



Environment

Prepared for  
Shell Oil Products US

Submitted to  
Mr. Jerome Cruz  
Washington Department  
of Ecology  
Northwest Region Office  
3190 160th Avenue SE  
Bellevue, WA 98008

Submitted by  
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Suite 1500  
Portland, OR 97201-5850  
February 2020

# Annual Compliance Monitoring Report 2019

Shell Harbor Island Terminal  
Seattle, Washington





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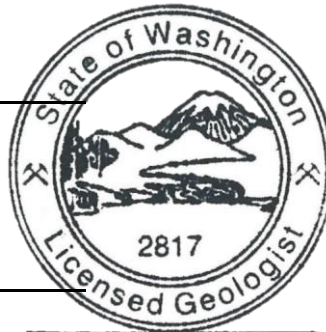
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Seattle, Washington

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# 1 Introduction

The purpose of this Annual Compliance Monitoring Report is to evaluate groundwater conditions with respect to the cleanup requirements at the Shell (Equilon) Distribution Terminal on Harbor Island in Seattle, Washington (herein referred to as the Shell Harbor Island Terminal or the site) (**Figure 1**). The site is comprised of three parcels located at 2555 13<sup>th</sup> Avenue Southwest (SW), 1835 13<sup>th</sup> Avenue SW, and 1711 13<sup>th</sup> Avenue SW. These parcels are designated as the Main Tank Farm, North Tank Farm, and Shoreline Manifold Area, respectively (**Figure 2**). Three groundwater monitoring and cleanup areas are associated with the three parcels. Groundwater monitoring and cleanup area TX-03A Area, identified on **Figure 2**, encompasses the North Tank Farm and the northern portion of the Main Tank Farm. The SH-04 Area overlaps the southeastern portion of the Main Tank Farm. The boundaries for the Shoreline Manifold Area parcel and groundwater monitoring and cleanup area are identical.

Compliance monitoring activities described in this report are performed under the *October 1998 Equilon Seattle Terminal MTCA Consent Decree* (Consent Decree No. 99 2-07 176 SEA [Consent Decree]) with the Washington State Department of Ecology (Ecology, 1998). The information presented in this report is based on data collected during the monitoring period of January through December 2019.

## 1.1 Summary of Cleanup Actions

Cleanup actions were performed in compliance with the Consent Decree, which provides site-specific cleanup levels for total petroleum hydrocarbon (TPH), lead, and arsenic in soils and for TPHs, select metals, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) in groundwater. The site-specific groundwater cleanup levels applicable to this report are in **Table 1**. The site-specific soil cleanup levels are included in the summary of cleanup actions discussed below.

The primary cleanup action at the site included excavation of near-surface lead- and arsenic-impacted soil in areas throughout the Main Tank Farm which was conducted from December 2003 through February 2004. Lead- and arsenic-impacted surface soils with concentrations above the soil cleanup levels of 1,000 milligrams per kilogram (mg/kg) and 32 mg/kg, respectively were removed. In addition, a small area of lead-impacted soil near the oil/water separator (OWS) in the Main Tank Farm was excavated in October 2001; however, some lead-impacted soils were left in place due to structural constraints. A 3-inch cap was placed over the lead-impacted subsurface soil in the area around the OWS.

Between November 2001 and October 2009, TPH-impacted surface and subsurface hotspots with concentrations greater than 10,000 mg/kg, the shoreline soil cleanup level, were removed from the Shoreline Manifold Area. Additional impacted soils with TPH concentrations greater than 20,000 mg/kg, the inland soil cleanup level) were removed near former underground storage tank (UST) in October 2001, and in the Main Tank Farm in February 2004 and 2007.

A free product and vapor extraction system was installed in the Shoreline Manifold Area in 1996. The vapor extraction system operated until August 2005 when it was shut down because the hydrocarbon recovery through vapor extraction had declined. Passive free product recovery occurred in the Shoreline Manifold Area at monitoring well MW-211 through 2010 and in monitoring wells MW-210 and MW-212 through 2011. Vacuum purging was conducted on a quarterly basis in monitoring wells MW-210 and MW-212 in 2012.

On September 10, 2013, less than three barrels of diesel product were released in the Shoreline Manifold Area during an "in-line" inspection of the dock lines. Approximately 2.4 barrels of free-standing product were recovered immediately by vacuum truck and the use of sorbent pads. Additionally, approximately 8 to 10 cubic yards of soil were removed. Confirmation soil samples collected from the excavated area were below the shoreline soil cleanup level of 10,000 mg/kg. Field observations indicated that surface water and the stormwater system were not impacted by the release (URS, 2014). Pooled diesel product was observed surrounding monitoring well MW-212 following the release. The product was removed using a vacuum truck and subsequent monitoring did not detect product. At the request of Ecology, sorbent socks were installed in monitoring wells MW-209, MW-210, and

MW-212 in January 2014. In addition, monitoring wells MW-208, MW-210, MW-211, and MW-212 are monitored monthly for product.

In September 2016, RECON Environmental, Inc. (RECON) excavated and disposed of approximately 5.28 tons of visibly stained soils at the former Lubes Facility, located near the southwest corner of the Main Tank Farm and directly west of the pumphouse. Confirmation soil samples were collected and the open piping at two small petroleum impacted areas were capped. The TPH concentrations in the confirmation soil samples were less than the inland soil cleanup level of 20,000 mg/kg (Ecology, 1998; RECON, 2017). Upon receipt of these results, AECOM authorized RECON to backfill the excavations.

In November 2016, construction of the bio-sparging system commenced within the TX-03A Area (**Figure 2**). The City of Seattle (the City) halted the completion of the system in December 2016 due to a delay in the issuance of the Utility Major Permit and the Annual Permit. Prior to the work halt, AECOM oversaw the installation of the 37 bio-sparging wells in the City Parking Lot and Main Tank Farm, and the installation of the system piping within the Main Tank Farm. System construction was completed in May 2017 and the system was started on May 25, 2017. The bio-sparging system construction details were documented in a Bio-Sparging Completion Technical Memorandum, submitted in the first quarter of 2018.

Between March and September of 2018, AECOM completed rehabilitation of the 24-inch mainline of the City's stormwater system located directly north of the Seattle Terminal's Main Tank Farm, per the terms of a Voluntary Compliance Agreement between Shell and the City. Dry weather stormwater system sampling events were conducted in January and August of 2019.

## 1.2 Summary of Compliance Monitoring Program

Compliance monitoring consists of product monitoring, groundwater level monitoring, and groundwater sampling as detailed in the *Compliance Monitoring Plan* (EMCON and LCI, 1999). The monitoring objectives have been categorized as confirmational, performance, and sentry:

- Performance monitoring is conducted to monitor the effectiveness of the cleanup actions. Performance monitoring consists of three components; product thickness and sheen monitoring, groundwater natural attenuation monitoring, and groundwater quality monitoring.
- Confirmational monitoring is conducted to confirm the long-term effectiveness of the cleanup action once performance and cleanup levels have been met. Confirmational product monitoring consists of monitoring product thickness and sheen.
- Sentry monitoring is conducted to provide early warnings of off-site contaminant migrations. Semi-annual sentry groundwater quality monitoring is conducted simultaneously with groundwater performance monitoring.

Site-wide quarterly monitoring was conducted until 2006 in accordance with the *Compliance Monitoring Plan*. In 2006, the monitoring program was modified in accordance to proposed changes by RETEC (RETEC, 2006a; RETEC, 2006b), and additional modifications in the monitoring program occurred in 2008 in accordance with email correspondence with Ecology (URS, 2008). The groundwater monitoring program established in 2008 is presented in black text in **Table 2**. Additional modifications to the compliance monitoring program between 2011 and 2015 are presented in red text. The groundwater cleanup levels specified in the 1998 Consent Decree are presented in **Table 1**.

### 1.2.1 SH-04 Area

Compliance monitoring wells MW-05, MW-111, MW-112A, MW-104, and SH-04 are located along 13<sup>th</sup> Avenue and in the southeast corner of the Main Tank Farm, within the SH-04 Area of the site (**Figure 2**). The compliance monitoring program for the SH-04 Area was modified between 2011 and 2015 as described below and presented in red text on **Table 2**.

- In 2011, additional semi-annual samples were obtained from the above listed five monitoring wells to assess the dissolved groundwater plume (URS, 2012). Monitoring wells MW-305 and MW-306 were installed in the SH-04 Area in November 2011.
- Beginning in 2012 through 2014, quarterly groundwater samples were collected to assess the dissolved hydrocarbon plume in the SH-04 Area. Additionally, three joint groundwater sampling events were conducted in 2012 with the neighboring Kinder Morgan Terminal in the SH-04 Area.
- In 2014, benzene and gasoline concentrations within sentry well SH-04 were below the cleanup levels. Therefore, due to the reductions of concentrations within the sentry well, URS removed groundwater monitoring at monitoring wells MW-305 and MW-306 from the monitoring program (URS, 2014).

### 1.2.2 TX-03A Area

As indicated on **Table 2**, multiple compliance monitoring wells are in the TX-03A Area of the site. This area includes the northern boundary of the Main Tank Farm and extends north to the northern boundary of the North Tank Farm (**Figure 2**). The compliance monitoring program within the TX-03A Area includes historical monitoring wells and additional monitoring wells that were installed within the TX-03A Area between 2011 and 2016 as part of the TX-03A Area investigation. Modifications since 2008 are presented in red text on **Table 2**.

To assess the dissolved hydrocarbon plume at the TX-03A Area, the following additional monitoring wells were installed within the TX-03A Area between 2011 and 2016:

- MW-301 through MW-304 in November 2011
- MW-307 through MW-310 in November 2012
- MW-311 and MW-312 in October 2014
- MW-313, MW-314, and MW-315 in July 2016

The monitoring wells installed in November 2011 through July 2016 are sampled at least semi-annually since 2012.

### 1.2.3 Rehabilitation of the Stormwater System

Per the terms of a Voluntary Compliance Agreement between Shell and the City, AECOM completed rehabilitation of the 24-inch mainline of the City's stormwater system located directly north of the Seattle Terminal's Main Tank Farm. Rehabilitation activities included installing 440 feet of cured-in-place pipe (CIPP) in a section of the mainline where groundwater infiltration was observed and conducting post-installation cleaning of the mainline through the CIPP installation area downstream to the mainline outfall (approximately 1,250 total feet of pipe). A technical memorandum detailing the stormwater system rehabilitation activities was provided to the City on January 29, 2019.

Dry weather stormwater system samples were collected at manholes D050-014 and D050-016 on January 15 and August 14, 2019 after at least 24 hours of dry weather conditions while tidal elevations were below sample points in the mainline. When compared to 2014 results, the 2019 dry weather sampling results indicated that BTEX and petroleum hydrocarbon concentrations within the CIPP installation area have been significantly reduced since the completion of the stormwater system rehabilitation project. The analytical results and summary of the events were provided in Technical Memorandums *January 2019 Dry Weather Stormwater System Sampling Results* and *August 2019 Dry Weather Stormwater System Sampling Results*.

### 1.3 Geology and Hydrogeology

The 405-acre Harbor Island was constructed during the early 1900s in an area consisting of intertidal wetlands at the mouth of the Duwamish River. The island was created using sediments dredged to facilitate navigation in the Lower Duwamish River and West Waterway (KJC, 1990).

Soil underlying the site consists of emplaced grade and dredge fill overlying native estuarine deposits (EMCON and LCI, 1999). The uppermost grade fill unit consists of coarse-grained fill varying in thickness from less than one foot to approximately two feet thick. The underlying dredge fill unit was created when estuarine deposits near the site were dredged and used as fill. The contact between the dredge fill and native estuarine units is poorly defined due to similar properties of the two units. The dredge fill varies from approximately 8 to 20 feet in thickness at the site. It consists of fine- to medium-grained sand with some gravel. Native estuarine deposits underlie the dredge fill at depths of approximately 9 to 21 feet below grade. These deposits are composed of primarily fine- to medium-grained sand with thin silt interbeds.

The shallow, unconfined groundwater aquifer consists of a thin lens of freshwater overlying brackish water. The groundwater table is 4 to 8 feet below the ground surface (bgs), within the dredge fill. The water table within the North Tank Farm and Main Tank Farm areas are generally unaffected by tides; groundwater quality and elevations within the Shoreline Manifold Area are affected by tides.

The native estuarine deposits are fully saturated, and groundwater within this unit is unconfined. Groundwater quality and groundwater elevations within this unit are influenced by surrounding surface water bodies and associated tidal fluctuations. This shallow groundwater flows in a radial fashion to the north and to the south from a potentiometric high located within the Main Tank Farm area.

## 2 Groundwater Elevations and Flow

Monitoring wells at the site are screened in either the shallow or deep depth intervals. The monitoring well screen intervals are presented on **Table 2** and discussed below.

- All but two of the monitoring wells in the groundwater monitoring program are screened in the shallow depth interval (approximately 5 to 15 feet bgs)
- Monitoring wells MW-213 and MW-214 are screened in the deeper depth interval (approximately 30 to 40 feet bgs).

Groundwater elevation data for the monitoring period (January 2019 through December 2019) and historical groundwater elevation data are presented in **Table 3**. The groundwater elevation data is discussed in the following subsections for each area, as identified in **Figure 2**. Monitoring well gauging field logs, which include depth to groundwater and depth to product, are provided in **Appendix A**.

### 2.1.1 TX-03A Area (including the North Tank Farm)

The TX-03A Area is shown on **Figure 2**. The North Tank Farm has been incorporated into the TX-03A Area because it provides downgradient and cross-gradient data for the TX-03A Area (**Figures 3 through 6**).

In accordance with the groundwater monitoring program (**Table 2**), depth to groundwater was measured in North Tank Farm monitoring wells (MW-201 through MW-204 and MW-206A) and in additional TX-03A Area monitoring wells (MW-101, MW-102, MW-301 through MW-304, MW-307 through MW-315, TES-MW-1, and TX-03A) during the quarterly sampling events.

The range in groundwater elevations for each quarterly 2019 event is listed below:

- March 2019: 6.57 (MW-314) to 8.23 (MW-310) feet above mean sea level (AMSL)

- May 2019: 6.12 (MW-201) to 7.77 (MW-102) feet AMSL
- September 2019: 5.18 (MW-315) to 6.43 (MW-313) feet AMSL
- December 2019: 5.66 (MW-201) to 6.51 (MW-313) feet AMSL

Localized groundwater elevation contour maps depicting the March, June, September, and December 2019 groundwater elevations for the shallow depth interval beneath the TX-03A Area are presented as **Figures 3 through 6**, respectively. Groundwater in the TX-03A Area generally flows to the north-northwest.

### 2.1.2 SH-04 Area

In accordance with the groundwater monitoring program, depth to groundwater was measured in MW-05, MW-104, MW-111, MW-112A, and SH-04 in May and December 2019.

The range in groundwater elevations for each semiannual 2019 event is listed below:

- May 2019: 6.13 (MW-112A) to 7.49 (MW-104) feet AMSL
- December 2019: 5.79 (MW-112A) to 6.48 (MW-05) feet AMSL

### 2.1.3 Shoreline Manifold Area

In accordance with the groundwater monitoring program in 2019, depth to groundwater was measured semiannually in MW-213 and MW-214 (June and December) and monthly from monitoring wells MW-208, MW-210, MW-211, and MW-212.

The range in groundwater elevations for each quarter in 2019 is listed below:

- First Quarter 2019: 5.83 (MW-212) to 8.18 (MW-208) feet AMSL
- Second Quarter 2019: 3.41 (MW-213) to 7.61 (MW-210) feet AMSL
- Third Quarter 2019: 5.67 (MW-212) to 7.26 (MW-210) feet AMSL
- Fourth Quarter 2019: 5.44 (MW-212) to 7.08 (MW-208) feet AMSL

### 3 General Compliance Results

This section presents the analytical results of the groundwater monitoring and performance product monitoring (in support of operation and maintenance). Field sampling data sheets, which include field parameter measurements and product measurement field forms, are provided in **Appendix A**. Laboratory data packages are provided in **Appendix B**. Laboratory analytical data was assessed to ensure data quality and were deemed acceptable for their intended use with noted qualifiers. Data validation reports are provided in **Appendix B**.

#### 3.1 Performance Product Monitoring

In accordance with the groundwater monitoring program (**Table 2**), depth to groundwater and thickness of free product was measured in the monitoring wells listed below:

- Shoreline Manifold Area: MW-208, MW-210, MW-211, and MW-212, monthly
- North Tank Farm: MW-204, quarterly

Performance product monitoring data is presented in **Table 4**.

No measurable thickness of floating product was detected in monitoring wells MW-204 and MW-211 during the 2019 events. Floating product was detected in MW-208 at 0.01 feet thick (March 2019); MW-212 at 0.03 feet thick (April, May, and September 2019); and MW-210 ranging from 0.01 (July and August 2019) to 1.43 feet thick (February 2019).

Absorbent socks are present for product recovery in monitoring wells MW-210 and MW-212 and are replaced monthly as needed.

#### 3.2 Natural Attenuation Performance Criteria

In accordance with the groundwater monitoring program (**Table 2**), natural attenuation performance monitoring is conducted annually at ten monitoring wells within the TX-03A Area. The results are presented in **Table 5** along with the standard groundwater stabilization parameters, which are collected from monitoring wells quarterly after completion of purging and prior to collection of groundwater samples.

#### 3.3 Analytical Results for the Groundwater Performance and Confirmational Monitoring

This section presents analytical results for the performance and compliance monitoring events conducted in 2019. Groundwater samples were collected during the fourth quarter of 2019 from the following monitoring wells in accordance with **Table 2**.

- Background well MW-206A
- Point of compliance (POC) wells MW-213 and MW-214
- Sentry wells MW-102, MW-104, MW-201, MW-204, MW-311 through MW-315, MW-05, MW-111, MW-112A, SH-04, MW-105, TX-04, and TX-06A
- General compliance wells MW-101, MW-301, MW-303, MW-309, and TES-MW-1

- Natural attenuation performance wells MW-202, MW-203, MW-302, MW-304, MW-307, MW-308, MW-310, MW-311, MW-312, and TX-03A

Monitoring wells at the site were monitored in 2019 on either a quarterly, semiannual, or annual basis according to **Table 2**. Monitoring wells MW-311 and MW-312 are identified as both natural attenuation performance wells and sentry wells.

The 2019 and historic groundwater sample results are included on **Tables 6 and 7** and are summarized in the following subsections. The gasoline and diesel results for 2019 are included on **Figure 7**, and the benzene results are included on **Figure 8**. Cleanup level exceedances are highlighted in red on **Figures 7 and 8**.

### 3.3.1 Background Monitoring Well Results

A groundwater sample was collected from background monitoring well MW-206A in December 2019. The background sample was analyzed for BTEX, gasoline range hydrocarbons (gasoline), diesel range hydrocarbons (diesel), and motor oil range hydrocarbons (oil). The results are presented on **Table 6**.

No analytes were detected at concentrations above the cleanup levels in background monitoring well MW-206A.

### 3.3.2 Point of Compliance Well Results

Groundwater samples were collected from POC wells MW-213 and MW-214 in May and December 2019. The groundwater samples from the POC wells were analyzed for BTEX, gasoline, diesel, oil, and cPAHs. The results for the two monitoring wells are presented within **Tables 6 and 7**.

No analytes were detected at concentrations above the cleanup levels in POC wells MW-213 and MW-214.

### 3.3.3 Sentry Monitoring Results

Sentry wells include MW-05, MW-102, MW-104, MW-105, MW-111, MW-112A, MW-201, MW-204, MW-311 through MW-315, SH-04, TX-04, and TX-06A. The following subsections summarize the results in the sentry wells characterizing groundwater flowing from beneath the North and Main Tank Farms. The sentry wells within the TX-03A Area are discussed further in Section 3.

#### 3.3.3.1 North Tank Farm (included in the TX-03A Area)

Monitoring wells MW-201 and MW-204 are representative sampling points for assessing the quality of groundwater flowing across the northern boundary of the North Tank Farm. Collection of groundwater samples from these monitoring wells was attempted in December 2019; however, there was an insufficient volume of water in monitoring well MW-201 and a sample could not be collected. The groundwater sample collected from monitoring well MW-204 was analyzed for BTEX, gasoline, diesel, and oil.

No analytes were detected at concentrations above the cleanup levels at MW-204 (**Table 6**).

#### 3.3.3.2 Main Tank Farm – Northern Boundary (included in the TX-03A Area)

Historically, monitoring well TX-03A was the representative sampling point for assessing the quality of groundwater flowing across the northern boundary of the Main Tank Farm. However, the investigation within the TX-03A has expanded with the installation of additional monitoring wells as discussed in Section 1.2.2.

Monitoring wells MW-102 and MW-311 through MW-315 are additional sentry wells used for the characterization of the northern boundary of the Main Tank Farm. Groundwater samples were collected from MW-102 in December 2019; from MW-314 in March, May, and December 2019; from MW-311 through MW-313, and MW-

315 in March, May, September, and December 2019. Monitoring well MW-314 could not be located during the September monitoring event. The groundwater samples from the six sentry wells were all analyzed for BTEX and gasoline, and the groundwater samples from MW-102 and MW-313 through MW-315 were also analyzed for diesel and oil.

No analytes were detected above the cleanup levels at MW-102, MW-311, MW-313, and MW-314 (**Table 6**).

Concentrations of benzene and gasoline exceeded the cleanup levels of 0.071 milligrams per liter (mg/L) and 1 mg/L, respectively, in monitoring well MW-312 during all four quarters of 2019. The maximum detected concentrations of benzene and gasoline in monitoring well MW-312 during 2019 were detected during the May monitoring event at 1.89 mg/L and 2.50 mg/L, respectively (**Table 6**). Concentrations of gasoline exceeded the cleanup level of 1 mg/L in monitoring well MW-315 during all four quarters of 2019. The maximum detected concentration of gasoline in monitoring well MW-315 during 2019 was detected during the May monitoring event at 2.16 mg/L. These exceedances are highlighted in red on **Figures 7 and 8**.

### 3.3.3.3 Main Tank Farm – Eastern and Western Boundaries

Monitoring wells TX-04 and TX-06A were designated as the sentry wells for the eastern and western boundaries of the Main Tank Farm. Groundwater samples were collected from these two monitoring wells in December 2019 and analyzed for BTEX, gasoline, diesel, and oil.

No analytes were detected above the cleanup levels at TX-04 and TX-06A (**Table 6**).

### 3.3.3.4 Main Tank Farm – Southern Boundary (includes the SH-04 Area)

SH-04 Area monitoring wells MW-05, MW-104, MW-111, MW-112A, and SH-04 as well as monitoring well MW-105, located to the west of the SH-04 Area, were designated as the sentry wells for the southern boundary of the Main Tank Farm.

- MW-05, MW-111, MW-112A, and SH-04 were sampled in May and December 2019 for BTEX, gasoline, diesel, and oil.
- MW-104 was sampled in May and December 2019 for total lead, gasoline, diesel, and oil.
- MW-105 was sampled in December 2019 for total lead, BTEX, gasoline, diesel, and oil.

The results are presented within **Table 6**, and the cleanup level exceedances for these five sentry wells are as follows:

- Gasoline concentrations exceeded the cleanup level of 1 mg/L in MW-104 in May 2019 and MW-112A in May and December 2019 (**Figure 7**). The maximum detected concentration was 2.59 mg/L in MW-104.
- Diesel concentrations exceeded the cleanup level of 10 mg/L in MW-112A at a concentration of 12.2 mg/L in December 2019.



## 4 TX-03A Area Investigation

The TX-03A Area, which includes the North Tank Farm, was identified for additional evaluation during the *EPA 5-Year review of the Harbor Island Superfund Site* (EPA, 2010a). The TX-03A Area is shown on **Figure 2**. This section summarizes the other activities conducted in the TX-03A Area during 2019 in addition to the compliance monitoring.

### 4.1 TX-03A Area Groundwater Flow

Localized groundwater elevation contour maps for the shallow depth interval beneath the TX-03A Area using the March, June, September, and December 2019 groundwater elevations are presented as **Figures 3 through 6**, respectively. Groundwater in the TX-03A Area flows to the north-northwest across the north end of the Main Tank Farm across SW Florida Street.

### 4.2 Bio-Sparging System

Construction of the bio-sparging system was completed in May 2017 and the system was started on May 25, 2017. Details of the system installation and the operation and maintenance plan are provided in the Bio-Sparging Completion Technical Memorandum, dated March 28, 2018. The location of the bio-sparging system, including the air lines including a total of six (6) main trunk lines, and wells, is shown in **Figure 2**.

A summary of bio-sparging system operations from January 2019 through September 2019 is provided below, and system operation details for this period are provided in the first, second, and third quarter of 2019 progress reports dated May 14, August 15, and November 8, 2019, respectively:

- The bio-sparge system was fully operational until January 16 when trunk line AS-5 was discovered to be damaged. Trunk line AS-5 was immediately taken out of service while the other five trunk lines remained in operation. On February 20, damaged rotameters at trunk lines AS-1 and AS-6 and a fault in the air injection sequencing program was discovered and bio-sparging operations were suspended. Bio-sparging operations resumed at all six trunk lines after repairs were completed on March 21, 2019;
- The three rotameters that were damaged during the first quarter of 2019 were replaced with flexible hose which absorbs polyvinyl chloride (PVC) pipe movement without sustaining damage. Trunk lines AS-2, AS-3, and AS-4 will be replaced with flexible hose if damage is discovered, or on an as-needed basis;
- The bio-sparge system was shut off on May 13 to support the second quarter groundwater sampling event. The system was restarted on May 17 following the completion of the sampling event;
- On July 1 and 2, bio-sparging system operational adjustments were made to increase air delivery to the aquifer in the vicinity of three monitoring wells with petroleum concentrations currently exceeding cleanup levels: MW-303, MW-307, and TX-03A. Additionally, two (2) ball-valve monitoring ports were installed in Trunk Line AS-4 and four (4) ball-valve monitoring ports were installed in Trunk Line AS-6 for airflow measurements;
- On August 16, terminal staff reported that the terminal air compressor motor was operating continuously. Staff temporarily discontinued bio-sparging and closed the air compressor outlet valve in order to reduce the load on the air compressor. The system was restarted on September 5 at 50% frequency. Trunk line AS-5 was closed to support the frequency reduction; and
- The bio-sparging system was shut off on September 16 to support the third quarter groundwater sampling event. The system was restarted at 100% frequency and trunk line AS-5 was re-opened on September 20.

Bio-sparging operational details from October 2019 through December 2019 are provided below:

- Monthly visits were conducted October 16, November 5, and December 6 for system inspection and to record system readings.
- The bio-sparging system was shut off on December 6 to support the fourth quarter groundwater sampling event. Based on the analytical results from the fourth quarter sampling event, the system has remained off for rebound testing.

### 4.3 TX-03A Area Groundwater Analytical Results

Groundwater samples from monitoring wells in the TX-03A Area were analyzed for one or more of the following: gasoline, diesel, oil, BTEX, natural attenuation parameters, and lead (**Table 2**). The results are included in **Tables 5 and 6**. The BTEX and petroleum hydrocarbon concentrations detected in groundwater in the TX-03A Area in 2019 are summarized below. The gasoline, diesel, and benzene concentration are shown on **Figures 7 and 8**. The BTEX and gasoline concentration trends for monitoring well TX-03A are shown on **Figure 9**.

Note: To support effectiveness monitoring of the bio-sparging program, the monitoring program within the TX-03A Area was modified in 2017 to include the quarterly sampling of monitoring wells MW-302, MW-303, and MW-304. Quarterly groundwater sampling began in June 2017 for MW-302 and MW-304 and began in December 2017 for MW-303.

#### 4.3.1 Petroleum Hydrocarbon Results

Gasoline was analyzed in 22 monitoring wells located in the TX-03A Area during the monitoring period (**Table 2**). Diesel and oil were analyzed in 18 monitoring wells located in the TX-03A Area during the monitoring period (**Table 2**).

Gasoline exceeded the cleanup level of 1 mg/L during one or more sampling events in monitoring wells MW-202, MW-203, MW-301, MW-302, MW-202, MW-307, MW-312, and MW-315 at concentrations ranging from 1.34 mg/L (MW-301 in March 2019) to 4.29 mg/L (MW-202 in December 2019).

Diesel exceeded the cleanup level of 10 mg/L in MW-202 in December 2019 (reported concentration of 24.0 mg/L). Gasoline and diesel concentrations are shown on **Figure 7** with the cleanup level exceedances highlighted in red.

Oil concentrations did not exceed the cleanup level of 10 mg/L in any of the monitoring wells.

#### 4.3.2 BTEX Results

BTEX constituents were analyzed in 21 monitoring wells located in the TX-03A Area. Benzene concentrations exceeded the cleanup level of 0.071 mg/L in monitoring wells MW-301, MW-312, and TX-03A at concentrations ranging from 0.0999 mg/L (MW-301 in March 2019) to 0.189 mg/L (MW-312 in May 2019). Benzene concentrations are shown on **Figure 8** with the cleanup level exceedances highlighted in red.

Toluene and ethylbenzene detections were all below the cleanup levels of 200 mg/L and 29 mg/L, respectively. A cleanup level for xylenes has not been established for the site.

## 5 Summary

Based on the analytical results of the January through December 2019 monitoring period, AECOM concludes the following:

- Groundwater elevations at the site generally appear to be consistent with historical levels. Elevation data will be collected in association with all monitoring events in 2020. AECOM proposes no changes to the monitoring schedule, which is included in **Table 2**.
- Measurable product from an older release is still present in the Shoreline Manifold Area. During the past year, measurable product was observed in monitoring well MW-210. Absorbent socks are present for product recovery in monitoring wells MW-210 and MW-212. Given the presence of product, absorbent socks will remain in monitoring wells MW-210 and MW-212, and performance product monitoring will continue until discussed further with Ecology. The performance product monitoring schedule is included in **Table 2**.
- Natural attenuation parameters were collected annually from eight monitoring wells (MW-302, MW-304, MW-307, MW-308, MW-310, MW-311, MW-312, and TX-03A) on the northern boundary of the Main Tank Farm and two monitoring wells (MW-202 and MW-203) in the North Tank Farm. In support of evaluating natural attenuation and the bio-sparging system, no changes to the natural attenuation monitoring program are proposed in this report. The groundwater monitoring program is included in **Table 2**.
- Of the sentry wells, cleanup level exceedances included gasoline and diesel detections in MW-112A; gasoline detections in MW-315; and benzene and gasoline detections in MW-312.
- North Tank Farm: Due to insufficient groundwater volume in well MW-201, a sample could not be collected during the December 2019 sampling event. Concentrations of gasoline in monitoring well MW-202 have historically exceeded the cleanup level.
- SH-04 Area: Concentrations of benzene and gasoline in monitoring well SH-04 remain below the cleanup levels in 2019. Concentrations of gasoline or diesel exceeded their respective screening levels in MW-104 and MW-112A. Concentrations are generally consistent with historical results, but the diesel concentration in MW-112A increased relative to recent sampling events.
- TX03-A Area: Concentrations of benzene and gasoline are stable and consistent with historical results but exceed cleanup levels in the source areas of the TX-03A Area.
- Prior summaries of bio-sparging system operations are provided in the first, second, and third quarter of 2019 progress reports dated May 14, August 12, and November 8, 2019, respectively. The bio-sparging system was shut off on December 6 to support the fourth quarter groundwater sampling event. Based on the analytical results from the fourth quarter sampling event, the system has remained off for rebound testing.
- AECOM completed dry weather stormwater system sampling at manholes D050-014 and D050-016 in January and August 2019. The analytical results and summary of the sampling events were provided in Technical Memorandums *January 2019 Dry Weather Stormwater System Sampling Results* and *August 2019 Dry Weather Stormwater System Sampling Results*.

## 6 References

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- URS, 2012. *Annual Compliance Monitoring Report – 2010-2011*. Shell Seattle Distribution Terminal, Seattle, Washington. February.
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# Tables

**Table 1**  
**Groundwater Cleanup Levels**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Constituent	Cleanup Level <sup>a</sup> (mg/L)
Arsenic	0.036 <sup>b</sup>
Benzene	0.071
Benzo(a)anthracene	0.000031
Benzo(a)pyrene	0.000031
Benzo(b)fluoranthene	0.000031
Benzo(k)fluoranthene	0.000031
Chrysene	0.000031
Dibenzo(a,h)anthracene	0.000031
Ethylbenzene	29.0
Indeno(1,2,3-cd)pyrene	0.000031
Lead	0.0058
TPH-G	1.0
TPH-D	10
TPH-O	10
Toluene	200.0

**Notes:**

<sup>a</sup> Cleanup levels per the Consent Decree (Ecology, 1998), except where noted.

<sup>b</sup> Cleanup level based on ambient water quality criteria (chronic criteria for the protection of aquatic organisms) per WAC 173-201A-040.  
 mg/L = milligrams per liter

TPH-D = total petroleum hydrocarbons as diesel

TPH-G = total petroleum hydrocarbons as gasoline

TPH-O = total petroleum hydrocarbons as oil

**Table 2  
Groundwater Monitoring Program  
Shell Harbor Island Terminal  
Seattle, Washington**

Well	Schedule								Analysis						Compliance Monitoring Well				Well Construction		Comments and Deviations from Monitoring Program
	1Q		2Q		3Q		4Q (2nd Semi-Annual & Annual)		Total Lead	BTEX	TPH-Gx	TPH-DX	PAHs	NA Parameters	Performance Product	NA Performance	Groundwater Quality Confirmation	Sentry	Total Depth (ft bgs)	Screened Interval (ft bgs)	
	Gauge	Sample	Gauge	Sample	Gauge	Sample	Gauge	Sample													
<b>TX-03A Area - North Tank Farm</b>																					
MW-201	G		G		G		G	S		X	X	X					X	15	5.0 - 14.5		
MW-202	G		G	S	G		G	S		X <sup>A</sup>	X	X		X <sup>A</sup>	X			15	5.0 - 14.5		
MW-203	G		G	S	G		G	S			X	X		X <sup>A</sup>	X			15	5.0 - 14.5		
MW-204	G		G		G		G	S		X	X	X			X		X	15	5.0 - 14.5		
MW-206A	G		G		G		G	S		X	X	X				X-BGD		15	5.0 - 14.5		
<b>TX-03A Area - Excluding the North Tank Farm</b>																					
MW-101	G		G		G		G	S		X	X	X						15	5.0 - 14.5		
MW-102	G		G		G		G	S		X	X	X					X	15	5.0 - 14.5		
MW-301	G	S	G	S	G	S	G	S		X	X							15	5.0 - 15.0		
MW-302	G	S	G	S	G	S	G	S		X	X	X <sup>A</sup>		X <sup>A</sup>	X			15	5.0 - 15.0		
MW-303	G	S	G	S	G	S	G	S		X	X	X <sup>A</sup>						15	5.0 - 15.0		
MW-304	G	S	G	S	G	S	G	S		X	X	X <sup>A</sup>		X <sup>A</sup>	X			15	5.0 - 15.0		
MW-307	G	S	G	S	G	S	G	S		X	X	X <sup>S</sup>		X <sup>A</sup>	X			15	5.0 - 15.0		
MW-308	G	S	G	S	G	S	G	S		X	X			X <sup>A</sup>	X			15	5.0 - 15.0		
MW-309	G		G	S	G		G	S		X	X	X <sup>A</sup>						15	5.0 - 15.0		
MW-310	G	S	G	S	G	S	G	S		X	X	X <sup>A</sup>		X <sup>A</sup>	X			15	5.0 - 15.0		
MW-311	G	S	G	S	G	S	G	S		X	X			X <sup>A</sup>	X		X	15	5.0 - 15.0		
MW-312	G	S	G	S	G	S	G	S		X	X			X <sup>A</sup>	X		X	15	5.0 - 15.0		
MW-313	G	S	G	S	G	S	G	S		X	X	X					X	15	5.0 - 15.0		
MW-314	G	S	G	S	G	S	G	S		X	X	X					X	15	5.0 - 15.0		
MW-315	G	S	G	S	G	S	G	S		X	X	X					X	15	5.0 - 15.0		
TES-MW-1	G		G		G		G	S		X	X	X						18	3.0 - 18.0		
TX-03A	G	S	G	S	G	S	G	S		X	X	X <sup>A</sup>		X <sup>A</sup>	X			16	6.0 - 16.0		
<b>SH-04 Area</b>																					
MW-05			G	S			G	S		X	X	X					X	15	5.0 - 15.0		
MW-111			G	S			G	S		X	X	X					X	15	5.0 - 14.5		
MW-112A			G	S			G	S		X	X	X					X	15	5.5 - 15.0		
SH-04			G	S			G	S		X	X	X					X	16	6.0 - 16.0		
MW-104			G	S			G	S	X		X	X					X	15	5.0 - 14.5		

**Table 2  
Groundwater Monitoring Program  
Shell Harbor Island Terminal  
Seattle, Washington**

Well	Schedule								Analysis						Compliance Monitoring Well				Well Construction		Comments and Deviations from Monitoring Program
	1Q		2Q		3Q		4Q (2nd Semi-Annual & Annual)		Total Lead	BTEX	TPH-Gx	TPH-Dx	PAHs	NA Parameters	Performance Product	NA Performance	Groundwater Quality Confirmation	Sentry	Total Depth (ft bgs)	Screened Interval (ft bgs)	
	Gauge	Sample	Gauge	Sample	Gauge	Sample	Gauge	Sample													
<b>Additional Compliance Monitoring Wells</b>																					
MW-105							G	S	X	X	X	X						X	15	5.0 - 14.5	
TX-04							G	S		X	X	X						X	16	6.0 - 16.0	
TX-06A							G	S		X	X	X						X	15.8	5.5 - 15.5	
<b>Shoreline Manifold Area</b>																					
MW-208	MG		MG		MG		MG								X				16.5	5.0 - 14.5	
MW-210	MG		MG		MG		MG								X				15	unknown	
MW-211	MG		MG		MG		MG								X				13	5.0 - 13.0	
MW-212	MG		MG		MG		MG								X				12	unknown	
MW-213			G	S			G	S		X	X	X	X				X-POC	30	30 - 40		
MW-214			G	S			G	S		X	X	X	X				X-POC	30	30 - 40		
<b>Additional Wells (Included in Annual Inspection only)</b>																					
ASW-1																			14	13 - 14	Air sparge well
PSV-1																			4	3 - 4	Soil gas well
PSV-2																			4	3 - 4	Soil gas well
SVE-1																			4	3 - 4	Soil vapor extraction well
TW-01																			14	4 - 14	Pumping test well
DP-06																					
MW-06																					
MW-103																					
MW-106																					
MW-107																					
MW-108																					
MW-109																					
MW-110																					
MW-205																					
MW-209																					
MW-305																					
MW-306																					
AMW-8																					Wells were discovered during TSO Terminal Audit and are no longer used by operations for leak detection. Groundwater monitoring of these wells is not required. Checking for well logs for future well abandonment.
AMW-X																					Wells were discovered during TSO Terminal Audit and are no longer used by operations for leak detection. Groundwater monitoring of these wells is not required. Checking for well logs for future well abandonment.



**Table 2**  
**Groundwater Monitoring Program**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

**Notes:**

**Red** = Modifications to the program since the November 2008 proposed changes which were established in correspondence between URS and Ecology.

1Q = March

2Q = June

3Q = August

4Q = December

Addl = Additional

BGD = Background well with respect to confirmational sampling

BTEX = benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8260B

Dec = December

DTP = Depth to product

ft bgs = below ground surface

G = indicates a well to be gauged during that event

MG = monthly gauge

NA = natural attenuation

Natural Attenuation Parameters: Nitrate and Nitrite by EPA Method 353.2, Sulfate by EPA Method 300.0, Dissolved Iron and Manganese by EPA Method 6010B/6020A (Lab Filtered), and Ferrous Iron collected in the field.

PAHs = polycyclic aromatic hydrocarbons by EPA Method 8270C-SIM

POC = Conditional Point of Compliance Well

Q = quarter

S = indicates a well to be sampled during that event

Sept = September

Total Lead by EPA Method 6020

TPH-Dx = total petroleum hydrocarbons as diesel by NWTPH-Dx

TPH-Gx = total petroleum hydrocarbons as gasoline by NWTPH-Gx

WLM = Water level measurement

X = indicates a well to be analyzed for that analyte

X<sup>A</sup> = indicates a well to be analyzed for that analyte during the annual sampling event only

X<sup>S</sup> = indicates a well to be analyzed for that analyte during both semi-annual sampling events only

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
MW-05	04/06/93	10.39	6.12	4.27
	05/13/93	10.39	5.92	4.47
	06/10/93	10.39	5.98	4.41
	07/08/93	10.39	6.23	4.16
	08/03/93	10.39	6.50	3.89
	10/08/93	10.39	7.22	3.17
	11/05/93	10.39	7.42	2.97
	12/03/93	10.39	7.38	3.01
	01/05/94	10.39	6.64	3.75
	02/04/94	10.39	6.54	3.85
	08/28/95	10.39	Not Measured	Not Measured
	09/27/95	10.39	8.35	2.04
	04/27/99	10.39	8.07	2.32
	07/14/99	10.39	5.88	4.51
	10/18/99	10.39	7.00	3.39
	04/05/00	10.39	5.05	5.34
	07/18/00	10.39	6.30	4.09
	10/02/00	10.39	7.15	3.24
	01/22/01	10.39	6.50	3.89
	07/23/01	10.39	7.43	2.96
	07/18/02	10.39	7.10	3.29
	01/30/03	10.39	5.84	4.55
	04/15/03	10.39	5.80	4.59
	07/17/03	10.39	7.12	3.27
	10/15/03	10.39	7.78	2.61
	10/23/03	10.39	7.80	2.59
	01/13/04	10.39	5.65	4.74
	04/19/04	13.57	6.35	7.22
	07/27/04	13.57	7.32	6.25
	10/18/04	13.57	7.36	6.21
	01/24/05	13.57	6.26	7.31
	04/18/05	13.57	6.27	7.30
	07/12/05	13.57	6.85	6.72
	10/18/05	13.57	7.60	5.97
	01/25/06	13.57	4.78	8.79
	04/25/06	13.57	5.90	7.67
	10/11/06	13.57	7.62	5.95
	11/19/08	13.57	8.23	5.34
	11/16/09	13.57	6.44	7.13
	10/29/10	13.57	6.57	7.00
	10/25/11	13.57	7.25	6.32
05/30/12	13.57	5.86	7.71	
08/23/12	13.57	6.63	6.94	
11/27/12	13.57	5.30	8.27	
05/16/13	13.57	5.72	7.85	
11/07/13	13.57	6.49	7.08	
04/22/14	13.57	5.25	8.32	
12/08/15	13.57	5.42	8.15	
05/04/16	13.57	5.22	8.35	
12/14/16	13.57	4.78	8.79	
06/13/17	13.57	5.45	8.12	
12/04/17	13.57	5.64	7.93	
06/12/18	13.57	6.43	7.14	
12/17/18	13.57	6.27	7.30	
05/15/19	13.57	6.69	6.88	
12/09/19	13.57	7.09	6.48	

