ☐											NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
			X	X	X									X				X											5						
			X	X	X									X				X											5						
			X	X	X									X				X											5						
			X	X	X									X				X											5						
			X	X	X									X				X											5						
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			X	X	X									X				X											5						
			X	X	X									X				X																	

SPECIAL INSTRUCTIONS All METALS SAMPLES WERE FILTERED IN THE FIELD (0.45 MICRON)

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: [Signature] 8/29/18 4:20
Received By: [Signature] ALS 8/29/18 1620
2. Relinquished By: _____
Received By: _____

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis
Fuels & Hydrocarbon Analysis
Specify: _____
OTHER: _____
*Turnaround request less than standard may incur Rush Charges

APPENDIX E

Limitations

DRAFT

LIMITATIONS

No site investigation can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Performance of this investigation by Whatcom Environmental Services Inc. is intended to reduce, but not eliminate, uncertainty regarding the potential for environmental contamination in connection with the site.

The interpretation of subsurface soil and groundwater conditions is based on Whatcom Environmental Services' field observations and chemical analytical data collected from relatively widely spaced sampling locations at the site. It is possible that contamination exists beneath portions of the site that were not explored, sampled, or analyzed. No warranty, express or implied, is given regarding the presence of hidden or unidentified sources of contamination of the site. In addition, no warranty, express or implied is given regarding geotechnical or geologic hazards.

This environmental report is based on conditions that existed at the time the investigation was performed and samples collected. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, ground instability, or groundwater fluctuations.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted environmental practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

This report has been prepared for use by the Port of Friday Harbor. Whatcom Environmental Services prepares a report for the client's exclusive use for a particular project and in accordance with generally accepted practices at the time of investigation. This report was prepared for exclusive use by the client and its agents and may not be used, relied upon, or assigned to a third party without written consent from Whatcom Environmental Services Inc. This report is not intended for use by others, and the information contained herein is not applicable to other sites. This report may be made available to regulatory agencies.