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DUAL-PHASE EXTRACTION SYSTEM AS-BUILT REPORT ADDENDUM

Former Unocal Edmonds Bulk Fuel Terminal
Edmonds, Washington

December 8, 2020

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ACRONYMS AND ABBREVIATIONS

2018 GOR	2018 Groundwater and Operation Report
95% UCL	95 percent upper confidence limit on the mean
Addendum	Dual-Phase Extraction System As-Built Report Addendum
AO	Agreed Order
ARAR	applicable or relevant and appropriate requirement
Arcadis	Arcadis U.S., Inc.
bgs	below ground surface
Cascade	Cascade Drilling
CatOx	catalytic oxidizer
Chevron	Chevron Environmental Management Company
Clearcreek	Clearcreek Contractors Inc.
COC	constituent of concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSID	Cleanup Site Identification Number
CUL	cleanup level
DB-2	Detention Basin No. 2
DOT	U.S. Department of Transportation
DPE	dual-phase extraction
DPE System As-Built Report	Dual-Phase Extraction System As-Built Report
DPE Wells Work Plan	Final Additional Dual Phase Extraction Well Installation Work Plan
DRO	diesel range organics
Ecology	Washington State Department of Ecology
EPH	extractable petroleum hydrocarbon
FSID	Facility Site Identification Number
FS Report	Public Review Draft Final Feasibility Study Report
GAC	granular activated carbon
GRO	gasoline range organics

HDPE	high-density polyethylene
HO	heavy oil range organics
LNAPL	light nonaqueous phase liquid
mg/kg	milligrams per kilogram
Newterra telemetry service	Newterra Site-Link Basic Wireless Telemetry Service
NPDES	National Pollutant Discharge Elimination System
Otak	Otak, Inc.
PLC	programmable logic controller
POC	point of compliance
PSCAA	Puget Sound Clean Air Agency
PID	photoionization detector
PVC	polyvinyl chloride
REL	remediation level
Site	former Unocal Edmonds Bulk Fuel Terminal, located at 11720 Unoco Road, Edmonds, Washington
Soil Sampling Work Plan	Washington State Department of Transportation Stormwater Line Compliance Soil Sampling Work Plan
SOOW	service oil-resistant jackets, oil-resistant insulation, and weather-/water water-resistant
SVE	soil vapor extraction
TEQ	toxic equivalent
TPH	total petroleum hydrocarbons
Unocal	Union Oil Company of California
USEPA	United States Environmental Protection Agency
VFD	variable frequency drive
VPH	volatile petroleum hydrocarbon
VLS	vapor liquid separator
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation
µg/L	micrograms per liter

1. INTRODUCTION

On behalf of Chevron Environmental Management Company (Chevron), Arcadis U.S., Inc. (Arcadis) submitted the Dual-Phase Extraction System As-Built Report (DPE System As-Built Report) for the former Union Oil Company of California (Unocal) Edmonds Bulk Fuel Terminal located at 11720 Unoco Road in Edmonds, Washington (the Site) to Washington State Department of Ecology (Ecology) on May 10, 2018 (Arcadis 2018b).

This Addendum to the DPE System As-Built Report (Addendum) reports the performance monitoring following two years of operation of the dual-phase extraction (DPE) system as well as the DPE system expansion activities. Site description and background are available in the DPE System As-Built Report (Arcadis 2018b). The Site and surrounding area are shown on Figure 1-1.

The Site is being managed by Ecology pursuant to Agreed Order (AO) No. DE 4460 effective on July 5, 2007 and amended on June 19, 2017 (Ecology 2007, 2017). The Site is formally known as Unocal Edmonds Bulk Fuel Terminal 0178 in Ecology's database. Identifiers are:

- Facility Site Identification Number (FSID): 2720
- Cleanup Site Identification Number (CSID): 5180.

Ecology's website for the Site is available at: https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=5180. Documents available electronically can be accessed by clicking View Electronic Documents in the sidebar. Documents are also available at the public repository at the Edmonds Public Library. The complete file can be reviewed at Ecology's Northwest Regional Office in Bellevue (phone 425.649.7000). Data collected during investigations of the Site are available in Ecology's Environmental Information Management System database (see Study IDs UNOCAL01 and UNOCAL 02). Chevron's website for the Site is available at: http://www.unocaledmonds.info/.

2. DUAL-PHASE EXTRACTION SYSTEM SUMMARY

This section provides a brief description of the cleanup objectives for the Site and the DPE System. Detailed description of the DPE System is provided in the DPE System As-Built Report (Arcadis 2018b).

2.1 Cleanup Action Objectives

The objectives of the cleanup action required at the Site per AO No. DE 4460 (Ecology 2007, 2017) include:

- Remediate soil that contains petroleum hydrocarbon concentrations greater than the soil remediation level (REL) and cleanup levels (CULs) defined in Table 2-1, in the areas of remaining impacts at the Site as described in the Public Review Draft Final Feasibility Study Report (FS Report) (Arcadis 2017b) and summarized below:
    - *Washington State Department of Transportation (WSDOT) stormwater line and Point Edwards storm drain.* Twelve sample locations in soil along the WSDOT stormwater line and two sample locations in soil along the Point Edwards storm drain contain soil with constituent of concern (COC) concentrations greater than site CULs and/or REL.
    - *Detention Basin No. 2 (DB-2) area.* Free-phase and/or residual light nonaqueous phase liquid (LNAPL) was encountered in the DB-2 area. Additionally, 11 sample locations contained soil with COC concentrations greater than site CULs and/or RELs.[1]
- Remove recoverable free product (LNAPL) beneath the Site.
- Obtain the following data, which is necessary to assess future groundwater compliance at the Site:
    - Data necessary to calculate the restoration timeframes for COC concentrations to meet groundwater CULs, as defined in Table 2-2, at the groundwater points of compliance (POCs).
    - Data necessary to evaluate if the remaining soil concentrations will cause an exceedance of groundwater CULs at the groundwater POCs.

The cleanup action also complies with all applicable or relevant and appropriate requirements (ARARs) that apply to the Site as listed in the Final Interim Action Work Plan (Arcadis 2016b).

Compliance for soil at the Site is evaluated using the established 25-foot grid sample locations across the whole Lower Yard by a comparison of the 95 percent upper confidence limit on the mean (95% UCL) to the applicable CULs or REL and includes the criteria below:

- The 95% UCL for TPH is less than the soil REL.
- The 95% UCLs for total cPAHs toxic equivalency and benzene are less than the soil CULs.

[1] The DB-2 excavation successfully removed petroleum-hydrocarbon-impacted soil from the former DB-2 vicinity. Arcadis. 2018b. Detention Basin 2 Excavation As-Built Report. Former Unocal Edmonds Bulk Fuel Terminal. March 29.

- Less than 10 percent of the samples of the entire Lower Yard contain COC concentrations that exceed the REL or CULs.
- No single sample contains a COC concentration that is equal to or greater than twice the REL or CULs.

CULs and REL at the Lower Yard are summarized in Tables 2-1 and 2-2 for soil and groundwater, respectively. Details regarding CULs and REL identification are provided in the FS Report (Arcadis 2017b).

Table 2-1. Soil CULs and REL for the Lower Yard

Constituents of Concern	Cleanup Levels and Remediation Level
TPH[1]	2,775 mg/kg[3]
Benzene	18 mg/kg[3]
Total cPAHs TEQ[2]	0.14 mg/kg[3]

Notes:

[1] Total petroleum hydrocarbons (TPH) calculated by summing the concentrations of gasoline range organics (GRO), diesel range organics (DRO), and heavy oil range organics (HO).

[2] Total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) calculated by summing the concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene; adjusted for toxicity using toxic equivalency (TEQ) factors to represent a total benzo(a)pyrene concentration (Washington Administrative Code [WAC] 173-340-900).

[3] Proposed soil CULs and REL based on soil direct contact pathway and soil leaching pathway.

mg/kg = milligrams per kilogram

Table 2-2. Groundwater CULs and REL for the Lower Yard

Constituents of Concern	Cleanup Levels Groundwater (as protection of surface water)
TPH[1]	–[3]
Benzene	16 µg/L[4]
Total cPAHs TEQ[2]	0.05 µg/L[5]

Notes:

[1] TPH calculated by summing the concentrations of GRO, DRO, and HO.

[2] Total cPAHs calculated by summing the concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene; adjusted for toxicity using TEQ factors to represent a total benzo(a)pyrene concentration (WAC 173-340-900).

[3] Method A (WAC 173-340-900, Table 720-1); TPH calculated on a sample-specific basis. The CUL will fall between 500 and 800 µg/L, depending on the sample's composition.

[4] National Recommended Water Quality Criteria for human-health (organisms only) (United States Environmental Protection Agency [USEPA] 2015). http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#hhtable. Accessed on June 6, 2016.

[5] Total cPAHs TEQ adjusted for practical quantitation limit based on WAC 173-340-730(5)(c).

µg/L = micrograms per liter

2.2 Dual-Phase Extraction System Description

The DPE system was installed in 2017 to remediate remaining impacts near the WSDOT stormwater line as planned in the Final Engineering Design Report (Arcadis 2016a) approved by Ecology with the

addition of two soil vapor extraction (SVE) wells. The DPE system layout is presented on Figure 2-1. At the time of installation, the DPE system consisted of:

- Fourteen DPE wells (DPE-1 to DPE-14) used for both groundwater and soil vapor extraction
- Two SVE wells (SVE-1 and SVE-2) used for soil vapor extraction
- Nine piezometers used as observation wells for the DPE system monitoring (PZ-1, PZ-2 and PZ-4 to PZ-10)
- A Newterra-provided DPE system enclosure with equipment capable of extracting and treating groundwater and soil vapor:
    - A groundwater extraction and treatment unit, including 14 Grundfos Redi-Flo 4 electric submersible pumps controlled by pressure transducers and variable frequency drives (VFD), a 500-gallon conical bottom settling tank, a 500-gallon batch tank, a Goulds centrifugal transfer pump, two sets in parallel of bag filters in series, and upgraded two sets of two 3,000-pound granular activated carbon (GAC) vessels positioned in parallel.
    - A soil vapor extraction and treatment unit including a vapor liquid separator (VLS), three Minke rotary claw blowers in parallel controlled by VFD and programmable logic controller (PLC), various monitoring and safety devices, and a catalytic combustion electric catalytic oxidizer (CatOx).

As discussed in Section 4, four new DPE wells (DPE-15 – DPE-18) were installed during summer 2019 to address dissolved phase COC concentrations observed in monitoring wells MW-101, MW-129R, MW-518 and MW-ER. In order to accommodate the new DPE wells, four existing DPE wells (DPE-2, DPE-8, DPE-9 and DPE-10) were selected to be temporarily removed from service. These wells were selected based on their proximity to soils below CULs and REL as described in Section 3.2. The wells can be reconnected at a later date if required. In January 2020, following the addition to the new well layout, Arcadis also replaced the four 3,000-pound GAC vessels with four new 1,500 – pound GAC vessels to allow for a more efficient and safer method for exchanging spent carbon.

The DPE system operates in compliance with all ARARs that apply to the Site and particularly under the two following permits:

- National Pollutant Discharge Elimination System (NPDES) Permit No. WA0991007 to discharge treated groundwater to Willow Creek.
- Puget Sound Clean Air Agency (PSCAA) issued Permit No.29892 to discharge treated effluent vapors per the permit restrictions and conditions.

The DPE system startup began on December 1, 2017 with the groundwater extraction components in operation. The SVE portion of the DPE system commenced testing operation on December 5, 2017. The soil vapor extraction effective startup was initiated on December 11, 2017. Data collected from system startup on December 1, 2017 through December 31, 2019 are presented in the 2018 Groundwater and Operation Report (Arcadis 2019a) and 2019 Groundwater and Operation Report (Arcadis 2020).

3. PERFORMANCE SOIL SAMPLING ACTIVITIES

This section provides a description of the WSDOT stormwater line performance soil sampling.

3.1 Field Activities

Arcadis conducted the WSDOT stormwater line performance soil sampling according to the Washington State Department of Transportation Stormwater Line Compliance Soil Sampling Work Plan approved by Ecology (Soil Sampling Work Plan; Arcadis 2018c) on November 30, 2018. Drilling activities were conducted from December 3, 2018 to December 7, 2018 with preparation activities conducted earlier in October and November.

On October 26, 2018, Otak, Inc. (Otak), a registered land surveyor, pre-surveyed the soil boring locations along the established Site compliance soil sampling 25-foot grid. Washington 811 OneCall was contacted prior to drilling activities. Site utility maps were consulted, and any potential additional utilities were located by Geomarkout on November 21, 2018. The soil boring locations near the WSDOT stormwater line were then confirmed with little to no adjustment depending on site-specific constraints (Figure 3-1). To ensure that conditions in the area have equilibrated, sampling was conducted with the DPE system turned off since November 21, 2018 (meeting the 7-day minimum period requirement from the Soil Sampling Work Plan).

Soil borings were advanced from December 3, 2018 to December 7, 2018 by a licensed drilling subcontractor, Cascade Drilling (Cascade) to a minimum depth of 15 feet below ground surface (bgs). The initial 5 feet were cleared using manual methods to reduce the potential for damage to underground structures. When non-utility obstructions (concrete and asphalt) were encountered, mechanical means were used as necessary. An air knife vacuum truck was not utilized during this event. The borings were advanced to total depth using a track mounted full size geoprobe rig. Field screening of soil samples was performed using a photoionization detector (PID) or a flame ionization detector to measure volatile organic compounds in soil headspace and visual classification. If the field screening indicated that petroleum contaminated soil was present at 15 feet bgs, soil borings were advanced to 20 feet bgs. Soil samples were collected from undisturbed cores in accordance with the Soil Sampling Work Plan. Up to three samples per boring were collected for analysis depending on field screening and historical exceedances as specified in the Soil Sampling Work Plan. A total of 19 soil boring locations were advanced and 46 soil samples were collected.

Soil sample locations are shown on Figure 3-1. Boring logs are included in Appendix A.

Collected soil samples were submitted for chemical analysis to an Ecology-approved laboratory for:

- Benzene by USEPA Method 8260C[2]
- GRO (gasoline range organics) by Ecology Method NWTPH-Gx
- DRO (diesel range organics) and HO (heavy oil range organics) by Ecology Method NWTPH-Dx (after silica gel cleanup)

[2] Instead of 8021B mentioned in the Soil Sampling Work Plan.

- Samples with detectable DRO and/or HO concentrations were also analyzed for carcinogenic polycyclic aromatic hydrocarbons[3] (cPAHs) by USEPA Method 8270D[4]
- One sample per boring was also analyzed for volatile petroleum hydrocarbon (VPH) and extractable petroleum hydrocarbon (EPH). The EPH/VPH data include aliphatics, aromatics, benzene, toluene, ethylbenzene, xylenes, (BTEX collectively), naphthalene, 1- and 2-methyl naphthalene, n-hexane, and the seven cPAHs. Methyl tert-butyl ether, ethylene dibromide, and ethylene dichloride were not analyzed since these constituents were not detected in the Lower Yard and were not used in the determination of the TPH REL for the Site.

Additionally, the following quality samples were collected:

- Four duplicates for benzene, GRO, DRO and HO.
- Two duplicates for cPAHs and EPH/VPH.
- Two matrix spike and matrix spike duplicate for benzene, GRO, DRO, HO, cPAHs and EPH/VPH.
- Five trip blanks, one per day, for benzene and GRO.

Soil sample results are shown on Figure 3-1, Table 3-1 and Table 3-2. Laboratory Report and Chain-of-Custody Documentation are included in Appendix B.

3.2 Analytical Results

Analytical results of the 46 soil samples collected from the 19 soil boring locations advanced near the WSDOT stormwater line are summarized below.

Benzene:

- 45 out of the 46 soil samples collected presented analytical results in compliance with the benzene CUL.
- Only one soil sample (DPE-PSS-W8-8.5) presented a benzene concentration (33 mg/kg) above the benzene CUL (18 mg/kg) but below twice the CUL (36 mg/kg). This sample is delineated vertically.

cPAHs:

- 45 out of the 46 soil samples collected presented analytical results in compliance with the cPAHs CUL.
- Only one soil sample (DPE-PSS-Y9-9) presented a cPAHs concentration (0.19 mg/kg) above the cPAHs CUL (0.14 mg/kg) but below twice the CUL (0.28 mg/kg). The duplicate of this sample presented a cPAHs concentration above twice the CUL (0.349 mg/kg). This sample is considered delineated vertically as no detectable DRO and/or HO concentrations were observed deeper beneath this sample.

[3] cPAHs: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

[4] Instead of 8270C mentioned in the Soil Sampling Work Plan.

TPH:

- 35 out of the 46 soil samples collected presented analytical results in compliance with the TPH REL.
- Four soil samples presented a calculated TPH concentration (ranging from 3,070 to 5,380 mg/kg) above the TPH REL (2,775 mg/kg) but below twice the REL (5,550 mg/kg).
- Seven soil samples presented a calculated TPH concentration (ranging from 6,020 to 15,500 mg/kg) above twice the REL (5,550 mg/kg).
- All samples are delineated vertically.

As a result, soil collected from 10 soil boring locations presented concentrations in compliance with the CULs and REL. Soil collected from three soil boring locations contains COC concentrations that exceed the REL or CULs but none of these samples contains a COC concentration that is equal to or greater than twice the REL or CULs. Soil collected from six soil boring locations contains COC concentrations that exceed twice the REL or CULs.

Particularly, soil samples collected from samples locations T14 and U13 (both located near DPE well DPE-10), V12 (located near DPE well DPE-9), W11 (located near DPE well DPE-8), and W10 (located near DPE well DPE-2) presented concentrations in compliance with the CULs and REL.

3.3 Waste Handling

Soil generated from the WSDOT stormwater line performance soil sampling was containerized in 55-gallon steel drums approved by the U.S. Department of Transportation (DOT). Soil drums were labeled and staged in a designated area and stored on site. Soil was then transported off site to a Chevron-approved landfill.

4. DUAL-PHASE EXTRACTION SYSTEM EXPANSION ACTIVITIES

As of the fourth quarter 2018, groundwater samples collected from perimeter groundwater monitoring wells MW-101, MW-518, and MW-129-R, as well as, from interior monitoring well MW-E-R have occasionally contained TPH concentration above the groundwater site-specific CUL. To reduce the dissolved phase COCs observed in the groundwater collected from those four monitoring wells to below the groundwater CUL, a DPE well was installed in the vicinity of each of these four wells in accordance with the Final Additional Dual Phase Extraction Well Installation Work Plan (DPE Well Work Plan) submitted to Ecology on May 29, 2019 (Arcadis 2019b). Operation of these wells is incorporated into the existing DPE system under the existing approved permits.

DPE system expansion included the following activities:

- DPE wells installation and completion
- Conveyance piping installation
- Electrical connection
- Waste handling
- Startup commissioning.

This section is organized according to the activities listed above.

Field activities related to DPE system expansion were implemented during the summer 2019 and were monitored by Arcadis.

The DPE system expansion activities that were performed are listed below:

- Arcadis prepared construction specifications as part of the DPE Well Work Plan (Arcadis 2019b). Arcadis also observed the construction work completed by the contractors identified below.
- Subsurface utility locations were marked by Geomarkout.
- Survey at the Site was conducted by Otak.
- Drilling activities associated with monitoring well decommissioning and installation were conducted by Cascade.
- Electrical services were provided by SHJ Electric, a licensed electrician.
- General construction services for DPE system installation were provided by Clearcreek Contractors Inc. (Clearcreek).

4.1 Wells Installation and Completion

Four DPE wells used for both groundwater and soil vapor extraction were installed from June 13 to 28, 2019 under Arcadis supervision as part of the DPE system extension. The locations of DPE-15 through DPE-18 are presented on Figure 2-1.

4.1.1 Wells Installation

Installation details are summarized below:

- Otak pre-surveyed the well locations on June 13, 2019.
- Washington 811 OneCall was contacted prior to drilling the wells.
- Site utility maps were consulted, and any potential additional utilities were located by Geomarkout on June 24, 2019.
- SHJ Electric disconnected the electric line present near the drilling locations on June 25, 2019 and reconnected it following DPE well installation.
- Cascade advanced and constructed the wells from June 25 to 27, 2019.
    - Well locations were pre-cleared for subsurface utilities to 8 feet bgs with an air knife and vacuum truck to protect any potential underground improvements. Cascade then perform well installation using a 10¼-inch hollow stem auger to a depth of 24 feet bgs.
    - Soil was field screened with a PID using a 2.5-foot split spoon on 5-foot intervals and logged using USGS soil classification. DPE wells were installed in areas of the Site that have not been previously excavated and backfilled during the 2001 through 2017 remediation events.
    - Well installation was implemented according to the design provided in the DPE Wells Work Plan and Ecology's recommendations.
    - The sand pack extended from 1 foot above the screened interval to the total depth of the well. Each well was completed with hydrated bentonite chips and neat cement.
- Following well installation, Clearcreek completed the DPE wells with above-grade well vault and at-grade level conveyance piping, and installed control wiring connections.
- Otak surveyed the as-built locations and casing elevations of the wells on July 25, 2019, after completion of the well vault installation.

Well boring logs are provided in Appendix A. Well construction details are included in Table 4-1.

The DPE wells were constructed as follows:

- Advanced to 24 feet bgs.
- 4-inch diameter, Schedule 40 polyvinyl chloride (PVC) riser from above ground surface to 4 feet bgs,
- 4-inch diameter, Schedule 40 PVC 0.020-inch slotted screen from 4 to 19 feet bgs,
- and a 5-foot, Schedule 40 PVC sump from 19 to 24 feet bgs.
- Finished with an approximately 2- to 3-foot stickup for well vault completion by Clearcreek.

The annulus of the borehole was filled with 10x20 Colorado silica sand from 3 to 24 feet bgs, hydrated bentonite pellets from 1 to 2 feet bgs, and neat cement from 1 foot bgs to the ground surface. Cascade then developed the DPE wells via surge and purge techniques. A minimum of 10 well volumes was removed, or until the purge water was clear of sediment.

4.1.2 Wells Completion and Conveyance Piping Installation

Each DPE well was completed with an aboveground weatherproof fiberglass vault similar to the existing DPE wells as follows:

- The base of the vault was set at 6 inches bgs.
- The vault was set in a concrete skirt, reinforced with rebar, and set in gravel backfill to allow for drainage.
- The vault was topped with a custom-built, lightweight, high-density polyethylene (HDPE) lid to reduce the infiltration of rainwater.
- A high-level float switch was installed within the vault to shut down the corresponding pump in case a leak occurs within the vault.
- Insulation was added within each fiberglass vault to protect the wellhead piping from freezing temperatures.

Following DPE well installation, Clearcreek installed conveyance piping leading from the DPE wells to the DPE system manifolds. To avoid ground disturbance, allow for easy optimization and maintenance, and reduce additional waste handling, all conveyance piping was installed on grade. All conveyance piping constructed with HDPE was pressure tested by Clearcreek and observed by an Arcadis representative to pass 5 pounds per square inch for 15 minutes without losing pressure. At several locations, HDPE pipe is covered with a minimum of 2 feet of sand and gravel for temporary crossover. PVC pipe is contained inside steel casing at crossover locations. Conveyance piping layout is shown on Figure 2-1.

Similar to the DPE wells installed in the fall 2017, each DPE well is connected to conveyance piping and control wires that enter the vault. Vault penetrations are sealed to contain any potential leaks. Conveyance piping construction specifications are listed below:

- *Groundwater conveyance piping*- Extracted groundwater is pumped through a 1-inch-diameter HDPE conveyance line contained inside a 3-inch-diameter HDPE secondary containment line running from each DPE well to the groundwater manifold. Groundwater conveyance piping is connected to the DPE wellhead via steel pipe through a gate valve and check valve. The steel pipe is then connected to 1-inch-diameter polyethylene hose that penetrates the well casing through a jet well seal and leads down the DPE well to the pump. Secondary containment piping for groundwater conveyance is wrapped in ¼ inch jacketed insulation.
- *Vapor conveyance piping* - Extracted vapors are conveyed through individual 3-inch HDPE conveyance lines running from each DPE well to the SVE manifold. Vapor conveyance piping is connected to the DPE wellheads via a 3- by 4-inch PVC tee. A threaded HDPE to PVC threaded fitting connects the conveyance piping to the wellhead. A vacuum gauge is installed on the vapor conveyance piping at the wellhead to confirm vacuum is applied to the well.
- Three wires (pump lead wire, float switch wire, and pressure transducer wire) are sealed through penetrations in the sidewall of the well vault. The pump lead wire and transducer wire then enter the well casing through sealed penetrations in the jet well seal.

- Two service oil-resistant jackets, oil-resistant insulation, and weather-/water-resistant (SOOW) cords lead to a weatherproof junction box located outside of each DPE well vault. The pump lead wire connects to the SOOW cord.

4.1.3 Manifold Details

WSDOT stormwater line performance soil sampling data indicate that DPE wells DPE-2, DPE-8, DPE-9 and DPE-10 were successful in reducing COC concentrations in soil to below the site-specific CULs and REL within their ROI. Arcadis disconnected the conveyance piping from these wells and use the manifold locations and pump control inputs for operation of the expansion wells. The infrastructure associated with the disconnected wells was left in place for reconnection of these wells if required at a later date.

Following the completion of the DPE wells, manifold inputs were updated with the corresponding well conveyance piping:

- DPE-2 was changed to DPE-15
- DPE-8 was changed to DPE-16
- DPE-9 was changed to DPE-17
- DPE-10 was changed to DPE-18.

4.2 Electrical Connection

SHJ Electric installed a new junction box outside the system to assist with the connection of the new control wire, transducer wire and float switch for each new well. Electrical connection activities included:

- Disconnect the three wires (pump lead wire, float switch wire, and pressure transducer wire) for wells DPE-2, DPE-8, DPE-9 and DPE-10.
- Connect the three wires (pump lead wire, float switch wire, and pressure transducer wire) through the new junction box to wells DPE-15, DPE-16, DPE-17 and DPE-18.

No additional electrical services were provided.

4.3 Waste Handling

The above grade construction design limited the amount of soil handling and disposal required. Soil generated from the installation of DPE wells was containerized in DOT-approved 55-gallon steel drums. Soil drums were labeled and staged in a designated area and stored on site. Soil was then transported off site to a Chevron-approved landfill.

Development purge water from DPE wells was first stored in DOT-approved 55-gallon steel drums and then treated via the DPE System.

4.4 DPE System Restart

DPE system startup was performed on August 1 and 2, 2019.

SHJ Electric was onsite to ensure no vaults or pump controls were in alarm condition and the correct outputs were registering on the control panel. The soil vapor extraction and treatment unit was bump started (2 minutes of operation) to ensure connections were operational. The soil vapor extraction and treatment unit remained shut down to allow the new wells to dewater appropriately. Arcadis personnel performed a system walk through to ensure alarm failsafe were working as designed. Arcadis field personnel tested new DPE system components, collected baseline monitoring data and completed the DPE system startup check list.

Monitoring wells MW-101, MW-518, MW-129-R, and MW-E-R are used as observation wells for the DPE system monitoring near the newly installed DPE wells DPE-15 to DPE-18.

Data collected during system restart was reported in the 2019 Groundwater and Operation Report (2019 GOR).

5. SUMMARY

The results of the WSDOT stormwater line performance soil sampling and the DPE system expansion activities are summarized below.

5.1 WSDOT stormwater line performance soil sampling

Arcadis conducted the WSDOT stormwater line performance soil sampling according to the Soil Sampling Work Plan (Arcadis 2018c) during fourth quarter 2018, following 12 months of operation of the DPE system. A total of 19 soil boring locations were advanced and 46 soil samples were collected.

- Soil collected from 10 soil boring locations presented concentrations in compliance with the CULs and REL.
- Soil collected from three soil boring locations contains COC concentrations that exceed the REL or CULs but none of these samples contains a COC concentration that is equal to or greater than twice the REL or CULs.
- Soil collected from six soil boring locations contains COC concentrations that exceed twice the REL or CULs.

Particularly, soil samples collected from samples locations T14 and U13 (both located near DPE well DPE-10), V12 (located near DPE well DPE-9), W11 (located near DPE well DPE-8), and W10 (located near DPE well DPE-2) presented concentrations in compliance with the CULs and REL.

Besides one benzene exceedance and one cPAHs exceedances, all other exceedances observed were TPH exceedances. All samples were delineated vertically.

DPE system operation was resumed following the WSDOT stormwater line performance soil sampling and will continue until further evaluation of the remediation activities are conducted.

5.2 Dual-Phase Extraction System Expansion

Four DPE wells (DPE-15 to DPE-18) used for both groundwater and soil vapor extraction were installed near monitoring wells MW-101, MW-518, MW-129-R, and MW-E-R to address dissolved phase COC concentrations observed in these monitoring wells.

DPE wells were installed according to the DPE Well Work Plan submitted to Ecology on May 29, 2019 (Arcadis 2019b) and their characteristics and operation are similar to the existing DPE wells. Operation of these wells is incorporated into the existing DPE system under the existing approved permits.

WSDOT stormwater line performance soil sampling data indicate that DPE wells DPE-2, DPE-8, DPE-9 and DPE-10 were successful in reducing COC concentrations in soil to below the site-specific CULs and REL within their ROI. Arcadis disconnected the conveyance piping from these wells and use the manifold locations and pump control inputs for operation of the newly installed DPE wells. The infrastructure associated with the disconnected wells was left in place for reconnection of these DPE wells if required at a later date. Monitoring wells MW-101, MW-518, MW-129-R, and MW-E-R are used as observation wells for the DPE system monitoring near the newly installed DPE wells DPE-15 to DPE-18.

6. REFERENCES

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Arcadis. 2020. 2019 Groundwater and Operation Report. March 25.

Ecology. 2007. AO No. DE 4460

Ecology. 2017. AO No. DE 4460 amendment

TABLES

FIGURES

APPENDIX A

Boring Logs

APPENDIX B

Laboratory Report and Chain-of-Custody Documentation

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TABLES

Table 3-1
Soil Analytical Data
Former Unocal Terminal
11720 Unoco Road
Edmonds, Washington

Sample Date	Sample Location	Sample Name	Sample Depth (feet bgs)	Benzene (mg/kg)		GRO (mg/kg)		DRO (mg/kg)		HO (mg/kg)		TPH (mg/kg)		Total cPAHs Adjusted for Toxicity (mg/kg)		Comment
		Remediation Level (REL) / Cleanup Levels (CULs)		18 mg/kg		-						2,775 mg/kg		0.14 mg/kg		
				Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Sum	Q	Sum	Lab Q	
Soil Samples																
12/3/2018	N17	DPE-PSS-N17-4	4	0.0089	U	620		9,700		270		***10,590***		0.001	--	--
12/3/2018	N17	DPE-PSS-N17-6	6	0.0089	U	3.4	J	14	U	21	U	21		--	--	--
12/3/2018	O16	DPE-PSS-O16-4	4	0.0084	U	570		4,700		110		5,380		0.0004	UU	--
12/3/2018	O16	DPE-PSS-O16-6	6	0.008	U	8.5		410		24	J	443		0.001	--	--
12/3/2018	P15	DPE-PSS-P15-6	6	0.016	U	1400		4,100		520		***6,020***		0.004	--	--
12/3/2018	P15	DPE-PSS-P15-11	11	0.0087	U	2.6	J	14	U	19	U	19		--	--	--
12/3/2018	Q14	DPE-PSS-Q14-6	6	0.0085	U	870		7,200		990		***9,060***		0.003	--	--
12/3/2018	Q14	DPE-PSS-Q14-14.5	14.5	0.0086	U	2.6		14	U	20	U	20		--	--	--
12/4/2018	P16	DPE-PSS-P16-1	1	0.0076	U	720		20	J	82		822		0.009	--	--
12/4/2018	P16	DPE-PSS-P16-2	2	0.0093	U	100		42	J	75		217		0.001	--	--
12/4/2018	P16	DPE-PSS-P16-6	6	0.0087	U	28		14	U	34	J	69		0.001	--	--
12/4/2018	O17	DPE-PSS-O17-3	3	0.0076	U	120		13	U	28	J	155		0.007	--	--
12/4/2018	O17	DPE-PSS-O17-6	6	0.0088	U	14		14	U	19	U	31		--	--	--
12/4/2018	Q15	DPE-PSS-Q15-1	1	0.0077	U	210		25	J	64		299		0.005	--	--
12/4/2018	Q15	DPE-PSS-Q15-6	6	0.009	U	18		13	U	19	U	34		--	--	--
12/4/2018	T14	DPE-PSS-T14-4	4	0.0085	U	5.6		13	U	92		104		0.001	--	--
12/4/2018	T14	DPE-PSS-T14-6	6	0.0083	U	3.1	J	13	U	44	J	54		0.0004	--	--
12/4/2018	U13	DPE-PSS-U13-8.5	8.5	0.0083	U	370		1,200		45	J	1,615		0.012	--	--
12/4/2018	U13	DPE-PSS-U13-14.5	14.5	0.009	U	31		14	U	21	U	49		--	--	--
12/5/2018	W9	DPE-PSS-W9-4	4	0.072		78		290		720		1,088		0.001	--	--
12/5/2018	W9	DPE-PSS-W9-6	6	0.13		960		1,400		710		3,070		0.025	--	--
12/5/2018	W9	DPE-PSS-W9-19.5	19.5	0.0083	U	5.9		15	U	21	U	24		--	--	--
12/5/2018	V10	DPE-PSS-V10-5	5	0.67		240		5,800		7,900		***13,940***		0.035	--	--
12/5/2018	V10	DPE-PSS-V10-10	10	3.4		1100		6,100		8,300		***15,500***		0.059	--	--
12/5/2018	V10	DPE-PSS-V10-13	13	0.0088	U	2.7	U	14	U	22	J	30		0.0004	UU	--
12/5/2018	V11	DPE-PSS-V11-5	5	0.016	J	39		25	J	88		152		0.005	--	--
12/5/2018	V11	DPE-PSS-V11-9.5	9.5	0.0087	U	2.6	U	15	U	21	U	19	UU	--	--	--
12/5/2018	W10	DPE-PSS-W10-7	7	0.0086	U	17		25	U	450		480		0.002	--	--
12/5/2018	W10	DPE-PSS-W10-10	10	0.0082	U	46		240	U	1,200		1,366		0.006	--	--
12/5/2018	W10	DPE-PSS-W10-14.5	14.5	0.0096	U	2.9	U	16	U	23	U	21	UU	--	--	--
12/6/2018	W11	DPE-PSS-W11-2	2	0.0094	U F2 F1	110		610	U	2,000	J F1	2,415		0.086	--	--
12/6/2018	W11	DPE-PSS-W11-3	3	0.0084	U	5	J	9.6	U	78		88		0.002	UU	--
12/6/2018	W11	DPE-PSS-W11-6	6	0.0081	U	2.4	U	10	U	15	U	14	UU	--	--	--
12/6/2018	V12	DPE-PSS-V12-4	4	0.0091	U	6.4		12	U	17	U	21		0.0004	UU	--
12/6/2018	V12	DPE-PSS-V12-6	6	0.0094	U	3.9	J	14	U	20	U	21		--	--	--
12/6/2018	Y9	DPE-PSS-Y9-7.5	7.5	0.011	U	5.6	J	61	J	130		197		0.009	--	--
12/6/2018	Y9	DPE-PSS-Y9-9	9	0.011	U	980		6,300		3,600		***10,880***		0.190	--	--
12/6/2018	Y9	DPE-PSS-Y9-14.5	14.5	0.013	U	3.8	U	17	U	24	U	22	UU	--	--	--
12/6/2018	W8	DPE-PSS-W8-6.5	6.5	0.18		2,800		2,400		1,200		***6,400***		0.064	--	--
12/6/2018	W8	DPE-PSS-W8-8.5	8.5	33		3,100		120		70		3,290		0.083	--	--
12/6/2018	W8	DPE-PSS-W8-19.5	19.5	0.0079	U	2.4	J	14	U	19	U	19		--	--	--
12/7/2018	X9	DPE-PSS-X9-7	7	0.22	F2 F1	150		480		100		730		0.002	--	--
12/7/2018	X9	DPE-PSS-X9-14.5	14.5	0.012	U	7	J	570		200		777		0.0005	UU	--

Table 3-1
Soil Analytical Data
Former Unocal Terminal
11720 Unoco Road
Edmonds, Washington

Sample Date	Sample Location	Sample Name	Sample Depth (feet bgs)	Benzene (mg/kg)		GRO (mg/kg)		DRO (mg/kg)		HO (mg/kg)		TPH (mg/kg)		Total cPAHs Adjusted for Toxicity (mg/kg)		Comment
		Remediation Level (REL) / Cleanup Levels (CULs)		18 mg/kg		-						2,775 mg/kg		0.14 mg/kg		
				Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Sum	Q	Sum	Lab Q	
12/7/2018	X8	DPE-PSS-X8-7	7	3.6		1,000		14	U	27	J	1,034		0.019	--	--
12/7/2018	X8	DPE-PSS-X8-12.5	12.5	8.4		1,200	H	2,000		270		3,470		0.025	--	--
12/7/2018	X8	DPE-PSS-X8-19.5	19.5	0.02	J	2.7	H U	10	U	14	U	15		--	--	--
Quality Assurance Samples																
Duplicate Samples																
12/4/2018	DPE-PSS-Q15-6	DUP-1	NA	0.01	U	10		13	U	19	U	26		--	--	Parent sample: DPE-PSS-Q15-6
12/5/2018	DPE-PSS-V10-5	DUP-2	NA	8.4		1,000		6,700		6,400		***14,100***		0.134	--	Parent sample: DPE-PSS-V10-5
12/6/2018	DPE-PSS-Y9-9	DUP-3	NA	0.01	U	1,000		510		330		1,840		***0.349***	--	Parent sample: DPE-PSS-Y9-9
12/7/2018	DPE-PSS-X8-19.5	DUP-4	NA	0.013	J	11		13	U	19	U	27		--	--	Parent sample: DPE-PSS-X8-19.5
Trip Blank Samples																
12/3/2018	580-82414-1	Trip Blank	NA	0.0076	U	2.3	U	--	--	--	--	--	--	--	--	--
12/4/2018	580-82405-1	Trip Blank	NA	0.0076	U	2.3	U	--	--	--	--	--	--	--	--	--
12/5/2018	580-82438-1	Trip Blank	NA	0.0076	U	2.3	U	--	--	--	--	--	--	--	--	--
12/6/2018	580-82469-1	Trip Blank	NA	0.0076	U	2.3	U	--	--	--	--	--	--	--	--	--
12/7/2018	580-82479-1	Trip Blank	NA	0.0076	U	4.6	J	--	--	--	--	--	--	--	--	--

Notes

mg/kg = milligrams per kilogram.

Sample depth in feet below ground surface (bgs). The depth mentioned in the sample name is the depth according to the planned final grade.

Benzene by Method United States Environmental Protection Agency (USEPA) 8260C

GRO = Gasoline by Washington State Department of Ecology (Ecology) Method NWTPH-Gx

DRO = diesel range organics by Ecology Method NWTPH-Dx (after silica gel cleanup)

HO = heavy oil range organics by Ecology Method NWTPH-Dx (after silica gel cleanup)

Total petroleum hydrocarbons (TPH) concentration calculated by summing the concentrations of GRO, DRO and HO. For results which do not exceed laboratory reporting limit (RL), half of the laboratory RL is added to determine TPH concentration.

Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) analyzed by USEPA 8270D SIM when either DRO or HO concentrations were observed at or above the laboratory RL. Total cPAHs calculated by summing the concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene and adjusted for toxicity using toxic equivalency factors to represent a total benzo(a)pyrene concentration (WAC 173-340-900). For results which do not exceed laboratory RL, half of the laboratory RL is added to determine cPAHs concentration.

na: not applicable

--: cPAHs not analyzed. No DRO/HO concentrations at or above the laboratory RL.

Lab Q: qualifier attributed by the laboratory

U: Not detected at the laboratory reporting limit (RL). Values shown are the laboratory RLs.

J: Result is less than the laboratory RL but greater than or equal to the laboratory method detection limit (MDL) and the concentration is an estimated value.

F1: matrix spike (MS) and/or matrix spike duplicate (MSD) recovery is outside acceptance limits

F2: MS/MSD RPD exceeds control limits

H: Sample was prepped or analyzed beyond the specified holding time

For summed results:

UU: The constituents making up the total are all non-detects.

	Exceeds site-specific REL or CULs
BOLD Italic	Exceeds twice site-specific REL or CULs

Table 3-2
Soil Analytical Data (VPH/EPH)
Former Unocal Terminal
11720 Unoco Road
Edmonds, Washington

Sample Date	Sample Location	Sample Name	Sample Depth (feet bgs)	Volatile Petroleum Hydrocarbons														Comment
				C5-C6 Aliphatics		C6-C8 Aliphatics		C8-C10 Aliphatics		C10-C12 Aliphatics		C8-C10 Aromatics		C10-C12 Aromatics		C12-C13 Aromatics		
				Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	
Soil Samples																		
12/3/2018	N17	DPE-PSS-N17-4	4	5.5	U	5.5	U	9.2		130		40		120		59		
12/3/2018	O16	DPE-PSS-O16-4	4	5.8	U	5.8	U	17		120		42		100		41	J	
12/3/2018	P15	DPE-PSS-P15-6	6	6.0	U	6.0	U	11		130		38		140		73		
12/3/2018	Q14	DPE-PSS-Q14-6	6	5.9	U	5.9		150		180		160		110		58	J	
12/4/2018	P16	DPE-PSS-P16-1	1	5.0	U	14		62		86		70		42	J	50	U	
12/4/2018	O17	DPE-PSS-O17-3	3	6.8	U	6.8	U	3.0	J	9.6		9.1		6.2	J F1	6.8	U F1	
12/4/2018	Q15	DPE-PSS-Q15-1	1	4.8	U	4.8	U	8.1		29		13		23		19		
12/4/2018	T14	DPE-PSS-T14-6	6	6.1	U	6.1	U	6.1	U	6.1	U	3.1	J	6.1	U	6.1	U	
12/4/2018	U13	DPE-PSS-U13-8.5	8.5	5.5	U	5.5	U	5.5	U	35		8.0		69		37	J	
12/5/2018	W9	DPE-PSS-W9-4	4	5.8	J	22		10		19		14		9.6		3.5	J	
12/5/2018	V10	DPE-PSS-V10-10	10	36	J	190		52		130		65		110		56	J	
12/5/2018	V11	DPE-PSS-V11-5	5	5.6	U	5.6	U	5.6	U	5.6	U	5.6	U	5.6	U	5.6	U	
12/5/2018	W10	DPE-PSS-W10-7	7	5.8	U	6.1		5.8	U	2.7	J	2.3	J	5.8	U	5.8	U	
12/6/2018	W11	DPE-PSS-W11-2	2	6.4	U	6.4	U F1	3.0	J F1	19	F1	6.1	J F1	9.0	F1	9.4	F1	
12/6/2018	V12	DPE-PSS-V12-4	4	6.5	U	6.5	U	6.5	U	6.5	U	6.5	U	6.5	U	6.5	U	
12/6/2018	Y9	DPE-PSS-Y9-9	9	6.0	U	2.7	J	21		75		30		74		100		
12/6/2018	W8	DPE-PSS-W8-6.5	6.5	12		73		96		430		160		360		130		
12/7/2018	X9	DPE-PSS-X9-7	7	25		32	J	84		150	F1	95		130		39	J	
12/7/2018	X8	DPE-PSS-X8-7	7	30		77	J	73		210		110		130		51	J	
Quality Assurance Samples																		
Duplicate Samples																		
12/5/2018	DPE-PSS-V10-5	DUP-2	NA	110		220		33		96		45		88		32	J	Parent sample: DPE-PSS-V10-5
12/6/2018	DPE-PSS-Y9-9	DUP-3	NA	18	U	9.6	J	56		210		90		220		200		Parent sample: DPE-PSS-Y9-9

Table 3-2
Soil Analytical Data (VPH/EPH)
Former Unocal Terminal
11720 Unoco Road
Edmonds, Washington

Sample Date	Sample Location	Sample Name	Sample Depth (feet bgs)	Volatile Petroleum Hydrocarbons														Comment
				Methyl tert-butyl ether		Benzene		Toluene		Ethylbenzene		m-Xylene & p-Xylene		o-Xylene		Napthalene		
				Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	
Soil Samples																		
12/3/2018	N17	DPE-PSS-N17-4	4	0.55	U	0.055	U	0.055	U	0.055	U	0.11	U	0.063		0.76		
12/3/2018	O16	DPE-PSS-O16-4	4	0.58	U	0.058	U	0.058	U	0.12		0.12	U	0.23		5.1		
12/3/2018	P15	DPE-PSS-P15-6	6	0.60	U	0.060	U	0.060	U	0.037	J	0.12	U	0.18		6.3		
12/3/2018	Q14	DPE-PSS-Q14-6	6	0.59	U	0.059	U	0.91		7.3		0.12	U	0.059	U	3.5		
12/4/2018	P16	DPE-PSS-P16-1	1	0.50	U	0.17		0.25		1.6		0.10	U	1.8		1.8		
12/4/2018	O17	DPE-PSS-O17-3	3	0.68	U	0.068	U	0.068	U	0.068	U	0.14	U	0.068	U	0.28	J	
12/4/2018	Q15	DPE-PSS-Q15-1	1	0.48	U	0.048	U	0.048	U	0.19		0.096	U	0.25		1.4		
12/4/2018	T14	DPE-PSS-T14-6	6	0.61	U	0.061	U	0.061	U	0.061	U	0.12	U	0.061	U	0.31	U	
12/4/2018	U13	DPE-PSS-U13-8.5	8.5	0.55	U	0.055	U	0.055	U	0.055	U	0.11	U	0.055	U	0.83		
12/5/2018	W9	DPE-PSS-W9-4	4	0.62	U	0.17		0.062	U	1.6		1.0		0.14		0.38		
12/5/2018	V10	DPE-PSS-V10-10	10	2.5		6.6		0.88		3.0		0.72		1.3		1.4		
12/5/2018	V11	DPE-PSS-V11-5	5	0.56	U	0.056	U	0.056	U	0.056	U	0.11	U	0.056	U	0.28	U	
12/5/2018	W10	DPE-PSS-W10-7	7	0.58	U	0.058	U	0.058	U	0.058	U	0.12	U	0.058	U	0.29	U	
12/6/2018	W11	DPE-PSS-W11-2	2	0.64	U	0.064	U	0.064	U	0.064	U	0.13	U	0.064	U	0.59		
12/6/2018	V12	DPE-PSS-V12-4	4	0.65	U	0.065	U	0.065	U	0.065	U	0.13	U	0.065	U	0.33	U	
12/6/2018	Y9	DPE-PSS-Y9-9	9	0.60	U	0.060	U	0.090		0.51		0.12	U	0.88		4.9		
12/6/2018	W8	DPE-PSS-W8-6.5	6.5	0.66	U	0.41		0.28		11		0.12	J	3.4		14		
12/7/2018	X9	DPE-PSS-X9-7	7	0.42	J	3.0		0.18		22		3.0		2.7		12		
12/7/2018	X8	DPE-PSS-X8-7	7	0.68	J	3.5		0.20		21		0.56		2.1		19		
Quality Assurance Samples																		
Duplicate Samples																		
12/5/2018	DPE-PSS-V10-5	DUP-2	NA	2.5		5.2		0.31		2.9		0.51		0.046	J	2.2		Parent sample: DPE-PSS-V10-5
12/6/2018	DPE-PSS-Y9-9	DUP-3	NA	1.8	U	0.18	U	0.18	U	1.2		0.37	U	2.1		11		Parent sample: DPE-PSS-Y9-9

Table 3-2
Soil Analytical Data (VPH/EPH)
Former Unocal Terminal
11720 Unoco Road
Edmonds, Washington

Sample Date	Sample Location	Sample Name	Sample Depth (feet bgs)	Extractable Petroeum Hydrocarbons																Comment
				C10-C12 Aliphatics		C10-C12 Aromatics		C12-C16 Aliphatics		C12-C16 Aromatics		C16-C21 Aliphatics		C16-C21 Aromatics		C21-C34 Aliphatics		C21-C34 Aromatics		
				Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	Result	Lab Q	
Soil Samples																				
12/3/2018	N17	DPE-PSS-N17-4	4	550		2.4	J*	3,400		87		4,500	B	610		990		4,700		
12/3/2018	O16	DPE-PSS-O16-4	4	350		2.4	J*	1,800		58	*	2,300		400		470		48	*	
12/3/2018	P15	DPE-PSS-P15-6	6	670		14	*	2,800		180	*	2,600		570		940		170	*	
12/3/2018	Q14	DPE-PSS-Q14-6	6	520	*	48	*	2,000		250	*	2,000		680		850		210	*	
12/4/2018	P16	DPE-PSS-P16-1	1	110	J*	200	U*	360		61	J*	440		230		1,300		660	*	
12/4/2018	O17	DPE-PSS-O17-3	3	15	J*	22	U*	28		7.5	J*	34		31		190		130	*	
12/4/2018	Q15	DPE-PSS-Q15-1	1	34	J*	41	U*	160		41	*	200		120		280		170	*	
12/4/2018	T14	DPE-PSS-T14-6	6	11	U*	11	U*	11	U	11	U*	11	U	11	U	13		7.7	J*	
12/4/2018	U13	DPE-PSS-U13-8.5	8.5	89	*	9.3	J*	490		48	*	400		86		80		10	J*	
12/5/2018	W9	DPE-PSS-W9-4	4	16	J*	52	U*	39	J	7.7	J*	67		35	J	310		100	*	
12/5/2018	V10	DPE-PSS-V10-10	10	110	*	34	J*	590		130	*	940		560		1,300		990	*	
12/5/2018	V11	DPE-PSS-V11-5	5	1.3	J*	11	U*	11		1.7	J*	22		8.2	J	27		15	*	
12/5/2018	W10	DPE-PSS-W10-7	7	53	U*	53	U*	5.9	J	53	U*	53	U	53	U	88		47	J*	
12/6/2018	W11	DPE-PSS-W11-2	2	530	U	530	U*	90	J	530	U	100	J B	77	J	550		470		
12/6/2018	V12	DPE-PSS-V12-4	4	5.4	U	5.4	U*	5.4	U	5.4	U	0.69	J B	5.4	U	4.5	J	2.8	J	
12/6/2018	Y9	DPE-PSS-Y9-9	9	270	J	570	U*	1,800		400	J	2,100	B	1,200		2,300		1,500	*	
12/6/2018	W8	DPE-PSS-W8-6.5	6.5	100	J	77	J*	370		83	J	440	B	200		340		210	*	
12/7/2018	X9	DPE-PSS-X9-7	7	13		6.4	J*	44		13		45	B	22		22		13	*	
12/7/2018	X8	DPE-PSS-X8-7	7	42		24	*	140		39		140	B	58		63		32	*	
Quality Assurance Samples																				
Duplicate Samples																				
12/5/2018	DPE-PSS-V10-5	DUP-2	NA	250	*	120	*	1,000		270	*	1,400		720		1,300		820	*	Parent sample: DPE-PSS-V10-5
12/6/2018	DPE-PSS-Y9-9	DUP-3	NA	370	J	1,200	U	2,700		590	J	4,200	B	2,600		5,400		3,700	*	Parent sample: DPE-PSS-Y9-9

Notes

mg/kg = milligrams per kilogram.
Sample depth in feet below ground surface (bgs).
Volatile Petroleum Hydrocarbons (VPH) by Ecology Method NWTPH/VPH
Extractable Petroleum Hydrocarbons (EPH) by Ecology Method NWTPH/EPH
NA: not applicable
Lab Q: qualifier attributed by the laboratory

U: Not detected at the laboratory reporting limit (RL). Values shown are the laboratory RLs.
B: Compound was found in the laboratory method blank and the sample. [The sample may have been cross-contaminated at the laboratory]
J: Result is less than the laboratory RL but greater than or equal to the laboratory method detection limit (MDL) and the concentration is an estimated value.
F1: matrix spike and/or matrix spike duplicate recovery is outside acceptance limits
* : RPD of the LCS and LCSD exceeds the control limits

Table 4-1
Well Construction Details
Former Unocal Edmonds Bulk Fuel Terminal
11720 Unoco Road
Edmonds, Washington

ARCADIS Design & Consultancy for natural and built assets

Well ID	Well Type	Casing Diameter	Casing Elevation[1]	Top of Screen Depth	Bottom of Screen Depth	Sump Length	Total Well Depth	Submersible Pump Installed	Pump Type Configuration
	DPE / PZ / SVE / MW	inches	feet NAVD88	feet bgs	feet bgs	feet	feet bgs	Yes/No	Top/Bottom Loading[2]
DPE-1	DPE	4	14.58	5.0	25.0	5.0	30.0	Yes	Top
DPE-2	DPE	4	14.88	5.0	25.0	5.0	30.0	Yes	Top
DPE-3	DPE	4	13.94	5.0	18.0	4.0	22.0	Yes	Top
DPE-4 (PZ-3)	DPE[3]	4	13.83	5.0	18.0	4.0	22.0	Yes	Top
DPE-5	DPE	4	15.33	7.0	19.0	5.0	24.0	Yes	Top
DPE-6	DPE	4	15.34	4.0	19.0	5.0	24.0	Yes	Top
DPE-7	DPE	4	13.68	6.5	19.0	5.0	24.0	Yes	Top
DPE-8	DPE	4	14.86	4.0	19.0	5.0	24.0	Yes	Top
DPE-9	DPE	4	14.32	4.0	19.0	5.0	24.0	Yes	Top
DPE-10	DPE	4	14.34	4.0	19.0	5.0	24.0	Yes	Top
DPE-11	DPE	4	14.27	5.0	19.0	5.0	24.0	Yes	Top
DPE-12	DPE	4	14.16	8.0	19.0	5.0	24.0	Yes	Top
DPE-12-R	DPE	4	14.30	6.0	19.0	5.0	24.0	Yes	Top
DPE-13	DPE	4	13.77	5.0	19.0	5.0	24.0	Yes	Top
DPE-14	DPE	4	13.67	6.5	19.0	5.0	24.0	Yes	Top
DPE-15	DPE	4	15.75	4.0	19.0	5.0	24.0	Yes	Top
DPE-16	DPE	4	16.14	4.0	19.0	5.0	24.0	Yes	Top
DPE-17	DPE	4	16.35	4.0	19.0	5.0	24.0	Yes	Top
DPE-18	DPE	4	14.89	4.0	19.0	5.0	24.0	Yes	Top
SVE-1	SVE	4	14.91	4.0	8.0	0.0	8.0	No	#N/A
SVE-2	SVE	4	14.65	4.0	8.0	0.0	8.0	No	#N/A
PZ-1	PZ	2	12.96	5.0	25.0	0.0	25.0	No	#N/A
PZ-2	PZ	2	13.18	5.0	25.0	0.0	25.0	No	#N/A
PZ-4	PZ	1	14.16	4.0	19.0	0.0	19.0	No	#N/A
PZ-5	PZ	1	12.84	4.0	19.0	0.0	19.0	No	#N/A
PZ-6	PZ	1	12.96	4.0	19.0	0.0	19.0	No	#N/A
PZ-7	PZ	1	13.05	4.0	19.0	0.0	19.0	No	#N/A
PZ-8	PZ	1	12.91	4.0	19.0	0.0	19.0	No	#N/A
PZ-9	PZ	1	12.85	4.0	19.0	0.0	19.0	No	#N/A
PZ-10	PZ	1	12.62	4.0	19.0	0.0	19.0	No	#N/A
MW-101	MW	2	14.99	5.0	15.0	0.0	15.0	No	#N/A
MW-126	MW[4]	2	12.40	3.7	13.7	0.0	14.2	No	#N/A
MW-129R	MW	2	12.92	3.0	13.0	0.0	13.0	No	#N/A
MW-143	MW[4]	2	11.94	3.5	13.6	0.0	14.1	No	#N/A
MW-511	MW	2	15.20	5.0	15.0	0.0	15.0	No	#N/A
MW-512	MW	2	13.19	3.0	13.0	0.0	13.0	No	#N/A
MW-518	MW	2	14.60	3.5	13.5	0.0	13.5	No	#N/A
MW-519	MW	2	12.60	3.0	13.0	0.0	13.0	No	#N/A
MW-525	MW	2	12.62	3.0	13.0	0.0	13.0	No	#N/A
MW-526	MW	2	12.90	3.0	13.0	0.0	13.0	No	#N/A
MW-531	MW	2	13.26	3.0	13.0	0.0	13.0	No	#N/A
MW-532	MW	2	13.38	3.0	13.0	0.0	13.0	No	#N/A
MW-E-R	MW[5]	2	14.30	3.0	13.0	0.0	13.0	No	#N/A

Notes:

1. Casing elevation surveyed by Otak, Inc. on 11/21/2017 for MW-E-R, DPE, SVE, and PZ wells besides DPE-12R surveyed on 04/10/2018 and DPE-15 to DPE-18 surveyed on 07/25/2019; on 08/08/2012 for MW-525, MW-526, MW-531, and MW-532; and on 10/27/2008 for MW-101, MW-126, MW-129R, MW-143, MW-511, MW-512, MW-518 and MW-519.
2. Grundfos Redi-flo 4 top-loading electric submersible pump.
3. During the 2015 DPE pilot test, DPE-4 was used as an observation well named PZ-3. DPE-4 has been used as a remediation well since DPE system startup on 12/01/17.
4. The monitoring well includes a well end cap of 0.5 foot.
5. Well overdrilled to 20 feet bgs

Shaded cells show decommisionned well.

bgs = below ground surface

DPE = dual phase extraction well; remediation well used for both groundwater and soil vapor extraction

MW = monitoring well; observation well used for DPE system monitoring and groundwater compliance monitoring

#N/A = not applicable

NAVD88 = North American Vertical Datum of 1988

PZ = piezometer; observation well used for DPE system monitoring

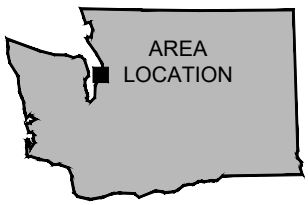
SVE = soil vapor extraction well; remediation well used for soil vapor extraction

FIGURES

REFERENCE: BASE MAP USGS QUADS., 7.5 MIN. SERIES (TOPOGRAPHIC) - EDMONDS EAST, WASH. AND EDMONDS WEST, WASH.