**Table 3  
Groundwater Elevation Data  
Shell Harbor Island Terminal  
Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-101	04/06/93	15.14	10.48	4.66
	05/13/93	15.14	10.32	4.82
	06/10/93	15.14	10.45	4.69
	07/08/93	15.14	10.75	4.39
	08/03/93	15.14	11.09	4.05
	09/08/93	15.14	11.52	3.62
	10/08/93	15.14	11.89	3.25
	11/05/93	15.14	12.13	3.01
	12/03/93	15.14	12.14	3.00
	01/05/94	15.14	11.16	3.98
	02/04/94	15.14	11.02	4.12
	08/28/95	15.14	11.25	3.89
	09/27/95	15.14	11.49	3.65
	04/27/99	15.14	9.22	5.92
	07/14/99	15.14	10.73	4.41
	10/18/99	15.14	11.78	3.36
	01/11/00	15.14	9.73	5.41
	04/05/00	15.14	9.85	5.29
	07/18/00	15.14	11.01	4.13
	10/02/00	15.14	11.85	3.29
	01/22/01	15.14	11.67	3.47
	07/23/01	15.14	12.33	2.81
	10/16/01	15.14	13.15	1.99
	04/23/02	15.14	10.81	4.33
	07/18/02	15.14	11.88	3.26
	10/23/02	15.14	12.73	2.41
	01/30/03	15.14	10.09	5.05
	04/15/03	15.14	10.36	4.78
	07/17/03	15.14	11.94	3.20
	10/15/03	15.14	12.68	2.46
	01/13/04	15.14	10.06	5.08
	04/19/04	18.21	11.13	7.08
	07/27/04	18.21	12.07	6.14
	10/18/04	18.21	12.19	6.02
	01/24/05	18.21	10.61	7.60
	04/18/05	18.21	10.86	7.35
	07/12/05	18.21	11.61	6.60
	10/18/05	18.21	12.45	5.76
	01/25/06	18.21	9.21	9.00
	04/25/06	18.21	10.75	7.46
	10/11/06	18.21	12.39	5.82
	11/18/08	18.21	11.45	6.76
	11/16/09	18.21	10.95	7.26
	10/26/10	18.21	11.36	6.85
	10/25/11	18.21	12.15	6.06
05/30/12	18.21	10.79	7.42	
06/13/12	18.21	10.90	7.31	
09/26/12	18.21	12.04	6.17	
11/27/12	18.21	9.90	8.31	
02/22/13	18.21	10.24	7.97	
05/16/13	18.21	10.89	7.32	
09/06/13	18.21	11.99	6.22	
11/07/13	18.21	11.78	6.43	
04/22/14	18.21	10.16	8.05	
11/04/14	18.21	10.70	7.51	
03/10/15	18.21	10.31	7.90	
05/15/15	18.21	10.03	8.18	
07/29/15	18.21	11.86	6.35	
12/10/15	18.21	9.12	9.09	
02/23/16	18.21	8.81	9.40	
05/03/16	18.21	10.29	7.92	
08/30/16	18.21	11.29	6.92	
12/14/16	18.21	9.62	8.59	
03/13/17	18.21	8.87	9.34	
06/13/17	18.21	10.53	7.68	
08/22/17	18.21	11.63	6.58	
12/04/17	18.21	10.18	8.03	
03/06/18	18.21	10.05	8.16	
06/12/18	18.21	11.03	7.18	
09/05/18	18.21	11.97	6.24	
12/17/18	18.21	10.98	7.23	
03/18/19	18.21	10.17	8.04	
05/15/19	18.21	10.58	7.63	
09/17/19	18.21	12.03	6.18	
12/09/19	18.21	11.82	6.39	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
MW-102	04/06/93	12.51	7.99	4.52
	05/13/93	12.51	7.82	4.69
	06/10/93	12.51	7.80	4.71
	07/08/93	12.51	8.32	4.19
	08/03/93	12.51	8.68	3.83
	09/08/93	12.51	9.03	3.48
	10/08/93	12.51	9.44	3.07
	11/05/93	12.51	9.62	2.89
	12/03/93	12.51	9.42	3.09
	01/05/94	12.51	8.50	4.01
	02/04/94	12.51	8.52	3.99
	08/28/95	12.51	8.86	3.65
	09/27/95	12.51	9.17	3.34
	04/27/99	12.51	6.68	5.83
	07/14/99	12.51	8.40	4.11
	10/18/99	12.51	9.38	3.13
	01/11/00	12.51	7.43	5.08
	04/05/00	12.51	7.55	4.96
	07/18/00	12.51	8.37	4.14
	10/02/00	12.51	9.45	3.06
	01/22/01	12.51	9.12	3.39
	07/23/01	12.51	9.91	2.60
	04/23/02	12.51	8.17	4.34
	07/18/02	12.51	9.44	3.07
	07/18/02	12.51	9.44	3.07
	10/23/02	12.51	10.05	2.46
	01/28/03	12.51	7.20	5.31
	04/15/03	12.51	7.75	4.76
	07/17/03	12.51	9.51	3.00
	10/15/03	12.51	10.11	2.40
	01/13/04	12.51	7.49	5.02
	04/19/04	15.60	8.72	6.88
	07/27/04	15.60	9.62	5.98
	10/18/04	15.60	9.54	6.06
	01/24/05	15.60	7.92	7.68
	04/18/05	15.60	8.20	7.40
	07/12/05	15.60	9.10	6.50
	10/18/05	15.60	9.87	5.73
	01/25/06	15.60	3.94	11.66
	04/25/06	15.60	8.24	7.36
	10/11/06	15.60	9.84	5.76
	11/19/08	15.60	8.79	6.81
	11/16/09	15.60	8.10	7.50
	10/28/10	15.60	8.64	6.96
	10/25/11	15.60	9.59	6.01
05/30/12	15.60	8.27	7.33	
06/13/12	15.60	8.32	7.28	
09/26/12	15.60	9.53	6.07	
11/27/12	15.60	7.03	8.57	
02/22/13	15.60	7.88	7.72	
05/16/13	15.60	8.40	7.20	
09/06/13	15.60	9.36	6.24	
11/07/13	15.60	9.18	6.42	
04/22/14	15.60	7.69	7.91	
11/04/14	15.60	7.91	7.69	
03/10/15	15.60	7.90	7.70	
05/15/15	15.60	8.47	7.13	
07/29/15	15.60	9.39	6.21	
12/10/15	15.60	6.53	9.07	
02/23/16	15.60	6.78	8.82	
05/03/16	15.60	7.92	7.68	
08/30/16	15.60	8.98	6.62	
12/14/16	15.60	7.27	8.33	
03/13/17	15.60	6.75	8.85	
06/13/17	15.60	8.10	7.50	
08/22/17	15.60	9.20	6.40	
12/04/17	15.60	7.32	8.28	
03/06/18	15.60	8.61	6.99	
06/12/18	15.60	9.02	6.58	
09/05/18	15.60	9.47	6.13	
12/17/18	15.60	8.20	7.40	
03/18/19	15.60	7.69	7.91	
05/15/19	15.60	7.83	7.77	
09/17/19	15.60	9.36	6.24	
12/09/19	15.60	9.23	6.37	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-104	04/06/93	10.22	5.98	4.24
	05/13/93	10.22	6.79	3.43
	06/10/93	10.22	5.85	4.37
	07/08/93	10.22	6.13	4.09
	08/03/93	10.22	6.38	3.84
	09/08/93	10.22	6.72	3.50
	10/08/93	10.22	7.05	3.17
	11/05/93	10.22	7.26	2.96
	12/03/93	10.22	7.26	2.96
	01/05/94	10.22	6.64	3.58
	02/04/94	10.22	6.46	3.76
	08/28/95	10.22	6.43	3.79
	09/27/95	10.22	6.70	3.52
	04/27/99	10.22	2.41	7.81
	07/14/99	10.22	5.62	4.60
	10/18/99	10.22	6.80	3.42
	01/11/00	10.22	5.04	5.18
	04/05/00	10.22	4.80	5.42
	07/18/00	10.22	6.15	4.07
	10/02/00	10.22	7.02	3.20
	01/22/01	10.22	6.45	3.77
	07/23/01	10.22	7.39	2.83
	10/16/01	10.22	8.59	1.63
	04/23/02	10.22	5.91	4.31
	07/18/02	10.22	7.07	3.15
	10/23/02	10.22	7.74	2.48
	01/28/03	10.22	6.03	4.19
	04/15/03	10.22	5.75	4.47
	07/17/03	10.22	7.08	3.14
	10/15/03	10.22	7.76	2.46
	01/13/04	10.22	5.58	4.64
	04/19/04	13.46	6.30	7.16
	07/27/04	13.46	7.25	6.21
	10/18/04	13.46	7.34	6.12
	01/24/05	13.46	6.27	7.19
	04/18/05	13.46	6.22	7.24
	07/12/05	13.46	6.81	6.65
	10/18/05	13.46	7.55	5.91
	01/25/06	13.46	4.78	8.68
	04/25/06	13.46	5.82	7.64
	10/11/06	13.46	7.54	5.92
	11/18/08	13.46	6.74	6.72
	04/08/09	13.46	6.27	7.19
	11/16/09	13.46	6.39	7.07
	04/27/10	13.46	5.45	8.01
10/26/10	13.46	6.53	6.93	
10/25/11	13.46	7.15	6.31	
03/01/12	13.46	5.82	7.64	
05/30/12	13.46	5.74	7.72	
06/13/12	13.46	5.86	7.60	
08/23/12	13.46	6.50	6.96	
09/26/12	13.46	6.90	6.56	
11/27/12	13.46	5.24	8.22	
05/16/13	13.46	5.65	7.81	
11/07/13	13.46	6.44	7.02	
04/22/14	13.46	5.20	8.26	
11/05/14	13.46	6.02	7.44	
05/20/15	13.46	5.86	7.60	
12/09/15	13.46	5.32	8.14	
12/14/16	13.46	4.78	8.68	
06/13/17	13.46	5.41	8.05	
12/04/17	13.46	5.75	7.71	
06/12/18	13.46	5.96	7.50	
12/17/18	13.46	6.23	7.23	
05/15/19	13.46	5.97	7.49	
12/09/19	13.46	6.99	6.47	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-105	04/06/93	9.05	4.97	4.08
	05/13/93	9.05	4.88	4.17
	06/10/93	9.05	4.83	4.22
	07/08/93	9.05	5.20	3.85
	08/03/93	9.05	5.43	3.62
	09/08/93	9.05	6.76	2.29
	10/08/93	9.05	6.06	2.99
	11/05/93	9.05	6.28	2.77
	12/03/93	9.05	6.18	2.87
	01/05/94	9.05	5.65	3.40
	02/04/94	9.05	5.63	3.42
	08/28/95	9.05	5.39	3.66
	09/27/95	9.05	5.70	3.35
	04/27/99	9.05	3.39	5.66
	07/14/99	9.05	4.58	4.47
	10/18/99	9.05	5.79	3.26
	01/11/00	9.05	3.97	5.08
	04/05/00	9.05	3.84	5.21
	07/18/00	9.05	4.90	4.15
	10/02/00	9.05	6.22	2.83
	01/22/01	9.05	5.56	3.49
	07/23/01	9.05	6.48	2.57
	04/23/02	9.05	5.25	3.80
	07/18/02	9.05	6.17	2.88
	10/23/02	9.05	6.78	2.27
	01/28/03	9.05	5.02	4.03
	04/15/03	9.05	4.97	4.08
	07/17/03	9.05	6.2	2.85
	10/15/03	9.05	6.66	2.39
	01/13/04	9.05	5.01	4.04
	04/19/04	12.18	5.51	6.67
	07/27/04	12.18	6.28	5.90
	10/18/04	12.18	6.15	6.03
	01/24/05	12.18	5.02	7.16
	04/18/05	12.18	5.19	6.99
	07/12/05	12.18	5.82	6.36
	10/18/05	12.18	6.44	5.74
	01/25/06	12.18	4.05	8.13
	04/25/06	12.18	5.00	7.18
	10/11/06	12.18	6.51	5.67
	11/19/08	12.18	5.52	6.66
11/16/09	12.18	5.03	7.15	
10/26/10	12.18	5.33	6.85	
10/25/11	12.18	6.06	6.12	
11/26/12	12.18	3.82	8.36	
11/07/13	12.18	5.42	6.76	
11/05/14	12.18	4.62	7.56	
12/08/15	12.18	4.00	8.18	
12/14/16	12.18	4.15	8.03	
12/04/17	12.18	4.55	7.63	
12/17/18	12.18	5.04	7.14	
12/09/19	12.18	5.83	6.35	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-111	04/06/93	8.61	4.95	3.66
	05/13/93	8.61	4.87	3.74
	06/10/93	8.61	4.84	3.77
	07/08/93	8.61	5.11	3.50
	08/03/93	8.61	5.29	3.32
	09/08/93	8.61	5.56	3.05
	10/08/93	8.61	5.81	2.80
	11/05/93	8.61	5.97	2.64
	12/03/93	8.61	5.93	2.68
	01/05/94	8.61	5.45	3.16
	02/04/94	8.61	5.28	3.33
	08/28/95	8.61	5.28	3.33
	09/27/95	8.61	5.45	3.16
	04/27/99	8.61	3.55	5.06
	07/14/99	8.61	4.65	3.96
	10/18/99	8.61	5.59	3.02
	01/11/00	8.61	4.18	4.43
	04/05/00	8.61	3.94	4.67
	07/13/00	8.61	5.30	3.31
	10/02/00	8.61	5.68	2.93
	01/22/01	8.61	5.37	3.24
	07/23/01	8.61	6.22	2.39
	10/16/01	8.61	7.37	1.24
	04/23/02	8.61	5.28	3.33
	07/18/02	8.61	5.94	2.67
	10/23/02	8.61	6.50	2.11
	01/28/03	8.61	5.05	3.56
	04/15/03	8.61	5.03	3.58
	07/17/03	8.61	6.05	2.56
	10/15/03	8.61	6.45	2.16
	01/13/04	8.61	4.84	3.77
	04/19/04	11.88	5.46	6.42
	07/27/04	11.88	6.16	5.72
	10/18/04	11.88	6.11	5.77
	01/24/05	11.88	5.33	6.55
	04/18/05	11.88	5.27	6.61
	07/12/05	11.88	5.75	6.13
	10/18/05	11.88	6.26	5.62
	01/25/06	11.88	4.42	7.46
	04/25/06	11.88	4.88	7.00
	10/11/06	11.88	6.30	5.58
	11/19/08	11.88	8.62	3.26
11/16/09	11.88	5.30	6.58	
10/26/10	11.88	5.35	6.53	
10/25/11	11.88	5.89	5.99	
05/30/12	11.88	4.81	7.07	
08/23/12	11.88	Not Measured	Not Measured	
11/29/12	11.88	4.14	7.74	
05/16/13	11.88	4.63	7.25	
11/07/13	11.88	5.10	6.78	
04/22/14	11.88	4.32	7.56	
11/05/14	11.88	4.58	7.30	
12/08/15	11.88	4.36	7.52	
12/14/16	11.88	4.04	7.84	
06/13/17	11.88	4.51	7.37	
12/04/17	11.88	4.59	7.29	
06/12/18	11.88	5.25	6.63	
12/17/18	11.88	4.98	6.90	
05/15/19	11.88	4.97	6.91	
12/09/19	11.88	5.66	6.22	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-112	04/06/93	9.98	6.69	3.29
	05/13/93	9.98	6.61	3.37
	06/10/93	9.98	6.51	3.47
	07/08/93	9.98	6.83	3.15
	08/03/93	9.98	7.00	2.98
	09/08/93	9.98	7.24	2.74
	10/08/93	9.98	7.50	2.48
	11/05/93	9.98	7.56	2.42
	12/03/93	9.98	7.41	2.57
	01/05/94	9.98	6.93	3.05
	02/04/94	9.98	6.83	3.15
	08/28/95	9.98	6.98	3.00
	09/27/95	9.98	7.13	2.85
	04/27/99	9.98	5.66	4.32
	07/14/99	9.98	6.57	3.41
	10/18/99	9.98	7.36	2.62
	01/11/00	9.98	5.89	4.09
	04/05/00	9.98	5.81	4.17
07/18/00	9.98	7.11	2.87	
10/02/00	9.98	7.57	2.41	
04/25/06	9.98	6.44	3.54	
MW-112A	04/24/02	9.98	6.85	3.13
	07/18/02	9.98	7.22	2.76
	10/23/02	9.98	7.52	2.46
	01/28/03	9.98	6.25	3.73
	04/15/03	9.98	6.47	3.51
	07/17/03	9.98	7.3	2.68
	10/15/03	9.98	7.49	2.49
	01/13/04	9.98	6.2	3.78
	04/19/04	12.52	6.93	5.59
	07/27/04	12.52	7.41	5.11
	10/18/04	12.52	7.15	5.37
	01/24/05	12.52	6.52	6.00
	04/18/05	12.52	6.6	5.92
	07/12/05	12.52	7.1	5.42
	10/18/05	12.52	7.34	5.18
	01/25/06	12.52	5.95	6.57
	10/11/06	12.52	7.43	5.09
	11/19/08	12.52	6.73	5.79
	11/16/09	12.52	6.35	6.17
	10/29/10	12.52	6.51	6.01
	10/25/11	12.52	7.03	5.49
	05/30/12	12.52	6.28	6.24
	08/23/12	12.52	6.56	5.96
	11/25/12	12.52	5.23	7.29
	05/16/13	12.52	6.24	6.28
	11/04/13	12.52	-	-
	04/22/14	12.52	5.90	6.62
	11/06/14	12.52	5.68	6.84
	12/08/15	12.52	5.42	7.10
	12/14/16	12.52	5.69	6.83
	06/13/17	12.52	6.25	6.27
	12/04/17	12.52	5.93	6.59
06/12/18	12.52	6.51	6.01	
12/17/18	12.52	5.97	6.55	
05/16/19	12.52	6.39	6.13	
12/09/19	12.52	6.73	5.79	



**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-201	04/06/93	17.07	14.03	3.04
	05/13/93	17.07	14.02	3.05
	06/10/93	17.07	13.97	3.10
	07/08/93	17.07	14.25	2.82
	08/03/93	17.07	14.48	2.59
	09/08/93	17.07	14.68	2.39
	10/08/93	17.07	14.90	2.17
	11/05/93	17.07	15.03	2.04
	12/03/93	17.07	14.96	2.11
	01/05/94	17.07	14.10	2.97
	02/04/94	17.07	14.32	2.75
	08/28/95	17.07	14.49	2.58
	09/27/95	17.07	14.56	2.51
	04/27/99	17.07	13.04	4.03
	07/14/99	17.07	14.26	2.81
	10/18/99	17.07	14.93	2.14
	01/11/00	17.07	13.03	4.04
	04/05/00	17.07	13.90	3.17
	07/18/00	17.07	14.09	2.98
	10/02/00	17.07	14.82	2.25
	01/22/01	17.07	14.43	2.64
	07/23/01	17.07	14.95	2.12
	10/16/01	17.07	16.11	0.96
	04/24/02	17.07	14.23	2.84
	07/18/02	17.07	14.73	2.34
	10/23/02	17.07	15.13	1.94
	01/28/03	17.07	13.13	3.94
	04/15/03	17.07	13.58	3.49
	07/17/03	17.07	14.70	2.37
	10/15/03	17.07	14.99	2.08
	01/13/04	17.07	12.71	4.36
	04/19/04	20.18	14.07	6.11
	07/27/04	20.18	14.70	5.48
	10/18/04	20.18	14.70	5.48
	01/24/05	20.18	13.44	6.74
	04/18/05	20.18	13.73	6.45
	07/12/05	20.18	14.47	5.71
	10/18/05	20.18	14.99	5.19
	01/25/06	20.18	12.61	7.57
	04/25/06	20.18	13.94	6.24
	10/11/06	20.18	15.00	5.18
	11/20/08	20.18	13.77	6.41
	11/16/09	20.18	13.74	6.44
10/27/10	20.18	14.42	5.76	
10/26/11	20.18	14.94	5.24	
11/27/12	20.18	13.10	7.08	
02/22/13	20.18	13.74	6.44	
05/16/13	20.18	14.45	5.73	
09/06/13	20.18	14.78	5.40	
11/07/13	20.18	14.70	5.48	
04/22/14	20.18	13.42	6.76	
11/04/14	20.18	13.65	6.53	
03/10/15	20.18	13.64	6.54	
05/15/15	20.18	14.34	5.84	
07/29/15	20.18	14.65	5.53	
12/10/15	20.18	12.23	7.95	
02/23/16	20.18	12.33	7.85	
05/03/16	20.18	13.74	6.44	
08/30/16	20.18	14.04	6.14	
12/14/16	20.18	12.86	7.32	
03/13/17	20.18	12.18	8.00	
06/13/17	20.18	13.85	6.33	
08/22/17	20.18	14.43	5.75	
12/04/17	20.18	12.87	7.31	
03/06/18	20.18	13.28	6.90	
06/12/18	20.18	13.58	6.60	
09/05/18	20.18	8.22	11.96	
12/17/18	20.18	13.66	6.52	
03/18/19	20.18	13.14	7.04	
05/15/19	20.18	14.06	6.12	
09/17/19	20.18	14.64	5.54	
12/09/19	20.18	14.52	5.66	

**Table 3  
Groundwater Elevation Data  
Shell Harbor Island Terminal  
Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-202	04/06/93	16.77	13.23	3.54
	05/13/93	16.77	13.17	3.60
	06/10/93	16.77	13.26	3.51
	07/08/93	16.77	13.54	3.23
	08/03/93	16.77	13.76	3.01
	09/08/93	16.77	14.04	2.73
	10/08/93	16.77	14.30	2.47
	11/05/93	16.77	14.48	2.29
	12/03/93	16.77	14.34	2.43
	01/05/94	16.77	13.73	3.04
	02/04/94	16.77	13.63	3.14
	08/28/95	16.77	13.78	2.99
	09/27/95	16.77	13.95	2.82
	04/27/99	16.77	12.38	4.39
	07/14/99	16.77	13.57	3.20
	10/18/99	16.77	14.31	2.46
	01/11/00	16.77	12.95	3.82
	04/05/00	16.77	12.96	3.81
	07/18/00	16.77	13.21	3.56
	10/02/00	16.77	14.25	2.52
	01/22/01	16.77	14.46	2.31
	07/23/01	16.77	14.64	2.13
	10/16/01	16.77	15.81	0.96
	04/24/02	16.77	13.80	2.97
	07/18/02	16.77	14.28	2.49
	10/23/02	16.77	14.73	2.04
	01/28/03	16.77	12.95	3.82
	04/15/03	16.77	13.13	3.64
	07/17/03	16.77	14.30	2.47
	10/15/03	16.77	14.62	2.15
	01/13/04	16.77	12.81	3.96
	04/19/04	19.86	13.61	6.25
	07/27/04	19.86	14.29	5.57
	10/18/04	19.86	14.30	5.56
	01/24/05	19.86	13.29	6.57
	04/18/05	19.86	13.51	6.35
	07/12/05	19.86	14.02	5.84
	10/18/05	19.86	14.59	5.27
	01/25/06	19.86	12.38	7.48
	04/25/06	19.86	13.43	6.43
	10/11/06	19.86	14.58	5.28
	11/20/08	19.86	13.92	5.94
	04/07/09	19.86	13.71	6.15
11/16/09	19.86	13.70	6.16	
04/27/10	19.86	13.24	6.62	
10/27/10	19.86	14.04	5.82	
10/26/11	19.86	14.45	5.41	
03/02/12	19.86	13.70	6.16	
05/30/12	19.86	13.65	6.21	
06/13/12	19.86	13.76	6.10	
09/26/12	19.86	14.42	5.44	
11/27/12	19.86	13.09	6.77	
02/22/13	19.86	13.27	6.59	
05/16/13	19.86	13.80	6.06	
09/06/13	19.86	14.38	5.48	
11/07/13	19.86	14.25	5.61	
04/22/14	19.86	13.23	6.63	
11/04/14	19.86	13.44	6.42	
03/10/15	19.86	13.23	6.63	
05/15/15	19.86	13.76	6.10	
07/29/15	19.86	14.18	5.68	
12/10/15	19.86	12.76	7.10	
02/23/16	19.86	12.15	7.71	
05/03/16	19.86	13.11	6.75	
08/30/16	19.86	14.00	5.86	
12/14/16	19.86	12.81	7.05	
03/13/17	19.86	12.25	7.61	
06/13/17	19.86	13.23	6.63	
08/22/17	19.86	13.98	5.88	
12/04/17	19.86	13.15	6.71	
03/06/18	19.86	13.03	6.83	
06/12/18	19.86	13.53	6.33	
09/05/18	19.86	8.20	11.66	
12/17/18	19.86	13.45	6.41	
03/18/19	19.86	12.95	6.91	
05/15/19	19.86	13.42	6.44	
09/17/19	19.86	14.16	5.70	
12/09/19	19.86	14.10	5.76	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
MW-203	04/06/93	11.04	7.39	3.65
	05/13/93	11.04	7.31	3.73
	06/10/93	11.04	7.40	3.64
	07/08/93	11.04	7.66	3.38
	08/03/93	11.04	7.93	3.11
	09/08/93	11.04	8.20	2.84
	10/08/93	11.04	8.46	2.58
	11/05/93	11.04	8.65	2.39
	12/03/93	11.04	8.64	2.40
	01/05/94	11.04	7.99	3.05
	02/04/94	11.04	7.88	3.16
	08/28/95	11.04	7.86	3.18
	09/27/95	11.04	8.02	3.02
	04/27/99	11.04	6.32	4.72
	07/14/99	11.04	7.58	3.46
	10/18/99	11.04	8.42	2.62
	01/11/00	11.04	6.98	4.06
	04/05/00	11.04	6.92	4.12
	07/18/00	11.04	8.00	3.04
	10/02/00	11.04	8.40	2.64
	01/22/01	11.04	8.47	2.57
	07/23/01	11.04	8.69	2.35
	10/16/01	11.04	9.73	1.31
	04/24/02	11.04	7.45	3.59
	10/23/02	11.04	8.80	2.24
	01/28/03	11.04	6.76	4.28
	04/15/03	11.04	7.05	3.99
	07/17/03	11.04	8.25	2.79
	01/13/04	11.04	6.71	4.33
	04/19/04	13.99	7.58	6.41
	07/27/04	13.99	8.25	5.74
	10/18/04	13.99	8.34	5.65
	01/24/05	13.99	7.31	6.68
	04/18/05	13.99	7.43	6.56
	07/12/05	13.99	7.96	6.03
	10/18/05	13.99	8.64	5.35
	01/25/06	13.99	6.41	7.58
	04/25/06	13.99	7.18	6.81
	10/11/06	13.99	8.58	5.41
	11/18/08	13.99	8.01	5.98
	04/08/09	13.99	7.63	6.36
	11/16/09	13.99	4.97	9.02
04/26/10	13.99	7.17	6.82	
10/25/10	13.99	8.10	5.89	
10/26/11	13.99	5.45	8.54	
05/30/12	13.99	7.61	6.38	
06/13/12	13.99	7.65	6.34	
09/26/12	13.99	8.40	5.59	
11/27/12	13.99	7.25	6.74	
02/22/13	13.99	7.26	6.73	
05/16/13	13.99	7.80	6.19	
09/06/13	13.99	8.37	5.62	
11/07/13	13.99	8.27	5.72	
04/22/14	13.99	7.33	6.66	
11/04/14	13.99	7.59	6.40	
03/10/15	13.99	6.70	7.29	
05/15/15	13.99	7.74	6.25	
07/29/15	13.99	8.18	5.81	
12/10/15	13.99	6.83	7.16	
02/23/16	13.99	5.92	8.07	
05/03/16	13.99	7.02	6.97	
08/30/16	13.99	8.17	5.82	
12/14/16	13.99	6.62	7.37	
03/13/17	13.99	5.83	8.16	
06/13/17	13.99	7.17	6.82	
08/22/17	13.99	7.98	6.01	
12/04/17	13.99	7.24	6.75	
03/06/18	13.99	6.57	7.42	
06/12/18	13.99	7.55	6.44	
09/05/18	13.99	8.14	5.85	
12/17/18	13.99	7.68	6.31	
03/18/19	13.99	6.96	7.03	
05/16/19	13.99	7.38	6.61	
09/17/19	13.99	8.19	5.80	
12/09/19	13.99	8.13	5.86	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-204	04/06/93	14.21	10.97	3.24
	05/13/93	14.21	10.92	3.29
	06/10/93	14.21	10.98	3.23
	07/08/93	14.21	11.20	3.01
	08/03/93	14.21	11.44	2.77
	09/08/93	14.21	11.64	2.57
	10/08/93	14.21	11.85	2.36
	11/05/93	14.21	12.03	2.18
	12/03/93	14.21	12.01	2.20
	01/05/94	14.21	11.42	2.79
	02/04/94	14.21	11.35	2.86
	08/28/95	14.21	11.58	2.63
	09/27/95	14.21	11.57	2.64
	04/05/00	14.21	Not Measured	Not Measured
	10/02/00	14.21	Not Measured	Not Measured
	01/22/01	14.21	11.69	2.52
	07/23/01	14.21	12.05	2.16
	10/16/01	14.21	13.17	1.04
	07/27/04	14.21	11.67	2.54
	10/18/04	17.27	11.71	5.56
	01/24/05	17.27	10.72	6.55
	04/18/05	17.27	10.98	6.29
	07/12/05	17.27	11.4	5.87
	10/18/05	17.27	11.98	5.29
	01/25/06	17.27	9.96	7.31
	10/11/06	17.27	11.96	5.31
	11/20/08	17.27	11.45	5.82
	11/16/09	17.27	11.20	6.07
	10/27/10	17.27	11.54	5.73
	10/27/11	17.27	10.71	6.56
	03/26/12	17.27	Not Measured	Not Measured
	06/12/12	17.27	11.20	6.07
	09/27/12	17.27	Not Measured	Not Measured
	11/27/12	17.27	10.81	6.46
	12/20/12	17.27	Not Measured	Not Measured
	02/22/13	17.27	10.81	6.46
	05/16/13	17.27	11.30	5.97
	09/06/13	17.27	11.77	5.50
	11/07/13	17.27	11.71	5.56
	04/22/14	17.27	10.78	6.49
	11/04/14	17.27	11.04	6.23
	03/10/15	17.27	10.75	6.52
05/15/15	17.27	11.21	6.06	
07/29/15	17.27	11.59	5.68	
12/10/15	17.27	9.91	7.36	
02/23/16	17.27	9.67	7.60	
05/03/16	17.27	10.53	6.74	
08/30/16	17.27	11.78	5.49	
12/14/16	17.27	10.34	6.93	
03/13/17	17.27	9.83	7.44	
08/22/17	17.27	11.34	5.93	
12/04/17	17.27	10.84	6.43	
03/06/18	17.27	10.55	6.72	
06/12/18	17.27	11.04	6.23	
09/05/18	17.27	8.20	9.07	
12/17/18	17.27	11.10	6.17	
03/18/19	17.27	10.51	6.76	
05/15/19	17.27	10.98	6.29	
09/17/19	17.27	11.65	5.62	
12/09/19	17.27	11.54	5.73	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
MW-206	04/06/93	10.75	9.83	0.92
	05/13/93	10.75	6.72	4.03
	06/10/93	10.75	6.78	3.97
	07/08/93	10.75	7.08	3.67
	08/03/93	10.75	7.35	3.40
	09/08/93	10.75	7.66	3.09
	10/08/93	10.75	7.95	2.80
	11/05/93	10.75	8.15	2.60
	12/03/93	10.75	8.17	2.58
	01/05/94	10.75	7.42	3.33
	02/04/94	10.75	7.24	3.51
	08/28/95	10.75	7.01	3.74
	09/27/95	10.75	7.19	3.56
	04/27/99	10.75	5.59	5.16
	07/14/99	10.75	6.97	3.78
	10/18/99	10.75	7.88	2.87
	01/11/00	10.75	6.34	4.41
	04/05/00	10.75	6.32	4.43
	07/18/00	10.75	7.11	3.64
	10/02/00	10.75	7.92	2.83
01/22/01	10.75	8.93	1.82	
04/25/06	10.75	9.30	1.45	
10/11/06	10.75	10.44	0.31	
MW-206A	04/24/02	10.75	7.43	3.32
	07/18/02	10.75	8.07	2.68
	10/23/02	10.75	8.55	2.20
	01/28/03	10.75	6.40	4.35
	04/15/03	10.75	5.26	5.49
	07/17/03	10.75	8.06	2.69
	04/19/04	15.90	9.51	6.39
	07/27/04	15.90	10.23	5.67
	10/18/04	15.90	10.17	5.73
	01/24/05	15.90	9.18	6.72
	04/18/05	15.90	9.38	6.52
	07/12/05	15.90	9.87	6.03
	10/18/05	15.90	10.50	5.40
	01/25/06	15.90	8.23	7.67
	11/20/08	15.90	9.81	6.09
	11/16/09	15.90	9.48	6.42
	10/25/10	15.90	9.74	6.16
	10/26/11	15.90	10.25	5.65
	05/30/12	15.90	9.44	6.46
	06/13/12	15.90	9.49	6.41
	09/26/12	15.90	10.21	5.69
	11/27/12	15.90	9.05	6.85
	02/22/13	15.90	9.04	6.86
	05/16/13	15.90	8.44	7.46
	09/06/13	15.90	10.06	5.84
	11/07/13	15.90	10.04	5.86
	04/22/14	15.90	9.01	6.89
	11/04/14	15.90	9.25	6.65
	03/10/15	15.90	9.03	6.87
	05/15/15	15.90	9.49	6.41
	07/29/15	15.90	9.99	5.91
	12/10/15	15.90	8.36	7.54
	02/23/16	15.90	8.09	7.81
	05/03/16	15.90	9.03	6.87
	08/30/16	15.90	10.25	5.65
	12/14/16	15.90	8.51	7.39
	03/13/17	15.90	7.98	7.92
	06/13/17	15.90	9.02	6.88
	08/22/17	15.90	9.74	6.16
	12/04/17	15.90	9.07	6.83
03/06/18	15.90	8.78	7.12	
06/12/18	15.90	6.90	9.00	
09/05/18	15.90	9.94	5.96	
12/17/18	15.90	9.23	6.67	
03/18/19	15.90	8.86	7.04	
05/15/19	15.90	9.30	6.60	
09/17/19	15.90	10.13	5.77	
12/09/19	15.90	9.98	5.92	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-208	06/28/13	--	4.98	--
	09/11/13	--	5.67	--
	10/30/13	--	5.97	--
	11/05/13	--	5.51	--
	01/16/14	--	5.46	--
	02/27/14	--	4.72	--
	03/25/14	--	4.91	--
	04/22/14	--	4.98	--
	06/10/14	--	5.62	--
	07/24/14	--	5.50	--
	08/28/14	--	5.73	--
	09/23/14	--	5.76	--
	10/22/14	--	4.82	--
	11/05/14	--	4.50	--
	12/18/14	12.16	4.28	7.88
	01/27/15	12.16	4.52	7.64
	02/26/15	12.16	4.92	7.24
	03/11/15	12.16	5.29	6.87
	04/21/15	12.16	5.08	7.08
	05/19/15	12.16	5.31	6.85
	06/11/15	12.16	5.34	6.82
	07/29/15	12.16	5.81	6.35
	08/25/15	12.16	5.95	6.21
	09/24/15	12.16	5.72	6.44
	10/15/15	12.16	5.35	6.81
	11/20/15	12.16	4.37	7.79
	12/09/15	12.16	2.55	9.61
	02/23/16	12.16	4.18	7.98
	04/22/16	12.16	4.90	7.26
	05/03/16	12.16	5.27	6.89
	06/02/16	12.16	5.34	6.82
	07/14/16	12.16	5.58	6.58
	08/18/16	12.16	5.80	6.36
	09/08/16	12.16	5.88	6.28
	10/21/16	12.16	5.40	6.76
	11/17/16	12.16	3.67	8.49
	12/01/16	12.16	3.93	8.23
	01/11/17	12.16	2.83	9.33
	02/14/17	12.16	3.81	8.35
	03/13/17	12.16	4.04	8.12
	04/13/17	12.16	3.78	8.38
05/08/17	12.16	4.78	7.38	
06/13/17	12.16	5.00	7.16	
07/18/17	12.16	5.32	6.84	
08/22/17	12.16	5.32	6.84	
09/13/17	12.16	5.68	6.48	
10/31/17	12.16	5.58	6.58	
11/13/17	12.16	4.67	7.49	
12/04/17	12.16	4.15	8.01	
03/06/18	12.16	4.57	7.59	
06/12/18	12.16	5.25	6.91	
09/05/18	12.16	5.75	6.41	
12/17/18	12.16	4.13	8.03	
01/16/19	12.16	4.48	7.68	
02/20/19	12.16	3.98	8.18	
03/18/19	12.16	4.95	7.21	
04/10/19	12.16	4.66	7.50	
05/15/19	12.16	4.91	7.25	
06/26/19	12.16	5.47	6.69	
07/24/19	12.16	5.43	6.73	
08/13/19	12.16	5.45	6.71	
09/17/19	12.16	5.23	6.93	
10/16/19	12.16	5.61	6.55	
11/05/19	12.16	5.62	6.54	
12/09/19	12.16	5.08	7.08	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-209	09/11/13	--	6.61	--
	10/30/13	--	5.65	--
	01/16/14	--	5.56	--
	02/27/14	--	6.04	--
	03/25/14	--	5.90	--
	04/22/14	--	5.89	--
	06/10/14	--	8.31	--
	07/24/14	--	6.91	--
	08/28/14	--	6.79	--
	09/23/14	--	5.73	--
	10/22/14	--	4.91	--
	11/05/14	--	6.60	--
	12/18/14	12.10	5.27	6.83
	01/27/15	12.10	4.88	7.22
	02/26/15	12.10	5.54	6.56
	03/11/15	12.10	5.55	6.55
05/19/15	12.10	8.60	3.50	

**Table 3  
Groundwater Elevation Data  
Shell Harbor Island Terminal  
Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-210	03/29/13	--	6.53	--
	06/28/13	--	6.35	--
	09/11/13	--	6.63	--
	10/30/13	--	7.08	--
	11/05/13	--	6.41	--
	01/16/14	--	6.48	--
	02/27/14	--	6.79	--
	03/25/14	--	6.96	--
	04/22/14	--	6.32	--
	06/10/14	--	7.08	--
	07/24/14	--	6.64	--
	08/28/14	--	6.72	--
	09/23/14	--	6.56	--
	10/22/14	--	5.87	--
	11/05/14	--	6.45	--
	12/18/14	12.85	5.49	7.36
	01/27/15	12.85	6.15	6.70
	02/26/15	12.85	6.69	6.16
	03/11/15	12.85	6.56	6.29
	04/21/15	12.85	6.44	6.41
	05/19/15	12.85	6.50	6.35
	06/11/15	12.85	6.48	6.37
	07/29/15	12.85	6.73	6.12
	08/25/15	12.85	6.23	6.62
	09/24/15	12.85	6.60	6.25
	10/15/15	12.85	6.30	6.55
	11/20/15	12.85	6.47	6.38
	12/09/15	12.85	4.45	8.40
	02/23/16	12.85	5.82	7.03
	04/22/16	12.85	5.96	6.89
	05/03/16	12.85	6.42	6.43
	06/02/16	12.85	6.44	6.41
	07/14/16	12.85	6.67	6.18
	08/18/16	12.85	6.78	6.07
	09/08/16	12.85	6.78	6.07
	10/21/16	12.85	6.32	6.53
	11/17/16	12.85	5.43	7.42
	12/01/16	12.85	6.00	6.85
	01/11/17	12.85	5.38	7.47
	02/14/17	12.85	5.69	7.16
	03/13/17	12.85	5.98	6.87
	04/13/17	12.85	6.42	6.43
	05/08/17	12.85	6.74	6.11
	06/13/17	12.85	6.18	6.67
	07/18/17	12.85	6.47	6.38
08/22/17	12.85	6.42	6.43	
09/13/17	12.85	6.60	6.25	
10/31/17	12.85	6.64	6.21	
11/13/17	12.85	6.08	6.77	
12/04/17	12.85	6.05	6.80	
03/06/18	12.85	6.19	6.66	
06/12/18	12.85	6.50	6.35	
09/05/18	12.85	6.74	6.11	
12/17/18	12.85	5.31	7.54	
01/16/19	12.85	6.07	6.78	
02/20/19	12.85	6.45	6.40	
03/18/19	12.85	6.67	6.18	
04/10/19	12.85	5.24	7.61	
05/15/19	12.85	7.05	5.80	
06/26/19	12.85	6.58	6.27	
07/24/19	12.85	5.59	7.26	
08/13/19	12.85	6.58	6.27	
09/17/19	12.85	6.18	6.67	
10/16/19	12.85	6.47	6.38	
11/05/19	12.85	6.78	6.07	
12/09/19	12.85	6.27	6.58	



**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
MW-211	03/29/13	--	5.97	--
	06/28/13	--	5.68	--
	10/30/13	--	6.43	--
	11/05/13	--	5.68	--
	01/16/14	--	5.51	--
	02/27/14	--	5.01	--
	03/25/14	--	5.38	--
	04/22/14	--	5.33	--
	06/10/14	--	6.02	--
	07/24/14	--	6.85	--
	08/28/14	--	6.06	--
	09/23/14	--	5.96	--
	10/22/14	--	4.96	--
	11/05/14	--	4.70	--
	12/18/14	12.21	4.50	7.71
	01/27/15	12.21	4.82	7.39
	02/26/15	12.21	5.38	6.83
	03/11/15	12.21	5.52	6.69
	04/21/15	12.21	5.50	6.71
	05/19/15	12.21	5.71	6.50
	06/11/15	12.21	5.70	6.51
	07/29/15	12.21	6.10	6.11
	08/25/15	12.21	6.17	6.04
	09/24/15	12.21	5.72	6.49
	10/15/15	12.21	5.30	6.91
	11/20/15	12.21	4.78	7.43
	12/09/15	12.21	2.80	9.41
	02/23/16	12.21	4.45	7.76
	04/22/16	12.21	4.67	7.54
	05/03/16	12.21	5.63	6.58
	06/02/16	12.21	5.77	6.44
	07/14/16	12.21	6.02	6.19
	08/18/16	12.21	6.16	6.05
	09/08/16	12.21	6.22	5.99
	10/21/16	12.21	6.01	6.20
	11/17/16	12.21	3.86	8.35
	12/01/16	12.21	4.14	8.07
	01/11/17	12.21	3.18	9.03
	02/14/17	12.21	4.02	8.19
	03/13/17	12.21	4.27	7.94
	04/13/17	12.21	4.02	8.19
	05/08/17	12.21	5.32	6.89
06/13/17	12.21	5.36	6.85	
07/18/17	12.21	5.78	6.43	
08/22/17	12.21	5.76	6.45	
09/13/17	12.21	Not Measured	Not Measured	
10/31/17	12.21	Not Measured	Not Measured	
11/13/17	12.21	Not Measured	Not Measured	
12/04/17	12.21	Not Measured	Not Measured	
03/06/18	12.21	5.03	7.18	
06/12/18	12.21	5.73	6.48	
09/05/18	12.21	6.16	6.05	
12/17/18	12.21	4.14	8.07	
01/16/19	12.21	4.30	7.91	
02/20/19	12.21	4.22	7.99	
03/18/19	12.21	5.34	6.87	
04/10/19	12.21	4.66	7.55	
05/15/19	12.21	5.38	6.83	
06/26/19	12.21	6.88	5.33	
07/24/19	12.21	5.88	6.33	
08/13/19	12.21	5.72	6.49	
09/17/19	12.21	5.54	6.67	
10/16/19	12.21	5.77	6.44	
11/05/19	12.21	6.01	6.20	
12/09/19	12.21	5.54	6.67	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
MW-212	03/29/13	--	4.90	--
	06/28/13	--	4.42	--
	09/11/13	--	5.32	--
	09/12/13	--	5.52	--
	10/30/13	--	5.28	--
	11/05/13	--	5.51	--
	01/16/14	--	5.47	--
	02/27/14	--	6.12	--
	03/25/14	--	6.30	--
	04/22/14	--	5.85	--
	06/10/14	--	Not Measured	Not Measured
	07/24/14	--	6.06	--
	08/28/14	--	6.23	--
	09/23/14	--	6.08	--
	10/22/14	--	4.13	--
	11/05/14	--	5.12	--
	12/18/14	11.95	4.89	7.06
	01/27/15	11.95	5.38	6.57
	02/26/15	11.95	5.59	6.36
	03/11/15	11.95	5.45	6.50
	04/21/15	11.95	5.85	6.10
	05/19/15	11.95	5.67	6.28
	06/11/15	11.95	5.46	6.49
	07/29/15	11.95	5.85	6.10
	08/25/15	11.95	6.82	5.13
	09/24/15	11.95	6.33	5.62
	10/15/15	11.95	5.82	6.13
	11/20/15	11.95	5.51	6.44
	12/09/15	11.95	3.61	8.34
	02/23/16	11.95	4.38	7.57
	04/22/16	11.95	5.37	6.58
	05/03/16	11.95	6.00	5.95
	06/02/16	11.95	6.18	5.77
	07/14/16	11.95	6.27	5.68
	08/18/16	11.95	6.44	5.51
	09/08/16	11.95	6.55	5.40
	10/21/16	11.95	6.10	5.85
	11/17/16	11.95	4.68	7.27
	12/01/16	11.95	4.88	7.07
	01/11/17	11.95	3.88	8.07
	02/14/17	11.95	4.79	7.16
	03/13/17	11.95	4.98	6.97
04/13/17	11.95	5.02	6.93	
05/08/17	11.95	5.31	6.64	
06/13/17	11.95	5.60	6.35	
07/18/17	11.95	5.83	6.12	
08/22/17	11.95	5.92	6.03	
09/13/17	11.95	6.21	5.74	
10/31/17	11.95	6.17	5.78	
11/13/17	11.95	4.98	6.97	
12/04/17	11.95	5.38	6.57	
03/06/18	11.95	5.46	6.49	
06/12/18	11.95	6.06	5.89	
09/05/18	11.95	6.35	5.60	
12/17/18	11.95	4.43	7.52	
01/16/19	11.95	5.56	6.39	
02/20/19	11.95	4.32	7.63	
03/18/19	11.95	6.12	5.83	
04/10/19	11.95	5.78	6.17	
05/15/19	11.95	6.13	5.82	
06/26/19	11.95	6.11	5.84	
07/24/19	11.95	5.96	5.99	
08/13/19	11.95	6.02	5.93	
09/17/19	11.95	6.28	5.67	
10/16/19	11.95	6.36	5.59	
11/05/19	11.95	6.51	5.44	
12/09/19	11.95	6.14	5.81	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-213	07/23/01	8.57	10.17	-1.60
	10/16/01	8.57	5.81	2.76
	04/24/02	8.57	7.34	1.23
	07/18/02	8.57	7.39	1.18
	10/23/02	8.57	5.04	3.53
	01/28/03	8.57	4.60	3.97
	04/15/03	8.57	4.43	4.14
	07/17/03	8.57	10.24	-1.67
	10/15/03	8.57	5.85	2.72
	01/13/04	8.57	5.02	3.55
	04/19/04	8.57	7.91	0.66
	07/27/04	8.57	6.94	1.63
	10/18/04	8.57	5.70	2.87
	01/24/05	8.57	4.70	3.87
	04/18/05	8.57	7.43	1.14
	07/12/05	8.57	8.72	-0.15
	10/18/05	8.57	7.24	1.33
	01/25/06	8.57	5.79	2.78
	04/25/06	8.57	7.82	0.75
	10/11/06	8.57	6.09	2.48
	11/19/08	8.57	5.98	2.59
	04/07/09	8.57	7.69	0.88
	11/16/09	8.57	4.97	3.60
	04/26/10	8.57	8.22	0.35
	10/28/10	8.57	5.33	3.24
	10/25/11	8.57	7.43	1.14
	06/12/12	8.57	7.84	0.73
	11/29/12	8.57	4.65	3.92
	05/15/13	8.57	8.86	-0.29
	10/30/13	8.57	5.45	3.12
	11/05/13	8.57	5.29	3.28
	04/22/14	8.57	6.39	2.18
	11/05/14	12.17	6.55	5.62
05/19/15	12.17	7.85	4.32	
12/09/15	12.17	4.18	7.99	
12/14/16	12.17	5.22	6.95	
06/13/17	12.17	5.75	6.42	
12/04/17	12.17	6.33	5.84	
06/12/18	12.17	9.38	2.79	
12/17/18	12.17	3.87	8.30	
05/15/19	12.17	8.76	3.41	
12/09/19	12.17	6.26	5.91	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
MW-214	07/23/01	8.63	10.37	-1.74
	10/19/01	8.63	5.74	2.89
	04/24/02	8.63	7.94	0.69
	07/18/02	8.63	7.25	1.38
	10/23/02	8.63	5.85	2.78
	01/28/03	8.63	4.25	4.38
	04/15/03	8.63	4.66	3.97
	07/17/03	8.63	10.40	-1.77
	10/15/03	8.63	4.89	3.74
	01/13/04	8.63	4.86	3.77
	04/19/04	8.63	7.92	0.71
	07/27/04	8.63	6.42	2.21
	10/18/04	8.63	5.37	3.26
	01/24/05	8.63	5.00	3.63
	04/18/05	8.63	7.65	0.98
	07/12/05	8.63	8.82	-0.19
	10/18/05	8.63	7.18	1.45
	01/25/06	8.63	5.96	2.67
	04/25/06	8.63	7.80	0.83
	10/11/06	8.63	5.95	2.68
	11/19/08	8.63	5.50	3.13
	04/07/09	12.92	7.05	5.87
	11/16/09	12.92	5.28	7.64
	04/26/10	12.92	7.80	5.12
	10/28/10	12.92	5.25	7.67
	10/25/11	12.92	7.78	5.14
	06/12/12	12.92	7.80	5.12
	11/29/12	12.92	5.00	7.92
	05/15/13	12.92	9.23	3.69
	10/30/13	12.92	7.88	5.04
	11/05/13	12.92	5.38	7.54
	02/27/14	12.92	6.08	6.84
04/22/14	12.92	6.78	6.14	
11/05/14	12.39	6.80	5.59	
05/19/15	12.39	8.10	4.29	
12/09/15	12.39	4.74	7.65	
12/14/16	12.39	5.58	6.81	
06/13/17	12.39	6.04	6.35	
12/04/17	12.39	6.41	5.98	
06/12/18	12.39	9.70	2.69	
12/17/18	12.39	4.13	8.26	
05/15/19	12.39	7.81	4.58	
12/09/19	12.39	6.39	6.00	
MW-301	03/02/12	12.56	6.03	6.53
	05/30/12	12.56	6.03	6.53
	06/13/12	12.56	6.11	6.45
	09/26/12	12.56	6.82	5.74
	11/27/12	12.56	5.34	7.22
	02/21/13	12.56	5.66	6.90
	05/16/13	12.56	6.14	6.42
	09/06/13	12.56	6.71	5.85
	11/07/13	12.56	6.60	5.96
	04/22/14	12.56	5.56	7.00
	07/24/14	12.56	6.38	6.18
	09/23/14	12.56	6.71	5.85
	11/04/14	12.56	5.73	6.83
	03/10/15	12.56	5.64	6.92
	05/15/15	12.56	6.10	6.46
	07/29/15	12.56	6.63	5.93
	12/10/15	12.56	4.57	7.99
	02/23/16	12.56	4.50	8.06
	05/03/16	12.56	5.53	7.03
	08/30/16	12.56	6.68	5.88
	12/14/16	12.56	5.08	7.48
	03/13/17	12.56	7.60	4.96
	05/16/17	12.56	5.21	7.35
	06/13/17	12.56	5.70	6.86
	08/22/17	12.56	6.43	6.13
	12/04/17	12.56	5.40	7.16
	03/06/18	12.56	5.37	7.19
	06/12/18	12.56	5.90	6.66
	09/05/18	12.56	6.58	5.98
	12/17/18	12.56	5.75	6.81
03/18/19	12.56	5.23	7.33	
05/16/19	12.56	5.74	6.82	
09/17/19	12.56	6.49	6.07	
12/09/19	12.56	6.41	6.15	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
MW-302	03/01/12	12.85	6.47	6.38
	05/30/12	12.85	Not Measured	Not Measured
	06/13/12	12.85	Not Measured	Not Measured
	09/26/12	12.85	7.23	5.62
	11/27/12	12.85	5.83	7.02
	02/22/13	12.85	6.10	6.75
	05/16/13	12.85	6.61	6.24
	09/06/13	12.85	7.11	5.74
	11/07/13	12.85	6.99	5.86
	01/16/14	12.85	6.80	6.05
	04/22/14	12.85	6.09	6.76
	06/10/14	12.85	6.40	6.45
	07/24/14	12.85	6.85	6.00
	09/23/14	12.85	7.13	5.72
	11/04/14	12.85	6.28	6.57
	03/10/15	12.85	6.22	6.63
	05/15/15	12.85	6.60	6.25
	07/29/15	12.85	7.07	5.78
	12/10/15	12.85	5.12	7.73
	02/23/16	12.85	5.23	7.62
	05/03/16	12.85	6.15	6.70
	08/30/16	12.85	7.26	5.59
	12/14/16	12.85	5.74	7.11
	03/13/17	12.85	5.33	7.52
	05/16/17	12.85	5.79	7.06
	06/13/17	12.85	6.30	6.55
08/22/17	12.85	6.92	5.93	
12/04/17	12.85	5.80	7.05	
03/06/18	12.85	5.91	6.94	
06/12/18	12.85	6.48	6.37	
09/05/18	12.85	6.96	5.89	
12/17/18	12.85	6.10	6.75	
03/18/19	12.85	5.65	7.20	
05/16/19	12.85	6.20	6.65	
09/17/19	12.85	7.33	5.52	
12/09/19	12.85	6.75	6.10	
MW-303	03/02/12	12.64	5.96	6.68
	05/30/12	12.64	5.97	6.67
	06/13/12	12.64	6.06	6.58
	09/26/12	12.64	6.86	5.78
	11/27/12	12.64	5.22	7.42
	02/21/13	12.64	5.58	7.06
	05/16/13	12.64	6.10	6.54
	09/06/13	12.64	6.80	5.84
	11/07/13	12.64	6.61	6.03
	04/22/14	12.64	5.49	7.15
	07/24/14	12.64	6.44	6.20
	09/23/14	12.64	6.80	5.84
	11/04/14	12.64	5.73	6.91
	03/10/15	12.64	5.62	7.02
	05/15/15	12.64	6.11	6.53
	07/29/15	12.64	6.71	5.93
	12/10/15	12.64	4.38	8.26
	02/23/16	12.64	4.44	8.20
	05/03/16	12.64	5.56	7.08
	08/30/16	12.64	6.82	5.82
	12/14/16	12.64	5.06	7.58
	03/13/17	12.64	4.51	8.13
	05/16/17	12.64	5.18	7.46
	06/13/17	12.64	5.75	6.89
	08/22/17	12.64	6.55	6.09
	12/04/17	12.64	5.35	7.29
03/06/18	12.64	5.35	7.29	
06/12/18	12.64	6.07	6.57	
09/05/18	12.64	6.73	5.91	
12/17/18	12.64	5.83	6.81	
03/18/19	12.64	5.33	7.31	
05/16/19	12.64	5.89	6.75	
09/17/19	12.64	6.68	5.96	
12/09/19	12.64	6.54	6.10	

**Table 3  
Groundwater Elevation Data  
Shell Harbor Island Terminal  
Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
MW-304	03/01/12	12.70	6.07	6.63
	05/30/12	12.70	6.12	6.58
	06/13/12	12.70	6.22	6.48
	09/26/12	12.70	6.98	5.72
	11/27/12	12.70	5.43	7.27
	02/22/13	12.70	5.78	6.92
	05/16/13	12.70	Not Measured	Not Measured
	09/06/13	12.70	6.89	5.81
	11/07/13	12.70	6.75	5.95
	01/16/14	12.70	6.50	6.20
	04/22/14	12.70	5.67	7.03
	07/24/14	12.70	6.57	6.13
	09/23/14	12.70	6.89	5.81
	11/04/14	12.70	5.91	6.79
	03/10/15	12.70	5.80	6.90
	05/15/15	12.70	6.28	6.42
	07/29/15	12.70	6.84	5.86
	12/10/15	12.70	4.80	7.90
	02/23/16	12.70	Not Measured	Not Measured
	05/03/16	12.70	5.79	6.91
	08/30/16	12.70	Not Measured	Not Measured
	12/14/16	12.70	5.27	7.43
	03/13/17	12.70	4.82	7.88
	06/13/17	12.70	5.95	6.75
08/22/17	12.70	6.67	6.03	
12/04/17	12.70	5.53	7.17	
03/06/18	12.70	5.46	7.24	
06/12/18	12.70	6.18	6.52	
09/05/18	12.70	6.78	5.92	
12/17/18	12.70	5.90	6.80	
03/18/19	12.70	5.39	7.31	
05/16/19	12.70	5.98	6.72	
09/17/19	12.70	6.67	6.03	
12/09/19	12.70	6.58	6.12	
MW-305	03/01/12	13.48	6.47	7.01
	05/30/12	13.48	6.43	7.05
	06/11/12	13.48	6.43	7.05
	09/26/12	13.48	7.22	6.26
	11/28/12	13.48	5.86	7.62
	05/16/13	13.48	6.01	7.47
	11/07/13	13.48	6.40	7.08
	04/22/14	13.48	5.92	7.56
	11/06/14	13.48	6.22	7.26
05/21/15	13.48	6.32	7.16	
MW-306	03/01/12	13.36	6.24	7.12
	05/30/12	13.36	6.14	7.22
	06/11/12	13.36	6.12	7.24
	09/26/12	13.36	6.99	6.37
	11/28/12	13.36	5.64	7.72
	05/16/13	13.36	5.57	7.79
	11/07/13	13.36	6.04	7.32
	04/22/14	13.36	5.63	7.73
	05/21/15	13.36	5.99	7.37
12/10/15	13.36	4.80	8.56	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
MW-307	11/27/12	15.62	7.94	7.68
	02/22/13	15.62	8.42	7.20
	05/16/13	15.62	8.91	6.71
	09/06/13	15.62	9.67	5.95
	11/07/13	15.62	9.49	6.13
	04/22/14	15.62	8.52	7.10
	03/10/15	15.62	8.42	7.20
	05/15/15	15.62	8.92	6.70
	07/29/15	15.62	9.58	6.04
	12/10/15	15.62	7.33	8.29
	02/23/16	15.62	7.24	8.38
	05/03/16	15.62	8.39	7.23
	08/30/16	15.62	9.51	6.11
	12/14/16	15.62	7.84	7.78
	03/13/17	15.62	7.32	8.30
	05/16/17	15.62	8.02	7.60
	06/13/17	15.62	8.51	7.11
	08/22/17	15.62	9.42	6.20
	09/25/17	15.62	9.76	5.86
	12/04/17	15.62	8.18	7.44
03/06/18	15.62	8.16	7.46	
06/12/18	15.62	8.70	6.92	
09/05/18	15.62	9.61	6.01	
12/17/18	15.62	8.62	7.00	
03/18/19	15.62	8.07	7.55	
05/15/19	15.62	8.69	6.93	
09/17/19	15.62	9.52	6.10	
12/09/19	15.62	9.39	6.23	
MW-308	11/27/12	15.59	7.90	7.69
	02/22/13	15.59	8.22	7.37
	05/16/13	15.59	8.80	6.79
	09/06/13	15.59	9.56	6.03
	11/07/13	15.59	9.45	6.14
	04/22/14	15.59	8.10	7.49
	11/04/14	15.59	8.40	7.19
	03/10/15	15.59	8.31	7.28
	05/15/15	15.59	9.01	6.58
	07/29/15	15.59	9.62	5.97
	12/10/15	15.59	6.15	9.44
	02/23/16	15.59	6.88	8.71
	05/03/16	15.59	8.20	7.39
	08/30/16	15.59	9.59	6.00
	12/14/16	15.59	7.56	8.03
	03/13/17	15.59	6.72	8.87
	05/16/17	15.59	7.69	7.90
	06/13/17	15.59	8.38	7.21
	08/22/17	15.59	9.29	6.30
	09/25/17	15.59	9.74	5.85
12/04/17	15.59	7.90	7.69	
03/06/18	15.59	7.98	7.61	
06/12/18	15.59	8.78	6.81	
09/05/18	15.59	9.55	6.04	
12/17/18	15.59	8.38	7.21	
03/18/19	15.59	8.02	7.57	
05/15/19	15.59	8.65	6.94	
09/17/19	15.59	9.49	6.10	
12/09/19	15.59	9.34	6.25	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
MW-309	11/27/12	12.67	5.41	7.26
	02/21/13	12.67	5.73	6.94
	05/16/13	12.67	6.21	6.46
	09/06/13	12.67	6.84	5.83
	11/07/13	12.67	6.76	5.91
	04/22/14	12.67	5.60	7.07
	07/24/14	12.67	6.47	6.20
	09/23/14	12.67	6.81	5.86
	11/04/14	12.67	5.81	6.86
	03/10/15	12.67	5.72	6.95
	05/15/15	12.67	6.18	6.49
	07/29/15	12.67	6.74	5.93
	12/10/15	12.67	4.59	8.08
	02/23/16	12.67	4.70	7.97
	05/03/16	12.67	5.60	7.07
	08/30/16	12.67	6.75	5.92
	12/12/16	12.67	5.12	7.55
	03/13/17	12.67	4.62	8.05
	06/13/17	12.67	5.76	6.91
	08/22/17	12.67	6.56	6.11
12/04/17	12.67	5.52	7.15	
03/06/18	12.67	5.40	7.27	
06/12/18	12.67	6.18	6.49	
09/05/18	12.67	6.72	5.95	
12/17/18	12.67	5.93	6.74	
03/18/19	12.67	5.41	7.26	
05/16/19	12.67	5.95	6.72	
09/17/19	12.67	6.74	5.93	
12/09/19	12.67	6.59	6.08	
MW-310	11/27/12	13.51	6.42	7.09
	02/21/13	13.51	6.78	6.73
	05/16/13	13.51	7.20	6.31
	09/06/13	13.51	7.72	5.79
	11/07/13	13.51	7.61	5.90
	01/16/14	13.51	7.39	6.12
	04/23/14	13.51	6.64	6.87
	07/24/14	13.51	7.43	6.08
	09/23/14	13.51	7.73	5.78
	11/04/14	13.51	6.84	6.67
	03/10/15	13.51	6.78	6.73
	05/15/15	13.51	7.19	6.32
	07/29/15	13.51	7.67	5.84
	12/10/15	13.51	5.80	7.71
	02/23/16	13.51	5.77	7.74
	05/03/16	13.51	6.70	6.81
	08/30/16	13.51	7.76	5.75
	12/14/16	13.51	6.32	7.19
	03/13/17	13.51	5.90	7.61
	05/16/17	13.51	6.39	7.12
06/13/17	13.51	6.88	6.63	
08/22/17	13.51	7.56	5.95	
12/04/17	13.51	6.48	7.03	
03/06/18	13.51	6.52	6.99	
06/12/18	13.51	7.08	6.43	
09/05/18	13.51	7.57	5.94	
12/17/18	13.51	6.73	6.78	
03/18/19	13.51	5.28	8.23	
05/16/19	13.51	6.92	6.59	
09/17/19	13.51	7.59	5.92	
12/09/19	13.51	7.41	6.10	
MW-311	11/05/14	14.91	8.03	6.88
	03/10/15	14.91	8.02	6.89
	05/15/15	14.91	8.42	6.49
	07/29/15	14.91	8.83	6.08
	12/10/15	14.91	7.08	7.83
	02/23/16	14.91	6.97	7.94
	05/03/16	14.91	7.92	6.99
	08/30/16	14.91	8.92	5.99
	12/14/16	14.91	7.53	7.38
	03/13/17	14.91	7.10	7.81
	06/13/17	14.91	8.05	6.86
	08/22/17	14.91	8.70	6.21
	12/04/17	14.91	7.70	7.21
	03/06/18	14.91	7.74	7.17
	06/12/18	14.91	8.32	6.59
	09/05/18	14.91	8.78	6.13
12/17/18	14.91	8.02	6.89	
03/18/19	14.91	7.63	7.28	
05/15/19	14.91	8.06	6.85	
09/17/19	14.91	8.78	6.13	
12/09/19	14.91	8.64	6.27	



**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
MW-312	11/05/14	14.31	7.58	6.73
	03/10/15	14.31	7.56	6.75
	05/15/15	14.31	7.95	6.36
	07/29/15	14.31	8.34	5.97
	12/10/15	14.31	6.97	7.34
	02/23/16	14.31	6.68	7.63
	05/03/16	14.31	7.49	6.82
	08/30/16	14.31	8.44	5.87
	12/14/16	14.31	7.10	7.21
	03/13/17	14.31	6.75	7.56
	06/13/17	14.31	7.61	6.70
	08/22/17	14.31	8.22	6.09
	12/04/17	14.31	7.36	6.95
	03/06/18	14.31	7.32	6.99
	06/12/18	14.31	7.83	6.48
	09/05/18	14.31	8.31	6.00
	12/17/18	14.31	7.57	6.74
03/18/19	14.31	7.23	7.08	
05/15/19	14.31	7.59	6.72	
09/17/19	14.31	8.26	6.05	
12/09/19	14.31	8.12	6.19	
MW-313	08/30/16	13.25	7.05	6.20
	12/14/16	13.25	5.63	7.62
	03/13/17	13.25	5.31	7.94
	06/13/17	13.25	6.10	7.15
	08/22/17	13.25	6.80	6.45
	12/04/17	13.25	5.77	7.48
	03/06/18	13.25	5.87	7.38
	06/12/18	13.25	6.38	6.87
	09/05/18	13.25	6.98	6.27
	12/17/18	13.25	6.04	7.21
	03/18/19	13.25	5.87	7.38
	05/15/19	13.25	6.21	7.04
	09/17/19	13.25	6.82	6.43
12/09/19	13.25	6.74	6.51	
MW-314	08/30/16	13.49	7.72	5.77
	12/14/16	13.49	6.77	6.72
	03/13/17	13.49	6.55	6.94
	06/13/17	13.49	7.08	6.41
	08/22/17	13.49	7.55	5.94
	12/04/17	13.49	7.00	6.49
	03/06/18	13.49	6.99	6.50
	06/12/18	13.49	7.38	6.11
	09/05/18	13.49	7.66	5.83
	12/17/18	13.49	6.98	6.51
	03/18/19	13.49	6.92	6.57
	05/16/19	13.49	7.13	6.36
	09/17/19	13.49	Not Measured	Not Measured
12/09/19	13.49	7.46	6.03	
MW-315	08/30/16	14.61	8.56	6.05
	12/14/16	14.61	7.26	7.35
	03/13/17	14.61	6.93	7.68
	06/13/17	14.61	7.72	6.89
	08/22/17	14.61	8.32	6.29
	12/04/17	14.61	7.45	7.16
	03/06/18	14.61	7.47	7.14
	06/12/18	14.61	7.98	6.63
	09/05/18	14.61	8.46	6.15
	12/17/18	14.61	7.64	6.97
	03/18/19	14.61	7.43	7.18
	05/15/19	14.61	7.73	6.88
	09/17/19	14.61	9.43	5.18
12/09/19	14.61	8.21	6.40	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
SH-04	07/08/93	12.92	9.94	2.98
	08/03/93	12.92	10.15	2.77
	09/08/93	12.92	10.50	2.42
	10/08/93	12.92	10.72	2.20
	11/05/93	12.92	10.88	2.04
	12/03/93	12.92	10.78	2.14
	01/05/94	12.92	10.20	2.72
	02/04/94	12.92	10.12	2.80
	08/28/95	12.92	10.15	2.77
	09/27/95	12.92	10.37	2.55
	04/27/99	12.92	8.55	4.37
	07/14/99	12.92	7.63	5.29
	10/18/99	12.92	10.58	2.34
	01/11/00	12.92	9.06	3.86
	04/05/00	12.92	8.94	3.98
	07/18/00	12.92	9.96	2.96
	10/02/00	12.92	10.62	2.30
	01/22/01	12.92	10.13	2.79
	07/23/01	12.92	6.98	5.94
	10/16/01	12.92	12.20	0.72
	04/23/02	12.92	9.91	3.01
	07/18/02	12.92	10.74	2.18
	10/23/02	12.92	11.27	1.65
	01/28/03	12.92	9.73	3.19
	04/15/03	12.92	9.69	3.23
	07/17/03	12.92	10.78	2.14
	10/15/03	12.92	11.19	1.73
	01/13/04	12.92	9.61	3.31
	04/19/04	16.62	10.05	6.57
	07/27/04	16.62	10.90	5.72
	10/18/04	16.62	10.89	5.73
	01/24/05	16.62	10.03	6.59
	04/18/05	16.62	10.03	6.59
	07/12/05	16.62	10.51	6.11
	10/18/05	16.62	11.01	5.61
	01/25/06	16.62	8.98	7.64
	10/11/06	16.62	11.06	5.56
	11/20/08	16.62	10.40	6.22
	04/08/09	16.62	10.01	6.61
	11/16/09	16.62	10.09	6.53
	04/27/10	16.62	9.33	7.29
	10/25/10	16.62	10.23	6.39
10/27/11	16.62	10.68	5.94	
03/01/12	16.62	9.63	6.99	
05/30/12	16.62	9.56	7.06	
06/11/12	16.62	9.55	7.07	
08/23/12	16.62	9.95	6.67	
09/25/12	16.62	10.21	6.41	
11/25/12	16.62	8.77	7.85	
05/16/13	16.62	8.64	7.98	
11/04/13	16.62	8.75	7.87	
04/22/14	16.62	9.00	7.62	
11/06/14	16.62	9.23	7.39	
05/21/15	16.62	9.15	7.47	
12/08/15	16.62	8.80	7.82	
12/14/16	16.62	8.34	8.28	
06/13/17	16.62	8.75	7.87	
12/04/17	16.62	9.33	7.29	
06/12/18	16.62	9.39	7.23	
12/17/18	16.62	9.65	6.97	
05/16/19	16.62	9.72	6.90	
12/09/19	16.62	10.50	6.12	

**Table 3  
Groundwater Elevation Data  
Shell Harbor Island Terminal  
Seattle, Washington**

<b>Well</b>	<b>Date</b>	<b>TOC Elevation (ft AMSL)</b>	<b>Depth to Groundwater (ft below TOC)</b>	<b>Groundwater Elevation (ft AMSL)</b>
TES-MW-1	04/06/93	13.10	8.79	4.31
	05/13/93	13.10	8.61	4.49
	06/10/93	13.10	8.63	4.47
	07/08/93	13.10	8.98	4.12
	08/03/93	13.10	9.28	3.82
	09/08/93	13.10	8.66	4.44
	10/08/93	13.10	9.98	3.12
	11/05/93	13.10	10.20	2.90
	12/03/93	13.10	10.17	2.93
	01/05/94	13.10	9.30	3.80
	02/04/94	13.10	9.19	3.91
	08/28/95	13.10	9.26	3.84
	09/27/95	13.10	9.53	3.57
	04/27/99	13.10	7.49	5.61
	07/14/99	13.10	8.90	4.20
	10/18/99	13.10	9.88	3.22
	01/11/00	13.10	7.59	5.51
	04/05/00	13.10	8.20	4.90
	10/02/00	13.10	9.99	3.11
	01/22/01	13.10	9.65	3.45
	07/23/01	13.10	10.77	2.33
	10/16/01	13.10	11.93	1.17
	04/23/02	13.10	9.32	3.78
	07/18/02	13.10	10.34	2.76
	10/23/02	13.10	10.92	2.18
	01/30/03	13.10	8.43	4.67
	04/15/03	13.10	8.89	4.21
	07/17/03	13.10	10.41	2.69
	10/15/03	13.10	10.82	2.28
	01/13/04	13.10	8.82	4.28
	04/19/04	16.15	9.76	6.39
	07/27/04	16.15	10.48	5.67
	10/18/04	16.15	10.27	5.88
	01/24/05	16.15	9.26	6.89
	04/18/05	16.15	9.46	6.69
	07/12/05	16.15	10.10	6.05
	10/18/05	16.15	10.70	5.45
	01/25/06	16.15	8.17	7.98
	04/25/06	16.15	9.33	6.82
	10/11/06	16.15	10.66	5.49
	11/18/08	16.15	9.85	6.30
	11/16/09	16.15	9.35	6.80
10/26/10	16.15	9.66	6.49	
10/27/11	16.15	10.42	5.73	
05/30/12	16.15	9.37	6.78	
06/13/12	16.15	9.43	6.72	
06/26/12	16.15	10.31	5.84	
11/27/12	16.15	8.62	7.53	
05/16/13	16.15	9.46	6.69	
11/07/13	16.15	10.06	6.09	
04/22/14	16.15	8.70	7.45	
11/04/14	16.15	9.07	7.08	
03/10/15	16.15	8.92	7.23	
05/15/15	16.15	9.40	6.75	
07/29/15	16.15	10.08	6.07	
12/10/15	16.15	7.14	9.01	
02/23/16	16.15	7.58	8.57	
05/03/16	16.15	8.80	7.35	
08/30/16	16.15	9.86	6.29	
12/14/16	16.15	8.30	7.85	
03/13/17	16.15	7.57	8.58	
06/13/17	16.15	9.01	7.14	
08/22/17	16.15	9.90	6.25	
12/04/17	16.15	8.75	7.40	
03/06/18	16.15	8.61	7.54	
06/12/18	16.15	9.56	6.59	
09/05/18	16.15	10.17	5.98	
12/17/18	16.15	9.08	7.07	
03/18/19	16.15	8.73	7.42	
05/15/19	16.15	9.34	6.81	
09/17/19	16.15	10.19	5.96	
12/09/19	16.15	9.99	6.16	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
TX-03	04/06/93	9.58	5.57	4.01
	06/10/93	9.58	5.50	4.08
	07/08/93	9.58	5.81	3.77
	08/03/93	9.58	6.08	3.50
	09/08/93	9.58	6.42	3.16
	10/08/93	9.58	6.74	2.84
	11/05/93	9.58	6.91	2.67
	12/03/93	9.58	6.90	2.68
	01/05/94	9.58	6.16	3.42
	02/04/94	9.58	Not Measured	Not Measured
	08/28/95	9.58	6.16	3.42
	09/27/95	9.58	Not Measured	Not Measured
	04/27/99	9.58	4.68	4.90
	07/14/99	9.58	5.87	3.71
	10/18/99	9.58	6.71	2.87
	01/11/00	9.58	5.30	4.28
	04/05/00	9.58	5.31	4.27
	07/18/00	9.58	5.98	3.60
	10/02/00	9.58	6.65	2.93
	TX-03A	04/23/02	9.58	6.25
07/18/02		9.58	6.75	2.83
10/23/02		9.58	7.15	2.43
01/28/03		9.58	5.40	4.18
04/15/03		9.58	5.76	3.82
07/17/03		9.58	6.76	2.82
10/15/03		9.58	7.05	2.53
01/13/04		9.58	5.46	4.12
04/19/04		12.26	6.22	6.04
07/27/04		12.26	6.78	5.48
10/18/04		12.26	6.69	5.57
01/24/05		12.26	5.76	6.50
04/18/05		12.26	5.91	6.35
07/12/05		12.26	6.41	5.85
10/18/05		12.26	6.92	5.34
01/25/06		12.26	4.82	7.44
04/25/06		12.26	5.82	6.44
10/11/06		12.26	6.91	5.35
11/20/08		12.26	6.14	6.12
04/08/09		12.26	5.90	6.36
11/16/09		12.26	5.80	6.46
04/27/10		12.26	5.53	6.73
10/25/10		12.26	6.20	6.06
10/27/11		12.26	6.74	5.52
03/01/12		12.26	5.86	6.40
06/13/12		12.26	5.97	6.29
09/26/12		12.26	6.67	5.59
11/27/12		12.26	5.21	7.05
02/21/13		12.26	5.55	6.71
05/16/13		12.26	6.01	6.25
09/06/13		12.26	6.56	5.70
11/07/13		12.26	6.45	5.81
04/22/14		12.26	5.45	6.81
07/24/14		12.26	6.28	5.98
09/23/14		12.26	6.57	5.69
11/04/14		12.26	5.64	6.62
03/10/15		12.26	5.57	6.69
05/15/15		12.26	5.98	6.28
07/29/15		12.26	6.51	5.75
12/10/15		12.26	4.48	7.78
02/23/16		12.26	4.44	7.82
05/03/16		12.26	5.46	6.80
08/30/16		12.26	6.59	5.67
12/14/16		12.26	5.04	7.22
03/13/17		12.26	4.56	7.70
05/16/17		12.26	5.12	7.14
06/13/17		12.26	5.63	6.63
08/22/17	12.26	6.37	5.89	
12/04/17	12.26	5.20	7.06	
03/27/18	12.26	5.42	6.84	
06/12/18	12.26	6.33	5.93	
09/05/18	12.26	6.43	5.83	
12/17/18	12.26	5.61	6.65	
03/18/19	12.26	5.12	7.14	
05/16/19	12.26	5.56	6.70	
09/17/19	12.26	6.42	5.84	
12/09/19	12.26	6.27	5.99	

**Table 3  
Groundwater Elevation Data  
Shell Harbor Island Terminal  
Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
TX-04	04/06/93	14.36	9.97	4.39
	05/13/93	14.36	9.83	4.53
	06/10/93	14.36	9.87	4.49
	07/08/93	14.36	10.24	4.12
	08/03/93	14.36	10.54	3.82
	09/08/93	14.36	10.96	3.40
	10/08/93	14.36	11.28	3.08
	11/05/93	14.36	11.51	2.85
	12/03/93	14.36	11.43	2.93
	01/05/94	14.36	10.60	3.76
	02/04/94	14.36	10.45	3.91
	08/28/95	14.36	10.64	3.72
	09/27/95	14.36	10.88	3.48
	04/27/99	14.36	8.57	5.79
	07/14/99	14.36	10.01	4.35
	10/18/99	14.36	11.12	3.24
	01/11/00	14.36	9.06	5.30
	04/05/00	14.36	9.04	5.32
	07/18/00	14.36	10.41	3.95
	10/02/00	14.36	11.23	3.13
	01/22/01	14.36	10.70	3.66
	07/23/01	14.36	11.50	2.86
	10/16/01	14.36	9.57	4.79
	04/23/02	14.36	6.81	7.55
	07/18/02	14.36	11.33	3.03
	10/23/02	14.36	11.79	2.57
	01/28/03	14.36	9.51	4.85
	04/15/03	14.36	9.55	4.81
	07/17/03	14.36	11.28	3.08
	10/15/03	14.36	11.93	2.43
	01/13/04	14.36	9.54	4.82
	04/19/04	17.65	10.50	7.15
	07/27/04	17.65	11.46	6.19
	10/18/04	17.65	11.46	6.19
	01/24/05	17.65	10.16	7.49
	04/18/05	17.65	10.35	7.30
	07/12/05	17.65	11.04	6.61
	10/18/05	17.65	11.79	5.86
	01/25/06	17.65	8.43	9.22
	04/25/06	17.65	10.22	7.43
	10/11/06	17.65	11.77	5.88
11/18/08	17.65	10.84	6.81	
11/16/09	17.65	10.39	7.26	
10/25/10	17.65	10.77	6.88	
10/26/11	17.65	11.47	6.18	
11/26/12	17.65	9.26	8.39	
11/04/13	17.65	10.98	6.67	
11/06/14	17.65	10.05	7.60	
02/27/15	17.65	9.37	8.28	
12/08/15	17.65	9.27	8.38	
12/14/16	17.65	8.97	8.68	
12/04/17	17.65	9.64	8.01	
12/17/18	17.65	10.39	7.26	
12/09/19	17.65	11.22	6.43	
TX-06	04/06/93	8.58	3.85	4.73
	06/10/93	8.58	3.71	4.87
	09/08/93	8.58	4.96	3.62
	10/08/93	8.58	5.35	3.23
	11/05/93	8.58	5.54	3.04
	12/03/93	8.58	5.37	3.21
	01/05/94	8.58	4.48	4.10
	02/04/94	8.58	4.43	4.15
	08/28/95	8.58	4.75	3.83
	09/27/95	8.58	5.78	2.80
	04/27/99	8.58	2.62	5.96
	07/14/99	8.58	4.05	4.53
	10/18/99	8.58	5.19	3.39
	01/11/00	8.58	2.98	5.60
	04/05/00	8.58	3.16	5.42
	07/18/00	8.58	4.25	4.33
10/02/00	8.58	5.23	3.35	
04/25/06	8.58	3.88	4.70	

**Table 3**  
**Groundwater Elevation Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Date	TOC Elevation (ft AMSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft AMSL)
TX-06A	04/23/02	8.58	3.98	4.60
	07/18/02	8.58	4.14	4.44
	10/23/02	8.58	5.98	2.60
	01/28/03	8.58	3.40	5.18
	04/15/03	8.58	3.57	5.01
	07/17/03	8.58	5.24	3.34
	10/15/03	8.58	6.01	2.57
	01/13/04	8.58	3.36	5.22
	04/19/04	11.67	4.41	7.26
	07/27/04	11.67	5.39	6.28
	10/18/04	11.67	5.23	6.44
	01/24/05	11.67	3.66	8.01
	04/18/05	11.67	3.89	7.78
	07/12/05	11.67	4.78	6.89
	10/18/05	11.67	5.63	6.04
	01/25/06	11.67	3.00	8.67
	04/25/06	11.67	5.54	6.13
	11/18/08	11.67	4.56	7.11
	11/16/09	11.67	3.99	7.68
	10/28/10	11.67	4.47	7.2
10/25/11	11.67	5.40	6.27	
11/25/12	11.67	3.03	8.64	
11/07/13	11.67	4.87	6.80	
11/06/14	11.67	4.03	7.64	
12/08/15	11.67	2.80	8.87	
12/14/16	11.67	3.26	8.41	
12/04/17	11.67	3.36	8.31	
12/17/18	11.67	4.18	7.49	
12/09/19	11.67	5.20	6.47	

**Notes:**  
 = Indicates data collected during this progress report period  
 -- = Survey data not available  
 AMSL = above mean sea level  
 ft = feet  
 TOC = Top of monitoring well casing

**Table 4**  
**Performance Product Monitoring Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Date	MW-204			MW-208			MW-209			MW-210			MW-211			MW-212		
	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness
06/01/04	10.68	NP	NP	5.01	NP	NP	—	—	—	6.20	6.15	0.05	5.33	NP	NP	5.60	NP	NP
10/02/04	10.12	NP	NP	4.77	NP	NP	—	—	—	7.09	6.31	0.78	5.04	NP	NP	4.89	NP	NP
10/03/04	10.50	NP	NP	5.98	NP	NP	—	—	—	7.26	6.71	0.55	5.86	NP	NP	6.06	NP	NP
04/19/04	10.95	NP	NP	6.29	NP	NP	—	—	—	6.99	NP	NP	4.90	NP	NP	5.13	NP	NP
05/13/04	11.24	NP	NP	6.07	NP	NP	—	—	—	6.95	NP	NP	4.78	NP	NP	4.80	NP	NP
08/06/04	11.35	NP	NP	4.76	NP	NP	—	—	—	5.52	NP	NP	4.64	NP	NP	4.41	NP	NP
06/07/04	11.55	NP	NP	5.06	NP	NP	—	—	—	6.98	NP	NP	4.55	NP	NP	4.61	NP	NP
11/08/04	11.79	NP	NP	6.51	NP	NP	—	—	—	7.22	NP	NP	7.18	NP	NP	7.27	NP	NP
09/09/04	11.79	NP	NP	6.66	NP	NP	—	—	—	7.19	7.18	0.01	7.16	NP	NP	7.14	7.14	Trace
06/10/04	11.76	NP	NP	6.58	NP	NP	—	—	—	7.18	NP	NP	7.11	NP	NP	7.08	NP	NP
09/11/04	11.61	NP	NP	6.17	NP	NP	—	—	—	7.04	7.01	0.03	6.93	NP	NP	6.95	6.95	Trace
10/12/04	—	—	—	3.91	NP	NP	—	—	—	6.96	NP	NP	5.31	NP	NP	5.00	NP	NP
11/01/05	11.04	NP	NP	3.80	NP	NP	—	—	—	5.78	NP	NP	4.85	4.85	Trace	4.71	NP	NP
11/02/05	10.81	10.81	Trace	4.47	NP	NP	—	—	—	6.19	6.18	0.01	5.71	NP	NP	5.68	NP	NP
11/03/05	11.18	NP	NP	5.48	NP	NP	—	—	—	6.73	NP	NP	6.56	6.56	Trace	6.50	NP	NP
04/18/05	10.98	NP	NP	5.97	NP	NP	—	—	—	6.95	6.81	0.14	6.18	NP	NP	6.42	NP	NP
05/25/05	10.98	NP	NP	4.78	NP	NP	—	—	—	6.12	NP	NP	5.73	NP	NP	5.78	NP	NP
09/06/05	11.15	NP	NP	5.74	NP	NP	—	—	—	6.68	6.67	0.01	6.11	NP	NP	6.33	NP	NP
11/07/05	11.40	NP	NP	6.12	NP	NP	—	—	—	7.13	NP	NP	6.32	NP	NP	6.65	NP	NP
08/19/05	11.64	NP	NP	6.25	NP	NP	—	—	—	6.91	NP	NP	6.50	NP	NP	7.85	NP	NP
09/16/05	11.83	NP	NP	6.51	NP	NP	—	—	—	7.32	NP	NP	6.85	NP	NP	7.02	NP	NP
10/18/05	11.98	NP	NP	6.06	NP	NP	—	—	—	6.93	NP	NP	6.51	NP	NP	6.54	NP	NP
09/11/05	11.67	NP	NP	4.43	NP	NP	—	—	—	6.34	NP	NP	4.86	NP	NP	4.10	NP	NP
05/12/05	11.48	NP	NP	4.65	NP	NP	—	—	—	6.57	NP	NP	—	—	—	—	—	—
01/26/06	9.96	NP	NP	4.72	NP	NP	—	—	—	5.83	NP	NP	6.65	NP	NP	3.95	NP	NP
02/28/06	10.24	NP	NP	5.34	NP	NP	—	—	—	6.28	NP	NP	4.53	NP	NP	4.88	NP	NP
03/24/06	10.57	NP	NP	5.34	NP	NP	—	—	—	4.20	NP	NP	5.74	NP	NP	4.94	NP	NP
04/18/06	10.78	NP	NP	5.41	NP	NP	—	—	—	6.46	6.45	0.01	5.81	NP	NP	5.28	NP	NP
05/18/06	11.06	NP	NP	6.02	NP	NP	—	—	—	7.01	NP	NP	6.32	NP	NP	5.56	NP	NP
06/19/06	11.26	NP	NP	5.98	NP	NP	—	—	—	6.91	NP	NP	6.23	NP	NP	5.48	NP	NP
08/28/06	11.74	NP	NP	6.45	NP	NP	—	—	—	7.25	NP	NP	6.63	NP	NP	5.68	NP	NP
09/15/06	11.83	NP	NP	6.21	NP	NP	—	—	—	7.02	NP	NP	6.54	NP	NP	5.53	NP	NP
10/11/06	11.96	NP	NP	6.10	NP	NP	—	—	—	6.95	NP	NP	5.93	NP	NP	5.48	NP	NP
11/29/06	—	—	—	4.19	NP	NP	—	—	—	5.83	NP	NP	5.39	NP	NP	4.27	NP	NP
12/13/06	10.53	NP	NP	3.60	NP	NP	—	—	—	5.58	5.58	0.01	4.39	NP	NP	2.81	NP	NP
01/31/07	10.17	NP	NP	3.98	NP	NP	—	—	—	6.32	6.09	0.23	5.58	NP	NP	4.26	NP	NP
02/26/07	10.56	NP	NP	4.55	NP	NP	—	—	—	6.04	NP	NP	5.24	NP	NP	4.12	NP	NP
03/20/07	10.68	NP	NP	4.68	NP	NP	—	—	—	6.42	6.41	0.01	5.68	NP	NP	4.82	NP	NP
04/26/07	10.99	NP	NP	—	NP	NP	—	—	—	—	NP	NP	6.15	NP	NP	4.97	4.96	0.01
05/25/07	11.29	NP	NP	5.68	NP	NP	—	—	—	7.05	NP	NP	6.60	NP	NP	5.11	NP	NP
06/15/07	11.50	NP	NP	5.93	NP	NP	—	—	—	7.04	NP	NP	6.35	NP	NP	5.03	NP	NP
07/19/07	11.70	NP	NP	5.82	5.81	0.01	—	—	—	6.81	6.80	0.01	6.34	NP	NP	5.29	5.28	0.01
08/17/07	11.81	NP	NP	5.90	NP	NP	—	—	—	6.75	NP	NP	6.22	NP	NP	5.35	NP	NP
09/11/07	—	NP	NP	6.24	NP	NP	—	—	—	7.28	7.28	<.01	6.68	6.68	<.01	5.73	NP	NP
10/29/07	11.80	NP	NP	5.60	NP	NP	—	—	—	6.68	NP	NP	5.25	NP	NP	6.03	NP	NP
11/12/07	11.84	NP	NP	5.56	NP	NP	—	—	—	6.58	6.57-6.58	<.01	5.82	NP	NP	4.83	—	—
12/26/07	10.84	NP	NP	4.09	NP	NP	—	—	—	5.85	5.84	<.01	4.84	4.85	<.01	4.44	4.43	<.01

**Table 4**  
**Performance Product Monitoring Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Date	MW-204			MW-208			MW-209			MW-210			MW-211			MW-212		
	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness
01/11/08	10.64	NP	NP	3.84	NP	NP	—	—	—	5.26	5.25	0.01	4.13	4.12	<.01	3.64	3.63	<.01
02/13/08	10.65	NP	NP	4.58	NP	NP	—	—	—	6.60	6.25	0.35	5.75	NP	NP	4.84	NP	NP
03/14/08	11.05	NP	NP	5.37	NP	NP	—	—	—	6.31	NP	NP	5.65	NP	NP	5.01	NP	NP
04/18/08	10.78	NP	NP	5.41	NP	NP	—	—	—	6.46	6.45	0.01	5.81	NP	NP	5.28	NP	NP
05/05/08	11.39	NP	NP	5.84	NP	NP	—	—	—	7.06	7.05	0.01	6.39	NP	NP	5.49	NP	NP
05/20/08	11.53	NP	NP	5.84	NP	NP	—	—	—	7.03	7.02	0.01	6.69	NP	NP	5.52	NP	NP
06/30/08	11.67	NP	NP	5.85	NP	NP	—	—	—	dry	NP	NP	6.35	6.34	0.01	5.45	5.44	0.01
07/10/08	11.70	NP	NP	5.70	NP	NP	—	—	—	6.83	6.80	0.03	6.23	NP	NP	5.24	NP	NP
08/13/08	11.75	NP	NP	5.61	NP	NP	—	—	—	6.75	NP	NP	6.25	NP	NP	6.17	NP	NP
09/02/08	11.82	NP	NP	5.86	NP	NP	—	—	—	6.98	NP	NP	6.40	NP	NP	5.71	NP	NP
10/10/08	11.82	NP	NP	7.11	NP	NP	—	—	—	5.83	NP	NP	6.59	NP	NP	5.83	NP	NP
11/10/08	10.02	NP	NP	4.68	NP	NP	—	—	—	6.40	NP	NP	5.61	NP	NP	5.21	NP	NP
12/08/08	11.48	NP	NP	5.53	NP	NP	—	—	—	6.70	6.52	0.18	5.82	NP	Sheen	5.17	NP	Sheen
01/07/09	11.00	NP	NP	3.93	NP	NP	—	—	—	5.32	NP	Sheen	4.51	NP	Sheen	4.41	NP	Sheen
02/17/09	11.60	NP	NP	5.20	NP	NP	—	—	—	6.40	NP	Sheen	5.72	NP	Sheen	5.21	NP	Sheen
03/06/09	11.21	NP	NP	4.67	NP	NP	—	—	—	6.02	5.59	0.43	4.45	NP	Sheen	4.83	NP	Sheen
04/07/09	—	—	—	—	—	—	—	—	—	6.98	6.96	0.02	—	—	—	—	—	—
07/09/09	11.55	NP	NP	—	—	—	—	—	—	6.90	NP	Sheen	6.34	NP	Sheen	5.56	NP	Sheen
10/20/09	11.75	NP	NP	4.90	NP	NP	—	—	—	6.28	NP	Sheen	5.63	NP	Sheen	4.91	NP	Sheen
01/05/10	10.98	NP	NP	3.60	NP	NP	—	—	—	5.78	NP	Sheen	3.55	NP	NP	3.30	NP	NP
04/26/10	10.7	NP	NP	5.04	NP	NP	—	—	—	6.29	6.28	0.01	5.76	NP	NP	5.05	NP	NP
07/22/10	11.44	NP	NP	5.83	NP	NP	—	—	—	10.02	NP	Sheen	6.74	NP	NP	5.37	NP	Sheen
10/20/10	11.68	NP	NP	5.90	NP	NP	—	—	—	6.78	NP	Sheen	6.20	NP	Sheen	5.45	NP	Sheen
12/12/10	10.79	NP	NP	4.45	NP	NP	—	—	—	5.97	NP	<0.01	5.27	NP	NP	4.62	NP	Sheen
04/08/11	9.97	NP	NP	4.62	NP	NP	—	—	—	5.72	5.71	0.01	5.22	NP	NP	4.82	NP	NP
07/28/11	11.08	NP	NP	5.71	NP	NP	—	—	—	6.90	6.89	0.01	6.22	NP	NP	5.38	NP	NP
09/21/11	11.75	NP	NP	6.19	NP	NP	—	—	—	7.06	7.05	0.01	6.55	NP	NP	5.78	NP	Sheen
03/26/12	—	—	—	4.68	NP	NP	—	—	—	6.09	5.76	0.33	5.08	NP	NP	4.19	NP	Sheen
06/12/12	11.20	NP	NP	5.24	NP	NP	—	—	—	7.25	6.38	0.87	5.86	NP	NP	4.69	NP	Sheen
09/27/12	—	—	—	8.39	NP	NP	—	—	—	7.29	6.98	0.31	6.73	NP	NP	5.47	NP	Sheen
11/27/12	10.81	NP	NP	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12/20/12	—	—	—	2.15	NP	NP	—	—	—	5.40	4.72	0.68	1.97	NP	NP	0.00	NP	NP
02/22/13	10.81	NP	NP	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
03/29/13	—	—	—	—	—	—	—	—	—	6.53	6.44	0.09	5.97	NP	Sheen	4.90	NP	Sheen
05/16/13	11.30	NP	NP	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
06/28/13	—	—	—	4.98	NP	NP	—	—	—	6.35	6.33	0.02	5.68	NP	NP	4.42	NP	Sheen
09/06/13	11.77	NP	NP	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
09/11/13	—	—	—	5.67	NP	Sheen	—	—	—	6.63	NP	NP	—	—	—	5.32	4.82	0.50
09/12/13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.52	5.03	0.49
10/30/13	—	—	—	5.97	NP	NP	—	—	—	7.08	6.96	0.12	6.43	NP	NP	5.29	5.28	0.01
11/07/13	11.73	NP	NP	5.51	NP	NP	—	—	—	6.44	6.41	0.03	5.68	NP	NP	5.54	5.51	0.03
01/16/14	—	—	—	5.46	NP	NP	5.46	5.51	0.05	6.48	6.36	0.12	5.51	NP	NP	5.47	5.43	0.04
02/27/14	—	—	—	4.72	NP	NP	6.04	NP	Sheen	6.79	6.12	0.67	5.01	NP	NP	6.12	NP	Sheen
03/25/14	—	—	—	4.91	NP	NP	5.90	NP	NP	6.96	5.84	1.12	5.38	NP	NP	6.30	NP	NP
04/22/14	10.78	NP	NP	4.98	NP	NP	5.89	NP	NP	6.32	5.98	0.34	5.33	NP	NP	5.85	NP	Sheen
06/10/14	—	—	—	5.62	NP	Sheen	8.31	NP	NP	7.08	6.85	0.23	6.02	NP	NP	—	NP	NP
07/24/14	—	—	—	5.50	NP	NP	6.91	NP	NP	6.64	6.56	0.08	6.85	NP	NP	6.06	NP	Sheen



**Table 4**  
**Performance Product Monitoring Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Date	MW-204			MW-208			MW-209			MW-210			MW-211			MW-212		
	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness
08/28/14	—	—	—	5.73	NP	NP	6.79	NP	NP	6.72	6.65	0.07	6.06	NP	NP	6.23	NP	NP
09/23/14	—	—	—	5.76	NP	NP	5.73	NP	NP	6.65	6.55	0.10	5.96	NP	NP	6.08	NP	NP
10/22/14	—	—	—	4.82	NP	NP	4.91	NP	NP	5.87	NP	NP	4.96	NP	NP	4.13	NP	Sheen
11/05/14	11.04	NP	NP	4.50	NP	NP	6.60	NP	NP	6.45	5.90	0.55	4.70	NP	NP	5.12	NP	NP
12/18/14	—	—	—	4.28	NP	NP	5.77	NP	NP	5.49	5.26	0.23	4.50	NP	NP	4.89	NP	NP
01/27/15	—	—	—	4.52	NP	NP	4.88	NP	NP	6.15	5.60	0.55	4.82	NP	NP	5.38	NP	NP
02/26/15	—	—	—	4.92	NP	NP	5.54	NP	NP	6.69	5.88	0.81	5.38	NP	NP	5.59	NP	NP
03/11/15	10.75	NP	NP	5.29	NP	NP	5.55	NP	NP	6.56	6.15	0.41	5.52	NP	NP	5.45	NP	Sheen
04/21/15	—	—	—	5.08	NP	NP	—	—	—	6.44	6.36	0.08	5.50	NP	NP	5.85	NP	NP
05/19/15	11.21	NP	NP	5.31	NP	NP	8.60	NP	NP	6.50	6.49	0.01	5.71	NP	NP	5.67	NP	NP
06/11/15	—	—	—	5.34	NP	NP	—	—	—	6.48	NP	NP	5.70	NP	NP	5.46	NP	NP
07/29/15	11.59	NP	NP	5.81	NP	NP	—	—	—	6.73	NP	NP	6.10	NP	NP	5.85	NP	NP
08/25/15	—	—	—	5.95	NP	NP	—	—	—	6.23	NP	NP	6.17	NP	NP	6.82	NP	NP
09/24/15	—	—	—	5.72	NP	NP	—	—	—	6.60	NP	NP	5.72	NP	NP	6.33	NP	NP
10/15/15	—	—	—	5.35	NP	NP	—	—	—	6.30	NP	NP	5.30	NP	NP	5.82	NP	NP
11/20/15	—	—	—	4.37	NP	NP	—	—	—	6.47	5.67	0.80	4.78	NP	NP	5.51	NP	NP
12/09/15	9.91	NP	NP	2.55	NP	NP	—	—	—	4.45	4.45	Trace	2.80	NP	NP	3.61	NP	NP
02/23/16	—	—	—	4.18	NP	NP	—	—	—	5.82	5.23	0.59	4.45	NP	NP	4.38	NP	Odor
04/22/16	—	—	—	4.90	NP	NP	—	—	—	5.96	5.83	0.13	4.67	NP	NP	5.37	NP	NP
05/03/16	—	—	—	5.27	NP	NP	—	—	—	6.42	6.19	0.23	5.63	NP	NP	6.00	NP	NP
06/02/16	—	—	—	5.34	NP	NP	—	—	—	6.44	6.44	Odor	5.77	NP	NP	6.18	NP	NP
07/14/16	—	—	—	5.58	NP	NP	—	—	—	6.67	NP	NP	6.02	NP	NP	6.27	NP	NP
08/18/16	—	—	—	5.80	NP	NP	—	—	—	6.78	6.78	Odor	6.16	NP	NP	6.44	NP	NP
09/08/16	—	—	—	5.88	NP	NP	—	—	—	6.78	6.78	Odor	6.22	NP	NP	6.55	NP	NP
10/21/16	—	—	—	5.40	NP	NP	—	—	—	6.32	Trace	Trace	6.01	NP	NP	6.10	NP	NP
11/17/16	—	—	—	3.67	NP	NP	—	—	—	5.43	4.49	0.94	3.86	NP	NP	4.68	NP	NP
12/01/16	—	—	—	3.93	NP	NP	—	—	—	6.00	4.94	1.06	4.14	NP	NP	4.88	NP	NP
12/14/16	10.34	NP	NP	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
01/11/17	—	—	—	2.83	NP	NP	—	—	—	5.38	5.34	0.04	3.18	NP	NP	3.88	NP	Sheen
02/14/17	—	—	—	3.81	NP	NP	—	—	—	5.69	4.75	0.94	4.02	NP	NP	4.79	NP	NP
03/13/17	9.83	NP	NP	4.04	NP	NP	—	—	—	5.98	5.17	0.81	4.27	NP	NP	4.98	NP	NP
04/13/17	—	—	—	3.78	NP	NP	—	—	—	6.42	5.03	1.39	4.02	NP	NP	5.02	NP	NP
05/08/17	—	—	—	4.78	NP	NP	—	—	—	6.74	5.83	0.91	5.32	NP	NP	5.31	NP	NP
06/13/17	—	—	—	5.00	NP	NP	—	—	—	6.18	5.98	0.20	5.36	NP	NP	5.60	NP	NP
07/18/17	—	—	—	5.32	NP	NP	—	—	—	6.47	6.43	0.04	5.78	NP	NP	5.83	NP	NP
08/22/17	11.34	NP	NP	5.32	NP	NP	—	—	—	6.42	NP	NP	5.76	NP	NP	5.92	NP	NP
09/13/17	—	—	—	5.68	NP	NP	—	—	—	6.60	NP	NP	—	—	—	6.21	NP	NP
10/31/17	—	—	—	5.58	NP	NP	—	—	—	6.64	NP	NP	—	—	—	6.17	NP	NP
11/13/17	—	—	—	4.67	NP	NP	—	—	—	6.08	NP	NP	—	—	—	4.98	NP	NP
12/04/17	10.84	NP	NP	4.15	NP	NP	—	—	—	6.05	5.53	0.52	—	—	—	5.38	NP	NP
01/24/18	—	—	—	3.55	NP	NP	—	—	—	5.34	4.95	0.39	3.78	NP	NP	4.16	NP	NP
02/15/18	—	—	—	4.68	NP	NP	—	—	—	6.65	5.64	1.01	4.40	NP	NP	5.42	NP	NP
03/06/18	10.55	NP	NP	4.57	NP	NP	—	—	—	6.19	5.80	0.39	5.03	NP	NP	5.46	NP	NP
04/12/18	—	—	—	4.72	NP	NP	—	—	—	4.96	4.87	0.09	5.68	NP	NP	5.37	NP	NP
05/02/18	—	—	—	4.85	NP	NP	—	—	—	6.22	5.80	0.42	5.17	NP	NP	5.54	NP	NP
06/12/18	11.04	NP	NP	5.25	NP	NP	—	—	—	6.50	6.47	0.03	5.73	NP	NP	6.06	NP	NP
07/12/18	—	—	—	5.24	NP	NP	—	—	—	6.40	6.39	0.01	6.70	NP	NP	5.94	NP	NP