0 2000' 4000'

GRAPHIC SCALE



WASHINGTON

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
FORMER UNOCAL EDMONDS BULK FUEL TERMINAL
EDMONDS, WASHINGTON

SITE LOCATION

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1-1

CITY: MINNEAPOLIS, MN DIV/GROUP: ENV/CAD DB: R. OBERLANDER LD: R. OBERLANDER PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
D:\PROJECTS\33. Edmond Figures\E-Drawings\Edmonds\45362D01-1.dwg LAYOUT: 1-1 SAVED: 12/5/2017 12:03 PM ACADVER: 20.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 2/16/2018 2:49 PM BY: PAVAN KUMAR ANJANEYAKUMAR
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Edmond-W.tif

OUTFALL #002

FENCE

WILLOW CREEK

DPE SYSTEM OUTFALL

ELECTRICAL SUPPLY LINE

TREATED WATER DISCHARGE

LOWER YARD

20' CROSSING

40' CROSSING

7' CROSSING

20' CROSSING

20' CROSSING

20' CROSSING

DPE SYSTEM (50' x 20' PAD)

DETENTION BASIN NO. 1

POINT EDWARDS RETENTION POND

LM-2
MW-535
MW-533
MW-139R
MW-534
MW-509
DPE-16
MW-518
MW-515
MW-101
DPE-15
MW-516
MW-517
MW-513
MW-104
MW-514
MW-20R
MW-512
MW-525
DPE-3
DPE-4
/PZ-3
MW-531
PZ-1
AS-1
MW-532
DPE-7
MW-520
DPE-1
PZ-2
DPE-5
PZ-5
DPE-2
PZ-4
MW-521
DPE-6
MW-519
DPE-8
PZ-6
DPE-9
PZ-7
DPE-10
MW-511
MW-143
MW-126
MW-507
MW-506
MW-131
MW-505
MW-504
MW-108
MW-109
MW-E-R
DPE-17
MW-503
DPE-18
MW-129R
DPE-12
DPE-12R
PZ-9
PZ-10
DPE-13
DPE-14
PZ-8
DPE-11
MW-526
SVE-1
SVE-2
MW-502
P-8
P-1
MW-501
P-2
P-3
MW-13U
MW-500
P-4
P-5

LEGEND:

- FORMER UNOCAL BULK FUEL TERMINAL PROPERTY BOUNDARY
- MW-515 INTERIOR MONITORING WELL LOCATION
- MW-518 PERIMETER MONITORING WELL LOCATION
- MW-13 MONITORING WELL LOCATION
- PZ-1 PIEZOMETER LOCATION
- AS-1 AIR SPARGE WELL LOCATION
- DPE-10 DUAL PHASE EXTRACTION (DPE) WELL LOCATION
- DPE-12 DECOMMISSIONED DPE WELL LOCATION
- SVE-1 SOIL VAPOR EXTRACTION (SVE) WELL LOCATION
- S WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STORMWATER LINE
- SD POINT EDWARDS STORM DRAIN LINE
- 20-MIL POLYETHYLENE SHEETING
- GRAVEL AREA
- ELECTRICAL CONDUIT
- TREATED GROUNDWATER DISCHARGE LINE
- GROUNDWATER CONVEYANCE PIPING (APPROXIMATE LOCATION)
- VAPOR CONVEYANCE PIPING (APPROXIMATE LOCATION)
- SITE BOUNDARY
- DPE-15 2019 DPE WELL LOCATION

NOTES:

1. BUILDING AND ROAD INFORMATION DIGITIZED FROM GOOGLE EARTH AERIAL PHOTO. TOPOGRAPHIC CONTOURS WERE OBTAINED FROM AN UNKNOWN SOURCE. ALL LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY CONTRACTOR PRIOR TO CONSTRUCTION.
2. HORIZONTAL DATUM: WASHINGTON STATE COORDINATE SYSTEM NORTH ZONE (NORTH AMERICAN DATUM OF 1983 AND 1998).
   VERTICAL DATUM: NORTH AMERICAN DATUM OF 1988
   UNITS: U.S. SURVEY FEET
   HORIZONTAL AND VERTICAL CONTROL ESTABLISHED BY GLOBAL POSITIONING SYSTEM VIA VERTICAL REFERENCE STATION NETWORK.
3. SOUTHEAST PORTION OF WSDOT STORMWATER LINE HAS NOT BEEN SURVEYED.
4. LOCATION OF EXISTING POWER SUPPLY PANEL HAS NOT BEEN SURVEYED.
5. DPE-4 WAS ORIGINALLY INSTALLED AS PZ-3 PRIOR TO THE 2015 PILOT TEST AND CONVERTED TO A DPE WELL DURING SYSTEM CONSTRUCTION.
6. MONITORING WELL MW-E WAS RE-INSTALLED IN PLACE ON OCTOBER 20th, 2017 AND RENAMED MW-E-R.

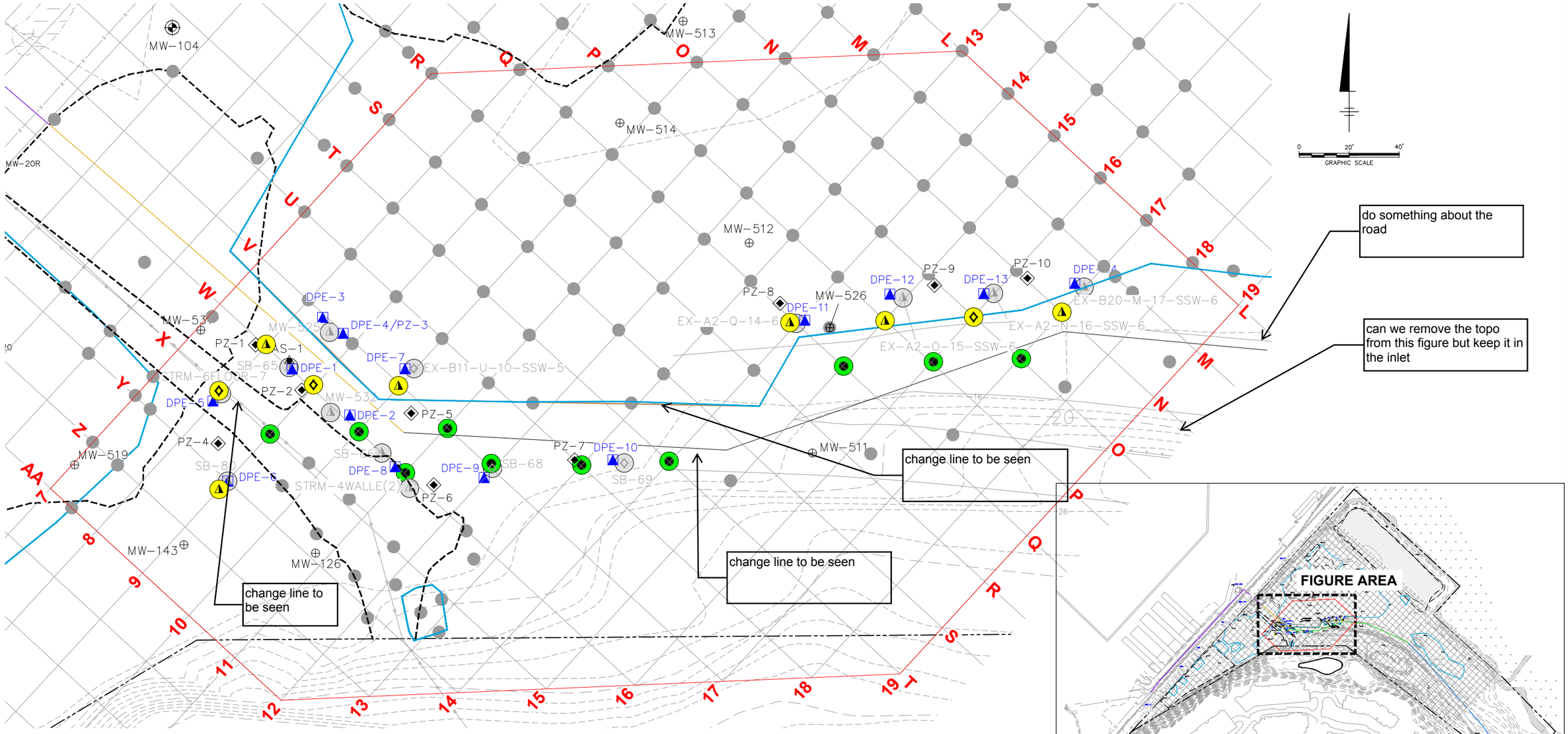
0 40' 80'
GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
FORMER UNOCAL BULK FUEL TERMINAL
EDMONDS, WASHINGTON

DUAL PHASE EXTRACTION SYSTEM LAYOUT

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2-1



LEGEND:

- PROPERTY BOUNDARY
- S — WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STORMWATER LINE
- SD — POINT EDWARDS STORM DRAIN LINE
- 20-MIL POLYETHYLENE SHEETING
- 2001 AND 2003 SOIL EXCAVATIONS BOUNDARIES
- 2007/2008 EXCAVATION BOUNDARIES
- DPE-10 — DUAL PHASE EXTRACTION (DPE) WELL LOCATION
- MW-515 — INTERIOR MONITORING WELL LOCATION AND DESIGNATION
- MW-518 — PERIMETER MONITORING WELL LOCATION
- AS-1 — AIR SPARGE WELL LOCATION
- PZ-9 — DPE MONITORING PIEZOMETERS

CUL CLEANUP LEVEL
REL REMEDIATION LEVEL

HISTORICAL SOIL SAMPLE CONCENTRATION:

- SOIL SAMPLE LOCATION WITH ANALYTE CONCENTRATIONS EXCEEDING SITE CULs OR REL
- SOIL SAMPLE LOCATION WITH ANALYTE CONCENTRATIONS EXCEEDING TWICE THE CULs OR REL
- SOIL SAMPLE LOCATION WITH ANALYTE CONCENTRATIONS LESS THAN SOIL CULs AND REL

2018 SOIL SAMPLE CONCENTRATION

- SOIL SAMPLE LOCATION WITH ANALYTE CONCENTRATIONS EXCEEDING SITE CULs OR REL
- SOIL SAMPLE LOCATION WITH ANALYTE CONCENTRATIONS EXCEEDING TWICE THE CULs OR REL
- SOIL SAMPLE LOCATION WITH ANALYTE CONCENTRATIONS LESS THAN SOIL CULs AND REL

NOTES:

1. HORIZONTAL DATUM: WASHINGTON STATE COORDINATE SYSTEM NORTH ZONE (NAD 83/98).
   VERTICAL DATUM: N.A.V.D. 88
   UNITS: U.S. SURVEY FEET
   HORIZONTAL AND VERTICAL CONTROL ESTABLISHED BY GPS VIA VERTICAL REFERENCE STATION NETWORK (VRSN).
2. SOUTHEAST PORTION OF WSDOT STORMWATER LINE HAS NOT BEEN SURVEYED.
3. LOCATION OF EXISTING POWER SUPPLY PANEL HAS NOT BEEN SURVEYED.

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
FORMER UNOCAL BULK FUEL TERMINAL
EDMONDS, WASHINGTON

DUAL PHASE EXTRACTION SYSTEM - PERFORMANCE SOIL SAMPLE RESULTS

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3-1

APPENDIX A

Boring Logs

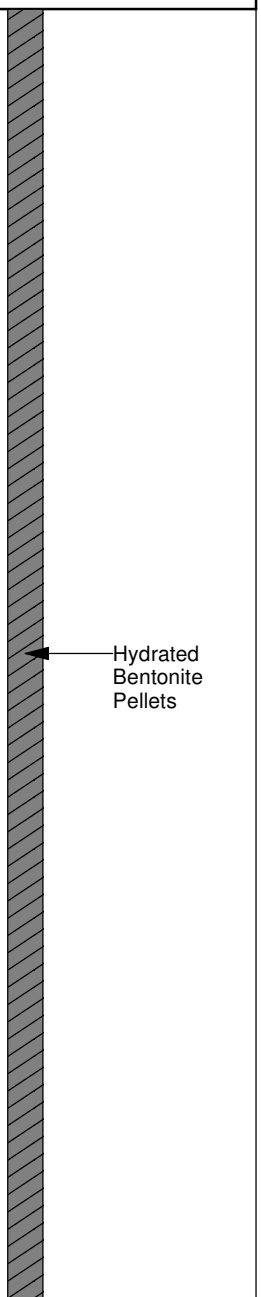
Date Start-Finish: 12/03/2018-12/03/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 20.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-N17
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 50°F, Sunny

DEPTH (ft.)	Sample Run	Sample Interval (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description
0	HA	0-0.3	0.3	NA	NA	0.0		SP		(0-0.3') SAND, fine grained, poorly graded, dry, brown. Black liner at 4" bgs.
1	HA	1-1.5	0.5	NA	NA	0.1		SP		(1-1.5') Same as above.
2	HA	2-2.5	0.5	NA	NA	0.4		SP		(2-2.5') SAND, fine to medium grained, poorly graded, dry, brown.
3	HA	3-3.5	0.5	NA	NA	1.5		SP		(3-3.5') SAND, fine to medium grained, poorly graded, moist, brown.
4	HA	4-4.5	0.5	NA	NA	65.4	X	SP		(4-4.5) Same as above.
5	HA	5-5.5	0.5	NA	NA	41.2				
6						9.2	X			
7	AS	5.5-10	4.5	NA	NA					(5-14') SAND, fine to medium grained, poorly graded, wet, brown.
8										
9								SP		
10										
11						18.7				
12	AS	10-15	5	NA	NA					
13										
14										(14-17') SAND with some gravel, fine to medium grained, poorly graded, wet, loose, grayish brown.
15								SP		
16										
17	AS	15-20	5	NA	NA					(17-19') SAND, fine grained, poorly graded; wet, brown.
18								SP		
19								SM		(19-20') SAND, CLAY and SILT, low plasticity, fine grained; wet, dense, brown.
20						4.3				End of boring at 20.0 ft bgs.
21										

Well/Boring Construction



REMARKS: ft/' = Feet
" = Inches
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
°F = Degrees Fahrenheit
HA = Hand Auger
AS = Acetate Sleeve
Cleared to 5.5' bgs via Hand Auger

Date Start-Finish: 12/03/2018-12/03/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 20.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-O16
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 50 °F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	HA	0-0.5	0.5	NA	NA	12.7		SP		(0.0-0.5') SAND, fine grained; little gravel; poorly graded, dry, loose, brown, dry.	
1	HA	1-1.5	0.5	NA	NA	9.2		SP		(1-1.5') Same as above.	
2	HA	2-2.5	0.5	NA	NA	8.4		SP		(2-2.5') Same as above.	
3	HA	3-3.5	0.5	NA	NA	27.0		SP		(3-3.5') Same as above.	
4	HA	4-4.5	0.5	NA	NA	71.4	X	SP		(4-4.5') SAND with little gravel, fine grained; poorly graded, moist to wet, loose, brown.	
5											
6						23.2	X			(5-10') Same as above, wet.	
7	AS	5-10	5	NA	NA			SP			
8											
9											
10						3.7				(10-19') Same as above, fine to medium grained.	Hydrated Bentonite Pellets
11											
12						1.2					
13	AS	10-15	5	NA	NA						
14								SP			
15						0.8					
16											
17											
18	AS	15-20	5	NA	NA						
19											
20						0.5		SP		(19-20') SAND with some gravel, fine grained; poorly graded, loose, wet, brown.	
21										End of boring at 20.0 ft bgs.	

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/04/2018-12/04/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-O17
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40°F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	NA	0-0.3	NA	NA	NA					(0-0.3') Asphalt, About 4 inches thick, no recovery	
1										(0.3-1') No Recovery.	
	HA	1-1.5	0.5	NA	NA	0.4		SP		(1-1.5') SAND, medium grained; trace gravel; poorly graded, dry, loose, brown.	
2	HA	2-2.5	0.5	NA	NA	0.3		SP		(2-2.5') Same as above.	
3	HA	3-3.5	0.5	NA	NA	61.2	X	SP		(3-3.5') Same as above.	
4	HA	4-4.5	0.5	NA	NA	0.9		SP		(4-4.5') Same as above, no gravels, moist.	
5	AS	5-10	5	NA	NA			SP		(5-10') Same as above, wet.	Hydrated Bentonite Pellets
6						1.3	X				
7											
8											
9											
10						0.7					
11											
12	AS	10-15	5	NA	NA	0.4					
13											
14								SP		(14-15') SAND with some gravel, medium grained; poorly graded, wet, loose, brown.	
15						0.6				End of boring at 15.0 ft bgs.	
16											

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/03/2018-12/03/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 20.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-P15
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 50°F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description
0	HA	0-0.5	0	NA	NA					(0-0.5') No Recovery,large cobbles.
1	HA	1-1.5	0.5	NA	NA	3.4		SP		(1-1.5') SAND, fine grained; poorly graded, dry, loose, brown.
2	HA	2-2.5	0.5	NA	NA	6.3		SP		(2-2.5') SAND with little gravel, fine grained; poorly graded, dry, loose, brown.
3	HA	3-3.5	0.5	NA	NA	27.5		SP		(3-3.5') Same as above, trace gravel.
4	HA	4-4.5	0.5	NA	NA	28.0		SP		(4-4.5') Same as above, moist.
5										
6	AS	5-10	5	NA	NA	78.2	X	SP		(5-7.5') Same as above, wet.
7										
8						13.1		SP		(7.5-8') Same as above, gray.
9								SP		(8-10') SAND with some gravel, fine grained, poorly graded, wet, loose,brown.
10										(10-20') Same as above, trace gravel.
11						6.7	X			
12	AS	10-15	5	NA	NA					
13										
14										
15								SP		
16										
17	AS	15-20	5	NA	NA					
18										
19										(19-20') Increased gravel.
20						5.0				
21										End of boring at 20.0 ft bgs.

Well/Boring Construction: Hydrated Bentonite Pellets

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/04/2018-12/04/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-P16
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40 °F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	NA	0-0.7	NA	NA	NA					(0-0.7') Asphalt, about 8 inches thick, no recovery.	
1	HA	0.7-1	0.3	NA	NA	105.9	X	SP		(0.7-1') SAND and GRAVEL, fine grained; poorly graded, dry, loose, dark brown.	
	HA	1-1.5	0.5	NA	NA	28.2		SP		(1-1.5') SAND and GRAVEL, fine grained; poorly graded, dry, loose, brown.	
2	HA	2-2.5	0.5	NA	NA	8.0	X	SP		(2-2.5') SAND, fine grained; poorly graded, dry, loose, brown.	
3	HA	3-3.5	0.5	NA	NA	3.5		SP		(3-3.5') SAND, medium grained; poorly graded, dry, loose, brown.	
4	HA	4-4.5	0.5	NA	NA	5.3		SP		(4-4.5') Same as above.	
5	AS	5-10	5	NA	NA	1.9	X	SP		(5-15') SAND, medium grained; poorly graded, dry, loose, brown.	Hydrated Bentonite Pellets
10	AS	10-15	5	NA	NA	1.0					
12						0.8					
15						1.2				End of boring at 15.0 ft bgs.	
16											

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/03/2018-12/03/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-Q14
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 50°F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	HA	0-0.5	0.5	NA	NA	8.1		SP		(0-0.5') SAND and GRAVEL, fine grained; poorly graded, loose, brown, dry.	
1	HA	1-1.5	0.5	NA	NA	3.0		SP		(1-1.5') Same as above. At 1.2' bgs, black liner encountered.	
2	HA	2-2.5	0.5	NA	NA	51.2		SP		(2-2.5') Same as above.	
3	HA	3-3.5	0.5	NA	NA	1.1		SP		(3-3.5') SAND, fine to medium grained; poorly graded, loose, brown, dry.	
4	HA	4-4.5	0.5	NA	NA	225.4		SP		(4-4.5') SAND, fine to medium grained; poorly graded, loose, brown, moist.	
5	AS	5-10	5	NA	NA					(5-15') SAND with trace gravel, fine to medium grained; poorly graded, loose, grayish brown, wet.	
6						394.7	X				
7											Hydrated Bentonite Pellets
8											
9											
10								SP			
11											
12	AS	10-15	5	NA	NA	10.7					
13											
14											
15						2.8	X				
16										End of boring at 15.0 ft bgs.	

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/04/2018-12/04/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-Q15
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40°F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	NA	0-0.7	NA	NA	NA					(0-0.7') Asphalt, about 8 inches thick, no recovery.	
1	HA	0.7-1	0.3	NA	NA	64.0		SP		(0.7-1') SAND and GRAVEL, fine grained; poorly graded, dry, loose, dark brown.	
	HA	1-1.5	0.5	NA	NA	70.8	X	SP		(1-1.5') Same as above.	
2	HA	2-2.5	0.5	NA	NA	6.4		SP		(2-2.5') SAND, fine grained; poorly graded, dark brown.	
3	HA	3-3.5	0.5	NA	NA	0.8		SP		(3-3.5') Same as above.	
4	HA	4-4.5	0.5	NA	NA	4.4		SP		(4-4.5') Same as above, moist.	
5	AS	5-10	5	NA	NA					(5-15') Same as above, moist.	
6						4.2	X				
7											Hydrated Bentonite Pellets
8											
9						2.7				(9-10') Trace gravels	
10								SP			
11											
12	AS	10-15	5	NA	NA	2.3					
13											
14											
15						1.4					
16										End of boring at 15.0 ft bgs.	

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/04/2018-12/04/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-T14
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40°F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	NA	0-0.3	NA	NA	NA					(0-0.3') Asphalt, about 4 inches thick, no recovery.	
	NA	0.3-1	NA	NA	NA					(0.3-1') No Recovery.	
1	HA	1-1.5	0.5	NA	NA	4.1		SP		(1-1.5') SAND with some gravel, medium grained; poorly graded, brown, dry, loose.	
2	HA	2-2.5	0.5	NA	NA	0.5		SP		(2-2.5') SAND, medium grained; poorly graded, dry, loose, brown.	
3	HA	3-3.5	0.5	NA	NA	0.5		SP		(3-3.5') SAND, fine grained; poorly graded, dry, loose, brown.	
4	HA	4-4.5	0.5	NA	NA	0.4	X	SP		(4-4.5') SAND, fine grained; poorly graded, moist, loose, brown.	
5	AS	5-10	5	NA	NA					(5-15') SAND, fine grained; poorly graded, wet, loose, brown.	
6						0.9	X				
7											Hydrated Bentonite Pellets
8											
9											
10						0.3		SP			
11	AS	10-15	5	NA	NA						
12						0.9					
13											
14											
15						0.4					
16										End of boring at 15.0 ft bgs.	

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/04/2018-12/04/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-U13
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40°F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	HA	0-0.3	NA	NA	NA					(0-0.3') Asphalt, about 4 inches thick, no recovery.	
	HA	0.3-1	0.7	NA	NA	3.7		SP		(0.3-1') SAND, fine grained; poorly graded, dry, loose, brown.	
1	HA	1-1.5	0.5	NA	NA	2.2		SP		(1-1.5') Same as above.	
2	HA	2-2.5	0.5	NA	NA	1.0		SP		(2-2.5') Same as above.	
3	HA	3-3.5	0.5	NA	NA	0.7		SP		(3-3.5') Same as above.	
4	HA	4-4.5	0.5	NA	NA	0.6		SP		(4-4.5') SAND, fine grained; poorly graded, moist, loose, brown.	
5	AS	5-10	5	NA	NA	0.2		SP		(5-7') SAND, fine grained; poorly graded, wet, loose, brown.	
7										(7-8') Asphalt, about 1 foot thick, no recovery.	Hydrated Bentonite Pellets
8						86.2	X	SP		(8-15') SAND, fine grained, poorly graded, wet, dense, grayish brown.	
10	AS	10-15	5	NA	NA	4.6					
15						2.1	X				
16										End of boring at 15.0 ft bgs.	

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/05/2018-12/05/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-V10
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40°F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	HA	0-0.5	0.5	NA	NA	2.0		SP		(0-0.5') SAND with trace gravel, fine grained; poorly graded, dry, loose, brown.	
1	HA	1-1.5	0.5	NA	NA	0.4		SP		(1-1.5') Same as above.	
2	HA	2-2.5	0.5	NA	NA	0.2		SP		(2-2.5') SAND with trace gravel, fine to medium grained; poorly graded, dry, loose, brown.	
3	HA	3-3.5	0.5	NA	NA	0.3		SP		(3-3.5') Same as above.	
4	HA	4-4.5	0.5	NA	NA	249.4		GP		(4-4.5') GRAVEL, coarse gravel; and sand; some clay, low plasticity; poorly graded, dry, loose, grayish brown, wood debris.	
5	AS	5-10	5	NA	NA	212.8	X	SP		(5-6') SAND and GRAVEL, fine grained, poorly graded, grayish brown, wet, loose.	Hydrated Bentonite Pellets
6											
7						394.1		CL		(7-8') CLAY, low plasticity; wet, dense, gray.	
8								SP		(8-13') SAND, fine grained; poorly graded, wet, dense, grayish brown.	
9						38.8					
10						512.2	X				
11											
12	AS	10-15	5	NA	NA						
13						2.0	X	SM		(13-14') SILTY SAND, fine grained; poorly graded, wet, dense, gray.	
14								SP		13.5' bgs, wood debris.	
15						1.6				(14-15') SAND, fine grained; poorly graded, wet, dense, gray.	
16										End of boring at 15.0 ft bgs.	

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/05/2018-12/05/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-V11
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40 °F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	NA	0-0.4	NA	NA	NA					(0-0.4') No Recovery.	
	NA	0.4-0.8	NA	NA	NA					(0.4-0.8') Asphalt, no recovery.	
1	NA	0.8-2	NA	NA	NA					(0.8-2') Concrete, no recovery.	
2	HA	2-2.5	0.5	NA	NA	0.8		SP		(2-2.5') SAND with trace gravels, fine grained; poorly graded, dry, loose, brown.	
3	HA	3-3.5	0.5	NA	NA	0.3		SP		(3-3.5') SAND, fine grained; poorly graded, dry, loose, brown.	
4	HA	4-4.5	0.5	NA	NA	1.6		SP		(4-4.5') SAND, fine grained; poorly graded, moist, loose, brown, wood debris.	
5	AS	5-10	5	NA	NA	23.7	X	SP		(5-15') Same as above. (6') Wet.	Hydrated Bentonite Pellets
10						1.4	X				
11	AS	10-15	5	NA	NA	0.8				(14') Gray.	
15						1.1				End of boring at 15.0 ft bgs.	
16											

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/06/2018-12/06/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-V12
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40 °F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	HA	0-0.5	0.5	NA	NA	0.2		SP		(0-0.5') SAND and GRAVEL, medium grained; poorly graded, dry, loose, brown.	
1	HA	1-1.5	0	NA	NA					(1-1.5') Asphalt, about 6 inches thick, no recovery.	
2	HA	2-2.5	0.5	NA	NA	1.0		SP		(2-2.5') SAND and trace gravels, medium grained; poorly graded, dry, loose, brown.	
3	HA	3-3.5	0.5	NA	NA	0.3		SP		(3-3.5') SAND, medium grained; poorly graded, dry, loose, brown.	
4	HA	4-4.5	0.5	NA	NA	0.3	X	SP		(4-4.5') SAND, fine grained; poorly graded, dry, loose, brown.	
5	AS	5-10	5	NA	NA			SP		(5-15') SAND, fine to medium grained; poorly graded, wet, loose, brown.	
6						0.2	X				
7											Hydrated Bentonite Pellets
8											
9											
10						0.3					
11	AS	10-15	5	NA	NA						
12						0.2					
13										(13-15') Grayish brown.	
14											
15						0.3					
16										End of boring at 15.0 ft bgs.	

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/05/2018-12/05/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-W10
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40 °F, Sunny

DEPTH (ft.)	Sample Run	Sample Interval (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	HA	0-0.5	0.5	NA	NA	0.0		SW		(0-0.5') SAND, trace gravel, fine to coarse grained; well graded, dry, loose, brown.	
1	HA	1-1.5	0.5	NA	NA	0.6		SP		(1-1.5') SAND and GRAVEL with some cobbles, fine to medium grained; poorly graded, dry, loose, brown.	
2	HA	2-2.5	0.5	NA	NA	0.3		SP		(2-2.5') Same as above.	
3	HA	3-3.5	0.5	NA	NA	0.1		SP		(3-3.5') Same as above.	
4										(3.5-3.8') Asphalt. about 4 inches thick, no recovery.	
										(3.8-4.5') Concrete, about 8 inches thick, no recovery.	
5	HA	4.5-5	0.5	NA	NA	4.3		SP		(4.5-5') SAND, fine grained; poorly graded, moist to wet, brown.	
6	AS	5-10	5	NA	NA	8.3		SP		(5-9') SAND, fine grained; poorly graded, wet, grayish brown.	
7						157.3	X				Hydrated Bentonite Pellets
8											
9						2.3		SM		(9-10') SILTY SAND, fine grained; poorly graded, low plasticity, wet, dense, dark gray.	
10	AS	10-15	5	NA	NA	149.3	X	SP		(10-15') SAND, fine grained; poorly graded, wet, loose, grayish brown.	
11											
12										(12-12.5') Gray.	
13										(12.5-15') Light brown.	
14											
15						0.3	X				
16										End of boring at 15.0 ft bgs.	

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.
" = Inches

Date: 11/07/2019

Date Start-Finish: 12/06/2018-12/06/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-W11
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40 °F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	HA	0-0.5	0.5	NA	NA	0.2		SW		(0-0.5') SAND and GRAVEL, fine to coarse grained; well graded, dry, loose, brown.	
1	HA	1-1.5	0.5	NA	NA	0.2		SW		(1-1.5') Same as above.	
										(1.5-2') Asphalt, about 8-inches thick, no recovery.	
2	HA	2-2.5	0.5	NA	NA	24.4	X	SP		(2-2.5') SAND with little gravel, fine grained; poorly graded, dry, loose, brown.	
3	HA	3-3.5	0.5	NA	NA	4.2	X	SP		(3-3.5') SAND with trace gravel, medium grained; poorly graded, dry, loose, brown.	
4	HA	4-4.5	0.5	NA	NA	1.2		SP		(4-4.5') SAND, medium grained; poorly graded, dry, loose, brown.	
5	AS	5-10	5	NA	NA					(5-15') SAND, medium grained; poorly graded, wet, loose, brown.	
6						0.4	X				
7											Hydrated Bentonite Pellets
8										(7.5 - 8.5') Grayish brown.	
9										(8.5-10') Brown.	
10						0.3		SP			
11	AS	10-15	5	NA	NA						
12						0.3					
13											
14											
15						0.5				End of boring at 15.0 ft bgs.	
16											

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/06/2018-12/06/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 20.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-W8
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40 °F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	HA	0-0.5	0.5	NA	NA	0.7		SP		(0-0.5') SAND with some gravel, fine grained; poorly graded, dry, loose, brown.	
1	HA	1-1.5	0	NA	NA	NA				(1-1.8') Asphalt, about 8-inches thick, no recovery.	
2	HA	2-2.5	0	NA	NA	NA				(2-2.5') No Recovery.	
3	HA	3-3.5	0	NA	NA	NA				(3-3.5') No Recovery.	
4	HA	4-4.5	0.5	NA	NA	44.0		SP		(4-4.5') SAND, fine to medium grained; poorly graded, moist, grayish brown.	
5	AS	5-10	5	NA	NA			SP		(5-8.5') Same as above, wet.	
6						346.2					
7						802.1	X				
8											
9						749.3	X	SM		(8.5-9.5') SILTY SAND, fine grained; poorly graded, wet, gray.	
10								SP		(9.5-20') SAND, fine grained; poorly graded, wet, dark gray.	Hydrated Bentonite Pellets
11											
12	AS	10-15	5	NA	NA	688.9					
13						273.2					
14											
15						38.2					
16	AS	15-20	5	NA	NA	492.3					
17											
18						26.3					
19											
20						8.6	X				
21										End of boring at 20.0 ft bgs.	

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/05/2018-12/05/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 20.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-W9
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40°F, Sunny

DEPTH (ft.)	Sample Run	Sample Interval (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	HA	0-0.5	0.5	NA	NA	0.1		SP		(0-0.5') SAND with some gravel, fine grained; poorly graded, dry, loose, brown.	
1	HA	1-1.5	0.5	NA	NA	0.1		SP		(1-1.5') Same as above, trace gravel.	
2	HA	2-2.5	0.5	NA	NA	0.2		SP		(2-2.5') Same as above, some gravel.	
3	HA	3-3.5	0.5	NA	NA	41.2		SP		(2.5-3') Asphalt, about 6 inches thick, no recovery.	
4	HA	4-4.5	0.5	NA	NA	398.5	X	SP		(3-3.5') SAND with some gravel, fine grained; poorly graded, dry, loose, brown.	
5											
6						196.9	X			(4-4.5') SAND with some gravel, fine grained; poorly graded, dry, loose, grayish brown.	
7	AS	5-10	5	NA	NA	122.8		SP			
8										(5-10') SAND with some gravel, fine grained; poorly graded, wet, loose, brown.	
9						104.6					
10										(10-15') SAND with some gravel, fine grained; poorly graded, wet, loose, grayish brown.	Hydrated Bentonite Pellets
11											
12	AS	10-15	5	NA	NA	46.5		SP			
13											
14										(13.5') Wood debris.	
15						5.1					
16										(15-20') SAND, fine grained; poorly graded, wet, loose, grayish brown.	
17						10.1					
18	AS	15-20	5	NA	NA			SP			
19										(18') Wood debris.	
20						2.8	X				
21										End of boring at 20.0 ft bgs.	

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.
" = Inches

Date: 11/07/2019

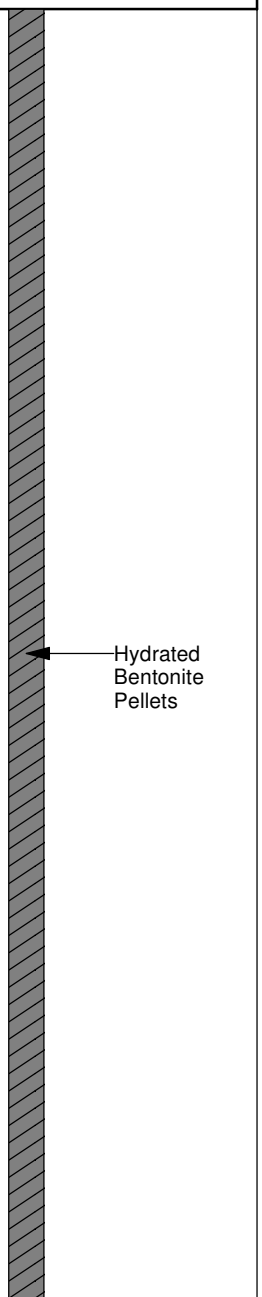
Date Start-Finish: 12/07/2018-12/07/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 20.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-X8
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40 °F, Sunny

DEPTH (ft.)	Sample Run	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description
0	HA	0-0.5	0	NA	NA					(0-0.5') No Recovery, quarry spalls.
1	HA	1-1.5	0.5	NA	NA	0.1		SP		(1-1.5) SAND with some gravel, medium grained; poorly sorted, dry, loose, brown.
2	HA	2-2.5	0.5	NA	NA	0.1		SP		(2-2.5') SAND with some gravel, medium to coarse grained; poorly sorted, dry, loose, brown.
3	HA	3-3.5	0.5	NA	NA	0.1		SP		(3-3.5') SAND and GRAVEL, medium to coarse grained; poorly sorted, dry, loose, brown.
4	HA	4-4.5	0.5	NA	NA	0.2		SP		(4-4.5') SAND with some gravel, medium to coarse grained; poorly sorted, moist, loose, brown.
5	AS	5-10	5	NA	NA	1,149.4	X	SM		(5-7') Wet. (6.5') Wood debris. (7-10') SILTY SAND, fine grained; poorly graded, wet, gray, loose.
6										
7										
8										
9						853.8				
10								SP		(10-12') SAND with little gravel, medium grained; poorly graded, wet, loose, brown.
11										
12	AS	10-15	5	NA	NA	949.2	X	SP		(12-15') Same as above, no gravel, fine grained, gray. (12') Wood debris.
13										
14						41.4				
15										
16	AS	15-20	5	NA	NA	181.1		SP		
17										
18										
19										
20						7.3	X			
21										End of boring at 20.0 ft bgs

Well/Boring Construction



REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

Date Start-Finish: 12/07/2018-12/07/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-X9
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40°F, Sunny

DEPTH (ft.)	Sample Run	Sample Interval (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	HA	0-0.5	0	NA	NA					(0-0.5') No Recovery, quarry spalls.	
1	HA	1-1.5	0.5	NA	NA	2.7		SP		(1-1.5') SAND with some gravel, fine grained, poorly graded, loose, dry, brown.	
2	HA	2-2.5	0.5	NA	NA	2.9		SP		(2-2.5') Same as above.	
3	HA	3-3.5	0.5	NA	NA	0.5		SP		(3-3.5') SAND with some gravel, medium grained; poorly graded, dry, loose, brown.	
4	HA	4-4.5	0.5	NA	NA	1.4		SP		(4-4.5') Same as above.	
5										(5-7') No recovery.	
7	AS	7-10	3	NA	NA	561.2 23.1	X	SP		(7-10') SAND with some gravel, fine grained; poorly graded, wet, loose, brown.	Hydrated Bentonite Pellets
10	AS	10-15	5	NA	NA	8.5 1.9	X	SP		(10-15') SAND, fine grained; poorly graded, wet, loose, brown. (13-15') Gray.	
15										End of boring at 15.0 ft bgs	
16											

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.
" = Inches

Date: 11/07/2019

Date Start-Finish: 12/06/2018-12/06/2018
Drilling Company: Cascade Drilling
Driller's Name: Kyle Ceruti
Drilling Method: Direct Push
Rig Type: Limited Access Geoprobe Rig
Sampling Method: Acetate Sleeve/Hand Auger

Northing : NA
Easting: NA
Casing Elevation: NA
Borehole Depth: 15.0 ft bgs.
Surface Elevation: NA
Descriptions By: E. Krueger

Well/Boring ID: DPE-PSS-Y9
Client: Chevron Edmonds Terminal
Location: 11720 Unoco Rd, Edmonds, WA. Former Unocal Edmonds Bulk Fuel Terminal.
Weather Conditions: 40°F, Sunny

DEPTH (ft.)	Sample Run Number	Sample/Int/Type (ft)	Recovery (ft)	Blow Counts	N-Value	PID (ppm)	Analytical Sample	USGS Class	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	HA	0-0.5	0	NA	NA			Fill		(0-0.5') No Recovery, pea gravel.	
1										(1-1.5') Asphalt, about 6 inches thick, no recovery.	
2	HA	2-2.5	0.5	NA	NA	0.3		SP		(2-2.5') SAND and GRAVEL, fine to medium grained; poorly graded, dry, loose, brown.	
3	NA	3-5	0	NA	NA					(3-5') No Recovery, Concrete.	
4											
5										(5-7') No Recovery.	
6											
7	AS	7-10	3	NA	NA			CL		(7-8') CLAY, low plasticity; wet, gray.	Hydrated Bentonite Pellets
8						14.0					
9								SP		(8-15') SAND, fine grained; poorly graded, wet, dense, gray.	
10						66.5					
11											
12	AS	10-15	5	NA	NA			SP			
13						8.9					
14											
15						3.2				End of boring at 15.0 ft bgs.	
16											

REMARKS: ft/'= Feet
bgs = Below ground surface
NA = Not Applicable/Available
PID = Photoionization detector
ppm = Parts Per Million
HA = Hand Auger
° F = Degrees Fahrenheit
AS = Acetate Sleeve
Cleared to 5' bgs via Hand Auger.

ARCADIS

Soil Boring Log

Boring No.: DPE-15

Sheet: 1 of 1

Project Name: Chevron Edmonds Terminal
Project Number: 30005535 - B0045362.0013
Project Location: 11720 Unoco Rd, Edmonds, WA

Date Started: 06/25/2019
Date Completed: 06/27/2019

Logger: Brett Tobin/Pink, Alexander
Editor: NA
Weather Conditions: Partly cloudy 68° F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details
1								Portland Concrete (0.-2')
2	2.0-2.5	HA	6		0.0		(2.0-2.5') Well graded SAND; trace gravel; medium density, noncohesive; moist; brown. At 2.0 ft bgs, asphalt layer.	Bentonite Chips (2-3')
3								4" Schedule 40 PVC Well Casing (above ground - 4')
4	4.0-4.5	HA	6		0.0		(4.0-4.5') Well graded SAND; trace gravel; medium density, noncohesive; moist; brown.	
5								
6	6.0-6.5	HA	6				(6.0-6.5') Well graded SAND; trace gravel (up to small cobble sized), subrounded; nonplastic; medium density; brown.	(#2/12 Sand Pack (3-24.5')
7								
8							(8.0-9.5') Well graded SAND; trace gravel (up to small cobble sized), subrounded; nonplastic; medium density; brown to gray; saturated.	
9								
10							(9.5-21.0') Well graded SAND; trace gravel (up to small cobble sized), subrounded; some low plasticity silts; medium density; brown to gray.	
11								4" Schedule 40 PVC 0.020" Slotted Well Screen (4-19')
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22							(21.0-22.0') Poorly graded subrounded GRAVEL with sand; saturated; loose; brown to gray.	4" Schedule 40 PVC Sump (19-24')
23							(22.0-24.5') SAND with low plasticity silt; and small to medium subrounded gravel; saturated; loose; brown to gray.	
24								
25							End of boring at 24.5 ft bgs.	

Drilling Co.: Cascade
Driller: Curtis Askew
Drilling Method: Hollow Stem Auger
Drilling Fluid: None
Drilling Rig: NA
Remarks: ft / ' = feet; in / " = inch; bgs = below ground surface; NA = not applicable / available; ppm = parts per million. HA = Hand Auger.

Sampling Method: Split Spoon
Sampling Interval: Continuous
Water Level Start (ft. bgs.): NA
Water Level Finish (ft. btoc.): NA
Converted to Well: ☒ Yes ☐ No
Surface Elev.: NA
North Coor: NA
East Coor: NA

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ARCADIS

Boring No.: DPE-16

Soil Boring Log

Sheet: 1 of 1

Project Name: Chevron Edmonds Terminal
Project Number: 30005535 - B0045362.0013
Project Location: 11720 Unoco Rd, Edmonds, WA

Date Started: 06/25/2019
Date Completed: 06/27/2019

Logger: Brett Tobin/Pink, Alexander
Editor: NA
Weather Conditions: Partly cloudy 68° F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1								Portland Concrete (0.-2')	
2	2.0-2.5	HA	6		0.0		(2.0-2.5') Well graded SAND, fine to very coarse; trace gravel; moist; medium density; brown.	Bentonite Chips (2-3')	
3								4" Schedule 40 PVC Well Casing (above ground - 4')	
4	4.0-4.5	HA	6		0.0		(4.0-4.5') Well graded SAND, fine to very coarse; trace gravel; moist; medium density; brown.		
5									
6	6.0-6.5	HA	6		0.0		(6.0-6.5') Well graded SAND, fine to very coarse, subrounded to subangular; trace gravel (up to small cobble sized); moist; medium density; brown.	(#2/12 Sand Pack (3-24.5')	
7									
8							Boring clear to 8.0'		
9	8.0-8.5	2 2 2	8		0.7		(8.0-21.0') Well graded SAND, fine to very coarse, subrounded to subangular; trace gravel (up to small cobble sized); moist; medium density; saturated; brown to gray. At 9.5' bgs, some low plasticity silts.		
10	9.5-11.0		12		1.2				
11									
12	11.0-12.5	5 5 5	12		1.0			4" Schedule 40 PVC 0.020" Slotted Well Screen (4-19')	
13		5							
14	12.5-15.5	6 7 3	18		6.2				
15		3 3			14.0				
16	15.5-17.0	3 3 3	18		13.9				
17									
18	17.0-18.5	3 3 3	18		9.0		At 17.5' bgs		
19	18.5-20.0	4 5 5	18		5.9				
20									
21	20.0-21.5	5 6 7	18		4.6				
22							(21.0-22.0') Poorly graded GRAVEL, subrounded with sand; saturated; loose; brown to gray.	4" Schedule 40 PVC Sump (19-24')	
23	21.5-23.0	5 7 7	12		4.9		(22.0-24.5') Well graded SAND with low plasticity silt and small to medium subrounded gravel; saturated; loose; brownish-gray.		
24	23.0-24.5	6 7 8	18		2.8				
25							End of boring at 24.5 ft bgs.		

Drilling Co.: Cascade
Driller: Curtis Askew
Drilling Method: Hollow Stem Auger
Drilling Fluid: None
Drilling Rig NA
Remarks: ft / ' = feet; in / " = inch; bgs = below ground surface; NA = not applicable / available; ppm = parts per million. HA = Hand Auger.

Sampling Method: Split Spoon
Sampling Interval: Continuous
Water Level Start (ft. bgs.): NA
Water Level Finish (ft. btoc.): NA
Converted to Well: ☒ Yes ☐ No
Surface Elev.: NA
North Coor: NA
East Coor: NA

ARCADIS

Soil Boring Log

Boring No.: DPE-16B

Sheet: 1 of 1

Project Name: Chevron Edmonds Terminal
Project Number: 30005535 - B0045362.0013
Project Location: 11720 Unoco Rd, Edmonds, WA

Date Started: 06/25/2019
Date Completed: 06/25/2019

Logger: Brett Tobin/Pink, Alexander
Editor: NA
Weather Conditions: Partly cloudy 68° F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1									
2	2.0-2.5	HA	6		0.0		(2.0-2.5') Well graded SAND with gravel; little gravel; moist; medium density; brown.		
3								Backfilled with native material	
4	4.0-4.5	HA	6		0.0		(4.0-4.5') Well graded SAND with gravel; little gravel; moist; medium density; brown.		
5									
6	6.0-6.5	HA	6		0.0		(6.0-6.5') Well graded SAND, fine to very coarse with gravel; little gravel; moist; medium density; brown.		
7							End of boring at 6.5 ft bgs.		

Drilling Co.: Cascade
Driller: Curtis Askew
Drilling Method: Hollow Stem Auger
Drilling Fluid: None
Drilling Rig: NA
Remarks: ft / ' = feet; in / " = inch; bgs = below ground surface; NA = not applicable / available; ppm = parts per million. HA = Hand Auger.

Sampling Method: Split Spoon
Sampling Interval: Continuous
Water Level Start (ft. bgs.): NA
Water Level Finish (ft. btoc.): NA
Converted to Well: ☐ Yes ☒ No
Surface Elev.: NA
North Coor: NA
East Coor: NA

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ARCADIS

Boring No.: DPE-17

Soil Boring Log

Sheet: 1 of 1

Project Name: Chevron Edmonds Terminal
Project Number: 30005535 - B0045362.0013
Project Location: 11720 Unoco Rd, Edmonds, WA

Date Started: 06/25/2019
Date Completed: 06/27/2019

Logger: Brett Tobin/Pink, Alexander
Editor: NA
Weather Conditions: Partly cloudy 68° F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details	Well
1								Portland Concrete (0.-2')	
2	2.0-2.5	HA	6		274.4		(2.0-2.5') Well graded SAND, very fine to very coarse; trace gravel (subangular up to 0.25"); moist; medium dense; brownish gray.	Bentonite Chips (2-3')	
3								4" Schedule 40 PVC Well Casing (above ground - 4')	
4	4.0-4.5	HA	6		1.5		(4.0-4.5') Silty SAND, very fine to coarse; little silt, nonplastic ,noncohesive; trace gravel; moist; medium dense; gray.		
5									
6	6.0-6.5	HA	6		1.0		(6.0-6.5') Silty SAND, very fine to coarse; little silt, nonplastic ,noncohesive; trace gravel; moist; dense; gray.	(#2/12 Sand Pack (3-24.5')	
7									
8									
9	8.0-9.5	2 2 3	18		6.7		(8.0-8.5') Well graded SAND with silt, nonplastic, noncohesive; trace gravel; little silt; moist; loose; gray. (8.5-10.7') Sandy SILT, nonplastic, low cohesiveness; moist; trace organics; loose; gray.		
10	9.5-11.0	3 3 3	18		10.0				
11							(10.7-17.5') Silty SAND, nonplastic, noncohesive; trace silt; trace organics (lenses 0.25" thick in fragments); wet; loose; gray.	4" Schedule 40 PVC 0.020" Slotted Well Screen (4-19')	
12	11.0-12.5	0 1 3	18		1.1				
13	12.5-13.0	1 1 3	18		1.2				
14									
15	14.0-15.5	2 2 3	18		1.2				
16	15.5-17.0	2 2 3	18		2.7				
17									
18	17.0-18.5	3 5 5	18		3.2		(17.5-24.5') Poorly graded SAND with silt, nonplastic, noncohesive; little silt; trace gravel; wet; loose; gray. At 17.5' bgs, 3" zone of organic fragments within silty sand.		
19	18.5-20.0	3 4 5	18		1.5				
20									
21	20.0-21.5	5 6 6	18		3.7				
22	21.5-23.0	6 7 7	18		1.5			4" Schedule 40 PVC Sump (19-24')	
23									
24	23.0-24.5	3 4 4	18		2.2		At 23.8" bgs, 0.3" organic material, slight increase in silt.		
25							End of boring at 24.5 ft bgs.		
26									

Drilling Co.: Cascade
Driller: Curtis Askew
Drilling Method: Hollow Stem Auger
Drilling Fluid: None
Drilling Rig: NA
Remarks: ft / ' = feet; in / " = inch; bgs = below ground surface; NA = not applicable / available; ppm = parts per million. HA = Hand Auger.

Sampling Method: Split Spoon
Sampling Interval: Continuous
Water Level Start (ft. bgs.): NA
Water Level Finish (ft. btoc.): NA
Converted to Well: ☒ Yes ☐ No
Surface Elev.: NA
North Coor: NA
East Coor: NA

CHEVRON EDMONDS V.1 D:\BORING LOGS\CHEVRON BORELOGS\2019 DPE WELLS - BORING LOGS\D-PROJECTWORKING_\D02-DRAWINGS\CHEVRON EDMONDS_P.GPJ CHEVRON EDMONDS.GDT 4/20/20

ARCADIS

Boring No.: DPE-18

Soil Boring Log

Sheet: 1 of 1

Project Name: Chevron Edmonds Terminal
Project Number: 30005535 - B0045362.0013
Project Location: 11720 Unoco Rd, Edmonds, WA

Date Started: 06/25/2019
Date Completed: 06/26/2019

Logger: Brett Tobin/Pink, Alexander
Editor: NA
Weather Conditions: Partly cloudy 68° F

Depth (feet)	Sample Interval	Blow Counts	Recovery (in)	Sample ID	PID (ppm)	USCS Class	Description	Construction Details
1								Portland Concrete (0.-2')
2	2.0-2.5	HA	6		290.4		(2.0-2.5') Well graded SAND with gravel; few gravel (subangular up to 0.5"); trace silt, nonplastic, noncohesive; moist; medium density; brown.	Bentonite Chips (2-3')
3								4" Schedule 40 PVC Well Casing (above ground - 4')
4	4.0-4.5	HA	6		51.3		(4.0-4.5') Sandy SILT, nonplastic, noncohesive; some sand, very fine to medium coarse; moist; medium density; micaceous; gray.	
5								
6	6.0-6.5	HA	6		9.2		(6.0-6.5') Poorly graded SAND, very fine to fine; trace silt, nonplastic, noncohesive; loose; micaceous; gray.	(#2/12 Sand Pack (3-24.5')
7								
8								
9	8.0-9.5	2 2 3	18		0.4		(8.0-13.5') Silty SAND; few silt (variable between 20-30% silt found in nodules, low to moderate plasticity); wet; loose; gray.	
10	9.5-11.0	1 1 1	18		0.2			
11								
12	11.0-12.5	1 1 1	18		0.5			4" Schedule 40 PVC 0.020" Slotted Well Screen (4-19')
13	12.5-14.0	5 6 7	18		0.8			
14							(13.5-14.0') Poorly graded SAND, very fine to medium coarse; trace silt, nonplastic, noncohesive; trace gravel; little woody debris; wet; medium density; gray.	
15	14.0-15.5	7 7 9	18		0.7		(14.0-22.5') Silty SAND, nonplastic, noncohesive; trace silt (20-30% variation with depth, low to moderate plasticity, sometimes found as nodules); loose; gray.	
16	15.5-17.0	5 5 5	18		0.7			
17								
18	17.0-18.5	5 5 5	18		0.5			
19	18.5-20.0	4 6 7	18		0.7			
20								
21	20.0-21.5	4 7 5	18		0.8			
22	21.5--23.0	4 4 4	18		0.3			4" Schedule 40 PVC Sump (19-24')
23							(22.5-23.0') Sandy SILT, nonplastic, noncohesive; some silt; wet; loose; trace organics; gray.	
24	23.0-24.5	6 7 10	18		0.4		(23.0-24.5') Silty SAND, nonplastic, noncohesive; trace silt; medium density; gray.	
25							End of boring at 24.5 ft bgs.	

Drilling Co.: Cascade
Driller: Curtis Askew
Drilling Method: Hollow Stem Auger
Drilling Fluid: None
Drilling Rig NA

Remarks: ft / ' = feet; in / " = inch; bgs = below ground surface; NA = not applicable / available; ppm = parts per million. HA = Hand Auger.

Sampling Method: Split Spoon
Sampling Interval: Continuous
Water Level Start (ft. bgs.): NA
Water Level Finish (ft. btoc.): NA
Converted to Well: ☒ Yes ☐ No
Surface Elev.: NA
North Coor: NA
East Coor: NA

CHEVRON EDMONDS V.1 D:\BORING LOGS\CHEVRON BORELOGS\2019 DPE WELLS - BORING LOGS\D-PROJECTWORKING_\D02-DRAWINGS\CHEVRON EDMONDS_P.GPJ CHEVRON EDMONDS.GDT 4/20/20

APPENDIX B

Laboratory Report and Chain-of-Custody Documentation

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-82405-1
Client Project/Site: Edmonds Terminal
Revision: 1

For:
ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
1/21/2019 12:00:07 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Job ID: 580-82405-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-82405-1

Revision 1: January 21, 2019
This revision was required to add the dilution factor for the NWTPH-Dx analysis of sample DPE-PSS-O17-3 (580-82405-4). This sample was diluted 20X but not indicated as such in the orignal report. In addition, samples DPE-PSS-O17-3 (580-82405-4) and DPE-PSS-O17-6 (580-82405-5) were initially reported from the wrong analytical run. The samples have been corrected and the surrogates are now in control for these two samples. Lastly, there were some "E" flags for the NWTPH-EPH analysis for sample DPE-PSS-U13-8.5 (580-82405-10) that were not needed and were removed. These analytes were NOT outside calibration range.

Receipt
Thirteen samples were received on 12/5/2018 11:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0º C.

Receipt Exceptions

The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. DPE-PSS-P16-1 (580-82405-1), DPE-PSS-P16-2 (580-82405-2), DPE-PSS-P16-6 (580-82405-3), DPE-PSS-O17-3 (580-82405-4), DPE-PSS-O17-6 (580-82405-5), DPE-PSS-Q15-1 (580-82405-6), DPE-PSS-Q15-6 (580-82405-7), DPE-PSS-T14-4 (580-82405-8), DPE-PSS-T14-6 (580-82405-9), DPE-PSS-U13-8.5 (580-82405-10), DPE-PSS-U13-14.5 (580-82405-11) and DUP-1 (580-82405-12).

GC/MS VOA
Method(s) 5035: Sample labels covered both of the tare weights for the following samples: DPE-PSS-P16-1 (580-82405-1), DPE-PSS-P16-2 (580-82405-2), DPE-PSS-P16-6 (580-82405-3), DPE-PSS-O17-3 (580-82405-4), DPE-PSS-O17-6 (580-82405-5), DPE-PSS-Q15-1 (580-82405-6), DPE-PSS-Q15-6 (580-82405-7), DPE-PSS-T14-4 (580-82405-8), DPE-PSS-T14-6 (580-82405-9), DPE-PSS-U13-8.5 (580-82405-10), DPE-PSS-U13-14.5 (580-82405-11), DUP-1 (580-82405-12) and Trip Blank (580-82405-13).

Method(s) 5035: The following samples were provided to the laboratory with a significantly different initial weight than that required by the reference method: DPE-PSS-P16-6 (580-82405-3), DPE-PSS-O17-3 (580-82405-4), DPE-PSS-O17-6 (580-82405-5), DPE-PSS-U13-8.5 (580-82405-10) and DPE-PSS-U13-14.5 (580-82405-11). The method requires 10 grams. The amount provided was above this range.

Method(s) NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: DPE-PSS-P16-1 (580-82405-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D SIM: The following samples were diluted due to the nature of the sample matrix: DPE-PSS-P16-1 (580-82405-1), DPE-PSS-O17-3 (580-82405-4) and DPE-PSS-Q15-1 (580-82405-6). Elevated reporting limits (RLs) are provided.

Method(s) 8270D SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch preparation batch 580-291281 and analytical batch 580-291411 recovered outside control limits for the following analytes: Benzo[b]fluoranthene.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
Method(s) NWTPH/VPH: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 490-562602 and analytical batch 490-562731 were outside control limits for C10-C12 Aromatics and C12-C13 Aromatics. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Job ID: 580-82405-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

Method(s) 3550B/NWTPH-Dx: Sample DPE-PSS-P16-1 (580-82405-1) did not drain well through the sodium sulfate funnel.

Method(s) NWTPH-Dx: The sample duplicate (DUP) precision for preparation batch 580-290729 and 580-290964 and analytical batch 580-291268 was outside control limits for Motor Oil. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method(s) NWTPH-Dx: Surrogate recovery for the following samples were outside control limits: DPE-PSS-P16-1 (580-82405-1), DPE-PSS-Q15-1 (580-82405-6) and DUP-1 (580-82405-12). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Dx: The following sample was diluted due to dark extract color, typically indicative of adverse sample matrix: DPE-PSS-O17-3 (580-82405-4). Elevated reporting limits (RL) are provided.

Method(s) EPH Frac: The follwing samples were extremely concentrated and overloaded silica gel column: DPE-PSS-P16-1 (580-82405-1), DPE-PSS-Q15-1 (580-82405-6), DPE-PSS-P16-1 MS (580-82405-1 MS) and DPE-PSS-P16-1 MSD (580-82405-1 MSD).

Method(s) NWTPH/EPH: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 580-290909 and 580-291429 and analytical batch 580-291544 was outside control limits. Sample matrix interference is suspected.

Method(s) NWTPH/EPH: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 580-290909 and 580-291429 and analytical batch 580-291544 recovered outside acceptance limits for C10-C12 Aliphatics, C10-C12 Aromatics, C12-C16 Aromatics, and C21-C34 Aromatics. The client requested the data be qualified and reported since re-extraction would be outside of hold. (LCS 580-290909/2-B) and (LCSD 580-290909/3-B).

Method(s) NWTPH/EPH: The following samples were diluted to bring the concentration of target analytes within the calibration range: DPE-PSS-P16-1 (580-82405-1), DPE-PSS-Q15-1 (580-82405-6), DPE-PSS-P16-1 MS (580-82405-1MS) and DPE-PSS-P16-1 MSD (580-82405-1 MSD). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	RPD of the LCS and LCSD exceeds the control limits

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits
F1	MS and/or MSD Recovery is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits
*	LCS or LCSD is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: DPE-PSS-P16-1

Date Collected: 12/04/18 08:35
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-1

Matrix: Solid
Percent Solids: 96.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg	☼	12/07/18 08:20	12/07/18 12:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*	*12/07/18 08:20*	*12/07/18 12:52*	*1*
Trifluorotoluene (Surr)	*96*		*80 - 120*	*12/07/18 08:20*	*12/07/18 12:52*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*	*12/07/18 08:20*	*12/07/18 12:52*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/07/18 08:20*	*12/07/18 12:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 121*	*12/07/18 08:20*	*12/07/18 12:52*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**630**		49	4.4	ug/Kg	☼	12/17/18 09:49	12/18/18 13:08	10
Benzo[a]anthracene	**34**	**J**	49	7.4	ug/Kg	☼	12/17/18 09:49	12/18/18 13:08	10
Benzo[a]pyrene	ND		49	3.9	ug/Kg	☼	12/17/18 09:49	12/18/18 13:08	10
Benzo[b]fluoranthene	ND	*	49	5.8	ug/Kg	☼	12/17/18 09:49	12/18/18 13:08	10
Benzo[k]fluoranthene	ND		49	5.9	ug/Kg	☼	12/17/18 09:49	12/18/18 13:08	10
Chrysene	**270**		49	15	ug/Kg	☼	12/17/18 09:49	12/18/18 13:08	10
Dibenz(a,h)anthracene	ND		49	7.0	ug/Kg	☼	12/17/18 09:49	12/18/18 13:08	10
Indeno[1,2,3-cd]pyrene	ND		49	5.9	ug/Kg	☼	12/17/18 09:49	12/18/18 13:08	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*99*		*57 - 120*	*12/17/18 09:49*	*12/18/18 13:08*	*10*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.0	2.0	mg/Kg	☼	12/10/18 11:44	12/11/18 12:59	1
C6-C8 Aliphatics	**14**		5.0	2.0	mg/Kg	☼	12/10/18 11:44	12/11/18 12:59	1
C8-C10 Aliphatics	**62**		5.0	2.0	mg/Kg	☼	12/10/18 11:44	12/11/18 12:59	1
C10-C12 Aliphatics	**86**		50	20	mg/Kg	☼	12/10/18 11:44	12/13/18 02:58	10
C8-C10 Aromatics	**70**		5.0	2.0	mg/Kg	☼	12/10/18 11:44	12/11/18 12:59	1
C10-C12 Aromatics	**42**	**J**	50	20	mg/Kg	☼	12/10/18 11:44	12/13/18 02:58	10
C12-C13 Aromatics	ND		50	20	mg/Kg	☼	12/10/18 11:44	12/13/18 02:58	10
Methyl tert-butyl ether	ND		0.50	0.25	mg/Kg	☼	12/10/18 11:44	12/11/18 12:59	1
Benzene	**0.17**		0.050	0.025	mg/Kg	☼	12/10/18 11:44	12/11/18 12:59	1
Toluene	**0.25**		0.050	0.025	mg/Kg	☼	12/10/18 11:44	12/11/18 12:59	1
Ethylbenzene	**1.6**		0.050	0.025	mg/Kg	☼	12/10/18 11:44	12/11/18 12:59	1
m-Xylene & p-Xylene	ND		0.10	0.050	mg/Kg	☼	12/10/18 11:44	12/11/18 12:59	1
o-Xylene	**1.8**		0.050	0.025	mg/Kg	☼	12/10/18 11:44	12/11/18 12:59	1
Naphthalene	**1.8**		0.25	0.13	mg/Kg	☼	12/10/18 11:44	12/11/18 12:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*90*		*60 - 140*	*12/10/18 11:44*	*12/11/18 12:59*	*1*
2,5-Dibromotoluene (fid)	*86*		*60 - 140*	*12/10/18 11:44*	*12/13/18 02:58*	*10*
2,5-Dibromotoluene (pid)	*96*		*60 - 140*	*12/10/18 11:44*	*12/11/18 12:59*	*1*
2,5-Dibromotoluene (pid)	*93*		*60 - 140*	*12/10/18 11:44*	*12/13/18 02:58*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**720**		5.0	2.3	mg/Kg	☼	12/11/18 14:19	12/11/18 19:54	1

Client Sample ID: DPE-PSS-P16-1
Date Collected: 12/04/18 08:35
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-1
Matrix: Solid
Percent Solids: 96.4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*304*	*X*	*50 - 150*	*12/11/18 14:19*	*12/11/18 19:54*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	**110**	**J ***	200	19	mg/Kg	☼	12/12/18 11:47	12/19/18 18:45	10
C10-C12 Aromatics	ND	*	200	34	mg/Kg	☼	12/12/18 11:47	12/19/18 18:45	10
C12-C16 Aliphatics	**360**		200	18	mg/Kg	☼	12/12/18 11:47	12/19/18 18:45	10
C12-C16 Aromatics	**61**	**J ***	200	18	mg/Kg	☼	12/12/18 11:47	12/19/18 18:45	10
C16-C21 Aliphatics	**440**		200	25	mg/Kg	☼	12/12/18 11:47	12/19/18 18:45	10
C16-C21 Aromatics	**230**		200	26	mg/Kg	☼	12/12/18 11:47	12/19/18 18:45	10
C21-C34 Aliphatics	**1300**		200	48	mg/Kg	☼	12/12/18 11:47	12/19/18 18:45	10
C21-C34 Aromatics	**660**	*****	200	40	mg/Kg	☼	12/12/18 11:47	12/19/18 18:45	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*123*		*60 - 140*	*12/12/18 11:47*	*12/19/18 18:45*	*10*
o-Terphenyl	*65*		*60 - 140*	*12/12/18 11:47*	*12/19/18 18:45*	*10*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**20**	**J**	51	13	mg/Kg	☼	12/10/18 17:59	12/16/18 02:53	1
Motor Oil (>C24-C36)	**82**		51	18	mg/Kg	☼	12/10/18 17:59	12/16/18 02:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*0*	*X*	*50 - 150*	*12/10/18 17:59*	*12/16/18 02:53*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**96.4**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**3.6**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-P16-2

Date Collected: 12/04/18 08:44
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-2

Matrix: Solid
Percent Solids: 90.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		37	9.3	ug/Kg	☼	12/07/18 08:20	12/07/18 13:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/07/18 08:20*	*12/07/18 13:18*	*1*
Trifluorotoluene (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 13:18*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*12/07/18 08:20*	*12/07/18 13:18*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/07/18 08:20*	*12/07/18 13:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 121*	*12/07/18 08:20*	*12/07/18 13:18*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**2.0**	**J**	5.3	0.80	ug/Kg	☼	12/17/18 09:49	12/18/18 13:33	1
Benzo[a]pyrene	ND		5.3	0.42	ug/Kg	☼	12/17/18 09:49	12/18/18 13:33	1
Benzo[b]fluoranthene	ND	*	5.3	0.62	ug/Kg	☼	12/17/18 09:49	12/18/18 13:33	1
Benzo[k]fluoranthene	ND		5.3	0.63	ug/Kg	☼	12/17/18 09:49	12/18/18 13:33	1
Chrysene	**11**		5.3	1.6	ug/Kg	☼	12/17/18 09:49	12/18/18 13:33	1
Dibenz(a,h)anthracene	ND		5.3	0.76	ug/Kg	☼	12/17/18 09:49	12/18/18 13:33	1
Indeno[1,2,3-cd]pyrene	ND		5.3	0.63	ug/Kg	☼	12/17/18 09:49	12/18/18 13:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*87*		*57 - 120*	*12/17/18 09:49*	*12/18/18 13:33*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**100**		6.1	2.8	mg/Kg	☼	12/11/18 14:19	12/11/18 20:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*50 - 150*	*12/11/18 14:19*	*12/11/18 20:25*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**42**	**J**	53	13	mg/Kg	☼	12/10/18 17:59	12/16/18 03:13	1
Motor Oil (>C24-C36)	**75**		53	18	mg/Kg	☼	12/10/18 17:59	12/16/18 03:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*117*		*50 - 150*	*12/10/18 17:59*	*12/16/18 03:13*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**90.9**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**9.1**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-P16-6

Date Collected: 12/04/18 09:03
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-3

Matrix: Solid
Percent Solids: 85.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		34	8.7	ug/Kg	☼	12/07/18 08:20	12/07/18 13:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*	*12/07/18 08:20*	*12/07/18 13:43*	*1*
Trifluorotoluene (Surr)	*97*		*80 - 120*	*12/07/18 08:20*	*12/07/18 13:43*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/07/18 08:20*	*12/07/18 13:43*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*	*12/07/18 08:20*	*12/07/18 13:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 121*	*12/07/18 08:20*	*12/07/18 13:43*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**1.2**	**J**	5.5	0.84	ug/Kg	☼	12/17/18 09:49	12/18/18 13:59	1
Benzo[a]pyrene	ND		5.5	0.44	ug/Kg	☼	12/17/18 09:49	12/18/18 13:59	1
Benzo[b]fluoranthene	ND	*	5.5	0.65	ug/Kg	☼	12/17/18 09:49	12/18/18 13:59	1
Benzo[k]fluoranthene	ND		5.5	0.66	ug/Kg	☼	12/17/18 09:49	12/18/18 13:59	1
Chrysene	**5.4**	**J**	5.5	1.7	ug/Kg	☼	12/17/18 09:49	12/18/18 13:59	1
Dibenz(a,h)anthracene	ND		5.5	0.79	ug/Kg	☼	12/17/18 09:49	12/18/18 13:59	1
Indeno[1,2,3-cd]pyrene	ND		5.5	0.66	ug/Kg	☼	12/17/18 09:49	12/18/18 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*90*		*57 - 120*	*12/17/18 09:49*	*12/18/18 13:59*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**28**		5.7	2.6	mg/Kg	☼	12/11/18 14:19	12/11/18 20:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*50 - 150*	*12/11/18 14:19*	*12/11/18 20:56*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		57	14	mg/Kg	☼	12/10/18 17:59	12/16/18 03:34	1
Motor Oil (>C24-C36)	**34**	**J**	57	20	mg/Kg	☼	12/10/18 17:59	12/16/18 03:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*53*		*50 - 150*	*12/10/18 17:59*	*12/16/18 03:34*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**85.6**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**14.4**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-O17-3

Date Collected: 12/04/18 09:48
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-4

Matrix: Solid
Percent Solids: 89.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg	☼	12/07/18 08:20	12/07/18 14:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 14:09*	*1*
Trifluorotoluene (Surr)	*98*		*80 - 120*	*12/07/18 08:20*	*12/07/18 14:09*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 14:09*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*	*12/07/18 08:20*	*12/07/18 14:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*	*12/07/18 08:20*	*12/07/18 14:09*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**21**	**J**	53	4.8	ug/Kg	☼	12/12/18 09:17	12/16/18 16:55	10
Benzo[a]anthracene	**26**	**J**	53	8.1	ug/Kg	☼	12/12/18 09:17	12/16/18 16:55	10
Benzo[a]pyrene	ND		53	4.3	ug/Kg	☼	12/12/18 09:17	12/16/18 16:55	10
Benzo[b]fluoranthene	ND		53	6.3	ug/Kg	☼	12/12/18 09:17	12/16/18 16:55	10
Benzo[k]fluoranthene	ND		53	6.4	ug/Kg	☼	12/12/18 09:17	12/16/18 16:55	10
Chrysene	**100**		53	16	ug/Kg	☼	12/12/18 09:17	12/16/18 16:55	10
Dibenz(a,h)anthracene	ND		53	7.7	ug/Kg	☼	12/12/18 09:17	12/16/18 16:55	10
Indeno[1,2,3-cd]pyrene	ND		53	6.4	ug/Kg	☼	12/12/18 09:17	12/16/18 16:55	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*95*		*57 - 120*	*12/12/18 09:17*	*12/16/18 16:55*	*10*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		6.8	2.7	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
C6-C8 Aliphatics	ND		6.8	2.7	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
C8-C10 Aliphatics	**3.0**	**J**	6.8	2.7	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
C10-C12 Aliphatics	**9.6**		6.8	2.7	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
C8-C10 Aromatics	**9.1**		6.8	2.7	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
C10-C12 Aromatics	**6.2**	**J F1**	6.8	2.7	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
C12-C13 Aromatics	ND	F1	6.8	2.7	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
Methyl tert-butyl ether	ND		0.68	0.34	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
Benzene	ND		0.068	0.034	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
Toluene	ND		0.068	0.034	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
Ethylbenzene	ND		0.068	0.034	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
m-Xylene & p-Xylene	ND		0.14	0.068	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
o-Xylene	ND		0.068	0.034	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1
Naphthalene	**0.28**	**J**	0.34	0.17	mg/Kg	☼	12/10/18 11:44	12/11/18 21:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*88*		*60 - 140*	*12/10/18 11:44*	*12/11/18 21:39*	*1*
2,5-Dibromotoluene (pid)	*92*		*60 - 140*	*12/10/18 11:44*	*12/11/18 21:39*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**120**		5.0	2.3	mg/Kg	☼	12/11/18 14:19	12/11/18 21:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*50 - 150*	*12/11/18 14:19*	*12/11/18 21:27*	*1*

Client Sample ID: DPE-PSS-O17-3
Date Collected: 12/04/18 09:48
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-4
Matrix: Solid
Percent Solids: 89.0

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	**15**	**J ***	22	2.1	mg/Kg	☼	12/12/18 11:47	12/19/18 20:00	1
C10-C12 Aromatics	ND	*	22	3.8	mg/Kg	☼	12/12/18 11:47	12/19/18 20:00	1
C12-C16 Aliphatics	**28**		22	2.0	mg/Kg	☼	12/12/18 11:47	12/19/18 20:00	1
C12-C16 Aromatics	**7.5**	**J ***	22	2.0	mg/Kg	☼	12/12/18 11:47	12/19/18 20:00	1
C16-C21 Aliphatics	**34**		22	2.7	mg/Kg	☼	12/12/18 11:47	12/19/18 20:00	1
C16-C21 Aromatics	**31**		22	2.9	mg/Kg	☼	12/12/18 11:47	12/19/18 20:00	1
C21-C34 Aliphatics	**190**		22	5.4	mg/Kg	☼	12/12/18 11:47	12/19/18 20:00	1
C21-C34 Aromatics	**130**	*	22	4.5	mg/Kg	☼	12/12/18 11:47	12/19/18 20:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*84*		*60 - 140*	*12/12/18 11:47*	*12/19/18 20:00*	*1*
o-Terphenyl	*83*		*60 - 140*	*12/12/18 11:47*	*12/19/18 20:00*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		1000	250	mg/Kg	☼	12/10/18 17:59	12/17/18 21:29	20
Motor Oil (>C24-C36)	**590**	**J**	1000	360	mg/Kg	☼	12/10/18 17:59	12/17/18 21:29	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*81*		*50 - 150*	*12/10/18 17:59*	*12/17/18 21:29*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**89.0**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**11.0**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-O17-6
Date Collected: 12/04/18 09:59
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-5
Matrix: Solid
Percent Solids: 83.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		35	8.8	ug/Kg	☼	12/07/18 08:20	12/07/18 14:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 14:34*	*1*
Trifluorotoluene (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 14:34*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/07/18 08:20*	*12/07/18 14:34*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/07/18 08:20*	*12/07/18 14:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 121*	*12/07/18 08:20*	*12/07/18 14:34*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**14**		5.8	2.7	mg/Kg	☼	12/11/18 14:19	12/11/18 21:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*50 - 150*	*12/11/18 14:19*	*12/11/18 21:58*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**14**	**J**	55	14	mg/Kg	☼	12/10/18 17:59	12/17/18 21:51	1
Motor Oil (>C24-C36)	**170**		55	19	mg/Kg	☼	12/10/18 17:59	12/17/18 21:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*94*		*50 - 150*	*12/10/18 17:59*	*12/17/18 21:51*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**83.4**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**16.6**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-Q15-1

Date Collected: 12/04/18 10:55
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-6

Matrix: Solid
Percent Solids: 95.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		31	7.7	ug/Kg	☼	12/07/18 08:20	12/07/18 15:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:00*	*1*
Trifluorotoluene (Surr)	*97*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:00*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:00*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 121*	*12/07/18 08:20*	*12/07/18 15:00*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**350**		43	3.9	ug/Kg	☼	12/12/18 09:17	12/16/18 17:20	10
Benzo[a]anthracene	**15**	**J**	43	6.6	ug/Kg	☼	12/12/18 09:17	12/16/18 17:20	10
Benzo[a]pyrene	ND		43	3.5	ug/Kg	☼	12/12/18 09:17	12/16/18 17:20	10
Benzo[b]fluoranthene	ND		43	5.1	ug/Kg	☼	12/12/18 09:17	12/16/18 17:20	10
Benzo[k]fluoranthene	ND		43	5.2	ug/Kg	☼	12/12/18 09:17	12/16/18 17:20	10
Chrysene	**60**		43	13	ug/Kg	☼	12/12/18 09:17	12/16/18 17:20	10
Dibenz(a,h)anthracene	ND		43	6.2	ug/Kg	☼	12/12/18 09:17	12/16/18 17:20	10
Indeno[1,2,3-cd]pyrene	ND		43	5.2	ug/Kg	☼	12/12/18 09:17	12/16/18 17:20	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*77*		*57 - 120*	*12/12/18 09:17*	*12/16/18 17:20*	*10*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		4.8	1.9	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
C6-C8 Aliphatics	ND		4.8	1.9	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
C8-C10 Aliphatics	**8.1**		4.8	1.9	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
C10-C12 Aliphatics	**29**		4.8	1.9	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
C8-C10 Aromatics	**13**		4.8	1.9	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
C10-C12 Aromatics	**23**		19	7.7	mg/Kg	☼	12/10/18 11:44	12/11/18 23:49	4
C12-C13 Aromatics	**19**		4.8	1.9	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
Methyl tert-butyl ether	ND		0.48	0.24	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
Benzene	ND		0.048	0.024	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
Toluene	ND		0.048	0.024	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
Ethylbenzene	**0.19**		0.048	0.024	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
m-Xylene & p-Xylene	ND		0.096	0.048	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
o-Xylene	**0.25**		0.048	0.024	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1
Naphthalene	**1.4**		0.24	0.12	mg/Kg	☼	12/10/18 11:44	12/12/18 00:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*86*		*60 - 140*	*12/10/18 11:44*	*12/12/18 00:21*	*1*
2,5-Dibromotoluene (pid)	*96*		*60 - 140*	*12/10/18 11:44*	*12/11/18 23:49*	*4*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**210**		5.1	2.3	mg/Kg	☼	12/11/18 14:19	12/11/18 23:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*122*		*50 - 150*	*12/11/18 14:19*	*12/11/18 23:00*	*1*

Client Sample ID: DPE-PSS-Q15-1
Date Collected: 12/04/18 10:55
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-6
Matrix: Solid
Percent Solids: 95.1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	**34**	**J ***	41	4.0	mg/Kg	☼	12/12/18 11:47	12/19/18 20:26	2
C10-C12 Aromatics	ND	*	41	7.0	mg/Kg	☼	12/12/18 11:47	12/19/18 20:26	2
C12-C16 Aliphatics	**160**		41	3.6	mg/Kg	☼	12/12/18 11:47	12/19/18 20:26	2
C12-C16 Aromatics	**41**	****	41	3.6	mg/Kg	☼	12/12/18 11:47	12/19/18 20:26	2
C16-C21 Aliphatics	**200**		41	5.0	mg/Kg	☼	12/12/18 11:47	12/19/18 20:26	2
C16-C21 Aromatics	**120**		41	5.3	mg/Kg	☼	12/12/18 11:47	12/19/18 20:26	2
C21-C34 Aliphatics	**280**		41	9.9	mg/Kg	☼	12/12/18 11:47	12/19/18 20:26	2
C21-C34 Aromatics	**170**	****	41	8.3	mg/Kg	☼	12/12/18 11:47	12/19/18 20:26	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*90*		*60 - 140*	*12/12/18 11:47*	*12/19/18 20:26*	*2*
o-Terphenyl	*86*		*60 - 140*	*12/12/18 11:47*	*12/19/18 20:26*	*2*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**25**	**J**	49	12	mg/Kg	☼	12/10/18 17:59	12/16/18 04:34	1
Motor Oil (>C24-C36)	**64**		49	17	mg/Kg	☼	12/10/18 17:59	12/16/18 04:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*0.1*	*X*	*50 - 150*	*12/10/18 17:59*	*12/16/18 04:34*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**95.1**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**4.9**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-Q15-6
Date Collected: 12/04/18 11:22
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-7
Matrix: Solid
Percent Solids: 88.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		36	9.0	ug/Kg	☼	12/07/18 08:20	12/07/18 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:25*	*1*
Trifluorotoluene (Surr)	*98*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:25*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:25*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*	*12/07/18 08:20*	*12/07/18 15:25*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**18**		5.9	2.7	mg/Kg	☼	12/11/18 14:19	12/11/18 23:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*50 - 150*	*12/11/18 14:19*	*12/11/18 23:31*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		54	13	mg/Kg	☼	12/10/18 17:59	12/16/18 04:54	1
Motor Oil (>C24-C36)	ND		54	19	mg/Kg	☼	12/10/18 17:59	12/16/18 04:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*111*		*50 - 150*	*12/10/18 17:59*	*12/16/18 04:54*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**88.8**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**11.2**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-T14-4

Date Collected: 12/04/18 12:52
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-8

Matrix: Solid
Percent Solids: 92.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		33	8.5	ug/Kg	☼	12/07/18 08:20	12/07/18 15:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:51*	*1*
Trifluorotoluene (Surr)	*97*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:51*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:51*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*	*12/07/18 08:20*	*12/07/18 15:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 121*	*12/07/18 08:20*	*12/07/18 15:51*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**2.5**	**J**	5.2	0.80	ug/Kg	☼	12/17/18 09:49	12/18/18 15:15	1
Benzo[a]pyrene	ND		5.2	0.42	ug/Kg	☼	12/17/18 09:49	12/18/18 15:15	1
Benzo[b]fluoranthene	ND	*	5.2	0.62	ug/Kg	☼	12/17/18 09:49	12/18/18 15:15	1
Benzo[k]fluoranthene	ND		5.2	0.63	ug/Kg	☼	12/17/18 09:49	12/18/18 15:15	1
Chrysene	ND		5.2	1.6	ug/Kg	☼	12/17/18 09:49	12/18/18 15:15	1
Dibenz(a,h)anthracene	ND		5.2	0.75	ug/Kg	☼	12/17/18 09:49	12/18/18 15:15	1
Indeno[1,2,3-cd]pyrene	ND		5.2	0.63	ug/Kg	☼	12/17/18 09:49	12/18/18 15:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*91*		*57 - 120*	*12/17/18 09:49*	*12/18/18 15:15*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**5.6**		5.6	2.6	mg/Kg	☼	12/11/18 14:19	12/12/18 00:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*50 - 150*	*12/11/18 14:19*	*12/12/18 00:02*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		52	13	mg/Kg	☼	12/10/18 17:59	12/16/18 05:14	1
Motor Oil (>C24-C36)	**92**		52	18	mg/Kg	☼	12/10/18 17:59	12/16/18 05:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*117*		*50 - 150*	*12/10/18 17:59*	*12/16/18 05:14*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**92.5**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**7.5**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-T14-6

Date Collected: 12/04/18 13:00
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-9

Matrix: Solid
Percent Solids: 90.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		33	8.3	ug/Kg	☼	12/07/18 08:20	12/07/18 16:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 16:16*	*1*
Trifluorotoluene (Surr)	*97*		*80 - 120*	*12/07/18 08:20*	*12/07/18 16:16*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 16:16*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/07/18 08:20*	*12/07/18 16:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*	*12/07/18 08:20*	*12/07/18 16:16*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**0.74**	**J**	5.1	0.46	ug/Kg	☼	12/12/18 09:17	12/16/18 17:46	1
Benzo[a]anthracene	ND		5.1	0.78	ug/Kg	☼	12/12/18 09:17	12/16/18 17:46	1
Benzo[a]pyrene	ND		5.1	0.41	ug/Kg	☼	12/12/18 09:17	12/16/18 17:46	1
Benzo[b]fluoranthene	ND		5.1	0.60	ug/Kg	☼	12/12/18 09:17	12/16/18 17:46	1
Benzo[k]fluoranthene	ND		5.1	0.61	ug/Kg	☼	12/12/18 09:17	12/16/18 17:46	1
Chrysene	**2.4**	**J**	5.1	1.5	ug/Kg	☼	12/12/18 09:17	12/16/18 17:46	1
Dibenz(a,h)anthracene	ND		5.1	0.74	ug/Kg	☼	12/12/18 09:17	12/16/18 17:46	1
Indeno[1,2,3-cd]pyrene	ND		5.1	0.61	ug/Kg	☼	12/12/18 09:17	12/16/18 17:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*78*		*57 - 120*	*12/12/18 09:17*	*12/16/18 17:46*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		6.1	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
C6-C8 Aliphatics	ND		6.1	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
C8-C10 Aliphatics	ND		6.1	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
C10-C12 Aliphatics	ND		6.1	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
C8-C10 Aromatics	**3.1**	**J**	6.1	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
C10-C12 Aromatics	ND		6.1	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
C12-C13 Aromatics	ND		6.1	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
Methyl tert-butyl ether	ND		0.61	0.31	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
Benzene	ND		0.061	0.031	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
Toluene	ND		0.061	0.031	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
Ethylbenzene	ND		0.061	0.031	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
m-Xylene & p-Xylene	ND		0.12	0.061	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
o-Xylene	ND		0.061	0.031	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1
Naphthalene	ND		0.31	0.15	mg/Kg	☼	12/10/18 11:44	12/11/18 14:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*93*		*60 - 140*	*12/10/18 11:44*	*12/11/18 14:37*	*1*
2,5-Dibromotoluene (pid)	*99*		*60 - 140*	*12/10/18 11:44*	*12/11/18 14:37*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**3.1**	**J**	5.5	2.5	mg/Kg	☼	12/11/18 14:19	12/12/18 00:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*50 - 150*	*12/11/18 14:19*	*12/12/18 00:33*	*1*

Client Sample ID: DPE-PSS-T14-6

Date Collected: 12/04/18 13:00
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-9

Matrix: Solid
Percent Solids: 90.1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND	*	11	1.1	mg/Kg	☼	12/12/18 11:47	12/19/18 20:51	1
C10-C12 Aromatics	ND	*	11	1.8	mg/Kg	☼	12/12/18 11:47	12/19/18 20:51	1
C12-C16 Aliphatics	ND		11	0.97	mg/Kg	☼	12/12/18 11:47	12/19/18 20:51	1
C12-C16 Aromatics	ND	*	11	0.97	mg/Kg	☼	12/12/18 11:47	12/19/18 20:51	1
C16-C21 Aliphatics	ND		11	1.3	mg/Kg	☼	12/12/18 11:47	12/19/18 20:51	1
C16-C21 Aromatics	ND		11	1.4	mg/Kg	☼	12/12/18 11:47	12/19/18 20:51	1
C21-C34 Aliphatics	**13**		11	2.6	mg/Kg	☼	12/12/18 11:47	12/19/18 20:51	1
C21-C34 Aromatics	**7.7**	**J ***	11	2.2	mg/Kg	☼	12/12/18 11:47	12/19/18 20:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*85*		*60 - 140*	*12/12/18 11:47*	*12/19/18 20:51*	*1*
o-Terphenyl	*85*		*60 - 140*	*12/12/18 11:47*	*12/19/18 20:51*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		52	13	mg/Kg	☼	12/10/18 17:59	12/16/18 05:54	1
Motor Oil (>C24-C36)	**44**	**J**	52	18	mg/Kg	☼	12/10/18 17:59	12/16/18 05:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*54*		*50 - 150*	*12/10/18 17:59*	*12/16/18 05:54*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**90.1**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**9.9**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-U13-8.5

Date Collected: 12/04/18 14:19
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-10

Matrix: Solid
Percent Solids: 87.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		33	8.3	ug/Kg	☼	12/07/18 08:20	12/07/18 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 16:41*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/07/18 08:20*	*12/07/18 16:41*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*12/07/18 08:20*	*12/07/18 16:41*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/07/18 08:20*	*12/07/18 16:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*	*12/07/18 08:20*	*12/07/18 16:41*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**66**		5.6	0.51	ug/Kg	☼	12/12/18 09:17	12/16/18 18:11	1
Benzo[a]anthracene	**27**		5.6	0.86	ug/Kg	☼	12/12/18 09:17	12/16/18 18:11	1
Benzo[a]pyrene	**8.1**		5.6	0.45	ug/Kg	☼	12/12/18 09:17	12/16/18 18:11	1
Benzo[b]fluoranthene	**7.3**		5.6	0.66	ug/Kg	☼	12/12/18 09:17	12/16/18 18:11	1
Benzo[k]fluoranthene	**2.9**	**J**	5.6	0.68	ug/Kg	☼	12/12/18 09:17	12/16/18 18:11	1
Chrysene	**32**		5.6	1.7	ug/Kg	☼	12/12/18 09:17	12/16/18 18:11	1
Dibenz(a,h)anthracene	ND		5.6	0.81	ug/Kg	☼	12/12/18 09:17	12/16/18 18:11	1
Indeno[1,2,3-cd]pyrene	**2.2**	**J**	5.6	0.68	ug/Kg	☼	12/12/18 09:17	12/16/18 18:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*60*		*57 - 120*	*12/12/18 09:17*	*12/16/18 18:11*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.5	2.2	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1
C6-C8 Aliphatics	ND		5.5	2.2	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1
C8-C10 Aliphatics	ND		5.5	2.2	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1
C10-C12 Aliphatics	**35**		5.5	2.2	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1
C8-C10 Aromatics	**8.0**		5.5	2.2	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1
C10-C12 Aromatics	**69**		55	22	mg/Kg	☼	12/10/18 11:44	12/13/18 03:31	10
C12-C13 Aromatics	**37**	**J**	55	22	mg/Kg	☼	12/10/18 11:44	12/13/18 03:31	10
Methyl tert-butyl ether	ND		0.55	0.27	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1
Benzene	ND		0.055	0.027	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1
Toluene	ND		0.055	0.027	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1
Ethylbenzene	ND		0.055	0.027	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1
m-Xylene & p-Xylene	ND		0.11	0.055	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1
o-Xylene	ND		0.055	0.027	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1
Naphthalene	**0.83**		0.27	0.14	mg/Kg	☼	12/10/18 11:44	12/11/18 15:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*129*		*60 - 140*	*12/10/18 11:44*	*12/11/18 15:09*	*1*
2,5-Dibromotoluene (pid)	*136*		*60 - 140*	*12/10/18 11:44*	*12/11/18 15:09*	*1*
2,5-Dibromotoluene (pid)	*98*		*60 - 140*	*12/10/18 11:44*	*12/13/18 03:31*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**370**		5.4	2.5	mg/Kg	☼	12/11/18 14:19	12/12/18 01:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*50 - 150*	*12/11/18 14:19*	*12/12/18 01:04*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	89	*	11	1.1	mg/Kg	☼	12/12/18 11:47	12/19/18 21:16	1
C10-C12 Aromatics	9.3	J *	11	1.9	mg/Kg	☼	12/12/18 11:47	12/19/18 21:16	1
C12-C16 Aliphatics	490		11	0.99	mg/Kg	☼	12/12/18 11:47	12/19/18 21:16	1
C12-C16 Aromatics	48	*	11	0.99	mg/Kg	☼	12/12/18 11:47	12/19/18 21:16	1
C16-C21 Aliphatics	400		11	1.4	mg/Kg	☼	12/12/18 11:47	12/19/18 21:16	1
C16-C21 Aromatics	86		11	1.4	mg/Kg	☼	12/12/18 11:47	12/19/18 21:16	1
C21-C34 Aliphatics	80		11	2.7	mg/Kg	☼	12/12/18 11:47	12/19/18 21:16	1
C21-C34 Aromatics	10	J *	11	2.3	mg/Kg	☼	12/12/18 11:47	12/19/18 21:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*113*		*60 - 140*	*12/12/18 11:47*	*12/19/18 21:16*	*1*
o-Terphenyl	*72*		*60 - 140*	*12/12/18 11:47*	*12/19/18 21:16*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1200		55	13	mg/Kg	☼	12/10/18 17:59	12/16/18 06:35	1
Motor Oil (>C24-C36)	45	J	55	19	mg/Kg	☼	12/10/18 17:59	12/16/18 06:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*125*		*50 - 150*	*12/10/18 17:59*	*12/16/18 06:35*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	87.6		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	12.4		0.1	0.1	%			12/07/18 09:28	1

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82405-1

Client Sample ID: DPE-PSS-U13-14.5
Date Collected: 12/04/18 14:35
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-11
Matrix: Solid
Percent Solids: 81.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		36	9.0	ug/Kg	☼	12/07/18 08:20	12/07/18 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:06*	*1*
Trifluorotoluene (Surr)	*98*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:06*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:06*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:06*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 121*	*12/07/18 08:20*	*12/07/18 17:06*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**31**		5.9	2.7	mg/Kg	☼	12/11/18 14:19	12/12/18 01:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*50 - 150*	*12/11/18 14:19*	*12/12/18 01:35*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		59	14	mg/Kg	☼	12/10/18 17:59	12/16/18 06:55	1
Motor Oil (>C24-C36)	ND		59	21	mg/Kg	☼	12/10/18 17:59	12/16/18 06:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*119*		*50 - 150*	*12/10/18 17:59*	*12/16/18 06:55*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**81.8**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**18.2**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DUP-1
Date Collected: 12/04/18 00:01
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-12
Matrix: Solid
Percent Solids: 88.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		40	10	ug/Kg	☼	12/07/18 08:20	12/07/18 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:31*	*1*
Trifluorotoluene (Surr)	*98*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:31*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:31*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*	*12/07/18 08:20*	*12/07/18 17:31*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**10**		6.7	3.1	mg/Kg	☼	12/11/18 14:19	12/12/18 02:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*50 - 150*	*12/11/18 14:19*	*12/12/18 02:06*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		54	13	mg/Kg	☼	12/10/18 17:59	12/16/18 07:15	1
Motor Oil (>C24-C36)	ND		54	19	mg/Kg	☼	12/10/18 17:59	12/16/18 07:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*48*	*X*	*50 - 150*	*12/10/18 17:59*	*12/16/18 07:15*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**88.0**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**12.0**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: Trip Blank
Date Collected: 12/04/18 00:01
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-13
Matrix: Solid

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/07/18 08:20	12/07/18 17:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:56*	*1*
Trifluorotoluene (Surr)	*98*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:56*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:56*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*	*12/07/18 08:20*	*12/07/18 17:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*	*12/07/18 08:20*	*12/07/18 17:56*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/11/18 14:19	12/11/18 17:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*50 - 150*	*12/11/18 14:19*	*12/11/18 17:49*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-290530/1-A
Matrix: Solid
Analysis Batch: 290570

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290530

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/07/18 08:20	12/07/18 11:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 11:35*	*1*
Trifluorotoluene (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 11:35*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*12/07/18 08:20*	*12/07/18 11:35*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/07/18 08:20*	*12/07/18 11:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 121*	*12/07/18 08:20*	*12/07/18 11:35*	*1*

Lab Sample ID: LCS 580-290530/2-A
Matrix: Solid
Analysis Batch: 290570

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290530

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			800	930		ug/Kg		116	79 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
Trifluorotoluene (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*

Lab Sample ID: LCSD 580-290530/3-A
Matrix: Solid
Analysis Batch: 290570

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290530

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			800	914		ug/Kg		114	79 - 135	2	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
Trifluorotoluene (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-290875/1-A
Matrix: Solid
Analysis Batch: 291157

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290875

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		5.0	0.45	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		12/12/18 09:17	12/14/18 14:28	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-290875/1-A
Matrix: Solid
Analysis Batch: 291157

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290875

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Chrysene	ND		5.0	1.5	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		12/12/18 09:17	12/14/18 14:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*101*		*57 - 120*	*12/12/18 09:17*	*12/14/18 14:28*	*1*

Lab Sample ID: LCS 580-290875/2-A
Matrix: Solid
Analysis Batch: 291157

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290875

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	1000	1050		ug/Kg		105	68 - 120
Benzo[a]anthracene	1000	1100		ug/Kg		110	66 - 120
Benzo[a]pyrene	1000	1040		ug/Kg		104	72 - 124
Benzo[b]fluoranthene	1000	964		ug/Kg		96	63 - 121
Benzo[k]fluoranthene	1000	965		ug/Kg		97	63 - 123
Chrysene	1000	908		ug/Kg		91	69 - 120
Dibenz(a,h)anthracene	1000	993		ug/Kg		99	70 - 125
Indeno[1,2,3-cd]pyrene	1000	891		ug/Kg		89	65 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*96*		*57 - 120*

Lab Sample ID: MB 580-291281/1-A
Matrix: Solid
Analysis Batch: 291411

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291281

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		5.0	0.45	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Chrysene	ND		5.0	1.5	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		12/17/18 09:49	12/18/18 11:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*87*		*57 - 120*	*12/17/18 09:49*	*12/18/18 11:52*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-291281/2-A
Matrix: Solid
Analysis Batch: 291411

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291281

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	1000	1060		ug/Kg		106	68 - 120
Benzo[a]anthracene	1000	1010		ug/Kg		101	66 - 120
Benzo[a]pyrene	1000	985		ug/Kg		98	72 - 124
Benzo[b]fluoranthene	1000	975		ug/Kg		97	63 - 121
Benzo[k]fluoranthene	1000	1100		ug/Kg		110	63 - 123
Chrysene	1000	1050		ug/Kg		105	69 - 120
Dibenz(a,h)anthracene	1000	965		ug/Kg		96	70 - 125
Indeno[1,2,3-cd]pyrene	1000	987		ug/Kg		99	65 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*83*		*57 - 120*

Lab Sample ID: LCSD 580-291281/3-A
Matrix: Solid
Analysis Batch: 291411

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291281

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Methylnaphthalene	1000	1030		ug/Kg		103	68 - 120	3	12
Benzo[a]anthracene	1000	1010		ug/Kg		101	66 - 120	0	14
Benzo[a]pyrene	1000	1000		ug/Kg		100	72 - 124	2	12
Benzo[b]fluoranthene	1000	1180	*	ug/Kg		118	63 - 121	19	10
Benzo[k]fluoranthene	1000	1030		ug/Kg		103	63 - 123	6	15
Chrysene	1000	1040		ug/Kg		104	69 - 120	1	10
Dibenz(a,h)anthracene	1000	995		ug/Kg		99	70 - 125	3	13
Indeno[1,2,3-cd]pyrene	1000	1020		ug/Kg		102	65 - 121	3	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Terphenyl-d14	*89*		*57 - 120*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Lab Sample ID: 580-82405-4 MS
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: DPE-PSS-O17-3
Prep Type: Total/NA
Prep Batch: 562602

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	ND		10.2	12.0		mg/Kg	☼	117	70 - 130
C6-C8 Aliphatics	ND		6.83	8.09		mg/Kg	☼	118	70 - 130
C8-C10 Aliphatics	3.0	J	20.5	26.3		mg/Kg	☼	114	70 - 130
C10-C12 Aliphatics	9.6		6.83	17.1		mg/Kg	☼	110	70 - 130
C8-C10 Aromatics	9.1		17.1	29.3		mg/Kg	☼	118	70 - 130
C10-C12 Aromatics	6.2	J F1	3.41	8.10	F1	mg/Kg	☼	56	70 - 130
C12-C13 Aromatics	ND	F1	3.41	4.66	J F1	mg/Kg	☼	136	70 - 130
Naphthalene	0.28	J	3.41	3.77		mg/Kg	☼	102	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*85*		*60 - 140*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: 580-82405-4 MS
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: DPE-PSS-O17-3
Prep Type: Total/NA
Prep Batch: 562602

Surrogate	MS %Recovery	MS Qualifier	Limits
2,5-Dibromotoluene (pid)	*91*		*60 - 140*

Lab Sample ID: 580-82405-4 MSD
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: DPE-PSS-O17-3
Prep Type: Total/NA
Prep Batch: 562602

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics	ND		10.2	12.5		mg/Kg	☼	122	70 - 130	5	25
C6-C8 Aliphatics	ND		6.83	8.67		mg/Kg	☼	127	70 - 130	7	25
C8-C10 Aliphatics	3.0	J	20.5	27.3		mg/Kg	☼	119	70 - 130	4	25
C10-C12 Aliphatics	9.6		6.83	17.5		mg/Kg	☼	115	70 - 130	2	25
C8-C10 Aromatics	9.1		17.1	29.6		mg/Kg	☼	120	70 - 130	1	25
C10-C12 Aromatics	6.2	J F1	3.41	8.26	F1	mg/Kg	☼	61	70 - 130	2	25
C12-C13 Aromatics	ND	F1	3.41	4.74	J F1	mg/Kg	☼	139	70 - 130	2	25
Naphthalene	0.28	J	3.41	4.00		mg/Kg	☼	109	70 - 130	6	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,5-Dibromotoluene (fid)	*86*		*60 - 140*
2,5-Dibromotoluene (pid)	*91*		*60 - 140*

Lab Sample ID: MB 490-562731/45
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C6-C8 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C8-C10 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C10-C12 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C8-C10 Aromatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C10-C12 Aromatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C12-C13 Aromatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
Methyl tert-butyl ether	ND		0.50	0.25	mg/Kg			12/12/18 15:27	1
Benzene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1
Toluene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1
Ethylbenzene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1
m-Xylene & p-Xylene	ND		0.10	0.050	mg/Kg			12/12/18 15:27	1
o-Xylene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1
Naphthalene	ND		0.25	0.13	mg/Kg			12/12/18 15:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,5-Dibromotoluene (fid)	*92*		*60 - 140*		*12/12/18 15:27*	*1*
2,5-Dibromotoluene (pid)	*97*		*60 - 140*		*12/12/18 15:27*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 490-562731/9
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C6-C8 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C8-C10 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C10-C12 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C8-C10 Aromatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C10-C12 Aromatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C12-C13 Aromatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
Methyl tert-butyl ether	ND		0.50	0.25	mg/Kg			12/11/18 12:27	1
Benzene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
Toluene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
Ethylbenzene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
m-Xylene & p-Xylene	ND		0.10	0.050	mg/Kg			12/11/18 12:27	1
o-Xylene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
Naphthalene	ND		0.25	0.13	mg/Kg			12/11/18 12:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*101*		*60 - 140*		*12/11/18 12:27*	*1*
2,5-Dibromotoluene (pid)	*110*		*60 - 140*		*12/11/18 12:27*	*1*

Lab Sample ID: LCS 490-562731/43
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	15.0	14.9		mg/Kg		99	70 - 130
C6-C8 Aliphatics	10.0	9.32		mg/Kg		93	70 - 130
C8-C10 Aliphatics	30.0	29.6		mg/Kg		99	70 - 130
C10-C12 Aliphatics	10.0	9.91		mg/Kg		99	70 - 130
C8-C10 Aromatics	25.0	25.7		mg/Kg		103	70 - 130
C10-C12 Aromatics	5.00	4.86	J	mg/Kg		97	70 - 130
C12-C13 Aromatics	5.00	4.64	J	mg/Kg		93	70 - 130
Naphthalene	5.00	4.98		mg/Kg		100	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*93*		*60 - 140*
2,5-Dibromotoluene (pid)	*97*		*60 - 140*

Lab Sample ID: LCS 490-562731/7
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	15.0	15.0		mg/Kg		100	70 - 130
C6-C8 Aliphatics	10.0	9.62		mg/Kg		96	70 - 130
C8-C10 Aliphatics	30.0	30.1		mg/Kg		100	70 - 130
C10-C12 Aliphatics	10.0	11.2		mg/Kg		112	70 - 130
C8-C10 Aromatics	25.0	26.4		mg/Kg		106	70 - 130

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 490-562731/7
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C10-C12 Aromatics			5.00	5.77		mg/Kg		115	70 - 130		
C12-C13 Aromatics			5.00	5.01		mg/Kg		100	70 - 130		
Naphthalene			5.00	5.05		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*108*		*60 - 140*
2,5-Dibromotoluene (pid)	*113*		*60 - 140*

Lab Sample ID: LCSD 490-562731/44
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics			15.0	15.0		mg/Kg		100	70 - 130	1	25
C6-C8 Aliphatics			10.0	9.74		mg/Kg		97	70 - 130	4	25
C8-C10 Aliphatics			30.0	31.0		mg/Kg		103	70 - 130	4	25
C10-C12 Aliphatics			10.0	10.2		mg/Kg		102	70 - 130	3	25
C8-C10 Aromatics			25.0	26.3		mg/Kg		105	70 - 130	3	25
C10-C12 Aromatics			5.00	5.18		mg/Kg		104	70 - 130	6	25
C12-C13 Aromatics			5.00	4.74	J	mg/Kg		95	70 - 130	2	25
Naphthalene			5.00	5.06		mg/Kg		101	70 - 130	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*93*		*60 - 140*
2,5-Dibromotoluene (pid)	*95*		*60 - 140*

Lab Sample ID: LCSD 490-562731/8
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics			15.0	15.5		mg/Kg		103	70 - 130	3	25
C6-C8 Aliphatics			10.0	9.87		mg/Kg		99	70 - 130	3	25
C8-C10 Aliphatics			30.0	30.8		mg/Kg		103	70 - 130	2	25
C10-C12 Aliphatics			10.0	11.0		mg/Kg		110	70 - 130	1	25
C8-C10 Aromatics			25.0	26.9		mg/Kg		108	70 - 130	2	25
C10-C12 Aromatics			5.00	5.27		mg/Kg		105	70 - 130	9	25
C12-C13 Aromatics			5.00	5.25		mg/Kg		105	70 - 130	5	25
Naphthalene			5.00	5.23		mg/Kg		105	70 - 130	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*108*		*60 - 140*
2,5-Dibromotoluene (pid)	*113*		*60 - 140*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-290799/1-A
Matrix: Solid
Analysis Batch: 291471

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290799

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/11/18 14:19	12/11/18 13:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*50 - 150*	*12/11/18 14:19*	*12/11/18 13:16*	*1*

Lab Sample ID: LCS 580-290799/2-A
Matrix: Solid
Analysis Batch: 291471

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290799

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	40.3		mg/Kg		101	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*50 - 150*

Lab Sample ID: LCSD 580-290799/3-A
Matrix: Solid
Analysis Batch: 291471

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290799

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	38.5		mg/Kg		96	80 - 120	4	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*50 - 150*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-290909/1-B
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		5.0	0.48	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C10-C12 Aromatics	ND		5.0	0.84	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C12-C16 Aliphatics	ND		5.0	0.44	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C12-C16 Aromatics	ND		5.0	0.44	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C16-C21 Aliphatics	ND		5.0	0.61	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C16-C21 Aromatics	ND		5.0	0.64	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C21-C34 Aliphatics	ND		5.0	1.2	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C21-C34 Aromatics	ND		5.0	1.0	mg/Kg		12/12/18 11:47	12/19/18 17:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*90*		*60 - 140*	*12/12/18 11:47*	*12/19/18 17:29*	*1*
o-Terphenyl	*77*		*60 - 140*	*12/12/18 11:47*	*12/19/18 17:29*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 580-290909/2-B
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290909

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics	2.52	1.75	J *	mg/Kg		69	70 - 130
C10-C12 Aromatics	2.52	1.52	J *	mg/Kg		60	70 - 130
C12-C16 Aliphatics	5.05	3.98	J	mg/Kg		79	70 - 130
C12-C16 Aromatics	7.57	4.90	J *	mg/Kg		65	70 - 130
C16-C21 Aliphatics	7.57	7.10		mg/Kg		94	70 - 130
C16-C21 Aromatics	12.6	9.75		mg/Kg		77	70 - 130
C21-C34 Aliphatics	15.1	15.1		mg/Kg		100	70 - 130
C21-C34 Aromatics	20.2	13.5	*	mg/Kg		67	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctadecane	*92*		*60 - 140*
o-Terphenyl	*87*		*60 - 140*

Lab Sample ID: LCSD 580-290909/3-B
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290909

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics	2.52	1.69	J *	mg/Kg		67	70 - 130	4	25
C10-C12 Aromatics	2.52	1.45	J *	mg/Kg		58	70 - 130	4	25
C12-C16 Aliphatics	5.05	3.86	J	mg/Kg		76	70 - 130	3	25
C12-C16 Aromatics	7.57	4.70	J *	mg/Kg		62	70 - 130	4	25
C16-C21 Aliphatics	7.57	6.81		mg/Kg		90	70 - 130	4	25
C16-C21 Aromatics	12.6	9.45		mg/Kg		75	70 - 130	3	25
C21-C34 Aliphatics	15.1	14.9		mg/Kg		98	70 - 130	2	25
C21-C34 Aromatics	20.2	14.0		mg/Kg		70	70 - 130	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctadecane	*87*		*60 - 140*
o-Terphenyl	*85*		*60 - 140*

Lab Sample ID: 580-82405-1 MS
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: DPE-PSS-P16-1
Prep Type: Total/NA
Prep Batch: 290909

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics	110	J *	2.56	136	J 4	mg/Kg	☼	873	70 - 130
C10-C12 Aromatics	ND	*	2.56	ND		mg/Kg	☼	NC	70 - 130
C12-C16 Aliphatics	360		5.12	432	4	mg/Kg	☼	1492	70 - 130
C12-C16 Aromatics	61	J *	7.68	92.5	J 4	mg/Kg	☼	415	70 - 130
C16-C21 Aliphatics	440		7.68	510	4	mg/Kg	☼	936	70 - 130
C16-C21 Aromatics	230		12.8	339	4	mg/Kg	☼	889	70 - 130
C21-C34 Aliphatics	1300		15.4	1500	4	mg/Kg	☼	1328	70 - 130
C21-C34 Aromatics	660	*	20.5	935	4	mg/Kg	☼	1328	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctadecane	*83*		*60 - 140*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: 580-82405-1 MS
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: DPE-PSS-P16-1
Prep Type: Total/NA
Prep Batch: 290909

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	*81*		*60 - 140*

Lab Sample ID: 580-82405-1 MSD
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: DPE-PSS-P16-1
Prep Type: Total/NA
Prep Batch: 290909

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics	110	J *	2.62	112	J 4	mg/Kg	☼	-36	70 - 130	19	25
C10-C12 Aromatics	ND	*	2.62	ND		mg/Kg	☼	NC	70 - 130	NC	25
C12-C16 Aliphatics	360		5.24	372	4	mg/Kg	☼	322	70 - 130	15	25
C12-C16 Aromatics	61	J *	7.85	72.3	J 4	mg/Kg	☼	149	70 - 130	25	25
C16-C21 Aliphatics	440		7.85	439	4	mg/Kg	☼	9	70 - 130	15	25
C16-C21 Aromatics	230		13.1	263	4	mg/Kg	☼	286	70 - 130	25	25
C21-C34 Aliphatics	1300		15.7	1300	4	mg/Kg	☼	-8	70 - 130	15	25
C21-C34 Aromatics	660	*	20.9	739	4	mg/Kg	☼	367	70 - 130	23	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctadecane	*83*		*60 - 140*
o-Terphenyl	*62*		*60 - 140*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-290729/1-B
Matrix: Solid
Analysis Batch: 291268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290729

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		12/10/18 17:59	12/16/18 01:33	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		12/10/18 17:59	12/16/18 01:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	*110*		*50 - 150*	*12/10/18 17:59*	*12/16/18 01:33*	*1*

Lab Sample ID: LCS 580-290729/2-B
Matrix: Solid
Analysis Batch: 291268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290729

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	464		mg/Kg		93	64 - 127		
Motor Oil (>C24-C36)			500	496		mg/Kg		99	70 - 125		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	*96*		*50 - 150*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-290729/3-B
Matrix: Solid
Analysis Batch: 291268

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290729

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	481		mg/Kg		96	64 - 127	4	16
Motor Oil (>C24-C36)			500	496		mg/Kg		99	70 - 125	0	17

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*85*		*50 - 150*

Lab Sample ID: 580-82405-8 DU
Matrix: Solid
Analysis Batch: 291268

Client Sample ID: DPE-PSS-T14-4
Prep Type: Total/NA
Prep Batch: 290729

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	ND			ND		mg/Kg	☼			NC	35
Motor Oil (>C24-C36)	92			30.1	J F3	mg/Kg	☼			101	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*114*		*50 - 150*

Method: D 2216 - Percent Moisture

Lab Sample ID: 580-82405-5 DU
Matrix: Solid
Analysis Batch: 290510

Client Sample ID: DPE-PSS-O17-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	83.4			83.2		%				0.3	20
Percent Moisture	16.6			16.8		%				2	20

Lab Sample ID: 580-82405-12 DU
Matrix: Solid
Analysis Batch: 290510

Client Sample ID: DUP-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Solids	88.0			87.7		%				0.4	20
Percent Moisture	12.0			12.3		%				3	20

Client Sample ID: DPE-PSS-P16-1

Lab Sample ID: 580-82405-1
Date Collected: 12/04/18 08:35
Matrix: Solid
Date Received: 12/05/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-P16-1

Lab Sample ID: 580-82405-1
Date Collected: 12/04/18 08:35
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 96.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 12:52	ASJ	TAL SEA
Total/NA	Prep	3546			291281	12/17/18 09:49	DCV	TAL SEA
Total/NA	Analysis	8270D SIM		10	291411	12/18/18 13:08	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/11/18 12:59	AK1	TAL NSH
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	562731	12/13/18 02:58	AK1	TAL NSH
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/11/18 19:54	TL1	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		10	291544	12/19/18 18:45	Z1R	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 02:53	Z1R	TAL SEA

Client Sample ID: DPE-PSS-P16-2

Lab Sample ID: 580-82405-2
Date Collected: 12/04/18 08:44
Matrix: Solid
Date Received: 12/05/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-P16-2

Lab Sample ID: 580-82405-2
Date Collected: 12/04/18 08:44
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 90.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 13:18	ASJ	TAL SEA
Total/NA	Prep	3546			291281	12/17/18 09:49	DCV	TAL SEA
Total/NA	Analysis	8270D SIM		1	291411	12/18/18 13:33	W1T	TAL SEA
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/11/18 20:25	TL1	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA

Client Sample ID: DPE-PSS-P16-2
Lab Sample ID: 580-82405-2
Date Collected: 12/04/18 08:44
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 90.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 03:13	Z1R	TAL SEA

Client Sample ID: DPE-PSS-P16-6
Lab Sample ID: 580-82405-3
Date Collected: 12/04/18 09:03
Matrix: Solid
Date Received: 12/05/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-P16-6
Lab Sample ID: 580-82405-3
Date Collected: 12/04/18 09:03
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 85.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 13:43	ASJ	TAL SEA
Total/NA	Prep	3546			291281	12/17/18 09:49	DCV	TAL SEA
Total/NA	Analysis	8270D SIM		1	291411	12/18/18 13:59	W1T	TAL SEA
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/11/18 20:56	TL1	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 03:34	Z1R	TAL SEA

Client Sample ID: DPE-PSS-O17-3
Lab Sample ID: 580-82405-4
Date Collected: 12/04/18 09:48
Matrix: Solid
Date Received: 12/05/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-O17-3
Lab Sample ID: 580-82405-4
Date Collected: 12/04/18 09:48
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 89.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 14:09	ASJ	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		10	291261	12/16/18 16:55	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/11/18 21:39	AK1	TAL NSH

Client Sample ID: DPE-PSS-O17-3
Lab Sample ID: 580-82405-4
Date Collected: 12/04/18 09:48
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 89.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/11/18 21:27	TL1	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291544	12/19/18 20:00	Z1R	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		20	291367	12/17/18 21:29	CJ	TAL SEA

Client Sample ID: DPE-PSS-O17-6
Lab Sample ID: 580-82405-5
Date Collected: 12/04/18 09:59
Matrix: Solid
Date Received: 12/05/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-O17-6
Lab Sample ID: 580-82405-5
Date Collected: 12/04/18 09:59
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 14:34	ASJ	TAL SEA
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/11/18 21:58	TL1	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291367	12/17/18 21:51	CJ	TAL SEA

Client Sample ID: DPE-PSS-Q15-1
Lab Sample ID: 580-82405-6
Date Collected: 12/04/18 10:55
Matrix: Solid
Date Received: 12/05/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-Q15-1
Lab Sample ID: 580-82405-6
Date Collected: 12/04/18 10:55
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 95.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 15:00	ASJ	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82405-1

Client Sample ID: DPE-PSS-Q15-1

Date Collected: 12/04/18 10:55
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-6

Matrix: Solid
Percent Solids: 95.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		10	291261	12/16/18 17:20	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		4	562731	12/11/18 23:49	AK1	TAL NSH
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/12/18 00:21	AK1	TAL NSH
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/11/18 23:00	TL1	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		2	291544	12/19/18 20:26	Z1R	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 04:34	Z1R	TAL SEA

Client Sample ID: DPE-PSS-Q15-6

Date Collected: 12/04/18 11:22
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-Q15-6

Date Collected: 12/04/18 11:22
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-7

Matrix: Solid
Percent Solids: 88.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 15:25	ASJ	TAL SEA
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/11/18 23:31	TL1	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 04:54	Z1R	TAL SEA

Client Sample ID: DPE-PSS-T14-4

Date Collected: 12/04/18 12:52
Date Received: 12/05/18 11:45

Lab Sample ID: 580-82405-8

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-T14-4
Lab Sample ID: 580-82405-8
Date Collected: 12/04/18 12:52
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 92.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 15:51	ASJ	TAL SEA
Total/NA	Prep	3546			291281	12/17/18 09:49	DCV	TAL SEA
Total/NA	Analysis	8270D SIM		1	291411	12/18/18 15:15	W1T	TAL SEA
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/12/18 00:02	TL1	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 05:14	Z1R	TAL SEA

Client Sample ID: DPE-PSS-T14-6
Lab Sample ID: 580-82405-9
Date Collected: 12/04/18 13:00
Matrix: Solid
Date Received: 12/05/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-T14-6
Lab Sample ID: 580-82405-9
Date Collected: 12/04/18 13:00
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 90.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 16:16	ASJ	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		1	291261	12/16/18 17:46	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/11/18 14:37	AK1	TAL NSH
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/12/18 00:33	TL1	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291544	12/19/18 20:51	Z1R	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 05:54	Z1R	TAL SEA

Client Sample ID: DPE-PSS-U13-8.5
Lab Sample ID: 580-82405-10
Date Collected: 12/04/18 14:19
Matrix: Solid
Date Received: 12/05/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-U13-8.5

Lab Sample ID: 580-82405-10
Date Collected: 12/04/18 14:19
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 87.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 16:41	ASJ	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		1	291261	12/16/18 18:11	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/11/18 15:09	AK1	TAL NSH
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	562731	12/13/18 03:31	AK1	TAL NSH
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/12/18 01:04	TL1	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291544	12/19/18 21:16	Z1R	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 06:35	Z1R	TAL SEA

Client Sample ID: DPE-PSS-U13-14.5

Lab Sample ID: 580-82405-11
Date Collected: 12/04/18 14:35
Matrix: Solid
Date Received: 12/05/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-U13-14.5

Lab Sample ID: 580-82405-11
Date Collected: 12/04/18 14:35
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 81.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 17:06	ASJ	TAL SEA
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/12/18 01:35	TL1	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 06:55	Z1R	TAL SEA

Client Sample ID: DUP-1

Lab Sample ID: 580-82405-12
Date Collected: 12/04/18 00:01
Matrix: Solid
Date Received: 12/05/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82405-1

Client Sample ID: DUP-1

Lab Sample ID: 580-82405-12

Date Collected: 12/04/18 00:01
Matrix: Solid
Date Received: 12/05/18 11:45
Percent Solids: 88.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 17:31	ASJ	TAL SEA
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/12/18 02:06	TL1	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 07:15	Z1R	TAL SEA

Client Sample ID: Trip Blank

Lab Sample ID: 580-82405-13

Date Collected: 12/04/18 00:01
Matrix: Solid
Date Received: 12/05/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 17:56	ASJ	TAL SEA
Total/NA	Prep	5035			290799	12/11/18 14:19	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291471	12/11/18 17:49	TL1	TAL SEA

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82405-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-22
ANAB	ISO/IEC 17025		L2236	01-19-22
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Laboratory: TestAmerica Nashville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	06-30-19
Arizona	State Program	9	AZ0473	05-05-19
Arkansas DEQ	State Program	6	88-0737	04-25-19
California	State Program	9	2938	06-30-19 *
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-19
Georgia	State Program	4	NA: NELAP & A2LA	12-31-19
Illinois	NELAP	5	200010	12-09-18 *
Iowa	State Program	7	131	04-01-20
Kansas	NELAP	7	E-10229	10-31-19
Kentucky (UST)	State Program	4	19	06-30-19
Kentucky (WW)	State Program	4	90038	12-31-19
Louisiana	NELAP	6	30613	06-30-19
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-19
Massachusetts	State Program	1	M-TN032	06-30-19
Minnesota	NELAP	5	047-999-345	12-31-19
Mississippi	State Program	4	N/A	06-30-19
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-19
New Hampshire	NELAP	1	2963	10-09-19
New Jersey	NELAP	2	TN965	06-30-19
New York	NELAP	2	11342	03-31-19
North Carolina (WW/SW)	State Program	4	387	12-31-19
North Dakota	State Program	8	R-146	06-30-19
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-19
Oregon	NELAP	10	TN200001	04-26-19
Pennsylvania	NELAP	3	68-00585	07-31-19
Rhode Island	State Program	1	LAO00268	12-30-19
South Carolina	State Program	4	84009 (001)	02-28-19
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-19
USDA	Federal		P330-13-00306	12-01-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Laboratory: TestAmerica Nashville (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Utah	NELAP	8	TN00032	07-31-19
Virginia	NELAP	3	460152	06-14-19
Washington	State Program	10	C789	07-19-19
West Virginia DEP	State Program	3	219	02-28-19
Wisconsin	State Program	5	998020430	08-31-19
Wyoming (UST)	A2LA	8	453.07	12-31-19

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82405-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82405-1	DPE-PSS-P16-1	Solid	12/04/18 08:35	12/05/18 11:45
580-82405-2	DPE-PSS-P16-2	Solid	12/04/18 08:44	12/05/18 11:45
580-82405-3	DPE-PSS-P16-6	Solid	12/04/18 09:03	12/05/18 11:45
580-82405-4	DPE-PSS-O17-3	Solid	12/04/18 09:48	12/05/18 11:45
580-82405-5	DPE-PSS-O17-6	Solid	12/04/18 09:59	12/05/18 11:45
580-82405-6	DPE-PSS-Q15-1	Solid	12/04/18 10:55	12/05/18 11:45
580-82405-7	DPE-PSS-Q15-6	Solid	12/04/18 11:22	12/05/18 11:45
580-82405-8	DPE-PSS-T14-4	Solid	12/04/18 12:52	12/05/18 11:45
580-82405-9	DPE-PSS-T14-6	Solid	12/04/18 13:00	12/05/18 11:45
580-82405-10	DPE-PSS-U13-8.5	Solid	12/04/18 14:19	12/05/18 11:45
580-82405-11	DPE-PSS-U13-14.5	Solid	12/04/18 14:35	12/05/18 11:45
580-82405-12	DUP-1	Solid	12/04/18 00:01	12/05/18 11:45
580-82405-13	Trip Blank	Solid	12/04/18 00:01	12/05/18 11:45

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TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamericainc.com

Loc: 580
82405

☐ Rush
☐ Short Hold

Chain of Custody Record

Client	Client Contact	Date	Chain of Custody Number
Arcadis	Ophelie Encelle	12/4/18	34984
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 2
1100 Olive Way, Suite 800	206-939-9622		
City / **State** / **Zip Code**	**Sampler**	**Lab Contact**	
Seattle / WA / 98101	Jason Little	Elaine Walker	
Project Name and Location (State)	**Billing Contact**		
Edmonds Terminal			
Contract/Purchase Order/Quote No.			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	Analysis (Attach list if more space is needed): Benzene EPA 8260C	NWTPH-Gx	NWTPH-Dx w/SGC	cPAHs EPA 8270C	EPH/VPH	Special Instructions/ Conditions of Receipt
DPE-PSS-P16-1	12/4/18	0835				X	2						2	X	X	X	X	X	* use Standard SGC
DPE-PSS-P16-2	12/4/18	0844				X	1						1	X	X	X	X		* only analyze CPAHs
DPE-PSS-P16-6	12/4/18	0903				X	1						1	X	X	X	X		if DRO/HO detections
DPE-PSS-017-3	12/4/18	0948				X	2						2	X	X	X	X	X	* EPH/VPH - aliphatics,
DPE-PSS-017-6	12/4/18	0959				X	1						1	X	X	X	X		aromatics, benzene,
DPE-PSS-Q15-1	12/4/18	1055				X	2						2	X	X	X	X	X	toluene, ethylbenzene,
DPE-PSS-Q15-6	12/4/18	1122				X	1						1	X	X	X	X		xylenes, naphthalenes,
DPE-PSS-T14-4	12/4/18	1252				X	1						1	X	X	X	X		1 & 2-methylnaphthalenes
DPE-PSS-T14-6	12/4/18	1300				X	2						2	X	X	X	X	X	n-hexane & 7 cPAHs
DPE-PSS-U13-8.5	12/4/18	1419				X	2						2	X	X	X	X	X	
DPE-PSS-U13-14.5	12/4/18	1435				X	1						1	X	X	X	X		
DUP-1	12/4/18	—				X	1						1	X	X	X	X		

Cooler
☐ Yes ☐ No Cooler Temp: _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____

580-82405 Chain of Custody

Turn Around Time Required (business days)
☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☒ Other STAT

QC Requirements (Specify)

	Date	Time
1. Relinquished By Sign/Print: Eric Krueger	12/5/18	1145
2. Relinquished By Sign/Print		
3. Relinquished By Sign/Print		

	Date	Time
1. Received By Sign/Print: Francisco Lara, Jr.	12/5/18	11 45
2. Received By Sign/Print		
3. Received By Sign/Print		

Therm. ID: #2 Cor: 1.0 ° Unc: 1.7 °
Cooler Dsc: Ice Blue
Packing: Bubble
Cust. Seal: Yes ___ No ✓
Blue Ice, Wet, Dry, None
FedEx: _____
UPS: _____
Lab Cour: ✓
Other: _____

Comments

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

TAL-8274-580 (0210)
1/21/2019 (Rev. 1)

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☐ Rush
☐ Short Hold

Chain of Custody Record

Client	Client Contact	Date	Chain of Custody Number
Arcadis	Ophelie Enceile	12/4/18	34978
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 2 of 2**
1100 olive way, Suite 800	206-939-9622		
City / **State** / **Zip Code**	**Sampler**	**Lab Contact**	
Seattle / WA / 98101	Jason Little	Elaine Walker	
Project Name and Location (State)	**Billing Contact**		
Edmonds Terminal			
Contract/Purchase Order/Quote No.			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	Analysis: Benzene 8260C	NWTPH-Gx	Special Instructions/ Conditions of Receipt
Trip Blank	—	—		X									1	X	X	

Cooler
☐ Yes ☐ No Cooler Temp: _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Disposal By Lab
☐ Return To Client ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days)
☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☒ Other STAT

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By Sign/Print: Eric Krueger	12/5/18	1145	1. Received By Sign/Print: Francisco Luna, Jr	12/5/18	1145
2. Relinquished By Sign/Print			2. Received By Sign/Print		
3. Relinquished By Sign/Print			3. Received By Sign/Print		

Comments

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

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Nashville, TN

COOLER RECEIPT FORM

580-82405 Chain of Custody

Cooler Received/Opened On 12/8/2018 @ 10:10

Time Samples Removed From Cooler 12:10 Time Samples Placed In Storage 12:50 (2 Hour Window)

1. Tracking # 9027 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960358 pH Strip Lot _____ Chlorine Strip Lot _____

2. Temperature of rep. sample or temp blank when opened: 0.4 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) DD

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) DD

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) DD

I certify that I attached a label with the unique LIMS number to each container (intial) DD

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

580-82405

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	C No: 580-61960.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Washington
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note):	Page: Page 1 of 1
Address: 2960 Foster Creighton Drive, ,	Due Date Requested: 12/14/2018		Job #: 580-82405-1
City: Nashville	TAT Requested (days):		
State, Zip: TN, 37204	PO #:		
Phone: 615-726-0177(Tel) 615-726-3404(Fax)	WO #:		
Email:			
Project Name: Edmonds Terminal	Project #: 58011413		
Site: Chevron Edmonds Terminal	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH_VPH/5035FM_Calc Northwest VPH + VOCs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
DPE-PSS-P16-1 (580-82405-1)	12/4/18	08:35 Pacific		Solid			X	1	
DPE-PSS-O17-3 (580-82405-4)	12/4/18	09:48 Pacific		Solid			X	1	
DPE-PSS-Q15-1 (580-82405-6)	12/4/18	10:55 Pacific		Solid			X	1	
DPE-PSS-T14-6 (580-82405-9)	12/4/18	13:00 Pacific		Solid			X	1	
DPE-PSS-U13-8.5 (580-82405-10)	12/4/18	14:19 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: Tom Blankenship	Date/Time: 12/7/18	Company TA-Sea	Received by: [illegible]	Date/Time: 12/8/18 10:10	Company TA-VAN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.4

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-82405-1

Login Number: 82405
List Number: 1
Creator: Gall, Brandon A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-82414-1
Client Project/Site: Edmonds Terminal
Revision: 1

For:
ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
1/21/2019 12:32:12 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

Table of Contents

Job ID: 580-82414-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-82414-1

Revision 1: January 21, 2019
This revision was required to remove some "E" flags from the NWTPH-EPH analysis for samples DPE-PSS-O16-4 (580-82414-3), DPE-PSS-P15-6 (580-82414-5), and DPE-PSS-Q14-6 (580-82414-7). These anaytes were NOT outside the calibration range so the flags were not required. Per inquiry from the client the NWTPH-EPH surrogate recoveries for sample DPE-PSS-P15-6 (580-82414-5) were confirmed to be due to matrix interference.