**Table 4**  
**Performance Product Monitoring Data**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Date	MW-204			MW-208			MW-209			MW-210			MW-211			MW-212		
	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness	Groundwater Depth	Product Depth	Product Thickness
08/23/18	—	—	—	5.57	NP	NP	—	—	—	6.56	6.55	0.01	5.97	NP	NP	6.08	NP	NP
09/05/18	8.20	NP	NP	5.75	NP	NP	—	—	—	6.74	NP	NP	6.16	NP	NP	6.35	NP	NP
10/11/18	—	—	—	5.18	NP	NP	—	—	—	6.32	NP	NP	5.50	NP	NP	5.83	NP	NP
11/07/18	—	—	—	5.01	NP	NP	—	—	—	6.33	NP	NP	5.56	NP	NP	5.66	NP	NP
12/17/18	11.10	NP	NP	4.13	NP	NP	—	—	—	5.31	NP	NP	4.14	NP	NP	4.43	NP	NP
01/16/19	—	—	—	4.48	NP	NP	—	—	—	6.07	5.35	0.72	4.30	NP	NP	5.56	NP	NP
02/20/19	—	—	—	3.98	NP	NP	—	—	—	6.45	5.02	1.43	4.22	NP	NP	4.32	NP	NP
03/18/19	10.51	NP	NP	4.95	4.94	0.01	—	—	—	6.67	5.96	0.71	5.34	NP	NP	6.12	NP	NP
04/10/19	—	—	—	4.66	NP	NP	—	—	—	5.24	NP	NP	4.98	NP	NP	5.78	5.75	0.03
05/15/19	—	—	—	4.19	NP	NP	—	—	—	7.05	6.22	0.83	5.38	NP	NP	6.13	6.10	0.03
06/26/19	—	—	—	5.47	NP	NP	—	—	—	6.58	6.56	0.02	6.88	NP	NP	6.11	NP	NP
07/24/19	—	—	—	5.43	NP	NP	—	—	—	6.59	6.58	0.01	5.88	NP	NP	5.96	NP	NP
08/13/19	—	—	—	5.45	NP	NP	—	—	—	6.58	6.57	0.01	5.72	NP	NP	6.02	NP	NP
09/17/19	11.65	NP	NP	5.23	NP	NP	—	—	—	6.18	6.13	0.05	5.54	NP	NP	6.28	6.25	0.03
10/16/19	—	—	—	5.61	NP	NP	—	—	—	6.47	6.45	0.02	5.77	NP	NP	6.36	NP	NP
11/05/19	—	—	—	5.62	NP	NP	—	—	—	6.78	6.68	0.10	6.01	NP	NP	6.51	NP	NP
12/09/19	11.54	NP	NP	5.08	NP	NP	—	—	—	6.27	NP	NP	5.54	NP	NP	6.14	NP	NP

**Notes:**

= Indicates data collected during this progress report period  
 Depth relative to the measuring point at the top of the monitoring well PVC pipe  
 Product depth/thick = product depth/thickness in well measured in feet  
 — = not measured  
 NP = no product detected

**Table 5**  
**Compliance Monitoring Natural Attenuation Parameters**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Field Parameters							Laboratory Parameters					
		Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Ferrous Iron (mg/L)	Nitrogen, Nitrate (mg/L)	Nitrogen, Nitrite (mg/L)	Sulfate (mg/L)	Iron Dissolved (mg/L)	Manganese Dissolved (mg/L)	
MW-05	05/04/16	14.30	357	3.38	6.26	31.6	9.99	NM	NM	NM	NM	NM	NM	
	12/14/16	12.22	308	5.94	6.45	47	0.0	NM	NM	NM	NM	NM	NM	
	06/14/17	14.80	249	1.70	6.37	25.4	5.13	NM	NM	NM	NM	NM	NM	
	12/07/17	15.16	263	791.21	6.73	-165.1	8.37	NM	NM	NM	NM	NM	NM	
	06/12/18	15.66	211	1.47	6.35	-44.7	6.88	NM	NM	NM	NM	NM	NM	
	12/18/18	15.0	299	1.73	7.28	-23.6	80	NM	NM	NM	NM	NM	NM	
	05/15/19	15.3	294	0.85	6.92	18.3	45	NM	NM	NM	NM	NM	NM	
12/10/19	14.31	300	4.76	5.91	32.8	16	NM	NM	NM	NM	NM	NM		
MW-101	12/13/16	8.35	244	1.67	6.81	-75	0.0	NM	NM	NM	NM	NM	NM	
	12/06/17	10.99	103	0.32	6.75	-12.3	9.0	NM	NM	NM	NM	NM	NM	
	12/19/18	12.5	239	1.38	7.39	-74.6	11	NM	NM	NM	NM	NM	NM	
	12/09/19	13.13	207	3.59	6.49	-69.6	44	NM	NM	NM	NM	NM	NM	
MW-102	12/14/16	9.44	438	1.96	6.77	32	0.0	NM	NM	NM	NM	NM	NM	
	12/05/17	11.76	310	1.14	6.43	106.3	9.60	NM	NM	NM	NM	NM	NM	
	12/18/18	14.20	415	1.51	7.49	-35.9	12.00	NM	NM	NM	NM	NM	NM	
	12/10/19	13.55	410	3.43	6.16	59.4	27	NM	NM	NM	NM	NM	NM	
MW-104	05/05/16	17.11	420	0.65	6.19	-105.1	4.31	NM	NM	NM	NM	NM	NM	
	12/14/16	10.90	340	1.76	6.49	-70.0	0.0	NM	NM	NM	NM	NM	NM	
	06/14/17	17.09	323	0.82	7.09	-39.3	2.61	NM	NM	NM	NM	NM	NM	
	12/07/17	15.60	349	0.61	6.65	-4.0	0.00	NM	NM	NM	NM	NM	NM	
	06/12/18	19.32	180	0.54	6.24	-44.0	2.52	NM	NM	NM	NM	NM	NM	
	12/18/18	15.8	331	1.34	7.35	-41.6	10	NM	NM	NM	NM	NM	NM	
	05/15/19	17.8	258	0.78	6.60	-74.9	6	NM	NM	NM	NM	NM	NM	
	12/10/19	15.35	345	2.66	5.40	74.8	36	NM	NM	NM	NM	NM	NM	
MW-105	12/14/16	14.63	160	0.32	6.14	-58.1	8.67	NM	NM	NM	NM	NM	NM	
	12/06/17	13.11	136	1.37	6.12	-26.4	0.00	NM	NM	NM	NM	NM	NM	
	12/18/18	15.5	93	1.01	7.21	-33.7	49	NM	NM	NM	NM	NM	NM	
	12/11/19	15.53	166	0.48	7.31	-17.2	25	NM	NM	NM	NM	NM	NM	
MW-111	05/04/16	15.20	148	3.67	6.29	4.6	23.2	NM	NM	NM	NM	NM	NM	
	12/14/16	13.40	295	0.35	6.45	-87.3	6.48	NM	NM	NM	NM	NM	NM	
	06/14/17	16.60	112	1.12	7.08	1.0	8.2	NM	NM	NM	NM	NM	NM	
	12/06/17	15.03	386	10.65	6.42	-51.3	5.13	NM	NM	NM	NM	NM	NM	
	06/12/18	17.56	118	0.73	6.22	-46.2	4.01	NM	NM	NM	NM	NM	NM	
	12/18/18	15.0	417	1.25	7.76	-46.6	20	NM	NM	NM	NM	NM	NM	
	05/15/19	16.1	147	0.75	7.57	-55.6	14	NM	NM	NM	NM	NM	NM	
	12/11/19	15.42	280	0.40	7.54	-13.1	6	NM	NM	NM	NM	NM	NM	
MW-112A	05/05/16	14.28	448	0.87	6.41	-87.0	4.41	NM	NM	NM	NM	NM	NM	
	12/12/16	13.70	401	0.67	6.51	-87.1	9.78	NM	NM	NM	NM	NM	NM	
	06/15/17	15.75	498	0.60	7.26	-62.6	NM	NM	NM	NM	NM	NM	NM	
	12/07/17	13.97	359	0.82	6.50	-27.9	0.00	NM	NM	NM	NM	NM	NM	
	06/13/18	16.28	517	0.26	6.51	-56.1	0.00	NM	NM	NM	NM	NM	NM	
	12/20/18	14.0	495	0.12	6.75	-101	128	NM	NM	NM	NM	NM	NM	
	05/16/19	10.91	529	0.52	6.27	-104	77	NM	NM	NM	NM	NM	NM	
	12/12/19	13.87	620	0.50	8.90	-80.8	12	NM	NM	NM	NM	NM	NM	
MW-201	01/14/04	12.0	282	1.98	5.59	-95.5	1.5	NM	NM	NM	NM	NM	NM	
	04/20/04	11.4	101	5.52	5	61.3	7.0	ND	NM	NM	5.71	NM	NM	
	01/26/05	9.0	720	9.12	5.48	129	9.0	NM	NM	NM	NM	NM	NM	
	04/20/05	11.9	700	6.24	6.66	83	8.0	0	NM	NM	7.67	NM	NM	
	07/13/05	15.4	99	0.16	5.64	178.1	1.9	NM	NM	NM	NM	NM	NM	
	10/20/05	14.1	535	0.42	7.21	49.2	3.9	NM	NM	NM	NM	NM	NM	
	01/26/06	8.3	24	7.47	7.02	-72.5	4	NM	NM	NM	NM	NM	NM	
	11/20/08	9.3	172	14.08	6.12	268.0	38	NM	NM	NM	NM	NM	NM	
	04/07/09	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
	11/19/09	10.6	13.2	7.79	5.21	61.0	6.5	NM	NM	NM	NM	NM	NM	
	10/27/10	12.7	15.2	6.92	4.79	157	0.5	NM	NM	NM	NM	NM	NM	
	10/26/11	11.53	655	2.77	7.59	-76.0	5.9	NM	NM	NM	NM	NM	NM	
	11/27/12	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
	11/06/13	11.78	800	0.00	6.68	-74	0	NM	NM	NM	NM	NM	NM	
	11/06/14	14.1	121	0.00	6.08	297	3.3	NM	NM	NM	NM	NM	NM	
	12/13/16	8.12	47	3.58	6.13	142.3	9.27	NM	NM	NM	NM	NM	NM	
	12/06/17	11.30	57	14.37	6.08	37.7	12.2	NM	NM	NM	NM	NM	NM	
12/19/18	12.6	387	0.65	6.81	-87.4	30	NM	NM	NM	NM	NM	NM		

**Table 5  
Compliance Monitoring Natural Attenuation Parameters  
Shell Harbor Island Terminal  
Seattle, Washington**

Well	Sample Date	Field Parameters							Laboratory Parameters				
		Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Ferrous Iron (mg/L)	Nitrogen, Nitrate (mg/L)	Nitrogen, Nitrite (mg/L)	Sulfate (mg/L)	Iron Dissolved (mg/L)	Manganese Dissolved (mg/L)
MW-202	01/14/04	8.0	52	12.4	5.32	-40.2	9.1	NM	NM	NM	NM	NM	NM
	04/20/04	12.1	317	1.31	5.27	112	9.8	3	NM	NM	< 1	NM	NM
	01/26/05	11.6	218	1.69	4.8	3	126	NM	NM	NM	NM	NM	NM
	04/20/05	12.6	44	0	7.78	-60	26.0	8	NM	NM	<1	NM	NM
	07/13/05	15.7	281	0.11	6.09	-22	6.3	NM	NM	NM	NM	NM	NM
	10/20/05	15.5	576	0.44	6.42	-47.9	5.5	NM	NM	NM	NM	NM	NM
	01/26/06	10.78	213	0.18	7.73	-104.7	70	NM	NM	NM	NM	NM	NM
	11/20/08	14.50	532	3.65	6.40	232.0	10	36.6	NM	NM	< 1	NM	NM
	04/07/09	11.86	0.175	0	6.12	-82	56.1	NM	NM	NM	NM	NM	NM
	11/19/09	12.4	51.6	1.65	5.81	-53	29.5	19	NM	NM	82	NM	NM
	04/27/10	12.3	34	0.22	5.46	-96	55.4	NM	NM	NM	NM	NM	NM
	10/27/10	15	29.5	2.35	6.15	-48	24	7.4	NM	NM	< 1.0	NM	NM
	10/26/11	12.90	214	2.45	8.22	-104.2	2.72	8.5	NM	NM	< 0.50	NM	NM
	03/02/12	10.03	334	0.00	6.30	-39	27.2	NM	NM	NM	NM	NM	NM
	06/13/12	12.5	284	4.36	7.22	-59	25.7	NM	NM	NM	NM	NM	NM
	09/26/12	14.20	332	0.00	6.74	-112	25.0	NM	NM	NM	NM	NM	NM
	11/27/12	12.99	383	0.00	7.33	-70	77.7	NM	NM	NM	15.0	NM	NM
	11/06/13	13.67	263	2.28	5.79	-43.6	4.9	3.0	NM	NM	0.76	< 0.200	0.439
	11/06/14	15.87	373	0.00	6.47	-49	107.0	5.0	< 0.25	< 0.25	7.0	0.288	0.631
	12/10/15	12.85	241	0.42	6.42	-21	98.6	1.5	< 0.10	< 0.10	11.6	24.2	0.628
05/03/16	15.95	232	0.36	6.20	-46	16.9	NM	NM	NM	NM	NM	NM	
12/13/16	10.66	223	0.39	6.33	-102.4	9.52	0.5	< 0.0400	< 0.0400	1.24 J	45.3	0.401	
06/14/17	14.76	222	0.33	7.08	-145.6	9.0	NM	NM	NM	NM	NM	NM	
12/06/17	11.62	153	0.71	6.00	-49.0	4.5	2.75	< 0.0400	< 0.0400	28.6	11.2	0.45	
06/14/18	14.22	159	0.69	6.04	-2.9	9.9	NM	NM	NM	NM	NM	NM	
12/19/18	12.6	287	0.28	6.84	-87.4	22	14	< 0.0400	< 0.0400	58.4	17.9	0.649	
05/16/19	12.6	266	0.48	6.53	-91.9	71	NM	NM	NM	NM	NM	NM	
12/10/19	12.88	278	4.97	6.12	-10.2	50	3.5	<0.0600	<0.0600	8.61	28.3	0.543	
MW-203	01/13/04	12.4	243	2.91	6.38	-6.9	13.7	NM	NM	NM	NM	NM	NM
	04/19/04	13.0	369	1.02	6.58	110	39.2	1	NM	NM	2.4	NM	NM
	07/27/04	16.4	514	1.12	6.11	90.9	32.2	NM	NM	NM	NM	NM	NM
	10/18/04	14.8	643	0.35	9.42	136.8	110	NM	NM	NM	NM	NM	NM
	01/25/05	12.9	476	2.79	6.37	21	210	NM	NM	NM	NM	NM	NM
	04/19/05	12.8	44	0	6.22	0	5	5.5	NM	NM	6.48	NM	NM
	07/13/05	15.0	351	0.67	6.34	-46	15	NM	NM	NM	NM	NM	NM
	10/20/05	15.9	902	1.12	6.69	-48.7	34	NM	NM	NM	NM	NM	NM
	01/23/06	11.4	131	2.2	6.45	7.6	60	NM	NM	NM	NM	NM	NM
	11/18/08	13.9	448	10.3	7.11	87.0	190	1.35	NM	NM	17.1	NM	NM
	04/08/09	12.2	136	1.87	6.83	-31.0	338	NM	NM	NM	NM	NM	NM
	11/17/09	12.2	25.8	5.5	6.28	197	45.6	< 0.1	NM	NM	8.3	NM	NM
	04/26/10	12.7	40.9	0.30	6.81	-109.0	80.1	NM	NM	NM	NM	NM	NM
	10/25/10	14.1	43.8	1.58	6.10	-4	51.8	4.3	NM	NM	14	NM	NM
	05/23/11	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	10/26/11	13.98	384.0	2.94	8.40	-81	10.9	8.8	NM	NM	< 0.50	NM	NM
	06/13/12	12.8	375	4.27	7.20	-38	22.3	NM	NM	NM	NM	NM	NM
	11/27/12	14.83	250	0.00	6.61	22	41.7	NM	NM	NM	24.4	NM	NM
	11/06/13	12.59	486	0.18	6.35	-51	0.0	3.0	NM	NM	< 0.50	3.68	0.178
	11/06/14	16.13	236	4.55	6.71	135.1	28.4	1.5	0.42 J	< 0.25	14.5	< 0.200	0.127
	12/09/15	12.51	0	0.00	6.05	-60.0	67.2	5	< 0.10	< 0.10	4.1	24	0.197
	05/04/16	12.93	266	4.91	6.42	-108.0	14.5	NM	NM	NM	NM	NM	NM
	12/13/16	10.46	221	0.73	6.25	-88.0	9.60	0.5	< 0.0400	< 0.0400	2.27	14.1	0.134
06/14/17	15.02	203	0.23	6.09	-205.4	12.7	NM	NM	NM	NM	NM	NM	
12/08/17	11.65	274	1.60	6.30	43.8	0.00	1.25	< 0.0400	< 0.0400	21.60	3.32	0.166	
06/14/18	13.90	265	1.93	6.25	3.9	35.10	NM	NM	NM	NM	NM	NM	
12/20/18	12.8	357	0.78	7.41	-44.6	>1000	1.4	0.307	0.307	7.81	2.32	0.195	
05/16/19	10.89	353	1.89	5.52	-1	99	NM	NM	NM	NM	NM	NM	
12/10/19	12.77	441	4.84	5.30	0.5	41	3.0	<0.0600	<0.0600	1.34 J	20.0	0.207	
MW-204	12/13/16	10.72	173	0.99	5.84	21	4.00	NM	NM	NM	NM	NM	NM
	12/06/17	13.48	129	12.04	5.60	49.8	6.22	NM	NM	NM	NM	NM	NM
	12/19/18	12.90	218	0.33	6.98	-66.1	27	NM	NM	NM	NM	NM	NM
	12/10/19	13.47	340	1.83	6.01	-6.0	22	NM	NM	NM	NM	NM	NM
MW-206-A	12/12/16	11.31	482	0.68	6.60	-104.9	9.44	NM	NM	NM	NM	NM	NM
	12/08/17	11.87	491	1.39	6.63	34.0	0.00	NM	NM	NM	NM	NM	NM
	12/20/18	13.1	605	0.81	7.41	-52.3	70	NM	NM	NM	NM	NM	NM
	12/10/19	13.08	617	2.28	6.07	-41.9	11	NM	NM	NM	NM	NM	NM

**Table 5  
Compliance Monitoring Natural Attenuation Parameters  
Shell Harbor Island Terminal  
Seattle, Washington**

Well	Sample Date	Field Parameters							Laboratory Parameters					
		Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Ferrous Iron (mg/L)	Nitrogen, Nitrate (mg/L)	Nitrogen, Nitrite (mg/L)	Sulfate (mg/L)	Iron Dissolved (mg/L)	Manganese Dissolved (mg/L)	
MW-213	05/03/16	14.65	12440	0.13	8.26	-330.0	0.0	NM	NM	NM	NM	NM	NM	
	12/13/16	9.57	18.7	5.52	8.28	-321	5.6	NM	NM	NM	NM	NM	NM	
	06/14/17	15.37	10550	0.23	7.03	-330.2	7.36	NM	NM	NM	NM	NM	NM	
	12/07/17	12.43	13640	0.55	8.14	-72.3	0.00	NM	NM	NM	NM	NM	NM	
	06/12/18	14.43	8410	0.91	7.65	-91.3	3.02	NM	NM	NM	NM	NM	NM	
	12/19/18	12.8	11390	0.82	7.57	-45.6	5	NM	NM	NM	NM	NM	NM	
	05/16/19	14.8	11641	1.84	7.50	79.5	2	NM	NM	NM	NM	NM	NM	
12/11/19	10.91	1322	1.28	8.51	-112.7	16	NM	NM	NM	NM	NM	NM		
MW-214	05/03/16	14.91	10960	0.44	8.16	-363.0	0.0	NM	NM	NM	NM	NM	NM	
	12/14/16	10.50	312	7.24	6.98	39	0.0	NM	NM	NM	NM	NM	NM	
	06/14/17	15.55	10395	0.05	8.14	-358.6	0.85	NM	NM	NM	NM	NM	NM	
	12/07/17	14.01	7725	838.05	8.01	-355.1	3.11	NM	NM	NM	NM	NM	NM	
	06/12/18	14.77	3900	0.74	7.82	-90.5	0.00	NM	NM	NM	NM	NM	NM	
	12/19/18	13.4	11888	0.12	7.45	-101.6	29	NM	NM	NM	NM	NM	NM	
	05/16/19	15.7	10667	0.59	7.43	-62.3	3	NM	NM	NM	NM	NM	NM	
12/11/19	11.41	1576	1.16	10.33	-211.5	9	NM	NM	NM	NM	NM	NM		
MW-301	02/22/16	12.32	449	0.34	6.50	-127.1	15.1	NM	NM	NM	NM	NM	NM	
	05/02/16	17.58	257	0.29	6.60	-119.6	6.7	NM	NM	NM	NM	NM	NM	
	08/29/16	18.76	183	1.96	6.86	5.0	0.0	NM	NM	NM	NM	NM	NM	
	12/12/16	10.16	357	2.37	6.73	-140.0	0.0	NM	NM	NM	NM	NM	NM	
	03/13/17	11.62	355	0.00	6.72	-125	0.0	NM	NM	NM	NM	NM	NM	
	06/13/17	15.60	192	0.37	6.59	-107.4	NM	NM	NM	NM	NM	NM	NM	
	08/22/17	20.23	187	0.00	7.32	-105	0.0	NM	NM	NM	NM	NM	NM	
	12/08/17	14.93	151	1.20	6.89	-118.3	-11	NM	NM	NM	NM	NM	NM	
	03/06/18	12.60	435	0.82	6.78	19.7	3.19	NM	NM	NM	NM	NM	NM	
	06/13/18	16.70	521	0.21	6.61	-76.4	1.80	NM	NM	NM	NM	NM	NM	
	09/06/18	18.95	651	0.16	6.57	-94.8	1.34	7	NM	NM	NM	NM	NM	
	12/20/18	15.1	836	0.12	6.53	-50.0	14	NM	NM	NM	NM	NM	NM	
	03/19/19	13.4	930	1.02	7.52	-48.5	119	NM	NM	NM	NM	NM	NM	
	05/16/19	12.30	693	0.71	6.11	-52	97	NM	NM	NM	NM	NM	NM	
09/17/19	15.31	373	0.87	6.70	-23.8	11	NM	NM	NM	NM	NM	NM		
12/11/19	14.25	755	10.14	7.15	55.9	64	NM	NM	NM	NM	NM	NM		
MW-302	03/01/12	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
	06/12/12	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
	06/28/12	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
	09/25/12	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
	11/25/12	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
	11/05/13	14.81	346	0.10	6.42	-67	0.0	6.0-6.5	NM	NM	13.2	< 0.200	0.349	
	11/03/14	15.91	342	0.53	6.50	-27.8	5.06	2.5	< 0.10	< 0.10	< 0.50	0.765	0.493	
	12/10/15	14.58	337	0.35	6.63	-104.8	0.00	1.5	< 0.10	< 0.10	< 0.50	27.4	0.402	
	05/04/16	13.60	371	4.92	6.51	-116.5	2.49	NM	NM	NM	NM	NM	NM	
	12/15/16	10.93	388	0.95	6.58	-89	0.0	1.0	< 0.0400	< 0.0400	< 0.128	35.1	0.572	
	06/13/17	16.99	143	0.30	5.79	39.2	NM	NM	NM	NM	NM	NM	NM	
	08/23/17	20.32	358	9.36	7.08	-54	2.7	NM	NM	NM	NM	NM	NM	
	12/05/17	13.54	755	0.89	5.82	30.4	8.95	4.25	< 0.0400	< 0.0400	97.2	42.9	2.15	
	03/07/18	11.57	984	0.27	6.15	12.0	9.95	NM	NM	NM	NM	NM	NM	
	06/13/18	16.08	446	0.81	6.04	-61.4	5.51	NM	NM	NM	NM	NM	NM	
	09/06/18	19.67	424	0.74	6.49	-27.0	3.37	1.75	NM	NM	NM	NM	NM	
	12/20/18	15.9	726	0.10	6.40	73.0	55	7.0	0.105	0.105	364	1.40	2.52	
03/19/19	14.5	1321	0.40	7.44	-54.1	58	NM	NM	NM	NM	NM	NM		
05/16/19	12.83	589	0.70	5.81	-53	43	NM	NM	NM	NM	NM	NM		
09/17/19	14.71	424	0.79	6.75	-35.3	14	NM	NM	NM	NM	NM	NM		
12/11/19	16.95	1359	2.13	8.06	-57.4	19	3.0	<0.0600	<0.0600	629	67.4	3.52		
MW-303	05/04/16	11.90	91	2.92	6.42	-73.9	9.31	NM	NM	NM	NM	NM	NM	
	12/12/16	11.20	185	1.29	6.49	-50.0	0.0	NM	NM	NM	NM	NM	NM	
	06/13/17	15.03	69	0.30	6.20	15.9	NM	NM	NM	NM	NM	NM	NM	
	12/08/17	12.72	257	1.74	5.18	77.1	4.48	NM	NM	NM	NM	NM	NM	
	03/06/18	11.47	382	0.76	5.59	91.7	3.47	NM	NM	NM	NM	NM	NM	
	06/13/18	14.32	148	0.64	5.84	-19.6	4.22	NM	NM	NM	NM	NM	NM	
	09/06/18	18.26	388	0.32	6.38	-56.1	4.40	6	NM	NM	NM	NM	NM	
	12/20/18	12.9	561	0.39	5.51	145	18	NM	NM	NM	NM	NM	NM	
	03/19/19	11.1	470	0.59	7.19	-34.9	20	NM	NM	NM	NM	NM	NM	
	05/16/19	10.49	590	1.80	5.56	-19	29	NM	NM	NM	NM	NM	NM	
	09/17/19	14.68	474	1.30	6.31	-24.7	7	NM	NM	NM	NM	NM	NM	
12/11/19	13.89	570	0.71	7.80	-53.9	41	NM	NM	NM	NM	NM	NM		

**Table 5**  
**Compliance Monitoring Natural Attenuation Parameters**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Field Parameters							Laboratory Parameters					
		Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Ferrous Iron (mg/L)	Nitrogen, Nitrate (mg/L)	Nitrogen, Nitrite (mg/L)	Sulfate (mg/L)	Iron Dissolved (mg/L)	Manganese Dissolved (mg/L)	
MW-304	11/05/13	12.20	396	0.10	6.60	-119	0.0	7.0	NM	NM	< 0.50	0.345	0.273	
	11/03/14	14.86	310	0.62	6.46	-36.9	11.2	5.0	< 0.10	< 0.10	0.51	3.60 J	0.297 J	
	12/10/15	12.81	345	0.35	6.55	100.1	4.0	3.0	< 0.10	< 0.10	0.873	33.70	0.390	
	05/04/16	12.90	337	1.95	6.35	-103.1	6.3	NM	NM	NM	NM	NM	NM	
	12/15/16	9.20	342	2.40	6.65	-92.0	0.0	0.5	< 0.0400	< 0.0400	3.35	28.20	0.276	
	06/13/17	16.82	162	1.47	6.27	-24.2	NM	NM	NM	NM	NM	NM	NM	
	08/23/17	20.76	529	0.00	7.09	-55	0.1	NM	NM	NM	NM	NM	NM	
	12/05/17	13.01	1421	1.00	3.42	134.2	3.96	2.25	< 0.0400	< 0.0400	253	18.6	8.94	
	03/06/18	12.36	794	1.52	4.82	105.9	3.92	NM	NM	NM	NM	NM	NM	
	06/13/18	16.04	305	0.19	6.12	-63.2	5.78	NM	NM	NM	NM	NM	NM	
	09/06/18	20.20	439	0.48	4.72	127.5	3.83	NM	NM	NM	NM	NM	NM	
	12/20/18	14.3	830	0.19	4.19	272	96	6.5	0.0730 J	0.0730 J	520	2.51	2.74	
	03/19/19	11.8	155	0.71	7.53	-30.3	24	NM	NM	NM	NM	NM	NM	
	05/16/19	10.89	367	1.27	4.82	36	9	NM	NM	NM	NM	NM	NM	
09/17/19	13.56	323	1.29	6.73	5.4	15	NM	NM	NM	NM	NM	NM		
12/11/19	15.30	1518	5.46	8.24	91.6	62	6.0	<0.0600	<0.0600	908	11.3	4.79		
MW-307	11/26/12	12.70	332	0.00	7.18	-62	36.6	NM	NM	NM	1.5	NM	NM	
	11/06/13	12.31	231	0.07	6.42	-106	0.8	3.5	NM	NM	< 0.50	< 0.200	0.217	
	11/04/14	14.49	383	0.26	6.86	-107	6.9	4.5	< 0.10	< 0.10	< 0.50	18.2	0.513	
	12/09/15	12.78	225	0.51	6.40	-78	7.9	2.25	< 0.10	< 0.10	< 0.50	29.6	0.338	
	02/23/16	10.43	225	0.27	6.21	-68.9	9.98	NM	NM	NM	NM	NM	NM	
	05/03/16	12.71	211	0.39	6.05	-54.0	9.27	NM	NM	NM	NM	NM	NM	
	08/30/16	16.90	198	1.18	6.91	67.0	0.00	NM	NM	NM	NM	NM	NM	
	12/13/16	10.28	138	0.57	6.46	-87.4	8.09	1.5	< 0.0400	< 0.0400	< 0.256	21.2	0.235	
	03/14/17	11.62	224	0.0	6.46	-79	0.0	NM	NM	NM	NM	NM	NM	
	06/15/17	12.72	126	0.33	5.40	15.1	1.91	NM	NM	NM	NM	NM	NM	
	08/23/17	17.87	149	0.00	7.03	-13	2.1	NM	NM	NM	NM	NM	NM	
	12/06/17	14.55	405	1.49	6.18	-47.1	0	0.6	< 0.0400	< 0.0400	465	37.1	1.07	
	03/08/18	13.90	270	0.38	6.42	2.6	5.10	NM	NM	NM	NM	NM	NM	
	06/14/18	13.80	205	0.45	6.55	-23.0	2.92	NM	NM	NM	NM	NM	NM	
	09/04/18	18.44	235	0.99	6.11	-25.6	0.00	2.0	NM	NM	NM	NM	NM	
	12/19/18	16.6	343	2.15	7.69	28.7	17	1.4	< 0.0400	< 0.0400	82.6	7.61	0.669	
03/18/19	14.3	530	0.85	6.79	-62.3	20	NM	NM	NM	NM	NM	NM		
05/16/19	14.1	315	0.72	6.82	-90.6	4	NM	NM	NM	NM	NM	NM		
09/17/19	13.21	231	1.15	6.95	1.6	10	NM	NM	NM	NM	NM	NM		
12/10/19	15.65	541	1.37	6.88	-44.6	18	5.5	<0.0600	<0.0600	210	60.4	1.21		
MW-308	02/23/16	10.09	657	0.32	6.78	-36.3	9.17	NM	NM	NM	NM	NM	NM	
	05/03/16	13.49	431	0.31	6.52	-42.7	7.44	NM	NM	NM	NM	NM	NM	
	08/30/16	16.93	224	1.43	7.00	50.0	0.00	NM	NM	NM	NM	NM	NM	
	12/13/16	10.31	577	0.51	6.75	-22.5	8.43	1.5	< 0.0400	< 0.0400	141.0	1.53	1.05	
	03/14/17	10.27	587	0.0	6.99	86	0.0	NM	NM	NM	NM	NM	NM	
	06/15/17	13.16	355	0.90	7.07	-53.0	7.5	NM	NM	NM	NM	NM	NM	
	08/23/17	18.34	235	0.00	7.15	-32	0.0	NM	NM	NM	NM	NM	NM	
	12/06/17	13.30	591	801.24	6.76	-73.2	3.97	1.7	< 0.0400	< 0.0400	21.4	1.24	1.49	
	03/08/18	10.08	758	0.29	6.74	-26.7	6.79	NM	NM	NM	NM	NM	NM	
	06/14/18	14.41	208	0.43	6.34	-13.5	4.10	NM	NM	NM	NM	NM	NM	
	09/05/18	17.87	270	0.64	6.57	-45.2	0.00	2.0	NM	NM	NM	NM	NM	
	12/19/18	10.7	579	1.68	6.94	52.4	30	0.0	< 0.0400	< 0.0400	48.1	0.167 J	0.0912	
	03/18/19	12.5	912	0.63	7.03	-61.3	15	NM	NM	NM	NM	NM	NM	
05/16/19	13.2	311	0.29	6.78	-107.3	10	NM	NM	NM	NM	NM	NM		
09/17/19	12.9	213	1.61	6.64	2.6	12	NM	NM	NM	NM	NM	NM		
12/09/19	14.07	386	1.89	6.32	-53.5	10	5.5	<0.0600 J	<0.0600 J	93.9	16.1	1.01		
MW-309	05/04/16	14.84	208	2.80	6.50	-102.7	8.08	NM	NM	NM	NM	NM	NM	
	12/12/16	11.39	250	0.67	6.46	-110.3	9.47	NM	NM	NM	NM	NM	NM	
	06/13/17	15.23	147	0.21	6.49	-89.1	NM	NM	NM	NM	NM	NM	NM	
	12/05/17	14.56	215	1.10	6.72	-87.3	-20.70	NM	NM	NM	NM	NM	NM	
	06/12/18	16.23	161	0.53	6.41	-42.0	7.48	NM	NM	NM	NM	NM	NM	
	12/20/18	13.9	410	0.16	6.80	-112	21	NM	NM	NM	NM	NM	NM	
	05/16/19	11.48	588	0.57	6.16	-109	62	NM	NM	NM	NM	NM	NM	
12/11/19	14.91	554	0.37	7.49	-70.1	37	NM	NM	NM	NM	NM	NM		

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Shell Harbor Island Terminal  
Seattle, Washington**

Well	Sample Date	Field Parameters							Laboratory Parameters					
		Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Ferrous Iron (mg/L)	Nitrogen, Nitrate (mg/L)	Nitrogen, Nitrite (mg/L)	Sulfate (mg/L)	Iron Dissolved (mg/L)	Manganese Dissolved (mg/L)	
MW-310	11/28/12	13.97	385	0.00	7.22	-88	80.6	NM	NM	NM	< 0.50	NM	NM	
	11/05/13	14.07	396	0.05	6.44	-95	0.0	2.0-2.5	NM	NM	< 0.50	0.982	0.528	
	11/04/14	15.97	393	0.03	6.88	-101	0.0	1.5	< 0.10	< 0.10	< 0.50	11.5	0.615	
	12/10/15	13.23	313	0.45	6.39	-79	0.0	2	< 0.10	< 0.10	< 0.50	34.8	0.554	
	02/22/16	11.72	358	0.29	6.40	-98.5	3.83	NM	NM	NM	NM	NM	NM	
	05/02/16	15.68	270	0.34	6.18	-67.1	8.56	NM	NM	NM	NM	NM	NM	
	08/29/16	19.29	283	1.64	6.82	29.0	0.00	NM	NM	NM	NM	NM	NM	
	12/15/16	11.60	258	1.26	6.49	-70.0	0.00	2	< 0.0400	< 0.0400	1.1	26.4	0.485	
	03/13/17	11.24	317	0.00	6.53	-102	0.0	NM	NM	NM	NM	NM	NM	NM
	06/15/17	15.80	229	0.33	6.21	-69.1	NM	NM	NM	NM	NM	NM	NM	NM
	08/22/17	23.88	365	0.00	6.96	-80	21.4	NM	NM	NM	NM	NM	NM	NM
	12/05/17	13.45	603	1.39	4.01	101.0	3.30	1.5	< 0.0400	< 0.0400	44.2	1.55	2.66	
	03/06/18	12.75	946	0.30	5.25	72.8	5.80	NM	NM	NM	NM	NM	NM	NM
	06/13/18	17.54	464	0.20	5.84	-34.4	2.01	NM	NM	NM	NM	NM	NM	NM
	09/06/18	20.00	293	0.67	5.45	74.0	2.13	3.0	NM	NM	NM	NM	NM	NM
	12/20/18	15.9	605	1.43	7.10	49.6	18	3.2	0.346	0.346	318	7.48	1.63	
	03/19/19	14.4	804	1.25	7.21	-21.1	28	NM	NM	NM	NM	NM	NM	NM
	05/16/19	12.36	695	1.09	4.51	87	72	NM	NM	NM	NM	NM	NM	NM
	09/17/19	13.46	281	0.83	6.93	-24	16	NM	NM	NM	NM	NM	NM	NM
12/11/19	16.40	1551	12.52	6.92	155.8	28	5.0	<0.0600	<0.0600	999	53.1	7.24		
MW-311	11/05/14	16.57	606	0.00	7.42	-146	7.0	1.5	< 0.25	< 0.25	42.3	< 0.200	1.57	
	12/10/15	14.15	482	0.00	6.35	-103	1.4	0.75	< 0.10	< 0.10	46.4	27.4	1.45	
	02/22/16	13.84	583	0.26	6.45	-103.1	4.2	NM	NM	NM	NM	NM	NM	
	05/04/16	14.42	564	1.02	6.49	-109.3	6.2	NM	NM	NM	NM	NM	NM	
	08/29/16	22.58	384	1.01	6.89	22.0	7.7	NM	NM	NM	NM	NM	NM	
	12/15/16	12.91	270	0.40	6.64	-107.3	7.4	3	< 0.0400	< 0.0400	23.7	22.7	0.801	
	03/13/17	12.31	424	0.31	6.73	-98.5	0.0	NM	NM	NM	NM	NM	NM	
	06/15/17	15.25	453	0.95	7.16	-87.5	NM	NM	NM	NM	NM	NM	NM	
	08/22/17	19.69	390	8.27	7.10	-72	0.0	NM	NM	NM	NM	NM	NM	
	12/07/17	15.15	276	0.38	6.61	-33.2	0.00	3.75	< 0.0400 J	< 0.0400 J	28.4	8.42	0.703	
	03/08/18	10.87	585	1.04	6.62	-17.2	0.00	NM	NM	NM	NM	NM	NM	
	06/13/18	17.24	366	0.25	6.44	-45.7	0.00	NM	NM	NM	NM	NM	NM	
	09/05/18	19.44	455	0.19	6.27	38.8	3.11	NM	NM	NM	NM	NM	NM	
	12/20/18	14.6	522	1.15	7.33	-72.6	14	1.7	< 0.0400	< 0.0400	8.59	4.44	1.02	
	03/18/19	14.8	530	0.32	6.71	-73.9	3	NM	NM	NM	NM	NM	NM	
05/16/19	14.3	519	0.10	6.82	-71.4	5	NM	NM	NM	NM	NM	NM		
09/17/19	13.98	338	0.62	6.61	-22.9	3	NM	NM	NM	NM	NM	NM		
12/12/19	15.24	674	0.80	7.22	-84.4	3	4.5	<0.0600	<0.0600	8.28	41.5	1.81		
MW-312	11/05/14	17.07	459	0.58	6.78	-92.0	0.0	5.7	< 0.25	< 0.25	< 1.3	< 0.200	0.787	
	12/10/15	13.74	434	0.00	6.30	-89.0	0.0	1.5	< 0.10	< 0.10	< 0.50	16.8	0.717	
	02/23/16	13.69	578	0.22	6.63	-113.5	8.84	NM	NM	NM	NM	NM	NM	
	05/04/16	14.77	539	1.19	6.63	-122.1	4.05	NM	NM	NM	NM	NM	NM	
	08/29/16	24.31	480	1.01	6.89	28.0	0.00	NM	NM	NM	NM	NM	NM	
	12/15/16	13.74	452	0.40	6.74	-121.8	9.47	4	< 0.0400	< 0.0400	< 0.500	20.4	0.924	
	03/13/17	12.95	598	0.0	6.81	-126	0.0	NM	NM	NM	NM	NM	NM	
	06/15/17	15.14	465	0.27	6.68	-106.8	NM	NM	NM	NM	NM	NM	NM	
	08/23/17	19.07	460	0.00	7.30	-81	0.00	NM	NM	NM	NM	NM	NM	
	12/07/17	16.15	351	0.88	6.66	-107.7	1.17	2.6	< 0.0400	< 0.0400	488	3.95	0.664	
	03/08/18	11.91	501	1.12	6.88	-6.3	0.00	NM	NM	NM	NM	NM	NM	
	06/13/18	15.38	349	1.59	6.58	-106.1	0.92	NM	NM	NM	NM	NM	NM	
	09/05/18	20.03	417	0.16	6.55	-72.6	3.75	6.0	NM	NM	NM	NM	NM	
	12/20/18	14.1	429	0.75	7.29	-45.3	7	2.5	< 0.0400	< 0.0400	0.164 J	4.35	0.715	
	03/19/19	12.6	553	0.58	7.74	-41.0	3	NM	NM	NM	NM	NM	NM	
	05/16/19	13.8	524	0.67	6.70	-101.9	2	NM	NM	NM	NM	NM	NM	
09/17/19	13.84	289	0.55	6.54	-31.9	2	NM	NM	NM	NM	NM	NM		
12/12/19	14.76	514	0.36	8.17	-86.4	5	2.0	<0.0600	<0.0600	0.630	22.0	0.957		

**Table 5**  
**Compliance Monitoring Natural Attenuation Parameters**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Field Parameters							Laboratory Parameters					
		Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Ferrous Iron (mg/L)	Nitrogen, Nitrate (mg/L)	Nitrogen, Nitrite (mg/L)	Sulfate (mg/L)	Iron Dissolved (mg/L)	Manganese Dissolved (mg/L)	
MW-313	08/29/16	21.96	489	1.07	6.88	23	0.00	NM	NM	NM	NM	NM	NM	
	12/12/16	14.13	474	1.04	6.82	-35	9.1	NM	NM	NM	NM	NM	NM	
	03/13/17	11.30	850	0.03	6.78	-23	3.5	NM	NM	NM	NM	NM	NM	
	06/15/17	15.94	374	1.32	6.85	-24.6	NM	NM	NM	NM	NM	NM	NM	
	08/22/17	23.47	400	8.21	7.39	-62	0.00	NM	NM	NM	NM	NM	NM	
	12/07/17	15.72	395	0.99	6.95	24.8	3.22	NM	NM	NM	NM	NM	NM	
	03/07/18	11.05	615	0.89	6.96	36.8	8.42	NM	NM	NM	NM	NM	NM	
	06/13/18	16.73	400	0.46	6.76	-44.1	3.02	NM	NM	NM	NM	NM	NM	
	09/05/18	20.55	447	0.18	6.76	-29.7	1.34	NM	NM	NM	NM	NM	NM	
	12/20/18	14.7	555	1.03	7.07	-52.9	43	NM	NM	NM	NM	NM	NM	
	03/19/19	11.1	686	0.73	7.81	-30.4	6	NM	NM	NM	NM	NM	NM	
	05/16/19	14.5	781	0.42	7.05	-39.1	10	NM	NM	NM	NM	NM	NM	
	09/17/19	15.7	343	0.71	6.65	-25.3	7	NM	NM	NM	NM	NM	NM	
12/12/19	14.86	574	0.64	7.99	-55.7	5	NM	NM	NM	NM	NM	NM		
MW-314	08/30/16	20.60	565	1.23	6.87	82	8.52	NM	NM	NM	NM	NM	NM	
	12/14/16	13.42	471	0.52	6.73	-90	9.44	NM	NM	NM	NM	NM	NM	
	03/13/17	12.34	626	0.0	6.73	-53	3.9	NM	NM	NM	NM	NM	NM	
	06/14/17	18.28	447	0.46	7.07	-87.9	8.2	NM	NM	NM	NM	NM	NM	
	08/23/17	18.35	453	0.00	7.33	-35	3.6	NM	NM	NM	NM	NM	NM	
	12/06/17	14.00	413	0.68	6.56	-62.5	4.2	NM	NM	NM	NM	NM	NM	
	03/07/18	11.95	583	0.90	6.84	23.5	8.42	NM	NM	NM	NM	NM	NM	
	06/12/18	15.92	455	0.74	6.70	-110.0	2.91	NM	NM	NM	NM	NM	NM	
	09/05/18	18.90	427	0.40	6.49	-40.8	4.24	NM	NM	NM	NM	NM	NM	
	12/20/18	14.7	567	0.16	6.79	-87	29	NM	NM	NM	NM	NM	NM	
	03/19/19	11.4	564	0.97	7.12	-32.4	48	NM	NM	NM	NM	NM	NM	
	05/16/19	11.01	714	0.77	6.27	-61	79	NM	NM	NM	NM	NM	NM	
	09/17/19	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
12/10/19	13.97	725	1.55	5.67	-36.0	7	NM	NM	NM	NM	NM	NM		
MW-315	08/29/16	20.56	558	1.04	6.86	2	8.44	NM	NM	NM	NM	NM	NM	
	12/12/16	12.07	488	1.45	6.74	-102	0.00	NM	NM	NM	NM	NM	NM	
	03/13/17	12.81	522	0.0	6.77	-117	0.00	NM	NM	NM	NM	NM	NM	
	06/15/17	14.20	450	1.27	7.21	-99.0	NM	NM	NM	NM	NM	NM	NM	
	08/23/17	18.20	465	0.00	7.30	-68	0.00	NM	NM	NM	NM	NM	NM	
	12/07/17	14.59	372	0.84	6.68	-28.7	0.00	NM	NM	NM	NM	NM	NM	
	03/08/18	11.74	448	1.34	6.84	20.7	0.00	NM	NM	NM	NM	NM	NM	
	06/13/18	15.32	325	1.00	6.58	-41.5	0.00	NM	NM	NM	NM	NM	NM	
	09/05/18	18.81	378	0.12	6.39	-28.8	0.54	NM	NM	NM	NM	NM	NM	
	12/20/18	14.5	460	0.32	7.15	-92.0	5	NM	NM	NM	NM	NM	NM	
	03/18/19	14.7	497	0.81	6.74	-65.4	3	NM	NM	NM	NM	NM	NM	
	05/16/19	13.6	508	0.20	6.83	-64.3	3	NM	NM	NM	NM	NM	NM	
	09/17/19	13.0	311	0.58	6.37	-41.8	4	NM	NM	NM	NM	NM	NM	
12/12/19	14.40	587	0.79	7.98	-67.8	3	NM	NM	NM	NM	NM	NM		
SH-04	05/05/16	14.18	129	1.43	6.47	-107.3	8.73	NM	NM	NM	NM	NM	NM	
	12/14/16	8.88	133	0.39	6.41	-48.2	7.21	NM	NM	NM	NM	NM	NM	
	06/14/17	17.02	116	0.27	6.33	52.7	1.67	NM	NM	NM	NM	NM	NM	
	12/05/17	15.32	134	0.71	6.72	-65.4	3.51	NM	NM	NM	NM	NM	NM	
	06/13/18	16.50	140	0.47	6.12	-54.2	1.05	NM	NM	NM	NM	NM	NM	
	12/18/18	12.3	180	1.05	7.31	-30.6	19	NM	NM	NM	NM	NM	NM	
	05/16/19	9.31	226	0.91	5.71	-126	13	NM	NM	NM	NM	NM	NM	
12/11/19	14.43	391	0.63	7.51	-12.1	19	NM	NM	NM	NM	NM	NM		