Receipt
Nine samples were received on 12/4/2018 12:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

Receipt Exceptions

The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. DPE-PSS-N17-4 (580-82414-1), DPE-PSS-N17-6 (580-82414-2), DPE-PSS-O16-4 (580-82414-3), DPE-PSS-O16-6 (580-82414-4), DPE-PSS-P15-6 (580-82414-5), DPE-PSS-P15-11 (580-82414-6), DPE-PSS-Q14-6 (580-82414-7) and DPE-PSS-Q14-14.5 (580-82414-8).

GC/MS VOA
Method(s) 5035: Sample labels covered both of the tare weightsfor the following samples: DPE-PSS-N17-4 (580-82414-1), DPE-PSS-N17-6 (580-82414-2), DPE-PSS-O16-4 (580-82414-3), DPE-PSS-O16-6 (580-82414-4), DPE-PSS-P15-6 (580-82414-5), DPE-PSS-P15-11 (580-82414-6), DPE-PSS-Q14-6 (580-82414-7), DPE-PSS-Q14-14.5 (580-82414-8) and Trip Blank (580-82414-9)

Method(s) 5035: The following samples were provided to the laboratory with a significantly different initial weight than that required by the reference method: DPE-PSS-N17-6 (580-82414-2), DPE-PSS-O16-6 (580-82414-4), DPE-PSS-P15-6 (580-82414-5), DPE-PSS-P15-11 (580-82414-6) and DPE-PSS-Q14-14.5 (580-82414-8). The method requires 10 grams. The amount provided was above this range.

Method(s) NWTPH-Gx: The %D of surrogate in CCV associated with batch 580-290584 were outside the lower control limits. All associated sample surrogate fell within acceptance criteria; therefore, the data have been reported. (CCV 580-290584/16), (CCV 580-290584/19) and (CCV 580-290584/5).

Method(s) NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: DPE-PSS-Q14-6 (580-82414-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Gx: The %D of surrogate in CCV associated with batch 580-290708 were outside control limits. All associated sample surrogates fell within acceptance criteria; therefore, the data have been reported. (CCV 580-290708/13) and (CCV 580-290708/5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270C SIM, 8270D SIM: Surrogate recovery for the following sample was outside control limits: DPE-PSS-P15-6 (580-82414-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8270D SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch preparation batch 580-291281 and analytical batch 580-291411 recovered outside control limits for the following analytes: Benzo[b]fluoranthene.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Job ID: 580-82414-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

Method(s) NWTPH-Dx: Surrogate recovery for the following samples were outside control limits: DPE-PSS-N17-4 (580-82414-1), DPE-PSS-O16-4 (580-82414-3), DPE-PSS-P15-6 (580-82414-5), DPE-PSS-Q14-6 (580-82414-7) and DPE-PSS-N17-4 DU (580-82414-1 DU). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH/EPH: The method blank for preparation batch 580-291025 and 580-291524 and analytical batch 580-291634 contained C16-C21 Aliphatics above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) NWTPH/EPH: The method blank for preparation batch 580-291025 and 580-291524 and analytical batch 580-292266 contained C16-C21 aliphatic compounds above the MDL. Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) NWTPH/EPH: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 580-290909 and 580-291429 and analytical batch 580-291544 recovered outside acceptance limits for C10-C12 Aliphatics, C10-C12 Aromatics, C12-C16 Aromatics, and C21-C34 Aromatics. The client requested the data be qualified and reported since re-extraction would be outside of hold. (LCS 580-290909/2-B) and (LCSD 580-290909/3-B).

Method(s) NWTPH/EPH: The laboratory control samples (LCS/LCSD) for preparation batch 580-291025 and 580-291524 and analytical batch 580-292266 recovered outside control limits for the C10-C12 aromatic range. Out-of-hold data was not requested by the client; therefore, current data is reported.

Method(s) NWTPH/EPH: Surrogate recovery for the following samples were outside control limits: DPE-PSS-N17-4 (580-82414-1), E-PSS-O16-4 (580-82414-3), DPE-PSS-P15-6 (580-82414-5) and DPE-PSS-Q14-6 (580-82414-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH/EPH: The following samples were diluted due to the nature of the sample matrix: DPE-PSS-O16-4 (580-82414-3), DPE-PSS-P15-6 (580-82414-5) and DPE-PSS-Q14-6 (580-82414-7). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	RPD of the LCS and LCSD exceeds the control limits
X	Surrogate is outside control limits

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: DPE-PSS-N17-4
Date Collected: 12/03/18 09:05
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-1
Matrix: Solid
Percent Solids: 92.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		35	8.9	ug/Kg	☼	12/07/18 08:20	12/07/18 18:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/07/18 08:20*	*12/07/18 18:22*	*1*
Trifluorotoluene (Surr)	*97*		*80 - 120*	*12/07/18 08:20*	*12/07/18 18:22*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/07/18 08:20*	*12/07/18 18:22*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*	*12/07/18 08:20*	*12/07/18 18:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 121*	*12/07/18 08:20*	*12/07/18 18:22*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**21**		4.7	0.42	ug/Kg	☼	12/12/18 09:17	12/16/18 18:36	1
Benzo[a]anthracene	**11**		4.7	0.72	ug/Kg	☼	12/12/18 09:17	12/16/18 18:36	1
Benzo[a]pyrene	ND		4.7	0.38	ug/Kg	☼	12/12/18 09:17	12/16/18 18:36	1
Benzo[b]fluoranthene	ND		4.7	0.56	ug/Kg	☼	12/12/18 09:17	12/16/18 18:36	1
Benzo[k]fluoranthene	ND		4.7	0.57	ug/Kg	☼	12/12/18 09:17	12/16/18 18:36	1
Chrysene	ND		4.7	1.4	ug/Kg	☼	12/12/18 09:17	12/16/18 18:36	1
Dibenz(a,h)anthracene	ND		4.7	0.68	ug/Kg	☼	12/12/18 09:17	12/16/18 18:36	1
Indeno[1,2,3-cd]pyrene	ND		4.7	0.57	ug/Kg	☼	12/12/18 09:17	12/16/18 18:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*72*		*57 - 120*	*12/12/18 09:17*	*12/16/18 18:36*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.5	2.2	mg/Kg	☼	12/10/18 11:44	12/12/18 16:01	1
C6-C8 Aliphatics	ND		5.5	2.2	mg/Kg	☼	12/10/18 11:44	12/12/18 16:01	1
C8-C10 Aliphatics	**9.2**		5.5	2.2	mg/Kg	☼	12/10/18 11:44	12/12/18 16:01	1
C10-C12 Aliphatics	**130**		55	22	mg/Kg	☼	12/10/18 11:44	12/12/18 17:46	10
C8-C10 Aromatics	**40**		5.5	2.2	mg/Kg	☼	12/10/18 11:44	12/12/18 16:01	1
C10-C12 Aromatics	**120**		55	22	mg/Kg	☼	12/10/18 11:44	12/12/18 17:46	10
C12-C13 Aromatics	**59**		55	22	mg/Kg	☼	12/10/18 11:44	12/12/18 17:46	10
Methyl tert-butyl ether	ND		0.55	0.28	mg/Kg	☼	12/10/18 11:44	12/12/18 16:01	1
Benzene	ND		0.055	0.028	mg/Kg	☼	12/10/18 11:44	12/12/18 16:01	1
Toluene	ND		0.055	0.028	mg/Kg	☼	12/10/18 11:44	12/12/18 16:01	1
Ethylbenzene	ND		0.055	0.028	mg/Kg	☼	12/10/18 11:44	12/12/18 16:01	1
m-Xylene & p-Xylene	ND		0.11	0.055	mg/Kg	☼	12/10/18 11:44	12/12/18 16:01	1
o-Xylene	**0.063**		0.055	0.028	mg/Kg	☼	12/10/18 11:44	12/12/18 16:01	1
Naphthalene	**0.76**		0.28	0.14	mg/Kg	☼	12/10/18 11:44	12/12/18 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*76*		*60 - 140*	*12/10/18 11:44*	*12/12/18 16:01*	*1*
2,5-Dibromotoluene (pid)	*78*		*60 - 140*	*12/10/18 11:44*	*12/12/18 16:01*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**620**		5.8	2.7	mg/Kg	☼	12/07/18 10:16	12/07/18 16:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*79*		*50 - 150*	*12/07/18 10:16*	*12/07/18 16:14*	*1*

Client Sample ID: DPE-PSS-N17-4

Lab Sample ID: 580-82414-1

Date Collected: 12/03/18 09:05

Matrix: Solid

Date Received: 12/04/18 12:15

Percent Solids: 92.8

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aromatics	2.4	J *	11	1.8	mg/Kg	☼	12/13/18 11:21	12/20/18 18:42	1
C12-C16 Aromatics	87		11	0.93	mg/Kg	☼	12/13/18 11:21	12/20/18 18:42	1
C16-C21 Aromatics	610		11	1.4	mg/Kg	☼	12/13/18 11:21	12/20/18 18:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*24*	*X*	*60 - 140*	*12/13/18 11:21*	*12/20/18 18:42*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	550		530	51	mg/Kg	☼	12/13/18 11:21	12/29/18 21:12	50
C12-C16 Aliphatics	3400		530	47	mg/Kg	☼	12/13/18 11:21	12/29/18 21:12	50
C16-C21 Aliphatics	4500	B	530	65	mg/Kg	☼	12/13/18 11:21	12/29/18 21:12	50
C21-C34 Aliphatics	990		530	130	mg/Kg	☼	12/13/18 11:21	12/29/18 21:12	50
C21-C34 Aromatics	4700		530	110	mg/Kg	☼	12/13/18 11:21	12/29/18 21:12	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*598*	*X*	*60 - 140*	*12/13/18 11:21*	*12/29/18 21:12*	*50*
o-Terphenyl	*1728*	*X*	*60 - 140*	*12/13/18 11:21*	*12/29/18 21:12*	*50*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	9700		49	12	mg/Kg	☼	12/08/18 16:05	12/17/18 19:24	1
Motor Oil (>C24-C36)	270		49	17	mg/Kg	☼	12/08/18 16:05	12/17/18 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*1107*	*X*	*50 - 150*	*12/08/18 16:05*	*12/17/18 19:24*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	92.8		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	7.2		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-N17-6
Date Collected: 12/03/18 09:26
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-2
Matrix: Solid
Percent Solids: 83.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		35	8.9	ug/Kg	☼	12/07/18 08:20	12/07/18 18:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/07/18 08:20*	*12/07/18 18:47*	*1*
Trifluorotoluene (Surr)	*97*		*80 - 120*	*12/07/18 08:20*	*12/07/18 18:47*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 18:47*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*	*12/07/18 08:20*	*12/07/18 18:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 121*	*12/07/18 08:20*	*12/07/18 18:47*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**3.4**	**J**	5.9	2.7	mg/Kg	☼	12/07/18 10:16	12/10/18 14:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*50 - 150*	*12/07/18 10:16*	*12/10/18 14:37*	*1*
Trifluorotoluene (Surr)				*12/07/18 10:16*	*12/10/18 14:37*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		59	14	mg/Kg	☼	12/08/18 16:05	12/17/18 20:04	1
Motor Oil (>C24-C36)	ND		59	21	mg/Kg	☼	12/08/18 16:05	12/17/18 20:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*112*		*50 - 150*	*12/08/18 16:05*	*12/17/18 20:04*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**83.8**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**16.2**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-O16-4
Date Collected: 12/03/18 10:45
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-3
Matrix: Solid
Percent Solids: 88.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		33	8.4	ug/Kg	☼	12/07/18 08:20	12/07/18 19:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/07/18 08:20*	*12/07/18 19:12*	*1*
Trifluorotoluene (Surr)	*97*		*80 - 120*	*12/07/18 08:20*	*12/07/18 19:12*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 19:12*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/07/18 08:20*	*12/07/18 19:12*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*	*12/07/18 08:20*	*12/07/18 19:12*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**50**		5.4	0.49	ug/Kg	☼	12/12/18 09:17	12/16/18 19:02	1
Benzo[a]anthracene	ND		5.4	0.82	ug/Kg	☼	12/12/18 09:17	12/16/18 19:02	1
Benzo[a]pyrene	ND		5.4	0.43	ug/Kg	☼	12/12/18 09:17	12/16/18 19:02	1
Benzo[b]fluoranthene	ND		5.4	0.64	ug/Kg	☼	12/12/18 09:17	12/16/18 19:02	1
Benzo[k]fluoranthene	ND		5.4	0.65	ug/Kg	☼	12/12/18 09:17	12/16/18 19:02	1
Chrysene	ND		5.4	1.6	ug/Kg	☼	12/12/18 09:17	12/16/18 19:02	1
Dibenz(a,h)anthracene	ND		5.4	0.78	ug/Kg	☼	12/12/18 09:17	12/16/18 19:02	1
Indeno[1,2,3-cd]pyrene	ND		5.4	0.65	ug/Kg	☼	12/12/18 09:17	12/16/18 19:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*71*		*57 - 120*	*12/12/18 09:17*	*12/16/18 19:02*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.8	2.3	mg/Kg	☼	12/10/18 11:44	12/12/18 19:24	1
C6-C8 Aliphatics	ND		5.8	2.3	mg/Kg	☼	12/10/18 11:44	12/12/18 19:24	1
C8-C10 Aliphatics	**17**		5.8	2.3	mg/Kg	☼	12/10/18 11:44	12/12/18 19:24	1
C10-C12 Aliphatics	**120**		58	23	mg/Kg	☼	12/10/18 11:44	12/12/18 18:51	10
C8-C10 Aromatics	**42**		5.8	2.3	mg/Kg	☼	12/10/18 11:44	12/12/18 19:24	1
C10-C12 Aromatics	**100**		58	23	mg/Kg	☼	12/10/18 11:44	12/12/18 18:51	10
C12-C13 Aromatics	**41**	**J**	58	23	mg/Kg	☼	12/10/18 11:44	12/12/18 18:51	10
Methyl tert-butyl ether	ND		0.58	0.29	mg/Kg	☼	12/10/18 11:44	12/12/18 19:24	1
Benzene	ND		0.058	0.029	mg/Kg	☼	12/10/18 11:44	12/12/18 19:24	1
Toluene	ND		0.058	0.029	mg/Kg	☼	12/10/18 11:44	12/12/18 19:24	1
Ethylbenzene	**0.12**		0.058	0.029	mg/Kg	☼	12/10/18 11:44	12/12/18 19:24	1
m-Xylene & p-Xylene	ND		0.12	0.058	mg/Kg	☼	12/10/18 11:44	12/12/18 19:24	1
o-Xylene	**0.23**		0.058	0.029	mg/Kg	☼	12/10/18 11:44	12/12/18 19:24	1
Naphthalene	**5.1**		0.29	0.15	mg/Kg	☼	12/10/18 11:44	12/12/18 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*103*		*60 - 140*	*12/10/18 11:44*	*12/12/18 18:51*	*10*
2,5-Dibromotoluene (pid)	*101*		*60 - 140*	*12/10/18 11:44*	*12/12/18 18:51*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**570**		5.5	2.5	mg/Kg	☼	12/07/18 10:16	12/07/18 17:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*50 - 150*	*12/07/18 10:16*	*12/07/18 17:08*	*1*

Client Sample ID: DPE-PSS-O16-4
Date Collected: 12/03/18 10:45
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-3
Matrix: Solid
Percent Solids: 88.7

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aromatics	2.4	J *	5.6	0.95	mg/Kg	☼	12/12/18 11:47	12/19/18 22:06	1
C12-C16 Aromatics	58	*	5.6	0.50	mg/Kg	☼	12/12/18 11:47	12/19/18 22:06	1
C16-C21 Aromatics	400		5.6	0.72	mg/Kg	☼	12/12/18 11:47	12/19/18 22:06	1
C21-C34 Aromatics	48	*	5.6	1.1	mg/Kg	☼	12/12/18 11:47	12/19/18 22:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*116*		*60 - 140*	*12/12/18 11:47*	*12/19/18 22:06*	*1*
o-Terphenyl	*24*	*X*	*60 - 140*	*12/12/18 11:47*	*12/19/18 22:06*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	350		280	27	mg/Kg	☼	12/12/18 11:47	12/31/18 03:01	50
C12-C16 Aliphatics	1800		280	25	mg/Kg	☼	12/12/18 11:47	12/31/18 03:01	50
C16-C21 Aliphatics	2300		280	34	mg/Kg	☼	12/12/18 11:47	12/31/18 03:01	50
C21-C34 Aliphatics	470		280	68	mg/Kg	☼	12/12/18 11:47	12/31/18 03:01	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*363*	*X*	*60 - 140*	*12/12/18 11:47*	*12/31/18 03:01*	*50*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	4700		56	14	mg/Kg	☼	12/08/18 16:05	12/17/18 20:24	1
Motor Oil (>C24-C36)	110		56	20	mg/Kg	☼	12/08/18 16:05	12/17/18 20:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*191*	*X*	*50 - 150*	*12/08/18 16:05*	*12/17/18 20:24*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	88.7		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	11.3		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-O16-6

Date Collected: 12/03/18 10:55
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-4

Matrix: Solid
Percent Solids: 87.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		32	8.0	ug/Kg	☼	12/07/18 08:20	12/07/18 19:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 19:37*	*1*
Trifluorotoluene (Surr)	*98*		*80 - 120*	*12/07/18 08:20*	*12/07/18 19:37*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*	*12/07/18 08:20*	*12/07/18 19:37*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/07/18 08:20*	*12/07/18 19:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*	*12/07/18 08:20*	*12/07/18 19:37*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**4.7**	**J**	5.4	0.83	ug/Kg	☼	12/17/18 09:49	12/18/18 17:47	1
Benzo[a]pyrene	ND		5.4	0.44	ug/Kg	☼	12/17/18 09:49	12/18/18 17:47	1
Benzo[b]fluoranthene	ND	*	5.4	0.64	ug/Kg	☼	12/17/18 09:49	12/18/18 17:47	1
Benzo[k]fluoranthene	ND		5.4	0.65	ug/Kg	☼	12/17/18 09:49	12/18/18 17:47	1
Chrysene	ND		5.4	1.6	ug/Kg	☼	12/17/18 09:49	12/18/18 17:47	1
Dibenz(a,h)anthracene	ND		5.4	0.78	ug/Kg	☼	12/17/18 09:49	12/18/18 17:47	1
Indeno[1,2,3-cd]pyrene	ND		5.4	0.65	ug/Kg	☼	12/17/18 09:49	12/18/18 17:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*82*		*57 - 120*	*12/17/18 09:49*	*12/18/18 17:47*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**8.5**		5.3	2.4	mg/Kg	☼	12/07/18 10:16	12/10/18 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*76*		*50 - 150*	*12/07/18 10:16*	*12/10/18 15:04*	*1*
Trifluorotoluene (Surr)				*12/07/18 10:16*	*12/10/18 15:04*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**410**		56	14	mg/Kg	☼	12/08/18 16:05	12/17/18 20:44	1
Motor Oil (>C24-C36)	**24**	**J**	56	20	mg/Kg	☼	12/08/18 16:05	12/17/18 20:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*112*		*50 - 150*	*12/08/18 16:05*	*12/17/18 20:44*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**87.3**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**12.7**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-P15-6

Date Collected: 12/03/18 12:38
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-5

Matrix: Solid
Percent Solids: 84.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		64	16	ug/Kg	☼	12/07/18 08:20	12/07/18 20:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:02*	*1*
Trifluorotoluene (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:02*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:02*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 121*	*12/07/18 08:20*	*12/07/18 20:02*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**97**		5.7	0.51	ug/Kg	☼	12/12/18 09:17	12/16/18 19:27	1
Benzo[a]anthracene	**28**		5.7	0.87	ug/Kg	☼	12/12/18 09:17	12/16/18 19:27	1
Benzo[a]pyrene	ND		5.7	0.46	ug/Kg	☼	12/12/18 09:17	12/16/18 19:27	1
Benzo[b]fluoranthene	ND		5.7	0.67	ug/Kg	☼	12/12/18 09:17	12/16/18 19:27	1
Benzo[k]fluoranthene	ND		5.7	0.69	ug/Kg	☼	12/12/18 09:17	12/16/18 19:27	1
Chrysene	**46**		5.7	1.7	ug/Kg	☼	12/12/18 09:17	12/16/18 19:27	1
Dibenz(a,h)anthracene	ND		5.7	0.82	ug/Kg	☼	12/12/18 09:17	12/16/18 19:27	1
Indeno[1,2,3-cd]pyrene	ND		5.7	0.69	ug/Kg	☼	12/12/18 09:17	12/16/18 19:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*54*	*X*	*57 - 120*	*12/12/18 09:17*	*12/16/18 19:27*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		6.0	2.4	mg/Kg	☼	12/10/18 11:44	12/12/18 22:06	1
C6-C8 Aliphatics	ND		6.0	2.4	mg/Kg	☼	12/10/18 11:44	12/12/18 22:06	1
C8-C10 Aliphatics	**11**		6.0	2.4	mg/Kg	☼	12/10/18 11:44	12/12/18 22:06	1
C10-C12 Aliphatics	**130**		60	24	mg/Kg	☼	12/10/18 11:44	12/12/18 21:34	10
C8-C10 Aromatics	**38**		6.0	2.4	mg/Kg	☼	12/10/18 11:44	12/12/18 22:06	1
C10-C12 Aromatics	**140**		60	24	mg/Kg	☼	12/10/18 11:44	12/12/18 21:34	10
C12-C13 Aromatics	**73**		60	24	mg/Kg	☼	12/10/18 11:44	12/12/18 21:34	10
Methyl tert-butyl ether	ND		0.60	0.30	mg/Kg	☼	12/10/18 11:44	12/12/18 22:06	1
Benzene	ND		0.060	0.030	mg/Kg	☼	12/10/18 11:44	12/12/18 22:06	1
Toluene	ND		0.060	0.030	mg/Kg	☼	12/10/18 11:44	12/12/18 22:06	1
Ethylbenzene	**0.037**	**J**	0.060	0.030	mg/Kg	☼	12/10/18 11:44	12/12/18 22:06	1
m-Xylene & p-Xylene	ND		0.12	0.060	mg/Kg	☼	12/10/18 11:44	12/12/18 22:06	1
o-Xylene	**0.18**		0.060	0.030	mg/Kg	☼	12/10/18 11:44	12/12/18 22:06	1
Naphthalene	**6.3**		0.30	0.15	mg/Kg	☼	12/10/18 11:44	12/12/18 22:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*107*		*60 - 140*	*12/10/18 11:44*	*12/12/18 21:34*	*10*
2,5-Dibromotoluene (pid)	*106*		*60 - 140*	*12/10/18 11:44*	*12/12/18 21:34*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1400**		11	4.9	mg/Kg	☼	12/07/18 10:16	12/07/18 18:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*50 - 150*	*12/07/18 10:16*	*12/07/18 18:03*	*1*

Client Sample ID: DPE-PSS-P15-6

Date Collected: 12/03/18 12:38
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-5

Matrix: Solid
Percent Solids: 84.0

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aromatics	14	*	12	2.0	mg/Kg	☼	12/12/18 11:47	12/19/18 22:31	1
C12-C16 Aromatics	180	*	12	1.0	mg/Kg	☼	12/12/18 11:47	12/19/18 22:31	1
C16-C21 Aromatics	570		12	1.5	mg/Kg	☼	12/12/18 11:47	12/19/18 22:31	1
C21-C34 Aromatics	170	*	12	2.4	mg/Kg	☼	12/12/18 11:47	12/19/18 22:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*54*	*X*	*60 - 140*	*12/12/18 11:47*	*12/19/18 22:31*	*1*
o-Terphenyl	*9*	*X*	*60 - 140*	*12/12/18 11:47*	*12/19/18 22:31*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	670		590	57	mg/Kg	☼	12/12/18 11:47	12/31/18 03:25	50
C12-C16 Aliphatics	2800		590	52	mg/Kg	☼	12/12/18 11:47	12/31/18 03:25	50
C16-C21 Aliphatics	2600		590	72	mg/Kg	☼	12/12/18 11:47	12/31/18 03:25	50
C21-C34 Aliphatics	940		590	140	mg/Kg	☼	12/12/18 11:47	12/31/18 03:25	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*307*	*X*	*60 - 140*	*12/12/18 11:47*	*12/31/18 03:25*	*50*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	4100		58	14	mg/Kg	☼	12/08/18 16:05	12/17/18 21:04	1
Motor Oil (>C24-C36)	520		58	20	mg/Kg	☼	12/08/18 16:05	12/17/18 21:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*191*	*X*	*50 - 150*	*12/08/18 16:05*	*12/17/18 21:04*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	84.0		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	16.0		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-P15-11
Date Collected: 12/03/18 12:42
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-6
Matrix: Solid
Percent Solids: 82.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		34	8.7	ug/Kg	☼	12/07/18 08:20	12/07/18 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:27*	*1*
Trifluorotoluene (Surr)	*97*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:27*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:27*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*	*12/07/18 08:20*	*12/07/18 20:27*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**2.6**	**J**	5.7	2.6	mg/Kg	☼	12/07/18 10:16	12/10/18 15:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*73*		*50 - 150*	*12/07/18 10:16*	*12/10/18 15:31*	*1*
Trifluorotoluene (Surr)				*12/07/18 10:16*	*12/10/18 15:31*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		55	14	mg/Kg	☼	12/08/18 16:05	12/17/18 21:24	1
Motor Oil (>C24-C36)	ND		55	19	mg/Kg	☼	12/08/18 16:05	12/17/18 21:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*109*		*50 - 150*	*12/08/18 16:05*	*12/17/18 21:24*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**82.3**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**17.7**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-Q14-6

Date Collected: 12/03/18 14:18
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-7

Matrix: Solid
Percent Solids: 87.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		34	8.5	ug/Kg	☼	12/07/18 08:20	12/07/18 20:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:52*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:52*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:52*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*	*12/07/18 08:20*	*12/07/18 20:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 121*	*12/07/18 08:20*	*12/07/18 20:52*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**1900**		5.3	0.47	ug/Kg	☼	12/12/18 09:17	12/16/18 19:52	1
Benzo[a]anthracene	**26**		5.3	0.80	ug/Kg	☼	12/12/18 09:17	12/16/18 19:52	1
Benzo[a]pyrene	ND		5.3	0.42	ug/Kg	☼	12/12/18 09:17	12/16/18 19:52	1
Benzo[b]fluoranthene	ND		5.3	0.62	ug/Kg	☼	12/12/18 09:17	12/16/18 19:52	1
Benzo[k]fluoranthene	ND		5.3	0.63	ug/Kg	☼	12/12/18 09:17	12/16/18 19:52	1
Chrysene	**47**		5.3	1.6	ug/Kg	☼	12/12/18 09:17	12/16/18 19:52	1
Dibenz(a,h)anthracene	ND		5.3	0.76	ug/Kg	☼	12/12/18 09:17	12/16/18 19:52	1
Indeno[1,2,3-cd]pyrene	ND		5.3	0.63	ug/Kg	☼	12/12/18 09:17	12/16/18 19:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*71*		*57 - 120*	*12/12/18 09:17*	*12/16/18 19:52*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.9	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 19:29	1
C6-C8 Aliphatics	**5.9**		5.9	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 19:29	1
C8-C10 Aliphatics	**150**		59	23	mg/Kg	☼	12/10/18 11:44	12/13/18 00:16	10
C10-C12 Aliphatics	**180**		59	23	mg/Kg	☼	12/10/18 11:44	12/13/18 00:16	10
C8-C10 Aromatics	**160**		59	23	mg/Kg	☼	12/10/18 11:44	12/13/18 00:16	10
C10-C12 Aromatics	**110**		59	23	mg/Kg	☼	12/10/18 11:44	12/13/18 00:16	10
C12-C13 Aromatics	**58**	**J**	59	23	mg/Kg	☼	12/10/18 11:44	12/13/18 00:16	10
Methyl tert-butyl ether	ND		0.59	0.29	mg/Kg	☼	12/10/18 11:44	12/11/18 19:29	1
Benzene	ND		0.059	0.029	mg/Kg	☼	12/10/18 11:44	12/11/18 19:29	1
Toluene	**0.91**		0.059	0.029	mg/Kg	☼	12/10/18 11:44	12/11/18 19:29	1
Ethylbenzene	**7.3**		0.059	0.029	mg/Kg	☼	12/10/18 11:44	12/11/18 19:29	1
m-Xylene & p-Xylene	ND		0.12	0.059	mg/Kg	☼	12/10/18 11:44	12/11/18 19:29	1
o-Xylene	ND		0.059	0.029	mg/Kg	☼	12/10/18 11:44	12/11/18 19:29	1
Naphthalene	**3.5**		0.29	0.15	mg/Kg	☼	12/10/18 11:44	12/11/18 19:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*121*		*60 - 140*	*12/10/18 11:44*	*12/11/18 19:29*	*1*
2,5-Dibromotoluene (fid)	*93*		*60 - 140*	*12/10/18 11:44*	*12/13/18 00:16*	*10*
2,5-Dibromotoluene (pid)	*115*		*60 - 140*	*12/10/18 11:44*	*12/11/18 19:29*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**870**		6.0	2.8	mg/Kg	☼	12/07/18 10:16	12/07/18 19:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*232*	*X*	*50 - 150*	*12/07/18 10:16*	*12/07/18 19:25*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	520	*	23	2.2	mg/Kg	☼	12/12/18 11:47	12/19/18 22:55	1
C10-C12 Aromatics	48	*	23	3.8	mg/Kg	☼	12/12/18 11:47	12/19/18 22:55	1
C12-C16 Aromatics	250	*	23	2.0	mg/Kg	☼	12/12/18 11:47	12/19/18 22:55	1
C16-C21 Aromatics	680		23	2.9	mg/Kg	☼	12/12/18 11:47	12/19/18 22:55	1
C21-C34 Aliphatics	850		23	5.5	mg/Kg	☼	12/12/18 11:47	12/19/18 22:55	1
C21-C34 Aromatics	210	*	23	4.6	mg/Kg	☼	12/12/18 11:47	12/19/18 22:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*0*	*X*	*60 - 140*	*12/12/18 11:47*	*12/19/18 22:55*	*1*
o-Terphenyl	*133*		*60 - 140*	*12/12/18 11:47*	*12/19/18 22:55*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C16 Aliphatics	2000		1100	100	mg/Kg	☼	12/12/18 11:47	12/31/18 03:49	50
C16-C21 Aliphatics	2000		1100	140	mg/Kg	☼	12/12/18 11:47	12/31/18 03:49	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*271*	*X*	*60 - 140*	*12/12/18 11:47*	*12/31/18 03:49*	*50*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	7200		55	14	mg/Kg	☼	12/08/18 16:05	12/17/18 22:05	1
Motor Oil (>C24-C36)	990		55	19	mg/Kg	☼	12/08/18 16:05	12/17/18 22:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*558*	*X*	*50 - 150*	*12/08/18 16:05*	*12/17/18 22:05*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	87.1		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	12.9		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: DPE-PSS-Q14-14.5
Date Collected: 12/03/18 14:29
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-8
Matrix: Solid
Percent Solids: 81.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		34	8.6	ug/Kg	☼	12/10/18 14:03	12/10/18 22:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:54*	*1*
Trifluorotoluene (Surr)	*100*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:54*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:54*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*	*12/10/18 14:03*	*12/10/18 22:54*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.6	2.6	mg/Kg	☼	12/07/18 10:16	12/10/18 15:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*50 - 150*	*12/07/18 10:16*	*12/10/18 15:59*	*1*
Trifluorotoluene (Surr)				*12/07/18 10:16*	*12/10/18 15:59*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		56	14	mg/Kg	☼	12/08/18 16:05	12/17/18 22:25	1
Motor Oil (>C24-C36)	ND		56	20	mg/Kg	☼	12/08/18 16:05	12/17/18 22:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*109*		*50 - 150*	*12/08/18 16:05*	*12/17/18 22:25*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**81.4**		0.1	0.1	%			12/07/18 09:28	1
Percent Moisture	**18.6**		0.1	0.1	%			12/07/18 09:28	1

Client Sample ID: Trip Blank
Date Collected: 12/03/18 00:01
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-9
Matrix: Solid

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/10/18 14:03	12/10/18 23:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*	*12/10/18 14:03*	*12/10/18 23:19*	*1*
Trifluorotoluene (Surr)	*101*		*80 - 120*	*12/10/18 14:03*	*12/10/18 23:19*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*	*12/10/18 14:03*	*12/10/18 23:19*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/10/18 14:03*	*12/10/18 23:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 121*	*12/10/18 14:03*	*12/10/18 23:19*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/07/18 10:16	12/07/18 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*50 - 150*	*12/07/18 10:16*	*12/07/18 15:47*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-290530/1-A
Matrix: Solid
Analysis Batch: 290570

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290530

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/07/18 08:20	12/07/18 11:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/07/18 08:20*	*12/07/18 11:35*	*1*
Trifluorotoluene (Surr)	*100*		*80 - 120*	*12/07/18 08:20*	*12/07/18 11:35*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*12/07/18 08:20*	*12/07/18 11:35*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/07/18 08:20*	*12/07/18 11:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 121*	*12/07/18 08:20*	*12/07/18 11:35*	*1*

Lab Sample ID: LCS 580-290530/2-A
Matrix: Solid
Analysis Batch: 290570

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290530

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			800	930		ug/Kg		116	79 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
Trifluorotoluene (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*

Lab Sample ID: LCSD 580-290530/3-A
Matrix: Solid
Analysis Batch: 290570

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290530

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			800	914		ug/Kg		114	79 - 135	2	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
Trifluorotoluene (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*

Lab Sample ID: MB 580-290693/1-A
Matrix: Solid
Analysis Batch: 290711

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290693

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/10/18 14:03	12/10/18 16:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/10/18 14:03*	*12/10/18 16:13*	*1*
Trifluorotoluene (Surr)	*98*		*80 - 120*	*12/10/18 14:03*	*12/10/18 16:13*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-290693/1-A
Matrix: Solid
Analysis Batch: 290711

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290693

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120	12/10/18 14:03	12/10/18 16:13	1
Dibromofluoromethane (Surr)	95		80 - 120	12/10/18 14:03	12/10/18 16:13	1
1,2-Dichloroethane-d4 (Surr)	91		80 - 121	12/10/18 14:03	12/10/18 16:13	1

Lab Sample ID: LCS 580-290693/2-A
Matrix: Solid
Analysis Batch: 290711

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290693

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			800	940		ug/Kg		118	79 - 135		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	97		80 - 120
Trifluorotoluene (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	96		80 - 120
1,2-Dichloroethane-d4 (Surr)	91		80 - 121

Lab Sample ID: LCSD 580-290693/3-A
Matrix: Solid
Analysis Batch: 290711

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290693

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			800	970		ug/Kg		121	79 - 135	3	15

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 120
Trifluorotoluene (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	97		80 - 120
1,2-Dichloroethane-d4 (Surr)	88		80 - 121

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-290875/1-A
Matrix: Solid
Analysis Batch: 291157

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290875

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		5.0	0.45	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Chrysene	ND		5.0	1.5	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		12/12/18 09:17	12/14/18 14:28	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-290875/1-A
Matrix: Solid
Analysis Batch: 291157

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290875

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	101		57 - 120	12/12/18 09:17	12/14/18 14:28	1

Lab Sample ID: LCS 580-290875/2-A
Matrix: Solid
Analysis Batch: 291157

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290875

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	1000	1050		ug/Kg		105	68 - 120
Benzo[a]anthracene	1000	1100		ug/Kg		110	66 - 120
Benzo[a]pyrene	1000	1040		ug/Kg		104	72 - 124
Benzo[b]fluoranthene	1000	964		ug/Kg		96	63 - 121
Benzo[k]fluoranthene	1000	965		ug/Kg		97	63 - 123
Chrysene	1000	908		ug/Kg		91	69 - 120
Dibenz(a,h)anthracene	1000	993		ug/Kg		99	70 - 125
Indeno[1,2,3-cd]pyrene	1000	891		ug/Kg		89	65 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	96		57 - 120

Lab Sample ID: MB 580-291281/1-A
Matrix: Solid
Analysis Batch: 291411

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291281

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Chrysene	ND		5.0	1.5	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		12/17/18 09:49	12/18/18 11:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	87		57 - 120	12/17/18 09:49	12/18/18 11:52	1

Lab Sample ID: LCS 580-291281/2-A
Matrix: Solid
Analysis Batch: 291411

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291281

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1000	1010		ug/Kg		101	66 - 120
Benzo[a]pyrene	1000	985		ug/Kg		98	72 - 124
Benzo[b]fluoranthene	1000	975		ug/Kg		97	63 - 121
Benzo[k]fluoranthene	1000	1100		ug/Kg		110	63 - 123
Chrysene	1000	1050		ug/Kg		105	69 - 120
Dibenz(a,h)anthracene	1000	965		ug/Kg		96	70 - 125
Indeno[1,2,3-cd]pyrene	1000	987		ug/Kg		99	65 - 121

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-291281/2-A
Matrix: Solid
Analysis Batch: 291411

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291281

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	83		57 - 120

Lab Sample ID: LCSD 580-291281/3-A
Matrix: Solid
Analysis Batch: 291411

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291281

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene			1000	1010		ug/Kg		101	66 - 120	0	14
Benzo[a]pyrene			1000	1000		ug/Kg		100	72 - 124	2	12
Benzo[b]fluoranthene			1000	1180	*	ug/Kg		118	63 - 121	19	10
Benzo[k]fluoranthene			1000	1030		ug/Kg		103	63 - 123	6	15
Chrysene			1000	1040		ug/Kg		104	69 - 120	1	10
Dibenz(a,h)anthracene			1000	995		ug/Kg		99	70 - 125	3	13
Indeno[1,2,3-cd]pyrene			1000	1020		ug/Kg		102	65 - 121	3	15

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	89		57 - 120

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 490-562731/45
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C6-C8 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C8-C10 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C10-C12 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C8-C10 Aromatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C10-C12 Aromatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C12-C13 Aromatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
Methyl tert-butyl ether	ND		0.50	0.25	mg/Kg			12/12/18 15:27	1
Benzene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1
Toluene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1
Ethylbenzene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1
m-Xylene & p-Xylene	ND		0.10	0.050	mg/Kg			12/12/18 15:27	1
o-Xylene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1
Naphthalene	ND		0.25	0.13	mg/Kg			12/12/18 15:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,5-Dibromotoluene (fid)	92		60 - 140		12/12/18 15:27	1
2,5-Dibromotoluene (pid)	97		60 - 140		12/12/18 15:27	1

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 490-562731/9
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C6-C8 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C8-C10 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C10-C12 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C8-C10 Aromatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C10-C12 Aromatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C12-C13 Aromatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
Methyl tert-butyl ether	ND		0.50	0.25	mg/Kg			12/11/18 12:27	1
Benzene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
Toluene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
Ethylbenzene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
m-Xylene & p-Xylene	ND		0.10	0.050	mg/Kg			12/11/18 12:27	1
o-Xylene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
Naphthalene	ND		0.25	0.13	mg/Kg			12/11/18 12:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*101*		*60 - 140*		*12/11/18 12:27*	*1*
2,5-Dibromotoluene (pid)	*110*		*60 - 140*		*12/11/18 12:27*	*1*

Lab Sample ID: LCS 490-562731/43
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	15.0	14.9		mg/Kg		99	70 - 130
C6-C8 Aliphatics	10.0	9.32		mg/Kg		93	70 - 130
C8-C10 Aliphatics	30.0	29.6		mg/Kg		99	70 - 130
C10-C12 Aliphatics	10.0	9.91		mg/Kg		99	70 - 130
C8-C10 Aromatics	25.0	25.7		mg/Kg		103	70 - 130
C10-C12 Aromatics	5.00	4.86	J	mg/Kg		97	70 - 130
C12-C13 Aromatics	5.00	4.64	J	mg/Kg		93	70 - 130
Naphthalene	5.00	4.98		mg/Kg		100	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*93*		*60 - 140*
2,5-Dibromotoluene (pid)	*97*		*60 - 140*

Lab Sample ID: LCS 490-562731/7
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	15.0	15.0		mg/Kg		100	70 - 130
C6-C8 Aliphatics	10.0	9.62		mg/Kg		96	70 - 130
C8-C10 Aliphatics	30.0	30.1		mg/Kg		100	70 - 130
C10-C12 Aliphatics	10.0	11.2		mg/Kg		112	70 - 130
C8-C10 Aromatics	25.0	26.4		mg/Kg		106	70 - 130

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 490-562731/7
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C10-C12 Aromatics			5.00	5.77		mg/Kg		115	70 - 130		
C12-C13 Aromatics			5.00	5.01		mg/Kg		100	70 - 130		
Naphthalene			5.00	5.05		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*108*		*60 - 140*
2,5-Dibromotoluene (pid)	*113*		*60 - 140*

Lab Sample ID: LCSD 490-562731/44
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics			15.0	15.0		mg/Kg		100	70 - 130	1	25
C6-C8 Aliphatics			10.0	9.74		mg/Kg		97	70 - 130	4	25
C8-C10 Aliphatics			30.0	31.0		mg/Kg		103	70 - 130	4	25
C10-C12 Aliphatics			10.0	10.2		mg/Kg		102	70 - 130	3	25
C8-C10 Aromatics			25.0	26.3		mg/Kg		105	70 - 130	3	25
C10-C12 Aromatics			5.00	5.18		mg/Kg		104	70 - 130	6	25
C12-C13 Aromatics			5.00	4.74	J	mg/Kg		95	70 - 130	2	25
Naphthalene			5.00	5.06		mg/Kg		101	70 - 130	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*93*		*60 - 140*
2,5-Dibromotoluene (pid)	*95*		*60 - 140*

Lab Sample ID: LCSD 490-562731/8
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics			15.0	15.5		mg/Kg		103	70 - 130	3	25
C6-C8 Aliphatics			10.0	9.87		mg/Kg		99	70 - 130	3	25
C8-C10 Aliphatics			30.0	30.8		mg/Kg		103	70 - 130	2	25
C10-C12 Aliphatics			10.0	11.0		mg/Kg		110	70 - 130	1	25
C8-C10 Aromatics			25.0	26.9		mg/Kg		108	70 - 130	2	25
C10-C12 Aromatics			5.00	5.27		mg/Kg		105	70 - 130	9	25
C12-C13 Aromatics			5.00	5.25		mg/Kg		105	70 - 130	5	25
Naphthalene			5.00	5.23		mg/Kg		105	70 - 130	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*108*		*60 - 140*
2,5-Dibromotoluene (pid)	*113*		*60 - 140*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-290571/1-A
Matrix: Solid
Analysis Batch: 290584

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290571

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/07/18 10:16	12/07/18 12:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*50 - 150*	*12/07/18 10:16*	*12/07/18 12:44*	*1*

Lab Sample ID: MB 580-290571/1-A
Matrix: Solid
Analysis Batch: 290708

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290571

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/07/18 10:16	12/10/18 13:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*69*		*50 - 150*	*12/07/18 10:16*	*12/10/18 13:15*	*1*
Trifluorotoluene (Surr)	*105*		*50 - 150*	*12/07/18 10:16*	*12/10/18 13:15*	*1*

Lab Sample ID: LCS 580-290571/2-A
Matrix: Solid
Analysis Batch: 290584

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290571

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	38.3		mg/Kg		96	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*77*		*50 - 150*

Lab Sample ID: LCS 580-290571/2-A
Matrix: Solid
Analysis Batch: 290708

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290571

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	36.1		mg/Kg		90	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*79*		*50 - 150*
Trifluorotoluene (Surr)	*113*		*50 - 150*

Lab Sample ID: LCSD 580-290571/3-A
Matrix: Solid
Analysis Batch: 290584

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290571

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	40.5		mg/Kg		101	80 - 120	6	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*78*		*50 - 150*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-290571/3-A
Matrix: Solid
Analysis Batch: 290708

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290571

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	35.4		mg/Kg		88	80 - 120	2	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*79*		*50 - 150*
Trifluorotoluene (Surr)	*108*		*50 - 150*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-290909/1-B
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		5.0	0.48	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C10-C12 Aromatics	ND		5.0	0.84	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C12-C16 Aliphatics	ND		5.0	0.44	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C12-C16 Aromatics	ND		5.0	0.44	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C16-C21 Aliphatics	ND		5.0	0.61	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C16-C21 Aromatics	ND		5.0	0.64	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C21-C34 Aliphatics	ND		5.0	1.2	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C21-C34 Aromatics	ND		5.0	1.0	mg/Kg		12/12/18 11:47	12/19/18 17:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*90*		*60 - 140*	*12/12/18 11:47*	*12/19/18 17:29*	*1*
o-Terphenyl	*77*		*60 - 140*	*12/12/18 11:47*	*12/19/18 17:29*	*1*

Lab Sample ID: LCS 580-290909/2-B
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290909

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics			2.52	1.75	J *	mg/Kg		69	70 - 130
C10-C12 Aromatics			2.52	1.52	J *	mg/Kg		60	70 - 130
C12-C16 Aliphatics			5.05	3.98	J	mg/Kg		79	70 - 130
C12-C16 Aromatics			7.57	4.90	J *	mg/Kg		65	70 - 130
C16-C21 Aliphatics			7.57	7.10		mg/Kg		94	70 - 130
C16-C21 Aromatics			12.6	9.75		mg/Kg		77	70 - 130
C21-C34 Aliphatics			15.1	15.1		mg/Kg		100	70 - 130
C21-C34 Aromatics			20.2	13.5	*	mg/Kg		67	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctadecane	*92*		*60 - 140*
o-Terphenyl	*87*		*60 - 140*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCSD 580-290909/3-B
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290909

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics			2.52	1.69	J *	mg/Kg		67	70 - 130	4	25
C10-C12 Aromatics			2.52	1.45	J *	mg/Kg		58	70 - 130	4	25
C12-C16 Aliphatics			5.05	3.86	J	mg/Kg		76	70 - 130	3	25
C12-C16 Aromatics			7.57	4.70	J *	mg/Kg		62	70 - 130	4	25
C16-C21 Aliphatics			7.57	6.81		mg/Kg		90	70 - 130	4	25
C16-C21 Aromatics			12.6	9.45		mg/Kg		75	70 - 130	3	25
C21-C34 Aliphatics			15.1	14.9		mg/Kg		98	70 - 130	2	25
C21-C34 Aromatics			20.2	14.0		mg/Kg		70	70 - 130	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctadecane	*87*		*60 - 140*
o-Terphenyl	*85*		*60 - 140*

Lab Sample ID: MB 580-291025/1-B
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		15	1.4	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C10-C12 Aromatics	ND		15	2.5	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C12-C16 Aliphatics	ND		15	1.3	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C12-C16 Aromatics	ND		15	1.3	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C16-C21 Aliphatics	2.15	J	15	1.8	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C16-C21 Aromatics	ND		15	1.9	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C21-C34 Aliphatics	ND		15	3.6	mg/Kg		12/13/18 11:21	12/20/18 17:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*91*		*60 - 140*	*12/13/18 11:21*	*12/20/18 17:27*	*1*
o-Terphenyl	*93*		*60 - 140*	*12/13/18 11:21*	*12/20/18 17:27*	*1*

Lab Sample ID: MB 580-291025/1-B
Matrix: Solid
Analysis Batch: 292266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aromatics	ND		15	3.0	mg/Kg		12/13/18 11:21	12/29/18 15:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*98*		*60 - 140*	*12/13/18 11:21*	*12/29/18 15:45*	*1*

Lab Sample ID: LCS 580-291025/2-B
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics			7.57	6.10	J	mg/Kg		81	70 - 130
C10-C12 Aromatics			7.57	4.57	J *	mg/Kg		60	70 - 130

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 580-291025/2-B
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C12-C16 Aliphatics			15.1	14.3	J	mg/Kg		94	70 - 130		
C12-C16 Aromatics			22.7	16.0		mg/Kg		71	70 - 130		
C16-C21 Aliphatics			22.7	23.4		mg/Kg		103	70 - 130		
C16-C21 Aromatics			37.8	29.9		mg/Kg		79	70 - 130		
C21-C34 Aliphatics			45.4	47.1		mg/Kg		104	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctadecane	*95*		*60 - 140*
o-Terphenyl	*91*		*60 - 140*

Lab Sample ID: LCS 580-291025/2-B
Matrix: Solid
Analysis Batch: 292266

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C21-C34 Aromatics			60.5	52.7		mg/Kg		87	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*93*		*60 - 140*

Lab Sample ID: LCSD 580-291025/3-B
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics			7.57	6.10	J	mg/Kg		81	70 - 130	0	25
C10-C12 Aromatics			7.57	4.67	J *	mg/Kg		62	70 - 130	2	25
C12-C16 Aliphatics			15.1	12.9	J	mg/Kg		85	70 - 130	10	25
C12-C16 Aromatics			22.7	16.4		mg/Kg		72	70 - 130	2	25
C16-C21 Aliphatics			22.7	21.8		mg/Kg		96	70 - 130	7	25
C16-C21 Aromatics			37.8	30.6		mg/Kg		81	70 - 130	2	25
C21-C34 Aliphatics			45.4	46.5		mg/Kg		102	70 - 130	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctadecane	*95*		*60 - 140*
o-Terphenyl	*93*		*60 - 140*

Lab Sample ID: LCSD 580-291025/3-B
Matrix: Solid
Analysis Batch: 292266

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C21-C34 Aromatics			60.5	54.0		mg/Kg		89	70 - 130	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*93*		*60 - 140*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-290602/1-B
Matrix: Solid
Analysis Batch: 291357

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290602

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		12/08/18 16:05	12/17/18 18:23	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		12/08/18 16:05	12/17/18 18:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*116*		*50 - 150*	*12/08/18 16:05*	*12/17/18 18:23*	*1*

Lab Sample ID: LCS 580-290602/2-B
Matrix: Solid
Analysis Batch: 291357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290602

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	445		mg/Kg		89	64 - 127		
Motor Oil (>C24-C36)			500	470		mg/Kg		94	70 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*107*		*50 - 150*

Lab Sample ID: LCSD 580-290602/3-B
Matrix: Solid
Analysis Batch: 291357

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290602

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	449		mg/Kg		90	64 - 127	1	16
Motor Oil (>C24-C36)			500	467		mg/Kg		93	70 - 125	1	17

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*95*		*50 - 150*

Lab Sample ID: 580-82414-1 DU
Matrix: Solid
Analysis Batch: 291357

Client Sample ID: DPE-PSS-N17-4
Prep Type: Total/NA
Prep Batch: 290602

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	9700			9930		mg/Kg	☼			3	35
Motor Oil (>C24-C36)	270			270		mg/Kg	☼			2	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*1185*	*X*	*50 - 150*

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82414-1

Client Sample ID: DPE-PSS-N17-4
Date Collected: 12/03/18 09:05
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-N17-4
Date Collected: 12/03/18 09:05
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-1
Matrix: Solid
Percent Solids: 92.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 18:22	ASJ	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		1	291261	12/16/18 18:36	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/12/18 16:01	AK1	TAL NSH
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	562731	12/12/18 17:46	AK1	TAL NSH
Total/NA	Prep	5035			290571	12/07/18 10:16	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290584	12/07/18 16:14	CJ	TAL SEA
Total/NA	Prep	3550B			291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291634	12/20/18 18:42	Z1R	TAL SEA
Total/NA	Prep	3550B	DL		291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac	DL		291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH	DL	50	292266	12/29/18 21:12	ERZ	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/17/18 19:24	Z1R	TAL SEA

Client Sample ID: DPE-PSS-N17-6
Date Collected: 12/03/18 09:26
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-N17-6
Date Collected: 12/03/18 09:26
Date Received: 12/04/18 12:15

Lab Sample ID: 580-82414-2
Matrix: Solid
Percent Solids: 83.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 18:47	ASJ	TAL SEA
Total/NA	Prep	5035			290571	12/07/18 10:16	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290708	12/10/18 14:37	CJB	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82414-1

Client Sample ID: DPE-PSS-N17-6

Lab Sample ID: 580-82414-2
Date Collected: 12/03/18 09:26
Matrix: Solid
Date Received: 12/04/18 12:15
Percent Solids: 83.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/17/18 20:04	Z1R	TAL SEA

Client Sample ID: DPE-PSS-O16-4

Lab Sample ID: 580-82414-3
Date Collected: 12/03/18 10:45
Matrix: Solid
Date Received: 12/04/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-O16-4

Lab Sample ID: 580-82414-3
Date Collected: 12/03/18 10:45
Matrix: Solid
Date Received: 12/04/18 12:15
Percent Solids: 88.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 19:12	ASJ	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		1	291261	12/16/18 19:02	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	562731	12/12/18 18:51	AK1	TAL NSH
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/12/18 19:24	AK1	TAL NSH
Total/NA	Prep	5035			290571	12/07/18 10:16	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290584	12/07/18 17:08	CJ	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291544	12/19/18 22:06	Z1R	TAL SEA
Total/NA	Prep	3550B	DL		290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac	DL		291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH	DL	50	292296	12/31/18 03:01	JCM	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/17/18 20:24	Z1R	TAL SEA

Client Sample ID: DPE-PSS-O16-6

Lab Sample ID: 580-82414-4
Date Collected: 12/03/18 10:55
Matrix: Solid
Date Received: 12/04/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82414-1

Client Sample ID: DPE-PSS-O16-6

Lab Sample ID: 580-82414-4
Date Collected: 12/03/18 10:55
Matrix: Solid
Date Received: 12/04/18 12:15
Percent Solids: 87.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 19:37	ASJ	TAL SEA
Total/NA	Prep	3546			291281	12/17/18 09:49	DCV	TAL SEA
Total/NA	Analysis	8270D SIM		1	291411	12/18/18 17:47	W1T	TAL SEA
Total/NA	Prep	5035			290571	12/07/18 10:16	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290708	12/10/18 15:04	CJB	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/17/18 20:44	Z1R	TAL SEA

Client Sample ID: DPE-PSS-P15-6

Lab Sample ID: 580-82414-5
Date Collected: 12/03/18 12:38
Matrix: Solid
Date Received: 12/04/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-P15-6

Lab Sample ID: 580-82414-5
Date Collected: 12/03/18 12:38
Matrix: Solid
Date Received: 12/04/18 12:15
Percent Solids: 84.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 20:02	ASJ	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		1	291261	12/16/18 19:27	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	562731	12/12/18 21:34	AK1	TAL NSH
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/12/18 22:06	AK1	TAL NSH
Total/NA	Prep	5035			290571	12/07/18 10:16	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290584	12/07/18 18:03	CJ	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291544	12/19/18 22:31	Z1R	TAL SEA
Total/NA	Prep	3550B	DL		290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac	DL		291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH	DL	50	292296	12/31/18 03:25	JCM	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/17/18 21:04	Z1R	TAL SEA