**Table 5**  
**Compliance Monitoring Natural Attenuation Parameters**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Field Parameters							Laboratory Parameters				
		Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mv)	Turbidity (NTU)	Ferrous Iron (mg/L)	Nitrogen, Nitrate (mg/L)	Nitrogen, Nitrite (mg/L)	Sulfate (mg/L)	Iron Dissolved (mg/L)	Manganese Dissolved (mg/L)
TX-03A	01/13/04	14.0	480	1.400	6.39	-59	1.8	NM	NM	NM	NM	NM	NM
	04/19/04	13.7	560	1.440	6.18	21	2.4	6.000	NM	NM	< 1	NM	NM
	07/27/04	17.9	589	1.310	6.26	68	3.0	NM	NM	NM	NM	NM	NM
	10/18/04	16.7	595	2.770	6.63	-100	42.0	NM	NM	NM	NM	NM	NM
	01/24/05	14.6	563	1.79	5.11	5.0	43.1	NM	NM	NM	NM	NM	NM
	04/19/05	13.8	552	0	6.47	-86	20	4	NM	NM	< 1	NM	NM
	07/12/05	17.3	477	0.16	6.55	-121.0	55.6	NM	NM	NM	NM	NM	NM
	10/31/07	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	11/20/08	15.8	821	0.5	6.87	-59	31.8	30.4	NM	NM	< 1	NM	NM
	04/08/09	12.8	236	0	6.58	-145	43.1	NM	NM	NM	NM	NM	NM
	11/17/09	16.3	50.6	1.29	6.39	-102	9.7	36	NM	NM	1.2	NM	NM
	04/27/10	13.2	52.8	0.21	5.76	-153	9.5	NM	NM	NM	NM	NM	NM
	10/25/10	15.5	42.5	1.39	6.68	-115	48.0	30	NM	NM	6.8	NM	NM
	05/23/11	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
	10/27/11	15.44	478	1.72	8.50	-100.9	NM	20.3	NM	NM	< 0.50	NM	NM
	03/01/12	12.29	564	0.00	6.71	-118	12.6	NM	NM	NM	NM	NM	NM
	06/12/12	14.0	507	4.00	7.19	-103	4.5	NM	NM	NM	NM	NM	NM
	09/25/12	17.83	514	0.00	6.48	-139	15.2	NM	NM	NM	NM	NM	NM
	11/28/12	13.79	439	0.00	6.70	-104	NM	NM	NM	NM	< 0.50	NM	NM
	11/05/13	10.98	528	0.06	6.57	-114	0.0	4.0	NM	NM	< 0.50	< 0.200	0.470
	11/04/14	16.80	424	0.38	6.49	-39.0	5.83	6.0	< 0.10	< 0.10	< 0.50	6.18	0.523
	12/10/15	15.11	456	0.25	6.51	-103.5	6.70	0.5	< 0.10	< 0.10	< 0.50	31.7	0.500
	02/22/16	12.73	484	0.30	6.34	-109.1	7.22	NM	NM	NM	NM	NM	NM
	05/02/16	15.06	418	0.22	6.36	-103.1	3.96	NM	NM	NM	NM	NM	NM
	08/29/16	18.69	395	2.27	6.84	18.0	0.00	NM	NM	NM	NM	NM	NM
	12/15/16	12.31	295	0.29	6.54	-109.9	8.97	2.0	< 0.0400	< 0.0400	< 0.500	37.8	0.517
	03/13/17	11.74	287	0.23	6.74	-109.5	0.0	NM	NM	NM	NM	NM	NM
	06/13/17	14.63	322	0.24	6.32	-98.0	NM	NM	NM	NM	NM	NM	NM
	08/22/17	18.97	317	0.00	7.07	-87	0.0	NM	NM	NM	NM	NM	NM
	12/05/17	13.23	477	1.83	6.57	-104	2.77	1.5	< 0.0400	< 0.0400	219	25.1	0.784
03/27/18	12.27	465	0.65	6.19	71.9	3.37	NM	NM	NM	NM	NM	NM	
06/13/18	15.40	407	4.12	6.07	-82.4	0.69	NM	NM	NM	NM	NM	NM	
09/06/18	19.90	551	0.14	6.24	-76.8	1.26	NM	NM	NM	NM	NM	NM	
12/20/18	16.5	369	0.10	6.67	-116	16	4.5	< 0.0400	< 0.0400	19.0	6.46	0.465	
03/19/19	13.9	550	0.45	7.55	-67.1	8	NM	NM	NM	NM	NM	NM	
05/16/19	12.64	538	0.51	6.11	-84	12	NM	NM	NM	NM	NM	NM	
09/17/19	16.79	348	0.97	6.41	3	8	NM	NM	NM	NM	NM	NM	
12/11/19	16.75	1514	1.86	8.64	-94.0	5	3.0	<0.0600 J	<0.0600 J	704	104	2.99	
TES-MW-1	12/13/16	8.37	99	7.01	5.86	89	0.0	NM	NM	NM	NM	NM	NM
	12/06/17	10.00	69	6.02	5.67	39.9	5.70	NM	NM	NM	NM	NM	NM
	12/19/18	11.2	172	1.30	6.68	-96.0	24	NM	NM	NM	NM	NM	NM
	12/09/19	13.42	172	6.20	6.51	63.9	11	NM	NM	NM	NM	NM	NM
TX-04	12/12/16	10.65	353	0.82	7.02	-108	0.0	NM	NM	NM	NM	NM	NM
	12/05/17	12.06	167	0.68	7.01	-11	23.2	NM	NM	NM	NM	NM	NM
	12/18/18	14.5	233	1.26	7.69	-48	44.0	NM	NM	NM	NM	NM	NM
	12/12/19	14.81	295	0.44	8.46	-83.3	14	NM	NM	NM	NM	NM	NM
TX-06A	12/12/16	11.95	212	0.55	6.55	-97.3	6.56	NM	NM	NM	NM	NM	NM
	12/05/17	14.43	248	1.15	6.69	-63.6	5.63	NM	NM	NM	NM	NM	NM
	12/20/18	14.5	257	0.17	6.76	-99	11	NM	NM	NM	NM	NM	NM
	12/10/19	13.58	230	4.49	5.62	8.6	12	NM	NM	NM	NM	NM	NM

**Note:**  
 = Indicates data collected during this progress report period  
°C = degrees Celsius  
J = indicates a estimated value  
< = not detected at or above the indicated limit. Beginning June 12, 2012, limits shown are laboratory Method Detection Limits (MDLs). Prior to June 12, 2012, limits shown are laboratory Reporting Limits (RLs).  
mg/L = milligrams per liter  
mV = millivolts  
NM = not measured  
NTU = nephelometric turbidity unit  
ORP = oxidation-reduction potential  
µS/cm = microsiemens per centimeter

**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-05	01/15/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	0.37	< 0.5	NA
	04/21/04	0.0015	< 0.001	0.0053	< 0.001	< 0.25	0.41	< 0.5	NA
	07/28/04	0.0015	0.001	< 0.001	0.0017	< 0.25	< 0.25	< 0.5	NA
	10/19/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	01/25/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	04/18/05	< 0.001	< 0.001	< 0.001	< 0.001	0.072	< 0.25	< 0.5	NA
	07/12/05	< 0.001	< 0.001	< 0.001	< 0.001	0.25	< 0.25	< 0.5	NA
	10/19/05	< 0.001	< 0.001	< 0.001	< 0.001	0.11	< 0.25	< 0.5	NA
	01/26/06	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.05	< 0.238	< 0.476	NA
	11/19/08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	< 0.25	< 0.5	NA
	11/17/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	10/29/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	0.14	< 0.1	NA
	05/23/11	< 0.0003	< 0.0005	< 0.0003	< 0.0007	0.0744	NA	NA	NA
	10/25/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	0.115	< 0.095	< 0.19	NA
	11/29/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.0954	< 0.095	NA
	11/07/13	< 0.00020	0.00083 J	< 0.00020	0.00087 J	0.345	< 0.049	< 0.097	NA
	11/06/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	0.0507 J	0.137	< 0.094	NA
	12/08/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	< 0.100	< 0.233	< 0.388	NA
	05/04/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000162	70.9 J	< 0.0398	< 0.0598	NA
	12/14/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0178	< 0.0436	< 0.0654	NA
06/14/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	< 0.0860	< 0.129	NA	
12/07/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	0.0968 J	0.105 J	< 0.121	NA	
06/12/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	< 0.114	< 0.124	NA	
12/19/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.230 J	0.119 J	NA	
05/15/19	< 0.000200	< 0.000170	< 0.000190	< 0.000580	0.0589	< 0.108	< 0.118	NA	
12/10/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.111 J	< 0.121	NA	
MW-101	01/16/04	< 0.001	< 0.001	< 0.001	0.0028	0.55	< 0.25	< 0.5	NA
	04/20/04	0.0016	< 0.001	< 0.001	0.0014	0.67	< 0.25	< 0.5	NA
	07/28/04	0.0012	< 0.001	< 0.001	0.0011	1.0	< 0.25	< 0.5	NA
	10/18/04	0.0011	< 0.001	< 0.001	< 0.001	0.42	< 0.25	< 0.5	NA
	01/26/05	< 0.001	< 0.001	< 0.001	0.0011	0.51	< 0.25	< 0.5	NA
	04/19/05	0.0016	< 0.001	< 0.001	< 0.001	0.58	< 0.25	< 0.5	NA
	07/13/05	< 0.001	< 0.001	< 0.001	< 0.001	0.31	< 0.25	< 0.5	NA
	10/10/05	< 0.001	< 0.001	< 0.001	< 0.001	0.16	< 0.25	< 0.5	NA
	01/27/06	< 0.0005	< 0.0005	< 0.0005	< 0.001	0.223	< 0.236	< 0.476	NA
	11/18/08	< 0.005	< 0.005	< 0.005	< 0.005	0.1	< 0.25	< 0.5	NA
	11/18/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	10/26/10	< 0.0005	< 0.001	< 0.001	< 0.001	0.15	0.13	< 0.1	NA
	10/27/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	0.0936	< 0.10	< 0.20	NA
	11/26/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	0.188 J	0.0937 J	< 0.10	NA
	11/06/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	0.118 J	< 0.0048	< 0.0095	NA
	11/04/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.0048	< 0.0095	NA
	12/09/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	< 0.100	0.129	< 0.201	NA
	12/13/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.101	0.0983 J	< 0.0632	NA
	12/06/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	0.2370	0.246 J	< 0.127	NA
	12/19/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	0.127 J	0.157 J	< 0.115	NA
12/09/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.155 J	< 0.125	NA	

**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-102	01/14/04	0.0021	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	04/21/04	0.0036	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	07/28/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	10/18/04	0.0011	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	01/25/05	0.0024	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	04/18/05	0.0027	< 0.001	< 0.001	< 0.001	< 0.05	< 0.25	< 0.5	NA
	07/13/05	< 0.001	< 0.001	< 0.001	< 0.001	0.077	< 0.25	< 0.5	NA
	10/19/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.25	< 0.5	NA
	01/26/06	0.00498	< 0.0005	0.00174	0.00201	< 0.05	< 0.238	< 0.472	NA
	11/19/08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	< 0.25	< 0.5	NA
	11/18/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	10/28/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	10/26/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.20	0.113	< 0.20	NA
	11/28/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.050	< 0.10	NA
	11/07/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.047	0.144 J	NA
	11/04/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.0568 J	< 0.094	NA
	12/08/15	< 0.0020	< 0.0010	< 0.0010	< 0.0030	< 0.100	< 0.233	< 0.388	NA
12/14/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0178	< 0.0413	< 0.0620	NA	
12/05/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	< 0.0834	< 0.125	NA	
12/05/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	< 0.0834	< 0.125	NA	
12/19/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.774	0.197 J	NA	
12/10/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.151 J	< 0.123	NA	
MW-104	01/15/04	0.0019	< 0.001	0.15	0.1028	2.7	1.2	< 0.5	0.00555
	01/15/04	0.0012	< 0.001	0.1	0.0706	2	1.3	< 0.5	< 0.005
	04/21/04	0.0066	0.0025	0.35	0.0931	4.3	1.7	< 0.5	0.00575
	07/28/04	0.0018	< 0.001	0.048	0.017	2.2	0.87	< 0.5	< 0.005
	07/28/04	0.0017	< 0.001	0.049	0.019	2.1	1.3	< 0.5	< 0.005
	10/19/04	< 0.001	< 0.001	0.0021	0.0016	< 0.25	0.61	< 0.5	< 0.005
	01/24/05	< 0.001	< 0.001	0.0012	< 0.001	< 0.25	0.74	< 0.5	< 0.005
	04/18/05	< 0.001	< 0.001	0.057	0.0067	1.4	1.2	< 0.5	< 0.005
	07/12/05	0.0014	< 0.001	0.11	0.012	1.8	0.7	< 0.5	< 0.005
	10/19/05	< 0.001	< 0.001	0.024	0.0049	0.29	0.62	< 0.5	< 0.005
	01/25/06	0.00245	0.00129	0.33	0.0273	2.07	3.73	< 0.962	0.0077
	10/30/07	NA	NA	NA	NA	1.25	NA	NA	< 0.002
	05/20/08	NA	NA	NA	NA	4.00	2.10	< 0.5	NA
	11/18/08	NA	NA	NA	NA	0.13	0.69	< 0.5	< 0.005
	04/08/09	NA	NA	NA	NA	1.80	1.60	< 0.1	0.00326
	11/17/09	< 0.0005	< 0.001	0.0016	< 0.001	0.21	0.17	< 0.1	0.00778
	04/27/10	NA	NA	NA	NA	3.90	2.50	0.27	0.00232
	10/26/10	NA	NA	NA	NA	0.23	0.23	< 0.1	NA
	05/23/11	< 0.0006	0.003	0.104	0.0018	4.44	0.45	< 0.097	< 0.01
	10/25/11	NA	NA	NA	NA	3.38	0.413	< 0.20	< 0.01
	03/01/12	0.00079 J	0.0015	0.0467	0.0016 J	3.69	NA	NA	NA
	06/13/12	NA	NA	NA	NA	4.78	0.423	< 0.10	< 0.01
	09/26/12	0.00066 J	0.0024	0.0509	0.0019 J	4.54	NA	NA	NA
	11/29/12	0.00038 J	0.00037 J	0.0113	< 0.00046	0.592	0.315	< 0.098	NA
	05/14/13	NA	NA	NA	NA	5.07	0.601	< 0.096	< 0.01
	11/07/13	NA	NA	NA	NA	3.62	0.666 J	< 0.095	< 0.01
	04/24/14	NA	NA	NA	NA	5.68	1.13	0.100 J	< 0.01
	11/05/14	NA	NA	NA	NA	0.441	0.527	0.221	< 0.01
	05/20/15	NA	NA	NA	NA	2.82	0.686	< 0.097	< 0.01
	12/09/15	NA	NA	NA	NA	< 0.100	0.408	< 0.398	< 0.00200
05/05/16	NA	NA	NA	NA	7.45	2.85	0.144 J	0.00285	
12/14/16	NA	NA	NA	NA	3.61	2.22	0.155 J	0.000902 J	
06/14/17	NA	NA	NA	NA	4.85	2.90	0.159 J	0.00444	
12/07/17	< 0.0000993	< 0.000312	0.00411	< 0.000442	0.530	1.34	0.126 J	NA	
06/12/18	NA	NA	NA	NA	3.04	1.86	< 0.122	0.00207 J	
12/19/18	NA	NA	NA	NA	0.552	2.25	0.967	0.00185 J	
05/15/19	NA	NA	NA	NA	2.59	1.64	0.316 J	0.00163 J	
12/10/19	NA	NA	NA	NA	0.956	0.713	< 0.122	< 0.000995	

**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-105	01/15/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	1.4	< 0.5	0.00647
	04/21/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	0.65	< 0.5	0.00793
	07/27/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	2.2	< 0.5	0.0128
	10/19/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	1.8	< 0.5	0.0311
	01/24/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	3	< 0.5	0.00824
	04/18/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	1.3	0.78	0.00615
	07/12/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	1.7	< 0.5	< 0.005
	10/18/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	1.7	0.66	< 0.005
	01/25/06	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.05	3.95	< 0.962	0.00321
	11/19/08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	NA	NA	< 0.005
	11/17/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	0.17	< 0.1	0.021
	10/26/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	NA	NA	NA
	10/25/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.20	0.253	< 0.20	< 0.01
	11/26/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.291	< 0.098	< 0.01
	11/07/13	< 0.00020	< 0.00020	< 0.00020	< 0.000046	< 0.050	0.189	< 0.095	<b>0.0179</b>
	11/05/14	< 0.00020	< 0.00020	< 0.00020	< 0.000046	< 0.050	0.377	0.192	< 0.01
	12/08/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	< 0.100	0.406	0.408	<b>0.0152</b>
12/14/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0178	0.850	0.377	<b>0.0116</b>	
12/06/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	0.146 J	0.624	0.176 J	< 0.00200	
12/19/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.672	0.737	0.0107	
12/11/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	<b>0.388</b>	<b>0.382 J</b>	<b>0.00754</b>	
MW-111	01/15/04	0.047	< 0.001	< 0.001	< 0.001	< 0.25	0.98	< 0.5	NA
	04/21/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	0.48	< 0.5	NA
	07/27/04	0.015	< 0.001	< 0.001	0.0012	< 0.25	0.45	< 0.5	NA
	10/19/04	0.036	0.0012	< 0.001	0.0035	0.35	0.45	< 0.5	NA
	01/25/05	<b>0.079</b>	< 0.005	< 0.005	< 0.005	0.58 J	0.63	< 0.5	NA
	04/18/05	< 0.001	< 0.001	< 0.001	< 0.001	0.096	< 0.25	< 0.5	NA
	07/12/05	0.0094	< 0.001	< 0.001	< 0.001	0.23	0.26	< 0.5	NA
	10/18/05	0.017	< 0.001	< 0.001	0.0013	0.26	0.27	< 0.5	NA
	01/25/06	<b>0.0956</b>	0.00189	0.000796	0.0037	0.683	0.998	< 0.481	NA
	11/19/08	0.014	< 0.005	< 0.005	< 0.005	0.230	0.370	< 0.5	NA
	11/17/09	0.041	< 0.001	< 0.001	< 0.001	0.240	0.110	< 0.1	NA
	10/26/10	0.0043	< 0.001	< 0.001	< 0.001	< 0.1	0.120	< 0.1	NA
	05/23/11	0.0006	< 0.0005	< 0.0003	< 0.0007	< 0.050	NA	NA	NA
	10/25/11	0.00094	< 0.0010	< 0.0010	< 0.0020	< 0.20	0.122	< 0.20	NA
	11/29/12	0.0248	0.0010	< 0.00020	0.0012 J	0.371	0.269	< 0.10	NA
	11/07/13	<b>0.0845</b>	0.0010	0.00023 J	0.00069 J	0.208	0.174	< 0.095	NA
	11/05/14	<b>0.0574</b>	0.0012	0.00083 J	0.00047 J	0.232	0.167	0.118 J	NA
	12/08/15	<b>0.386</b>	0.0065	0.00291	0.00333	0.944	0.335	< 0.388	NA
	05/04/16	<b>0.0719</b>	0.00157	0.00158	0.00125 J	0.294	0.141	< 0.0598	NA
	12/14/16	<b>0.248</b>	0.00375 J	0.00243 J	< 0.00442	0.739 J	0.343	0.0883 J	NA
06/14/17	0.00575	0.000480 J	< 0.000198	0.000466 J	0.0836 J	0.142 J	< 0.123	NA	
12/06/17	<b>0.202</b>	0.00632	0.00214	0.00507	0.792	0.597	< 0.132	NA	
06/12/18	0.0273	0.00181	0.000334 J	0.00238 J	0.227	0.210 J	< 0.123	NA	
12/19/18	0.0592	0.00574	0.00120	0.00475	0.766	1.27	0.462	NA	
05/15/19	0.00484	< 0.000170	< 0.000190	< 0.000580	0.149	0.195 J	< 0.117	NA	
12/11/19	0.000270 J	< 0.000312	< 0.000198	< 0.000422	< 0.0704	0.255 J	< 0.125	NA	

**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-112A	01/15/04	0.02	< 0.001	< 0.001	< 0.001	0.25	0.63	< 0.5	NA
	04/21/04	< 0.005	< 0.005	< 0.005	< 0.005	< 1.2	0.56	< 0.75	NA
	07/27/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	0.51	< 0.5	NA
	10/19/04	0.0013	< 0.001	< 0.001	< 0.001	< 0.25	0.68	< 0.5	NA
	01/24/05	0.0003	0.0012	< 0.001	0.001	0.44	0.65	< 0.5	NA
	04/20/05	< 0.001	< 0.001	< 0.001	< 0.001	0.42	1.4	< 0.5	NA
	07/12/05	0.0029	< 0.001	< 0.001	< 0.001	0.28	0.48	< 0.5	NA
	10/18/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.25	< 0.5	NA
	01/26/06	0.00211	< 0.0005	< 0.0005	< 0.001	0.236	0.602	< 0.485	NA
	11/19/08	< 0.005	< 0.005	< 0.005	< 0.005	0.300	1.300	< 0.5	NA
	11/18/09	0.00075	< 0.001	< 0.001	< 0.001	0.200	0.230	< 0.1	NA
	10/29/10	0.03600	< 0.001	< 0.001	0.0015	0.770	0.600	< 0.1	NA
	05/24/11	0.00041	< 0.0005	< 0.0003	< 0.0007	0.129	NA	NA	NA
	10/25/11	0.0055	< 0.0010	< 0.0010	< 0.0020	0.292	0.200	< 0.20	NA
	11/25/12	0.0058	0.00022 J	0.00037 J	< 0.00046	0.197 J	0.282	< 0.10	NA
	11/04/13	0.0238	0.00068 J	0.0376	0.0012 J	0.909	1.72	< 0.19	NA
	11/06/14	0.0156	0.0014	0.028	0.0016 J	0.760	1.43	0.295	NA
	12/08/15	0.0297	0.00368	0.00219	0.00406	<b>1.31</b>	5.89	< 0.389	NA
	05/05/16	0.0248	0.00131	0.0992	0.00688	<b>1.75</b>	7.96	0.132 J	NA
	12/12/16	0.0426	0.00666	0.0109	0.0103	<b>2.27</b>	2.77	0.180 J	NA
06/15/17	0.0348	0.00370	0.0200	0.00464 J	<b>1.46</b>	7.34	0.210 J	NA	
12/07/17	0.00111	0.00169	< 0.000198	0.00196 J	0.811	1.71	0.151 J	NA	
06/13/18	0.0289	0.00297	0.134	0.00748	<b>2.39</b>	<b>12.6</b>	0.150 J	NA	
12/20/18	0.00166	0.00171	0.000248 J	0.00196 J	0.728	2.93	0.789	NA	
05/16/19	0.0111	0.00173	0.0231	0.00208 J	<b>2.00</b>	2.37	0.222 J	NA	
12/12/19	0.0149	0.00296	0.00154	0.00385	<b>1.910</b>	<b>12.2</b>	0.419 J	NA	
MW-201	01/14/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	04/20/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	01/26/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	0.33	< 0.5	NA
	04/20/05	< 0.001	< 0.001	< 0.001	0.0021	< 0.25	< 0.25	< 0.5	NA
	07/13/05	< 0.001	< 0.001	< 0.001	< 0.001	0.12	0.7	< 0.5	NA
	10/20/05	< 0.001	< 0.001	< 0.001	< 0.001	0.22	4.6	2.3	NA
	01/26/06	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.050	0.342	< 0.476	NA
	11/20/08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	0.41	< 0.5	NA
	11/19/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	10/27/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	0.18	< 0.1	NA
	10/26/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	0.0899	1.46	0.181	NA
	11/27/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.122	< 0.10	NA
	11/06/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	0.0964 J	0.520	< 0.094	NA
	11/06/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.173	0.195	NA
	12/10/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	0.121	0.323	< 0.389	NA
	12/13/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0178	0.203	0.174 J	NA
	12/06/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.159 J	< 0.132	NA
12/19/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.281	0.383 J	NA	

**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-202	01/14/04	< 0.001	< 0.001	< 0.001	< 0.001	<b>2.5</b>	<b>15</b>	< 10	NA
	04/20/04	0.014	0.0062	0.074	0.021	<b>4.4</b>	<b>28</b>	< 10	NA
	01/26/05	< 0.005	< 0.005	< 0.005	< 0.005	<b>7.7</b>	5.2	< 5	NA
	04/20/05	0.016	0.0022	0.036	0.0237	<b>3.7</b>	6.2	< 5	NA
	07/13/05	0.016	0.0033	0.067	0.0191	<b>3.5</b>	6.2	< 1	NA
	10/20/05	0.019	0.0021	0.058	0.0056	<b>3.3</b>	5.9	< 2.5	NA
	01/26/06	0.0224	0.00598	0.041	0.0191	<b>5.79</b>	<b>11.2</b>	< 4.76	NA
	04/25/06	0.007	0.0038	0.062	0.0124	<b>6.8</b>	8.7	<4.85	NA
	10/12/06	0.009	0.0034	0.083	0.0062	<b>5.7</b>	<b>11.5</b>	0.834	NA
	04/26/07	0.008	0.0048	0.063	<0.015	<b>4.8</b>	8.2	1.05	NA
	10/30/07	NA	NA	NA	NA	<b>4.55</b>	<b>10.9</b>	< 1	NA
	05/20/08	NA	NA	NA	NA	<b>2.3</b>	1.8	< 2.5	NA
	11/20/08	NA	NA	NA	NA	<b>5.0</b>	2.2	< 0.5	NA
	04/07/09	NA	NA	NA	NA	<b>4.8</b>	<b>14</b>	< 0.1	NA
	11/19/09	NA	NA	NA	NA	<b>6.6</b>	<b>20</b>	< 0.5	NA
	04/27/10	NA	NA	NA	NA	<b>3.3</b>	6.4	0.12	NA
	10/27/10	0.0081	0.0031	0.066	0.0022	<b>6.0</b>	5.4	< 0.1	NA
	05/23/11	NA	NA	NA	NA	<b>3.5</b>	1.84	< 0.097	NA
	10/26/11	NA	NA	NA	NA	<b>4.3</b>	1.02	< 0.21	NA
	03/02/12	0.0053	0.0019	0.0107	0.0013 J	<b>3.87</b>	NA	NA	NA
	06/13/12	NA	NA	NA	NA	<b>3.31</b>	1.54	< 0.10	NA
	09/26/12	0.0058	0.0029 J	0.0378	< 0.0018	<b>4.07</b>	NA	NA	NA
	11/27/12	0.0113	0.0034	0.0274	0.0022	<b>6.07</b>	2.67	< 0.30	NA
	05/15/13	NA	NA	NA	NA	<b>3.83</b>	1.62	< 0.096	NA
	11/06/13	< 0.00020	0.0027	0.0335	0.0012 J	<b>4.68</b>	1.29	< 0.095	NA
	04/22/14	NA	NA	NA	NA	<b>3.22</b>	2.18	< 0.28	NA
	11/06/14	0.0083	0.0026	0.0154	0.0011	<b>5.10</b>	2.45	0.282 J	NA
	05/19/15	NA	NA	NA	NA	<b>2.96</b>	0.84	< 0.096	NA
12/10/15	0.00419	0.00124	0.00277	< 0.0030	<b>5.67</b>	<b>27.2</b>	0.565	NA	
05/03/16	NA	NA	NA	NA	<b>2.89</b>	2.29	0.111 J	NA	
12/13/16	0.00606	0.00280	0.00901	0.00110 J	<b>2.92</b>	4.04	0.201	NA	
06/14/17	NA	NA	NA	NA	<b>2.58</b>	3.68	0.134 J	NA	
12/06/17	0.00102	< 0.000312	0.00144	0.00129 J	<b>3.02</b>	<b>25.8</b>	0.402 J	NA	
06/14/18	NA	NA	NA	NA	<b>1.49</b>	4.10	0.166 J	NA	
12/19/18	0.00178	0.000839 J	0.00444	0.00187 J	<b>4.74</b>	<b>48.3</b>	1.69	NA	
05/16/19	NA	NA	NA	NA	<b>3.04</b>	<b>11.8</b>	0.718	NA	
12/10/19	0.00179	0.00159	0.0128	0.00202 J	<b>4.29</b>	<b>24.0</b>	0.534	NA	

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Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-203	01/13/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	04/19/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	0.26	< 0.5	NA
	07/27/04	0.013	< 0.001	0.0069	< 0.001	<b>2.6</b>	0.45	< 0.5	NA
	10/19/04	0.013	< 0.001	0.015	0.0025	<b>1.6</b>	< 0.25	< 0.5	NA
	10/19/04	0.017	< 0.001	0.012	0.0018	<b>1.4</b>	< 0.25	< 0.5	NA
	01/25/05	0.0063	< 0.001	0.011	0.0013	<b>1.6</b>	0.52	0.68	NA
	04/19/05	0.0068	< 0.001	0.0018	< 0.001	0.63	< 0.25	0.55	NA
	07/13/05	0.01	< 0.001	0.0077	< 0.001	0.89	< 0.25	< 0.5	NA
	10/20/05	0.023	0.002	0.021	0.0026	<b>4.2</b>	2.1	1.1	NA
	01/23/06	0.00186	< 0.0005	0.00182	0.00125	0.76	0.565	< 0.943	NA
	04/26/16	0.00694	0.00076	0.00079	<0.003	<b>1.38</b>	0.660	0.625	NA
	10/13/16	0.02300	0.00553	0.00448	0.00652	<b>6.22</b>	7.390	1.34	NA
	04/27/17	0.00502	<0.0005	0.00053	<0.003	<b>1.24</b>	0.507	0.515	NA
	05/20/08	NA	NA	NA	NA	0.60	0.320	< 0.5	NA
	11/18/08	NA	NA	NA	NA	0.17	< 0.25	< 0.5	NA
	04/08/09	NA	NA	NA	NA	< 0.1	0.12	0.11	NA
	11/17/09	NA	NA	NA	NA	< 0.1	< 0.1	< 0.1	NA
	04/26/10	NA	NA	NA	NA	0.16	0.18	< 0.1	NA
	10/25/10	NA	NA	NA	NA	0.92	0.36	< 0.1	NA
	05/23/11	NA	NA	NA	NA	0.333	0.085	0.314	NA
	10/26/11	NA	NA	NA	NA	<b>1.380</b>	0.262	0.118	NA
	06/13/12	NA	NA	NA	NA	0.459	0.134	0.332	NA
	11/27/12	NA	NA	NA	NA	<b>1.05</b>	0.0943 J	< 0.10	NA
	05/15/13	NA	NA	NA	NA	0.144 J	< 0.048	< 0.096	NA
	11/06/13	NA	NA	NA	NA	0.680	< 0.047	< 0.094	NA
	04/22/14	NA	NA	NA	NA	0.164	0.210 J	0.732 J	NA
	11/06/14	NA	NA	NA	NA	0.102	0.0933 J	0.168 J	NA
	05/19/15	NA	NA	NA	NA	0.285	0.166	0.170 J	NA
	12/09/15	NA	NA	NA	NA	< 0.100	0.319	< 0.394	NA
	05/04/16	NA	NA	NA	NA	0.575	0.161	0.133 J	NA
5/5/2016 DUP	NA	NA	NA	NA	0.534	0.151	0.134 J	NA	
12/13/16	NA	NA	NA	NA	0.203	0.234	0.125 J	NA	
06/14/17	NA	NA	NA	NA	0.0898 J	0.212 J	0.172 J	NA	
12/08/17	NA	NA	NA	NA	<b>1.56</b>	0.323	< 0.122	NA	
06/14/18	NA	NA	NA	NA	0.16	0.152 J	0.167 J	NA	
12/20/18	NA	NA	NA	NA	0.107 J	0.806	0.944	NA	
05/16/19	NA	NA	NA	NA	0.471	0.185 J	0.159 J	NA	
12/10/19	NA	NA	NA	NA	<b>1.74</b>	0.495	0.189 J	NA	
MW-204	07/27/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	1.6	< 0.5	NA
	01/26/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	6.2	< 1	NA
	04/18/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	1.5	0.79	NA
	07/13/05	< 0.001	< 0.001	< 0.001	< 0.001	0.076	1.1	0.59	NA
	10/19/05	< 0.001	< 0.001	< 0.001	< 0.001	0.082	0.45	< 0.5	NA
	01/26/06	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.05	5.53	< 0.952	NA
	04/25/06	<0.0005	<0.0005	<0.0005	<0.003	0.076	2.5	1.11	NA
	10/12/06	<0.0005	<0.0005	<0.0005	<0.003	0.0634	0.90	0.519	NA
	04/26/07	<0.0005	<0.0005	<0.0005	<0.003	0.086	1.81	0.749	NA
	10/30/07	NA	NA	NA	NA	< 0.05	NA	NA	NA
	11/20/08	< 0.005	< 0.005	< 0.005	< 0.005	0.13	1.0	< 0.5	NA
	11/19/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	3.5	0.16	NA
	10/27/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	0.29	< 0.1	NA
	10/27/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	0.0660	0.599	< 0.20	NA
	11/27/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.975	< 0.10	NA
	11/06/13	0.00057 J	< 0.00020	< 0.00020	< 0.00046	0.0762 J	0.280	0.0976 J	NA
	11/06/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.505	0.321	NA
	12/10/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	< 0.100	0.579	< 0.388	NA
	12/13/16	0.000187 J	< 0.000312	0.000555 J	< 0.000442	< 0.0178	0.507	0.215	NA
	12/06/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.786	0.232 J	NA
12/19/18	0.000204 J	< 0.000312	< 0.000198	< 0.000442	0.138 J	0.599	0.729	NA	
12/10/19	0.00105	< 0.000312	< 0.000198	< 0.000442	<0.0704	0.238 J	0.128 J	NA	

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		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-206A	01/22/04	< 0.001	< 0.001	< 0.001	0.004	< 0.25	< 0.25	< 0.5	NA
	04/19/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	07/27/04	< 0.005	< 0.005	< 0.005	< 0.005	< 1.2	1.8	0.78	NA
	10/19/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	2	1.1	NA
	01/25/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	2.1	2.2	NA
	04/18/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	1.3	1.5	NA
	07/13/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	1.2	1.9	NA
	10/20/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	2.1	7.9	NA
	01/26/06	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.05	4.41	2.54	NA
	11/20/08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.25	2.1	1.7	NA
	11/19/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	0.1	< 0.1	NA
	10/25/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	0.18	NA
	10/26/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.20	0.141	< 0.20	NA
	11/27/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.116	0.111 J	NA
	11/06/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.047	< 0.094	NA
	11/06/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.236	0.392	NA
	12/08/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	< 0.100	< 0.242	< 0.403	NA
12/12/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0178	0.180	0.135 J	NA	
12/08/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.258	0.239 J	NA	
12/20/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	2.250	3.960	NA	
12/10/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.591	0.396	NA	
MW-213	01/14/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	04/20/04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.25	< 0.25	< 0.5	NA
	07/28/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	10/19/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	01/25/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	04/19/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.25	< 0.5	NA
	07/12/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.25	< 0.5	NA
	10/20/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	0.34	< 0.5	NA
	01/26/06	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.05	0.653	< 0.495	NA
	10/30/07	< 0.001	< 0.001	< 0.001	< 0.003	NA	NA	NA	NA
	11/19/08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.25	< 0.25	< 0.5	NA
	04/07/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	11/18/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	04/26/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	10/28/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	05/24/11	< 0.0003	< 0.0005	< 0.0003	< 0.0007	< 0.050	< 0.049	< 0.098	NA
	10/25/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.20	< 0.11	< 0.21	NA
	06/12/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.050	< 0.10	NA
	11/29/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.050	< 0.10	NA
	05/15/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.048	< 0.096	NA
	11/05/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.0625 J	< 0.095	NA
	04/23/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.0586	< 0.094	NA
	11/05/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.0782 J	< 0.094	NA
	05/19/15	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.1020	< 0.10	NA
	12/09/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	< 0.100	< 0.235	< 0.392	NA
	05/03/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000162	< 0.100	0.0415 J	< 0.0593	NA
	12/13/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.100	0.115 J	< 0.0622	NA
	06/14/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.128 J	< 0.123	NA
	12/07/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.158 J	< 0.121	NA
	06/12/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	< 0.111	< 0.121	NA
12/19/18	< 0.0000930	0.000320 J	< 0.000198	< 0.000442	0.0717 J	0.434	0.411	NA	
05/16/19	< 0.000200	0.000349 J	< 0.000190	< 0.000580	0.0912	0.153 J	< 0.123	NA	
12/11/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.147 J	< 0.117	NA	



**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-214	01/14/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	04/20/04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.25	< 0.25	< 0.5	NA
	07/28/04	< 0.005	< 0.005	< 0.005	< 0.005	< 1.2	< 0.25	< 0.5	NA
	10/19/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	01/25/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	0.36	< 0.5	NA
	04/19/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	0.3	< 0.5	NA
	07/12/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	0.29	< 0.5	NA
	10/20/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	0.33	< 0.5	NA
	01/26/06	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.05	0.91	< 0.476	NA
	10/30/07	< 0.001	< 0.001	< 0.001	< 0.003	NA	NA	NA	NA
	05/05/08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.25	0.91	< 0.5	NA
	07/10/08	NA	NA	NA	NA	NA	< 0.5	< 1	NA
	11/19/08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.25	0.80	< 0.5	NA
	04/07/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	0.17	< 0.1	NA
	11/18/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	0.11	< 0.1	NA
	04/26/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	0.19	< 0.1	NA
	10/28/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	05/24/11	<0.0003	<0.0005	<0.0003	<0.0007	<0.050	0.127	<0.097	NA
	10/25/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.20	0.126	< 0.21	NA
	06/12/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.050	0.135 J	NA
	11/29/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.048	< 0.095	NA
	05/15/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.0857 J	< 0.096	NA
	11/05/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.0552 J	< 0.094	NA
	04/23/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.118	< 0.094	NA
	11/05/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.168	0.103	NA
	05/19/15	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.106	< 0.094	NA
12/09/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	< 0.100	0.248	< 0.392	NA	
05/03/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000162	< 0.100	0.123	< 0.0594	NA	
12/14/16	< 0.0000930	< 0.000312	0.000275 J	< 0.000442	0.0226 J	0.130	< 0.0600	NA	
06/14/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.214 J	< 0.121	NA	
12/07/17	< 0.0000930 J	< 0.000312 J	< 0.000198 J	< 0.000442 J	< 0.0704 J	0.305	< 0.128	NA	
06/12/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.170 J	< 0.120	NA	
12/19/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.547	0.415	NA	
05/16/19	< 0.000200	0.000303 J	< 0.000190	< 0.000580	< 0.0550	0.213 J	< 0.122	NA	
12/11/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.239 J	< 0.121	NA	
MW-301	03/02/12	<b>0.240</b>	0.0138	0.00990	0.0212	<b>3.37</b>	NA	NA	NA
	09/25/12	<b>0.333</b>	0.0131	0.0186	0.0192	<b>4.02</b>	NA	NA	NA
	11/28/12	<b>0.241</b>	0.0099	0.0125	0.0106	<b>2.76</b>	NA	NA	NA
	02/21/13	<b>0.659</b>	0.0175	0.0264	0.0173 J	<b>3.98</b>	0.315	< 0.10	NA
	05/15/13	<b>0.357</b>	0.0122	0.0231	0.0145	<b>3.63</b>	NA	NA	NA
	11/04/13	<b>0.160</b>	0.0097	0.0164	0.0109	<b>2.29</b>	NA	NA	NA
	04/23/14	<b>0.252</b>	0.0072	0.0135	0.0075	<b>3.57</b>	NA	NA	NA
	07/24/14	<b>0.314</b>	0.0080	0.0143	0.0096	<b>3.70</b>	0.361	< 0.094	NA
	11/03/14	<b>0.108</b>	0.0043 J	0.0046 J	0.0051 J	<b>1.76</b>	NA	NA	NA
	03/09/15	<b>0.222</b>	0.0067	0.0065	0.0062 J	<b>2.27</b>	NA	NA	NA
	05/21/15	<b>0.194</b>	0.0069	0.0100	0.0060 J	<b>2.24</b>	NA	NA	NA
	07/28/15	<b>0.116</b>	0.0036	0.0037	0.0019 J	<b>2.09</b>	NA	NA	NA
	12/10/15	0.0437	0.0035	0.0010	0.0055	<b>1.34</b>	NA	NA	NA
	02/22/16	<b>0.280</b>	0.0088	0.0104	0.0075	<b>3.65</b>	NA	NA	NA
	05/02/16	<b>0.170</b>	0.00834	0.0138	0.00663	<b>3.32</b>	NA	NA	NA
	08/29/16	0.0647	0.00551	0.0103	0.00640	<b>2.90</b>	NA	NA	NA
	12/12/16	<b>0.251</b>	0.00745	0.0173	0.00633	<b>3.00</b>	NA	NA	NA
	03/13/17	<b>0.206</b>	0.00771	0.0117	0.00585	<b>3.02</b>	NA	NA	NA
	06/13/17	<b>0.111</b>	0.00659 J	0.0128	0.00713 J	<b>2.50</b>	NA	NA	NA
	08/22/17	0.0652	0.00472	0.0108	0.00366	<b>1.93</b>	NA	NA	NA
	12/05/17	0.0222	0.00228	0.00217	0.00272 J	<b>1.67</b>	NA	NA	NA
	03/06/18	<b>0.207</b>	0.003030	0.00542	0.00248 J	<b>1.32</b>	NA	NA	NA
	06/13/18	0.0132	0.00108	0.00239	0.000821 J	<b>1.27</b>	NA	NA	NA
09/06/18	0.00368	0.000585 J	0.000352 J	0.000489 J	<b>1.45</b>	NA	NA	NA	
12/20/18	0.0175	0.000688 J	0.00259	0.000536 J	0.445	NA	NA	NA	
03/19/19	<b>0.0999</b>	0.00182	0.00923	0.00182 J	<b>1.34</b>	NA	NA	NA	
05/16/19	0.00684	< 0.000170	0.000357 J	< 0.000580	0.483	NA	NA	NA	
09/19/19	0.0000937 J	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA	
12/11/19	0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA	

**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-302	03/01/12	0.831	0.0275	0.213	0.248	5.33	NA	NA	NA
	06/12/12	0.574	0.0156	0.0183	0.0244	4.18	NA	NA	NA
	06/28/12	1.23	0.0437	0.403	0.289	5.65	NA	NA	NA
	09/25/12	0.657	0.0247	0.180	0.106	4.07	NA	NA	NA
	11/25/12	0.449	0.0152	0.191	0.177	4.58	NA	NA	NA
	02/22/13	0.393	0.0149	0.124	0.116	4.15	0.435	< 0.10	NA
	05/14/13	0.873	0.0231	0.236	0.145	4.19	NA	NA	NA
	09/05/13	0.783	0.0189	0.162	0.0746	3.70	NA	NA	NA
	11/05/13	0.607	0.0112	0.0977	0.0529	2.69	NA	NA	NA
	01/16/14	0.404	0.0161	0.0843	0.0504	3.54	NA	NA	NA
	04/23/14	0.980	0.0269	0.276	0.232	5.86	NA	NA	NA
	07/24/14	0.656	0.0206	0.178	0.131	4.66	0.363	< 0.094	NA
	11/03/14	0.506	0.0159	0.221	0.176	4.06	0.361	< 0.094	NA
	05/21/15	0.454	0.0161	0.174	0.150	3.44	NA	NA	< 0.010
	12/10/15	0.372	0.0085	0.014	0.018	2.16	1	< 0.391	NA
	05/04/16	0.595	0.0145	0.270	0.153	3.75	NA	NA	NA
	12/15/16	0.759	0.0263	0.453	0.117	5.08	1.73	< 0.0630	NA
	06/13/17	0.487	0.0146 J	0.215	0.0524 J	1.98	NA	NA	NA
	08/23/17	0.047	0.00305	0.00823	0.00647	0.709	NA	NA	NA
	12/05/17	0.0414	0.00196	0.00271	0.00300	1.79	9.96	0.209 J	NA
03/07/18	0.0707	0.00314	0.0430	0.00763	1.61	NA	NA	NA	
06/13/18	0.0591	0.00363	0.0481	0.02270	1.00	NA	NA	NA	
09/06/18	0.0312	0.00138	0.0242	0.00479	0.53	NA	NA	NA	
12/20/18	0.00121	< 0.000312	0.00431	0.000625 J	0.232	2.50	0.386	NA	
03/19/19	0.0133	0.000823 J	0.0122	0.00433	1.84 J	NA	NA	NA	
05/16/19	0.00350	0.000363 J	0.00678	0.00177 J	0.578	NA	NA	NA	
09/19/19	0.0174	0.00115	0.0217	0.00428	0.662	NA	NA	NA	
12/11/19	0.0132	0.000741 J	0.00976	0.00222 J	0.297	3.69	0.179 J	NA	
MW-303	03/02/12	3.13	0.0759	0.760	0.232	12.3	NA	NA	NA
	06/13/12	2.90	0.0957	0.884	0.268	12.5	NA	NA	NA
	09/25/12	1.83	0.0635	0.474	0.146	9.14	NA	NA	NA
	11/28/12	1.94	0.0873	1.18	0.319	12.6	NA	NA	NA
	02/21/13	2.34	0.0955	1.29	0.338	12.8	0.674	< 0.10	NA
	05/15/13	1.90	0.0864	0.983	0.272	10.6	NA	NA	NA
	11/04/13	0.884	0.0278	0.219	0.0544	6.11	NA	NA	NA
	04/23/14	1.58	0.0710	1.114	0.224	11.8	NA	NA	NA
	07/24/14	0.808	0.0471	0.653	0.161	9.76	0.622	< 0.094	NA
	11/04/14	1.42	0.0618	0.924	0.180	11.5	1.00	1.15	NA
	05/20/15	0.669	0.0432	0.713	0.157	7.90	NA	NA	NA
	12/08/15	1.19	0.0710	1.330	< 0.300	7.60	2.45	< 0.398	NA
	05/04/16	0.704	0.0625	1.82	0.287	8.60	NA	NA	NA
	12/12/16	0.831	0.0482	1.450	0.176	8.31	2.52	< 0.0602	NA
	06/13/17	0.353	0.0408	1.540	0.190	5.69	NA	NA	NA
	12/05/17	0.104	0.0116 J	0.300	0.0400 J	4.29	7.49	< 0.125	NA
	03/06/18	0.0390	0.0154	0.147 J	0.0352	2.50	NA	NA	NA
	06/13/18	0.157	0.0151 J	0.390	0.0317 J	2.94 J	NA	NA	NA
	09/06/18	0.001	< 0.000312	0.001	< 0.000442	< 0.0704	NA	NA	NA
	12/20/18	0.000581	0.000342 J	0.00136	0.00088 J	0.382	8.25	0.505	NA
03/19/19	0.0346	0.00611	0.194	0.0111	2.48	NA	NA	NA	
05/16/19	0.0173	0.00170	0.0869	0.00541	1.33	NA	NA	NA	
09/19/19	0.00776	0.00207	0.0717	0.00326	0.785	NA	NA	NA	
12/11/19	0.00114	0.000373 J	0.0404	0.00134 J	0.371	2.73	0.281 J	NA	

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**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-304	03/01/12	<b>0.686</b>	0.0351	0.214	0.264	<b>5.64</b>	NA	NA	NA
	06/12/12	<b>1.04</b>	0.0408	0.270	0.218	<b>5.98</b>	NA	NA	NA
	09/25/12	<b>0.630</b>	0.0240	0.198	0.105	<b>3.93</b>	NA	NA	NA
	11/28/12	<b>0.411</b>	0.0244	0.306	0.252	<b>5.89</b>	NA	NA	NA
	02/22/13	<b>0.507</b>	0.0225	0.208	0.149	<b>5.56</b>	0.762	0.186 J	NA
	05/14/13	<b>0.645</b>	0.0283	0.209	0.144	<b>4.73</b>	NA	NA	NA
	09/05/13	<b>0.862</b>	0.0188	0.0849	0.0616	<b>3.09</b>	NA	NA	NA
	11/05/13	<b>0.695</b>	0.0163	0.0629	0.0540	<b>2.67</b>	NA	NA	NA
	01/16/14	<b>0.790</b>	0.0194	0.0472	0.0571	<b>4.89</b>	NA	NA	NA
	04/23/14	<b>0.778</b>	0.0248	0.185	0.147	<b>5.93</b>	NA	NA	NA
	07/24/14	<b>0.437</b>	0.0173	0.109	0.0666	<b>3.59</b>	0.557	< 0.094	NA
	11/03/14	<b>1.11</b>	0.0421	0.48	0.2140	<b>3.32</b>	0.366	< 0.094	NA
	05/20/15	<b>0.486</b>	0.0136	0.115	0.0373	<b>3.30</b>	NA	NA	< 0.010
	12/10/15	<b>0.775</b>	0.0312	0.336	0.1140	<b>4.37</b>	1.55	< 0.387	NA
	05/04/16	<b>0.527</b>	0.0187	0.355	0.0559	<b>4.05</b>	NA	NA	NA
	12/15/16	<b>0.749</b>	0.0271	0.586	0.0664	<b>5.75</b>	1.78	0.0686 J	NA
	06/13/17	<b>0.209</b>	0.0113	0.413	0.0246 J	<b>2.20</b>	NA	NA	NA
	08/23/17	0.021	0.00437	0.0124	0.00494	0.566	NA	NA	NA
	12/05/17	0.000217 J	< 0.000312	< 0.000494 J	0.00118 J	0.291	3.20	< 0.122	NA
	03/06/18	0.000493	< 0.000312	0.000337 J	< 0.000442	0.562	NA	NA	NA
06/13/18	0.00107	< 0.000312	0.00561	0.00104 J	0.425	NA	NA	NA	
09/06/18	0.000535	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA	
12/20/18	< 0.000093	< 0.000312	< 0.000198	< 0.000442	< 0.0704	1.50	0.219 J	NA	
03/19/19	0.000448	< 0.000312	0.000514 J	< 0.000442	0.105 J	NA	NA	NA	
05/16/19	< 0.000200	< 0.000170	< 0.000190	< 0.000580	< 0.055	NA	NA	NA	
09/19/19	0.000242 J	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA	
12/11/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.188 J	0.120 U	NA	
MW-305	03/01/12	<b>1.14</b>	0.0227	0.0389	0.0375 J	<b>5.84</b>	NA	NA	NA
	06/11/12	<b>1.34</b>	0.0221	0.0517	0.0331 J	<b>5.97</b>	NA	NA	NA
	09/26/12	<b>1.27</b>	0.0229	0.0388	0.0355 J	<b>5.89</b>	NA	NA	NA
	11/28/12	<b>0.286</b>	0.0061	0.0032 J	0.0140	<b>1.53</b>	NA	NA	NA
	05/15/13	<b>0.397</b>	0.0263	0.290	0.0867	<b>6.28</b>	NA	NA	NA
	11/07/13	<b>0.0844</b>	0.0250	0.216	0.0919	<b>3.59</b>	NA	NA	NA
	04/23/14	<b>0.0884</b>	0.0139	0.0941	0.0454	<b>2.82</b>	NA	NA	NA
	11/06/14	0.0419	0.0052	0.0020	0.0306	<b>1.16</b>	NA	NA	NA
05/21/15	<b>0.120</b>	0.0101	0.191	0.108	<b>2.81</b>	NA	NA	NA	
MW-306	03/01/12	<b>0.606</b>	0.0150	0.0353	0.718	<b>4.74</b>	NA	NA	NA
	06/11/12	<b>0.393</b>	0.0115	0.0509	0.763	<b>5.09</b>	NA	NA	NA
	09/26/12	<b>1.05</b>	0.0261	0.135	0.147	<b>6.56</b>	NA	NA	NA
	11/28/12	<b>0.393</b>	0.0125	0.0183	0.0895	<b>3.06</b>	NA	NA	NA
	05/15/13	<b>0.746</b>	0.0472	0.837	3.70	<b>18.5</b>	NA	NA	NA
	11/07/13	<b>0.101</b>	0.0502	0.482	2.65	<b>12.8</b>	NA	NA	NA
	04/23/14	<b>0.0762</b>	0.0345	0.325	1.97	<b>11.0</b>	NA	NA	NA
	11/06/14	<b>0.119</b>	0.0226	0.302 J	0.939 J	<b>5.59</b>	NA	NA	NA
05/21/15	<b>0.106</b>	0.0354 J	0.874	5.15	<b>20.6</b>	NA	NA	NA	

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**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-307	11/26/12	2.15	0.0858	0.833	0.513	10.9	NA	NA	NA
	02/22/13	0.497	0.0358	0.226	0.145	6.02	0.604	< 0.094	NA
	05/15/13	0.437	0.0461	0.167	0.120	4.56	NA	NA	NA
	09/05/13	0.643	0.0645	0.154	0.131	5.30	NA	NA	NA
	11/06/13	0.568	0.0448 J	0.104	0.0912	4.39	NA	NA	NA
	04/22/14	0.520	0.0408	0.241	0.152	5.68	NA	NA	NA
	11/04/14	0.596	0.0390	0.176	0.095	5.16	0.632	< 0.095	NA
	03/09/15	0.444	0.0358	0.271	0.104	5.41	NA	NA	NA
	05/19/15	0.306	0.0273	0.140	0.067	3.44	0.479	< 0.096	NA
	07/29/15	0.298	0.0245	0.109	0.043	4.09	NA	NA	NA
	12/09/15	0.699	0.0585	0.334	0.131	5.03	1.63	< 0.392	NA
	02/23/16	0.498	0.0417	0.578	0.110 J	4.98	NA	NA	NA
	05/03/16	0.469	0.0338	0.456	0.0981	5.04	1.55	< 0.0597	NA
	08/30/16	0.261	0.0299	0.222	0.1950	5.13	NA	NA	NA
	12/13/16	0.275	0.0255	0.302	0.102	4.02	1.34	0.0812 J	NA
	03/14/17	0.418	0.0311	0.540	0.136	6.33	NA	NA	NA
	06/15/17	0.166	0.0242	0.283	0.194 J	4.18	1.32	< 0.121	NA
	08/23/17	0.102 J	0.0162	0.0950	0.0912	3.22	1.33	< 0.126	NA
	12/06/17	0.0501	0.00663	0.0479	0.0134	0.977	1.04	< 0.128	NA
	03/08/18	0.150	0.0158	0.134	0.0255	2.09	NA	NA	NA
	06/14/18	0.243	0.0256	0.315	0.0329	2.71	1.45	< 0.120	NA
09/05/18	0.0507	0.00339	0.016	0.00343	1.45	NA	NA	NA	
12/19/18	0.0270	0.000413 J	0.0119	0.00153 J	1.17	1.79	0.396 J	NA	
03/18/19	0.0587	0.00269	0.0500	0.00393	0.965	NA	NA	NA	
05/16/19	0.0324	0.00693	0.0260	0.0113	2.47	2.74	0.265 J	NA	
09/19/19	0.0126	< 0.000312	0.0014	< 0.000442	0.444	NA	NA	NA	
12/10/19	0.00497	< 0.000312	0.000291 J	< 0.000442	0.28	0.660	< 0.118	NA	
MW-308	11/26/12	0.144	0.0010 J	0.0072	0.0013 J	0.778	NA	NA	NA
	02/22/13	0.668	0.0078 J	0.0443	0.0059 J	3.48	0.354	< 0.10	NA
	05/15/13	0.392	0.0052 J	0.0427	< 0.0046	2.54	NA	NA	NA
	11/06/13	0.237	0.0033 J	0.0056	0.0026 J	1.65	NA	NA	NA
	04/22/14	0.0165	< 0.00020	0.00036 J	< 0.00046	0.146	NA	NA	NA
	11/04/14	0.132	0.0012	0.0044	0.00058	0.782	< 0.048	< 0.095	NA
	03/09/15	0.121 J	0.0020	0.00064 J	0.0013 J	1.10	NA	NA	NA
	05/19/15	0.213	0.0013 J	< 0.00050	< 0.0012	0.973	NA	NA	NA
	07/29/15	0.242	0.0017 J	0.0014 J	< 0.0012	1.77	NA	NA	NA
	12/09/15	0.146	0.0036	0.0284	0.00527	1.19	NA	NA	NA
	02/23/16	0.00711	< 0.0000380	0.000101 J	< 0.0000160	0.0619	NA	NA	NA
	05/03/16	0.281	0.000903 J	0.00376	0.000680 J	1.41	NA	NA	NA
	08/30/16	0.196	< 0.00312	< 0.00198	< 0.00162	1.48	NA	NA	NA
	12/13/16	0.0309	< 0.000312	0.000529 J	< 0.000442	0.207	NA	NA	NA
	03/14/17	0.000861	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA
	06/15/17	0.383	0.00147	0.00107	0.000477 J	1.28	NA	NA	NA
	08/23/17	0.234	< 0.00312	< 0.00198	< 0.00442	0.812 J	NA	NA	NA
	12/06/17	0.0850	< 0.000312	0.000717 J	< 0.000442	0.245	NA	NA	NA
	03/08/18	0.252	0.000314 J	< 0.000198	< 0.000442	0.550	NA	NA	NA
	06/14/18	0.238	0.000765 J	0.00226	< 0.000442	0.487	NA	NA	NA
	09/05/18	0.00741	< 0.000312	< 0.000198	< 0.000442	0.118 J	NA	NA	NA
12/19/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA	
03/18/19	0.000815	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA	
05/16/19	0.00703	< 0.000170	< 0.000190	< 0.000580	0.397	NA	NA	NA	
09/19/19	0.00960	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA	
12/09/19	0.000322 J	< 0.000312	< 0.000198	< 0.000442	0.118 J	NA	NA	NA	

**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
Cleanup Level*		0.071	200	29	NE	1	10	10	0.0058
MW-309	11/28/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	NA	NA	NA
	02/21/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.0790 J	< 0.10	NA
	05/16/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	NA	NA	NA
	11/06/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	NA	NA	NA
	04/23/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	NA	NA	NA
	07/24/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.102	< 0.094	NA
	11/03/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.048	< 0.095	NA
	05/20/15	< 0.00020	< 0.00020	0.00027 J	< 0.00046	0.0542 J	NA	NA	NA
	12/08/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	< 0.100	< 0.241	< 0.402	NA
	05/04/16	< 0.000930	< 0.000312	0.000337 J	< 0.000162	< 0.100	NA	NA	NA
	12/12/16	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0178	0.0834 J	< 0.0595	NA
	06/13/17	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA
	12/05/17	0.000184 J	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.0877 J	< 0.128	NA
	06/12/18	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA
	12/20/18	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.220 J	< 0.118	NA
05/16/19	< 0.000200	< 0.000170	< 0.000190	< 0.000580	0.300	NA	NA	NA	
12/11/19	< 0.000930	< 0.000312	< 0.000198	< 0.000442	0.0804 J	0.614	< 0.120	NA	
MW-310	11/28/12	<b>0.860</b>	0.0265	0.211	0.147	<b>5.74</b>	NA	NA	NA
	02/21/13	<b>1.80</b>	0.0768	0.506	0.180	<b>8.37</b>	0.603	< 0.10	NA
	05/14/13	<b>0.993</b>	0.0703	0.654	0.175	<b>6.49</b>	NA	NA	NA
	09/05/13	<b>0.960</b>	0.0598	0.310	0.110	<b>5.51</b>	NA	NA	NA
	11/05/13	<b>0.772</b>	0.0409	0.226	0.0846	<b>4.92</b>	NA	NA	NA
	01/16/14	<b>0.821</b>	0.0414	0.189	0.0775	<b>5.94</b>	NA	NA	< 0.001 <sup>1</sup>
	04/23/14	<b>0.796</b>	0.0432	0.187	0.0607	<b>5.88</b>	NA	NA	NA
	07/24/14	<b>0.920</b>	0.0489	0.368	0.0647	<b>6.36</b>	0.605	< 0.094	NA
	11/04/14	<b>0.739</b>	0.0387	0.132	0.0538	<b>5.15</b>	0.613	< 0.094	NA
	03/09/15	<b>0.736</b>	0.0475	0.189	0.0606	<b>4.71</b>	NA	NA	NA
	05/21/15	<b>0.641</b>	0.0464	0.169	0.0572	<b>4.39</b>	NA	NA	< 0.010
	07/28/15	<b>0.714</b>	0.0428	0.181	0.0488	<b>3.72</b>	NA	NA	NA
	12/10/15	<b>0.405</b>	0.0396	0.077	0.0564	<b>3.89</b>	2.75	< 0.390	NA
	02/23/16	<b>0.755</b>	0.0436	0.303	0.0615	<b>4.86</b>	NA	NA	NA
	05/02/16	<b>0.655</b>	0.0349	0.324	0.0721	<b>4.82</b>	NA	NA	NA
	08/29/16	<b>0.734</b>	0.0608	0.209	0.0885	<b>5.38</b>	NA	NA	NA
	12/15/16	<b>0.673</b>	0.0504	0.289	0.0747	<b>5.92</b>	1.72	< 0.0624	NA
	03/13/17	<b>0.809</b>	0.0541	0.387	0.0848	<b>5.58</b>	NA	NA	NA
	06/15/17	<b>0.984</b>	0.0504	0.318	0.0635	<b>4.29</b>	NA	NA	NA
	08/22/17	0.0562	0.0135	0.0416	0.0297	<b>2.17</b>	NA	NA	NA
	12/05/17	0.00444	0.000430 J	0.0122	0.0172	0.459	1.66	< 0.122	NA
	03/06/18	0.0293	< 0.000312	0.00108	0.00167 J	0.724	NA	NA	NA
06/13/18	0.0448	0.00103	0.00980	0.00308	0.748	NA	NA	NA	
09/06/18	0.0182	0.000905 J	< 0.000198	0.000637 J	0.284	NA	NA	NA	
12/20/18	0.00126	< 0.000312	< 0.000198	< 0.000442	0.0782 J	0.652	0.126 J	NA	
03/19/19	0.00127	< 0.000312	0.000226 J	< 0.000442	0.297	NA	NA	NA	
05/16/19	< 0.000200	< 0.000170	< 0.000190	< 0.000580	0.240	NA	NA	NA	
09/19/19	0.000104 J	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA	
12/11/19	< 0.000930	< 0.000312	< 0.000198	< 0.000442	0.0739 J	0.453	< 0.120	NA	
MW-311	11/05/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.048	< 0.095	< 0.010
	03/09/15	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	NA	NA	NA
	06/11/15	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	NA	NA	NA
	07/28/15	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	NA	NA	NA
	12/10/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	< 0.100	NA	NA	NA
	02/23/16	< 0.000320	< 0.0000380	< 0.0000860	< 0.0000160	< 0.0178	NA	NA	NA
	05/04/16	0.000716	< 0.000312	< 0.000198	< 0.000162	0.0260 J	NA	NA	NA
	08/29/16	< 0.000930	< 0.000312	< 0.000198	< 0.000162	< 0.0178	NA	NA	NA
	12/15/16	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0178	NA	NA	NA
	03/13/17	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA
	06/15/17	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA
	08/22/17	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA
	12/07/17	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA
	03/08/18	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA
	06/13/18	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA
	09/05/18	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA
	12/20/18	< 0.000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	NA	NA	NA
	03/18/19	0.000107 J	0.000409 J	< 0.000198	< 0.000442	0.300	NA	NA	NA
05/16/19	0.000237 J	0.000976 J	< 0.000190	< 0.000580	0.618	NA	NA	NA	
09/19/19	0.000211 J	< 0.000312	< 0.000198	< 0.000442	0.461	NA	NA	NA	
12/12/19	< 0.000930	< 0.000312	0.000290 J	0.000839 J	0.751	NA	NA	NA	

**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
MW-312	11/05/14	0.239	0.0058	0.0065	0.0102	1.64	1.13	0.132 J	< 0.010
	03/09/15	0.357	0.0044 J	0.0086	0.0050 J	1.91	NA	NA	NA
	06/11/15	0.204	0.0034 J	0.0023 J	0.0027 J	1.35	NA	NA	NA
	07/28/15	0.313	0.0041 J	0.0030 J	0.0032 J	1.65	NA	NA	NA
	12/10/15	0.072	0.0033	0.0022	0.0046	1.26	NA	NA	NA
	02/23/16	0.327	0.0035	0.0076	0.0042	1.96	NA	NA	NA
	05/04/16	0.414	0.00399	0.00662	0.00376	2.22	NA	NA	NA
	08/29/16	0.370	0.00457 J	0.00354 J	0.00394 J	2.30	NA	NA	NA
	12/15/16	0.356	0.00336 J	0.00556 J	< 0.000442	2.27	NA	NA	NA
	03/13/17	0.350	0.00362	0.00527	0.00375	2.07	NA	NA	NA
	06/15/17	0.383	0.00372	0.00425	0.00368 J	1.89	NA	NA	NA
	08/23/17	0.330	0.00395	0.00279	0.00422	2.02	NA	NA	NA
	12/07/17	0.241	0.00441	0.00223	0.00708	1.72	NA	NA	NA
	03/08/18	0.261	0.00273 J	0.00260 J	0.00311 J	1.77	NA	NA	NA
	06/13/18	0.284	0.00440	0.00243	0.00480	1.69	NA	NA	NA
	09/05/18	0.283	0.00405	0.00306	0.00410	2.06	NA	NA	NA
12/20/18	0.126	0.00284	0.00231	0.00361	1.44	NA	NA	NA	
03/19/19	0.183	0.00372	0.00472	0.00447	2.07	NA	NA	NA	
05/16/19	0.189	0.00286	0.00353	0.00290 J	2.50	NA	NA	NA	
09/19/19	0.0928	0.00233	0.00307	0.00220 J	1.64	NA	NA	NA	
12/12/19	0.0940	0.00251	0.00341	0.00275 J	1.70	NA	NA	NA	
MW-313	08/29/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000162	< 0.0178	0.218	< 0.0603	NA
	12/12/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.100	0.207	< 0.0598	NA
	03/13/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.146 J	< 0.121	NA
	06/15/17	< 0.0000930	< 0.000312	< 0.000198	0.000463 J	< 0.0704	0.165 J	< 0.122	NA
	08/22/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.222 J	< 0.121	NA
	12/07/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.153 J	< 0.120	NA
	03/07/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	< 0.120	< 0.131	NA
	06/13/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.139 J	< 0.123	NA
	09/05/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.362	0.255 J	NA
	12/20/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.468	0.327 J	NA
	03/19/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.174 J	< 0.117	NA
	05/16/19	< 0.000200	< 0.000170	< 0.000190	< 0.000580	0.0807	0.207 J	0.164 J	NA
09/19/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.237	< 0.114	NA	
12/12/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.473	0.153 J	NA	
MW-314	08/30/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000162	0.182	0.293	< 0.0599	NA
	12/14/16	0.00432	0.000374 J	< 0.000198	< 0.000442	0.298	0.401	0.0679 J	NA
	03/13/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	0.0891 J	0.245	< 0.120	NA
	06/14/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.227 J	< 0.122	NA
	08/23/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	0.136 J	0.283	< 0.124	NA
	12/06/17	0.000153 J	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.285	< 0.122	NA
	03/07/18	0.00726	< 0.000312	< 0.000198	< 0.000442	0.131 J	0.336	< 0.127	NA
	06/12/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	0.121 J	0.460	< 0.121	NA
	09/05/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	0.203	0.825	0.501	NA
	12/20/18	0.000564	0.000600 J	< 0.000198	< 0.000442	0.138 J	0.788	0.471	NA
	03/19/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	0.157	0.608	0.139 J	NA
	05/16/19	< 0.000200	< 0.000170	< 0.000190	< 0.000580	0.201	2.09	0.248 J	NA
12/10/19	< 0.000105 J	0.000400 J	< 0.000198	< 0.000442	0.260	1.44	0.178 J	NA	
MW-315	08/29/16	0.0965	0.00265	0.000548 J	0.00135 J	0.453	1.55	< 0.0600	NA
	12/12/16	0.0174	0.00361	0.00230	0.00408	1.17	1.29	0.0871 J	NA
	03/13/17	0.0295	0.00478	0.00153	0.00793	1.24	1.64	< 0.121	NA
	06/15/17	0.0804	0.00426	0.000634 J	0.00965	1.20	2.95	< 0.122	NA
	08/23/17	0.0727	0.00403	0.000909 J	0.00871	1.71	2.74	< 0.123	NA
	12/07/17	0.00479	0.00377	0.000382 J	0.00756	1.19	2.21	< 0.121	NA
	03/08/18	0.0435	0.00411	0.000736 J	0.00712	1.39	1.15	< 0.125	NA
	06/13/18	0.0619	0.00529	0.000648 J	0.00762	1.19	1.78	< 0.120	NA
	09/05/18	0.0178	0.00461	0.000476 J	0.00904	1.33	2.89	0.267 J	NA
	12/20/18	0.00283	0.00464	0.000599 J	0.0106	1.16	3.06	0.310 J	NA
	03/18/19	0.0233	0.00363	0.000959 J	0.00390	1.40	1.89	0.149 J	NA
	05/16/19	0.0565	0.00393	0.000584 J	0.00399	2.16	2.38	0.179 J	NA
	09/19/19	0.0361	0.00360	0.000542 J	0.00353	1.29	2.61	0.133 J	NA
12/12/19	0.00334	0.00389	0.000667 J	0.00500	1.68	3.96	0.266 J	NA	

**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
SH-04	01/13/04	1.20	0.21	0.140	2.11	15.0	4.7	< 2.5	NA
	04/20/04	1.50	0.49	0.640	5.79	26.0	6.2	< 10	NA
	07/27/04	1.30	0.13	0.550	1.78	15.0	5.4	0.53	NA
	04/20/05	0.98	0.061	0.360	1.07	11.0	4.2	< 1.5	NA
	04/25/06	1.25	0.09	0.650	2.31	20.0	8.2	2.52	NA
	10/30/07	0.88	0.032	0.315	0.08	<5.0	NA	NA	NA
	05/20/08	1.10	0.05	0.520	0.66	8.9	4.80	0.92	NA
	11/20/08	0.79	0.032	0.230	0.04	6.6	2.70	< 0.5	NA
	04/08/09	0.870	0.04	0.250	0.190	9.2	4.70	< 0.1	NA
	11/16/09	0.48	0.023	0.068	0.02	4.9	3.70	< 0.1	NA
	04/27/10	0.710	0.03	0.270	0.130	7.3	4.70	0.39	NA
	10/25/10	0.580	0.019	0.180	0.0130	4.0	2.80	< 0.1	NA
	05/23/11	0.655	0.015	0.151	0.0340	5.4	1.84	0.13	NA
	10/27/11	0.393	0.0200	0.0926	0.0279	5.35	1.22	< 0.19	NA
	03/01/12	0.614	0.0227	0.0932	0.0124 J	5.53	NA	NA	NA
	06/11/12	0.426	0.0142	0.112	0.0198 J	6.00	1.49	0.393	NA
	09/25/12	0.124	0.0184	0.461	0.139	6.52	NA	NA	NA
	11/25/12	0.0730	0.0079 J	0.609	0.326	8.15	0.762	< 0.098	NA
	05/15/13	0.0016 J	0.00050	0.0042	0.0032 J	2.16	0.376	< 0.096	NA
	11/04/13	0.0032	0.00043 J	0.0071	0.0050	1.05	0.134	< 0.094	NA
	04/24/14	0.0091	0.00053 J	0.00090 J	0.0014 J	0.938	0.469	0.0944 J	NA
	11/06/14	0.0249	0.0023	0.0173	0.0072	0.984	0.608	< 0.094	NA
	05/21/15	0.0094	0.00048 J	0.0035	0.0021	0.780	0.171	< 0.094	NA
12/08/15	0.0155	0.0012	0.0036	0.0041	0.927	1.740	0.422	NA	
05/05/16	0.000454	< 0.000312	0.000939 J	0.000887 J	0.941	0.230	< 0.0601	NA	
12/14/16	0.00534	0.000990 J	0.0199	0.0123	0.843	1.00	0.102 J	NA	
06/14/17	0.00158	0.000468 J	0.00192	0.00208 J	0.702	0.242 J	0.138 J	NA	
12/07/17	0.00934	0.00150	0.00205	0.00351	0.796	1.78	< 0.136	NA	
06/13/18	0.00520	0.000593 J	0.00420	0.00212 J	0.724	0.187 J	< 0.123	NA	
12/19/18	0.0118	0.00195	0.0125	0.00477	0.804	0.954	0.210 J	NA	
05/16/19	0.00169	0.000346 J	0.00225	0.00227 J	1.35	0.582	0.174 J	NA	
12/11/19	0.0120	0.00186	0.00139	0.00342	0.0805	1.26	< 0.121	NA	
TES-MW-1	01/14/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	04/20/04	0.0067	< 0.001	0.011	0.043	< 0.25	< 0.25	< 0.5	NA
	04/20/04	0.0075	< 0.001	0.013	0.049	< 0.25	< 0.25	< 0.5	NA
	07/28/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	10/18/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	01/25/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	01/25/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	< 0.25	< 0.5	NA
	04/19/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.25	< 0.5	NA
	07/13/05	0.001	< 0.001	0.006	0.0189	0.10	< 0.25	< 0.5	NA
	10/20/05	0.0039	< 0.001	0.013	0.0437	0.23	< 0.25	< 0.5	NA
	01/27/06	< 0.0005	< 0.0005	< 0.0005	< 0.001	< 0.05	< 0.240	< 0.481	NA
	11/18/08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	< 0.25	< 0.5	NA
	11/18/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	10/26/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	< 0.1	< 0.1	NA
	05/24/11	< 0.0003	< 0.0005	< 0.0003	< 0.0007	< 0.050	NA	NA	NA
	10/27/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.20	< 0.10	< 0.20	NA
	11/26/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.050	< 0.10	NA
	11/06/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.048	< 0.095	NA
	11/04/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.048	< 0.095	NA
	12/09/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	< 0.100	< 0.234	< 0.390	NA
	12/13/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0178	< 0.0466	< 0.0699	NA
	12/06/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	< 0.0816	< 0.122	NA
	12/19/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	< 0.106	< 0.116	NA
12/09/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	< 0.111	< 0.121	NA	



**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
TX-03A	Cleanup Level*	0.071	200	29	NE	1	10	10	0.0058
	01/13/04	2.9	0.018	0.038	0.091	2.7	0.86	< 0.5	NA
	04/19/04	4.4	0.047	0.12	0.11	12	1.3	< 0.5	NA
	07/27/04	1.7	0.011	0.016	0.037	5.2	0.81	< 0.5	NA
	10/18/04	3.2	0.024	0.062	0.093	7.5	1.2	< 0.5	NA
	01/24/05	2.5	0.02	< 0.01	0.065	8.2	0.54	< 0.5	NA
	04/19/05	2.5	0.021	0.026	0.049	6.1	0.47	< 0.5	NA
	07/12/05	3.1	0.024	0.044	0.054	10	0.32	< 0.5	NA
	10/31/07	2.2	0.023	0.060	0.050	<5.0	NA	NA	NA
	05/20/08	0.9	0.007	0.016	0.010	3.0	NA	NA	NA
	11/20/08	2.1	0.019	0.038	0.018	4.5	NA	NA	NA
	04/08/09	1.2	< 0.025	0.028	< 0.025	3.5	NA	NA	NA
	11/17/09	1.0	0.008	0.016	0.011	2.4	NA	NA	NA
	04/27/10	1.7	0.010	0.009	0.010	4.6	NA	NA	NA
	10/25/10	1.7	0.011	0.067	0.013	3.3	NA	NA	NA
	05/23/11	1.78	<0.025	0.044	<0.035	7.5	NA	NA	NA
	10/27/11	3.44	0.0712	0.147	0.111	8.51	NA	NA	NA
	03/01/12	1.74	0.0261	0.0272	0.0345 J	5.58	NA	NA	NA
	06/12/12	1.57	0.0200 J	0.0139 J	0.0300 J	6.78	NA	NA	NA
	09/25/12	1.7	0.0298	0.0410	0.0501	5.53	NA	NA	NA
	11/28/12	1.18	0.0188 J	0.0232	0.0357 J	4.91	NA	NA	NA
	02/21/13	2.81	0.0403	0.0421	0.0489 J	8.20	0.320	< 0.10	NA
	05/15/13	2.15	0.0459 J	0.189	0.0643 J	3.11	NA	NA	NA
	11/05/13	2.72	0.0343 J	0.0364 J	0.0411 J	6.01	NA	NA	NA
	04/23/14	1.22	0.0171	0.0251	0.0270	5.76	NA	NA	NA
	07/24/14	1.64	0.0317	0.0698	0.0520	7.55	0.382	< 0.094	NA
	11/04/14	0.941	0.0137	0.0366	0.0269	5.76	0.448	< 0.094	NA
	03/09/15	1.860	0.0246 J	0.0581	0.0390 J	7.16	NA	NA	NA
	05/21/15	1.150	0.0144 J	0.0462	0.0260 J	3.40	NA	NA	NA
	07/28/15	1.720	0.0213 J	0.1180	0.0355 J	5.42	NA	NA	NA
	12/10/15	0.635	0.0126	0.0260	0.0253	3.32	1.34	< 0.391	NA
	02/23/16	1.78	0.0274	0.0882	0.0385	5.17	NA	NA	NA
	05/02/16	1.54	0.0370	0.208	0.0503	6.30	NA	NA	NA
08/29/16	0.844	0.0257	0.246	0.0530	5.89	NA	NA	NA	
12/15/16	0.995	0.0197 J	0.0697	0.0357 J	4.81	1.73	0.125 J	NA	
03/13/17	0.760	0.0208	0.0901	0.0352 J	3.66	NA	NA	NA	
06/13/17	1.37	0.0361	0.246	0.0618 J	5.36	NA	NA	NA	
08/22/17	1.08	0.0233	0.137	0.0363	4.55	NA	NA	NA	
12/05/17	0.258	0.00697 J	0.0172 J	0.0126 J	3.07	2.03	0.172 J	NA	
03/27/18	0.135	0.00114	0.00395	0.000969 J	1.21	NA	NA	NA	
06/13/18	0.204	0.00240	0.0150	0.000713 J	0.970	NA	NA	NA	
09/06/18	0.263	0.00308	0.0252	0.00115 J	1.31	NA	NA	NA	
12/20/18	0.0278	0.000612 J	0.00282	0.000499 J	0.768	2.88	1.05	NA	
03/19/19	0.0131 J	< 0.000312	0.00143	< 0.000442	0.938	NA	NA	NA	
05/16/19	0.102 J	< 0.000170 J	0.00115 J	< 0.000580 J	0.991	NA	NA	NA	
09/19/19	0.00642	< 0.000312	0.00722	< 0.000442	0.446	NA	NA	NA	
12/11/19	0.00173	< 0.000312	0.00170	< 0.000442	0.521	1.72	0.154 J	NA	
TX-04	01/13/04	0.025	0.0055	< 0.001	0.01940	0.650	0.59	< 0.5	NA
	04/21/04	0.0025	0.0017	< 0.001	0.0031	0.47	2.200	< 0.75	NA
	07/27/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	1.50	< 0.5	NA
	10/18/04	< 0.001	< 0.001	< 0.001	0.0022	0.28	1.2	< 0.5	NA
	01/24/05	0.0310	0.0071	< 0.001	0.020	0.87	0.64	< 0.5	NA
	04/20/05	0.014	0.00360	< 0.001	0.0085	0.54	0.73	< 0.5	NA
	07/12/05	< 0.001	< 0.001	< 0.001	0.00140	0.340	0.82	< 0.5	NA
	10/18/05	< 0.001	< 0.001	< 0.001	< 0.001	0.20	1.100	< 0.5	NA
	01/25/06	0.00127	0.001	< 0.0005	0.00151	0.206	0.84	< 0.476	NA
	11/18/08	< 0.005	< 0.005	< 0.005	< 0.005	0.076	< 0.25	< 0.5	NA
	11/16/09	< 0.0005	< 0.001	< 0.001	< 0.001	0.17	< 0.13	< 0.1	NA
	10/25/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	0.17	< 0.1	NA
	05/23/11	<0.0003	<0.0005	<0.0003	<0.0007	0.055	NA	NA	NA
	10/26/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	< 0.20	0.0966	< 0.20	NA
	11/26/12	0.0013	0.00038 J	< 0.00020	0.00052 J	0.0980 J	0.0807 J	< 0.10	NA
	11/04/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.0492 J	< 0.095	NA
	11/06/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	< 0.048	< 0.096	NA
	12/08/15	0.000268	< 0.0010	< 0.0010	< 0.0030	< 0.100	< 0.245	< 0.408	NA
	12/12/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0178	0.0762 J	< 0.0608	NA
	12/05/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	< 0.0834	< 0.125	NA
12/19/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	< 0.104	< 0.114	NA	
12/12/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.122 J	< 0.119	NA	



**Table 6**  
**BTEX, Petroleum Hydrocarbons, and Lead in Groundwater**  
**Shell Harbor Island Terminal**  
**Seattle, Washington**

Well	Sample Date	Chemical (mg/L)							
		Benzene	Toluene	Ethylbenzene	Total Xylenes (mixed isomers)	Gasoline Range Hydrocarbons	Diesel Range Hydrocarbons	Motor Oil Range Hydrocarbons	Total Lead
	<b>Cleanup Level*</b>	<b>0.071</b>	<b>200</b>	<b>29</b>	<b>NE</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>0.0058</b>
TX-06A	01/14/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	5.8	< 1	NA
	04/21/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	3.4	< 0.75	NA
	07/27/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	3.6	< 0.5	NA
	10/18/04	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	4.1	< 0.5	NA
	01/24/05	< 0.001	< 0.001	< 0.001	< 0.001	< 0.25	2.7	< 0.5	NA
	04/20/05	< 0.001	< 0.001	< 0.001	< 0.001	0.18	6.3	< 1.5	NA
	07/13/05	< 0.001	< 0.001	< 0.001	< 0.001	0.26	2.5	< 0.5	NA
	10/18/05	< 0.001	< 0.001	< 0.001	< 0.001	0.072	0.93	< 0.5	NA
	01/26/06	< 0.0005	< 0.0005	< 0.0005	< 0.001	0.126	1.57	< 0.476	NA
	11/18/08	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	0.49	< 0.5	NA
	11/17/09	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	0.24	< 0.1	NA
	10/28/10	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.1	0.72	< 0.1	NA
	10/25/11	< 0.0010	< 0.0010	< 0.0010	< 0.0020	0.0519	0.499	< 0.21	NA
	11/25/12	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.50	0.716	< 0.098	NA
	11/07/13	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.358	< 0.095	NA
	11/06/14	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	0.758	0.184	NA
	12/08/15	< 0.00020	< 0.0010	< 0.0010	< 0.0030	< 0.100	1.03	< 0.388	NA
	12/12/16	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0178	0.433	0.0707 J	NA
12/05/17	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.36	< 0.122	NA	
12/20/18	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.592	0.244 J	NA	
	12/10/19	< 0.0000930	< 0.000312	< 0.000198	< 0.000442	< 0.0704	0.244	< 0.119	NA
MW-1	07/28/15	< 0.00020	< 0.00020	< 0.00020	< 0.00046	< 0.050	NA	NA	NA

**Note:**

     = Indicates data collected during this progress report period

\* = Cleanup levels per the Cleanup Action Plan (Ecology, 1998)

<sup>1</sup> = Dissolved lead result

**Bold** = indicate detected concentration greater than cleanup level

BTEX = benzene, toluene, ethylbenzene, and total xylenes

J = Laboratory qualifier; indicates an estimated value

< = not detected at or above the indicated limit. Beginning June 12, 2012, limits shown are laboratory Method Detection Limits (MDLs). Prior to June 12, 2012, mg/L = milligrams per liter

NA = not analyzed

NE = not established

**Table 7  
Carcinogenic PAHs in Groundwater  
Shell Harbor Island Terminal  
Seattle, Washington**

Well	Sample Date	Chemical (mg/L)						
		Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Chrysene	Dibenz(a,h)-anthracene	Indeno(1,2,3-cd)pyrene
<b>Cleanup Level*</b>		<b>0.000031</b>	<b>0.000031</b>	<b>0.000031</b>	<b>0.000031</b>	<b>0.000031</b>	<b>0.000031</b>	<b>0.000031</b>
MW-213	01/14/04	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	04/20/04	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	07/28/04	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/19/04	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	01/25/05	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	04/19/05	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	07/12/05	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/20/05	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	01/26/06	< 0.0000943	< 0.0000943	< 0.0000943	< 0.0000943	< 0.0000943	< 0.0000943	< 0.0000943
	10/30/07	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	11/19/08	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	04/07/09	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	11/18/09	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	04/26/10	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/28/10	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	05/24/11	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
	10/25/11	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
	06/12/12	< 0.000050	< 0.000041	< 0.000035	< 0.000039	< 0.000045	< 0.000035	< 0.000035
	11/29/12	< 0.000053	< 0.000041	< 0.000035	< 0.000039	< 0.000045	< 0.000035	< 0.000035
	05/15/13	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	11/05/13	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000043	< 0.000033	< 0.000033
	04/23/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000043	< 0.000033	< 0.000033
	11/05/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	05/19/15	< 0.0014	< 0.0011	< 0.0013	< 0.0013	Table 7	< 0.0012	< 0.0013
	12/09/15	< 0.0000948	< 0.0000948	< 0.0000948	< 0.0000948	< 0.0000948	< 0.0000948	< 0.0000948
	05/03/16	< 0.0000920	< 0.0000101	< 0.0000101	< 0.0000138	< 0.0000644	< 0.0000120	< 0.0000202
12/13/16	0.0000122	< 0.0000887	< 0.0000108	< 0.0000148	< 0.0000690	< 0.0000128	< 0.0000217	
06/14/17	< 0.0000888	< 0.0000109	< 0.0000109	< 0.0000148	< 0.0000691	< 0.0000128	< 0.0000217	
12/07/17	< 0.0000965	< 0.0000106	< 0.0000106	< 0.0000145	< 0.0000676	< 0.0000125	< 0.0000212	
06/12/18	< 0.0000103	< 0.0000113	< 0.0000113	< 0.0000154	< 0.0000720	< 0.0000134	< 0.0000226	
12/19/18	< 0.0000119	< 0.0000119	< 0.0000109	< 0.0000149	< 0.0000893	< 0.0000129	< 0.0000218	
05/16/19	< 0.0000119	< 0.0000119	< 0.0000109	< 0.0000149	< 0.0000893	< 0.0000129	< 0.0000218	
12/11/19	< 0.0000119	< 0.0000896	< 0.0000109	< 0.0000149	< 0.0000995	< 0.0000129	< 0.0000219	

**Table 7  
Carcinogenic PAHs in Groundwater  
Shell Harbor Island Terminal  
Seattle, Washington**

Well	Sample Date	Chemical (mg/L)						
		Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Chrysene	Dibenz(a,h)-anthracene	Indeno(1,2,3-cd)pyrene
Cleanup Level*		0.000031	0.000031	0.000031	0.000031	0.000031	0.000031	0.000031
MW-214	01/30/03	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	04/17/03	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	07/17/03	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/16/03	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	01/14/04	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	04/20/04	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	07/28/04	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/19/04	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	01/25/05	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	04/19/05	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	07/12/05	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/20/05	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	01/26/06	< 0.000099	< 0.000099	< 0.000099	< 0.000099	< 0.000099	< 0.000099	< 0.000099
	10/30/07	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	05/05/08	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	11/19/08	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	04/07/09	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	11/18/09	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	04/26/10	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/28/10	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	05/24/11	< 0.000029	< 0.000029	< 0.000029	< 0.000029	< 0.000029	< 0.000029	< 0.000029
	10/25/11	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010	< 0.00010
	06/12/12	< 0.000051	< 0.000040	< 0.000034	< 0.000038	< 0.000044	< 0.000034	< 0.000034
	11/29/12	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	05/15/13	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	11/05/13	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	04/23/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000043	< 0.000033	< 0.000033
	11/05/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	05/19/15	< 0.0013	< 0.0010	< 0.0012	< 0.0013	< 0.0015	< 0.0012	< 0.0013
	12/09/15	< 0.0000908	< 0.0000908	< 0.0000908	< 0.0000908	< 0.0000908	< 0.0000908	< 0.0000908
05/04/16	< 0.0000926	< 0.0000102	< 0.0000102	< 0.0000139	< 0.0000648	< 0.0000120	< 0.0000204	
12/14/16	0.0000994	< 0.0000883	< 0.0000108	< 0.0000147	< 0.0000687	< 0.0000128	< 0.0000216	
06/14/17	< 0.0000850	< 0.0000104	< 0.0000104	< 0.0000142	< 0.0000661	< 0.0000123	< 0.0000208	
12/07/17	< 0.0000102	< 0.0000112	< 0.0000112	< 0.0000153	< 0.0000713	< 0.0000132	< 0.0000224	
06/12/18	< 0.0000976	< 0.0000107	< 0.0000107	< 0.0000146	< 0.0000683	< 0.0000127	< 0.0000215	
12/19/18	< 0.0000119	< 0.0000119	< 0.0000109	< 0.0000149	< 0.0000894	< 0.0000129	< 0.0000219	
05/16/19	< 0.0000119	< 0.0000119	< 0.0000109	< 0.0000149	< 0.0000894	< 0.0000129	< 0.0000219	
12/11/19	0.0000141 J	< 0.0000921	< 0.0000113	< 0.0000154	< 0.0000102	< 0.0000133	< 0.0000225	

**Table 7  
Carcinogenic PAHs in Groundwater  
Shell Harbor Island Terminal  
Seattle, Washington**

Well	Sample Date	Chemical (mg/L)						
		Benzo(a)-anthracene	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(k)-fluoranthene	Chrysene	Dibenz(a,h)-anthracene	Indeno(1,2,3-cd)pyrene
Cleanup Level*		0.000031	0.000031	0.000031	0.000031	0.000031	0.000031	0.000031
MW-301	07/24/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	05/21/15	< 0.0014	< 0.0011	< 0.0013	< 0.0013	< 0.0016	< 0.0012	< 0.0013
MW-302	07/24/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	05/21/15	< 0.0013	< 0.0010	< 0.0012	< 0.0013	< 0.0015	< 0.0012	< 0.0013
MW-303	07/24/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000043	< 0.000033	< 0.000033
	05/20/15	< 0.0014	< 0.0011	< 0.0013	< 0.0013	< 0.0016	< 0.0012	< 0.0013
MW-304	07/24/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	05/20/15	< 0.0013	< 0.0010	< 0.0012	< 0.0013	< 0.0015	< 0.0012	< 0.0013
MW-309	07/24/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	05/20/15	< 0.0014	< 0.0011	< 0.0013	< 0.0014	< 0.0016	< 0.0012	< 0.0013
MW-310	07/24/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	05/21/15	< 0.0013	< 0.0010	< 0.0012	< 0.0013	< 0.0015	< 0.0012	< 0.0013
MW-311	11/05/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
MW-312	11/05/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
TX-03A	07/24/14	< 0.000050	< 0.000039	< 0.000033	< 0.000037	< 0.000042	< 0.000033	< 0.000033
	05/21/15	< 0.0014	< 0.0010	< 0.0013	< 0.0013	< 0.0016	< 0.0012	< 0.0013

**Note:**

= Indicates data collected during this progress report period

\* = Cleanup levels per the Cleanup Action Plan (Ecology, 1998)

J = indicates an estimated value

< = not detected at or above the indicated limit. Beginning June 12, 2012, limits shown are laboratory Method Detection Limits (MDLs). Prior to June 12, 2012, limits shown are laboratory Reporting Limits (RLs).