Client Sample ID: DPE-PSS-P15-11
Lab Sample ID: 580-82414-6
Date Collected: 12/03/18 12:42
Matrix: Solid
Date Received: 12/04/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-P15-11
Lab Sample ID: 580-82414-6
Date Collected: 12/03/18 12:42
Matrix: Solid
Date Received: 12/04/18 12:15
Percent Solids: 82.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 20:27	ASJ	TAL SEA
Total/NA	Prep	5035			290571	12/07/18 10:16	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290708	12/10/18 15:31	CJB	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/17/18 21:24	Z1R	TAL SEA

Client Sample ID: DPE-PSS-Q14-6
Lab Sample ID: 580-82414-7
Date Collected: 12/03/18 14:18
Matrix: Solid
Date Received: 12/04/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-Q14-6
Lab Sample ID: 580-82414-7
Date Collected: 12/03/18 14:18
Matrix: Solid
Date Received: 12/04/18 12:15
Percent Solids: 87.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290530	12/07/18 08:20	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290570	12/07/18 20:52	ASJ	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		1	291261	12/16/18 19:52	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/11/18 19:29	AK1	TAL NSH
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	562731	12/13/18 00:16	AK1	TAL NSH
Total/NA	Prep	5035			290571	12/07/18 10:16	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290584	12/07/18 19:25	CJ	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291544	12/19/18 22:55	Z1R	TAL SEA
Total/NA	Prep	3550B	DL		290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac	DL		291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH	DL	50	292296	12/31/18 03:49	JCM	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82414-1

Client Sample ID: DPE-PSS-Q14-6
Lab Sample ID: 580-82414-7
Date Collected: 12/03/18 14:18
Matrix: Solid
Date Received: 12/04/18 12:15
Percent Solids: 87.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/17/18 22:05	Z1R	TAL SEA

Client Sample ID: DPE-PSS-Q14-14.5
Lab Sample ID: 580-82414-8
Date Collected: 12/03/18 14:29
Matrix: Solid
Date Received: 12/04/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290510	12/07/18 09:28	BAH	TAL SEA

Client Sample ID: DPE-PSS-Q14-14.5
Lab Sample ID: 580-82414-8
Date Collected: 12/03/18 14:29
Matrix: Solid
Date Received: 12/04/18 12:15
Percent Solids: 81.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 22:54	W1T	TAL SEA
Total/NA	Prep	5035			290571	12/07/18 10:16	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290708	12/10/18 15:59	CJB	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/17/18 22:25	Z1R	TAL SEA

Client Sample ID: Trip Blank
Lab Sample ID: 580-82414-9
Date Collected: 12/03/18 00:01
Matrix: Solid
Date Received: 12/04/18 12:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 23:19	W1T	TAL SEA
Total/NA	Prep	5035			290571	12/07/18 10:16	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290584	12/07/18 15:47	CJ	TAL SEA

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82414-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-22
ANAB	ISO/IEC 17025		L2236	01-19-22
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Laboratory: TestAmerica Nashville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	06-30-19
Arizona	State Program	9	AZ0473	05-05-19
Arkansas DEQ	State Program	6	88-0737	04-25-19
California	State Program	9	2938	06-30-19 *
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-19
Georgia	State Program	4	NA: NELAP & A2LA	12-31-19
Illinois	NELAP	5	200010	12-09-18 *
Iowa	State Program	7	131	04-01-20
Kansas	NELAP	7	E-10229	10-31-19
Kentucky (UST)	State Program	4	19	06-30-19
Kentucky (WW)	State Program	4	90038	12-31-19
Louisiana	NELAP	6	30613	06-30-19
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-19
Massachusetts	State Program	1	M-TN032	06-30-19
Minnesota	NELAP	5	047-999-345	12-31-19
Mississippi	State Program	4	N/A	06-30-19
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-19
New Hampshire	NELAP	1	2963	10-09-19
New Jersey	NELAP	2	TN965	06-30-19
New York	NELAP	2	11342	03-31-19
North Carolina (WW/SW)	State Program	4	387	12-31-19
North Dakota	State Program	8	R-146	06-30-19
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-19
Oregon	NELAP	10	TN200001	04-26-19
Pennsylvania	NELAP	3	68-00585	07-31-19
Rhode Island	State Program	1	LAO00268	12-30-19
South Carolina	State Program	4	84009 (001)	02-28-19
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-19
USDA	Federal		P330-13-00306	12-01-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82414-1

Laboratory: TestAmerica Nashville (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Utah	NELAP	8	TN00032	07-31-19
Virginia	NELAP	3	460152	06-14-19
Washington	State Program	10	C789	07-19-19
West Virginia DEP	State Program	3	219	02-28-19
Wisconsin	State Program	5	998020430	08-31-19
Wyoming (UST)	A2LA	8	453.07	12-31-19

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82414-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82414-1	DPE-PSS-N17-4	Solid	12/03/18 09:05	12/04/18 12:15
580-82414-2	DPE-PSS-N17-6	Solid	12/03/18 09:26	12/04/18 12:15
580-82414-3	DPE-PSS-O16-4	Solid	12/03/18 10:45	12/04/18 12:15
580-82414-4	DPE-PSS-O16-6	Solid	12/03/18 10:55	12/04/18 12:15
580-82414-5	DPE-PSS-P15-6	Solid	12/03/18 12:38	12/04/18 12:15
580-82414-6	DPE-PSS-P15-11	Solid	12/03/18 12:42	12/04/18 12:15
580-82414-7	DPE-PSS-Q14-6	Solid	12/03/18 14:18	12/04/18 12:15
580-82414-8	DPE-PSS-Q14-14.5	Solid	12/03/18 14:29	12/04/18 12:15
580-82414-9	Trip Blank	Solid	12/03/18 00:01	12/04/18 12:15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamericainc.com

Loc: 580
82414

☐ Rush
☐ Short Hold

Chain of Custody Record

Client	Client Contact	Date	Chain of Custody Number
Arcadis	Ophelie Encelle	12/3/18	34977
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 1
1100 Olive Way, Suite 800	206-939-9622		
City / **State** / **Zip Code**	**Sampler**	**Lab Contact**	
Seattle / WA / 98101	Jason Little	Elaine Walker	
Project Name and Location (State)	**Billing Contact**		
Edmonds Terminal			
Contract/Purchase Order/Quote No.			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	MeOH	Analysis (Attach list if more space is needed): Benzene EPA 8260C	NWTPH-Gx	NWTPH-Dx w/ SGC	CPAHs EPA 8270C	EPH/VPH	Special Instructions/ Conditions of Receipt
DPE-PSS-N17-4	12/3/18	0905				X	2						2	X	X	X	X	X	* use Standard SGC
DPE-PSS-N17-6	12/3/18	0926				X	2						2	X	X	X	X		* ONLY analyze CPAHs
DPE-PSS-016-4	12/3/18	1045				X	2						2	X	X	X	X	X	if D20/ito detections
DPE-PSS-016-6	12/3/18	1055				X	2						2	X	X	X	X		* EPH/VPH - aliphatics,
DPE-PSS-P15-6	12/3/18	1238				X	2						2	X	X	X	X	X	aromatics, benzene,
DPE-PSS-P15-11	12/3/18	1242				X	2						2	X	X	X	X		toluene, ethylbenzene,
DPE-PSS-Q14-6	12/3/18	1418					2						2	X	X	X	X	X	Xylenes, naphthalene,
DPE-PSS-Q14-14.5	12/3/18	1429		X			1						1	X	X	X	X		1 & 2-methyl naphthalene
Trip Blank	—	—		X									1	X	X				n-hexane, ~~methyl tert-butyl ether~~, ~~ethylene dibromide~~,
																			~~ethylene~~ EK & 7 CPAHs

Cooler	Possible Hazard Identification	Sample Disposal	(A fee may be assessed if samples are retained longer than 1 month)
☐ Yes ☐ No Cooler Temp: ____	☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months	

Turn Around Time Required (business days)
☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☒ Other STAT

QC Requirements (Specify)

1. Relinquished By Sign/Print	Date	Time	1. Received By Sign/Print	Date	Time
Eric Krueger	12/4/18	1215	Francisco Luna, Jr	12/4/18	1715
2. Relinquished By Sign/Print	Date	Time	2. Received By Sign/Print	Date	Time
3. Relinquished By Sign/Print			3. Received By Sign/Print	Date	Time

Comments

Therm. ID: AZ Cor: 1.0 ° Unc: 0.7 °
Cooler Dsc: Ls Blnk
Packing: Bubble
Cust. Seal: Yes ___ No X
Blue Ice, Wet, Dry, None
FedEx: ___
UPS: ___
Lab Cour: X
Other: ___

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to

580-82414 Chain of Custody

TAL-8274-580 (0210)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

Anchorage

COOLER RECEIPT FORM

580-82414 Chain of Custody

Cooler Received/Opened On 12/8/2018 @ 10:10

Time Samples Removed From Cooler 12:10 Time Samples Placed In Storage 12:54 (2 Hour Window)

1. Tracking # 9027 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960358 pH Strip Lot _____ Chlorine Strip Lot _____

2. Temperature of rep. sample or temp blank when opened: 0.4 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# _____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

580-82414

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	COC No: 580-61960.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State: Washington
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note):	Page: Page 1 of 1
Address: 2960 Foster Creighton Drive, ,	Due Date Requested: 12/13/2018		Job #: 580-82414-1
City: Nashville	TAT Requested (days):		
State, Zip: TN, 37204			
Phone: 615-726-0177(Tel) 615-726-3404(Fax)	PO #:		
Email:	WO #:		
Project Name: Edmonds Terminal	Project #: 58011413		
Site: Chevron Edmonds Terminal	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH_VPH/5035FM_Calc Northwest VPH + VOCs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
DPE-PSS-N17-4 (580-82414-1)	12/3/18	09:05 Pacific		Solid			X	1	
DPE-PSS-O16-4 (580-82414-3)	12/3/18	10:45 Pacific		Solid			X	1	
DPE-PSS-P15-6 (580-82414-5)	12/3/18	12:38 Pacific		Solid			X	1	
DPE-PSS-Q14-6 (580-82414-7)	12/3/18	14:18 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Tom Blankenship	Date/Time: 12/7/18	Company: TA-Sea	Received by: Williams Jerden
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

Received by: Williams Jerden	Date/Time: 12/07/18 10:10	Company: TA-WAS	
Received by:	Date/Time:	Company:	
Received by:	Date/Time:	Company:	

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.4

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-82414-1

Login Number: 82414
List Number: 1
Creator: Gall, Brandon A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-82438-1
Client Project/Site: Chevron Edmonds Terminal
Revision: 1

For:
ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
1/21/2019 12:58:15 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

Table of Contents

Job ID: 580-82438-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-82438-1

Revsion 1: January 21, 2019
This revison was rquired to remove "E" flags from the NWTPH-EPH analysis for samples DPE-PSS-V10-10 (580-82438-5) and DUP-2 (580-82438-12). These analytes were NOT outside the calibration range and the flags were not required. In addition, text was added to the NWTPH-Dx section of the narrative to explain the surrogate failure for sample DPE-PSS-W10-10 (580-82438-10), which were out due to the required dilution.

Receipt
Thirteen samples were received on 12/6/2018 11:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9º C.

Receipt Exceptions

The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. DPE-PSS-W9-4 (580-82438-1), DPE-PSS-W9-6 (580-82438-2), DPE-PSS-W9-19.5 (580-82438-3), DPE-PSS-V10-5 (580-82438-4), DPE-PSS-V10-10 (580-82438-5), DPE-PSS-V10-13 (580-82438-6), DPE-PSS-V11-5 (580-82438-7), DPE-PSS-V11-9.5 (580-82438-8), DPE-PSS-W10-7 (580-82438-9), DPE-PSS-W10-10 (580-82438-10), DPE-PSS-W10-14.5 (580-82438-11) and DUP-2 (580-82438-12).

GC/MS VOA
Method(s) 5035: The following samples were provided to the laboratory with a significantly different initial weight than that required by the reference method: DPE-PSS-W9-19.5 (580-82438-3), DPE-PSS-V10-5 (580-82438-4), DPE-PSS-V10-13 (580-82438-6) and DPE-PSS-W10-14.5 (580-82438-11). The method requires 10 grams. The amount provided was above this range.

Method(s) 5035: The following sample was provided to the laboratory with a significantly different initial weight than that required by the reference method: DPE-PSS-V10-10 (580-82438-5). The method requires 10 grams. The amount provided was below this range.

Method(s) NWTPH-Gx: The following continuing calibration verification (CCV) standard associated with batch 580-291579 recovered outside acceptance criteria for %D for surrogate 4-Bromofluorobenzene (Surr). Since the %Rec is within the acceptance criteria for the surrogate in the CCV and associated samples, the data have been reported. (CCV 580-291579/16), (CCV 580-291579/33) and (CCV 580-291579/5).

Method(s) NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: DPE-PSS-V10-10 (580-82438-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Gx: The following samples were analyzed at reduced volume due to high concentrations of target analytes: DPE-PSS-W9-6 (580-82438-2) and DUP-2 (580-82438-12). The calculation was done using an initial volume adjustment rather than a dilution factor. The reporting limits have been elevated by the appropriate factor.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D SIM: The following samples were diluted due to the nature of the sample matrix: DPE-PSS-W9-6 (580-82438-2), DPE-PSS-V10-5 (580-82438-4), DPE-PSS-V10-10 (580-82438-5), DPE-PSS-W10-7 (580-82438-9), and DPE-PSS-W10-10 (580-82438-10). Elevated reporting limits (RLs) are provided.

Method(s) 8270D SIM: The following sample was diluted to bring the concentration of target analytes within the calibration range: DUP-2 (580-82438-12). Elevated reporting limits (RLs) are provided.

Method(s) 8270D SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch preparation batch 580-291281 and analytical batch 580-291411 recovered outside control limits for the following analytes: Benzo[b]fluoranthene.

Job ID: 580-82438-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) NWTPH-Dx: The following sample required a dilution due to the nature of the sample matrix: DPE-PSS-W10-10 (580-82438-10). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) NWTPH-Dx: The following samples were diluted because of suspected high concentrations of target or non-target analytes, due to color, odor, appearance, viscosity, etc.: DPE-PSS-W9-6 (580-82438-2), DPE-PSS-V10-5 (580-82438-4), DPE-PSS-V10-10 (580-82438-5), DPE-PSS-W10-10 (580-82438-10) and DUP-2 (580-82438-12). Elevated reporting limits (RL) are provided.

Method(s) EPH Frac: Samples DPE-PSS-V10-10 (580-82438-5) and DUP-2 (580-82438-12) were extremely concentrated and overloaded silica gel column.

Method(s) NWTPH/EPH: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 580-290909 and 580-291429 and analytical batch 580-291544 recovered outside acceptance limits for C10-C12 Aliphatics, C10-C12 Aromatics, C12-C16 Aromatics, and C21-C34 Aromatics. The client requested the data be qualified and reported since re-extraction would be outside of hold. (LCS 580-290909/2-B) and (LCSD 580-290909/3-B).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	RPD of the LCS and LCSD exceeds the control limits

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: DPE-PSS-W9-4

Date Collected: 12/05/18 09:45
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-1

Matrix: Solid
Percent Solids: 93.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**72**		39	10	ug/Kg	☼	12/10/18 14:03	12/10/18 17:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/10/18 14:03*	*12/10/18 17:28*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/10/18 14:03*	*12/10/18 17:28*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*12/10/18 14:03*	*12/10/18 17:28*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*	*12/10/18 14:03*	*12/10/18 17:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 121*	*12/10/18 14:03*	*12/10/18 17:28*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**64**		4.9	0.44	ug/Kg	☼	12/12/18 09:17	12/16/18 20:17	1
Benzo[a]anthracene	ND		4.9	0.74	ug/Kg	☼	12/12/18 09:17	12/16/18 20:17	1
Benzo[a]pyrene	ND		4.9	0.39	ug/Kg	☼	12/12/18 09:17	12/16/18 20:17	1
Benzo[b]fluoranthene	ND		4.9	0.57	ug/Kg	☼	12/12/18 09:17	12/16/18 20:17	1
Benzo[k]fluoranthene	ND		4.9	0.58	ug/Kg	☼	12/12/18 09:17	12/16/18 20:17	1
Chrysene	**18**		4.9	1.5	ug/Kg	☼	12/12/18 09:17	12/16/18 20:17	1
Dibenz(a,h)anthracene	ND		4.9	0.70	ug/Kg	☼	12/12/18 09:17	12/16/18 20:17	1
Indeno[1,2,3-cd]pyrene	ND		4.9	0.58	ug/Kg	☼	12/12/18 09:17	12/16/18 20:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*72*		*57 - 120*	*12/12/18 09:17*	*12/16/18 20:17*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	**5.8**	**J**	6.2	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
C6-C8 Aliphatics	**22**		6.2	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
C8-C10 Aliphatics	**10**		6.2	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
C10-C12 Aliphatics	**19**		6.2	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
C8-C10 Aromatics	**14**		6.2	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
C10-C12 Aromatics	**9.6**		6.2	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
C12-C13 Aromatics	**3.5**	**J**	6.2	2.5	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
Methyl tert-butyl ether	ND		0.62	0.31	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
Benzene	**0.17**		0.062	0.031	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
Toluene	ND		0.062	0.031	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
Ethylbenzene	**1.6**		0.062	0.031	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
m-Xylene & p-Xylene	**1.0**		0.12	0.062	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
o-Xylene	**0.14**		0.062	0.031	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1
Naphthalene	**0.38**		0.31	0.15	mg/Kg	☼	12/10/18 11:44	12/11/18 22:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*85*		*60 - 140*	*12/10/18 11:44*	*12/11/18 22:11*	*1*
2,5-Dibromotoluene (pid)	*96*		*60 - 140*	*12/10/18 11:44*	*12/11/18 22:11*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**78**		6.6	3.0	mg/Kg	☼	12/13/18 15:50	12/19/18 17:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*50 - 150*	*12/13/18 15:50*	*12/19/18 17:46*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 17:46*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	16	J *	52	5.0	mg/Kg	☼	12/12/18 11:47	12/19/18 23:20	1
C10-C12 Aromatics	ND	*	52	8.8	mg/Kg	☼	12/12/18 11:47	12/19/18 23:20	1
C12-C16 Aliphatics	39	J	52	4.6	mg/Kg	☼	12/12/18 11:47	12/19/18 23:20	1
C12-C16 Aromatics	7.7	J *	52	4.6	mg/Kg	☼	12/12/18 11:47	12/19/18 23:20	1
C16-C21 Aliphatics	67		52	6.4	mg/Kg	☼	12/12/18 11:47	12/19/18 23:20	1
C16-C21 Aromatics	35	J	52	6.7	mg/Kg	☼	12/12/18 11:47	12/19/18 23:20	1
C21-C34 Aliphatics	310		52	13	mg/Kg	☼	12/12/18 11:47	12/19/18 23:20	1
C21-C34 Aromatics	100	*	52	10	mg/Kg	☼	12/12/18 11:47	12/19/18 23:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*91*		*60 - 140*	*12/12/18 11:47*	*12/19/18 23:20*	*1*
o-Terphenyl	*80*		*60 - 140*	*12/12/18 11:47*	*12/19/18 23:20*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	290		53	13	mg/Kg	☼	12/08/18 16:05	12/17/18 22:45	1
Motor Oil (>C24-C36)	720		53	19	mg/Kg	☼	12/08/18 16:05	12/17/18 22:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*101*		*50 - 150*	*12/08/18 16:05*	*12/17/18 22:45*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.0		0.1	0.1	%			12/10/18 10:12	1
Percent Moisture	7.0		0.1	0.1	%			12/10/18 10:12	1

Client Sample ID: DPE-PSS-W9-6

Date Collected: 12/05/18 09:59
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-2

Matrix: Solid
Percent Solids: 91.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**130**		31	7.9	ug/Kg	☼	12/10/18 14:03	12/10/18 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*12/10/18 14:03*	*12/10/18 17:53*	*1*
Trifluorotoluene (Surr)	*98*		*80 - 120*	*12/10/18 14:03*	*12/10/18 17:53*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*	*12/10/18 14:03*	*12/10/18 17:53*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/10/18 14:03*	*12/10/18 17:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 121*	*12/10/18 14:03*	*12/10/18 17:53*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**26**	**J**	27	4.1	ug/Kg	☼	12/17/18 09:49	12/18/18 19:04	5
Benzo[a]pyrene	**18**	**J**	27	2.2	ug/Kg	☼	12/17/18 09:49	12/18/18 19:04	5
Benzo[b]fluoranthene	**29**	*****	27	3.2	ug/Kg	☼	12/17/18 09:49	12/18/18 19:04	5
Benzo[k]fluoranthene	**5.7**	**J**	27	3.3	ug/Kg	☼	12/17/18 09:49	12/18/18 19:04	5
Chrysene	**90**		27	8.1	ug/Kg	☼	12/17/18 09:49	12/18/18 19:04	5
Dibenz(a,h)anthracene	ND		27	3.9	ug/Kg	☼	12/17/18 09:49	12/18/18 19:04	5
Indeno[1,2,3-cd]pyrene	ND		27	3.3	ug/Kg	☼	12/17/18 09:49	12/18/18 19:04	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*80*		*57 - 120*	*12/17/18 09:49*	*12/18/18 19:04*	*5*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**960**		52	24	mg/Kg	☼	12/13/18 15:50	12/19/18 20:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*50 - 150*	*12/13/18 15:50*	*12/19/18 20:01*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 20:01*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**1400**		100	26	mg/Kg	☼	12/08/18 16:05	12/17/18 23:05	2
Motor Oil (>C24-C36)	**710**		100	36	mg/Kg	☼	12/08/18 16:05	12/17/18 23:05	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*108*		*50 - 150*	*12/08/18 16:05*	*12/17/18 23:05*	*2*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**91.4**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**8.6**		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DPE-PSS-W9-19.5
Date Collected: 12/05/18 10:19
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-3
Matrix: Solid
Percent Solids: 84.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		33	8.3	ug/Kg	☼	12/10/18 14:03	12/10/18 18:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/10/18 14:03*	*12/10/18 18:18*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/10/18 14:03*	*12/10/18 18:18*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/10/18 14:03*	*12/10/18 18:18*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/10/18 14:03*	*12/10/18 18:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*	*12/10/18 14:03*	*12/10/18 18:18*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**5.9**		5.4	2.5	mg/Kg	☼	12/13/18 15:50	12/19/18 15:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*50 - 150*	*12/13/18 15:50*	*12/19/18 15:13*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 15:13*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		59	15	mg/Kg	☼	12/08/18 16:05	12/17/18 23:25	1
Motor Oil (>C24-C36)	ND		59	21	mg/Kg	☼	12/08/18 16:05	12/17/18 23:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*111*		*50 - 150*	*12/08/18 16:05*	*12/17/18 23:25*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**84.5**		0.1	0.1	%			12/10/18 10:12	1
Percent Moisture	**15.5**		0.1	0.1	%			12/10/18 10:12	1

Client Sample ID: DPE-PSS-V10-5

Date Collected: 12/05/18 11:55
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-4

Matrix: Solid
Percent Solids: 88.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**670**		30	7.7	ug/Kg	☼	12/10/18 14:03	12/10/18 18:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/10/18 14:03*	*12/10/18 18:43*	*1*
Trifluorotoluene (Surr)	*102*		*80 - 120*	*12/10/18 14:03*	*12/10/18 18:43*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/10/18 14:03*	*12/10/18 18:43*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*	*12/10/18 14:03*	*12/10/18 18:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*	*12/10/18 14:03*	*12/10/18 18:43*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**30**		28	4.2	ug/Kg	☼	12/17/18 09:49	12/18/18 19:55	5
Benzo[a]pyrene	**30**		28	2.2	ug/Kg	☼	12/17/18 09:49	12/18/18 19:55	5
Benzo[b]fluoranthene	ND	*	28	3.3	ug/Kg	☼	12/17/18 09:49	12/18/18 19:55	5
Benzo[k]fluoranthene	ND		28	3.3	ug/Kg	☼	12/17/18 09:49	12/18/18 19:55	5
Chrysene	**130**		28	8.3	ug/Kg	☼	12/17/18 09:49	12/18/18 19:55	5
Dibenz(a,h)anthracene	ND		28	4.0	ug/Kg	☼	12/17/18 09:49	12/18/18 19:55	5
Indeno[1,2,3-cd]pyrene	ND		28	3.3	ug/Kg	☼	12/17/18 09:49	12/18/18 19:55	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*83*		*57 - 120*	*12/17/18 09:49*	*12/18/18 19:55*	*5*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**240**		5.1	2.3	mg/Kg	☼	12/13/18 15:50	12/19/18 20:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*50 - 150*	*12/13/18 15:50*	*12/19/18 20:28*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 20:28*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**5800**		1100	280	mg/Kg	☼	12/08/18 16:05	12/17/18 23:45	20
Motor Oil (>C24-C36)	**7900**		1100	390	mg/Kg	☼	12/08/18 16:05	12/17/18 23:45	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*85*		*50 - 150*	*12/08/18 16:05*	*12/17/18 23:45*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**88.2**		0.1	0.1	%			12/10/18 10:12	1
Percent Moisture	**11.8**		0.1	0.1	%			12/10/18 10:12	1

Client Sample ID: DPE-PSS-V10-10

Date Collected: 12/05/18 12:08
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-5

Matrix: Solid
Percent Solids: 86.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**3400**		85	22	ug/Kg	☼	12/10/18 14:03	12/10/18 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:08*	*1*
Trifluorotoluene (Surr)	*102*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:08*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:08*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*80 - 121*	*12/10/18 14:03*	*12/10/18 19:08*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**4500**		28	2.5	ug/Kg	☼	12/12/18 09:17	12/16/18 20:43	5
Benzo[a]anthracene	**56**		28	4.2	ug/Kg	☼	12/12/18 09:17	12/16/18 20:43	5
Benzo[a]pyrene	**45**		28	2.2	ug/Kg	☼	12/12/18 09:17	12/16/18 20:43	5
Benzo[b]fluoranthene	**57**		28	3.3	ug/Kg	☼	12/12/18 09:17	12/16/18 20:43	5
Benzo[k]fluoranthene	ND		28	3.3	ug/Kg	☼	12/12/18 09:17	12/16/18 20:43	5
Chrysene	**210**		28	8.3	ug/Kg	☼	12/12/18 09:17	12/16/18 20:43	5
Dibenz(a,h)anthracene	ND		28	4.0	ug/Kg	☼	12/12/18 09:17	12/16/18 20:43	5
Indeno[1,2,3-cd]pyrene	ND		28	3.3	ug/Kg	☼	12/12/18 09:17	12/16/18 20:43	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*69*		*57 - 120*	*12/12/18 09:17*	*12/16/18 20:43*	*5*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	**36**	**J**	71	29	mg/Kg	☼	12/10/18 11:44	12/13/18 04:03	10
C6-C8 Aliphatics	**190**		71	29	mg/Kg	☼	12/10/18 11:44	12/13/18 04:03	10
C8-C10 Aliphatics	**52**		7.1	2.9	mg/Kg	☼	12/10/18 11:44	12/11/18 16:14	1
C10-C12 Aliphatics	**130**		71	29	mg/Kg	☼	12/10/18 11:44	12/13/18 04:03	10
C8-C10 Aromatics	**65**		7.1	2.9	mg/Kg	☼	12/10/18 11:44	12/11/18 16:14	1
C10-C12 Aromatics	**110**		71	29	mg/Kg	☼	12/10/18 11:44	12/13/18 04:03	10
C12-C13 Aromatics	**56**	**J**	71	29	mg/Kg	☼	12/10/18 11:44	12/13/18 04:03	10
Methyl tert-butyl ether	**2.5**		0.71	0.36	mg/Kg	☼	12/10/18 11:44	12/11/18 16:14	1
Benzene	**6.6**		0.071	0.036	mg/Kg	☼	12/10/18 11:44	12/11/18 16:14	1
Toluene	**0.88**		0.071	0.036	mg/Kg	☼	12/10/18 11:44	12/11/18 16:14	1
Ethylbenzene	**3.0**		0.071	0.036	mg/Kg	☼	12/10/18 11:44	12/11/18 16:14	1
m-Xylene & p-Xylene	**0.72**		0.14	0.071	mg/Kg	☼	12/10/18 11:44	12/11/18 16:14	1
o-Xylene	**1.3**		0.071	0.036	mg/Kg	☼	12/10/18 11:44	12/11/18 16:14	1
Naphthalene	**1.4**		0.36	0.18	mg/Kg	☼	12/10/18 11:44	12/11/18 16:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*82*		*60 - 140*	*12/10/18 11:44*	*12/11/18 16:14*	*1*
2,5-Dibromotoluene (pid)	*95*		*60 - 140*	*12/10/18 11:44*	*12/11/18 16:14*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1100**		14	6.5	mg/Kg	☼	12/13/18 15:50	12/19/18 20:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*200*	*X*	*50 - 150*	*12/13/18 15:50*	*12/19/18 20:55*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 20:55*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	110	*	110	11	mg/Kg	☼	12/12/18 11:47	12/19/18 23:45	2
C10-C12 Aromatics	34	J *	110	19	mg/Kg	☼	12/12/18 11:47	12/19/18 23:45	2
C12-C16 Aliphatics	590		110	10	mg/Kg	☼	12/12/18 11:47	12/19/18 23:45	2
C12-C16 Aromatics	130	*	110	10	mg/Kg	☼	12/12/18 11:47	12/19/18 23:45	2
C16-C21 Aliphatics	940		110	14	mg/Kg	☼	12/12/18 11:47	12/19/18 23:45	2
C16-C21 Aromatics	560		110	15	mg/Kg	☼	12/12/18 11:47	12/19/18 23:45	2
C21-C34 Aliphatics	1300		110	28	mg/Kg	☼	12/12/18 11:47	12/19/18 23:45	2
C21-C34 Aromatics	990	*	110	23	mg/Kg	☼	12/12/18 11:47	12/19/18 23:45	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*138*		*60 - 140*	*12/12/18 11:47*	*12/19/18 23:45*	*2*
o-Terphenyl	*98*		*60 - 140*	*12/12/18 11:47*	*12/19/18 23:45*	*2*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	6100		1100	280	mg/Kg	☼	12/08/18 16:05	12/18/18 00:05	20
Motor Oil (>C24-C36)	8300		1100	400	mg/Kg	☼	12/08/18 16:05	12/18/18 00:05	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*129*		*50 - 150*	*12/08/18 16:05*	*12/18/18 00:05*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	86.5		0.1	0.1	%			12/10/18 10:12	1
Percent Moisture	13.5		0.1	0.1	%			12/10/18 10:12	1

Client Sample ID: DPE-PSS-V10-13
Date Collected: 12/05/18 12:09
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-6
Matrix: Solid
Percent Solids: 82.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		35	8.8	ug/Kg	☼	12/10/18 14:03	12/10/18 19:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:33*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:33*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:33*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 121*	*12/10/18 14:03*	*12/10/18 19:33*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.6	0.85	ug/Kg	☼	12/17/18 09:49	12/18/18 20:20	1
Benzo[a]pyrene	ND		5.6	0.45	ug/Kg	☼	12/17/18 09:49	12/18/18 20:20	1
Benzo[b]fluoranthene	ND	*	5.6	0.66	ug/Kg	☼	12/17/18 09:49	12/18/18 20:20	1
Benzo[k]fluoranthene	ND		5.6	0.67	ug/Kg	☼	12/17/18 09:49	12/18/18 20:20	1
Chrysene	ND		5.6	1.7	ug/Kg	☼	12/17/18 09:49	12/18/18 20:20	1
Dibenz(a,h)anthracene	ND		5.6	0.81	ug/Kg	☼	12/17/18 09:49	12/18/18 20:20	1
Indeno[1,2,3-cd]pyrene	ND		5.6	0.67	ug/Kg	☼	12/17/18 09:49	12/18/18 20:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*92*		*57 - 120*	*12/17/18 09:49*	*12/18/18 20:20*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.8	2.7	mg/Kg	☼	12/13/18 15:50	12/19/18 16:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*50 - 150*	*12/13/18 15:50*	*12/19/18 16:29*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 16:29*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		56	14	mg/Kg	☼	12/08/18 16:05	12/18/18 00:25	1
Motor Oil (>C24-C36)	**22**	**J**	56	20	mg/Kg	☼	12/08/18 16:05	12/18/18 00:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*109*		*50 - 150*	*12/08/18 16:05*	*12/18/18 00:25*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**82.8**		0.1	0.1	%			12/10/18 10:12	1
Percent Moisture	**17.2**		0.1	0.1	%			12/10/18 10:12	1

Client Sample ID: DPE-PSS-V11-5
Date Collected: 12/05/18 13:45
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-7
Matrix: Solid
Percent Solids: 90.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**16**	**J**	35	8.8	ug/Kg	☼	12/10/18 14:03	12/10/18 19:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:58*	*1*
Trifluorotoluene (Surr)	*100*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:58*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:58*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/10/18 14:03*	*12/10/18 19:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*	*12/10/18 14:03*	*12/10/18 19:58*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**89**		5.2	0.47	ug/Kg	☼	12/12/18 09:17	12/16/18 21:08	1
Benzo[a]anthracene	**6.9**		5.2	0.79	ug/Kg	☼	12/12/18 09:17	12/16/18 21:08	1
Benzo[a]pyrene	**3.7**	**J**	5.2	0.41	ug/Kg	☼	12/12/18 09:17	12/16/18 21:08	1
Benzo[b]fluoranthene	ND		5.2	0.61	ug/Kg	☼	12/12/18 09:17	12/16/18 21:08	1
Benzo[k]fluoranthene	ND		5.2	0.62	ug/Kg	☼	12/12/18 09:17	12/16/18 21:08	1
Chrysene	**18**		5.2	1.6	ug/Kg	☼	12/12/18 09:17	12/16/18 21:08	1
Dibenz(a,h)anthracene	ND		5.2	0.75	ug/Kg	☼	12/12/18 09:17	12/16/18 21:08	1
Indeno[1,2,3-cd]pyrene	ND		5.2	0.62	ug/Kg	☼	12/12/18 09:17	12/16/18 21:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*69*		*57 - 120*	*12/12/18 09:17*	*12/16/18 21:08*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.6	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
C6-C8 Aliphatics	ND		5.6	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
C8-C10 Aliphatics	ND		5.6	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
C10-C12 Aliphatics	ND		5.6	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
C8-C10 Aromatics	ND		5.6	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
C10-C12 Aromatics	ND		5.6	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
C12-C13 Aromatics	ND		5.6	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
Methyl tert-butyl ether	ND		0.56	0.28	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
Benzene	ND		0.056	0.028	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
Toluene	ND		0.056	0.028	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
Ethylbenzene	ND		0.056	0.028	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
m-Xylene & p-Xylene	ND		0.11	0.056	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
o-Xylene	ND		0.056	0.028	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1
Naphthalene	ND		0.28	0.14	mg/Kg	☼	12/10/18 11:44	12/11/18 22:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*88*		*60 - 140*	*12/10/18 11:44*	*12/11/18 22:43*	*1*
2,5-Dibromotoluene (pid)	*93*		*60 - 140*	*12/10/18 11:44*	*12/11/18 22:43*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**39**		5.8	2.7	mg/Kg	☼	12/13/18 15:50	12/19/18 18:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*73*		*50 - 150*	*12/13/18 15:50*	*12/19/18 18:40*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 18:40*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	1.3	J *	11	1.1	mg/Kg	☼	12/12/18 11:47	12/20/18 00:10	1
C10-C12 Aromatics	ND	*	11	1.8	mg/Kg	☼	12/12/18 11:47	12/20/18 00:10	1
C12-C16 Aliphatics	11		11	0.97	mg/Kg	☼	12/12/18 11:47	12/20/18 00:10	1
C12-C16 Aromatics	1.7	J *	11	0.97	mg/Kg	☼	12/12/18 11:47	12/20/18 00:10	1
C16-C21 Aliphatics	22		11	1.3	mg/Kg	☼	12/12/18 11:47	12/20/18 00:10	1
C16-C21 Aromatics	8.2	J	11	1.4	mg/Kg	☼	12/12/18 11:47	12/20/18 00:10	1
C21-C34 Aliphatics	27		11	2.6	mg/Kg	☼	12/12/18 11:47	12/20/18 00:10	1
C21-C34 Aromatics	15	*	11	2.2	mg/Kg	☼	12/12/18 11:47	12/20/18 00:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*76*		*60 - 140*	*12/12/18 11:47*	*12/20/18 00:10*	*1*
o-Terphenyl	*76*		*60 - 140*	*12/12/18 11:47*	*12/20/18 00:10*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	25	J	52	13	mg/Kg	☼	12/08/18 16:05	12/18/18 00:45	1
Motor Oil (>C24-C36)	88		52	18	mg/Kg	☼	12/08/18 16:05	12/18/18 00:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*106*		*50 - 150*	*12/08/18 16:05*	*12/18/18 00:45*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	90.6		0.1	0.1	%			12/10/18 10:12	1
Percent Moisture	9.4		0.1	0.1	%			12/10/18 10:12	1

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-82438-1

Client Sample ID: DPE-PSS-V11-9.5
Date Collected: 12/05/18 13:46
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-8
Matrix: Solid
Percent Solids: 83.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		35	8.7	ug/Kg	☼	12/10/18 14:03	12/10/18 20:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/10/18 14:03*	*12/10/18 20:23*	*1*
Trifluorotoluene (Surr)	*101*		*80 - 120*	*12/10/18 14:03*	*12/10/18 20:23*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*	*12/10/18 14:03*	*12/10/18 20:23*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*	*12/10/18 14:03*	*12/10/18 20:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*	*12/10/18 14:03*	*12/10/18 20:23*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.8	2.6	mg/Kg	☼	12/13/18 15:50	12/19/18 16:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*50 - 150*	*12/13/18 15:50*	*12/19/18 16:02*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 16:02*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		60	15	mg/Kg	☼	12/08/18 16:05	12/18/18 01:06	1
Motor Oil (>C24-C36)	ND		60	21	mg/Kg	☼	12/08/18 16:05	12/18/18 01:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*105*		*50 - 150*	*12/08/18 16:05*	*12/18/18 01:06*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**83.0**		0.1	0.1	%			12/10/18 10:12	1
Percent Moisture	**17.0**		0.1	0.1	%			12/10/18 10:12	1

Client Sample ID: DPE-PSS-W10-7

Date Collected: 12/05/18 16:01
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-9

Matrix: Solid
Percent Solids: 94.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		34	8.6	ug/Kg	☼	12/10/18 14:03	12/10/18 20:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/10/18 14:03*	*12/10/18 20:48*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/10/18 14:03*	*12/10/18 20:48*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*12/10/18 14:03*	*12/10/18 20:48*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/10/18 14:03*	*12/10/18 20:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*80 - 121*	*12/10/18 14:03*	*12/10/18 20:48*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**36**		25	2.2	ug/Kg	☼	12/12/18 09:17	12/16/18 21:33	5
Benzo[a]anthracene	**4.5**	**J**	25	3.8	ug/Kg	☼	12/12/18 09:17	12/16/18 21:33	5
Benzo[a]pyrene	ND		25	2.0	ug/Kg	☼	12/12/18 09:17	12/16/18 21:33	5
Benzo[b]fluoranthene	ND		25	2.9	ug/Kg	☼	12/12/18 09:17	12/16/18 21:33	5
Benzo[k]fluoranthene	ND		25	3.0	ug/Kg	☼	12/12/18 09:17	12/16/18 21:33	5
Chrysene	**25**		25	7.5	ug/Kg	☼	12/12/18 09:17	12/16/18 21:33	5
Dibenz(a,h)anthracene	ND		25	3.6	ug/Kg	☼	12/12/18 09:17	12/16/18 21:33	5
Indeno[1,2,3-cd]pyrene	ND		25	3.0	ug/Kg	☼	12/12/18 09:17	12/16/18 21:33	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*109*		*57 - 120*	*12/12/18 09:17*	*12/16/18 21:33*	*5*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.8	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
C6-C8 Aliphatics	**6.1**		5.8	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
C8-C10 Aliphatics	ND		5.8	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
C10-C12 Aliphatics	**2.7**	**J**	5.8	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
C8-C10 Aromatics	**2.3**	**J**	5.8	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
C10-C12 Aromatics	ND		5.8	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
C12-C13 Aromatics	ND		5.8	2.3	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
Methyl tert-butyl ether	ND		0.58	0.29	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
Benzene	ND		0.058	0.029	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
Toluene	ND		0.058	0.029	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
Ethylbenzene	ND		0.058	0.029	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
m-Xylene & p-Xylene	ND		0.12	0.058	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
o-Xylene	ND		0.058	0.029	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1
Naphthalene	ND		0.29	0.14	mg/Kg	☼	12/10/18 11:44	12/11/18 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*86*		*60 - 140*	*12/10/18 11:44*	*12/11/18 23:16*	*1*
2,5-Dibromotoluene (pid)	*92*		*60 - 140*	*12/10/18 11:44*	*12/11/18 23:16*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**17**		5.6	2.6	mg/Kg	☼	12/13/18 15:50	12/19/18 16:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*50 - 150*	*12/13/18 15:50*	*12/19/18 16:56*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 16:56*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND	*	53	5.1	mg/Kg	☼	12/12/18 11:47	12/20/18 00:35	1
C10-C12 Aromatics	ND	*	53	8.9	mg/Kg	☼	12/12/18 11:47	12/20/18 00:35	1
C12-C16 Aliphatics	**5.9**	**J**	53	4.6	mg/Kg	☼	12/12/18 11:47	12/20/18 00:35	1
C12-C16 Aromatics	ND	*	53	4.6	mg/Kg	☼	12/12/18 11:47	12/20/18 00:35	1
C16-C21 Aliphatics	ND		53	6.4	mg/Kg	☼	12/12/18 11:47	12/20/18 00:35	1
C16-C21 Aromatics	ND		53	6.7	mg/Kg	☼	12/12/18 11:47	12/20/18 00:35	1
C21-C34 Aliphatics	**88**		53	13	mg/Kg	☼	12/12/18 11:47	12/20/18 00:35	1
C21-C34 Aromatics	**47**	**J ***	53	11	mg/Kg	☼	12/12/18 11:47	12/20/18 00:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*77*		*60 - 140*	*12/12/18 11:47*	*12/20/18 00:35*	*1*
o-Terphenyl	*76*		*60 - 140*	*12/12/18 11:47*	*12/20/18 00:35*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		100	25	mg/Kg	☼	12/08/18 16:05	12/18/18 01:46	2
Motor Oil (>C24-C36)	**450**		100	35	mg/Kg	☼	12/08/18 16:05	12/18/18 01:46	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*94*		*50 - 150*	*12/08/18 16:05*	*12/18/18 01:46*	*2*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**94.8**		0.1	0.1	%			12/10/18 10:12	1
Percent Moisture	**5.2**		0.1	0.1	%			12/10/18 10:12	1

Client Sample ID: DPE-PSS-W10-10

Date Collected: 12/05/18 16:09
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-10

Matrix: Solid
Percent Solids: 94.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		32	8.2	ug/Kg	☼	12/10/18 14:03	12/10/18 21:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/10/18 14:03*	*12/10/18 21:13*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/10/18 14:03*	*12/10/18 21:13*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*	*12/10/18 14:03*	*12/10/18 21:13*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*	*12/10/18 14:03*	*12/10/18 21:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 121*	*12/10/18 14:03*	*12/10/18 21:13*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**15**	**J**	53	8.0	ug/Kg	☼	12/17/18 09:49	12/18/18 21:11	10
Benzo[a]pyrene	ND		53	4.2	ug/Kg	☼	12/17/18 09:49	12/18/18 21:11	10
Benzo[b]fluoranthene	ND	*	53	6.2	ug/Kg	☼	12/17/18 09:49	12/18/18 21:11	10
Benzo[k]fluoranthene	ND		53	6.3	ug/Kg	☼	12/17/18 09:49	12/18/18 21:11	10
Chrysene	**88**		53	16	ug/Kg	☼	12/17/18 09:49	12/18/18 21:11	10
Dibenz(a,h)anthracene	ND		53	7.6	ug/Kg	☼	12/17/18 09:49	12/18/18 21:11	10
Indeno[1,2,3-cd]pyrene	ND		53	6.3	ug/Kg	☼	12/17/18 09:49	12/18/18 21:11	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*88*		*57 - 120*	*12/17/18 09:49*	*12/18/18 21:11*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**46**		5.4	2.5	mg/Kg	☼	12/13/18 15:50	12/19/18 19:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*79*		*50 - 150*	*12/13/18 15:50*	*12/19/18 19:07*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 19:07*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		990	240	mg/Kg	☼	12/08/18 16:05	12/18/18 02:06	20
Motor Oil (>C24-C36)	**1200**		990	350	mg/Kg	☼	12/08/18 16:05	12/18/18 02:06	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*0*	*X*	*50 - 150*	*12/08/18 16:05*	*12/18/18 02:06*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**94.4**		0.1	0.1	%			12/10/18 10:12	1
Percent Moisture	**5.6**		0.1	0.1	%			12/10/18 10:12	1

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-82438-1

Client Sample ID: DPE-PSS-W10-14.5
Date Collected: 12/05/18 16:10
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-11
Matrix: Solid
Percent Solids: 77.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		38	9.6	ug/Kg	☼	12/10/18 14:03	12/10/18 21:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/10/18 14:03*	*12/10/18 21:39*	*1*
Trifluorotoluene (Surr)	*101*		*80 - 120*	*12/10/18 14:03*	*12/10/18 21:39*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*12/10/18 14:03*	*12/10/18 21:39*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*	*12/10/18 14:03*	*12/10/18 21:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*	*12/10/18 14:03*	*12/10/18 21:39*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		6.3	2.9	mg/Kg	☼	12/13/18 15:50	12/19/18 14:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*50 - 150*	*12/13/18 15:50*	*12/19/18 14:46*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 14:46*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		64	16	mg/Kg	☼	12/08/18 16:05	12/18/18 02:26	1
Motor Oil (>C24-C36)	ND		64	23	mg/Kg	☼	12/08/18 16:05	12/18/18 02:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*105*		*50 - 150*	*12/08/18 16:05*	*12/18/18 02:26*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**77.1**		0.1	0.1	%			12/10/18 10:12	1
Percent Moisture	**22.9**		0.1	0.1	%			12/10/18 10:12	1

Client Sample ID: DUP-2

Date Collected: 12/05/18 00:01
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-12

Matrix: Solid
Percent Solids: 77.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**8400**		43	11	ug/Kg	☼	12/10/18 14:03	12/10/18 22:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:04*	*1*
Trifluorotoluene (Surr)	*103*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:04*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:04*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*	*12/10/18 14:03*	*12/10/18 22:04*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**19000**		120	11	ug/Kg	☼	12/12/18 09:17	12/16/18 21:59	20
Benzo[a]anthracene	**150**		120	18	ug/Kg	☼	12/12/18 09:17	12/16/18 21:59	20
Benzo[a]pyrene	**110**	**J**	120	9.5	ug/Kg	☼	12/12/18 09:17	12/16/18 21:59	20
Benzo[b]fluoranthene	ND		120	14	ug/Kg	☼	12/12/18 09:17	12/16/18 21:59	20
Benzo[k]fluoranthene	ND		120	14	ug/Kg	☼	12/12/18 09:17	12/16/18 21:59	20
Chrysene	**620**		120	36	ug/Kg	☼	12/12/18 09:17	12/16/18 21:59	20
Dibenz(a,h)anthracene	ND		120	17	ug/Kg	☼	12/12/18 09:17	12/16/18 21:59	20
Indeno[1,2,3-cd]pyrene	ND		120	14	ug/Kg	☼	12/12/18 09:17	12/16/18 21:59	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*76*		*57 - 120*	*12/12/18 09:17*	*12/16/18 21:59*	*20*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	**110**		74	29	mg/Kg	☼	12/10/18 11:44	12/13/18 01:54	10
C6-C8 Aliphatics	**220**		74	29	mg/Kg	☼	12/10/18 11:44	12/13/18 01:54	10
C8-C10 Aliphatics	**33**		7.4	2.9	mg/Kg	☼	12/10/18 11:44	12/11/18 17:52	1
C10-C12 Aliphatics	**96**		74	29	mg/Kg	☼	12/10/18 11:44	12/13/18 01:54	10
C8-C10 Aromatics	**45**		7.4	2.9	mg/Kg	☼	12/10/18 11:44	12/11/18 17:52	1
C10-C12 Aromatics	**88**		74	29	mg/Kg	☼	12/10/18 11:44	12/13/18 01:54	10
C12-C13 Aromatics	**32**	**J**	74	29	mg/Kg	☼	12/10/18 11:44	12/13/18 01:54	10
Methyl tert-butyl ether	**2.5**		0.74	0.37	mg/Kg	☼	12/10/18 11:44	12/11/18 17:52	1
Benzene	**5.2**		0.074	0.037	mg/Kg	☼	12/10/18 11:44	12/11/18 17:52	1
Toluene	**0.31**		0.074	0.037	mg/Kg	☼	12/10/18 11:44	12/11/18 17:52	1
Ethylbenzene	**2.9**		0.074	0.037	mg/Kg	☼	12/10/18 11:44	12/11/18 17:52	1
m-Xylene & p-Xylene	**0.51**		0.15	0.074	mg/Kg	☼	12/10/18 11:44	12/11/18 17:52	1
o-Xylene	**0.046**	**J**	0.074	0.037	mg/Kg	☼	12/10/18 11:44	12/11/18 17:52	1
Naphthalene	**2.2**		0.37	0.18	mg/Kg	☼	12/10/18 11:44	12/11/18 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*66*		*60 - 140*	*12/10/18 11:44*	*12/11/18 17:52*	*1*
2,5-Dibromotoluene (pid)	*96*		*60 - 140*	*12/10/18 11:44*	*12/11/18 17:52*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1000**		71	33	mg/Kg	☼	12/13/18 15:50	12/19/18 19:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*50 - 150*	*12/13/18 15:50*	*12/19/18 19:34*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 19:34*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	250	*	64	6.1	mg/Kg	☼	12/12/18 11:47	12/20/18 01:00	1
C10-C12 Aromatics	120	*	64	11	mg/Kg	☼	12/12/18 11:47	12/20/18 01:00	1
C12-C16 Aliphatics	1000		64	5.6	mg/Kg	☼	12/12/18 11:47	12/20/18 01:00	1
C12-C16 Aromatics	270	*	64	5.6	mg/Kg	☼	12/12/18 11:47	12/20/18 01:00	1
C16-C21 Aliphatics	1400		64	7.8	mg/Kg	☼	12/12/18 11:47	12/20/18 01:00	1
C16-C21 Aromatics	720		64	8.2	mg/Kg	☼	12/12/18 11:47	12/20/18 01:00	1
C21-C34 Aliphatics	1300		64	15	mg/Kg	☼	12/12/18 11:47	12/20/18 01:00	1
C21-C34 Aromatics	820	*	64	13	mg/Kg	☼	12/12/18 11:47	12/20/18 01:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*139*		*60 - 140*	*12/12/18 11:47*	*12/20/18 01:00*	*1*
o-Terphenyl	*92*		*60 - 140*	*12/12/18 11:47*	*12/20/18 01:00*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	6700		1200	300	mg/Kg	☼	12/08/18 16:05	12/18/18 03:06	20
Motor Oil (>C24-C36)	6400		1200	420	mg/Kg	☼	12/08/18 16:05	12/18/18 03:06	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*127*		*50 - 150*	*12/08/18 16:05*	*12/18/18 03:06*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	77.8		0.1	0.1	%			12/10/18 10:12	1
Percent Moisture	22.2		0.1	0.1	%			12/10/18 10:12	1

Client Sample ID: Trip Blank
Date Collected: 12/05/18 00:01
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-13
Matrix: Solid

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/10/18 14:03	12/10/18 22:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:29*	*1*
Trifluorotoluene (Surr)	*103*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:29*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:29*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/10/18 14:03*	*12/10/18 22:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*	*12/10/18 14:03*	*12/10/18 22:29*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/13/18 15:50	12/19/18 14:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*50 - 150*	*12/13/18 15:50*	*12/19/18 14:19*	*1*
Trifluorotoluene (Surr)				*12/13/18 15:50*	*12/19/18 14:19*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-290693/1-A
Matrix: Solid
Analysis Batch: 290711

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290693

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/10/18 14:03	12/10/18 16:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/10/18 14:03*	*12/10/18 16:13*	*1*
Trifluorotoluene (Surr)	*98*		*80 - 120*	*12/10/18 14:03*	*12/10/18 16:13*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*	*12/10/18 14:03*	*12/10/18 16:13*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/10/18 14:03*	*12/10/18 16:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 121*	*12/10/18 14:03*	*12/10/18 16:13*	*1*

Lab Sample ID: LCS 580-290693/2-A
Matrix: Solid
Analysis Batch: 290711

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290693

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			800	940		ug/Kg		118	79 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*97*		*80 - 120*
Trifluorotoluene (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*91*		*80 - 121*

Lab Sample ID: LCSD 580-290693/3-A
Matrix: Solid
Analysis Batch: 290711

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290693

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			800	970		ug/Kg		121	79 - 135	3	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*80 - 120*
Trifluorotoluene (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-290875/1-A
Matrix: Solid
Analysis Batch: 291157

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290875

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		5.0	0.45	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		12/12/18 09:17	12/14/18 14:28	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-290875/1-A
Matrix: Solid
Analysis Batch: 291157

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290875

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Chrysene	ND		5.0	1.5	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		12/12/18 09:17	12/14/18 14:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*101*		*57 - 120*	*12/12/18 09:17*	*12/14/18 14:28*	*1*

Lab Sample ID: LCS 580-290875/2-A
Matrix: Solid
Analysis Batch: 291157

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290875

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	1000	1050		ug/Kg		105	68 - 120
Benzo[a]anthracene	1000	1100		ug/Kg		110	66 - 120
Benzo[a]pyrene	1000	1040		ug/Kg		104	72 - 124
Benzo[b]fluoranthene	1000	964		ug/Kg		96	63 - 121
Benzo[k]fluoranthene	1000	965		ug/Kg		97	63 - 123
Chrysene	1000	908		ug/Kg		91	69 - 120
Dibenz(a,h)anthracene	1000	993		ug/Kg		99	70 - 125
Indeno[1,2,3-cd]pyrene	1000	891		ug/Kg		89	65 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*96*		*57 - 120*

Lab Sample ID: MB 580-291281/1-A
Matrix: Solid
Analysis Batch: 291411

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291281

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Chrysene	ND		5.0	1.5	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		12/17/18 09:49	12/18/18 11:52	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		12/17/18 09:49	12/18/18 11:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*87*		*57 - 120*	*12/17/18 09:49*	*12/18/18 11:52*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-291281/2-A
Matrix: Solid
Analysis Batch: 291411

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291281

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1000	1010		ug/Kg		101	66 - 120
Benzo[a]pyrene	1000	985		ug/Kg		98	72 - 124
Benzo[b]fluoranthene	1000	975		ug/Kg		97	63 - 121
Benzo[k]fluoranthene	1000	1100		ug/Kg		110	63 - 123
Chrysene	1000	1050		ug/Kg		105	69 - 120
Dibenz(a,h)anthracene	1000	965		ug/Kg		96	70 - 125
Indeno[1,2,3-cd]pyrene	1000	987		ug/Kg		99	65 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*83*		*57 - 120*

Lab Sample ID: LCSD 580-291281/3-A
Matrix: Solid
Analysis Batch: 291411

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291281

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene	1000	1010		ug/Kg		101	66 - 120	0	14
Benzo[a]pyrene	1000	1000		ug/Kg		100	72 - 124	2	12
Benzo[b]fluoranthene	1000	1180	*	ug/Kg		118	63 - 121	19	10
Benzo[k]fluoranthene	1000	1030		ug/Kg		103	63 - 123	6	15
Chrysene	1000	1040		ug/Kg		104	69 - 120	1	10
Dibenz(a,h)anthracene	1000	995		ug/Kg		99	70 - 125	3	13
Indeno[1,2,3-cd]pyrene	1000	1020		ug/Kg		102	65 - 121	3	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Terphenyl-d14	*89*		*57 - 120*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 490-562731/45
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C6-C8 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C8-C10 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C10-C12 Aliphatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C8-C10 Aromatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C10-C12 Aromatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
C12-C13 Aromatics	ND		5.0	2.0	mg/Kg			12/12/18 15:27	1
Methyl tert-butyl ether	ND		0.50	0.25	mg/Kg			12/12/18 15:27	1
Benzene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1
Toluene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1
Ethylbenzene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1
m-Xylene & p-Xylene	ND		0.10	0.050	mg/Kg			12/12/18 15:27	1
o-Xylene	ND		0.050	0.025	mg/Kg			12/12/18 15:27	1

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 490-562731/45
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.25	0.13	mg/Kg			12/12/18 15:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*92*		*60 - 140*		*12/12/18 15:27*	*1*
2,5-Dibromotoluene (pid)	*97*		*60 - 140*		*12/12/18 15:27*	*1*

Lab Sample ID: MB 490-562731/9
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C6-C8 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C8-C10 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C10-C12 Aliphatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C8-C10 Aromatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C10-C12 Aromatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
C12-C13 Aromatics	ND		5.0	2.0	mg/Kg			12/11/18 12:27	1
Methyl tert-butyl ether	ND		0.50	0.25	mg/Kg			12/11/18 12:27	1
Benzene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
Toluene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
Ethylbenzene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
m-Xylene & p-Xylene	ND		0.10	0.050	mg/Kg			12/11/18 12:27	1
o-Xylene	ND		0.050	0.025	mg/Kg			12/11/18 12:27	1
Naphthalene	ND		0.25	0.13	mg/Kg			12/11/18 12:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*101*		*60 - 140*		*12/11/18 12:27*	*1*
2,5-Dibromotoluene (pid)	*110*		*60 - 140*		*12/11/18 12:27*	*1*

Lab Sample ID: LCS 490-562731/43
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	15.0	14.9		mg/Kg		99	70 - 130
C6-C8 Aliphatics	10.0	9.32		mg/Kg		93	70 - 130
C8-C10 Aliphatics	30.0	29.6		mg/Kg		99	70 - 130
C10-C12 Aliphatics	10.0	9.91		mg/Kg		99	70 - 130
C8-C10 Aromatics	25.0	25.7		mg/Kg		103	70 - 130
C10-C12 Aromatics	5.00	4.86	J	mg/Kg		97	70 - 130
C12-C13 Aromatics	5.00	4.64	J	mg/Kg		93	70 - 130
Naphthalene	5.00	4.98		mg/Kg		100	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*93*		*60 - 140*
2,5-Dibromotoluene (pid)	*97*		*60 - 140*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 490-562731/7
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C5-C6 Aliphatics			15.0	15.0		mg/Kg		100	70 - 130		
C6-C8 Aliphatics			10.0	9.62		mg/Kg		96	70 - 130		
C8-C10 Aliphatics			30.0	30.1		mg/Kg		100	70 - 130		
C10-C12 Aliphatics			10.0	11.2		mg/Kg		112	70 - 130		
C8-C10 Aromatics			25.0	26.4		mg/Kg		106	70 - 130		
C10-C12 Aromatics			5.00	5.77		mg/Kg		115	70 - 130		
C12-C13 Aromatics			5.00	5.01		mg/Kg		100	70 - 130		
Naphthalene			5.00	5.05		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*108*		*60 - 140*
2,5-Dibromotoluene (pid)	*113*		*60 - 140*

Lab Sample ID: LCSD 490-562731/44
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics			15.0	15.0		mg/Kg		100	70 - 130	1	25
C6-C8 Aliphatics			10.0	9.74		mg/Kg		97	70 - 130	4	25
C8-C10 Aliphatics			30.0	31.0		mg/Kg		103	70 - 130	4	25
C10-C12 Aliphatics			10.0	10.2		mg/Kg		102	70 - 130	3	25
C8-C10 Aromatics			25.0	26.3		mg/Kg		105	70 - 130	3	25
C10-C12 Aromatics			5.00	5.18		mg/Kg		104	70 - 130	6	25
C12-C13 Aromatics			5.00	4.74	J	mg/Kg		95	70 - 130	2	25
Naphthalene			5.00	5.06		mg/Kg		101	70 - 130	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*93*		*60 - 140*
2,5-Dibromotoluene (pid)	*95*		*60 - 140*

Lab Sample ID: LCSD 490-562731/8
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics			15.0	15.5		mg/Kg		103	70 - 130	3	25
C6-C8 Aliphatics			10.0	9.87		mg/Kg		99	70 - 130	3	25
C8-C10 Aliphatics			30.0	30.8		mg/Kg		103	70 - 130	2	25
C10-C12 Aliphatics			10.0	11.0		mg/Kg		110	70 - 130	1	25
C8-C10 Aromatics			25.0	26.9		mg/Kg		108	70 - 130	2	25
C10-C12 Aromatics			5.00	5.27		mg/Kg		105	70 - 130	9	25
C12-C13 Aromatics			5.00	5.25		mg/Kg		105	70 - 130	5	25
Naphthalene			5.00	5.23		mg/Kg		105	70 - 130	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*108*		*60 - 140*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCSD 490-562731/8
Matrix: Solid
Analysis Batch: 562731