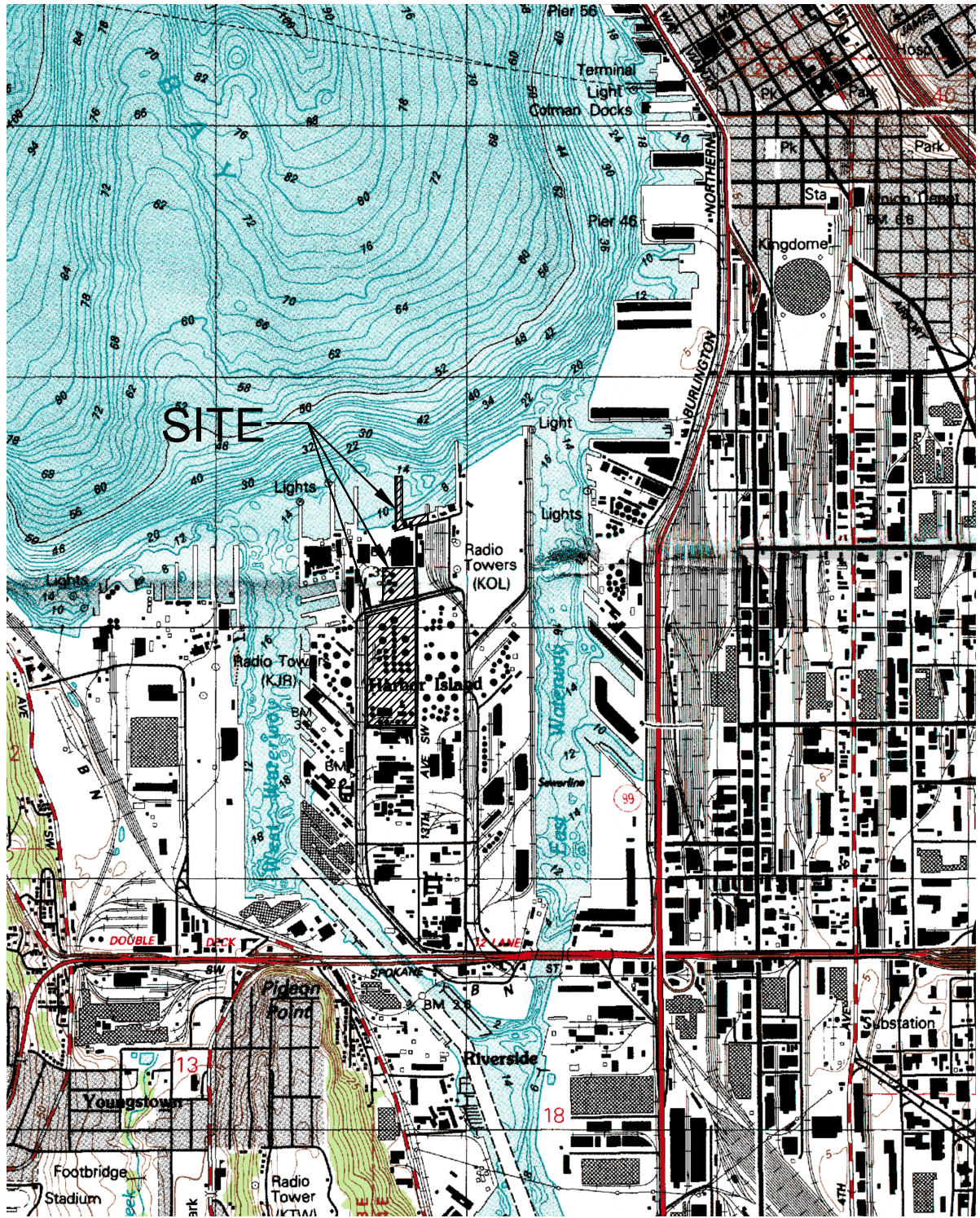
ID = identification

mg/L = milligrams per liter

PAHs = polycyclic aromatic hydrocarbons

# Figures





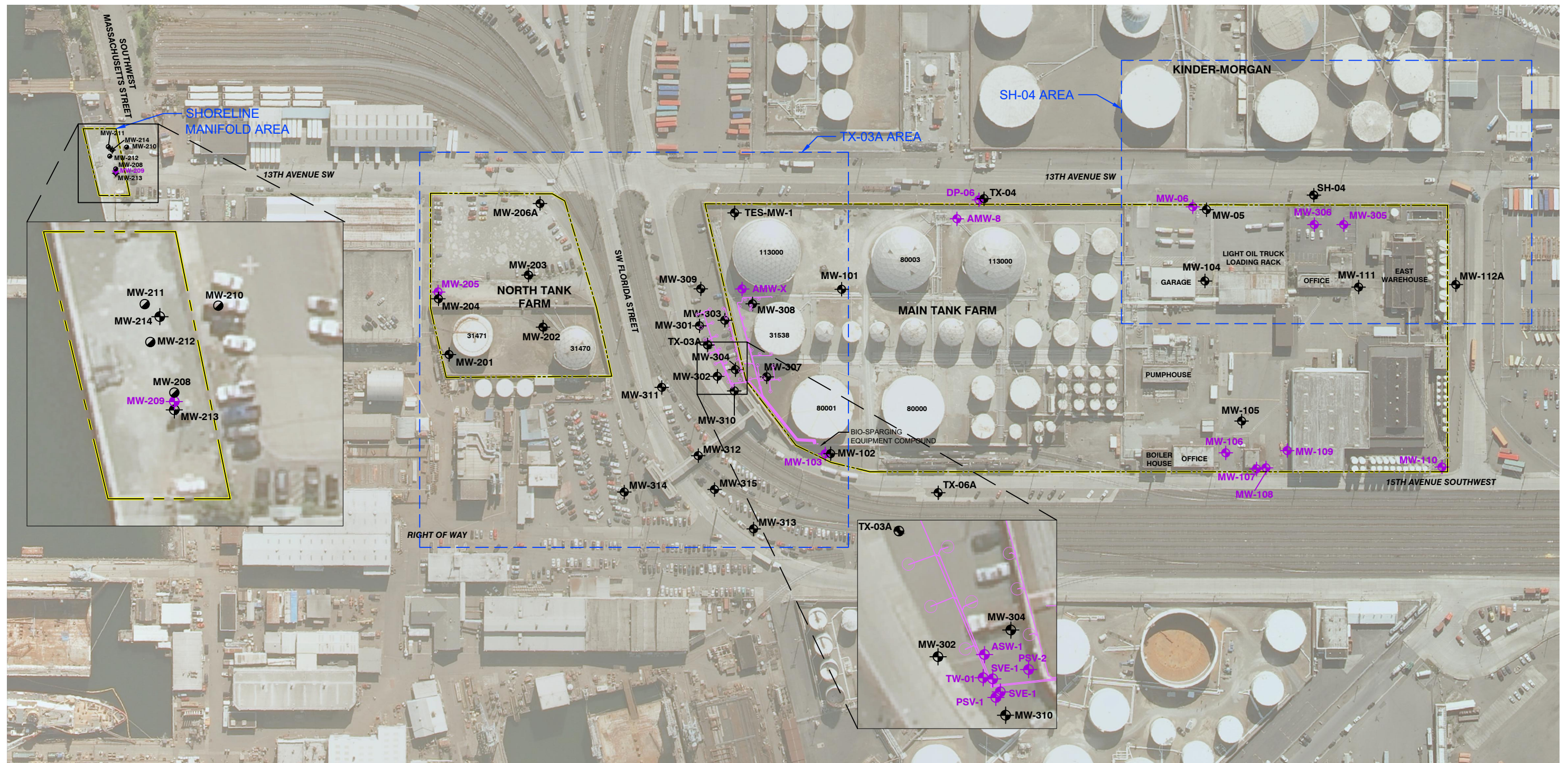
**SITE LOCATION MAP**

SHELL HARBOR ISLAND TERMINAL  
ANNUAL COMPLIANCE MONITORING REPORT  
SEATTLE, WASHINGTON

**FIGURE 1**

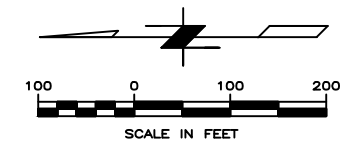






**Map Features**

- MW-212 Monitoring Well Location  
(Included in Current Groundwater Monitoring Program)
- MW-210 Product Recovery / Monitoring Well Location
- MW-103 Additional Well Location  
(Not Included in Current Groundwater Monitoring Program)
- Shell Property Line
- Bio-Sparging Well Location
- Bio-Sparging Line (System start on May 25, 2017)

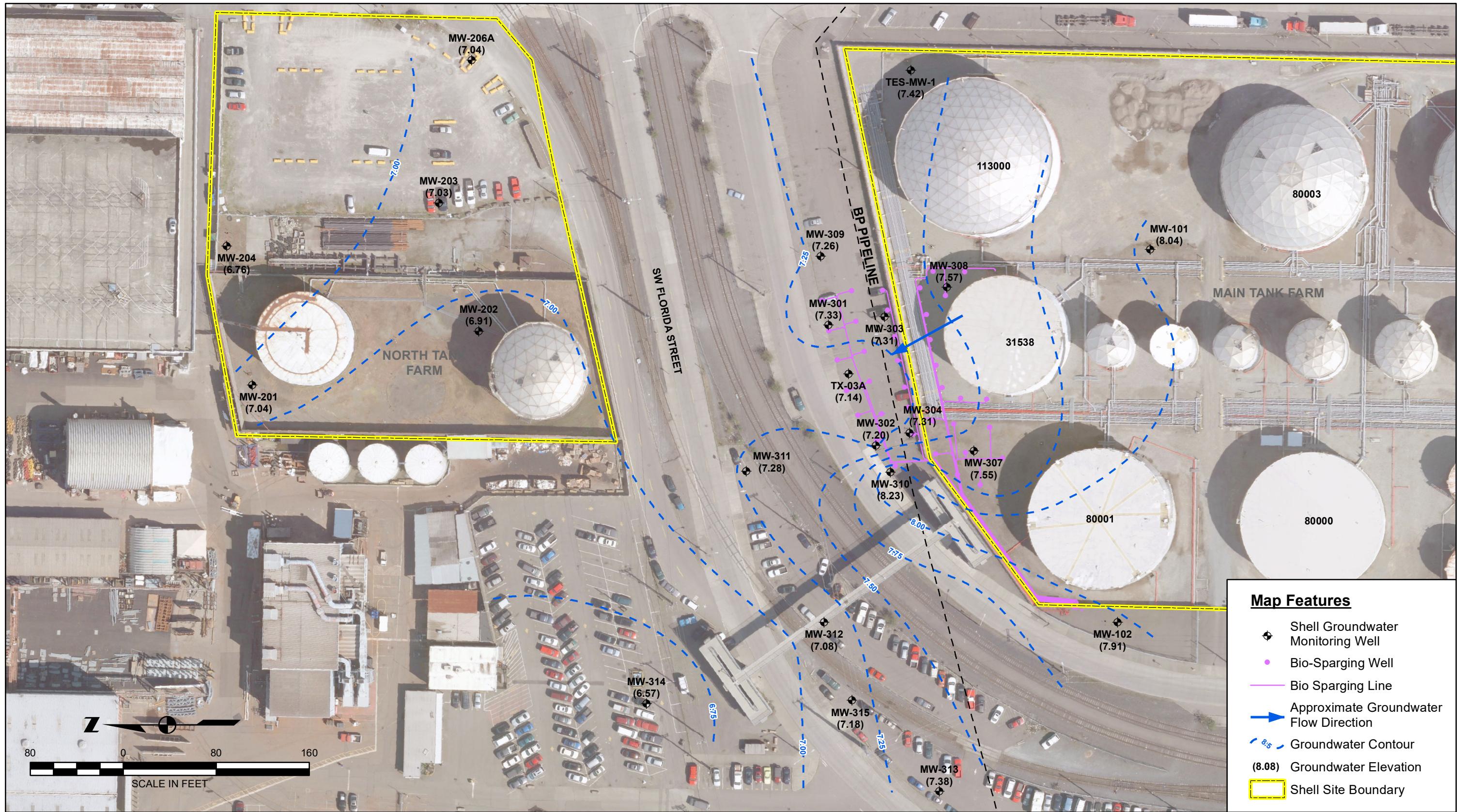


**SITE MAP**

SHELL HARBOR ISLAND TERMINAL  
ANNUAL COMPLIANCE MONITORING REPORT  
SEATTLE, WASHINGTON

**FIGURE 2**





Source: USGS, 2012.

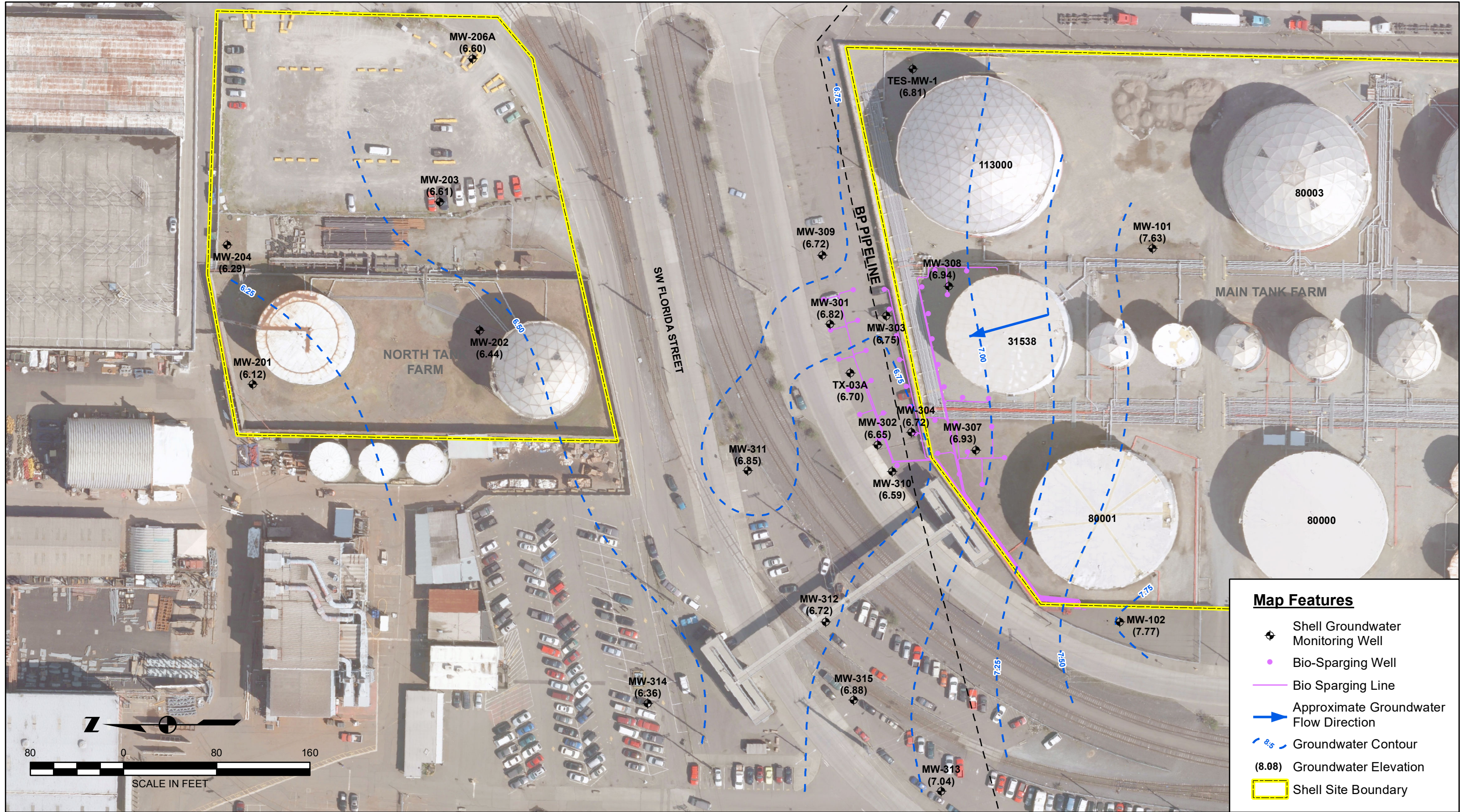
**TX-03A AREA GROUNDWATER SURFACE CONTOUR MAP – MARCH 2019**

SHELL HARBOR ISLAND TERMINAL  
ANNUAL COMPLIANCE MONITORING REPORT  
SEATTLE, WASHINGTON



**FIGURE 3**





Source: USGS, 2012.

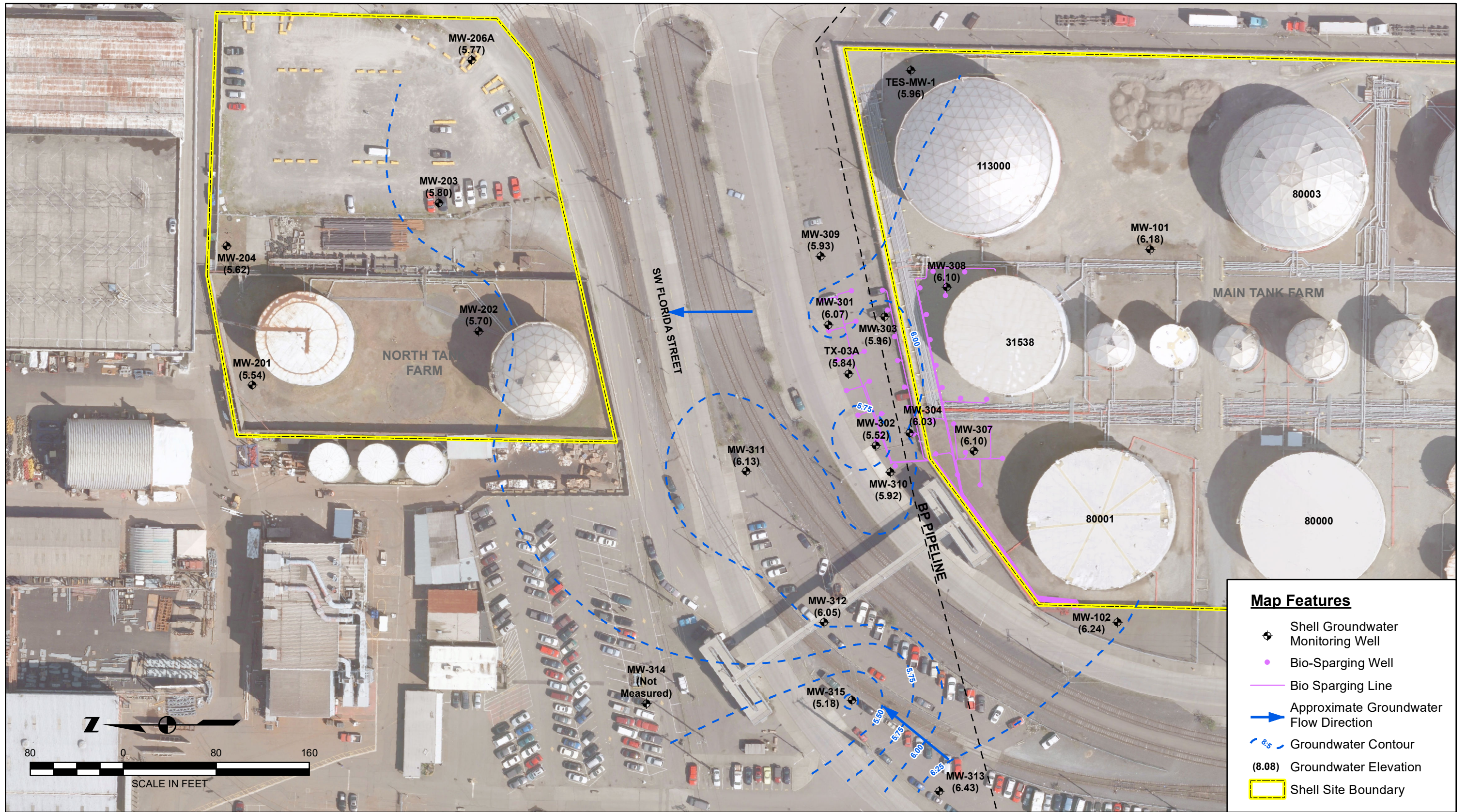
**TX-03A AREA GROUNDWATER SURFACE CONTOUR MAP – MAY 2019**

SHELL HARBOR ISLAND TERMINAL  
ANNUAL COMPLIANCE MONITORING REPORT  
SEATTLE, WASHINGTON



**FIGURE 4**





Source: USGS, 2012.

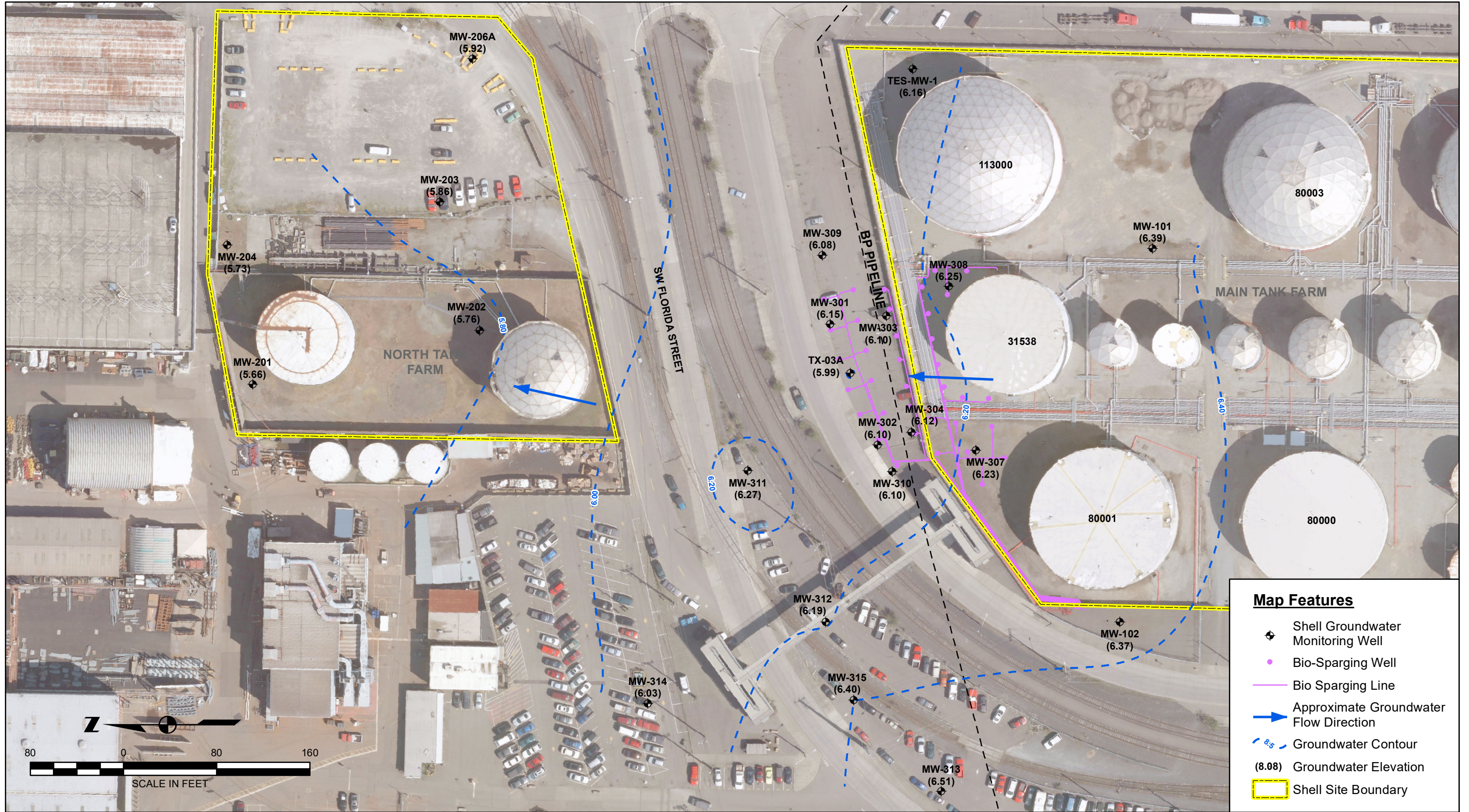
**TX-03A AREA GROUNDWATER SURFACE CONTOUR MAP – SEPTEMBER 2019**

SHELL HARBOR ISLAND TERMINAL  
ANNUAL COMPLIANCE MONITORING REPORT  
SEATTLE, WASHINGTON



**FIGURE 5**

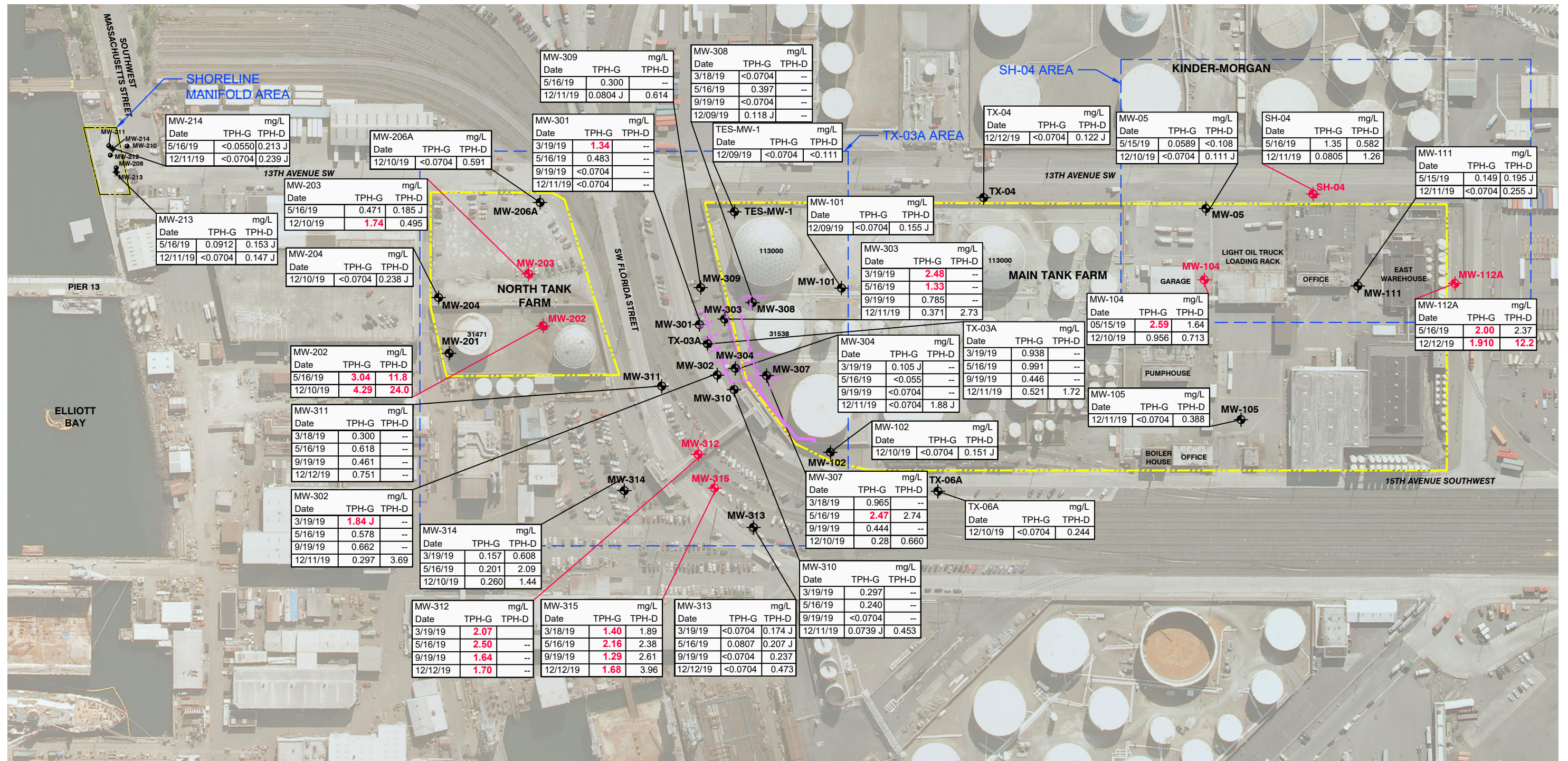




**TX-03A AREA GROUNDWATER SURFACE CONTOUR MAP – DECEMBER 2019**

SHELL HARBOR ISLAND TERMINAL  
ANNUAL COMPLIANCE MONITORING REPORT  
SEATTLE, WASHINGTON





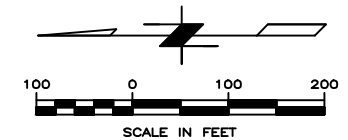
**Map Features**

- MW-212 Monitoring Well Location (Included in Current Groundwater Monitoring Program)
- MW-210 Product Recovery / Monitoring Well Location
- MW-315 Monitoring Well Location (with Most Recent Detected Concentration Greater than Cleanup Level)
- Shell Property Line

- Bio-Sparging Well Location
- Bio-Sparging Line (System start on May 25, 2017)

Analyte		TPH-G Cleanup Level = 1 mg/L
TPH-G	Gasoline	TPH-G Cleanup Level = 1 mg/L
TPH-D	Diesel	TPH-D Cleanup Level = 10 mg/L

- mg/L Milligrams per Liter
- RED** Indicates Detected Concentration Greater than Cleanup Level
- < Not Detected at or above the Method Detection Limit
- Not Analyzed
- J Reported Value is Estimated



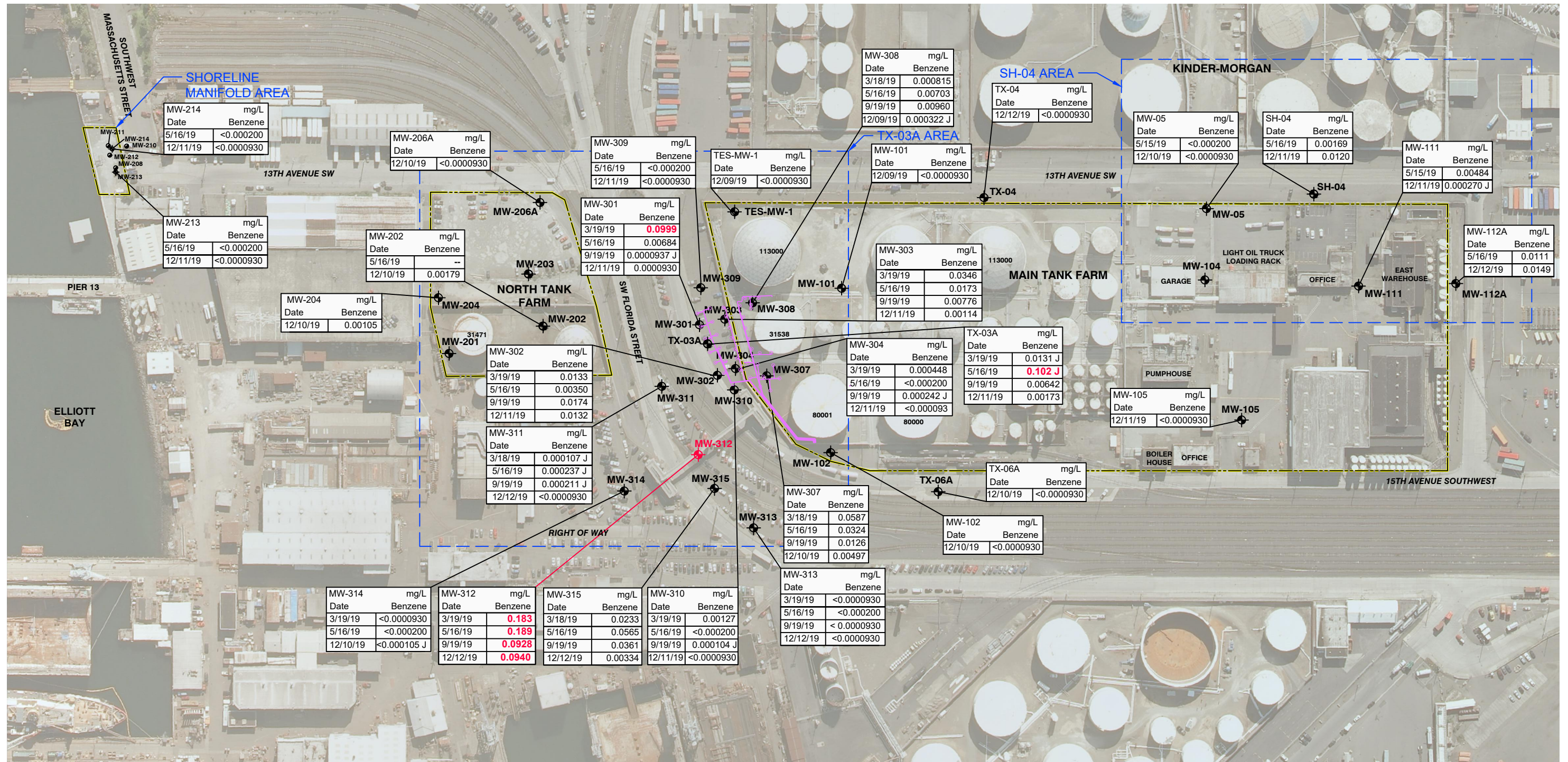
**GASOLINE AND DIESEL CONCENTRATIONS - 2019**

SHELL HARBOR ISLAND TERMINAL  
ANNUAL COMPLIANCE MONITORING REPORT  
SEATTLE, WASHINGTON



**FIGURE 7**





**Map Features**

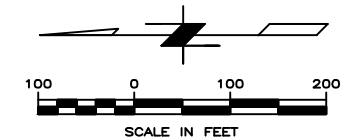
- MW-212 Monitoring Well Location (Included in Current Groundwater Monitoring Program)
- MW-210 Product Recovery / Monitoring Well Location
- MW-315 Monitoring Well Location (with Most Recent Detected Concentration Greater than Cleanup Level)
- Shell Property Line

- Bio-Sparging Well Location
- Bio-Sparging Line (System start on May 25, 2017)

Benzene Cleanup Level = 0.071 mg/L

mg/L Milligrams per Liter

- RED** Indicates detected Concentration Greater than Cleanup Level
- < Not Detected at or above the Method Detection Limit
- Not Analyzed
- J Reported Value is Estimated



**BENZENE CONCENTRATIONS - 2019**

SHELL HARBOR ISLAND TERMINAL  
ANNUAL COMPLIANCE MONITORING REPORT  
SEATTLE, WASHINGTON

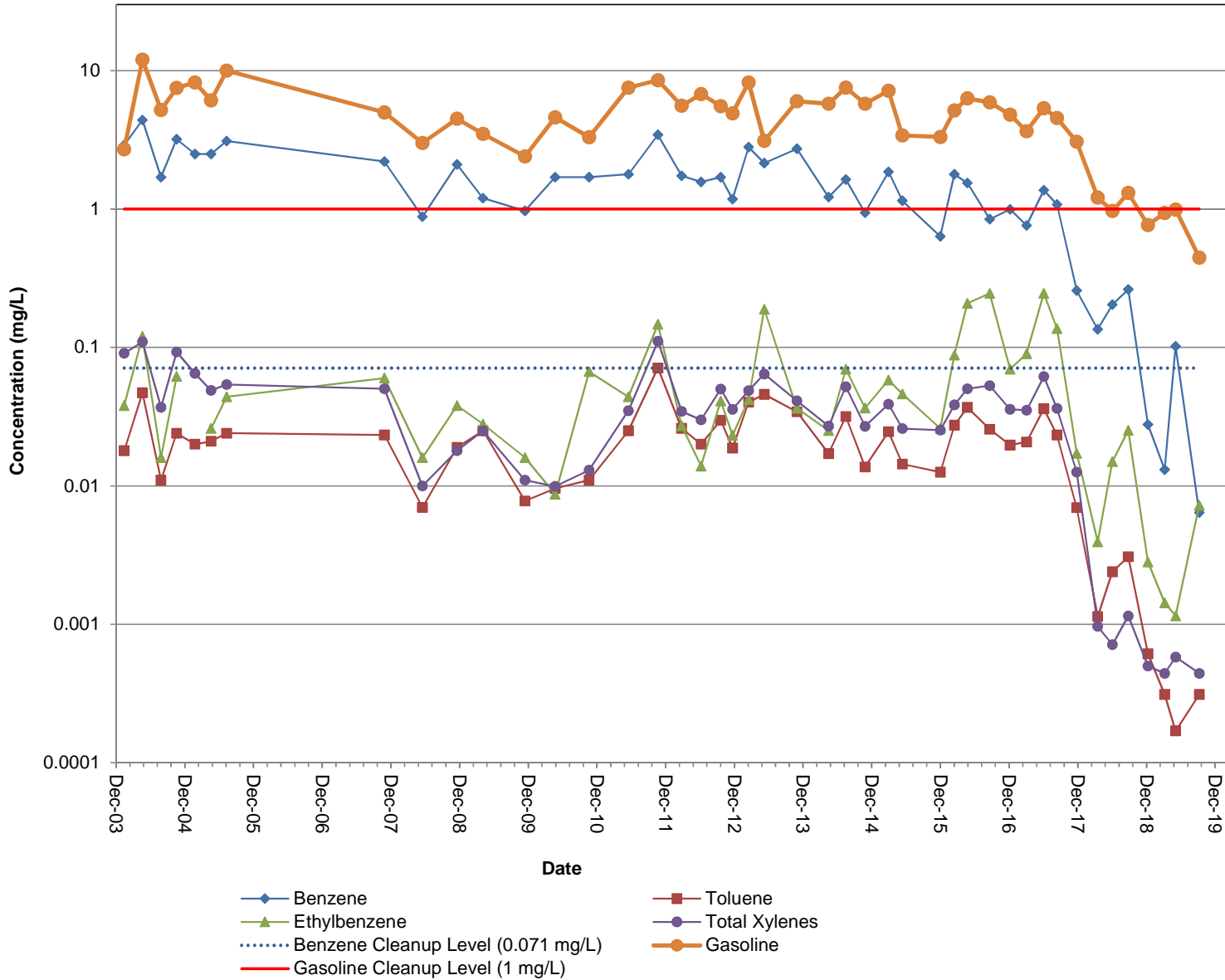


**FIGURE 8**



Figure 9: TX-03A Area Monitoring Well TX-03A BTEX and Gasoline Concentrations

Shell - Harbor Island Terminal



## **Appendix A Field Sampling Data Sheets**



**Monitoring Well Gauging Field Log- Shoreline**

Date: 1-16-18<sup>g</sup>

Job No : ~~60441070~~

SAP: ~~3547032~~

Incident No ~~300030~~

Location: 2555 13<sup>th</sup> Ave SW Seattle (Harbor Island Terminal)

Personnel: DAVE LEWIS

Well ID	Time Gauged	Depth to Water	Depth to Product	Comments
MW-208	0848	4.48	—	
MW-210	0854	6.07	5.35	.72 ft. of product / replaced sock Absorbant Sock
MW-211	0852	4.30	—	
MW-212	0850	5.56	—	replaced socks Absorbant Sock





Monitoring Well Gauging Field Log- Shoreline

Date: 2-20-19  
Job No.: ~~6044076~~ ~~62561813~~ 60595460/0901-19  
SAP: 3547032  
Incident No: 300036  
Location: 2555 13<sup>th</sup> Ave SW Seattle (Harbor Island Terminal)  
Personnel: DAVE LEWIS  
0301-19

Well ID	Time Gauged	Depth to Water	Depth to Product	Comments
MW-208	1010	3.98	—	
MW-210	1019	6.45	5.02	1.43 ft. product change sock Absorbant Sock
MW-211	1016	4.22	—	
MW-212	1014	4.32	—	Absorbant Sock

**1Q Groundwater Monitoring Program Field Form**  
 Shell Harbor Island Terminal  
 Seattle, Washington

Well ID	1st Quarter Program				Total Depth (ft bgs)	Screened Interval (ft bgs)	Comments
	Time Gauged	Depth to GW	Depth to Product	Sample Analytes			
<b>TX-03A Area - North Tank Farm</b>							
MW-201	0923	13.14	--	--	15	5.0 - 14.5	
MW-202	0918	12.95	--	--	15	5.0 - 14.5	
MW-203	0902	6.96	--	--	15	5.0 - 14.5	
MW-204	0914	10.51	--	--	15	5.0 - 14.5	
MW-206A	0907	8.86	--	--	15	5.0 - 14.5	
<b>TX-03A Area - Excluding the North Tank Farm</b>							
MW-101	1046	16.17	--	--	15	5.0 - 14.5	
MW-102	1023	7.69	--	--	15	5.0 - 14.5	
MW-301	1004	5.23	--	BTEX, Gx	15	5.0 - 15.0	
MW-302	1013	5.65	--	BTEX, Gx	15	5.0 - 15.0	
MW-303	0967	5.33	--	BTEX, Gx	15	5.0 - 15.0	
MW-304	1012	5.39	--	BTEX, Gx	15	5.0 - 15.0	
MW-307	1150	8.07	--	BTEX, Gx	15	5.0 - 15.0	
MW-308	1145	8.02	--	BTEX, Gx	15	5.0 - 15.0	
MW-309	0953	5.41	--	--	15	5.0 - 15.0	
MW-310	1019	5.28	--	BTEX, Gx	15	5.0 - 15.0	
MW-311	0947	7.63	--	BTEX, Gx	15	5.0 - 15.0	ODOR
MW-312	0942	7.23	--	BTEX, Gx	15	5.0 - 15.0	
MW-313	0933	5.87	--	BTEX, Gx, Dx	15	5.0 - 15.0	
MW-314	1515	6.92	--	BTEX, Gx, Dx	15	5.0 - 15.0	
MW-315	0937	7.43	--	BTEX, Gx, Dx	15	5.0 - 15.0	ODOR
TES-MW-1	1141	8.73	--	--	18	3.0 - 18.0	
TX-03A	1008	5.12	--	BTEX, Gx	16	6.0 - 16.0	
<b>Shoreline Manifold Area</b>							
MW-208	0825	4.45	4.94	--	16.5	5.0 - 14.5	HEAVY SHEEN
MW-210	<del>0829</del>	<del>5.96</del> 6.67	<del>6.67</del> 5.96	--	15	unknown	ODOR, SOCK REPLACED
MW-211	0846	5.34	—	--	13	5.0 - 13.0	ODOR
MW-212	0840	6.12	—	--	12	unknown	ODOR, SOCK REPLACED

**Notes:**

BTEX = benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8260B  
 ft bgs = below ground surface  
 TPH-Gx = total petroleum hydrocarbons as gasoline by NWTPH-Gx  
 TPH-Dx = total petroleum hydrocarbons as diesel by NWTPH-Dx

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190318-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>3/18/19</u>
Well I.D.: <u>MW-301</u>	Well Diameter (in.): <u>4</u> 3 4 6 8
Total Well Depth (ft.): <u>14.38</u>	Depth to Water (ft.): <u>5.23</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI PRO PLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic  Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0952      Flow Rate: 200 mL / MIN      Pump Depth: 10'

Time	Temp. ( <input checked="" type="radio"/> °C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0955	13.0	7.44	975	170	1.97	-17.1	600	5.29
0958	13.3	7.53	929	159	1.39	-25.8	1200	5.29
1001	13.3	7.54	920	149	1.15	-31.4	1800	5.29
1004	13.4	7.50	927	120	1.05	-45.4	2400	5.29
1007	13.3	7.51	929	118	1.04	-47.1	3000	5.29
1010	13.4	7.52	930	119	1.02	-48.5	3600	5.29

Did well dewater? Yes <input checked="" type="checkbox"/> No	Amount actually evacuated: <u>3.6L</u>
Sampling Time: <u>1011</u>	Sampling Date: <u>3/19/19</u>
Sample I.D.: <u>MW-301</u>	Laboratory: <u>TA</u>
Analyzed for: <input checked="" type="checkbox"/> PPHG <input checked="" type="checkbox"/> BTEX    MTBE    TPH-D    Other:	
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190318-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>3/18/19</u>
Well I.D.: <u>MW-302</u>	Well Diameter (in.): <u>A</u> 3 4 6 8 _____
Total Well Depth (ft.): <u>14.92</u>	Depth to Water (ft.): <u>5.65</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVO</u> Grade	Flow Cell Type: <u>YSI Pro Plus</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1154      Flow Rate: 200 mL/min      Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1157	14.6	7.47	1348	105	0.40	-28.8	600	5.79
1200	14.5	7.48	1334	84	0.52	-37.9	1200	5.79
1203	14.4	7.48	1328	75	0.50	-44.3	1800	5.79
1206	14.4	7.45	1322	61	0.43	-52.3	2400	5.79
1209	14.4	7.44	1321	60	0.42	-53.6	3000	5.79
1212	14.5	7.44	1321	58	0.40	-54.1	3600	5.79

Did well dewater? Yes  No       Amount actually evacuated: 3.6L

Sampling Time: 1213      Sampling Date: 3/19/19

Sample I.D.: MW-302      Laboratory: TA

Analyzed for:  TPH-G     BTEX     MTBE     TPH-D    Other: \_\_\_\_\_

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190318-LB1	Client: AECCM
Sampler: LB	Gauging Date: 3/18/19
Well I.D.: MW-303	Well Diameter (in.): 2 3 4 6 8
Total Well Depth (ft.): 14.76	Depth to Water (ft.): 5.33
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI PRO PLUS

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0923      Flow Rate: 200 mL / MIN      Pump Depth: 10'

Time	Temp. (C or F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0926	11.3	7.18	461	48	0.68	-11.9	600	5.41
0929	11.2	7.17	465	26	0.60	-26.6	1200	5.41
0932	11.1	7.18	466	21	0.61	-32.1	1800	5.41
0935	11.1	7.18	468	21	0.60	-33.4	2400	5.41
0938	11.1	7.19	470	20	0.59	-34.9	3000	5.41

Did well dewater? Yes  No       Amount actually evacuated: 3L

Sampling Time: 0939      Sampling Date: 3/19/19

Sample I.D.: MW-303      Laboratory: TA

Analyzed for: TPH-C  BTEX  MTBE  TPH-D  Other: \_\_\_\_\_

Equipment Blank I.D.: @ \_\_\_\_\_ Time \_\_\_\_\_ Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190318-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>3/18/19</u>
Well I.D.: <u>MW-304</u>	Well Diameter (in.): <u>3</u> 4 6 8
Total Well Depth (ft.): <u>14.73</u>	Depth to Water (ft.): <u>5.39</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI <del>535</del> PRO PLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1052      Flow Rate: 200 ML / MIN      Pump Depth: 10'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>ML</u> )	Depth to Water (ft.)
1055	11.4	7.47	153	20	0.95	-16.3	600	5.44
1058	11.6	7.47	152	24	0.78	-21.3	1200	5.44
1101	11.7	7.49	153	23	0.73	-28.4	1800	5.44
1104	11.8	7.52	154	23	0.72	-29.9	2400	5.44
1107	11.8	7.53	155	24	0.71	-30.3	3000	5.44

Did well dewater? Yes NO      Amount actually evacuated: 3L  
 Sampling Time: 1108      Sampling Date: 3/19/19  
 Sample I.D.: MW-304      Laboratory: TA  
 Analyzed for: TPH-G BTEX MTBE TPH-D      Other:  
 Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190318-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>3/18/19</u>
Well I.D.: <u>MW-307</u>	Well Diameter (in.): <u>2</u> 3 4 6 8 _____
Total Well Depth (ft.): <u>17.35</u>	Depth to Water (ft.): <u>8.07</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVO</u> Grade	Flow Cell Type: <u>YSE PRO PLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1157      Flow Rate: 200 ML / MIN      Pump Depth: 10'

Time	Temp. ( <u>°C</u> or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1200	14.0	6.72	526	118	1.15	-13.1	600	8.15
1203	14.2	6.75	525	43	0.98	-32.1	1200	8.15
1206	14.4	6.83	524	30	0.91	-50.7	1800	8.15
1209	14.4	6.83	529	21	0.87	-60.6	2400	8.15
1212	14.4	6.81	530	20	0.86	-61.9	3000	8.15
1215	14.3	6.79	530	20	0.85	-62.3	3600	8.15

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: <u>3.6L</u>
Sampling Time: <u>1216</u>	Sampling Date: <u>3/18/19</u>
Sample I.D.: <u>MW-307</u>	Laboratory: <u>TA</u>
Analyzed for: <u>TPH-G</u> <u>BTEX</u> MTBE TPH-D      Other:	
Equipment Blank I.D.: _____ @ _____	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>140318-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>3/18/19</u>
Well I.D.: <u>MW-308</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>17.38</u>	Depth to Water (ft.): <u>8.02</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVO</u> Grade	Flow Cell Type: <u>YSE PRO PLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1229      Flow Rate: 200 ML/MIN      Pump Depth: 12'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1232	12.3	6.84	910	14	0.70	-29.0	600	8.08
1235	12.4	6.89	914	22	0.72	-44.0	1200	8.08
1238	12.5	6.97	913	16	0.66	-58.8	1800	8.08
1241	12.5	6.99	912	15	0.64	-60.1	2400	8.08
1244	12.5	7.03	912	15	0.63	-61.3	3000	8.08

Did well dewater? Yes  No       Amount actually evacuated: 3L

Sampling Time: 1245      Sampling Date: 3/18/19

Sample I.D.: MW-308      Laboratory: TA

Analyzed for:  TPH-G  BTEX  MTBE  TPH-D      Other: \_\_\_\_\_

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_



## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190318-LB1	Client: AECOM
Sampler: LB	Gauging Date: 3/18/19
Well I.D.: MW-310	Well Diameter (in.): ② 3 4 6 8
Total Well Depth (ft.): 14.66	Depth to Water (ft.): 5.28
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI PRO PLUS

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1123      Flow Rate: 200 mL / MIN      Pump Depth: 10'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1126	14.2	6.78	804	45	<del>1.89</del> -0.89	35.2	600	5.37
1129	14.3	6.99	805	61	1.72	13.3	1200	5.37
1132	14.4	7.06	805	56	1.46	-8.6	1800	5.37
1135	14.4	7.14	805	39	1.37	-12.0	2400	5.37
1138	14.4	7.17	806	29	1.28	-19.1	3000	5.37
1141	14.5	7.20	805	28	1.26	-20.3	3600	5.37
1144	14.4	7.21	804	28	1.25	-21.1	4200	5.37

Did well dewater? Yes  No       Amount actually evacuated: 4.2L

Sampling Time: 1145      Sampling Date: 3/19/19

Sample I.D.: MW-310      Laboratory: TA

Analyzed for: TPH-G) BTEX) MTBE TPH-D      Other:

Equipment Blank I.D.: @      Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190218 -LB1</u>	Client: <u>AEZOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>3/18/19</u>
Well I.D.: <u>MW-311</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>1498</u>	Depth to Water (ft.): <u>7.63</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI PRO PLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1359      Flow Rate: 200 mL / MIN      Pump Depth: 11'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1402	15.1	6.52	522	4	0.42	-32.9	600	7.69
1405	14.8	6.61	529	3	0.34	-58.4	1200	7.69
1408	14.9	6.65	529	3	0.33	-71.3	1800	7.69
1411	14.8	6.69	530	3	0.33	-72.4	2400	7.69
1414	14.8	6.71	530	3	0.32	-73.9	3000	7.69

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: <u>3L</u>
Sampling Time: <u>1415</u>	Sampling Date: <u>3/18/19</u>
Sample I.D.: <u>MW-311</u>	Laboratory: <u>TA</u>
Analyzed for: <input checked="" type="checkbox"/> TPH-G <input checked="" type="checkbox"/> BTEX <input type="checkbox"/> MTBE <input type="checkbox"/> TPH-D    Other: _____	
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190318-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>3/18/19</u>
Well I.D.: <u>MW-312</u>	Well Diameter (in.): <u>4</u> 3 4 6 8 _____
Total Well Depth (ft.): <u>14.76</u>	Depth to Water (ft.): <u>7.23</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVO</u> Grade	Flow Cell Type: <u>YSI PRO PLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0850      Flow Rate: 200 mL / MIN      Pump Depth: 11'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
0853	12.4	7.62	553	2	0.95	-7.5	600	7.29
0856	12.5	7.68	557	2	0.53	-38.6	1200	7.29
0859	12.5	7.71	556	2	0.59	-43.6	1800	7.29
0902	12.6	7.74	555	2	0.60	-39.8	2400	7.29
0905	12.6	7.73	552	3	0.59	-40.4	3000	7.29
0908	12.6	7.74	553	3	0.58	-41.0	3600	7.29

Did well dewater? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: <u>3.6L</u>
Sampling Time: <u>0909</u>	Sampling Date: <u>3/19/19</u>
Sample I.D.: <u>MW-312</u>	Laboratory: <u>TA</u>
Analyzed for: <u>TPH-G</u> <u>BTEX</u> MTBE TPH-D	Other:
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190318-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>3/18/19</u>
Well I.D.: <u>MW-313</u>	Well Diameter (in.): <u>3</u> 4 6 8
Total Well Depth (ft.): <u>13.26</u>	Depth to Water (ft.): <u>5.87</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YST PRO PLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0818      Flow Rate: 200 mL/min      Pump Depth: 10'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
0821	11.0	7.62	669	34	1.26	-8.8	600	5.91
0824	11.0	7.64	677	12	6.95	-15.1	1200	5.91
0827	11.0	7.71	678	6	6.83	-20.9	1800	5.91
0830	11.1	7.75	684	6	6.75	-28.6	2400	5.91
0833	11.1	7.78	685	6	6.74	-29.8	3000	5.91
0836	11.1	7.81	686	6	0.73	-30.4	3600	5.91

Did well dewater? Yes <u>NO</u>	Amount actually evacuated: <u>3.6L</u>
Sampling Time: <u>0837</u>	Sampling Date: <u>3/19/19</u>
Sample I.D.: <u>MW-313</u>	Laboratory: <u>TA</u>
Analyzed for: <u>TPH-G</u> <u>BTEX</u> <u>MTBE</u> <u>TPH-D</u>	Other:
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190318-121</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>3/18/19</u>
Well I.D.: <u>MW-314</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>14.79</u>	Depth to Water (ft.): <u>6.92</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSL PRO PLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0745      Flow Rate: 200 mL / MIN      Pump Depth: 11'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0748	11.5	6.41	556	89	1.74	-6.9	600	6.96
0751	11.4	6.94	560	60	1.14	-18.9	1200	6.96
0754	11.2	7.04	563	55	1.11	-25.6	1800	6.96
0757	11.3	7.11	564	51	0.99	-30.5	2400	6.96
0800	11.4	7.12	565	50	0.98	-31.6	3000	6.96
0803	11.4	7.12	564	48	0.97	-32.4	3600	6.96