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (pid)	*113*		*60 - 140*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-291075/1-A
Matrix: Solid
Analysis Batch: 291579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291075

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/13/18 15:50	12/19/18 11:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*50 - 150*	*12/13/18 15:50*	*12/19/18 11:59*	*1*
Trifluorotoluene (Surr)	*107*		*50 - 150*	*12/13/18 15:50*	*12/19/18 11:59*	*1*

Lab Sample ID: LCS 580-291075/2-A
Matrix: Solid
Analysis Batch: 291579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291075

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	36.7		mg/Kg		92	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*81*		*50 - 150*
Trifluorotoluene (Surr)	*115*		*50 - 150*

Lab Sample ID: LCSD 580-291075/3-A
Matrix: Solid
Analysis Batch: 291579

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291075

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	35.1		mg/Kg		88	80 - 120	5	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*67*		*50 - 150*
Trifluorotoluene (Surr)	*112*		*50 - 150*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-290909/1-B
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		5.0	0.48	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C10-C12 Aromatics	ND		5.0	0.84	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C12-C16 Aliphatics	ND		5.0	0.44	mg/Kg		12/12/18 11:47	12/19/18 17:29	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 580-290909/1-B
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C16 Aromatics	ND		5.0	0.44	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C16-C21 Aliphatics	ND		5.0	0.61	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C16-C21 Aromatics	ND		5.0	0.64	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C21-C34 Aliphatics	ND		5.0	1.2	mg/Kg		12/12/18 11:47	12/19/18 17:29	1
C21-C34 Aromatics	ND		5.0	1.0	mg/Kg		12/12/18 11:47	12/19/18 17:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*90*		*60 - 140*	*12/12/18 11:47*	*12/19/18 17:29*	*1*
o-Terphenyl	*77*		*60 - 140*	*12/12/18 11:47*	*12/19/18 17:29*	*1*

Lab Sample ID: LCS 580-290909/2-B
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290909

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C10-C12 Aliphatics			2.52	1.75	J *	mg/Kg		69	70 - 130		
C10-C12 Aromatics			2.52	1.52	J *	mg/Kg		60	70 - 130		
C12-C16 Aliphatics			5.05	3.98	J	mg/Kg		79	70 - 130		
C12-C16 Aromatics			7.57	4.90	J *	mg/Kg		65	70 - 130		
C16-C21 Aliphatics			7.57	7.10		mg/Kg		94	70 - 130		
C16-C21 Aromatics			12.6	9.75		mg/Kg		77	70 - 130		
C21-C34 Aliphatics			15.1	15.1		mg/Kg		100	70 - 130		
C21-C34 Aromatics			20.2	13.5	*	mg/Kg		67	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctadecane	*92*		*60 - 140*
o-Terphenyl	*87*		*60 - 140*

Lab Sample ID: LCSD 580-290909/3-B
Matrix: Solid
Analysis Batch: 291544

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290909

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics			2.52	1.69	J *	mg/Kg		67	70 - 130	4	25
C10-C12 Aromatics			2.52	1.45	J *	mg/Kg		58	70 - 130	4	25
C12-C16 Aliphatics			5.05	3.86	J	mg/Kg		76	70 - 130	3	25
C12-C16 Aromatics			7.57	4.70	J *	mg/Kg		62	70 - 130	4	25
C16-C21 Aliphatics			7.57	6.81		mg/Kg		90	70 - 130	4	25
C16-C21 Aromatics			12.6	9.45		mg/Kg		75	70 - 130	3	25
C21-C34 Aliphatics			15.1	14.9		mg/Kg		98	70 - 130	2	25
C21-C34 Aromatics			20.2	14.0		mg/Kg		70	70 - 130	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctadecane	*87*		*60 - 140*
o-Terphenyl	*85*		*60 - 140*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-290602/1-B
Matrix: Solid
Analysis Batch: 291357

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290602

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		12/08/18 16:05	12/17/18 18:23	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		12/08/18 16:05	12/17/18 18:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*116*		*50 - 150*	*12/08/18 16:05*	*12/17/18 18:23*	*1*

Lab Sample ID: LCS 580-290602/2-B
Matrix: Solid
Analysis Batch: 291357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290602

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	445		mg/Kg		89	64 - 127		
Motor Oil (>C24-C36)			500	470		mg/Kg		94	70 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*107*		*50 - 150*

Lab Sample ID: LCSD 580-290602/3-B
Matrix: Solid
Analysis Batch: 291357

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290602

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	449		mg/Kg		90	64 - 127	1	16
Motor Oil (>C24-C36)			500	467		mg/Kg		93	70 - 125	1	17

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*95*		*50 - 150*

Lab Sample ID: 580-82438-11 DU
Matrix: Solid
Analysis Batch: 291357

Client Sample ID: DPE-PSS-W10-14.5
Prep Type: Total/NA
Prep Batch: 290602

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	ND			ND		mg/Kg	☼			NC	35
Motor Oil (>C24-C36)	ND			ND		mg/Kg	☼			NC	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*106*		*50 - 150*

Client Sample ID: DPE-PSS-W9-4
Date Collected: 12/05/18 09:45
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290625	12/10/18 10:12	BAH	TAL SEA

Client Sample ID: DPE-PSS-W9-4
Date Collected: 12/05/18 09:45
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-1
Matrix: Solid
Percent Solids: 93.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 17:28	W1T	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		1	291261	12/16/18 20:17	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/11/18 22:11	AK1	TAL NSH
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 17:46	CJB	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291544	12/19/18 23:20	Z1R	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/17/18 22:45	Z1R	TAL SEA

Client Sample ID: DPE-PSS-W9-6
Date Collected: 12/05/18 09:59
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-W9-6
Date Collected: 12/05/18 09:59
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-2
Matrix: Solid
Percent Solids: 91.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 17:53	W1T	TAL SEA
Total/NA	Prep	3546			291281	12/17/18 09:49	DCV	TAL SEA
Total/NA	Analysis	8270D SIM		5	291411	12/18/18 19:04	W1T	TAL SEA
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 20:01	CJB	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		2	291357	12/17/18 23:05	Z1R	TAL SEA

Client Sample ID: DPE-PSS-W9-19.5
Lab Sample ID: 580-82438-3
Date Collected: 12/05/18 10:19
Matrix: Solid
Date Received: 12/06/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290625	12/10/18 10:12	BAH	TAL SEA

Client Sample ID: DPE-PSS-W9-19.5
Lab Sample ID: 580-82438-3
Date Collected: 12/05/18 10:19
Matrix: Solid
Date Received: 12/06/18 11:45
Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 18:18	W1T	TAL SEA
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 15:13	CJB	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/17/18 23:25	Z1R	TAL SEA

Client Sample ID: DPE-PSS-V10-5
Lab Sample ID: 580-82438-4
Date Collected: 12/05/18 11:55
Matrix: Solid
Date Received: 12/06/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290625	12/10/18 10:12	BAH	TAL SEA

Client Sample ID: DPE-PSS-V10-5
Lab Sample ID: 580-82438-4
Date Collected: 12/05/18 11:55
Matrix: Solid
Date Received: 12/06/18 11:45
Percent Solids: 88.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 18:43	W1T	TAL SEA
Total/NA	Prep	3546			291281	12/17/18 09:49	DCV	TAL SEA
Total/NA	Analysis	8270D SIM		5	291411	12/18/18 19:55	W1T	TAL SEA
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 20:28	CJB	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		20	291357	12/17/18 23:45	Z1R	TAL SEA

Client Sample ID: DPE-PSS-V10-10
Lab Sample ID: 580-82438-5
Date Collected: 12/05/18 12:08
Matrix: Solid
Date Received: 12/06/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290625	12/10/18 10:12	BAH	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-82438-1

Client Sample ID: DPE-PSS-V10-10

Lab Sample ID: 580-82438-5
Date Collected: 12/05/18 12:08
Matrix: Solid
Date Received: 12/06/18 11:45
Percent Solids: 86.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 19:08	W1T	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		5	291261	12/16/18 20:43	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/11/18 16:14	AK1	TAL NSH
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	562731	12/13/18 04:03	AK1	TAL NSH
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 20:55	CJB	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		2	291544	12/19/18 23:45	Z1R	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		20	291357	12/18/18 00:05	Z1R	TAL SEA

Client Sample ID: DPE-PSS-V10-13

Lab Sample ID: 580-82438-6
Date Collected: 12/05/18 12:09
Matrix: Solid
Date Received: 12/06/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290625	12/10/18 10:12	BAH	TAL SEA

Client Sample ID: DPE-PSS-V10-13

Lab Sample ID: 580-82438-6
Date Collected: 12/05/18 12:09
Matrix: Solid
Date Received: 12/06/18 11:45
Percent Solids: 82.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 19:33	W1T	TAL SEA
Total/NA	Prep	3546			291281	12/17/18 09:49	DCV	TAL SEA
Total/NA	Analysis	8270D SIM		1	291411	12/18/18 20:20	W1T	TAL SEA
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 16:29	CJB	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/18/18 00:25	Z1R	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-82438-1

Client Sample ID: DPE-PSS-V11-5
Date Collected: 12/05/18 13:45
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290625	12/10/18 10:12	BAH	TAL SEA

Client Sample ID: DPE-PSS-V11-5
Date Collected: 12/05/18 13:45
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-7
Matrix: Solid
Percent Solids: 90.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 19:58	W1T	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		1	291261	12/16/18 21:08	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/11/18 22:43	AK1	TAL NSH
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 18:40	CJB	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291544	12/20/18 00:10	Z1R	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/18/18 00:45	Z1R	TAL SEA

Client Sample ID: DPE-PSS-V11-9.5
Date Collected: 12/05/18 13:46
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290625	12/10/18 10:12	BAH	TAL SEA

Client Sample ID: DPE-PSS-V11-9.5
Date Collected: 12/05/18 13:46
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-8
Matrix: Solid
Percent Solids: 83.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 20:23	W1T	TAL SEA
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 16:02	CJB	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/18/18 01:06	Z1R	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-82438-1

Client Sample ID: DPE-PSS-W10-7
Date Collected: 12/05/18 16:01
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290625	12/10/18 10:12	BAH	TAL SEA

Client Sample ID: DPE-PSS-W10-7
Date Collected: 12/05/18 16:01
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-9
Matrix: Solid
Percent Solids: 94.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 20:48	W1T	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		5	291261	12/16/18 21:33	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/11/18 23:16	AK1	TAL NSH
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 16:56	CJB	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291544	12/20/18 00:35	Z1R	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		2	291357	12/18/18 01:46	Z1R	TAL SEA

Client Sample ID: DPE-PSS-W10-10
Date Collected: 12/05/18 16:09
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290625	12/10/18 10:12	BAH	TAL SEA

Client Sample ID: DPE-PSS-W10-10
Date Collected: 12/05/18 16:09
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-10
Matrix: Solid
Percent Solids: 94.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 21:13	W1T	TAL SEA
Total/NA	Prep	3546			291281	12/17/18 09:49	DCV	TAL SEA
Total/NA	Analysis	8270D SIM		10	291411	12/18/18 21:11	W1T	TAL SEA
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 19:07	CJB	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		20	291357	12/18/18 02:06	Z1R	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-82438-1

Client Sample ID: DPE-PSS-W10-14.5
Date Collected: 12/05/18 16:10
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290625	12/10/18 10:12	BAH	TAL SEA

Client Sample ID: DPE-PSS-W10-14.5
Date Collected: 12/05/18 16:10
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-11
Matrix: Solid
Percent Solids: 77.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 21:39	W1T	TAL SEA
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 14:46	CJB	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291357	12/18/18 02:26	Z1R	TAL SEA

Client Sample ID: DUP-2
Date Collected: 12/05/18 00:01
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290625	12/10/18 10:12	BAH	TAL SEA

Client Sample ID: DUP-2
Date Collected: 12/05/18 00:01
Date Received: 12/06/18 11:45

Lab Sample ID: 580-82438-12
Matrix: Solid
Percent Solids: 77.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 22:04	W1T	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		20	291261	12/16/18 21:59	W1T	TAL SEA
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	562731	12/11/18 17:52	AK1	TAL NSH
Total/NA	Prep	5035			562602	12/10/18 11:44	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	562731	12/13/18 01:54	AK1	TAL NSH
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 19:34	CJB	TAL SEA
Total/NA	Prep	3550B			290909	12/12/18 11:47	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291429	12/18/18 13:50	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291544	12/20/18 01:00	Z1R	TAL SEA
Total/NA	Prep	3546			290602	12/08/18 16:05	KMS	TAL SEA
Total/NA	Cleanup	3630C			290717	12/10/18 17:08	JCM	TAL SEA
Total/NA	Analysis	NWTPH-Dx		20	291357	12/18/18 03:06	Z1R	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-82438-1

Client Sample ID: Trip Blank

Lab Sample ID: 580-82438-13

Date Collected: 12/05/18 00:01

Matrix: Solid

Date Received: 12/06/18 11:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290693	12/10/18 14:03	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290711	12/10/18 22:29	W1T	TAL SEA
Total/NA	Prep	5035			291075	12/13/18 15:50	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 14:19	CJB	TAL SEA

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-82438-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-22
ANAB	ISO/IEC 17025		L2236	01-19-22
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Laboratory: TestAmerica Nashville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	06-30-19
Arizona	State Program	9	AZ0473	05-05-19
Arkansas DEQ	State Program	6	88-0737	04-25-19
California	State Program	9	2938	06-30-19 *
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-19
Georgia	State Program	4	NA: NELAP & A2LA	12-31-19
Illinois	NELAP	5	200010	12-09-18 *
Iowa	State Program	7	131	04-01-20
Kansas	NELAP	7	E-10229	10-31-19
Kentucky (UST)	State Program	4	19	06-30-19
Kentucky (WW)	State Program	4	90038	12-31-19
Louisiana	NELAP	6	30613	06-30-19
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-19
Massachusetts	State Program	1	M-TN032	06-30-19
Minnesota	NELAP	5	047-999-345	12-31-19
Mississippi	State Program	4	N/A	06-30-19
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-19
New Hampshire	NELAP	1	2963	10-09-19
New Jersey	NELAP	2	TN965	06-30-19
New York	NELAP	2	11342	03-31-19
North Carolina (WW/SW)	State Program	4	387	12-31-19
North Dakota	State Program	8	R-146	06-30-19
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-19
Oregon	NELAP	10	TN200001	04-26-19
Pennsylvania	NELAP	3	68-00585	07-31-19
Rhode Island	State Program	1	LAO00268	12-30-19
South Carolina	State Program	4	84009 (001)	02-28-19
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-19
USDA	Federal		P330-13-00306	12-01-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-82438-1

Laboratory: TestAmerica Nashville (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Utah	NELAP	8	TN00032	07-31-19
Virginia	NELAP	3	460152	06-14-19
Washington	State Program	10	C789	07-19-19
West Virginia DEP	State Program	3	219	02-28-19
Wisconsin	State Program	5	998020430	08-31-19
Wyoming (UST)	A2LA	8	453.07	12-31-19

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Chevron Edmonds Terminal

TestAmerica Job ID: 580-82438-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82438-1	DPE-PSS-W9-4	Solid	12/05/18 09:45	12/06/18 11:45
580-82438-2	DPE-PSS-W9-6	Solid	12/05/18 09:59	12/06/18 11:45
580-82438-3	DPE-PSS-W9-19.5	Solid	12/05/18 10:19	12/06/18 11:45
580-82438-4	DPE-PSS-V10-5	Solid	12/05/18 11:55	12/06/18 11:45
580-82438-5	DPE-PSS-V10-10	Solid	12/05/18 12:08	12/06/18 11:45
580-82438-6	DPE-PSS-V10-13	Solid	12/05/18 12:09	12/06/18 11:45
580-82438-7	DPE-PSS-V11-5	Solid	12/05/18 13:45	12/06/18 11:45
580-82438-8	DPE-PSS-V11-9.5	Solid	12/05/18 13:46	12/06/18 11:45
580-82438-9	DPE-PSS-W10-7	Solid	12/05/18 16:01	12/06/18 11:45
580-82438-10	DPE-PSS-W10-10	Solid	12/05/18 16:09	12/06/18 11:45
580-82438-11	DPE-PSS-W10-14.5	Solid	12/05/18 16:10	12/06/18 11:45
580-82438-12	DUP-2	Solid	12/05/18 00:01	12/06/18 11:45
580-82438-13	Trip Blank	Solid	12/05/18 00:01	12/06/18 11:45

TestAmerica
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TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamericainc.com

Loc: 580
82438

☐ Rush
☐ Short Hold

Chain of Custody Record

Client	Client Contact	Date	Chain of Custody Number
Arcadis	Ophelie Encelle	12/5/18	34979
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 2
1100 olive way, Suite 800	206-939-9622		
City / **State** / **Zip Code**	**Sampler**	**Lab Contact**	
Seattle / WA / 98101	Jason Little	Elaine Walker	
Project Name and Location (State)	**Billing Contact**		
Edmonds Terminal			
Contract/Purchase Order/Quote No.			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	MeOH	Analysis: Benzene EPA 8260C	NWTPH-Gx	NWTPH-Dx w/SGC	cPAHs EPA 8270C	EPH/VPH
DPE-PSS-W9-4	12/5/18	0945				X	2						2	X	X	X	X	X
DPE-PSS-W9-6		0959				X	1						1	X	X	X	X	
DPE-PSS-W9-19.5		1019				X	1						1	X	X	X	X	
DPE-PSS-V10-5		1155				X	1						1	X	X	X	X	
DPE-PSS-V10-10		1208				X	2						2	X	X	X	X	X
DPE-PSS-V10-13		1209				X	1						1	X	X	X	X	
DPE-PSS-V11-5		1345				X	2						2	X	X	X	X	X
DPE-PSS-V11-9.5		1346				X	1						1	X	X	X	X	
DPE-PSS-W10-7		1601				X	2						2	X	X	X	X	X
DPE-PSS-W10-10		1609				X	1						1	X	X	X	X	
DPE-PSS-W10-14.5		1610				X	1						1	X	X	X	X	
Dup-2		—				X	2						2	X	X	X	X	X

Special Instructions/ Conditions of Receipt

* use standard SGC
* ONLY analyze CPAHs if DRO/HO detections
* EPH/VPH - aliphatics, aromatics, benzene, toluene, ethylbenzene, xylenes, naphthalenes, 1 & 2-methyl naphthalene, n-hexane & 7 CPAHs

Therm. ID: #7 Cor: 2.9 ° Unc: 2.6 °
Cooler Dsc: Ly Green
Packing: Bubble
Cust. Seal: Yes ___ No ✓
Blue Ice, (Wet), Dry, None
FedEx: ___
UPS: ___
Lab Cour: ✓
Other: ___

Cooler
☐ Yes ☐ No Cooler Temp: ___

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal ☐ Disposal By Lab
☐ Return To Client ☐ Archive For ___

Turn Around Time Required (business days)
☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☒ Other STAT

QC Requirements (Specify)

1. Relinquished By Sign/Print	Date	Time	1. Received By Sign/Print	Date	Time
Eric Krueger	12/6/18	1145	Francisco Luna Jr.	12/6/18	1145
2. Relinquished By Sign/Print	Date	Time	2. Received By Sign/Print	Date	Time
3. Relinquished By Sign/Print	Date	Time	3. Received By Sign/Print	Date	Time

Comments

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

580-82438 Chain of Custody

TestAmerica
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Chain of Custody Record

Client	Client Contact	Date	Chain of Custody Number
Arcadis	Ophelie Encelle	12/5/18	34980
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 2 of 2**
1100 Olive Way, Suite 800	206-939-9622		
City / **State** / **Zip Code**	**Sampler**	**Lab Contact**	
Seattle / WA / 98101	Jason Little	Elaine Walker	
Project Name and Location (State)	**Billing Contact**		
Edmonds Terminal			
Contract/Purchase Order/Quote No.			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Other	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	MeOH	Analysis: Benzene EPA 8260C	NWTPH-Gx	Special Instructions/ Conditions of Receipt
Trip Blank	12/5/18	—		X										1	X	X	

Cooler
☐ Yes ☐ No Cooler Temp: _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days)
☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☒ Other STAT

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By Sign/Print: Eric Krueger	12/6/18	1145	1. Received By Sign/Print: Francisco Luna, Jr.	12/6/18	1145
2. Relinquished By Sign/Print			2. Received By Sign/Print		
3. Relinquished By Sign/Print			3. Received By Sign/Print		

Comments

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

Anchorage

580-82438 Chain of Custody

Cooler Received/Opened On 12/8/2018 @ 10:10

Time Samples Removed From Cooler 12:16 Time Samples Placed In Storage 12:56 (2 Hour Window)

1. Tracking # 9027 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960358 pH Strip Lot _____ Chlorine Strip Lot _____

2. Temperature of rep. sample or temp blank when opened: 0.4 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (intial) 2.2

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) 2.2

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) 2.2

I certify that I attached a label with the unique LIMS number to each container (intial) 2.2

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

580-82438

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M		COC No: 580-61960.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note):		Job #: 580-82438-1
Address: 2960 Foster Creighton Drive, ,	Due Date Requested: 12/17/2018			
City: Nashville	TAT Requested (days):			
State, Zip: TN, 37204				
Phone: 615-726-0177(Tel) 615-726-3404(Fax)	PO #:			
Email:	WO #:			
Project Name: Chevron Edmonds Terminal	Project #: 58011413			
Site: Chevron Edmonds Terminal	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH_VPH/8035FM_Calc Northwest VPH + VOCs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
DPE-PSS-W9-4 (580-82438-1)	12/5/18	09:45 Pacific		Solid			X	1	
DPE-PSS-V10-10 (580-82438-5)	12/5/18	12:08 Pacific		Solid			X	1	
DPE-PSS-V11-5 (580-82438-7)	12/5/18	13:45 Pacific		Solid			X	1	
DPE-PSS-W10-7 (580-82438-9)	12/5/18	16:01 Pacific		Solid			X	1	
DUP-2 (580-82438-12)	12/5/18	00:01 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	*Method of Shipment:*

Relinquished by: Tom Blankenship	Date/Time: 12/7/18	Company TA-Sea	Received by: [illegible]	Date/Time: 12/08/18 0010	Company TA-SEA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.4

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-82438-1

Login Number: 82438
List Number: 1
Creator: Gall, Brandon A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-82469-1
Client Project/Site: Edmonds Terminal

For:
ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
1/2/2019 4:07:14 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

Table of Contents

Job ID: 580-82469-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-82469-1

Receipt
ThIrteen samples were received on 12/7/2018 10:58 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7º C.

Receipt Exceptions

The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. DPE-PSS-W11-2 (580-82469-1), DPE-PSS-W11-3 (580-82469-2), DPE-PSS-W11-6 (580-82469-3), DPE-PSS-V12-4 (580-82469-4), DPE-PSS-V12-6 (580-82469-5), DPE-PSS-Y9-7.5 (580-82469-6), DPE-PSS-Y9-9 (580-82469-7), DPE-PSS-Y9-14.5 (580-82469-8), DPE-PSS-W8-6.5 (580-82469-9), DPE-PSS-W8-8.5 (580-82469-10), DPE-PSS-W8-19.5 (580-82469-11) and DUP-3 (580-82469-12).

The client requested MS/MSD be run for all analysis on the following sample: DPE-PSS-W11-2 (580-82469-1). This was not originally requested on the Chain of Custody.

GC/MS VOA
Method(s) 5035: The following samples were provided to the laboratory with a significantly different initial weight than that required by the reference method: DPE-PSS-Y9-7.5 (580-82469-6), DPE-PSS-W8-8.5 (580-82469-10) and DPE-PSS-W8-19.5 (580-82469-11). Deviations in the weight by more than 20% may affect reporting limits and potentially method performance. The method specifies 10 grams. The amount provided was above this range>.

Method(s) 8260C: The matrix spike duplicate (MSD) recovery and precision for preparation batch 580-291370 and analytical batch 580-291385 was outside control limits for Benzene. Sample matrix interference and/or non-homogeneity are suspected because the MS and associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits.

Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: DPE-PSS-W8-8.5 (580-82469-10). Elevated reporting limits (RLs) are provided.

Method(s) NWTPH-Gx: The following continuing calibration verification (CCV) standard associated with batch 580-291579 recovered outside acceptance criteria for %D for surrogate 4-Bromofluorobenzene (Surr). Since the %Rec is within the acceptance criteria for the surrogate in the CCV and associated samples, the data have been reported. (CCV 580-291579/16), (CCV 580-291579/33) and (CCV 580-291579/5).

Method(s) NWTPH-Gx: The following sample was analyzed at reduced volume due to high concentrations of target analytes: DPE-PSS-Y9-9 (580-82469-7). The calculation was done using an initial volume adjustment rather than a dilution factor. The reporting limits have been elevated by the appropriate factor.

Method(s) NWTPH-Gx: The following continuing calibration verification (CCV) standard associated with batch 580-291607 recovered outside acceptance criteria for %D for surrogate 4-Bromofluorobenzene (Surr). Since the %Rec is within the acceptance criteria for the surrogate in the CCV and associated samples, the data have been reported. (CCV 580-291607/15) and (CCV 580-291607/5).

Method(s) NWTPH-Gx: The %D of surrogate (4-Bromofluorobenzene (Surr)) for CCV associated with batch 580-291790 was outside the lower control limits. All associated sample surrogate fell within acceptance criteria; therefore, the data have been reported. (CCV 580-291790/16).

Method(s) NWTPH-Gx: The following samples were diluted to bring the concentration of target analytes within the calibration range: DPE-PSS-W8-6.5 (580-82469-9), DPE-PSS-W8-8.5 (580-82469-10) and DUP-3 (580-82469-12). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Job ID: 580-82469-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

Method(s) 8270D SIM: The following continuing calibration verification (CCV) standard associated with batch 580-291323 recovered outside acceptance criteria for %D for surrogate Terphenyl-d14. Since all the other surrogates were within %D criteria; therefore, the data have been reported. (CCVIS 580-291323/3)

Method(s) 8270D SIM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 580-290875 and analytical batch 580-291323 were outside control limits for Benzo(a)pyrene and Benzo(b)fluoranthene. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method(s) 8270D SIM: The following samples were diluted due to the nature of the sample matrix: DPE-PSS-W11-2 (580-82469-1), DPE-PSS-W11-2 (580-82469-1[MS]) and DPE-PSS-W11-2 (580-82469-1[MSD]), DPE-PSS-W11-3 (580-82469-2), DPE-PSS-Y9-7.5 (580-82469-6), and DPE-PSS-W8-8.5 (580-82469-10). Elevated reporting limits (RLs) are provided.

Method(s) 8270D SIM: Surrogate recovery for the following sample was outside control limits: DPE-PSS-W11-2 (580-82469-1[MSD]). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8270D SIM: The following samples were diluted to bring the concentration of target analytes within the calibration range: DPE-PSS-Y9-9 (580-82469-7), DPE-PSS-W8-6.5 (580-82469-9) and DUP-3 (580-82469-12). Elevated reporting limits (RLs) are provided.

Method(s) 8270D SIM: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 580-291571 and analytical batch 580-291993 was outside control limits for Benzo(b)fluoranthene. Sample matrix interference and/or non-homogeneity are suspected because the MS/MSD and associated laboratory control sample (LCS) recoveries were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA

Method(s) NWTPH-VPH: The matrix spike duplicate (MSD) recovery and precision for preparation batch 490-563169 and analytical batch 490-563684 was outside control limits for C6-C8 Aliphatics, C8-C10 Aliphatics, C10-C12 Aliphatics, C8-C10 Aromatics, C10-C12 Aromatics, and C12-C13 Aromatics. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method(s) 3550B: Sample DPE-PSS-W11-2 (580-82469-1) and DUP-3 (580-82469-12) did not drain well through the sodium sulfate funnel.

Method(s) NWTPH-Dx: Surrogate recovery for the following sample was outside control limits: DPE-PSS-W11-2 (580-82469-1), DPE-PSS-Y9-9 (580-82469-7), DPE-PSS-W8-8.5 (580-82469-10), DPE-PSS-W8-8.5 DU (580-82469-10 DU), and DUP-3 (580-82469-12). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Dx: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch preparation batch 580-290849 and 580-291013 and analytical batch 580-291124 recovered outside control limits for the following analytes: C10-C24. The % recovery was within acceptance limits.

Method(s) NWTPH-Dx: The sample duplicate (DUP) precision for preparation batch 580-290729 and analytical batch 580-291268 was outside control limits for #2 Diesel and Motor Oil. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method(s) NWTPH-Dx: The matrix spike / matrix spike duplicate(MS/MSD) recoveries for preparation batch 580-290849 and analytical batch 580-291407 was outside control limits for Motor Oil. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits.

Method(s) NWTPH-Dx: The following samples were diluted due to the nature of the sample matrix: DPE-PSS-W11-2 (580-82469-1), DPE-PSS-W11-2 (580-82469-1[MS]), DPE-PSS-W11-2 (580-82469-1[MSD]) and DPE-PSS-Y9-9 (580-82469-7). Elevated reporting limits

Job ID: 580-82469-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

(RLs) are provided.

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: DPE-PSS-W11-2 (580-82469-1), DPE-PSS-W11-2 (580-82469-1[MS]), DPE-PSS-W11-2 (580-82469-1[MSD]), DPE-PSS-W11-3 (580-82469-2), DPE-PSS-Y9-7.5 (580-82469-6), DPE-PSS-Y9-9 (580-82469-7) and DPE-PSS-W8-6.5 (580-82469-9).

Method(s) NWTPH-Dx: The following samples were diluted due to the abundance of target analytes : DPE-PSS-W11-2 (580-82469-1[MS]) and DPE-PSS-W11-2 (580-82469-1[MSD]). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) EPH Frac: Samples DPE-PSS-W11-2 (580-82469-1), DPE-PSS-W11-2 (580-82469-1[MS]), DPE-PSS-W11-2 (580-82469-1[MSD]), DPE-PSS-Y9-9 (580-82469-7) and DUP-3 (580-82469-12) were extremely highly concentrated and overloaded silica gel columns.

Method(s) NWTPH/EPH: The following samples were diluted due to the nature of the sample matrix: DPE-PSS-W11-2 (580-82469-1), DPE-PSS-W11-2 (580-82469-1[MS]), DPE-PSS-W11-2 (580-82469-1[MSD]), DPE-PSS-Y9-9 (580-82469-7) and DUP-3 (580-82469-12). Elevated reporting limits (RLs) are provided.

Method(s) NWTPH/EPH: The method blank for preparation batch 580-291025 and 580-291524 and analytical batch 580-291634 contained C16-C21 Aliphatics above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) NWTPH/EPH: The laboratory control samples (LCS/LCSD) for preparation batch 580-291025 and analytical batch 580-292266 recovered outside control limits for the C10-C12 aromatic range. Out-of-hold data was not requested by the client; therefore, current data is reported.

Method(s) NWTPH/EPH: The matrix spike / matrix spike duplicate(MS/MSD) recoveries for preparation batch 580-291025 and analytical batches 580-292266 and 580-291634 were outside control limits for multiple analytes. Sample matrix interference and/or non-homogeneity are suspected.

Method(s) NWTPH/EPH: Surrogate recovery for the following samples were outside control limits: DPE-PSS-Y9-9 (580-82469-7) and DUP-3 (580-82469-12). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH/EPH: The following samples were re-analyzed due to a failing CCV for C21-C34 Aromatics in the initial analysis: DPE-PSS-W11-2 (580-82469-1), DPE-PSS-W11-2 (580-82469-1[MS]), DPE-PSS-W11-2 (580-82469-1[MSD]), DPE-PSS-V12-4 (580-82469-4), DPE-PSS-Y9-9 (580-82469-7), DPE-PSS-W8-6.5 (580-82469-9) and DUP-3 (580-82469-12).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits
B	Compound was found in the blank and sample.
*	LCS or LCSD is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: DPE-PSS-W11-2
Date Collected: 12/06/18 08:48
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-1
Matrix: Solid
Percent Solids: 94.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	F2 F1	37	9.4	ug/Kg	☼	12/17/18 17:43	12/18/18 01:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 01:13*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 01:13*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*	*12/17/18 17:43*	*12/18/18 01:13*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 01:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*80 - 121*	*12/17/18 17:43*	*12/18/18 01:13*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**96**	**J**	130	12	ug/Kg	☼	12/12/18 09:17	12/17/18 19:06	25
Benzo[a]anthracene	**40**	**J**	130	20	ug/Kg	☼	12/12/18 09:17	12/17/18 19:06	25
Benzo[a]pyrene	**71**	**J F1**	130	10	ug/Kg	☼	12/12/18 09:17	12/17/18 19:06	25
Benzo[b]fluoranthene	**47**	**J F2 F1**	130	15	ug/Kg	☼	12/12/18 09:17	12/17/18 19:06	25
Benzo[k]fluoranthene	ND		130	15	ug/Kg	☼	12/12/18 09:17	12/17/18 19:06	25
Chrysene	**190**		130	39	ug/Kg	☼	12/12/18 09:17	12/17/18 19:06	25
Dibenz(a,h)anthracene	**26**	**J**	130	19	ug/Kg	☼	12/12/18 09:17	12/17/18 19:06	25
Indeno[1,2,3-cd]pyrene	ND		130	15	ug/Kg	☼	12/12/18 09:17	12/17/18 19:06	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*109*		*57 - 120*	*12/12/18 09:17*	*12/17/18 19:06*	*25*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		6.4	2.6	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
C6-C8 Aliphatics	ND	F1	6.4	2.6	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
C8-C10 Aliphatics	**3.0**	**J F1**	6.4	2.6	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
C10-C12 Aliphatics	**19**	**F1**	6.4	2.6	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
C8-C10 Aromatics	**6.1**	**J F1**	6.4	2.6	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
C10-C12 Aromatics	**9.0**	**F1**	6.4	2.6	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
C12-C13 Aromatics	**9.4**	**F1**	6.4	2.6	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
Methyl tert-butyl ether	ND		0.64	0.32	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
Benzene	ND		0.064	0.032	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
Toluene	ND		0.064	0.032	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
Ethylbenzene	ND		0.064	0.032	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
m-Xylene & p-Xylene	ND		0.13	0.064	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
o-Xylene	ND		0.064	0.032	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1
Naphthalene	**0.59**		0.32	0.16	mg/Kg	☼	12/12/18 14:30	12/17/18 17:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*84*		*60 - 140*	*12/12/18 14:30*	*12/17/18 17:03*	*1*
2,5-Dibromotoluene (pid)	*88*		*60 - 140*	*12/12/18 14:30*	*12/17/18 17:03*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**110**		6.2	2.8	mg/Kg	☼	12/18/18 14:01	12/20/18 00:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*50 - 150*	*12/18/18 14:01*	*12/20/18 00:32*	*1*
Trifluorotoluene (Surr)				*12/18/18 14:01*	*12/20/18 00:32*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		530	50	mg/Kg	☼	12/13/18 11:21	12/20/18 19:07	5
C10-C12 Aromatics	ND	*	530	88	mg/Kg	☼	12/13/18 11:21	12/20/18 19:07	5
C12-C16 Aliphatics	**90**	**J**	530	46	mg/Kg	☼	12/13/18 11:21	12/20/18 19:07	5
C12-C16 Aromatics	ND		530	46	mg/Kg	☼	12/13/18 11:21	12/20/18 19:07	5
C16-C21 Aliphatics	**100**	**J B**	530	64	mg/Kg	☼	12/13/18 11:21	12/20/18 19:07	5
C16-C21 Aromatics	**77**	**J**	530	67	mg/Kg	☼	12/13/18 11:21	12/20/18 19:07	5
C21-C34 Aliphatics	**550**		530	130	mg/Kg	☼	12/13/18 11:21	12/20/18 19:07	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*93*		*60 - 140*	*12/13/18 11:21*	*12/20/18 19:07*	*5*
o-Terphenyl	*88*		*60 - 140*	*12/13/18 11:21*	*12/20/18 19:07*	*5*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aromatics	**470**		110	21	mg/Kg	☼	12/13/18 11:21	12/29/18 21:37	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		2500	610	mg/Kg	☼	12/11/18 16:51	12/18/18 15:51	50
Motor Oil (>C24-C36)	**2000**	**J F1**	2500	870	mg/Kg	☼	12/11/18 16:51	12/18/18 15:51	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*0*	*X*	*50 - 150*	*12/11/18 16:51*	*12/18/18 15:51*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**94.5**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**5.5**		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DPE-PSS-W11-3

Date Collected: 12/06/18 08:58
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-2

Matrix: Solid
Percent Solids: 91.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		33	8.4	ug/Kg	☼	12/17/18 17:43	12/18/18 02:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/17/18 17:43*	*12/18/18 02:32*	*1*
Trifluorotoluene (Surr)	*98*		*80 - 120*	*12/17/18 17:43*	*12/18/18 02:32*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*	*12/17/18 17:43*	*12/18/18 02:32*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 02:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 121*	*12/17/18 17:43*	*12/18/18 02:32*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		26	4.0	ug/Kg	☼	12/19/18 14:43	12/24/18 21:27	5
Benzo[a]pyrene	ND		26	2.1	ug/Kg	☼	12/19/18 14:43	12/24/18 21:27	5
Benzo[b]fluoranthene	ND	F2	26	3.1	ug/Kg	☼	12/19/18 14:43	12/24/18 21:27	5
Benzo[k]fluoranthene	ND		26	3.2	ug/Kg	☼	12/19/18 14:43	12/24/18 21:27	5
Chrysene	ND		26	7.9	ug/Kg	☼	12/19/18 14:43	12/24/18 21:27	5
Dibenz(a,h)anthracene	ND		26	3.8	ug/Kg	☼	12/19/18 14:43	12/24/18 21:27	5
Indeno[1,2,3-cd]pyrene	ND		26	3.2	ug/Kg	☼	12/19/18 14:43	12/24/18 21:27	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*90*		*57 - 120*	*12/19/18 14:43*	*12/24/18 21:27*	*5*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**5.0**	**J**	5.5	2.6	mg/Kg	☼	12/18/18 14:01	12/19/18 23:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*50 - 150*	*12/18/18 14:01*	*12/19/18 23:39*	*1*
Trifluorotoluene (Surr)				*12/18/18 14:01*	*12/19/18 23:39*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		39	9.6	mg/Kg	☼	12/11/18 16:51	12/18/18 16:51	1
Motor Oil (>C24-C36)	**78**		39	14	mg/Kg	☼	12/11/18 16:51	12/18/18 16:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*98*		*50 - 150*	*12/11/18 16:51*	*12/18/18 16:51*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**91.4**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**8.6**		0.1	0.1	%			12/11/18 14:36	1

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82469-1

Client Sample ID: DPE-PSS-W11-6
Date Collected: 12/06/18 09:10
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-3
Matrix: Solid
Percent Solids: 92.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		32	8.1	ug/Kg	☼	12/17/18 17:43	12/18/18 02:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*	*12/17/18 17:43*	*12/18/18 02:58*	*1*
Trifluorotoluene (Surr)	*96*		*80 - 120*	*12/17/18 17:43*	*12/18/18 02:58*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 02:58*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*	*12/17/18 17:43*	*12/18/18 02:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 121*	*12/17/18 17:43*	*12/18/18 02:58*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.3	2.4	mg/Kg	☼	12/18/18 14:01	12/19/18 22:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*50 - 150*	*12/18/18 14:01*	*12/19/18 22:44*	*1*
Trifluorotoluene (Surr)				*12/18/18 14:01*	*12/19/18 22:44*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		43	10	mg/Kg	☼	12/11/18 16:51	12/18/18 17:11	1
Motor Oil (>C24-C36)	ND		43	15	mg/Kg	☼	12/11/18 16:51	12/18/18 17:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*106*		*50 - 150*	*12/11/18 16:51*	*12/18/18 17:11*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**92.3**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**7.7**		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DPE-PSS-V12-4

Date Collected: 12/06/18 10:35
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-4

Matrix: Solid
Percent Solids: 90.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		36	9.1	ug/Kg	☼	12/17/18 17:43	12/18/18 03:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/17/18 17:43*	*12/18/18 03:25*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 03:25*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*	*12/17/18 17:43*	*12/18/18 03:25*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*	*12/17/18 17:43*	*12/18/18 03:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 121*	*12/17/18 17:43*	*12/18/18 03:25*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**9.0**		5.0	0.45	ug/Kg	☼	12/17/18 15:22	12/19/18 12:50	1
Benzo[a]anthracene	ND		5.0	0.77	ug/Kg	☼	12/17/18 15:22	12/19/18 12:50	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg	☼	12/17/18 15:22	12/19/18 12:50	1
Benzo[b]fluoranthene	ND		5.0	0.60	ug/Kg	☼	12/17/18 15:22	12/19/18 12:50	1
Benzo[k]fluoranthene	ND		5.0	0.61	ug/Kg	☼	12/17/18 15:22	12/19/18 12:50	1
Chrysene	ND		5.0	1.5	ug/Kg	☼	12/17/18 15:22	12/19/18 12:50	1
Dibenz(a,h)anthracene	ND		5.0	0.73	ug/Kg	☼	12/17/18 15:22	12/19/18 12:50	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.61	ug/Kg	☼	12/17/18 15:22	12/19/18 12:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*103*		*57 - 120*	*12/17/18 15:22*	*12/19/18 12:50*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		6.5	2.6	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
C6-C8 Aliphatics	ND		6.5	2.6	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
C8-C10 Aliphatics	ND		6.5	2.6	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
C10-C12 Aliphatics	ND		6.5	2.6	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
C8-C10 Aromatics	ND		6.5	2.6	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
C10-C12 Aromatics	ND		6.5	2.6	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
C12-C13 Aromatics	ND		6.5	2.6	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
Methyl tert-butyl ether	ND		0.65	0.33	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
Benzene	ND		0.065	0.033	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
Toluene	ND		0.065	0.033	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
Ethylbenzene	ND		0.065	0.033	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
m-Xylene & p-Xylene	ND		0.13	0.065	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
o-Xylene	ND		0.065	0.033	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1
Naphthalene	ND		0.33	0.16	mg/Kg	☼	12/12/18 14:30	12/14/18 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*90*		*60 - 140*	*12/12/18 14:30*	*12/14/18 15:52*	*1*
2,5-Dibromotoluene (pid)	*92*		*60 - 140*	*12/12/18 14:30*	*12/14/18 15:52*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**6.4**		6.0	2.8	mg/Kg	☼	12/18/18 14:01	12/19/18 21:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*70*		*50 - 150*	*12/18/18 14:01*	*12/19/18 21:49*	*1*
Trifluorotoluene (Surr)				*12/18/18 14:01*	*12/19/18 21:49*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		5.4	0.52	mg/Kg	☼	12/13/18 11:21	12/20/18 20:22	1
C10-C12 Aromatics	ND	*	5.4	0.90	mg/Kg	☼	12/13/18 11:21	12/20/18 20:22	1
C12-C16 Aliphatics	ND		5.4	0.47	mg/Kg	☼	12/13/18 11:21	12/20/18 20:22	1
C12-C16 Aromatics	ND		5.4	0.47	mg/Kg	☼	12/13/18 11:21	12/20/18 20:22	1
C16-C21 Aliphatics	**0.69**	**J B**	5.4	0.66	mg/Kg	☼	12/13/18 11:21	12/20/18 20:22	1
C16-C21 Aromatics	ND		5.4	0.69	mg/Kg	☼	12/13/18 11:21	12/20/18 20:22	1
C21-C34 Aliphatics	**4.5**	**J**	5.4	1.3	mg/Kg	☼	12/13/18 11:21	12/20/18 20:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*85*		*60 - 140*	*12/13/18 11:21*	*12/20/18 20:22*	*1*
o-Terphenyl	*86*		*60 - 140*	*12/13/18 11:21*	*12/20/18 20:22*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aromatics	**2.8**	**J**	5.4	1.1	mg/Kg	☼	12/13/18 11:21	12/29/18 22:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*88*		*60 - 140*	*12/13/18 11:21*	*12/29/18 22:52*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		48	12	mg/Kg	☼	12/11/18 16:51	12/18/18 17:32	1
Motor Oil (>C24-C36)	ND		48	17	mg/Kg	☼	12/11/18 16:51	12/18/18 17:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*110*		*50 - 150*	*12/11/18 16:51*	*12/18/18 17:32*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**90.6**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**9.4**		0.1	0.1	%			12/11/18 14:36	1

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82469-1

Client Sample ID: DPE-PSS-V12-6
Date Collected: 12/06/18 10:45
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-5
Matrix: Solid
Percent Solids: 87.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		37	9.4	ug/Kg	☼	12/17/18 17:43	12/18/18 03:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*80 - 120*	*12/17/18 17:43*	*12/18/18 03:51*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 03:51*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/17/18 17:43*	*12/18/18 03:51*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 03:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 121*	*12/17/18 17:43*	*12/18/18 03:51*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**3.9**	**J**	6.2	2.8	mg/Kg	☼	12/18/18 14:01	12/19/18 22:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*71*		*50 - 150*	*12/18/18 14:01*	*12/19/18 22:17*	*1*
Trifluorotoluene (Surr)				*12/18/18 14:01*	*12/19/18 22:17*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		56	14	mg/Kg	☼	12/11/18 16:51	12/18/18 18:32	1
Motor Oil (>C24-C36)	ND		56	20	mg/Kg	☼	12/11/18 16:51	12/18/18 18:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*116*		*50 - 150*	*12/11/18 16:51*	*12/18/18 18:32*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**87.5**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**12.5**		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DPE-PSS-Y9-7.5

Date Collected: 12/06/18 13:10
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-6

Matrix: Solid
Percent Solids: 72.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		44	11	ug/Kg	☼	12/17/18 17:43	12/18/18 04:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/17/18 17:43*	*12/18/18 04:17*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 04:17*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/17/18 17:43*	*12/18/18 04:17*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 04:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 121*	*12/17/18 17:43*	*12/18/18 04:17*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**37**	**J**	67	10	ug/Kg	☼	12/19/18 14:43	12/24/18 22:43	10
Benzo[a]pyrene	ND		67	5.4	ug/Kg	☼	12/19/18 14:43	12/24/18 22:43	10
Benzo[b]fluoranthene	ND		67	7.9	ug/Kg	☼	12/19/18 14:43	12/24/18 22:43	10
Benzo[k]fluoranthene	ND		67	8.1	ug/Kg	☼	12/19/18 14:43	12/24/18 22:43	10
Chrysene	**110**		67	20	ug/Kg	☼	12/19/18 14:43	12/24/18 22:43	10
Dibenz(a,h)anthracene	ND		67	9.7	ug/Kg	☼	12/19/18 14:43	12/24/18 22:43	10
Indeno[1,2,3-cd]pyrene	ND		67	8.1	ug/Kg	☼	12/19/18 14:43	12/24/18 22:43	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*82*		*57 - 120*	*12/19/18 14:43*	*12/24/18 22:43*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**5.6**	**J**	7.3	3.4	mg/Kg	☼	12/18/18 14:01	12/19/18 23:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*73*		*50 - 150*	*12/18/18 14:01*	*12/19/18 23:11*	*1*
Trifluorotoluene (Surr)				*12/18/18 14:01*	*12/19/18 23:11*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**61**	**J**	68	17	mg/Kg	☼	12/11/18 16:51	12/18/18 18:52	1
Motor Oil (>C24-C36)	**130**		68	24	mg/Kg	☼	12/11/18 16:51	12/18/18 18:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*110*		*50 - 150*	*12/11/18 16:51*	*12/18/18 18:52*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**72.9**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**27.1**		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DPE-PSS-Y9-9
Date Collected: 12/06/18 13:12
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-7
Matrix: Solid
Percent Solids: 85.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		42	11	ug/Kg	☼	12/17/18 17:43	12/18/18 04:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*	*12/17/18 17:43*	*12/18/18 04:43*	*1*
Trifluorotoluene (Surr)	*88*		*80 - 120*	*12/17/18 17:43*	*12/18/18 04:43*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*12/17/18 17:43*	*12/18/18 04:43*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*	*12/17/18 17:43*	*12/18/18 04:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*80 - 121*	*12/17/18 17:43*	*12/18/18 04:43*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**11000**		270	24	ug/Kg	☼	12/17/18 15:22	12/19/18 13:15	50
Benzo[a]anthracene	ND		270	41	ug/Kg	☼	12/17/18 15:22	12/19/18 13:15	50
Benzo[a]pyrene	**170**	**J**	270	22	ug/Kg	☼	12/17/18 15:22	12/19/18 13:15	50
Benzo[b]fluoranthene	ND		270	32	ug/Kg	☼	12/17/18 15:22	12/19/18 13:15	50
Benzo[k]fluoranthene	ND		270	32	ug/Kg	☼	12/17/18 15:22	12/19/18 13:15	50
Chrysene	ND		270	81	ug/Kg	☼	12/17/18 15:22	12/19/18 13:15	50
Dibenz(a,h)anthracene	**88**	**J**	270	39	ug/Kg	☼	12/17/18 15:22	12/19/18 13:15	50
Indeno[1,2,3-cd]pyrene	**55**	**J**	270	32	ug/Kg	☼	12/17/18 15:22	12/19/18 13:15	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*94*		*57 - 120*	*12/17/18 15:22*	*12/19/18 13:15*	*50*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		6.0	2.4	mg/Kg	☼	12/12/18 14:30	12/14/18 16:25	1
C6-C8 Aliphatics	**2.7**	**J**	6.0	2.4	mg/Kg	☼	12/12/18 14:30	12/14/18 16:25	1
C8-C10 Aliphatics	**21**		6.0	2.4	mg/Kg	☼	12/12/18 14:30	12/14/18 16:25	1
C10-C12 Aliphatics	**75**		60	24	mg/Kg	☼	12/12/18 14:30	12/17/18 21:24	10
C8-C10 Aromatics	**30**		6.0	2.4	mg/Kg	☼	12/12/18 14:30	12/14/18 16:25	1
C10-C12 Aromatics	**74**		60	24	mg/Kg	☼	12/12/18 14:30	12/17/18 21:24	10
C12-C13 Aromatics	**100**		60	24	mg/Kg	☼	12/12/18 14:30	12/17/18 21:24	10
Methyl tert-butyl ether	ND		0.60	0.30	mg/Kg	☼	12/12/18 14:30	12/14/18 16:25	1
Benzene	ND		0.060	0.030	mg/Kg	☼	12/12/18 14:30	12/14/18 16:25	1
Toluene	**0.090**		0.060	0.030	mg/Kg	☼	12/12/18 14:30	12/14/18 16:25	1
Ethylbenzene	**0.51**		0.060	0.030	mg/Kg	☼	12/12/18 14:30	12/14/18 16:25	1
m-Xylene & p-Xylene	ND		0.12	0.060	mg/Kg	☼	12/12/18 14:30	12/14/18 16:25	1
o-Xylene	**0.88**		0.060	0.030	mg/Kg	☼	12/12/18 14:30	12/14/18 16:25	1
Naphthalene	**4.9**		0.30	0.15	mg/Kg	☼	12/12/18 14:30	12/14/18 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*98*		*60 - 140*	*12/12/18 14:30*	*12/14/18 16:25*	*1*
2,5-Dibromotoluene (fid)	*90*		*60 - 140*	*12/12/18 14:30*	*12/17/18 21:24*	*10*
2,5-Dibromotoluene (pid)	*114*		*60 - 140*	*12/12/18 14:30*	*12/14/18 16:25*	*1*
2,5-Dibromotoluene (pid)	*96*		*60 - 140*	*12/12/18 14:30*	*12/17/18 21:24*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**980**		70	32	mg/Kg	☼	12/18/18 14:01	12/20/18 00:06	1

Client Sample ID: DPE-PSS-Y9-9
Date Collected: 12/06/18 13:12
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-7
Matrix: Solid
Percent Solids: 85.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		50 - 150	12/18/18 14:01	12/20/18 00:06	1
Trifluorotoluene (Surr)				12/18/18 14:01	12/20/18 00:06	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	270	J	570	55	mg/Kg	☼	12/13/18 11:21	12/20/18 20:47	5
C10-C12 Aromatics	ND	*	570	96	mg/Kg	☼	12/13/18 11:21	12/20/18 20:47	5
C12-C16 Aliphatics	1800		570	50	mg/Kg	☼	12/13/18 11:21	12/20/18 20:47	5
C12-C16 Aromatics	400	J	570	50	mg/Kg	☼	12/13/18 11:21	12/20/18 20:47	5
C16-C21 Aliphatics	2100	B	570	70	mg/Kg	☼	12/13/18 11:21	12/20/18 20:47	5
C16-C21 Aromatics	1200		570	73	mg/Kg	☼	12/13/18 11:21	12/20/18 20:47	5
C21-C34 Aliphatics	2300		570	140	mg/Kg	☼	12/13/18 11:21	12/20/18 20:47	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	220	X	60 - 140	12/13/18 11:21	12/20/18 20:47	5
o-Terphenyl	117		60 - 140	12/13/18 11:21	12/20/18 20:47	5

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aromatics	1500	*	110	23	mg/Kg	☼	12/13/18 11:21	12/31/18 00:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	103		60 - 140	12/13/18 11:21	12/31/18 00:13	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	6300		950	230	mg/Kg	☼	12/11/18 16:51	12/18/18 19:12	20
Motor Oil (>C24-C36)	3600		950	330	mg/Kg	☼	12/11/18 16:51	12/18/18 19:12	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	169	X	50 - 150	12/11/18 16:51	12/18/18 19:12	20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	85.7		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	14.3		0.1	0.1	%			12/11/18 14:36	1

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82469-1

Client Sample ID: DPE-PSS-Y9-14.5
Date Collected: 12/06/18 13:20
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-8
Matrix: Solid
Percent Solids: 70.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		50	13	ug/Kg	☼	12/17/18 17:43	12/18/18 05:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/17/18 17:43*	*12/18/18 05:09*	*1*
Trifluorotoluene (Surr)	*93*		*80 - 120*	*12/17/18 17:43*	*12/18/18 05:09*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*	*12/17/18 17:43*	*12/18/18 05:09*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*	*12/17/18 17:43*	*12/18/18 05:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 121*	*12/17/18 17:43*	*12/18/18 05:09*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		8.3	3.8	mg/Kg	☼	12/18/18 14:01	12/20/18 05:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*50 - 150*	*12/18/18 14:01*	*12/20/18 05:30*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		68	17	mg/Kg	☼	12/11/18 16:51	12/18/18 19:32	1
Motor Oil (>C24-C36)	ND		68	24	mg/Kg	☼	12/11/18 16:51	12/18/18 19:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*114*		*50 - 150*	*12/11/18 16:51*	*12/18/18 19:32*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**70.8**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**29.2**		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DPE-PSS-W8-6.5

Date Collected: 12/06/18 14:36
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-9

Matrix: Solid
Percent Solids: 80.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**180**		39	9.8	ug/Kg	☼	12/17/18 17:43	12/18/18 05:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 05:36*	*1*
Trifluorotoluene (Surr)	*96*		*80 - 120*	*12/17/18 17:43*	*12/18/18 05:36*	*1*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*	*12/17/18 17:43*	*12/18/18 05:36*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*	*12/17/18 17:43*	*12/18/18 05:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 121*	*12/17/18 17:43*	*12/18/18 05:36*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**24000**		58	5.2	ug/Kg	☼	12/17/18 15:22	12/19/18 13:41	10
Benzo[a]anthracene	**49**	**J**	58	8.7	ug/Kg	☼	12/17/18 15:22	12/19/18 13:41	10
Benzo[a]pyrene	**48**	**J**	58	4.6	ug/Kg	☼	12/17/18 15:22	12/19/18 13:41	10
Benzo[b]fluoranthene	**44**	**J**	58	6.8	ug/Kg	☼	12/17/18 15:22	12/19/18 13:41	10
Benzo[k]fluoranthene	ND		58	6.9	ug/Kg	☼	12/17/18 15:22	12/19/18 13:41	10
Chrysene	**170**		58	17	ug/Kg	☼	12/17/18 15:22	12/19/18 13:41	10
Dibenz(a,h)anthracene	**20**	**J**	58	8.3	ug/Kg	☼	12/17/18 15:22	12/19/18 13:41	10
Indeno[1,2,3-cd]pyrene	**24**	**J**	58	6.9	ug/Kg	☼	12/17/18 15:22	12/19/18 13:41	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*93*		*57 - 120*	*12/17/18 15:22*	*12/19/18 13:41*	*10*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	**12**		6.6	2.6	mg/Kg	☼	12/12/18 14:30	12/14/18 16:58	1
C6-C8 Aliphatics	**73**		66	26	mg/Kg	☼	12/12/18 14:30	12/17/18 23:01	10
C8-C10 Aliphatics	**96**		6.6	2.6	mg/Kg	☼	12/12/18 14:30	12/14/18 16:58	1
C10-C12 Aliphatics	**430**		66	26	mg/Kg	☼	12/12/18 14:30	12/17/18 23:01	10
C8-C10 Aromatics	**160**		66	26	mg/Kg	☼	12/12/18 14:30	12/17/18 23:01	10
C10-C12 Aromatics	**360**		130	53	mg/Kg	☼	12/12/18 14:30	12/17/18 22:28	20
C12-C13 Aromatics	**130**		66	26	mg/Kg	☼	12/12/18 14:30	12/17/18 23:01	10
Methyl tert-butyl ether	ND		0.66	0.33	mg/Kg	☼	12/12/18 14:30	12/14/18 16:58	1
Benzene	**0.41**		0.066	0.033	mg/Kg	☼	12/12/18 14:30	12/14/18 16:58	1
Toluene	**0.28**		0.066	0.033	mg/Kg	☼	12/12/18 14:30	12/14/18 16:58	1
Ethylbenzene	**11**		0.066	0.033	mg/Kg	☼	12/12/18 14:30	12/14/18 16:58	1
m-Xylene & p-Xylene	**0.12**	**J**	0.13	0.066	mg/Kg	☼	12/12/18 14:30	12/14/18 16:58	1
o-Xylene	**3.4**		0.066	0.033	mg/Kg	☼	12/12/18 14:30	12/14/18 16:58	1
Naphthalene	**14**		0.33	0.16	mg/Kg	☼	12/12/18 14:30	12/14/18 16:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*79*		*60 - 140*	*12/12/18 14:30*	*12/14/18 16:58*	*1*
2,5-Dibromotoluene (fid)	*78*		*60 - 140*	*12/12/18 14:30*	*12/17/18 23:01*	*10*
2,5-Dibromotoluene (pid)	*67*		*60 - 140*	*12/12/18 14:30*	*12/14/18 16:58*	*1*
2,5-Dibromotoluene (pid)	*91*		*60 - 140*	*12/12/18 14:30*	*12/17/18 22:28*	*20*
2,5-Dibromotoluene (pid)	*91*		*60 - 140*	*12/12/18 14:30*	*12/17/18 23:01*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**2800**		65	30	mg/Kg	☼	12/18/18 14:01	12/20/18 17:33	1

Client Sample ID: DPE-PSS-W8-6.5

Date Collected: 12/06/18 14:36
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-9

Matrix: Solid
Percent Solids: 80.2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		50 - 150	12/18/18 14:01	12/20/18 17:33	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	100	J	120	12	mg/Kg	☼	12/13/18 11:21	12/20/18 21:12	1
C10-C12 Aromatics	77	J *	120	21	mg/Kg	☼	12/13/18 11:21	12/20/18 21:12	1
C12-C16 Aliphatics	370		120	11	mg/Kg	☼	12/13/18 11:21	12/20/18 21:12	1
C12-C16 Aromatics	83	J	120	11	mg/Kg	☼	12/13/18 11:21	12/20/18 21:12	1
C16-C21 Aliphatics	440	B	120	15	mg/Kg	☼	12/13/18 11:21	12/20/18 21:12	1
C16-C21 Aromatics	200		120	16	mg/Kg	☼	12/13/18 11:21	12/20/18 21:12	1
C21-C34 Aliphatics	340		120	30	mg/Kg	☼	12/13/18 11:21	12/20/18 21:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	102		60 - 140	12/13/18 11:21	12/20/18 21:12	1
o-Terphenyl	85		60 - 140	12/13/18 11:21	12/20/18 21:12	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aromatics	210	*	120	25	mg/Kg	☼	12/13/18 11:21	12/31/18 00:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	91		60 - 140	12/13/18 11:21	12/31/18 00:37	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	2400		47	12	mg/Kg	☼	12/11/18 16:51	12/18/18 19:52	1
Motor Oil (>C24-C36)	1200		47	17	mg/Kg	☼	12/11/18 16:51	12/18/18 19:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	121		50 - 150	12/11/18 16:51	12/18/18 19:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	80.2		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	19.8		0.1	0.1	%			12/11/18 14:36	1

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82469-1

Client Sample ID: DPE-PSS-W8-8.5
Date Collected: 12/06/18 14:38
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-10
Matrix: Solid
Percent Solids: 82.6

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**33000**		380	96	ug/Kg	☼	12/17/18 17:43	12/18/18 17:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/17/18 17:43*	*12/18/18 17:49*	*1*
Trifluorotoluene (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 17:49*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*	*12/17/18 17:43*	*12/18/18 17:49*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/17/18 17:43*	*12/18/18 17:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 121*	*12/17/18 17:43*	*12/18/18 17:49*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**86**		57	8.6	ug/Kg	☼	12/19/18 14:43	12/24/18 23:08	10
Benzo[a]pyrene	**51**	**J**	57	4.5	ug/Kg	☼	12/19/18 14:43	12/24/18 23:08	10
Benzo[b]fluoranthene	**200**		57	6.7	ug/Kg	☼	12/19/18 14:43	12/24/18 23:08	10
Benzo[k]fluoranthene	ND		57	6.8	ug/Kg	☼	12/19/18 14:43	12/24/18 23:08	10
Chrysene	**230**		57	17	ug/Kg	☼	12/19/18 14:43	12/24/18 23:08	10
Dibenz(a,h)anthracene	ND		57	8.2	ug/Kg	☼	12/19/18 14:43	12/24/18 23:08	10
Indeno[1,2,3-cd]pyrene	ND		57	6.8	ug/Kg	☼	12/19/18 14:43	12/24/18 23:08	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*82*		*57 - 120*	*12/19/18 14:43*	*12/24/18 23:08*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**3100**		59	27	mg/Kg	☼	12/18/18 14:01	12/20/18 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*132*		*50 - 150*	*12/18/18 14:01*	*12/20/18 17:59*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**120**		57	14	mg/Kg	☼	12/10/18 17:59	12/16/18 07:35	1
Motor Oil (>C24-C36)	**70**		57	20	mg/Kg	☼	12/10/18 17:59	12/16/18 07:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*4*	*X*	*50 - 150*	*12/10/18 17:59*	*12/16/18 07:35*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**82.6**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**17.4**		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DPE-PSS-W8-19.5
Date Collected: 12/06/18 14:58
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-11
Matrix: Solid
Percent Solids: 88.7

Method: 8260C - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		31	7.9	ug/Kg	☼	12/17/18 17:43	12/18/18 17:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/17/18 17:43*	*12/18/18 17:22*	*1*
Trifluorotoluene (Surr)	*96*		*80 - 120*	*12/17/18 17:43*	*12/18/18 17:22*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*	*12/17/18 17:43*	*12/18/18 17:22*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*	*12/17/18 17:43*	*12/18/18 17:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 121*	*12/17/18 17:43*	*12/18/18 17:22*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**2.4**	**J**	5.2	2.4	mg/Kg	☼	12/18/18 14:01	12/20/18 16:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*50 - 150*	*12/18/18 14:01*	*12/20/18 16:38*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		55	14	mg/Kg	☼	12/10/18 17:59	12/16/18 08:15	1
Motor Oil (>C24-C36)	ND		55	19	mg/Kg	☼	12/10/18 17:59	12/16/18 08:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*120*		*50 - 150*	*12/10/18 17:59*	*12/16/18 08:15*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**88.7**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**11.3**		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DUP-3

Date Collected: 12/06/18 00:01
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-12

Matrix: Solid
Percent Solids: 84.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		40	10	ug/Kg	☼	12/17/18 17:43	12/18/18 06:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*	*12/17/18 17:43*	*12/18/18 06:54*	*1*
Trifluorotoluene (Surr)	*91*		*80 - 120*	*12/17/18 17:43*	*12/18/18 06:54*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*	*12/17/18 17:43*	*12/18/18 06:54*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*	*12/17/18 17:43*	*12/18/18 06:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 121*	*12/17/18 17:43*	*12/18/18 06:54*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**17000**		290	26	ug/Kg	☼	12/17/18 15:22	12/19/18 14:06	50
Benzo[a]anthracene	**340**		290	45	ug/Kg	☼	12/17/18 15:22	12/19/18 14:06	50
Benzo[a]pyrene	**260**	**J**	290	23	ug/Kg	☼	12/17/18 15:22	12/19/18 14:06	50
Benzo[b]fluoranthene	**230**	**J**	290	35	ug/Kg	☼	12/17/18 15:22	12/19/18 14:06	50
Benzo[k]fluoranthene	ND		290	35	ug/Kg	☼	12/17/18 15:22	12/19/18 14:06	50
Chrysene	**1400**		290	88	ug/Kg	☼	12/17/18 15:22	12/19/18 14:06	50
Dibenz(a,h)anthracene	**110**	**J**	290	42	ug/Kg	☼	12/17/18 15:22	12/19/18 14:06	50
Indeno[1,2,3-cd]pyrene	**53**	**J**	290	35	ug/Kg	☼	12/17/18 15:22	12/19/18 14:06	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*85*		*57 - 120*	*12/17/18 15:22*	*12/19/18 14:06*	*50*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		18	7.3	mg/Kg	☼	12/12/18 14:30	12/14/18 17:30	1
C6-C8 Aliphatics	**9.6**	**J**	18	7.3	mg/Kg	☼	12/12/18 14:30	12/14/18 17:30	1
C8-C10 Aliphatics	**56**		18	7.3	mg/Kg	☼	12/12/18 14:30	12/14/18 17:30	1
C10-C12 Aliphatics	**210**		180	73	mg/Kg	☼	12/12/18 14:30	12/18/18 00:38	10
C8-C10 Aromatics	**90**		18	7.3	mg/Kg	☼	12/12/18 14:30	12/14/18 17:30	1
C10-C12 Aromatics	**220**		180	73	mg/Kg	☼	12/12/18 14:30	12/18/18 00:38	10
C12-C13 Aromatics	**200**		180	73	mg/Kg	☼	12/12/18 14:30	12/18/18 00:38	10
Methyl tert-butyl ether	ND		1.8	0.91	mg/Kg	☼	12/12/18 14:30	12/14/18 17:30	1
Benzene	ND		0.18	0.091	mg/Kg	☼	12/12/18 14:30	12/14/18 17:30	1
Toluene	ND		0.18	0.091	mg/Kg	☼	12/12/18 14:30	12/14/18 17:30	1
Ethylbenzene	**1.2**		0.18	0.091	mg/Kg	☼	12/12/18 14:30	12/14/18 17:30	1
m-Xylene & p-Xylene	ND		0.37	0.18	mg/Kg	☼	12/12/18 14:30	12/14/18 17:30	1
o-Xylene	**2.1**		0.18	0.091	mg/Kg	☼	12/12/18 14:30	12/14/18 17:30	1
Naphthalene	**11**		0.91	0.46	mg/Kg	☼	12/12/18 14:30	12/14/18 17:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*85*		*60 - 140*	*12/12/18 14:30*	*12/14/18 17:30*	*1*
2,5-Dibromotoluene (fid)	*86*		*60 - 140*	*12/12/18 14:30*	*12/18/18 00:38*	*10*
2,5-Dibromotoluene (pid)	*92*		*60 - 140*	*12/12/18 14:30*	*12/14/18 17:30*	*1*
2,5-Dibromotoluene (pid)	*94*		*60 - 140*	*12/12/18 14:30*	*12/18/18 00:38*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1000**		67	31	mg/Kg	☼	12/18/18 14:01	12/20/18 17:05	1

Client Sample ID: DUP-3

Date Collected: 12/06/18 00:01
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-12

Matrix: Solid
Percent Solids: 84.7

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		50 - 150	12/18/18 14:01	12/20/18 17:05	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	370	J	1200	110	mg/Kg	☼	12/13/18 11:21	12/20/18 22:02	5
C10-C12 Aromatics	ND	*	1200	200	mg/Kg	☼	12/13/18 11:21	12/20/18 22:02	5
C12-C16 Aliphatics	2700		1200	100	mg/Kg	☼	12/13/18 11:21	12/20/18 22:02	5
C12-C16 Aromatics	590	J	1200	100	mg/Kg	☼	12/13/18 11:21	12/20/18 22:02	5
C16-C21 Aliphatics	4200	B	1200	140	mg/Kg	☼	12/13/18 11:21	12/20/18 22:02	5
C16-C21 Aromatics	2600		1200	150	mg/Kg	☼	12/13/18 11:21	12/20/18 22:02	5
C21-C34 Aliphatics	5400		1200	280	mg/Kg	☼	12/13/18 11:21	12/20/18 22:02	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	321	X	60 - 140	12/13/18 11:21	12/20/18 22:02	5
o-Terphenyl	127		60 - 140	12/13/18 11:21	12/20/18 22:02	5

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aromatics	3700	*	240	47	mg/Kg	☼	12/13/18 11:21	12/31/18 01:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	146	X	60 - 140	12/13/18 11:21	12/31/18 01:01	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	510		55	14	mg/Kg	☼	12/10/18 17:59	12/16/18 08:35	1
Motor Oil (>C24-C36)	330		55	19	mg/Kg	☼	12/10/18 17:59	12/16/18 08:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	11	X	50 - 150	12/10/18 17:59	12/16/18 08:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	84.7		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	15.3		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: Trip Blank

Lab Sample ID: 580-82469-13

Date Collected: 12/06/18 00:01

Matrix: Solid

Date Received: 12/07/18 10:58

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/17/18 17:43	12/18/18 07:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/18/18 07:21*	*1*
Trifluorotoluene (Surr)	*95*		*80 - 120*	*12/17/18 17:43*	*12/18/18 07:21*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*	*12/17/18 17:43*	*12/18/18 07:21*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*	*12/17/18 17:43*	*12/18/18 07:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 121*	*12/17/18 17:43*	*12/18/18 07:21*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/18/18 14:01	12/20/18 05:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*50 - 150*	*12/18/18 14:01*	*12/20/18 05:03*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-291370/1-A
Matrix: Solid
Analysis Batch: 291385

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291370

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/17/18 17:43	12/17/18 23:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*	*12/17/18 17:43*	*12/17/18 23:55*	*1*
Trifluorotoluene (Surr)	*100*		*80 - 120*	*12/17/18 17:43*	*12/17/18 23:55*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*	*12/17/18 17:43*	*12/17/18 23:55*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*12/17/18 17:43*	*12/17/18 23:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 121*	*12/17/18 17:43*	*12/17/18 23:55*	*1*

Lab Sample ID: LCS 580-291370/2-A
Matrix: Solid
Analysis Batch: 291385

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291370

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			800	832		ug/Kg		104	79 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
Trifluorotoluene (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 121*

Lab Sample ID: LCSD 580-291370/3-A
Matrix: Solid
Analysis Batch: 291385

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291370

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			800	812		ug/Kg		101	79 - 135	2	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*80 - 120*
Trifluorotoluene (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 121*

Lab Sample ID: 580-82469-1 MS
Matrix: Solid
Analysis Batch: 291385

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 291370

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	ND	F2 F1	575	529		ug/Kg	☼	92	79 - 135		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
Trifluorotoluene (Surr)	*97*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 580-82469-1 MS
Matrix: Solid
Analysis Batch: 291385

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 291370

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	106		80 - 121

Lab Sample ID: 580-82469-1 MSD
Matrix: Solid
Analysis Batch: 291385

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 291370

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND	F2 F1	575	281	F2 F1	ug/Kg	☼	49	79 - 135	61	15

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
Trifluorotoluene (Surr)	96		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	99		80 - 120
1,2-Dichloroethane-d4 (Surr)	105		80 - 121

Lab Sample ID: MB 580-291435/1-A
Matrix: Solid
Analysis Batch: 291452

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291435

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/18/18 12:00	12/18/18 16:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120	12/18/18 12:00	12/18/18 16:04	1
Trifluorotoluene (Surr)	97		80 - 120	12/18/18 12:00	12/18/18 16:04	1
4-Bromofluorobenzene (Surr)	100		80 - 120	12/18/18 12:00	12/18/18 16:04	1
Dibromofluoromethane (Surr)	97		80 - 120	12/18/18 12:00	12/18/18 16:04	1
1,2-Dichloroethane-d4 (Surr)	107		80 - 121	12/18/18 12:00	12/18/18 16:04	1

Lab Sample ID: LCS 580-291435/2-A
Matrix: Solid
Analysis Batch: 291452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291435

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			800	807		ug/Kg		101	79 - 135		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
Trifluorotoluene (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
1,2-Dichloroethane-d4 (Surr)	104		80 - 121

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-291435/3-A
Matrix: Solid
Analysis Batch: 291452

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291435

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			800	803		ug/Kg		100	79 - 135	1	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*80 - 120*
Trifluorotoluene (Surr)	*94*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 121*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-290875/1-A
Matrix: Solid
Analysis Batch: 291157

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290875

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		5.0	0.45	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Chrysene	ND		5.0	1.5	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		12/12/18 09:17	12/14/18 14:28	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		12/12/18 09:17	12/14/18 14:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*101*		*57 - 120*	*12/12/18 09:17*	*12/14/18 14:28*	*1*

Lab Sample ID: LCS 580-290875/2-A
Matrix: Solid
Analysis Batch: 291157

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290875

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene			1000	1050		ug/Kg		105	68 - 120
Benzo[a]anthracene			1000	1100		ug/Kg		110	66 - 120
Benzo[a]pyrene			1000	1040		ug/Kg		104	72 - 124
Benzo[b]fluoranthene			1000	964		ug/Kg		96	63 - 121
Benzo[k]fluoranthene			1000	965		ug/Kg		97	63 - 123
Chrysene			1000	908		ug/Kg		91	69 - 120
Dibenz(a,h)anthracene			1000	993		ug/Kg		99	70 - 125
Indeno[1,2,3-cd]pyrene			1000	891		ug/Kg		89	65 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*96*		*57 - 120*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: 580-82469-1 MS
Matrix: Solid
Analysis Batch: 291323

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 290875

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	96	J	1050	1020		ug/Kg	☼	88	68 - 120
Benzo[a]anthracene	40	J	1050	1290		ug/Kg	☼	119	66 - 120
Benzo[a]pyrene	71	J F1	1050	813	F1	ug/Kg	☼	71	72 - 124
Benzo[b]fluoranthene	47	J F2 F1	1050	752		ug/Kg	☼	67	63 - 121
Benzo[k]fluoranthene	ND		1050	777		ug/Kg	☼	74	63 - 123
Chrysene	190		1050	1090		ug/Kg	☼	86	69 - 120
Dibenz(a,h)anthracene	26	J	1050	850		ug/Kg	☼	79	70 - 125
Indeno[1,2,3-cd]pyrene	ND		1050	797		ug/Kg	☼	76	65 - 121

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Terphenyl-d14	*108*		*57 - 120*

Lab Sample ID: 580-82469-1 MSD
Matrix: Solid
Analysis Batch: 291323

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 290875

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Methylnaphthalene	96	J	1050	1010		ug/Kg	☼	87	68 - 120	1	12
Benzo[a]anthracene	40	J	1050	1200		ug/Kg	☼	110	66 - 120	7	14
Benzo[a]pyrene	71	J F1	1050	807	F1	ug/Kg	☼	70	72 - 124	1	12
Benzo[b]fluoranthene	47	J F2 F1	1050	669	F2 F1	ug/Kg	☼	59	63 - 121	12	10
Benzo[k]fluoranthene	ND		1050	693		ug/Kg	☼	66	63 - 123	11	15
Chrysene	190		1050	1040		ug/Kg	☼	81	69 - 120	5	10
Dibenz(a,h)anthracene	26	J	1050	771		ug/Kg	☼	71	70 - 125	10	13
Indeno[1,2,3-cd]pyrene	ND		1050	779		ug/Kg	☼	74	65 - 121	2	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Terphenyl-d14	*110*		*57 - 120*

Lab Sample ID: MB 580-291346/1-A
Matrix: Solid
Analysis Batch: 291532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291346

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		5.0	0.45	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Chrysene	ND		5.0	1.5	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		12/17/18 15:22	12/19/18 11:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*98*		*57 - 120*	*12/17/18 15:22*	*12/19/18 11:09*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-291346/2-A
Matrix: Solid
Analysis Batch: 291532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291346

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	1000	982		ug/Kg		98	68 - 120
Benzo[a]anthracene	1000	974		ug/Kg		97	66 - 120
Benzo[a]pyrene	1000	973		ug/Kg		97	72 - 124
Benzo[b]fluoranthene	1000	1020		ug/Kg		102	63 - 121
Benzo[k]fluoranthene	1000	1060		ug/Kg		106	63 - 123
Chrysene	1000	973		ug/Kg		97	69 - 120
Dibenz(a,h)anthracene	1000	1030		ug/Kg		103	70 - 125
Indeno[1,2,3-cd]pyrene	1000	1040		ug/Kg		104	65 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*96*		*57 - 120*

Lab Sample ID: MB 580-291571/1-A
Matrix: Solid
Analysis Batch: 291993

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291571

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Chrysene	ND		5.0	1.5	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		12/19/18 14:43	12/24/18 15:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*90*		*57 - 120*	*12/19/18 14:43*	*12/24/18 15:57*	*1*

Lab Sample ID: LCS 580-291571/2-A
Matrix: Solid
Analysis Batch: 292017

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291571

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1000	835		ug/Kg		84	66 - 120
Benzo[a]pyrene	1000	919		ug/Kg		92	72 - 124
Benzo[b]fluoranthene	1000	975		ug/Kg		97	63 - 121
Benzo[k]fluoranthene	1000	1180		ug/Kg		118	63 - 123
Chrysene	1000	971		ug/Kg		97	69 - 120
Dibenz(a,h)anthracene	1000	1040		ug/Kg		104	70 - 125
Indeno[1,2,3-cd]pyrene	1000	1000		ug/Kg		100	65 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*81*		*57 - 120*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: 580-82469-2 MS
Matrix: Solid
Analysis Batch: 291993

Client Sample ID: DPE-PSS-W11-3
Prep Type: Total/NA
Prep Batch: 291571

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	ND		1030	949		ug/Kg	☼	93	66 - 120
Benzo[a]pyrene	ND		1030	988		ug/Kg	☼	96	72 - 124
Benzo[b]fluoranthene	ND	F2	1030	866		ug/Kg	☼	84	63 - 121
Benzo[k]fluoranthene	ND		1030	1100		ug/Kg	☼	107	63 - 123
Chrysene	ND		1030	960		ug/Kg	☼	94	69 - 120
Dibenz(a,h)anthracene	ND		1030	1160		ug/Kg	☼	114	70 - 125
Indeno[1,2,3-cd]pyrene	ND		1030	1200		ug/Kg	☼	117	65 - 121

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Terphenyl-d14	*84*		*57 - 120*

Lab Sample ID: 580-82469-2 MSD
Matrix: Solid
Analysis Batch: 291993

Client Sample ID: DPE-PSS-W11-3
Prep Type: Total/NA
Prep Batch: 291571

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene	ND		1070	987		ug/Kg	☼	92	66 - 120	4	14
Benzo[a]pyrene	ND		1070	1030		ug/Kg	☼	96	72 - 124	4	12
Benzo[b]fluoranthene	ND	F2	1070	1050	F2	ug/Kg	☼	98	63 - 121	19	10
Benzo[k]fluoranthene	ND		1070	986		ug/Kg	☼	92	63 - 123	10	15
Chrysene	ND		1070	990		ug/Kg	☼	92	69 - 120	3	10
Dibenz(a,h)anthracene	ND		1070	1230		ug/Kg	☼	115	70 - 125	5	13
Indeno[1,2,3-cd]pyrene	ND		1070	1250		ug/Kg	☼	116	65 - 121	4	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Terphenyl-d14	*83*		*57 - 120*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Lab Sample ID: 580-82469-1 MS
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 563169

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	ND		9.66	11.6		mg/Kg	☼	120	70 - 130
C6-C8 Aliphatics	ND	F1	6.44	8.53	F1	mg/Kg	☼	133	70 - 130
C8-C10 Aliphatics	3.0	J F1	19.3	25.7		mg/Kg	☼	118	70 - 130
C10-C12 Aliphatics	19	F1	6.44	12.2	F1	mg/Kg	☼	-112	70 - 130
C8-C10 Aromatics	6.1	J F1	16.1	26.3		mg/Kg	☼	125	70 - 130
C10-C12 Aromatics	9.0	F1	3.22	11.7		mg/Kg	☼	83	70 - 130
C12-C13 Aromatics	9.4	F1	3.22	13.0		mg/Kg	☼	110	70 - 130
Naphthalene	0.59		3.22	3.83		mg/Kg	☼	101	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*75*		*60 - 140*
2,5-Dibromotoluene (pid)	*79*		*60 - 140*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: 580-82469-1 MSD — **Client Sample ID: DPE-PSS-W11-2**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 563684 — **Prep Batch: 563169**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics	ND		9.66	11.9		mg/Kg	☼	123	70 - 130	3	25
C6-C8 Aliphatics	ND	F1	6.44	8.58	F1	mg/Kg	☼	133	70 - 130	1	25
C8-C10 Aliphatics	3.0	J F1	19.3	25.7		mg/Kg	☼	118	70 - 130	0	25
C10-C12 Aliphatics	19	F1	6.44	12.9	F1	mg/Kg	☼	-100	70 - 130	6	25
C8-C10 Aromatics	6.1	J F1	16.1	26.0		mg/Kg	☼	123	70 - 130	1	25
C10-C12 Aromatics	9.0	F1	3.22	11.7		mg/Kg	☼	82	70 - 130	0	25
C12-C13 Aromatics	9.4	F1	3.22	12.4		mg/Kg	☼	93	70 - 130	4	25
Naphthalene	0.59		3.22	4.29		mg/Kg	☼	115	70 - 130	11	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*71*		*60 - 140*
2,5-Dibromotoluene (pid)	*76*		*60 - 140*

Lab Sample ID: MB 490-563684/30 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 563684

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C6-C8 Aliphatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C8-C10 Aliphatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C10-C12 Aliphatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C8-C10 Aromatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C10-C12 Aromatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C12-C13 Aromatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
Methyl tert-butyl ether	ND		0.50	0.25	mg/Kg			12/17/18 16:31	1
Benzene	ND		0.050	0.025	mg/Kg			12/17/18 16:31	1
Toluene	ND		0.050	0.025	mg/Kg			12/17/18 16:31	1
Ethylbenzene	ND		0.050	0.025	mg/Kg			12/17/18 16:31	1
m-Xylene & p-Xylene	ND		0.10	0.050	mg/Kg			12/17/18 16:31	1
o-Xylene	ND		0.050	0.025	mg/Kg			12/17/18 16:31	1
Naphthalene	ND		0.25	0.13	mg/Kg			12/17/18 16:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*93*		*60 - 140*		*12/17/18 16:31*	*1*
2,5-Dibromotoluene (pid)	*96*		*60 - 140*		*12/17/18 16:31*	*1*

Lab Sample ID: MB 490-563684/9 — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 563684

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
C6-C8 Aliphatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
C8-C10 Aliphatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
C10-C12 Aliphatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
C8-C10 Aromatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 490-563684/9
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aromatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
C12-C13 Aromatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
Methyl tert-butyl ether	ND		0.50	0.25	mg/Kg			12/14/18 13:41	1
Benzene	ND		0.050	0.025	mg/Kg			12/14/18 13:41	1
Toluene	ND		0.050	0.025	mg/Kg			12/14/18 13:41	1
Ethylbenzene	ND		0.050	0.025	mg/Kg			12/14/18 13:41	1
m-Xylene & p-Xylene	ND		0.10	0.050	mg/Kg			12/14/18 13:41	1
o-Xylene	ND		0.050	0.025	mg/Kg			12/14/18 13:41	1
Naphthalene	ND		0.25	0.13	mg/Kg			12/14/18 13:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*94*		*60 - 140*		*12/14/18 13:41*	*1*
2,5-Dibromotoluene (pid)	*97*		*60 - 140*		*12/14/18 13:41*	*1*

Lab Sample ID: LCS 490-563684/28
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	15.0	13.3		mg/Kg		89	70 - 130
C6-C8 Aliphatics	10.0	8.88		mg/Kg		89	70 - 130
C8-C10 Aliphatics	30.0	29.3		mg/Kg		98	70 - 130
C10-C12 Aliphatics	10.0	11.5		mg/Kg		115	70 - 130
C8-C10 Aromatics	25.0	25.7		mg/Kg		103	70 - 130
C10-C12 Aromatics	5.00	5.53		mg/Kg		111	70 - 130
C12-C13 Aromatics	5.00	5.03		mg/Kg		101	70 - 130
Naphthalene	5.00	5.30		mg/Kg		106	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*95*		*60 - 140*
2,5-Dibromotoluene (pid)	*96*		*60 - 140*

Lab Sample ID: LCS 490-563684/7
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	15.0	14.8		mg/Kg		98	70 - 130
C6-C8 Aliphatics	10.0	9.28		mg/Kg		93	70 - 130
C8-C10 Aliphatics	30.0	30.1		mg/Kg		100	70 - 130
C10-C12 Aliphatics	10.0	10.9		mg/Kg		109	70 - 130
C8-C10 Aromatics	25.0	25.6		mg/Kg		102	70 - 130
C10-C12 Aromatics	5.00	5.47		mg/Kg		109	70 - 130
C12-C13 Aromatics	5.00	5.14		mg/Kg		103	70 - 130
Naphthalene	5.00	5.40		mg/Kg		108	70 - 130

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 490-563684/7
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,5-Dibromotoluene (fid)	98		60 - 140
2,5-Dibromotoluene (pid)	99		60 - 140

Lab Sample ID: LCSD 490-563684/29
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics	15.0	13.4		mg/Kg		89	70 - 130	1	25
C6-C8 Aliphatics	10.0	9.08		mg/Kg		91	70 - 130	2	25
C8-C10 Aliphatics	30.0	30.2		mg/Kg		101	70 - 130	3	25
C10-C12 Aliphatics	10.0	11.6		mg/Kg		116	70 - 130	1	25
C8-C10 Aromatics	25.0	26.1		mg/Kg		104	70 - 130	2	25
C10-C12 Aromatics	5.00	5.66		mg/Kg		113	70 - 130	2	25
C12-C13 Aromatics	5.00	5.20		mg/Kg		104	70 - 130	3	25
Naphthalene	5.00	5.35		mg/Kg		107	70 - 130	1	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,5-Dibromotoluene (fid)	94		60 - 140
2,5-Dibromotoluene (pid)	96		60 - 140

Lab Sample ID: LCSD 490-563684/8
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics	15.0	15.1		mg/Kg		100	70 - 130	2	25
C6-C8 Aliphatics	10.0	9.37		mg/Kg		94	70 - 130	1	25
C8-C10 Aliphatics	30.0	30.9		mg/Kg		103	70 - 130	2	25
C10-C12 Aliphatics	10.0	11.6		mg/Kg		116	70 - 130	6	25
C8-C10 Aromatics	25.0	26.2		mg/Kg		105	70 - 130	3	25
C10-C12 Aromatics	5.00	5.88		mg/Kg		118	70 - 130	7	25
C12-C13 Aromatics	5.00	5.40		mg/Kg		108	70 - 130	5	25
Naphthalene	5.00	5.50		mg/Kg		110	70 - 130	2	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,5-Dibromotoluene (fid)	97		60 - 140
2,5-Dibromotoluene (pid)	97		60 - 140

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-291075/1-A
Matrix: Solid
Analysis Batch: 291579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291075

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/13/18 15:50	12/19/18 11:59	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-291075/1-A
Matrix: Solid
Analysis Batch: 291579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291075

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		50 - 150	12/13/18 15:50	12/19/18 11:59	1
Trifluorotoluene (Surr)	107		50 - 150	12/13/18 15:50	12/19/18 11:59	1

Lab Sample ID: LCS 580-291075/2-A
Matrix: Solid
Analysis Batch: 291579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291075

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	36.7		mg/Kg		92	80 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	81		50 - 150
Trifluorotoluene (Surr)	115		50 - 150

Lab Sample ID: LCSD 580-291075/3-A
Matrix: Solid
Analysis Batch: 291579

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291075

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	35.1		mg/Kg		88	80 - 120	5	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	67		50 - 150
Trifluorotoluene (Surr)	112		50 - 150

Lab Sample ID: MB 580-291432/1-A
Matrix: Solid
Analysis Batch: 291607

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291432

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/18/18 14:01	12/20/18 03:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	73		50 - 150	12/18/18 14:01	12/20/18 03:42	1

Lab Sample ID: LCS 580-291432/2-A
Matrix: Solid
Analysis Batch: 291607

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291432

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	34.6		mg/Kg		86	80 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	78		50 - 150

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-291432/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 291607 — **Prep Batch: 291432**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	33.4		mg/Kg		83	80 - 120	4	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*74*		*50 - 150*

Lab Sample ID: 580-82469-1 MS — **Client Sample ID: DPE-PSS-W11-2**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 291579 — **Prep Batch: 291432**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline	110		49.4	156		mg/Kg	☼	87	80 - 120		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*50 - 150*

Lab Sample ID: 580-82469-1 MSD — **Client Sample ID: DPE-PSS-W11-2**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 291579 — **Prep Batch: 291432**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	110		49.4	153		mg/Kg	☼	82	80 - 120	2	10

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*87*		*50 - 150*

Lab Sample ID: MB 580-291680/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 291790 — **Prep Batch: 291680**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/20/18 10:00	12/20/18 12:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*71*		*50 - 150*	*12/20/18 10:00*	*12/20/18 12:29*	*1*
Trifluorotoluene (Surr)	*113*		*50 - 150*	*12/20/18 10:00*	*12/20/18 12:29*	*1*

Lab Sample ID: LCS 580-291680/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 291790 — **Prep Batch: 291680**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	35.0		mg/Kg		88	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*74*		*50 - 150*
Trifluorotoluene (Surr)	*112*		*50 - 150*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-291680/3-A
Matrix: Solid
Analysis Batch: 291790

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291680

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	34.0		mg/Kg		85	80 - 120	3	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*74*		*50 - 150*
Trifluorotoluene (Surr)	*107*		*50 - 150*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-291025/1-B
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		15	1.4	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C10-C12 Aromatics	ND		15	2.5	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C12-C16 Aliphatics	ND		15	1.3	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C12-C16 Aromatics	ND		15	1.3	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C16-C21 Aliphatics	2.15	J	15	1.8	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C16-C21 Aromatics	ND		15	1.9	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C21-C34 Aliphatics	ND		15	3.6	mg/Kg		12/13/18 11:21	12/20/18 17:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*91*		*60 - 140*	*12/13/18 11:21*	*12/20/18 17:27*	*1*
o-Terphenyl	*93*		*60 - 140*	*12/13/18 11:21*	*12/20/18 17:27*	*1*

Lab Sample ID: MB 580-291025/1-B
Matrix: Solid
Analysis Batch: 292266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aromatics	ND		15	3.0	mg/Kg		12/13/18 11:21	12/29/18 15:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*98*		*60 - 140*	*12/13/18 11:21*	*12/29/18 15:45*	*1*

Lab Sample ID: LCS 580-291025/2-B
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C12 Aliphatics			7.57	6.10	J	mg/Kg		81	70 - 130
C10-C12 Aromatics			7.57	4.57	J *	mg/Kg		60	70 - 130
C12-C16 Aliphatics			15.1	14.3	J	mg/Kg		94	70 - 130
C12-C16 Aromatics			22.7	16.0		mg/Kg		71	70 - 130
C16-C21 Aliphatics			22.7	23.4		mg/Kg		103	70 - 130
C16-C21 Aromatics			37.8	29.9		mg/Kg		79	70 - 130
C21-C34 Aliphatics			45.4	47.1		mg/Kg		104	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctadecane	95		60 - 140
o-Terphenyl	91		60 - 140

Lab Sample ID: LCS 580-291025/2-B
Matrix: Solid
Analysis Batch: 292266

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C21-C34 Aromatics			60.5	52.7		mg/Kg		87	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	93		60 - 140

Lab Sample ID: LCSD 580-291025/3-B
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics			7.57	6.10	J	mg/Kg		81	70 - 130	0	25
C10-C12 Aromatics			7.57	4.67	J *	mg/Kg		62	70 - 130	2	25
C12-C16 Aliphatics			15.1	12.9	J	mg/Kg		85	70 - 130	10	25
C12-C16 Aromatics			22.7	16.4		mg/Kg		72	70 - 130	2	25
C16-C21 Aliphatics			22.7	21.8		mg/Kg		96	70 - 130	7	25
C16-C21 Aromatics			37.8	30.6		mg/Kg		81	70 - 130	2	25
C21-C34 Aliphatics			45.4	46.5		mg/Kg		102	70 - 130	1	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctadecane	95		60 - 140
o-Terphenyl	93		60 - 140

Lab Sample ID: LCSD 580-291025/3-B
Matrix: Solid
Analysis Batch: 292266

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C21-C34 Aromatics			60.5	54.0		mg/Kg		89	70 - 130	2	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	93		60 - 140

Lab Sample ID: 580-82469-1 MS
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 291025

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
C10-C12 Aliphatics	ND		2.62	ND		mg/Kg	☼	NC	70 - 130		
C10-C12 Aromatics	ND	*	2.62	ND		mg/Kg	☼	NC	70 - 130		
C12-C16 Aliphatics	90	J	5.24	92.2	J 4	mg/Kg	☼	36	70 - 130		
C12-C16 Aromatics	ND		7.86	ND		mg/Kg	☼	NC	70 - 130		
C16-C21 Aliphatics	100	J B	7.86	108	J 4	mg/Kg	☼	70	70 - 130		
C16-C21 Aromatics	77	J	13.1	84.9	J 4	mg/Kg	☼	63	70 - 130		
C21-C34 Aliphatics	550		15.7	583	4	mg/Kg	☼	197	70 - 130		

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: 580-82469-1 MS
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 291025

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctadecane	*96*		*60 - 140*
o-Terphenyl	*87*		*60 - 140*

Lab Sample ID: 580-82469-1 MSD
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 291025

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics	ND		2.62	ND		mg/Kg	☼	NC	70 - 130	NC	25
C10-C12 Aromatics	ND	*	2.62	ND		mg/Kg	☼	NC	70 - 130	NC	25
C12-C16 Aliphatics	90	J	5.24	74.6	J 4	mg/Kg	☼	-300	70 - 130	21	25
C12-C16 Aromatics	ND		7.85	ND		mg/Kg	☼	NC	70 - 130	NC	25
C16-C21 Aliphatics	100	J B	7.85	87.5	J 4	mg/Kg	☼	-195	70 - 130	21	25
C16-C21 Aromatics	77	J	13.1	72.5	J 4	mg/Kg	☼	-32	70 - 130	16	25
C21-C34 Aliphatics	550		15.7	476	J 4	mg/Kg	☼	-485	70 - 130	20	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctadecane	*81*		*60 - 140*
o-Terphenyl	*79*		*60 - 140*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RA

Lab Sample ID: 580-82469-1 MS
Matrix: Solid
Analysis Batch: 292266

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 291025

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C21-C34 Aromatics - RA	470		21.0	517	4	mg/Kg	☼	214	70 - 130

Lab Sample ID: 580-82469-1 MSD
Matrix: Solid
Analysis Batch: 292266

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 291025

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C21-C34 Aromatics - RA	470		20.9	437	4	mg/Kg	☼	-165	70 - 130	17	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-290729/1-B
Matrix: Solid
Analysis Batch: 291268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290729

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		12/10/18 17:59	12/16/18 01:33	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		12/10/18 17:59	12/16/18 01:33	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 580-290729/1-B
Matrix: Solid
Analysis Batch: 291268

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290729

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	110		50 - 150	12/10/18 17:59	12/16/18 01:33	1

Lab Sample ID: LCS 580-290729/2-B
Matrix: Solid
Analysis Batch: 291268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290729

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	464		mg/Kg		93	64 - 127		
Motor Oil (>C24-C36)			500	496		mg/Kg		99	70 - 125		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	96		50 - 150

Lab Sample ID: LCSD 580-290729/3-B
Matrix: Solid
Analysis Batch: 291268

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290729

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	481		mg/Kg		96	64 - 127	4	16
Motor Oil (>C24-C36)			500	496		mg/Kg		99	70 - 125	0	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	85		50 - 150

Lab Sample ID: 580-82469-10 DU
Matrix: Solid
Analysis Batch: 291268

Client Sample ID: DPE-PSS-W8-8.5
Prep Type: Total/NA
Prep Batch: 290729

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	120			313	F3	mg/Kg	☼			89	35
Motor Oil (>C24-C36)	70			187	F3	mg/Kg	☼			91	35

Surrogate	DU %Recovery	DU Qualifier	Limits
o-Terphenyl	10	X	50 - 150

Lab Sample ID: MB 580-290849/1-B
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290849

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		12/11/18 16:51	12/18/18 14:50	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		12/11/18 16:51	12/18/18 14:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	124		50 - 150	12/11/18 16:51	12/18/18 14:50	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-290849/2-B
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290849

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	502		mg/Kg		100	64 - 127		
Motor Oil (>C24-C36)			500	534		mg/Kg		107	70 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*110*		*50 - 150*

Lab Sample ID: LCSD 580-290849/3-B
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290849

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	527		mg/Kg		105	64 - 127	5	16
Motor Oil (>C24-C36)			500	570		mg/Kg		114	70 - 125	7	17

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*108*		*50 - 150*

Lab Sample ID: 580-82469-1 MS
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 290849

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)	ND		507	ND		mg/Kg	☼	NC	70 - 125		
Motor Oil (>C24-C36)	2000	J F1	507	2240	J F1	mg/Kg	☼	49	64 - 127		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*0*	*X*	*50 - 150*

Lab Sample ID: 580-82469-1 MSD
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: DPE-PSS-W11-2
Prep Type: Total/NA
Prep Batch: 290849

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	ND		498	ND		mg/Kg	☼	NC	70 - 125	NC	16
Motor Oil (>C24-C36)	2000	J F1	498	1950	J F1	mg/Kg	☼	-7	64 - 127	14	17

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
o-Terphenyl	*0*	*X*	*50 - 150*

Lab Sample ID: 580-82469-4 DU
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: DPE-PSS-V12-4
Prep Type: Total/NA
Prep Batch: 290849

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	ND			ND		mg/Kg	☼			NC	35
Motor Oil (>C24-C36)	ND			ND		mg/Kg	☼			NC	35

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 580-82469-4 DU
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: DPE-PSS-V12-4
Prep Type: Total/NA
Prep Batch: 290849

Surrogate	DU %Recovery	DU Qualifier	Limits
o-Terphenyl	*112*		*50 - 150*

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82469-1

Client Sample ID: DPE-PSS-W11-2
Date Collected: 12/06/18 08:48
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-W11-2
Date Collected: 12/06/18 08:48
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-1
Matrix: Solid
Percent Solids: 94.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	291385	12/18/18 01:13	ASJ	TAL SEA
Total/NA	Prep	3546			290875	12/12/18 09:17	DSO	TAL SEA
Total/NA	Analysis	8270D SIM		25	291323	12/17/18 19:06	T1W	TAL SEA
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	563684	12/17/18 17:03	S1S	TAL NSH
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/20/18 00:32	CJB	TAL SEA
Total/NA	Prep	3550B			291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		5	291634	12/20/18 19:07	Z1R	TAL SEA
Total/NA	Prep	3550B	RA		291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac	RA		291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH	RA	1	292266	12/29/18 21:37	ERZ	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		50	291407	12/18/18 15:51	T1W	TAL SEA

Client Sample ID: DPE-PSS-W11-3
Date Collected: 12/06/18 08:58
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-W11-3
Date Collected: 12/06/18 08:58
Date Received: 12/07/18 10:58

Lab Sample ID: 580-82469-2
Matrix: Solid
Percent Solids: 91.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	291385	12/18/18 02:32	ASJ	TAL SEA
Total/NA	Prep	3546			291571	12/19/18 14:43	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	291993	12/24/18 21:27	W1T	TAL SEA
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 23:39	CJB	TAL SEA

Client Sample ID: DPE-PSS-W11-3

Lab Sample ID: 580-82469-2
Date Collected: 12/06/18 08:58
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 91.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 16:51	T1W	TAL SEA

Client Sample ID: DPE-PSS-W11-6

Lab Sample ID: 580-82469-3
Date Collected: 12/06/18 09:10
Matrix: Solid
Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-W11-6

Lab Sample ID: 580-82469-3
Date Collected: 12/06/18 09:10
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 92.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	291385	12/18/18 02:58	ASJ	TAL SEA
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 22:44	CJB	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 17:11	T1W	TAL SEA

Client Sample ID: DPE-PSS-V12-4

Lab Sample ID: 580-82469-4
Date Collected: 12/06/18 10:35
Matrix: Solid
Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-V12-4

Lab Sample ID: 580-82469-4
Date Collected: 12/06/18 10:35
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 90.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	291385	12/18/18 03:25	ASJ	TAL SEA
Total/NA	Prep	3546			291346	12/17/18 15:22	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	291532	12/19/18 12:50	ADB	TAL SEA
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	563684	12/14/18 15:52	S1S	TAL NSH
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA

Client Sample ID: DPE-PSS-V12-4

Lab Sample ID: 580-82469-4
Date Collected: 12/06/18 10:35
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 90.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 21:49	CJB	TAL SEA
Total/NA	Prep	3550B			291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291634	12/20/18 20:22	Z1R	TAL SEA
Total/NA	Prep	3550B	RA		291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac	RA		291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH	RA	1	292266	12/29/18 22:52	ERZ	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 17:32	T1W	TAL SEA

Client Sample ID: DPE-PSS-V12-6

Lab Sample ID: 580-82469-5
Date Collected: 12/06/18 10:45
Matrix: Solid
Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-V12-6

Lab Sample ID: 580-82469-5
Date Collected: 12/06/18 10:45
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 87.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	291385	12/18/18 03:51	ASJ	TAL SEA
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 22:17	CJB	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 18:32	T1W	TAL SEA

Client Sample ID: DPE-PSS-Y9-7.5

Lab Sample ID: 580-82469-6
Date Collected: 12/06/18 13:10
Matrix: Solid
Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82469-1

Client Sample ID: DPE-PSS-Y9-7.5

Lab Sample ID: 580-82469-6
Date Collected: 12/06/18 13:10
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 72.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	291385	12/18/18 04:17	ASJ	TAL SEA
Total/NA	Prep	3546			291571	12/19/18 14:43	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	291993	12/24/18 22:43	W1T	TAL SEA
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/19/18 23:11	CJB	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 18:52	T1W	TAL SEA

Client Sample ID: DPE-PSS-Y9-9

Lab Sample ID: 580-82469-7
Date Collected: 12/06/18 13:12
Matrix: Solid
Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-Y9-9

Lab Sample ID: 580-82469-7
Date Collected: 12/06/18 13:12
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 85.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	291385	12/18/18 04:43	ASJ	TAL SEA
Total/NA	Prep	3546			291346	12/17/18 15:22	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	291532	12/19/18 13:15	ADB	TAL SEA
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	563684	12/14/18 16:25	S1S	TAL NSH
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	563684	12/17/18 21:24	S1S	TAL NSH
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291579	12/20/18 00:06	CJB	TAL SEA
Total/NA	Prep	3550B			291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		5	291634	12/20/18 20:47	Z1R	TAL SEA
Total/NA	Prep	3550B	RA		291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac	RA		291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH	RA	1	292296	12/31/18 00:13	JCM	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		20	291407	12/18/18 19:12	T1W	TAL SEA

Client Sample ID: DPE-PSS-Y9-14.5

Lab Sample ID: 580-82469-8
Date Collected: 12/06/18 13:20
Matrix: Solid
Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-Y9-14.5

Lab Sample ID: 580-82469-8
Date Collected: 12/06/18 13:20
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 70.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	291385	12/18/18 05:09	ASJ	TAL SEA
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291607	12/20/18 05:30	CJB	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 19:32	T1W	TAL SEA

Client Sample ID: DPE-PSS-W8-6.5

Lab Sample ID: 580-82469-9
Date Collected: 12/06/18 14:36
Matrix: Solid
Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-W8-6.5

Lab Sample ID: 580-82469-9
Date Collected: 12/06/18 14:36
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 80.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	291385	12/18/18 05:36	ASJ	TAL SEA
Total/NA	Prep	3546			291346	12/17/18 15:22	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	291532	12/19/18 13:41	ADB	TAL SEA
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	563684	12/14/18 16:58	S1S	TAL NSH
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		20	563684	12/17/18 22:28	S1S	TAL NSH
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	563684	12/17/18 23:01	S1S	TAL NSH
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291790	12/20/18 17:33	TL1	TAL SEA
Total/NA	Prep	3550B			291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291634	12/20/18 21:12	Z1R	TAL SEA
Total/NA	Prep	3550B	RA		291025	12/13/18 11:21	KMS	TAL SEA

Client Sample ID: DPE-PSS-W8-6.5

Lab Sample ID: 580-82469-9
Date Collected: 12/06/18 14:36
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 80.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Fraction	EPH Frac	RA		291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH	RA	1	292296	12/31/18 00:37	JCM	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 19:52	T1W	TAL SEA

Client Sample ID: DPE-PSS-W8-8.5

Lab Sample ID: 580-82469-10
Date Collected: 12/06/18 14:38
Matrix: Solid
Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-W8-8.5

Lab Sample ID: 580-82469-10
Date Collected: 12/06/18 14:38
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035	DL		291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C	DL	1	291452	12/18/18 17:49	CJ	TAL SEA
Total/NA	Prep	3546			291571	12/19/18 14:43	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	291993	12/24/18 23:08	W1T	TAL SEA
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291790	12/20/18 17:59	TL1	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 07:35	Z1R	TAL SEA

Client Sample ID: DPE-PSS-W8-19.5

Lab Sample ID: 580-82469-11
Date Collected: 12/06/18 14:58
Matrix: Solid
Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-W8-19.5

Lab Sample ID: 580-82469-11
Date Collected: 12/06/18 14:58
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 88.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035	RA		291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C	RA	1	291452	12/18/18 17:22	CJ	TAL SEA
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82469-1

Client Sample ID: DPE-PSS-W8-19.5

Lab Sample ID: 580-82469-11
Date Collected: 12/06/18 14:58
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 88.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	291790	12/20/18 16:38	TL1	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 08:15	Z1R	TAL SEA

Client Sample ID: DUP-3

Lab Sample ID: 580-82469-12
Date Collected: 12/06/18 00:01
Matrix: Solid
Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DUP-3

Lab Sample ID: 580-82469-12
Date Collected: 12/06/18 00:01
Matrix: Solid
Date Received: 12/07/18 10:58
Percent Solids: 84.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291370	12/17/18 17:43	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	291385	12/18/18 06:54	ASJ	TAL SEA
Total/NA	Prep	3546			291346	12/17/18 15:22	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		50	291532	12/19/18 14:06	ADB	TAL SEA
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	563684	12/14/18 17:30	S1S	TAL NSH
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	563684	12/18/18 00:38	S1S	TAL NSH
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291790	12/20/18 17:05	TL1	TAL SEA
Total/NA	Prep	3550B			291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		5	291634	12/20/18 22:02	Z1R	TAL SEA
Total/NA	Prep	3550B	RA		291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac	RA		291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH	RA	1	292296	12/31/18 01:01	JCM	TAL SEA
Total/NA	Prep	3546			290729	12/10/18 17:59	BAH	TAL SEA
Total/NA	Cleanup	3630C			290964	12/12/18 16:49	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291268	12/16/18 08:35	Z1R	TAL SEA

Client Sample ID: Trip Blank

Lab Sample ID: 580-82469-13
Date Collected: 12/06/18 00:01
Matrix: Solid
Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291370	12/17/18 17:43	ASJ	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82469-1

Client Sample ID: Trip Blank

Lab Sample ID: 580-82469-13

Date Collected: 12/06/18 00:01

Matrix: Solid

Date Received: 12/07/18 10:58

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	291385	12/18/18 07:21	ASJ	TAL SEA
Total/NA	Prep	5035			291432	12/18/18 14:01	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291607	12/20/18 05:03	CJB	TAL SEA

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82469-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Laboratory: TestAmerica Nashville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	06-30-19
Arizona	State Program	9	AZ0473	05-05-19
Arkansas DEQ	State Program	6	88-0737	04-25-19
California	State Program	9	2938	10-31-18 *
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-19
Georgia	State Program	4	NA: NELAP & A2LA	12-31-19
Illinois	NELAP	5	200010	12-09-18 *
Iowa	State Program	7	131	04-01-20
Kansas	NELAP	7	E-10229	10-31-19
Kentucky (UST)	State Program	4	19	06-30-19
Kentucky (WW)	State Program	4	90038	12-31-18 *
Louisiana	NELAP	6	30613	06-30-19
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-19
Massachusetts	State Program	1	M-TN032	06-30-19
Minnesota	NELAP	5	047-999-345	12-31-19
Mississippi	State Program	4	N/A	06-30-19
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-19
New Hampshire	NELAP	1	2963	10-09-19
New Jersey	NELAP	2	TN965	06-30-19
New York	NELAP	2	11342	03-31-19
North Carolina (WW/SW)	State Program	4	387	12-31-19
North Dakota	State Program	8	R-146	06-30-19
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-19
Oregon	NELAP	10	TN200001	04-26-19
Pennsylvania	NELAP	3	68-00585	07-31-19
Rhode Island	State Program	1	LAO00268	12-30-19
South Carolina	State Program	4	84009 (001)	02-28-19
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-19
USDA	Federal		P330-13-00306	12-01-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82469-1

Laboratory: TestAmerica Nashville (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Utah	NELAP	8	TN00032	07-31-19
Virginia	NELAP	3	460152	06-14-19
Washington	State Program	10	C789	07-19-19
West Virginia DEP	State Program	3	219	02-28-19
Wisconsin	State Program	5	998020430	08-31-19
Wyoming (UST)	A2LA	8	453.07	12-31-19

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82469-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82469-1	DPE-PSS-W11-2	Solid	12/06/18 08:48	12/07/18 10:58
580-82469-2	DPE-PSS-W11-3	Solid	12/06/18 08:58	12/07/18 10:58
580-82469-3	DPE-PSS-W11-6	Solid	12/06/18 09:10	12/07/18 10:58
580-82469-4	DPE-PSS-V12-4	Solid	12/06/18 10:35	12/07/18 10:58
580-82469-5	DPE-PSS-V12-6	Solid	12/06/18 10:45	12/07/18 10:58
580-82469-6	DPE-PSS-Y9-7.5	Solid	12/06/18 13:10	12/07/18 10:58
580-82469-7	DPE-PSS-Y9-9	Solid	12/06/18 13:12	12/07/18 10:58
580-82469-8	DPE-PSS-Y9-14.5	Solid	12/06/18 13:20	12/07/18 10:58
580-82469-9	DPE-PSS-W8-6.5	Solid	12/06/18 14:36	12/07/18 10:58
580-82469-10	DPE-PSS-W8-8.5	Solid	12/06/18 14:38	12/07/18 10:58
580-82469-11	DPE-PSS-W8-19.5	Solid	12/06/18 14:58	12/07/18 10:58
580-82469-12	DUP-3	Solid	12/06/18 00:01	12/07/18 10:58
580-82469-13	Trip Blank	Solid	12/06/18 00:01	12/07/18 10:58

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamericainc.com

Loc: 580
82469

☐ Rush
☐ Short Hold

Chain of Custody Record

Client	Client Contact	Date	Chain of Custody Number
Arcadis	Ophelie Encelle	12/6/18	34983
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 2
1100 Olive Way Suite 800			
City Seattle	**State** WA	**Zip Code** 98101	
Sampler Jason Little	**Lab Contact** Elaine Walker		
Project Name and Location (State) Edmonds Terminal	**Billing Contact**		
Contract/Purchase Order/Quote No.			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	MeOH	Analysis (Attach list if more space is needed): Benzene EPA 8260C	NWTPH-Gx	NWTPH-Dx w/SGC	cPAHs EPA 8270D	EPH/VPH	Special Instructions/ Conditions of Receipt
DPE-PSS-W11-2	12/6/18	0848				X	2						2	X	X	X	X	X	*use standard SGC
DPE-PSS-W11-3	12/6/18	0858				X	1						1	X	X	X	X		*only analyze cPAHs
DPE-PSS-W11-6	12/6/18	0910				X	1						1	X	X	X	X		if DRO/HO detection
DPE-PSS-V12-4	12/6/18	1035				X	2						2	X	X	X	X	X	*EPH/VPH - aliphatics,
DPE-PSS-V12-6	12/6/18	1045				X	1						1	X	X	X	X		aromatics, benzene,
DPE-PSS-Y9-7.5	12/6/18	1310				X	1						1	X	X	X	X		toluene, ethylbenzene,
DPE-PSS-Y9-9	12/6/18	1312				X	2						2	X	X	X	X	X	xylenes, naphthalenes,
DPE-PSS-Y9-14.5	12/6/18	1320				X	1						1	X	X	X	X		1 & 2-methyl naphthalene
DPE-PSS-W8-6.5	12/6/18	1436				X	2						2	X	X	X	X	X	n-hexane & 7 cPAHs
DPE-PSS-W8-8.5	12/6/18	1438				X	1						1	X	X	X	X		
DPE-PSS-W8-19.5	12/6/18	1458				X	1						1	X	X	X	X		
DUP-3	12/6/18	—		~~X~~		X	2						2	X	X	X	X	X	

Therm. ID: A2 Cor: 2.7 ° Unc: 2.4 °
Cooler Dsc: Lg Green
Packing: Bubble
Cust. Seal: Yes ___ No Y
Blue Ice, Wet, Dry, None
FedEx: ___
UPS: ___
Lab Cour: Y
Other: ___

Cooler
☐ Yes ☐ No Cooler Temp: ___

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal ☐ Disposal By La
☐ Return To Client ☐ Archive For ___

Turn Around Time Required (business days)
☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☒ Other STAT

QC Requirements (Specify)

	Date	Time
1. Relinquished By Sign/Print / Jason Little	12/7/18	1058
2. Relinquished By Sign/Print		
3. Relinquished By Sign/Print		

	Date	Time
1. Received By Sign/Print / Francisco Luna, Jr.	12/7/18	1058
2. Received By Sign/Print		
3. Received By Sign/Print		

Comments

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

580-82469 Chain of Custody

TAL-8274-580 (0210)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamericainc.com

☐ Rush
☐ Short Hold

Chain of Custody Record

Client	Client Contact	Date	Chain of Custody Number
Arcadis	Ophelie Encelle	12/6/18	34981
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 2 **of** 2
1100 olive way, suite 800			
City	**State**	**Zip Code**	**Sampler**	**Lab Contact**
Seattle	WA	98101	Jason Little	Elaine Walker
Project Name and Location (State)	**Billing Contact**
Edmonds Terminal	
Contract/Purchase Order/Quote No.	

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	Analysis: Benzene 8260C	NWTPH-Gx	Special Instructions/ Conditions of Receipt
Trip Blank	—	—		X										X	X	

Cooler
☐ Yes ☐ No Cooler Temp: _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days)
☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☒ Other STAT

QC Requirements (Specify)

	Date	Time
1. Relinquished By Sign/Print: Jason Little	12/7/18	1058
2. Relinquished By Sign/Print:		
3. Relinquished By Sign/Print:		

	Date	Time
1. Received By Sign/Print: Francisco Luna, Jr	12/7/18	1058
2. Received By Sign/Print:		
3. Received By Sign/Print:		

Comments

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

580-82469 Chain of Custody

Cooler Received/Opened On 12-12-2018 @ 10:10

Time Samples Removed From Cooler 13:30 Time Samples Placed In Storage 13:33 (2 Hour Window)

1. Tracking # 9314 (last 4 digits, FedEx) Courier: _FedEx_

IR Gun ID 14740456 pH Strip Lot NA Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 1.7 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 (side)

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) KD

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA


Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (intial) KA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) KA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) KD

I certify that I attached a label with the unique LIMS number to each container (intial) KD

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#_____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

1/2/2019

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine .	COC No: 580-62026.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note):	Job #: 580-82469-1
Address: 2960 Foster Creighton Drive, ,	Due Date Requested: 12/18/2018		
City: Nashville	TAT Requested (days):		
State, Zip: TN, 37204			
Phone: 615-726-0177(Tel) 615-726-3404(Fax)	PO #:		
Email:	WO #:		
Project Name: Edmonds Terminal	Project #: 58011413		
Site: Chevron Edmonds Terminal	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH_VPH/5035FM_Calc Northwest VPH + VOCs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
DPE-PSS-W11-2 (580-82469-1)	12/6/18	08:48 Pacific		Solid			X	1	
DPE-PSS-V12-4 (580-82469-4)	12/6/18	10:35 Pacific		Solid			X	1	Loc: 580 82469
DPE-PSS-Y9-9 (580-82469-7)	12/6/18	13:12 Pacific		Solid			X	1	
DPE-PSS-W8-6.5 (580-82469-9)	12/6/18	14:36 Pacific		Solid			X	1	
DUP-3 (580-82469-12)	12/6/18	00:01 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Tom Blankenship	Date/Time: 12/11/18	Company: TA-Sea	Received by: [signature] Date/Time: 12-12-2018 10:10 Company: TAMS
Relinquished by:	Date/Time:	Company	Received by: Date/Time: Company
Relinquished by:	Date/Time:	Company	Received by: Date/Time: Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.7

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-82469-1

Login Number: 82469
List Number: 1
Creator: Gall, Brandon A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica
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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-82479-1
Client Project/Site: Edmonds Terminal

For:
ARCADIS U.S. Inc
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Samuel Miles

M. Elaine Walker

Authorized for release by:
1/3/2019 10:30:19 AM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

Table of Contents

Job ID: 580-82479-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative
580-82479-1

Receipt
Seven samples were received on 12/8/2018 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1° C.

Receipt Exceptions

The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results. DPE-PSS-X9-7 (580-82479-1), DPE-PSS-X9-14.5 (580-82479-2), DPE-PSS-X8-7 (580-82479-3), DPE-PSS-X8-12.5 (580-82479-4), DPE-PSS-X8-19.5 (580-82479-5) and DUP-4 (580-82479-6).

The client request MS/MSD be run for all analysis on the following sample: DPE-PSS-X9-7 (580-82479-1). This was not originally requested on the Chain of Custody.

GC/MS VOA
Method(s) 5035: The following sample was provided to the laboratory with a significantly different initial weight than that required by the reference method: DPE-PSS-X8-7 (580-82479-3). The method requires 10 grams. The amount provided was below this range.

Method(s) 5035: The following sample was provided to the laboratory with a significantly different initial weight than that required by the reference method: DPE-PSS-X8-12.5 (580-82479-4). Deviations in the weight by more than 20% may affect reporting limits and potentially method performance. The method specifies 10g. The amount provided was <CHOOSE_ONE> above this range. <PROVIDE_ADDITIONAL_INFORMATION_IF_APPLICABLE>

Method(s) 8260C: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) recoveries and precision for preparation batch 580-290883 and analytical batch 580-290954 was outside control limits for Benzene. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) reciveries and precision was within acceptance limits.

Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: DPE-PSS-X8-12.5 (580-82479-4). Elevated reporting limits (RLs) are provided.

Method(s) NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: DPE-PSS-X8-7 (580-82479-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Gx: The following continuing calibration verification (CCV) standard associated with batch 580-291790 recovered outside acceptance criteria for %D for surrogate 4-Bromofluorobenzene (Surr). Since the %Rec is within the acceptance criteria for the surrogate in the CCV and associated samples, the data have been reported. (CCV 580-291790/16) and (CCV 580-291790/30).

Method(s) NWTPH-Gx: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 580-291680 and analytical batch 580-291790 was outside control limits for Gasoline. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) reciveries were within acceptance limits.

Method(s) NWTPH-Gx: Reanalysis of the following samples were performed outside of the analytical holding time due to necessary dilution and evidence of carryover with a failing CCV in the initial re-analysis: DPE-PSS-X8-12.5 (580-82479-4) and DPE-PSS-X8-19.5 (580-82479-5). Both sets of data have been reported,

Method(s) NWTPH-Gx: The following sample was analyzed at reduced volume due to high concentrations of target analytes: DPE-PSS-X8-12.5 (580-82479-4). The calculation was done using an initial volume adjustment rather than a dilution factor. The reporting limits have been elevated by the appropriate factor.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

Job ID: 580-82479-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

Method(s) 8270D SIM: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) recoveries and precision for preparation batch 580-291346 and analytical batch 580-291532 was outside control limits for 2-Methylnaphthalene. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 8270D SIM: The following samples were diluted due to the nature of the sample matrix: DPE-PSS-X8-12.5 (580-82479-4), (580-82469-A-2-C), (580-82469-A-2-F MS) and (580-82469-A-2-G MSD). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA

Method(s) NWTPH/VPH: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 490-563169 and analytical batch 490-563684 were outside control limits for C10-C12 Aliphatics and C10-C12 Aromatics. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: DPE-PSS-X8-7 (580-82479-3), DPE-PSS-X8-12.5 (580-82479-4 and (580-82479-A-4-D DU).

Method(s) NWTPH-Dx: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 580-290849 and 580-291013 and analytical batch 580-291407 were outside control limits for #2 Diesel. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) NWTPH-Dx: The following samples were diluted due to the abundance of target analytes : (580-82469-A-1-E MS) and (580-82469-A-1-F MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) NWTPH/EPH: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 580-291025 and analytical batch 580-291634 recovered outside acceptance limits for C10-C12 Aromatics. The client requested the data be qualified and reported since re-extraction would be outside of hold.

Method(s) NWTPH/EPH: The matrix spike/matrix spike duplicate (MS/MSD) recoveries for preparation batch 580-291025 and analytical batch 580-291634 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected.

Method(s) NWTPH/EPH: The matrix spike/matrix spike duplicate (MS/MSD) precision for preparation batch 580-291025 and analytical batch 580-291634 was outside control limits for C10-C12 Aromatics. Sample non-homogeneity is suspected.

Method(s) NWTPH/EPH: The method blank for preparation batch 580-291025 and 580-291524 and analytical batch 580-291634 contained C16-C21 Aliphatics above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) NWTPH/EPH: The following samples were re-analyzed due to a failing CCV for C21-C34 Aromatics in the initial analysis: DPE-PSS-X9-7 (580-82479-1), DPE-PSS-X9-7 (580-82479-1[MS]), DPE-PSS-X9-7 (580-82479-1[MSD]) and DPE-PSS-X8-7 (580-82479-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
X	Surrogate is outside control limits
H	Sample was prepped or analyzed beyond the specified holding time

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
B	Compound was found in the blank and sample.
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: DPE-PSS-X9-7
Date Collected: 12/07/18 09:27
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-1
Matrix: Solid
Percent Solids: 93.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**220**	**F2 F1**	35	8.8	ug/Kg	☼	12/12/18 08:00	12/12/18 12:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/12/18 08:00*	*12/12/18 12:17*	*1*
Trifluorotoluene (Surr)	*102*		*80 - 120*	*12/12/18 08:00*	*12/12/18 12:17*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/12/18 08:00*	*12/12/18 12:17*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*	*12/12/18 08:00*	*12/12/18 12:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*80 - 121*	*12/12/18 08:00*	*12/12/18 12:17*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**790**	**F1 F2**	5.1	0.46	ug/Kg	☼	12/17/18 15:22	12/19/18 14:31	1
Benzo[a]anthracene	**3.3**	**J**	5.1	0.77	ug/Kg	☼	12/17/18 15:22	12/19/18 14:31	1
Benzo[a]pyrene	**1.7**	**J**	5.1	0.40	ug/Kg	☼	12/17/18 15:22	12/19/18 14:31	1
Benzo[b]fluoranthene	**2.0**	**J**	5.1	0.60	ug/Kg	☼	12/17/18 15:22	12/19/18 14:31	1
Benzo[k]fluoranthene	ND		5.1	0.61	ug/Kg	☼	12/17/18 15:22	12/19/18 14:31	1
Chrysene	**6.4**		5.1	1.5	ug/Kg	☼	12/17/18 15:22	12/19/18 14:31	1
Dibenz(a,h)anthracene	ND		5.1	0.73	ug/Kg	☼	12/17/18 15:22	12/19/18 14:31	1
Indeno[1,2,3-cd]pyrene	ND		5.1	0.61	ug/Kg	☼	12/17/18 15:22	12/19/18 14:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*92*		*57 - 120*	*12/17/18 15:22*	*12/19/18 14:31*	*1*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	**25**		6.0	2.4	mg/Kg	☼	12/12/18 14:30	12/14/18 14:14	1
C6-C8 Aliphatics	**32**	**J**	60	24	mg/Kg	☼	12/12/18 14:30	12/17/18 18:08	10
C8-C10 Aliphatics	**84**		6.0	2.4	mg/Kg	☼	12/12/18 14:30	12/14/18 14:14	1
C10-C12 Aliphatics	**150**	**F1**	60	24	mg/Kg	☼	12/12/18 14:30	12/17/18 18:08	10
C8-C10 Aromatics	**95**		6.0	2.4	mg/Kg	☼	12/12/18 14:30	12/14/18 14:14	1
C10-C12 Aromatics	**130**		60	24	mg/Kg	☼	12/12/18 14:30	12/17/18 18:08	10
C12-C13 Aromatics	**39**	**J**	60	24	mg/Kg	☼	12/12/18 14:30	12/17/18 18:08	10
Methyl tert-butyl ether	**0.42**	**J**	0.60	0.30	mg/Kg	☼	12/12/18 14:30	12/14/18 14:14	1
Benzene	**3.0**		0.060	0.030	mg/Kg	☼	12/12/18 14:30	12/14/18 14:14	1
Toluene	**0.18**		0.060	0.030	mg/Kg	☼	12/12/18 14:30	12/14/18 14:14	1
Ethylbenzene	**22**		0.060	0.030	mg/Kg	☼	12/12/18 14:30	12/14/18 14:14	1
m-Xylene & p-Xylene	**3.0**		0.12	0.060	mg/Kg	☼	12/12/18 14:30	12/14/18 14:14	1
o-Xylene	**2.7**		0.060	0.030	mg/Kg	☼	12/12/18 14:30	12/14/18 14:14	1
Naphthalene	**12**		0.30	0.15	mg/Kg	☼	12/12/18 14:30	12/14/18 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*123*		*60 - 140*	*12/12/18 14:30*	*12/14/18 14:14*	*1*
2,5-Dibromotoluene (fid)	*87*		*60 - 140*	*12/12/18 14:30*	*12/17/18 18:08*	*10*
2,5-Dibromotoluene (pid)	*105*		*60 - 140*	*12/12/18 14:30*	*12/14/18 14:14*	*1*
2,5-Dibromotoluene (pid)	*94*		*60 - 140*	*12/12/18 14:30*	*12/17/18 18:08*	*10*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**150**		5.8	2.7	mg/Kg	☼	12/20/18 10:00	12/20/18 19:48	1

Client Sample ID: DPE-PSS-X9-7
Date Collected: 12/07/18 09:27
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-1
Matrix: Solid
Percent Solids: 93.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		50 - 150	12/20/18 10:00	12/20/18 19:48	1
Trifluorotoluene (Surr)				12/20/18 10:00	12/20/18 19:48	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	13		11	1.0	mg/Kg	☼	12/13/18 11:21	12/20/18 22:26	1
C10-C12 Aromatics	6.4	J *	11	1.8	mg/Kg	☼	12/13/18 11:21	12/20/18 22:26	1
C12-C16 Aliphatics	44		11	0.93	mg/Kg	☼	12/13/18 11:21	12/20/18 22:26	1
C12-C16 Aromatics	13		11	0.93	mg/Kg	☼	12/13/18 11:21	12/20/18 22:26	1
C16-C21 Aliphatics	45	B	11	1.3	mg/Kg	☼	12/13/18 11:21	12/20/18 22:26	1
C16-C21 Aromatics	22		11	1.4	mg/Kg	☼	12/13/18 11:21	12/20/18 22:26	1
C21-C34 Aliphatics	22		11	2.5	mg/Kg	☼	12/13/18 11:21	12/20/18 22:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	89		60 - 140	12/13/18 11:21	12/20/18 22:26	1
o-Terphenyl	87		60 - 140	12/13/18 11:21	12/20/18 22:26	1

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aromatics	13	*	11	2.1	mg/Kg	☼	12/13/18 11:21	12/31/18 01:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	99		60 - 140	12/13/18 11:21	12/31/18 01:25	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	480	F1	49	12	mg/Kg	☼	12/11/18 16:51	12/18/18 20:13	1
Motor Oil (>C24-C36)	100		49	17	mg/Kg	☼	12/11/18 16:51	12/18/18 20:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	105		50 - 150	12/11/18 16:51	12/18/18 20:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	93.8		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	6.2		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DPE-PSS-X9-14.5
Date Collected: 12/07/18 09:33
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-2
Matrix: Solid
Percent Solids: 74.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		49	12	ug/Kg	☼	12/12/18 08:00	12/12/18 13:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*	*12/12/18 08:00*	*12/12/18 13:32*	*1*
Trifluorotoluene (Surr)	*102*		*80 - 120*	*12/12/18 08:00*	*12/12/18 13:32*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*	*12/12/18 08:00*	*12/12/18 13:32*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/12/18 08:00*	*12/12/18 13:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 121*	*12/12/18 08:00*	*12/12/18 13:32*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		6.4	0.98	ug/Kg	☼	12/19/18 14:43	12/24/18 23:34	1
Benzo[a]pyrene	ND		6.4	0.52	ug/Kg	☼	12/19/18 14:43	12/24/18 23:34	1
Benzo[b]fluoranthene	ND		6.4	0.76	ug/Kg	☼	12/19/18 14:43	12/24/18 23:34	1
Benzo[k]fluoranthene	ND		6.4	0.77	ug/Kg	☼	12/19/18 14:43	12/24/18 23:34	1
Chrysene	ND		6.4	1.9	ug/Kg	☼	12/19/18 14:43	12/24/18 23:34	1
Dibenz(a,h)anthracene	ND		6.4	0.93	ug/Kg	☼	12/19/18 14:43	12/24/18 23:34	1
Indeno[1,2,3-cd]pyrene	ND		6.4	0.77	ug/Kg	☼	12/19/18 14:43	12/24/18 23:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*93*		*57 - 120*	*12/19/18 14:43*	*12/24/18 23:34*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**7.0**	**J**	8.2	3.8	mg/Kg	☼	12/20/18 10:00	12/20/18 18:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*50 - 150*	*12/20/18 10:00*	*12/20/18 18:54*	*1*
Trifluorotoluene (Surr)				*12/20/18 10:00*	*12/20/18 18:54*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**570**		57	14	mg/Kg	☼	12/11/18 16:51	12/18/18 20:33	1
Motor Oil (>C24-C36)	**200**		57	20	mg/Kg	☼	12/11/18 16:51	12/18/18 20:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*50 - 150*	*12/11/18 16:51*	*12/18/18 20:33*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**74.7**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**25.3**		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DPE-PSS-X8-7
Date Collected: 12/07/18 11:31
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-3
Matrix: Solid
Percent Solids: 78.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3600		78	20	ug/Kg	☼	12/12/18 08:00	12/12/18 13:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*	*12/12/18 08:00*	*12/12/18 13:58*	*1*
Trifluorotoluene (Surr)	*102*		*80 - 120*	*12/12/18 08:00*	*12/12/18 13:58*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/12/18 08:00*	*12/12/18 13:58*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/12/18 08:00*	*12/12/18 13:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 121*	*12/12/18 08:00*	*12/12/18 13:58*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	27		6.3	0.96	ug/Kg	☼	12/17/18 15:23	12/19/18 15:47	1
Benzo[a]pyrene	12		6.3	0.51	ug/Kg	☼	12/17/18 15:23	12/19/18 15:47	1
Benzo[b]fluoranthene	22		6.3	0.75	ug/Kg	☼	12/17/18 15:23	12/19/18 15:47	1
Benzo[k]fluoranthene	5.5	J	6.3	0.76	ug/Kg	☼	12/17/18 15:23	12/19/18 15:47	1
Chrysene	48		6.3	1.9	ug/Kg	☼	12/17/18 15:23	12/19/18 15:47	1
Dibenz(a,h)anthracene	4.1	J	6.3	0.91	ug/Kg	☼	12/17/18 15:23	12/19/18 15:47	1
Indeno[1,2,3-cd]pyrene	11		6.3	0.76	ug/Kg	☼	12/17/18 15:23	12/19/18 15:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*84*		*57 - 120*	*12/17/18 15:23*	*12/19/18 15:47*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	10000		63	5.7	ug/Kg	☼	12/17/18 15:23	12/27/18 15:43	10

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	30		8.0	3.2	mg/Kg	☼	12/12/18 14:30	12/14/18 14:46	1
C6-C8 Aliphatics	77	J	80	32	mg/Kg	☼	12/12/18 14:30	12/17/18 19:46	10
C8-C10 Aliphatics	73		8.0	3.2	mg/Kg	☼	12/12/18 14:30	12/14/18 14:46	1
C10-C12 Aliphatics	210		80	32	mg/Kg	☼	12/12/18 14:30	12/17/18 19:46	10
C8-C10 Aromatics	110		8.0	3.2	mg/Kg	☼	12/12/18 14:30	12/14/18 14:46	1
C10-C12 Aromatics	130		80	32	mg/Kg	☼	12/12/18 14:30	12/17/18 19:46	10
C12-C13 Aromatics	51	J	80	32	mg/Kg	☼	12/12/18 14:30	12/17/18 19:46	10
Methyl tert-butyl ether	0.68	J	0.80	0.40	mg/Kg	☼	12/12/18 14:30	12/14/18 14:46	1
Benzene	3.5		0.080	0.040	mg/Kg	☼	12/12/18 14:30	12/14/18 14:46	1
Toluene	0.20		0.080	0.040	mg/Kg	☼	12/12/18 14:30	12/14/18 14:46	1
Ethylbenzene	21		0.080	0.040	mg/Kg	☼	12/12/18 14:30	12/14/18 14:46	1
m-Xylene & p-Xylene	0.56		0.16	0.080	mg/Kg	☼	12/12/18 14:30	12/14/18 14:46	1
o-Xylene	2.1		0.080	0.040	mg/Kg	☼	12/12/18 14:30	12/14/18 14:46	1
Naphthalene	19		0.40	0.20	mg/Kg	☼	12/12/18 14:30	12/14/18 14:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,5-Dibromotoluene (fid)	*108*		*60 - 140*	*12/12/18 14:30*	*12/14/18 14:46*	*1*
2,5-Dibromotoluene (fid)	*96*		*60 - 140*	*12/12/18 14:30*	*12/17/18 19:46*	*10*
2,5-Dibromotoluene (pid)	*104*		*60 - 140*	*12/12/18 14:30*	*12/14/18 14:46*	*1*
2,5-Dibromotoluene (pid)	*96*		*60 - 140*	*12/12/18 14:30*	*12/17/18 19:46*	*10*

Client Sample ID: DPE-PSS-X8-7
Date Collected: 12/07/18 11:31
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-3
Matrix: Solid
Percent Solids: 78.6

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1000		13	6.0	mg/Kg	☼	12/20/18 10:00	12/20/18 19:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*166*	*X*	*50 - 150*	*12/20/18 10:00*	*12/20/18 19:21*	*1*
Trifluorotoluene (Surr)				*12/20/18 10:00*	*12/20/18 19:21*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	42		12	1.2	mg/Kg	☼	12/13/18 11:21	12/20/18 23:41	1
C10-C12 Aromatics	24	*	12	2.1	mg/Kg	☼	12/13/18 11:21	12/20/18 23:41	1
C12-C16 Aliphatics	140		12	1.1	mg/Kg	☼	12/13/18 11:21	12/20/18 23:41	1
C12-C16 Aromatics	39		12	1.1	mg/Kg	☼	12/13/18 11:21	12/20/18 23:41	1
C16-C21 Aliphatics	140	B	12	1.5	mg/Kg	☼	12/13/18 11:21	12/20/18 23:41	1
C16-C21 Aromatics	58		12	1.6	mg/Kg	☼	12/13/18 11:21	12/20/18 23:41	1
C21-C34 Aliphatics	63		12	3.0	mg/Kg	☼	12/13/18 11:21	12/20/18 23:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*94*		*60 - 140*	*12/13/18 11:21*	*12/20/18 23:41*	*1*
o-Terphenyl	*88*		*60 - 140*	*12/13/18 11:21*	*12/20/18 23:41*	*1*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C21-C34 Aromatics	32	*	12	2.5	mg/Kg	☼	12/13/18 11:21	12/31/18 02:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*92*		*60 - 140*	*12/13/18 11:21*	*12/31/18 02:37*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		59	14	mg/Kg	☼	12/11/18 16:51	12/18/18 21:33	1
Motor Oil (>C24-C36)	27	J	59	21	mg/Kg	☼	12/11/18 16:51	12/18/18 21:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*107*		*50 - 150*	*12/11/18 16:51*	*12/18/18 21:33*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	78.6		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	21.4		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DPE-PSS-X8-12.5

Date Collected: 12/07/18 11:38
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-4

Matrix: Solid
Percent Solids: 79.4

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**8400**		400	100	ug/Kg	☼	12/12/18 11:50	12/13/18 17:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*	*12/12/18 11:50*	*12/13/18 17:02*	*1*
Trifluorotoluene (Surr)	*107*		*80 - 120*	*12/12/18 11:50*	*12/13/18 17:02*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*	*12/12/18 11:50*	*12/13/18 17:02*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*	*12/12/18 11:50*	*12/13/18 17:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*	*12/12/18 11:50*	*12/13/18 17:02*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	**53**		28	4.3	ug/Kg	☼	12/19/18 14:43	12/24/18 23:59	5
Benzo[a]pyrene	**16**	**J**	28	2.2	ug/Kg	☼	12/19/18 14:43	12/24/18 23:59	5
Benzo[b]fluoranthene	**19**	**J**	28	3.3	ug/Kg	☼	12/19/18 14:43	12/24/18 23:59	5
Benzo[k]fluoranthene	**5.3**	**J**	28	3.4	ug/Kg	☼	12/19/18 14:43	12/24/18 23:59	5
Chrysene	**81**		28	8.4	ug/Kg	☼	12/19/18 14:43	12/24/18 23:59	5
Dibenz(a,h)anthracene	ND		28	4.0	ug/Kg	☼	12/19/18 14:43	12/24/18 23:59	5
Indeno[1,2,3-cd]pyrene	ND		28	3.4	ug/Kg	☼	12/19/18 14:43	12/24/18 23:59	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*84*		*57 - 120*	*12/19/18 14:43*	*12/24/18 23:59*	*5*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**1300**		62	29	mg/Kg	☼	12/20/18 10:00	12/21/18 18:32	1
Gasoline	**1200**	**H**	62	29	mg/Kg	☼	12/20/18 10:00	12/22/18 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*50 - 150*	*12/20/18 10:00*	*12/21/18 18:32*	*1*
4-Bromofluorobenzene (Surr)	*94*		*50 - 150*	*12/20/18 10:00*	*12/22/18 19:56*	*1*
Trifluorotoluene (Surr)				*12/20/18 10:00*	*12/21/18 18:32*	*1*
Trifluorotoluene (Surr)				*12/20/18 10:00*	*12/22/18 19:56*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**2000**		52	13	mg/Kg	☼	12/11/18 16:51	12/18/18 22:13	1
Motor Oil (>C24-C36)	**270**		52	18	mg/Kg	☼	12/11/18 16:51	12/18/18 22:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*126*		*50 - 150*	*12/11/18 16:51*	*12/18/18 22:13*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	**79.4**		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	**20.6**		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DPE-PSS-X8-19.5

Date Collected: 12/07/18 11:52
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-5

Matrix: Solid
Percent Solids: 85.0

Method: 8260C - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20	J	35	8.8	ug/Kg	☼	12/12/18 11:50	12/13/18 14:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*	*12/12/18 11:50*	*12/13/18 14:31*	*1*
Trifluorotoluene (Surr)	*109*		*80 - 120*	*12/12/18 11:50*	*12/13/18 14:31*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*12/12/18 11:50*	*12/13/18 14:31*	*1*
Dibromofluoromethane (Surr)	*87*		*80 - 120*	*12/12/18 11:50*	*12/13/18 14:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*80*		*80 - 121*	*12/12/18 11:50*	*12/13/18 14:31*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.8	2.7	mg/Kg	☼	12/20/18 10:00	12/21/18 18:05	1
Gasoline	ND	H	5.8	2.7	mg/Kg	☼	12/20/18 10:00	12/22/18 17:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*50 - 150*	*12/20/18 10:00*	*12/21/18 18:05*	*1*
4-Bromofluorobenzene (Surr)	*71*		*50 - 150*	*12/20/18 10:00*	*12/22/18 17:41*	*1*
Trifluorotoluene (Surr)				*12/20/18 10:00*	*12/21/18 18:05*	*1*
Trifluorotoluene (Surr)				*12/20/18 10:00*	*12/22/18 17:41*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		41	10	mg/Kg	☼	12/11/18 16:51	12/18/18 22:54	1
Motor Oil (>C24-C36)	ND		41	14	mg/Kg	☼	12/11/18 16:51	12/18/18 22:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*94*		*50 - 150*	*12/11/18 16:51*	*12/18/18 22:54*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	85.0		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	15.0		0.1	0.1	%			12/11/18 14:36	1

Client Sample ID: DUP-4
Date Collected: 12/07/18 00:01
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-6
Matrix: Solid
Percent Solids: 76.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	13	J	44	11	ug/Kg	☼	12/12/18 08:00	12/12/18 15:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*	*12/12/18 08:00*	*12/12/18 15:13*	*1*
Trifluorotoluene (Surr)	*102*		*80 - 120*	*12/12/18 08:00*	*12/12/18 15:13*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*	*12/12/18 08:00*	*12/12/18 15:13*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*	*12/12/18 08:00*	*12/12/18 15:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*	*12/12/18 08:00*	*12/12/18 15:13*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	11		7.3	3.4	mg/Kg	☼	12/20/18 10:00	12/20/18 22:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*73*		*50 - 150*	*12/20/18 10:00*	*12/20/18 22:32*	*1*
Trifluorotoluene (Surr)				*12/20/18 10:00*	*12/20/18 22:32*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		54	13	mg/Kg	☼	12/11/18 16:51	12/18/18 23:14	1
Motor Oil (>C24-C36)	ND		54	19	mg/Kg	☼	12/11/18 16:51	12/18/18 23:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*103*		*50 - 150*	*12/11/18 16:51*	*12/18/18 23:14*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	76.4		0.1	0.1	%			12/11/18 14:36	1
Percent Moisture	23.6		0.1	0.1	%			12/11/18 14:36	1

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82479-1

Client Sample ID: Trip Blank

Lab Sample ID: 580-82479-7

Date Collected: 12/07/18 00:01

Matrix: Solid

Date Received: 12/08/18 10:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/12/18 08:00	12/12/18 15:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*	*12/12/18 08:00*	*12/12/18 15:39*	*1*
Trifluorotoluene (Surr)	*101*		*80 - 120*	*12/12/18 08:00*	*12/12/18 15:39*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*	*12/12/18 08:00*	*12/12/18 15:39*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*	*12/12/18 08:00*	*12/12/18 15:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*	*12/12/18 08:00*	*12/12/18 15:39*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**4.6**	**J**	5.0	2.3	mg/Kg		12/20/18 10:00	12/20/18 16:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*50 - 150*	*12/20/18 10:00*	*12/20/18 16:11*	*1*
Trifluorotoluene (Surr)				*12/20/18 10:00*	*12/20/18 16:11*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-290883/1-A
Matrix: Solid
Analysis Batch: 290954

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290883

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/12/18 08:00	12/12/18 11:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*	*12/12/18 08:00*	*12/12/18 11:01*	*1*
Trifluorotoluene (Surr)	*102*		*80 - 120*	*12/12/18 08:00*	*12/12/18 11:01*	*1*
4-Bromofluorobenzene (Surr)	*112*		*80 - 120*	*12/12/18 08:00*	*12/12/18 11:01*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*	*12/12/18 08:00*	*12/12/18 11:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*	*12/12/18 08:00*	*12/12/18 11:01*	*1*

Lab Sample ID: LCS 580-290883/2-A
Matrix: Solid
Analysis Batch: 290954

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290883

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	800	983		ug/Kg		123	79 - 135

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*80 - 120*
Trifluorotoluene (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*87*		*80 - 121*

Lab Sample ID: LCSD 580-290883/3-A
Matrix: Solid
Analysis Batch: 290954

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290883

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	800	990		ug/Kg		124	79 - 135	1	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*95*		*80 - 120*
Trifluorotoluene (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 121*

Lab Sample ID: 580-82479-1 MS
Matrix: Solid
Analysis Batch: 290954

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 290883

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	220	F2 F1	537	343	F1	ug/Kg	☼	23	79 - 135

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*80 - 120*
Trifluorotoluene (Surr)	*101*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 580-82479-1 MS
Matrix: Solid
Analysis Batch: 290954

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 290883

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*88*		*80 - 121*

Lab Sample ID: 580-82479-1 MSD
Matrix: Solid
Analysis Batch: 290954

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 290883

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	220	F2 F1	537	421	F2 F1	ug/Kg	☼	37	79 - 135	20	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*80 - 120*
Trifluorotoluene (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*85*		*80 - 121*

Lab Sample ID: MB 580-290910/1-A
Matrix: Solid
Analysis Batch: 291036

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290910

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		30	7.6	ug/Kg		12/12/18 11:50	12/13/18 11:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*	*12/12/18 11:50*	*12/13/18 11:58*	*1*
Trifluorotoluene (Surr)	*109*		*80 - 120*	*12/12/18 11:50*	*12/13/18 11:58*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*	*12/12/18 11:50*	*12/13/18 11:58*	*1*
Dibromofluoromethane (Surr)	*89*		*80 - 120*	*12/12/18 11:50*	*12/13/18 11:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*80 - 121*	*12/12/18 11:50*	*12/13/18 11:58*	*1*

Lab Sample ID: LCS 580-290910/2-A
Matrix: Solid
Analysis Batch: 291036

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290910

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			800	952		ug/Kg		119	79 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*93*		*80 - 120*
Trifluorotoluene (Surr)	*107*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*84*		*80 - 121*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-290910/3-A
Matrix: Solid
Analysis Batch: 291036

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290910

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			800	971		ug/Kg		121	79 - 135	2	15

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*90*		*80 - 120*
Trifluorotoluene (Surr)	*106*		*80 - 120*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*86*		*80 - 121*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-291346/1-A
Matrix: Solid
Analysis Batch: 291532

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291346

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		5.0	0.45	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Chrysene	ND		5.0	1.5	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		12/17/18 15:22	12/19/18 11:09	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		12/17/18 15:22	12/19/18 11:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*98*		*57 - 120*	*12/17/18 15:22*	*12/19/18 11:09*	*1*

Lab Sample ID: LCS 580-291346/2-A
Matrix: Solid
Analysis Batch: 291532

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291346

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene			1000	982		ug/Kg		98	68 - 120
Benzo[a]anthracene			1000	974		ug/Kg		97	66 - 120
Benzo[a]pyrene			1000	973		ug/Kg		97	72 - 124
Benzo[b]fluoranthene			1000	1020		ug/Kg		102	63 - 121
Benzo[k]fluoranthene			1000	1060		ug/Kg		106	63 - 123
Chrysene			1000	973		ug/Kg		97	69 - 120
Dibenz(a,h)anthracene			1000	1030		ug/Kg		103	70 - 125
Indeno[1,2,3-cd]pyrene			1000	1040		ug/Kg		104	65 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*96*		*57 - 120*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: 580-82479-1 MS
Matrix: Solid
Analysis Batch: 291532

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 291346

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	790	F1 F2	955	4570	F1	ug/Kg	☼	396	68 - 120
Benzo[a]anthracene	3.3	J	955	970		ug/Kg	☼	101	66 - 120
Benzo[a]pyrene	1.7	J	955	951		ug/Kg	☼	99	72 - 124
Benzo[b]fluoranthene	2.0	J	955	886		ug/Kg	☼	93	63 - 121
Benzo[k]fluoranthene	ND		955	979		ug/Kg	☼	103	63 - 123
Chrysene	6.4		955	939		ug/Kg	☼	98	69 - 120
Dibenz(a,h)anthracene	ND		955	947		ug/Kg	☼	99	70 - 125
Indeno[1,2,3-cd]pyrene	ND		955	951		ug/Kg	☼	100	65 - 121

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Terphenyl-d14	*86*		*57 - 120*

Lab Sample ID: 580-82479-1 MSD
Matrix: Solid
Analysis Batch: 291532

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 291346

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Methylnaphthalene	790	F1 F2	985	2460	F1 F2	ug/Kg	☼	170	68 - 120	60	12
Benzo[a]anthracene	3.3	J	985	991		ug/Kg	☼	100	66 - 120	2	14
Benzo[a]pyrene	1.7	J	985	977		ug/Kg	☼	99	72 - 124	3	12
Benzo[b]fluoranthene	2.0	J	985	946		ug/Kg	☼	96	63 - 121	7	10
Benzo[k]fluoranthene	ND		985	994		ug/Kg	☼	101	63 - 123	2	15
Chrysene	6.4		985	974		ug/Kg	☼	98	69 - 120	4	10
Dibenz(a,h)anthracene	ND		985	992		ug/Kg	☼	101	70 - 125	5	13
Indeno[1,2,3-cd]pyrene	ND		985	1020		ug/Kg	☼	103	65 - 121	7	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Terphenyl-d14	*94*		*57 - 120*

Lab Sample ID: MB 580-291571/1-A
Matrix: Solid
Analysis Batch: 291993

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291571

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.0	0.76	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Benzo[a]pyrene	ND		5.0	0.40	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Benzo[b]fluoranthene	ND		5.0	0.59	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Benzo[k]fluoranthene	ND		5.0	0.60	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Chrysene	ND		5.0	1.5	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Dibenz(a,h)anthracene	ND		5.0	0.72	ug/Kg		12/19/18 14:43	12/24/18 15:57	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.60	ug/Kg		12/19/18 14:43	12/24/18 15:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*90*		*57 - 120*	*12/19/18 14:43*	*12/24/18 15:57*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-291571/2-A
Matrix: Solid
Analysis Batch: 292017

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291571

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1000	835		ug/Kg		84	66 - 120
Benzo[a]pyrene	1000	919		ug/Kg		92	72 - 124
Benzo[b]fluoranthene	1000	975		ug/Kg		97	63 - 121
Benzo[k]fluoranthene	1000	1180		ug/Kg		118	63 - 123
Chrysene	1000	971		ug/Kg		97	69 - 120
Dibenz(a,h)anthracene	1000	1040		ug/Kg		104	70 - 125
Indeno[1,2,3-cd]pyrene	1000	1000		ug/Kg		100	65 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*81*		*57 - 120*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC)

Lab Sample ID: 580-82479-1 MS
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 563169

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	ND		89.6	107		mg/Kg	☼	119	70 - 130
C6-C8 Aliphatics	32	J	59.7	94.0		mg/Kg	☼	104	70 - 130
C8-C10 Aliphatics	57	J	179	262		mg/Kg	☼	114	70 - 130
C10-C12 Aliphatics	150	F1	59.7	143	F1	mg/Kg	☼	-15	70 - 130
C8-C10 Aromatics	91		149	270		mg/Kg	☼	120	70 - 130
C10-C12 Aromatics	130		29.9	110	4	mg/Kg	☼	-51	70 - 130
C12-C13 Aromatics	39	J	29.9	67.6		mg/Kg	☼	95	70 - 130
Naphthalene	12		29.9	44.0		mg/Kg	☼	108	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*80*		*60 - 140*
2,5-Dibromotoluene (pid)	*87*		*60 - 140*

Lab Sample ID: 580-82479-1 MSD
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 563169

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics	ND		89.6	102		mg/Kg	☼	114	70 - 130	5	25
C6-C8 Aliphatics	32	J	59.7	95.3		mg/Kg	☼	106	70 - 130	1	25
C8-C10 Aliphatics	57	J	179	261		mg/Kg	☼	114	70 - 130	0	25
C10-C12 Aliphatics	150	F1	59.7	152	F1	mg/Kg	☼	-0.4	70 - 130	6	25
C8-C10 Aromatics	91		149	272		mg/Kg	☼	122	70 - 130	1	25
C10-C12 Aromatics	130		29.9	109	4	mg/Kg	☼	-54	70 - 130	1	25
C12-C13 Aromatics	39	J	29.9	70.8		mg/Kg	☼	106	70 - 130	5	25
Naphthalene	12		29.9	43.9		mg/Kg	☼	108	70 - 130	0	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*85*		*60 - 140*

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: 580-82479-1 MSD
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 563169

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,5-Dibromotoluene (pid)	*85*		*60 - 140*

Lab Sample ID: MB 490-563684/30
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C6-C8 Aliphatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C8-C10 Aliphatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C10-C12 Aliphatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C8-C10 Aromatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C10-C12 Aromatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
C12-C13 Aromatics	ND		5.0	2.0	mg/Kg			12/17/18 16:31	1
Methyl tert-butyl ether	ND		0.50	0.25	mg/Kg			12/17/18 16:31	1
Benzene	ND		0.050	0.025	mg/Kg			12/17/18 16:31	1
Toluene	ND		0.050	0.025	mg/Kg			12/17/18 16:31	1
Ethylbenzene	ND		0.050	0.025	mg/Kg			12/17/18 16:31	1
m-Xylene & p-Xylene	ND		0.10	0.050	mg/Kg			12/17/18 16:31	1
o-Xylene	ND		0.050	0.025	mg/Kg			12/17/18 16:31	1
Naphthalene	ND		0.25	0.13	mg/Kg			12/17/18 16:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,5-Dibromotoluene (fid)	*93*		*60 - 140*		*12/17/18 16:31*	*1*
2,5-Dibromotoluene (pid)	*96*		*60 - 140*		*12/17/18 16:31*	*1*

Lab Sample ID: MB 490-563684/9
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C5-C6 Aliphatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
C6-C8 Aliphatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
C8-C10 Aliphatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
C10-C12 Aliphatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
C8-C10 Aromatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
C10-C12 Aromatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
C12-C13 Aromatics	ND		5.0	2.0	mg/Kg			12/14/18 13:41	1
Methyl tert-butyl ether	ND		0.50	0.25	mg/Kg			12/14/18 13:41	1
Benzene	ND		0.050	0.025	mg/Kg			12/14/18 13:41	1
Toluene	ND		0.050	0.025	mg/Kg			12/14/18 13:41	1
Ethylbenzene	ND		0.050	0.025	mg/Kg			12/14/18 13:41	1
m-Xylene & p-Xylene	ND		0.10	0.050	mg/Kg			12/14/18 13:41	1
o-Xylene	ND		0.050	0.025	mg/Kg			12/14/18 13:41	1
Naphthalene	ND		0.25	0.13	mg/Kg			12/14/18 13:41	1

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: MB 490-563684/9
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,5-Dibromotoluene (fid)	94		60 - 140		12/14/18 13:41	1
2,5-Dibromotoluene (pid)	97		60 - 140		12/14/18 13:41	1

Lab Sample ID: LCS 490-563684/28
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	15.0	13.3		mg/Kg		89	70 - 130
C6-C8 Aliphatics	10.0	8.88		mg/Kg		89	70 - 130
C8-C10 Aliphatics	30.0	29.3		mg/Kg		98	70 - 130
C10-C12 Aliphatics	10.0	11.5		mg/Kg		115	70 - 130
C8-C10 Aromatics	25.0	25.7		mg/Kg		103	70 - 130
C10-C12 Aromatics	5.00	5.53		mg/Kg		111	70 - 130
C12-C13 Aromatics	5.00	5.03		mg/Kg		101	70 - 130
Naphthalene	5.00	5.30		mg/Kg		106	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,5-Dibromotoluene (fid)	95		60 - 140
2,5-Dibromotoluene (pid)	96		60 - 140

Lab Sample ID: LCS 490-563684/7
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C5-C6 Aliphatics	15.0	14.8		mg/Kg		98	70 - 130
C6-C8 Aliphatics	10.0	9.28		mg/Kg		93	70 - 130
C8-C10 Aliphatics	30.0	30.1		mg/Kg		100	70 - 130
C10-C12 Aliphatics	10.0	10.9		mg/Kg		109	70 - 130
C8-C10 Aromatics	25.0	25.6		mg/Kg		102	70 - 130
C10-C12 Aromatics	5.00	5.47		mg/Kg		109	70 - 130
C12-C13 Aromatics	5.00	5.14		mg/Kg		103	70 - 130
Naphthalene	5.00	5.40		mg/Kg		108	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,5-Dibromotoluene (fid)	98		60 - 140
2,5-Dibromotoluene (pid)	99		60 - 140

Lab Sample ID: LCSD 490-563684/29
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics	15.0	13.4		mg/Kg		89	70 - 130	1	25
C6-C8 Aliphatics	10.0	9.08		mg/Kg		91	70 - 130	2	25
C8-C10 Aliphatics	30.0	30.2		mg/Kg		101	70 - 130	3	25

Method: NWTPH/VPH - Northwest - Volatile Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCSD 490-563684/29
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics			10.0	11.6		mg/Kg		116	70 - 130	1	25
C8-C10 Aromatics			25.0	26.1		mg/Kg		104	70 - 130	2	25
C10-C12 Aromatics			5.00	5.66		mg/Kg		113	70 - 130	2	25
C12-C13 Aromatics			5.00	5.20		mg/Kg		104	70 - 130	3	25
Naphthalene			5.00	5.35		mg/Kg		107	70 - 130	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*94*		*60 - 140*
2,5-Dibromotoluene (pid)	*96*		*60 - 140*

Lab Sample ID: LCSD 490-563684/8
Matrix: Solid
Analysis Batch: 563684

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C5-C6 Aliphatics			15.0	15.1		mg/Kg		100	70 - 130	2	25
C6-C8 Aliphatics			10.0	9.37		mg/Kg		94	70 - 130	1	25
C8-C10 Aliphatics			30.0	30.9		mg/Kg		103	70 - 130	2	25
C10-C12 Aliphatics			10.0	11.6		mg/Kg		116	70 - 130	6	25
C8-C10 Aromatics			25.0	26.2		mg/Kg		105	70 - 130	3	25
C10-C12 Aromatics			5.00	5.88		mg/Kg		118	70 - 130	7	25
C12-C13 Aromatics			5.00	5.40		mg/Kg		108	70 - 130	5	25
Naphthalene			5.00	5.50		mg/Kg		110	70 - 130	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,5-Dibromotoluene (fid)	*97*		*60 - 140*
2,5-Dibromotoluene (pid)	*97*		*60 - 140*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-291680/1-A
Matrix: Solid
Analysis Batch: 291790

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291680

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/20/18 10:00	12/20/18 12:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*71*		*50 - 150*	*12/20/18 10:00*	*12/20/18 12:29*	*1*
Trifluorotoluene (Surr)	*113*		*50 - 150*	*12/20/18 10:00*	*12/20/18 12:29*	*1*

Lab Sample ID: LCS 580-291680/2-A
Matrix: Solid
Analysis Batch: 291790

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291680

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	35.0		mg/Kg		88	80 - 120		

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-291680/2-A
Matrix: Solid
Analysis Batch: 291790

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291680

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	74		50 - 150
Trifluorotoluene (Surr)	112		50 - 150

Lab Sample ID: LCSD 580-291680/3-A
Matrix: Solid
Analysis Batch: 291790

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291680

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	34.0		mg/Kg		85	80 - 120	3	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	74		50 - 150
Trifluorotoluene (Surr)	107		50 - 150

Lab Sample ID: 580-82479-1 MS
Matrix: Solid
Analysis Batch: 291790

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 291680

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	150		9.93	165	4	mg/Kg	☼	184	80 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		50 - 150

Lab Sample ID: 580-82479-1 MSD
Matrix: Solid
Analysis Batch: 291790

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 291680

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	150		9.93	177	4	mg/Kg	☼	311	80 - 120	7	10

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		50 - 150

Lab Sample ID: MB 580-291882/1-A
Matrix: Solid
Analysis Batch: 291931

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291882

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0	2.3	mg/Kg		12/21/18 11:00	12/22/18 15:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		50 - 150	12/21/18 11:00	12/22/18 15:51	1
Trifluorotoluene (Surr)	104		50 - 150	12/21/18 11:00	12/22/18 15:51	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-291882/2-A
Matrix: Solid
Analysis Batch: 291931

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291882

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			40.0	36.4		mg/Kg		91	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*77*		*50 - 150*
Trifluorotoluene (Surr)	*113*		*50 - 150*

Lab Sample ID: LCSD 580-291882/3-A
Matrix: Solid
Analysis Batch: 291931

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291882

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			40.0	35.4		mg/Kg		89	80 - 120	3	10

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*50 - 150*
Trifluorotoluene (Surr)	*108*		*50 - 150*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 580-291025/1-B
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291025

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C12 Aliphatics	ND		15	1.4	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C10-C12 Aromatics	ND		15	2.5	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C12-C16 Aliphatics	ND		15	1.3	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C12-C16 Aromatics	ND		15	1.3	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C16-C21 Aliphatics	2.15	J	15	1.8	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C16-C21 Aromatics	ND		15	1.9	mg/Kg		12/13/18 11:21	12/20/18 17:27	1
C21-C34 Aliphatics	ND		15	3.6	mg/Kg		12/13/18 11:21	12/20/18 17:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*91*		*60 - 140*	*12/13/18 11:21*	*12/20/18 17:27*	*1*
o-Terphenyl	*93*		*60 - 140*	*12/13/18 11:21*	*12/20/18 17:27*	*1*

Lab Sample ID: LCS 580-291025/2-B
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C10-C12 Aliphatics			7.57	6.10	J	mg/Kg		81	70 - 130		
C10-C12 Aromatics			7.57	4.57	J *	mg/Kg		60	70 - 130		
C12-C16 Aliphatics			15.1	14.3	J	mg/Kg		94	70 - 130		
C12-C16 Aromatics			22.7	16.0		mg/Kg		71	70 - 130		
C16-C21 Aliphatics			22.7	23.4		mg/Kg		103	70 - 130		
C16-C21 Aromatics			37.8	29.9		mg/Kg		79	70 - 130		

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCS 580-291025/2-B
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C21-C34 Aliphatics			45.4	47.1		mg/Kg		104	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctadecane	*95*		*60 - 140*
o-Terphenyl	*91*		*60 - 140*

Lab Sample ID: LCSD 580-291025/3-B
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291025

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics			7.57	6.10	J	mg/Kg		81	70 - 130	0	25
C10-C12 Aromatics			7.57	4.67	J *	mg/Kg		62	70 - 130	2	25
C12-C16 Aliphatics			15.1	12.9	J	mg/Kg		85	70 - 130	10	25
C12-C16 Aromatics			22.7	16.4		mg/Kg		72	70 - 130	2	25
C16-C21 Aliphatics			22.7	21.8		mg/Kg		96	70 - 130	7	25
C16-C21 Aromatics			37.8	30.6		mg/Kg		81	70 - 130	2	25
C21-C34 Aliphatics			45.4	46.5		mg/Kg		102	70 - 130	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctadecane	*95*		*60 - 140*
o-Terphenyl	*93*		*60 - 140*

Lab Sample ID: 580-82479-1 MS
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 291025

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
C10-C12 Aliphatics	13		2.63	15.5	4	mg/Kg	☼	102	70 - 130		
C10-C12 Aromatics	6.4	J *	2.63	9.09	J	mg/Kg	☼	103	70 - 130		
C12-C16 Aliphatics	44		5.27	52.3	4	mg/Kg	☼	154	70 - 130		
C12-C16 Aromatics	13		7.90	20.4		mg/Kg	☼	94	70 - 130		
C16-C21 Aliphatics	45	B	7.90	55.3	4	mg/Kg	☼	129	70 - 130		
C16-C21 Aromatics	22		13.2	33.8		mg/Kg	☼	92	70 - 130		
C21-C34 Aliphatics	22		15.8	37.2		mg/Kg	☼	98	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctadecane	*86*		*60 - 140*
o-Terphenyl	*91*		*60 - 140*

Lab Sample ID: 580-82479-1 MSD
Matrix: Solid
Analysis Batch: 291634

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 291025

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C12 Aliphatics	13		2.61	13.0	4	mg/Kg	☼	5	70 - 130	18	25
C10-C12 Aromatics	6.4	J *	2.61	5.90	J F1 F2	mg/Kg	☼	-18	70 - 130	43	25

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: 580-82479-1 MSD — **Client Sample ID: DPE-PSS-X9-7**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 291634 — **Prep Batch: 291025**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C12-C16 Aliphatics	44		5.23	44.7	4	mg/Kg	☼	10	70 - 130	16	25
C12-C16 Aromatics	13		7.84	16.2	F1	mg/Kg	☼	42	70 - 130	23	25
C16-C21 Aliphatics	45	B	7.84	50.4	4	mg/Kg	☼	67	70 - 130	9	25
C16-C21 Aromatics	22		13.1	29.2	F1	mg/Kg	☼	57	70 - 130	15	25
C21-C34 Aliphatics	22		15.7	36.5		mg/Kg	☼	94	70 - 130	2	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctadecane	*87*		*60 - 140*
o-Terphenyl	*92*		*60 - 140*

Method: NWTPH/EPH - Northwest - Extractable Petroleum Hydrocarbons (GC) - RA

Lab Sample ID: 580-82479-1 MS — **Client Sample ID: DPE-PSS-X9-7**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 292296 — **Prep Batch: 291025**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C21-C34 Aromatics - RA	13	*	21.1	30.2		mg/Kg	☼	79	70 - 130

Lab Sample ID: 580-82479-1 MSD — **Client Sample ID: DPE-PSS-X9-7**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 292296 — **Prep Batch: 291025**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C21-C34 Aromatics - RA	13	*	20.9	29.9		mg/Kg	☼	78	70 - 130	1	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-290849/1-B — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 291407 — **Prep Batch: 290849**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		12/11/18 16:51	12/18/18 14:50	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		12/11/18 16:51	12/18/18 14:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*124*		*50 - 150*	*12/11/18 16:51*	*12/18/18 14:50*	*1*

Lab Sample ID: LCS 580-290849/2-B — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 291407 — **Prep Batch: 290849**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	500	502		mg/Kg		100	64 - 127
Motor Oil (>C24-C36)	500	534		mg/Kg		107	70 - 125

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-290849/2-B
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290849

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	110		50 - 150

Lab Sample ID: LCSD 580-290849/3-B
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290849

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	527		mg/Kg		105	64 - 127	5	16
Motor Oil (>C24-C36)			500	570		mg/Kg		114	70 - 125	7	17

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	108		50 - 150

Lab Sample ID: 580-82479-1 MS
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 290849

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	480	F1	488	763	F1	mg/Kg	☼	57	70 - 125
Motor Oil (>C24-C36)	100		488	543		mg/Kg	☼	90	64 - 127

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	102		50 - 150

Lab Sample ID: 580-82479-1 MSD
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: DPE-PSS-X9-7
Prep Type: Total/NA
Prep Batch: 290849

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	480	F1	505	699	F1	mg/Kg	☼	43	70 - 125	9	16
Motor Oil (>C24-C36)	100		505	556		mg/Kg	☼	90	64 - 127	2	17

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	98		50 - 150

Lab Sample ID: 580-82479-4 DU
Matrix: Solid
Analysis Batch: 291407

Client Sample ID: DPE-PSS-X8-12.5
Prep Type: Total/NA
Prep Batch: 290849

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	2000			2070		mg/Kg	☼			3	35
Motor Oil (>C24-C36)	270			297		mg/Kg	☼			9	35

Surrogate	DU %Recovery	DU Qualifier	Limits
o-Terphenyl	125		50 - 150

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82479-1

Client Sample ID: DPE-PSS-X9-7
Date Collected: 12/07/18 09:27
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-X9-7
Date Collected: 12/07/18 09:27
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-1
Matrix: Solid
Percent Solids: 93.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290883	12/12/18 08:00	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290954	12/12/18 12:17	CJ	TAL SEA
Total/NA	Prep	3546			291346	12/17/18 15:22	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	291532	12/19/18 14:31	ADB	TAL SEA
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	563684	12/14/18 14:14	S1S	TAL NSH
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	563684	12/17/18 18:08	S1S	TAL NSH
Total/NA	Prep	5035			291680	12/20/18 10:00	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291790	12/20/18 19:48	TL1	TAL SEA
Total/NA	Prep	3550B			291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291634	12/20/18 22:26	Z1R	TAL SEA
Total/NA	Prep	3550B	RA		291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac	RA		291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH	RA	1	292296	12/31/18 01:25	JCM	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 20:13	T1W	TAL SEA

Client Sample ID: DPE-PSS-X9-14.5
Date Collected: 12/07/18 09:33
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-X9-14.5
Date Collected: 12/07/18 09:33
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-2
Matrix: Solid
Percent Solids: 74.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290883	12/12/18 08:00	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290954	12/12/18 13:32	CJ	TAL SEA
Total/NA	Prep	3546			291571	12/19/18 14:43	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	291993	12/24/18 23:34	W1T	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82479-1

Client Sample ID: DPE-PSS-X9-14.5

Lab Sample ID: 580-82479-2
Date Collected: 12/07/18 09:33
Matrix: Solid
Date Received: 12/08/18 10:00
Percent Solids: 74.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291680	12/20/18 10:00	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291790	12/20/18 18:54	TL1	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 20:33	T1W	TAL SEA

Client Sample ID: DPE-PSS-X8-7

Lab Sample ID: 580-82479-3
Date Collected: 12/07/18 11:31
Matrix: Solid
Date Received: 12/08/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-X8-7

Lab Sample ID: 580-82479-3
Date Collected: 12/07/18 11:31
Matrix: Solid
Date Received: 12/08/18 10:00
Percent Solids: 78.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290883	12/12/18 08:00	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290954	12/12/18 13:58	CJ	TAL SEA
Total/NA	Prep	3546			291346	12/17/18 15:23	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		1	291532	12/19/18 15:47	ADB	TAL SEA
Total/NA	Prep	3546	DL		291346	12/17/18 15:23	BAH	TAL SEA
Total/NA	Analysis	8270D SIM	DL	10	292122	12/27/18 15:43	ADB	TAL SEA
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		1	563684	12/14/18 14:46	S1S	TAL NSH
Total/NA	Prep	5035			563169	12/12/18 14:30	DHC	TAL NSH
Total/NA	Analysis	NWTPH/VPH		10	563684	12/17/18 19:46	S1S	TAL NSH
Total/NA	Prep	5035			291680	12/20/18 10:00	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291790	12/20/18 19:21	TL1	TAL SEA
Total/NA	Prep	3550B			291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac			291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH		1	291634	12/20/18 23:41	Z1R	TAL SEA
Total/NA	Prep	3550B	RA		291025	12/13/18 11:21	KMS	TAL SEA
Total/NA	Fraction	EPH Frac	RA		291524	12/19/18 09:49	BAH	TAL SEA
Total/NA	Analysis	NWTPH/EPH	RA	1	292296	12/31/18 02:37	JCM	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 21:33	T1W	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82479-1

Client Sample ID: DPE-PSS-X8-12.5

Lab Sample ID: 580-82479-4
Date Collected: 12/07/18 11:38
Matrix: Solid
Date Received: 12/08/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-X8-12.5

Lab Sample ID: 580-82479-4
Date Collected: 12/07/18 11:38
Matrix: Solid
Date Received: 12/08/18 10:00
Percent Solids: 79.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035	DL		290910	12/12/18 11:50	ASJ	TAL SEA
Total/NA	Analysis	8260C	DL	1	291036	12/13/18 17:02	ASJ	TAL SEA
Total/NA	Prep	3546			291571	12/19/18 14:43	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	291993	12/24/18 23:59	W1T	TAL SEA
Total/NA	Prep	5035			291680	12/20/18 10:00	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291898	12/21/18 18:32	CJB	TAL SEA
Total/NA	Prep	5035			291680	12/20/18 10:00	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291931	12/22/18 19:56	JSM	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 22:13	T1W	TAL SEA

Client Sample ID: DPE-PSS-X8-19.5

Lab Sample ID: 580-82479-5
Date Collected: 12/07/18 11:52
Matrix: Solid
Date Received: 12/08/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DPE-PSS-X8-19.5

Lab Sample ID: 580-82479-5
Date Collected: 12/07/18 11:52
Matrix: Solid
Date Received: 12/08/18 10:00
Percent Solids: 85.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035	RA		290910	12/12/18 11:50	ASJ	TAL SEA
Total/NA	Analysis	8260C	RA	1	291036	12/13/18 14:31	ASJ	TAL SEA
Total/NA	Prep	5035			291680	12/20/18 10:00	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291898	12/21/18 18:05	CJB	TAL SEA
Total/NA	Prep	5035			291680	12/20/18 10:00	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291931	12/22/18 17:41	JSM	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 22:54	T1W	TAL SEA

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82479-1

Client Sample ID: DUP-4
Date Collected: 12/07/18 00:01
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	290812	12/11/18 14:36	BAH	TAL SEA

Client Sample ID: DUP-4
Date Collected: 12/07/18 00:01
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-6
Matrix: Solid
Percent Solids: 76.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290883	12/12/18 08:00	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290954	12/12/18 15:13	CJ	TAL SEA
Total/NA	Prep	5035			291680	12/20/18 10:00	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291790	12/20/18 22:32	TL1	TAL SEA
Total/NA	Prep	3546			290849	12/11/18 16:51	JCM	TAL SEA
Total/NA	Cleanup	3630C			291013	12/13/18 10:37	DSO	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	291407	12/18/18 23:14	T1W	TAL SEA

Client Sample ID: Trip Blank
Date Collected: 12/07/18 00:01
Date Received: 12/08/18 10:00

Lab Sample ID: 580-82479-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			290883	12/12/18 08:00	ASJ	TAL SEA
Total/NA	Analysis	8260C		1	290954	12/12/18 15:39	CJ	TAL SEA
Total/NA	Prep	5035			291680	12/20/18 10:00	CJB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291790	12/20/18 16:11	TL1	TAL SEA

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82479-1

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Laboratory: TestAmerica Nashville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-19
Alaska (UST)	State Program	10	UST-087	06-30-19
Arizona	State Program	9	AZ0473	05-05-19
Arkansas DEQ	State Program	6	88-0737	04-25-19
California	State Program	9	2938	10-31-18 *
Connecticut	State Program	1	PH-0220	12-31-19
Florida	NELAP	4	E87358	06-30-19
Georgia	State Program	4	NA: NELAP & A2LA	12-31-19
Illinois	NELAP	5	200010	12-09-18 *
Iowa	State Program	7	131	04-01-20
Kansas	NELAP	7	E-10229	10-31-19
Kentucky (UST)	State Program	4	19	06-30-19
Kentucky (WW)	State Program	4	90038	12-31-19
Louisiana	NELAP	6	30613	06-30-19
Maine	State Program	1	TN00032	11-03-19
Maryland	State Program	3	316	03-31-19
Massachusetts	State Program	1	M-TN032	06-30-19
Minnesota	NELAP	5	047-999-345	12-31-19
Mississippi	State Program	4	N/A	06-30-19
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-19
New Hampshire	NELAP	1	2963	10-09-19
New Jersey	NELAP	2	TN965	06-30-19
New York	NELAP	2	11342	03-31-19
North Carolina (WW/SW)	State Program	4	387	12-31-19
North Dakota	State Program	8	R-146	06-30-19
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-19
Oregon	NELAP	10	TN200001	04-26-19
Pennsylvania	NELAP	3	68-00585	07-31-19
Rhode Island	State Program	1	LAO00268	12-30-19
South Carolina	State Program	4	84009 (001)	02-28-19
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-19
USDA	Federal		P330-13-00306	12-01-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82479-1

Laboratory: TestAmerica Nashville (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Utah	NELAP	8	TN00032	07-31-19
Virginia	NELAP	3	460152	06-14-19
Washington	State Program	10	C789	07-19-19
West Virginia DEP	State Program	3	219	02-28-19
Wisconsin	State Program	5	998020430	08-31-19
Wyoming (UST)	A2LA	8	453.07	12-31-19

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Edmonds Terminal

TestAmerica Job ID: 580-82479-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82479-1	DPE-PSS-X9-7	Solid	12/07/18 09:27	12/08/18 10:00
580-82479-2	DPE-PSS-X9-14.5	Solid	12/07/18 09:33	12/08/18 10:00
580-82479-3	DPE-PSS-X8-7	Solid	12/07/18 11:31	12/08/18 10:00
580-82479-4	DPE-PSS-X8-12.5	Solid	12/07/18 11:38	12/08/18 10:00
580-82479-5	DPE-PSS-X8-19.5	Solid	12/07/18 11:52	12/08/18 10:00
580-82479-6	DUP-4	Solid	12/07/18 00:01	12/08/18 10:00
580-82479-7	Trip Blank	Solid	12/07/18 00:01	12/08/18 10:00

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamericainc.com

Loc: 580
82479

☐ Rush
☐ Short Hold

Chain of Custody Record

Client	Client Contact	Date	Chain of Custody Number
Arcadis	Ophelie Enceille	12/7/18	34982
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
1100 olive way, suite	206-939-9622		
City	**State**	**Zip Code**	**Sampler**	**Lab Contact**
Seattle	WA	98101	Jason Little	Elaine Walker
Project Name and Location (State)	**Billing Contact**
Edmonds Terminal	
Contract/Purchase Order/Quote No.	

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	MeOH	Analysis (Attach list if more space is needed): Benzene EPA 8260C	NWTPH-Gx	NWTPH-Dx w/SGC	cPAHs EPA 8270C	EPH/VPH
DPE-PSS-X9-7	12/7/18	0927				X	2						2	X	X	X	X	X
DPE-PSS-X9-14.5	12/7/18	0933				X	1						1	X	X	X		
DPE-PSS-X8-7	12/7/18	1131				X	2						2	X	X	X	X	X
DPE-PSS-X8-12.5	12/7/18	1138				X	1						1	X	X	X		
DPE-PSS-X8-19.5	12/7/18	1152				X	1						1	X	X	X		
DUP-4	12/7/18	—				X	1						1	X	X	X		
Trip Blank	—	—		X									1	X	X			

580-82479 Chain of Custody

Special Instructions/ Conditions of Receipt

* use standard SGC
* ONLY analyze cPAHs if DRO/HO detections
* EPH/VPH - aliphatics, aromatics, benzene, toluene, ethylbenzene, xylenes, naphthalene, 1&2-methylnaphthalene n-hexane & 7 cPAHs

Cooler: ☐ Yes ☐ No Cooler Temp: _____

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): ☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☐ Other _____

QC Requirements (Specify)

	Sign/Print	Date	Time
1. Relinquished By	Eric Krueger	12/7/18	1400
2. Relinquished By			
3. Relinquished By			
1. Received By	FedEx	12/7/18	1400
2. Received By	B. Gall RB Gall SEA TA	12.8.18	1000
3. Received By			

Therm. ID: A2 Cor: 0.1 ° Unc: 0.8 °
Cooler Dsc: Lrg Grn
Packing: Bubble
Cust. Seal: Yes X No ____
Cooler Temp. (°C): Obs'd: 3 Corr'd: 3 Dry, None
FedEx: P.O
UPS: ____
Lab Courier: ____
Other: ____

Comments

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

TAL-8274-580 (0210)

1/3/2019

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

580-82479 Chain of Custody

Cooler Received/Opened On 12-12-2018 @ 10:10

Time Samples Removed From Cooler 13:37 Time Samples Placed In Storage 13:39 (2 Hour Window)

1. Tracking # 9314 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 14740456 pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 1.7 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 (side)

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) KA

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #

I certify that I unloaded the cooler and answered questions 7-14 (intial) KA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) KA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) KA

I certify that I attached a label with the unique LIMS number to each container (intial) KA

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#

BIS = Broken in shipment

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

Loc 580
82479

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Walker, Elaine M	COC No: 580-62026.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: elaine.walker@testamericainc.com	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): Washington	Job #: 580-82479-1
Address: 2960 Foster Creighton Drive, ,	Due Date Requested: 12/18/2018		
City: Nashville	TAT Requested (days):		
State, Zip: TN, 37204			
Phone: 615-726-0177(Tel) 615-726-3404(Fax)	PO #:		
Email:	WO #:		
Project Name: Edmonds Terminal	Project #: 58011413		
Site: Chevron Edmonds Terminal	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH_VPH/5035FM_Calc Northwest VPH + VOCs	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
DPE-PSS-X9-7 (580-82479-1)	12/7/18	09:27 Pacific		Solid			X	1	
DPE-PSS-X8-7 (580-82479-3)	12/7/18	11:31 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:		Method of Shipment:		
Relinquished by: Tom Blankenship	Date/Time: 12/11/18	Company TA-Sea	Received by:	Date/Time: 12-12-2018 10:10	Company TA-NAS		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.7

Ver: 09/20/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 580-82479-1

Login Number: 82479
List Number: 1
Creator: Gall, Brandon A

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Arcadis U.S., Inc.

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