Did well dewater? Yes <u>NO</u>	Amount actually evacuated: <u>3161</u>
Sampling Time: <u>0804</u>	Sampling Date: <u>3/19/19</u>
Sample I.D.: <u>MW-314</u>	Laboratory: <u>TA</u>
Analyzed for: <u>TPH-G</u> <u>BTEX</u> MTBE <u>TPH-D</u>	Other:
Equipment Blank I.D.: @ _____	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190318-LB1	Client: AECOM
Sampler: LB	Gauging Date: 3/18/19
Well I.D.: MW-315	Well Diameter (in.): ② 3 4 6 8
Total Well Depth (ft.): 465	Depth to Water (ft.): 7.43
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI PRO PLUS

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1322      Flow Rate: 200 mL / MIN      Pump Depth: 11'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or μS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1325	14.4	6.42	504	5	0.90	-11.9	600	7.49
1328	14.4	6.69	502	3	0.85	-28.3	1200	7.49
1331	14.8	6.67	500	4	0.84	-45.8	1800	7.49
1334	14.7	6.71	499	4	0.83	-63.1	2400	7.49
1337	14.7	6.74	497	3	0.82	-64.9	3000	7.49
1340	14.7	6.74	497	3	0.81	-66.4	3600	7.49

Did well dewater? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: 3.6L
Sampling Time: 1341	Sampling Date: 3/18/19
Sample I.D.: MW-315	Laboratory: TA
Analyzed for: TPH-G    BTEX    MTBE    TPH-D    Other:	
Equipment Blank I.D.: @ _____ Time	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190318-LB1	Client: AECOM
Sampler: LB	Gauging Date: 3/18/19
Well I.D.: TX-03A	Well Diameter (in.): 2 3 4 6 8
Total Well Depth (ft.): 14.77	Depth to Water (ft.): 5.12
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI PRO Plus

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1024      Flow Rate: 200 mL / MIN      Pump Depth: 10'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1027	13.6	7.49	542	8	1.19	-10.7	600	5.21
1030	13.8	7.52	545	7	0.96	-41.9	1200	5.21
1033	13.7	7.55	548	8	0.50	-52.3	1800	5.21
1036	13.8	7.53	550	8	0.48	-64.1	2400	5.21
1039	13.8	7.53	551	7	0.47	-66.4	3000	5.21
1042	13.9	7.55	550	8	0.45	-67.1	3600	5.21

Did well dewater? Yes  NO

Amount actually evacuated: 3.6L

Sampling Time: 1043      Sampling Date: 3/19/19

Sample I.D.: TX-03A      Laboratory: TA

Analyzed for:  TPH-G     BTEX    MTBE    TPH-D      Other:

Equipment Blank I.D.: @      Duplicate I.D.:



Monitoring Well Gauging Field Log- Shoreline

Date: 4-10-19  
Job No.: 60411976-60595460.0301.19  
SAP: 3547032  
Incident No: 300036  
Location: 2555 13<sup>th</sup> Ave SW Seattle (Harbor Island Terminal)  
Personnel: DAVE LEWIS

Well ID	Time Gauged	Depth to Water	Depth to Product	Comments
MW-208	0814	4.66	—	
MW-210	0816	5.24	—	change sock Absorbant Sock
MW-211	0817	4.98	—	
MW-212	0820	<del>6.78</del> 5.78	<del>5.45</del> 5.75	103 ft. changed sock product Absorbant Sock



**2Q Groundwater Monitoring Program Field Form**  
 Shell Harbor Island Terminal  
 Seattle, Washington

Well ID	2nd Quarter Program				Total Depth (ft bgs)	Screened Interval (ft bgs)	Comments
	Time Gauged	Depth to GW	Depth to Product	Sample Analytes			
<b>TX-03A Area - North Tank Farm</b>							
MW-201	0900	14.06	--	--	15	5.0 - 14.5	
MW-202	0854	13.42	--	Gx, Dx	15	5.0 - 14.5	
MW-203	0833	7.41 7.38	--	Gx, Dx	15	5.0 - 14.5	
MW-204	0845	10.98	--	--	15	5.0 - 14.5	
MW-206A	0828	9.30	--	--	15	5.0 - 14.5	
<b>TX-03A Area - Excluding the North Tank Farm</b>							
MW-101	1121	10.58	--	--	15	5.0 - 14.5	
MW-102	1024	7.83	--	--	15	5.0 - 14.5	
MW-301	0951	5.74	--	BTEX, Gx	15	5.0 - 15.0	
MW-302	1006	6.20	--	BTEX, Gx	15	5.0 - 15.0	
MW-303	0947	5.89	--	BTEX, Gx	15	5.0 - 15.0	
MW-304	1011	5.98	--	BTEX, Gx	15	5.0 - 15.0	
MW-307	1130	8.69	--	BTEX, Gx, Dx	15	5.0 - 15.0	
MW-308	1135	8.65	--	BTEX, Gx	15	5.0 - 15.0	
MW-309	0943	5.95	--	BTEX, Gx	15	5.0 - 15.0	
MW-310	1018	6.92	--	BTEX, Gx	15	5.0 - 15.0	
MW-311	0931	8.06	--	BTEX, Gx	15	5.0 - 15.0	ODOR
MW-312	0925	7.59	--	BTEX, Gx	15	5.0 - 15.0	
MW-313	0912	6.21	--	BTEX, Gx, Dx	15	5.0 - 15.0	
MW-314	0937	7.13	--	BTEX, Gx, Dx	15	5.0 - 15.0	
MW-315	0918	7.73	--	BTEX, Gx, Dx	15	5.0 - 15.0	ODOR
TES-MW-1	1126	9.34	--	--	18	3.0 - 18.0	
TX-03A	0957	5.56	--	BTEX, Gx	16	6.0 - 16.0	
<b>SH-04 Area</b>							
MW-05	0808	6.69	--	BTEX, Gx, Dx	15	5.0 - 15.0	
MW-111	0750	4.97	--	BTEX, Gx, Dx	15	5.0 - 14.5	
MW-112A	0736	6.39	--	BTEX, Gx, Dx	15	5.5 - 15.0	
SH-04	0930	9.72	--	BTEX, Gx, Dx	16	6.0 - 16.0	
MW-104	0758	5.97	--	Total lead, Gx, Dx	15	5.0 - 14.5	
<b>Shoreline Manifold Area</b>							
MW-208	1054	4.91	--	--	16.5	5.0 - 14.5	
MW-210	1015	6.22	7.05	--	15	unknown	
MW-211	1111	5.38	--	--	13	5.0 - 13.0	
MW-212	1100	6.10	6.13	--	12	unknown	
MW-213	1050	8.76	--	BTEX, Gx, Dx, PAHs	30	30.0 - 40.0	
MW-214	1106	7.81	--	BTEX, Gx, Dx, PAHs	30	30.0 - 40.0	

**Notes:**

BTEX = benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8260B

ft bgs = below ground surface

PAHs = polycyclic aromatic hydrocarbons by EPA Method 8270C-SIM

Total Lead by EPA Method 6020

TPH-Gx = total petroleum hydrocarbons as gasoline by NWTPH-Gx

TPH-Dx = total petroleum hydrocarbons as diesel by NWTPH-Dx



### Monitoring Well Gauging Field Log - Shoreline

Date:  
Job No: 60595460  
SAP: 3547032  
Incident No 300036  
Location: 2555 13th Ave SW, Seattle (Harbor Island Terminal)  
Personnel:

Well ID	Time Gauged	Depth to Water	Depth to Product	Comments
MW-208	1054	4.19	—	
MW-210	1115	6.22	7.05	Absorbant sock
MW-211	1111	5.38	—	
MW-212	1100	6.10	6.13	Absorbant sock

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190515-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>5/15/19</u>
Well I.D.: <u>MW-202</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>21.50</u>	Depth to Water (ft.): <u>13.42</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSE PRO PLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_

Start Purge Time: 1106      Flow Rate: 200 mL/MIN      Pump Depth: 18'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
1109	12.3	6.51	263	74	0.81	-58.3	600	13.49
1112	12.4	6.48	264	70	0.53	-88.6	1200	13.49
1115	12.5	6.50	265	76	0.55	-90.4	1800	13.49
1118	12.5	6.51	266	72	0.44	-91.3	2400	13.49
1121	12.6	6.53	266	71	0.48	-91.9	3000	13.49

Did well dewater? Yes       Amount actually evacuated: 3L

Sampling Time: 1122      Sampling Date: 5/16/19

Sample I.D.: MW-202      Laboratory: TA

Analyzed for: TPH-G BTEX MTBE TPH-D      Other: \_\_\_\_\_

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-2B1	Client: AELOM
Sampler: HP	Gauging Date: 5/16/19
Well I.D.: mw-203	Well Diameter (in.): <input checked="" type="radio"/> 2   3   4   6   8   ___
Total Well Depth (ft.): 14.06	Depth to Water (ft.): 7.38
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="radio"/> PVC   Grade	Flow Cell Type: Ysi 556

Purge Method: 2" Grundfos Pump      ~~Peristaltic Pump~~      Bladder Pump  
 Sampling Method: ~~Dedicated Tubing~~      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1335      Flow Rate: 200 ml/min      Pump Depth: 11'

Time	Temp. ( <input checked="" type="radio"/> or °F)	pH	Cond. (mS/cm or <input checked="" type="radio"/> μS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <input checked="" type="radio"/> ml)	Depth to Water (ft.)
1338	10.57	5.59	352	78	1.75	2	600	7.49
1341	10.69	5.57	352	82	1.80	0	1200	7.52
1344	10.78	5.53	352	92	1.84	0	1800	7.54
1347	10.82	5.52	352	96	1.86	-1	2400	7.55
1350	10.89	5.52	353	99	1.89	-1	3000	7.55

Did well dewater? Yes <input checked="" type="radio"/> No	Amount actually evacuated: 3.0L
Sampling Time: 1352	Sampling Date: 5/16/19
Sample I.D.: mw-203	Laboratory: TA
Analyzed for: TPH-G   BTEX   MTBE   TPH-D	<input checked="" type="radio"/> Other: see C.O.C.
Equipment Blank I.D.: @ <small>Time</small>	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: HP	Gauging Date: 5/16/19
Well I.D.: mw-301	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 14.60	Depth to Water (ft.): 5.74
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="checkbox"/> VC Grade	Flow Cell Type: Yes 556

Purge Method: 2" Grundfos Pump      ~~Peristaltic Pump~~      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1029      Flow Rate: 200 ml/min      Pump Depth: 10'

Time	Temp. ( <del>°C</del> or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>mL</del> )	Depth to Water (ft.)
1032	12.33	6.13	694	71000	1.22	-33	600	5.82
1035	12.43	6.04	706	588	0.80	-43	1200	5.82
1038	12.36	6.07	707	196	0.77	-46	1800	5.82
1041	12.34	6.09	700	114	0.73	-47	2400	5.82
1044	12.33	6.10	695	99	0.71	-47	3000	5.82
1047	12.32	6.10	694	102	0.70	-50	3600	5.82
1050	12.30	6.11	693	97	0.71	-52	4200	5.82

Did well dewater? Yes <input checked="" type="checkbox"/> No	Amount actually evacuated: 4.2 L
Sampling Time: 1052	Sampling Date: 5/16/19
Sample I.D.: mw-301	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	<input checked="" type="checkbox"/> Other: See C.O.C.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-L01	Client: AECOM
Sampler: HF	Gauging Date: 5/16/19
Well I.D.: MW-302	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 14.95	Depth to Water (ft.): 6.20
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="checkbox"/> Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      ~~Peristaltic Pump~~      Bladder Pump  
 Sampling Method: ~~Dedicated Tubing~~      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1200      Flow Rate: 200 ml/min      Pump Depth: 11'

Time	Temp. ( <input checked="" type="radio"/> or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>ml</del> )	Depth to Water (ft.)
1203	12.88	5.94	681	72	1.84	-20	600	6.35
1206	12.61	5.61	670	82	0.75	-32	1200	6.35
1209	12.78	5.77	615	66	0.74	-46	1800	6.35
1212	12.86	5.80	597	46	0.73	-51	2400	6.37
1215	12.87	5.81	587	45	0.70	-54	3000	6.37
1218	12.83	5.81	589	43	0.70	-53	3600	6.37

Did well dewater? Yes       Amount actually evacuated: 3.6 L

Sampling Time: 1220      Sampling Date: 5/16/19

Sample I.D.: MW-302      Laboratory: TA

Analyzed for: TPH-G BTEX MTBE TPH-D      ~~Other~~ see C.O.C.

Equipment Blank I.D.: @ Time      Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: HP	Gauging Date: 5/16/19
Well I.D.: MW-303	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 14.66	Depth to Water (ft.): 5.89
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>NO</u> Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      ~~Peristaltic Pump~~      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1303      Flow Rate: 200 ml/min      Pump Depth: 10'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>ml</u> )	Depth to Water (ft.)
1306	11.18	5.78	511	21	3.84	49	600	5.95
1309	10.52	5.37	565	51	2.37	7	1200	5.96
1312	10.51	5.41	580	32	2.20	-3	1800	5.96
1315	10.50	5.52	584	31	1.89	-14	2400	5.96
1318	10.48	5.54	589	30	1.82	-16	3000	5.96
1321	10.49	5.56	590	29	1.80	-19	3600	5.96

Did well dewater? Yes <u>NO</u>	Amount actually evacuated: 3.6 L
Sampling Time: 1323	Sampling Date: 5/16/19
Sample I.D.: MW-303	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	<u>Other</u> : See C.O.C.
Equipment Blank I.D.: @ Time	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: HP	Gauging Date: 5/16/19
Well I.D.: MW-304	Well Diameter (in.): <input checked="" type="radio"/> 2 3 4 6 8
Total Well Depth (ft.): 14.66	Depth to Water (ft.): 5.98
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="radio"/> VC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      ~~Peristaltic Pump~~      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1231      Flow Rate: 200 ml/min      Pump Depth: 10'

Time	Temp. ( <input checked="" type="radio"/> or °F)	pH	Cond. (mS/cm or <input checked="" type="radio"/> µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <input checked="" type="radio"/> mL)	Depth to Water (ft.)
1234	10.96	5.13	392	24	1.58	13	600	6.04
1237	10.92	5.01	380	18	1.29	26	1200	6.04
1240	10.88	4.92	377	12	1.33	30	1800	6.04
1243	10.80	4.81	368	10	1.25	33	2400	6.04
1246	10.88	4.81	367	9	1.26	35	3000	6.06
1249	10.89	4.82	367	9	1.27	36	3600	6.06

Did well dewater? Yes <input checked="" type="radio"/>	Amount actually evacuated: 3.6 L
Sampling Time: 1251	Sampling Date: 5/16/19
Sample I.D.: MW-304	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	<input checked="" type="radio"/> Other: see C.O.C.
Equipment Blank I.D.: @ Time	Duplicate I.D.:



## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190515-LB</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>5/15/19</u>
Well I.D.: <u>MW-307</u>	Well Diameter (in.): <u>Ø</u> 3 4 6 8 <u>    </u>
Total Well Depth (ft.): <u>17.44</u>	Depth to Water (ft.): <u>8.69</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>RVC</u> Grade	Flow Cell Type: <u>YSE PRO PLY</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1248      Flow Rate: 200 mL / MIN      Pump Depth: 16'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1251	14.1	6.64	297	10	0.86	-71.8	600	8.73
1254	14.2	6.73	318	6	0.80	-82.4	1200	8.73
1257	14.2	6.74	317	6	0.78	-84.6	1800	8.73
1300	14.2	6.78	316	5	0.74	-88.3	2400	8.73
1303	14.1	6.81	315	4	0.73	-89.1	3000	8.73
1306	14.1	6.82	315	4	0.72	-90.6	3600	8.73

Did well dewater? Yes <input checked="" type="checkbox"/>	Amount actually evacuated: <u>36L</u>
Sampling Time: <u>1307</u>	Sampling Date: <u>5/16/19</u>
Sample I.D.: <u>MW-307</u>	Laboratory: <u>TA</u>
Analyzed for: <u>TPH-C</u> <u>BTEX</u> MTBE <u>TPH-D</u>	Other:
Equipment Blank I.D.: <u>        </u> @ <u>        </u> Time	Duplicate I.D.: <u>        </u>

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: ACCOM
Sampler: LB	Gauging Date: 5/15/19
Well I.D.: MW-308	Well Diameter (in.): <input checked="" type="radio"/> 2    3    4    6    8    ___
Total Well Depth (ft.): 17.36	Depth to Water (ft.): 8.65
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="radio"/> PVC <input type="radio"/> Grade	Flow Cell Type: YSE PRO PLUS

Purge Method: 2" Grundfos Pump                      Peristaltic Pump                      Bladder Pump  
 Sampling Method: Dedicated Tubing                      New Tubing                      Other \_\_\_\_\_  
 Start Purge Time: 1219                      Flow Rate: 200 mL/Min                      Pump Depth: 10'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1222	13.3	6.44	315	18	0.37	-99.8	600	8.71
1225	13.1	6.54	315	10	0.34	-104.6	1200	8.71
1228	13.1	6.81	313	10	0.31	-105.9	1800	8.71
1231	13.1	6.79	312	9	0.30	-106.8	2400	8.71
1234	13.2	6.78	311	10	0.29	-107.3	3000	8.71

Did well dewater? Yes <input checked="" type="radio"/> No	Amount actually evacuated: 3L
Sampling Time: 1235	Sampling Date: 5/16/19
Sample I.D.: MW-308	Laboratory: TA
Analyzed for: <input checked="" type="radio"/> TPH-G <input checked="" type="radio"/> BTEX    MTBE    TPH-D    Other:	
Equipment Blank I.D.: @ Time	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: HP	Gauging Date: 5/16/19
Well I.D.: MW-309	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 14.62	Depth to Water (ft.): 5.95
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>NO</u> Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      ~~Peristaltic Pump~~      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1000      Flow Rate: 200 ml/min      Pump Depth: 11'

Time	Temp. ( <del>C</del> or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>ml</del> )	Depth to Water (ft.)
1003	11.54	6.44	581	<del>22</del> 22	0.64	-59	600	6.02
1006	11.41	6.26	589	46	0.63	-97	1200	6.02
1009	11.35	6.14	592	57	0.63	-101	1800	6.04
1012	11.45	6.15	591	60	0.59	-106	2400	6.04
1015	11.48	6.16	588	62	0.57	-109	3000	6.05

Did well dewater? Yes <u>NO</u>	Amount actually evacuated: 3.0L
Sampling Time: 1017	Sampling Date: 5/16/19
Sample I.D.: MW-309	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: See C.O.C.
Equipment Blank I.D.: @ <small>Time</small>	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: HP	Gauging Date: 5/16/19
Well I.D.: MW-310	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 14.60	Depth to Water (ft.): 6.92
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVT</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      ~~Peristaltic Pump~~      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1130      Flow Rate: 200 mL/min      Pump Depth: 11'

Time	Temp. ( <del>°C</del> or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>ml</del> )	Depth to Water (ft.)
1133	12.56	5.56	675	116	1.03	24	600	7.03
1136	12.46	4.57	685	94	0.87	58	1200	7.03
1139	12.38	4.48	694	79	0.90	81	1800	7.03
1142	12.36	4.49	694	76	1.14	85	2400	7.03
1145	12.33	4.50	696	75	1.10	86	3000	7.03
1148	12.36	4.51	695	72	1.09	87	3600	7.03

Did well dewater? Yes <u>No</u>	Amount actually evacuated: <u>3.6L</u>
Sampling Time: <u>1150</u>	Sampling Date: <u>5/16/19</u>
Sample I.D.: <u>MW-310</u>	Laboratory: <u>TA</u>
Analyzed for: TPH-G BTEX MTBE TPH-D	<u>Other</u> <u>see C.O.C.</u>
Equipment Blank I.D.: @ <small>Time</small>	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190515-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>5/15/19</u>
Well I.D.: <u>MW-311</u>	Well Diameter (in.): <u>2</u> 3 4 6 8 _____
Total Well Depth (ft.): <u>14.91</u>	Depth to Water (ft.): <u>8.06</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI PROPLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump       Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1030      Flow Rate: 200 mL / MIN      Pump Depth: 12'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>ML</u> )	Depth to Water (ft.)
1033	14.1	6.89	531	8	0.17	-53.2	600	8.10
1036	14.2	6.74	524	7	0.14	-62.3	1200	8.10
1039	14.3	6.78	520	6	0.11	-69.8	1800	8.10
1042	14.3	6.80	514	6	0.10	-70.8	2400	8.10
1045	14.3	6.82	514	5	0.10	-71.4	3000	8.10

Did well dewater? Yes  No       Amount actually evacuated: 3L

Sampling Time: 1046      Sampling Date: 5/16/19

Sample I.D.: MW-311      Laboratory: TA

Analyzed for: TPH-D BTEX MTBE TPH-D      Other:

Equipment Blank I.D.: @ Time      Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: LB	Gauging Date: 5/15/19
Well I.D.: MW-312	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 14.81	Depth to Water (ft.): 7.59
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="checkbox"/> Grade	Flow Cell Type: YSI PRO PLUS

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0851      Flow Rate: 200 mL/MIN      Pump Depth: 12'

Time	Temp. ( <del>C</del> or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>ml</del> )	Depth to Water (ft.)
0854	13.9	6.55	528	5	0.75	-88.3	600	7.63
0857	13.9	6.57	527	3	0.70	-91.0	1200	7.63
0900	13.8	6.63	526	2	0.69	-99.3	1800	7.63
0903	13.8	6.68	525	2	0.68	-100.4	2400	7.63
0906	13.8	6.70	524	2	0.67	-101.9	3000	7.63

Did well dewater? Yes  No      Amount actually evacuated: 31

Sampling Time: 0907      Sampling Date: 5/16/19

Sample I.D.: MW-312      Laboratory: TA

Analyzed for:  TPH-C     BTEX    MTBE    TPH-D      Other: \_\_\_\_\_

Equipment Blank I.D.: @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190515-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>5/15/19</u>
Well I.D.: <u>MW-313</u>	Well Diameter (in.): <u>2</u> 3 4 6 8 _____
Total Well Depth (ft.): <u>13.68</u>	Depth to Water (ft.): <u>6.21</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVO</u> Grade	Flow Cell Type: <u>YSI PRO PLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0957      Flow Rate: 200 mL / MIN      Pump Depth: 10'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>ML</u> )	Depth to Water (ft.)
1000	14.6	7.03	819	28	0.58	-14.6	600	6.29
1003	14.5	7.02	811	23	0.55	-25.3	1200	6.29
1006	14.5	7.04	787	13	0.50	-30.8	1800	6.29
1009	14.5	7.03	783	11	0.45	-37.9	2400	6.29
1012	14.4	7.04	782	11	0.44	-38.6	3000	6.29
1015	14.5	7.05	781	10	0.42	-39.1	3600	6.29

Did well dewater? Yes  No       Amount actually evacuated: 3.6L

Sampling Time: 1016      Sampling Date: 5/16/19

Sample I.D.: MW-313      Laboratory: TA

Analyzed for: TPH-G BTEX MTBE TPH-D      Other: \_\_\_\_\_

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: HP	Gauging Date: 5/16/19
Well I.D.: MW-314	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 14.78	Depth to Water (ft.): 7.13
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>NO</u> Grade	Flow Cell Type: TSI 556

Purge Method: 2" Grundfos Pump      ~~Peristaltic Pump~~      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0925      Flow Rate: 200 ml/min      Pump Depth: 11'

Time	Temp. ( <del>C</del> or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>ml</del> )	Depth to Water (ft.)
0928	11.15	6.41	699	155	2.93	-26	600	7.14
0931	10.97	6.24	702	82	1.30	-41	1200	7.14
0934	10.97	6.20	710	78	0.95	-54	1800	7.14
0937	10.99	6.24	711	86	0.80	-57	2400	7.14
0940	11.00	6.25	713	83	0.75	-59	3000	7.14
0943	11.01	6.27	714	79	0.77	-61	3600	7.15

Did well dewater? Yes <u>NO</u>	Amount actually evacuated: 3.6 L
Sampling Time: 0945	Sampling Date: 5/16/19
Sample I.D.: MW-314	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	<u>Other</u> See C.O.C.
Equipment Blank I.D.: @ <small>Time</small>	Duplicate I.D.:



## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: LB	Gauging Date: 5/15/19
Well I.D.: MW-315	Well Diameter (in.): <input checked="" type="radio"/> 3    4    6    8    _____
Total Well Depth (ft.): 14.63	Depth to Water (ft.): 7.73
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI PPG PLUS

Purge Method: 2" Grundfos Pump                      Peristaltic Pump                      Bladder Pump  
 Sampling Method: Dedicated Tubing                      New Tubing                      Other \_\_\_\_\_  
 Start Purge Time: 0923                      Flow Rate: 200 mL / MIN                      Pump Depth: 11'

Time	Temp. ( <input checked="" type="radio"/> or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0926	13.5	6.67	501	4	0.38	-18.6	600	7.76
0929	13.6	6.71	504	4	0.24	-48.3	1200	7.76
0932	13.6	6.74	505	3	0.22	-55.9	1800	7.76
0935	13.6	6.80	507	2	0.21	-62.3	2400	7.76
0938	13.7	6.82	508	2	0.20	-63.8	3000	7.76
0941	13.6	6.83	508	3	0.20	-64.3	3600	7.76

Did well dewater? Yes <input checked="" type="radio"/> No	Amount actually evacuated: 3.6L
Sampling Time: 0942	Sampling Date: 5/16/19
Sample I.D.: MW-315	Laboratory: TA
Analyzed for: TPH-C    BTEX    MTBE    TPH-D    Other:	
Equipment Blank I.D.: @ Time	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: HP	Gauging Date: 5/16/19
Well I.D.: TX-03A	Well Diameter (in.): <u>(2)</u> 3 4 6 8
Total Well Depth (ft.): 14.84	Depth to Water (ft.): 5.56
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(X)</u> Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      ~~Peristaltic Pump~~      Bladder Pump  
 Sampling Method: ~~Dedicated Tubing~~      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1101      Flow Rate: 200 mL/min      Pump Depth: 10'

Time	Temp. ( <u>(C)</u> or °F)	pH	Cond. (mS/cm or <u>(uS/cm)</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
1104	13.08	5.94	542	21	0.73	-65	600	5.65
1107	12.81	5.98	538	14	0.59	-78	1200	5.69
1110	12.74	6.09	538	12	0.55	-79	1800	5.69
1113	12.66	6.10	538	12	0.52	-83	2400	5.69
1116	12.64	6.11	538	12	0.51	-84	3000	5.69

Did well dewater? Yes <u>(X)</u>	Amount actually evacuated: 3.0L
Sampling Time: 1118	Sampling Date: 5/16/19
Sample I.D.: TX-03A	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	<u>(Other)</u> See C.O.C.
Equipment Blank I.D.: @	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: LB	Gauging Date: 5/15/19
Well I.D.: MW-05	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 18.85	Depth to Water (ft.): 6.69
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVD</u> Grade	Flow Cell Type: <u>YSI PRO PLUS</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1300      Flow Rate: 200 mL / MIN      Pump Depth: 11'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or μS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>ML</u> )	Depth to Water (ft.)
1309	15.6	6.85	294	557	1.23	35.1	600	6.73
1312	15.5	6.88	<del>293</del>	331	0.98	25.6	1200	6.73
1315	15.4	6.88	294	83	0.91	24.8	1800	6.73
1318	15.4	6.91	295	48	0.88	20.1	2400	6.73
1321	15.3	6.92	294	46	0.86	19.6	3000	6.73
1323	15.3	6.92	294	45	0.85	18.3	3600	6.73

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: 3.6L
Sampling Time: 1325	Sampling Date: 5/15/19
Sample I.D.: MW-05	Laboratory: TA
Analyzed for: <u>TPH-G</u> <u>BTEX</u> MTBE <u>TPH-D</u>	Other: _____
Equipment Blank I.D.: @ _____	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515LB	Client: AECOM
Sampler: LB	Gauging Date: 5/15/19
Well I.D.: MW-111	Well Diameter (in.): ② 3 4 6 8 ____
Total Well Depth (ft.): 14.67	Depth to Water (ft.): 4.97
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI PRO PLUS

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1145      Flow Rate: 200 ML / MIN      Pump Depth: 10'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or μS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1148	16.1	7.38	154	34	1.19	-14.3	600	5.03
1151	15.9	7.56	147	25	0.98	-37.8	1200	5.03
1154	16.0	7.58	143	18	0.81	-48.3	1800	5.03
1157	16.0	7.57	146	15	0.78	-52.8	2400	5.03
1200	16.1	7.58	147	14	0.76	-54.1	3000	5.03
1203	16.1	7.57	147	14	0.75	-55.6	3600	5.03

Did well dewater? Yes  No       Amount actually evacuated: 3.6L

Sampling Time: 1204      Sampling Date: 5/15/19

Sample I.D.: MW-111      Laboratory: TA

Analyzed for: TPH-G    BTEX    MTBE    TPH-D      Other: \_\_\_\_\_

Equipment Blank I.D.: @      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: HP	Gauging Date: 5/16/19
Well I.D.: MW-112A	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 14.54	Depth to Water (ft.): 6.39
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>NO</u> Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      ~~Peristaltic Pump~~      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0829      Flow Rate: 200 mL/min      Pump Depth: 11'

Time	Temp. ( <u>10</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
0832	11.19	6.28	539	43	1.20	-56	600	6.44
0835	10.93	6.12	560	74	0.83	-93	1200	6.45
0838	10.92	6.22	534	76	0.59	-100	1800	6.45
0841	10.91	6.25	533	73	0.53	-103	2400	6.45
0844	10.91	6.27	529	77	0.52	-104	3000	6.45

Did well dewater? Yes <input checked="" type="checkbox"/>	Amount actually evacuated: 3.0L
Sampling Time: 0846	Sampling Date: 5/16/19
Sample I.D.: MW-112A	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	<u>Other:</u> see C.O.C.
Equipment Blank I.D.: @ <small>Time</small>	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: HP	Gauging Date: 5/16/19
Well I.D.: SH-04	Well Diameter (in.): ② 3 4 6 8 _____
Total Well Depth (ft.): 17.94	Depth to Water (ft.): 9.72
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="checkbox"/> VVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0800      Flow Rate: 200 mL/min      Pump Depth: 17'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0803	9.25	5.96	213	23	1.69	-125	600	9.82
0806	9.27	5.84	216	15	1.11	-126	1200	9.82
0809	9.35	5.78	221	14	0.93	-128	1800	9.82
0812	9.34	5.75	224	13	0.93	-127	2400	9.82
0815	9.32	5.72	225	12	0.91	-127	3000	9.82
0818	9.31	5.71	226	13	0.91	-126	3600	9.82

Did well dewater? Yes <input checked="" type="checkbox"/>	Amount actually evacuated: 3.6 L
Sampling Time: 0820	Sampling Date: 5/16/19
Sample I.D.: SH-04	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: See C.O.C.
Equipment Blank I.D.: @	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: LB	Gauging Date: 5/15/19
Well I.D.: MW-104	Well Diameter (in.): <input checked="" type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 6 <input type="radio"/> 8    _____
Total Well Depth (ft.): 14.70	Depth to Water (ft.): 5.97
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="radio"/> Grade	Flow Cell Type: YSI PRO PLUS

Purge Method: 2" Grundfos Pump                      Peristaltic Pump                      Bladder Pump  
 Sampling Method: Dedicated Tubing                      New Tubing                      Other \_\_\_\_\_  
 Start Purge Time: 1221                      Flow Rate: 200 mL / MIN                      Pump Depth: 11'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1224	17.4	6.88	262	10	1.13	-35.3	600	6.03
1227	17.7	6.80	259	8	0.83	-68.7	1200	6.03
1230	17.7	6.65	259	7	0.80	-72.3	1800	6.03
1233	17.8	6.64	258	6	0.79	-73.4	2400	6.03
1236	17.8	6.60	258	6	0.78	-74.9	3000	6.03

Did well dewater? Yes  No

Amount actually evacuated: 3L

Sampling Time: 1237                      Sampling Date: 5/15/19

Sample I.D.: MW-104                      Laboratory: TA

Analyzed for:  TPH-G     BTEX     MTBE     TPH-D                      Other: TOTAL Pb

Equipment Blank I.D.: \_\_\_\_\_ Time                      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190515-LB1	Client: AECOM
Sampler: LB	Gauging Date: 5/15/19
Well I.D.: MW-213	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 38.93	Depth to Water (ft.): 8.76
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="checkbox"/> Grade	Flow Cell Type: YSE PRO PLUS

Purge Method: 2" Grundfos Pump	Peristaltic Pump	Bladder Pump
Sampling Method: Dedicated Tubing	New Tubing	Other
Start Purge Time: 1343	Flow Rate: 200 mL / MIN	Pump Depth: 35'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>ML</del> )	Depth to Water (ft.)
1346	14.8	7.00	11516	7	1.95	121.6	600	8.81
1349	14.9	7.30	11610	3	1.90	96.0	1200	8.81
1352	14.9	7.48	11631	2	1.89	87.2	1800	8.81
1355	14.9	7.52	11637	2	1.87	81.6	2400	8.81
1358	14.9	7.51	11646	2	1.85	80.8	3000	8.81
1401	14.8	7.50	11641	2	1.84	79.5	3600	8.81

Did well dewater? Yes  No  Amount actually evacuated: 3.6L

Sampling Time: 1402 Sampling Date: 5/16/19

Sample I.D.: MW-213 Laboratory: TA

Analyzed for:  TPH-G  BTEX  MTBE  TPH-D Other:  SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:



## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190515-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>5/15/19</u>
Well I.D.: <u>MW-214</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>39.28</u>	Depth to Water (ft.): <u>7.81</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVO</u> Grade	Flow Cell Type: <u>YSI PRO PLY</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1427      Flow Rate: 200 mL / MIN      Pump Depth: 35'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1430	15.6	7.22	10665	3	0.71	-30.3	600	7.88
1433	15.7	7.32	10660	3	0.69	-44.3	1200	7.88
1436	15.7	7.37	10667	2	0.65	-54.8	1800	7.88
1439	15.6	7.41	10664	2	0.61	-60.3	2400	7.88
1442	15.7	7.42	10665	2	0.60	-61.8	3000	7.88
1445	15.7	7.43	10667	3	0.59	-62.3	3600	7.88

Did well dewater? Yes  No       Amount actually evacuated: 3.6L

Sampling Time: 1446      Sampling Date: 5/15/19

Sample I.D.: MW-214      Laboratory: TA

Analyzed for: TPH-G BTEX MTBE TPH-D      Other: SEE COL

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_



### Monitoring Well Gauging Field Log - Shoreline

Date: 6-26-19

Job No: 60595460

SAP: 3547032

Incident No 300036

Location: 2555 13th Ave SW, Seattle (Harbor Island Terminal)

Personnel: DAVE LEWIS

Well ID	Time Gauged	Depth to Water	Depth to Product	Comments
MW-208	0820	5.47	—	
MW-210	0830	<del>6.11</del> 6.58	6.56	Absorbant sock <i>change sock</i>
MW-211	0826	6.88	—	
MW-212	0823	6.11	—	Absorbant sock <i>change sock</i>



Monitoring Well Gauging Field Log- Shoreline

Date: 7-24-19  
Job No.: 80411078  
SAP: 3547032  
Incident No: 300036  
Location: 2555 13<sup>th</sup> Ave SW Seattle (Harbor Island Terminal)  
Personnel: *D Lewis*

0902

Well ID	Time Gauged	Depth to Water	Depth to Product	Comments
MW-208	0856	5.43	—	
MW-210	<del>0858</del>	<del>5.96</del>	59 6.58	.03 product Absorbant Sock <i>replace sock</i>
MW-211	0900	5.88	—	
MW-212	0858	5.96	—	Absorbant Sock <i>replace sock</i>



Monitoring Well Gauging Field Log- Shoreline

Date: 8-13-19  
Job No: ~~88411076~~ 60595460/0301.19  
SAP: 3547032  
Incident No: 300036  
Location: 2555 13<sup>th</sup> Ave SW Seattle (Harbor Island Terminal)  
Personnel: DAVE LEWIS

Well ID	Time Gauged	Depth to Water	Depth to Product	Comments
MW-208	1006	5.45	—	
MW-210	1012	6.58	6.57	~0.1 ft. product Absorbant Sock change sock
MW-211	1010	5.72	—	
MW-212	<del>6.0</del> 1008	6.02	—	Absorbant Sock change sock

**3Q Groundwater Monitoring Program Field Form**  
 Shell Harbor Island Terminal  
 Seattle, Washington

3rd Quarter Program					Total Depth (ft bgs)	Screened Interval (ft bgs)	Comments
Time Gauged	Depth to GW	Depth to Product	Sample Analytes				
<b>TX-03A Area - North Tank Farm</b>							
MW-201	0943	14.64	--	--	15	5.0 - 14.5	
MW-202	0938	14.16	--	--	15	5.0 - 14.5	
MW-203	0924	8.19	--	--	15	5.0 - 14.5	
MW-204	0931	11.65	--	--	15	5.0 - 14.5	
MW-206A	0919	10.13	--	--	15	5.0 - 14.5	
<b>TX-03A Area - Excluding the North Tank Farm</b>							
MW-101	1110	12.03	--	--	15	5.0 - 14.5	
MW-102	1050	9.36	--	--	15	5.0 - 14.5	
MW-301	0999	6.49	--	BTEX, Gx	15	5.0 - 15.0	
MW-302	1015	7.33	--	BTEX, Gx	15	5.0 - 15.0	
MW-303	0955	6.68	--	BTEX, Gx	15	5.0 - 15.0	
MW-304	1010	6.67	--	BTEX, Gx	15	5.0 - 15.0	
MW-307	1119	9.52	--	BTEX, Gx	15	5.0 - 15.0	
MW-308	1115	9.49	--	BTEX, Gx	15	5.0 - 15.0	
MW-309	0950	6.7944	--	--	15	5.0 - 15.0	
MW-310	1021	7.59	--	BTEX, Gx	15	5.0 - 15.0	
MW-311	1024	8.78	--	BTEX, Gx	15	5.0 - 15.0	
MW-312	1029	8.26	--	BTEX, Gx	15	5.0 - 15.0	
MW-313	1036	6.82	--	BTEX, Gx, Dx	15	5.0 - 15.0	
MW-314	—	—	--	BTEX, Gx, Dx	15	5.0 - 15.0	UNABLE TO ACCESS
MW-315	1041	9.43	--	BTEX, Gx, Dx	15	5.0 - 15.0	
TES-MW-1	1103	10.19	--	--	18	3.0 - 18.0	
TX-03A	1004	6.42	--	BTEX, Gx	16	6.0 - 16.0	
<b>Shoreline Manifold Area</b>							
MW-208	0859	5.23	—	--	16.5	5.0 - 14.5	
MW-210	0911	6.18	6.13	--	15	unknown	
MW-211	0905	5.54	—	--	13	5.0 - 13.0	
MW-212	0915	6.28	6.25	--	12	unknown	

**Notes:**

BTEX = benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8260B

ft bgs = below ground surface

PAHs = polycyclic aromatic hydrocarbons by EPA Method 8270C-SIM

Total Lead by EPA Method 6020

TPH-Gx = total petroleum hydrocarbons as gasoline by NWTPH-Gx

TPH-Dx = total petroleum hydrocarbons as diesel by NWTPH-Dx



### Monitoring Well Gauging Field Log - Shoreline

Date:  
Job No: 60595460  
SAP: 3547032  
Incident No 300036  
Location: 2555 13th Ave SW, Seattle (Harbor Island Terminal)  
Personnel:

Well ID	Time Gauged	Depth to Water	Depth to Product	Comments
MW-208	0859	5.23	—	
MW-210	0911	6.18	6.13	Absorbant sock
MW-211	0905	5.54	—	
MW-212	0915	6.28	6.25	Absorbant sock

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190917-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>9/17/19</u>
Well I.D.: <u>MW-301</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>14.53</u>	Depth to Water (ft.): <u>6.49</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI 536</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1158      Flow Rate: 200 mL/MIN      Pump Depth: 11'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
1201	15.05	6.83	362	28	1.29	2.4	600	6.53
1204	15.11	6.78	365	14	1.16	-10.4	1200	6.53
1207	15.22	6.73	370	12	0.91	-20.9	1800	6.53
1210	15.26	6.71	372	11	0.88	-22.1	2400	6.53
1213	15.31	6.70	373	11	0.87	-23.8	3000	6.53

Did well dewater? Yes  No       Amount actually evacuated: 3L

Sampling Time: 1214      Sampling Date: 9/19/19

Sample I.D.: MW-301      Laboratory: TA

Analyzed for:  TPH-G     BTEX    MTBE    TPH-D      Other: \_\_\_\_\_

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190917-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>9/17/19</u>
Well I.D.: <u>MW-302</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>14.97</u>	Depth to Water (ft.): <u>7.33</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI 53C</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1451      Flow Rate: 200 mL/MIN      Pump Depth: 11'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>ml</del> )	Depth to Water (ft.)
1454	14.88	6.32	418	31	1.41	-18.4	600	7.41
1457	14.81	6.68	420	18	1.32	-21.3	1200	7.41
1500	14.67	6.81	421	16	0.96	-30.7	1800	7.41
1503	14.69	6.73	421	15	0.81	-33.6	2400	7.41
1506	14.70	6.74	424	15	0.80	-34.1	3000	7.41
1509	14.71	6.75	424	14	0.79	-35.3	3600	7.41

Did well dewater? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: <u>3.6L</u>
Sampling Time: <u>1510</u>	Sampling Date: <u>9/19/19</u>
Sample I.D.: <u>MW-302</u>	Laboratory: <u>TA</u>
Analyzed for: <u>TPH-C</u> <u>BTEX</u> MTBE TPH-D	Other:
Equipment Blank I.D.: <u>@</u> Time	Duplicate I.D.:



## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190917-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>9/17/19</u>
Well I.D.: <u>MW-303</u>	Well Diameter (in.): <u>2</u> 3 4 6 8 <u>    </u>
Total Well Depth (ft.): <u>14.68</u>	Depth to Water (ft.): <u>6.68</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSE 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1228      Flow Rate: 200 mL/MIN      Pump Depth: 11'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>mL</del> )	Depth to Water (ft.)
1231	14.16	6.18	451	13	1.55	-11.2	600	6.71
1234	14.50	6.20	466	10	1.37	-21.6	1200	6.71
1237	14.58	6.23	470	9	1.33	-22.0	1800	6.71
1240	14.61	6.28	472	8	1.31	-23.6	2400	6.71
1243	14.68	6.31	474	7	1.30	-24.7	3000	6.71

Did well dewater? Yes  No       Amount actually evacuated: 3L

Sampling Time: 1244      Sampling Date: 9/19/19

Sample I.D.: MW-303      Laboratory: TA

Analyzed for: TPH-G BTEX MTBE TPH-D      Other: \_\_\_\_\_

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190917-LB</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>9/17/19</u>
Well I.D.: <u>MW-304</u>	Well Diameter (in.): <u>2</u> 3 4 6 8 _____
Total Well Depth (ft.): <u>14.68</u>	Depth to Water (ft.): <u>6.67</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVO</u> Grade	Flow Cell Type: <u>YSE 636</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1417      Flow Rate: 200 mL/MIN      Pump Depth: 11'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1420	13.88	6.88	318	23	1.76	11.4	600	6.71
1423	13.61	6.79	321	18	1.33	8.2	1200	6.71
1426	13.58	6.76	321	17	1.31	7.1	1800	6.71
1429	13.57	6.75	322	16	1.30	6.6	2400	6.71
1432	13.56	6.73	323	15	1.29	5.4	3000	6.71

Did well dewater? Yes  No       Amount actually evacuated: 3 L

Sampling Time: ~~1413~~ 1433      Sampling Date: 9/19/19

Sample I.D.: MW-304      Laboratory: TA

Analyzed for: TPH-G BTEX MTBE TPH-D      Other: \_\_\_\_\_

Equipment Blank I.D.: \_\_\_\_\_ Time \_\_\_\_\_      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190917-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>9/17/19</u>
Well I.D.: <u>MW-307</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>17.29</u>	Depth to Water (ft.): <u>9.52</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>RVC</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_

Start Purge Time: 0834      Flow Rate: 200 mL / MIN      Pump Depth: 12'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
<u>0837</u>	<u>13.60</u>	<u>7.03</u>	<u>208</u>	<u>43</u>	<u>1.74</u>	<u>19.6</u>	<u>600</u>	<u>9.58</u>
<u>0840</u>	<u>13.46</u>	<u>7.00</u>	<u>216</u>	<u>18</u>	<u>1.33</u>	<u>7.5</u>	<u>1200</u>	<u>9.61</u>
<u>0843</u>	<u>13.33</u>	<u>6.98</u>	<u>226</u>	<u>11</u>	<u>1.18</u>	<u>3.3</u>	<u>1800</u>	<u>9.61</u>
<u>0846</u>	<u>13.29</u>	<u>6.96</u>	<u>229</u>	<u>10</u>	<u>1.16</u>	<u>2.1</u>	<u>2400</u>	<u>9.61</u>
<u>0849</u>	<u>13.21</u>	<u>6.95</u>	<u>231</u>	<u>10</u>	<u>1.15</u>	<u>1.6</u>	<u>3000</u>	<u>9.61</u>

Did well dewater? Yes  No       Amount actually evacuated: 3L

Sampling Time: 0850      Sampling Date: 9/19/19

Sample I.D.: MW-307      Laboratory: TA

Analyzed for: TPH-G BTEX MTBE TPH-D      Other:

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 190917-LB1	Client: AECOM
Sampler: LB	Gauging Date: 9/17/19
Well I.D.: MW-308	Well Diameter (in.): ② 3 4 6 8
Total Well Depth (ft.): 17.25	Depth to Water (ft.): 9.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSE 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0809      Flow Rate: 200 mL/MIN      Pump Depth: 12'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0812	13.03	6.42	220	21	1.89	21.8	600	9.62
0815	12.95	6.61	218	14	1.75	9.8	1200	9.66
0818	12.93	6.61	215	13	1.65	4.6	1800	9.67
0821	12.91	6.63	214	13	1.63	3.8	2400	9.67
0824	12.90	6.64	213	12	1.61	2.6	3000	9.67

Did well dewater? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Amount actually evacuated: 3L
Sampling Time: 0825	Sampling Date: 9/19/19
Sample I.D.: MW-308	Laboratory: TA
Analyzed for: TPH-G    BTEX    MTBE    TPH-D    Other:	
Equipment Blank I.D.: @ Time	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190917-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>DB</u>	Gauging Date: <u>9/17/19</u>
Well I.D.: <u>MW-310</u>	Well Diameter (in.): <u>2</u> 3 4 6 8 _____
Total Well Depth (ft.): <u>14.58</u>	Depth to Water (ft.): <u>7.59</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI 55C</u>

Purge Method: 2" Grundfos Pump      Peristaltic  Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1534      Flow Rate: 200 mL / MIN      Pump Depth: 12'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>m³</u> )	Depth to Water (ft.)
1537	13.56	7.18	318	28	1.17	-4.46	600	7.63
1540	13.48	7.08	296	19	0.98	-18.8	1200	7.63
1543	13.46	6.99	284	18	0.86	-21.6	1800	7.63
1546	13.45	6.97	283	17	0.85	-22.4	2400	7.63
1549	13.46	6.93	281	16	0.83	-23.9	3000	7.63

Did well dewater? Yes  No       Amount actually evacuated: 3L

Sampling Time: 1550      Sampling Date: 9/19/19

Sample I.D.: MW-310      Laboratory: TA

Analyzed for: TPH-G BTEX MTBE TPH-D      Other:

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190917-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>9/17/19</u>
Well I.D.: <u>MW-311</u>	Well Diameter (in.): <u>2</u> 3 4 6 8 ____
Total Well Depth (ft.): <u>14.95</u>	Depth to Water (ft.): <u>8.78</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVO</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1129      Flow Rate: 200 mL/MIN      Pump Depth: 12'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1132	13.32	6.57	327	8	1.95	-10.3	600	8.81
1135	13.65	6.48	336	4	0.66	-14.3	1200	8.81
1138	13.84	6.51	339	4	0.64	-20.7	1800	8.81
1141	13.90	6.58	338	3	0.63	-21.6	2400	8.81
1144	13.98	6.61	338	3	0.62	-22.9	3000	8.81

Did well dewater? Yes  No       Amount actually evacuated: 3L

Sampling Time: 1145      Sampling Date: 9/19/19

Sample I.D.: MW-311      Laboratory: TA

Analyzed for:  TPH-G     BTEX     MTBE     TPH-D    Other: \_\_\_\_\_

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190917-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>9/17/19</u>
Well I.D.: <u>MW-312</u>	Well Diameter (in.): <u>4</u> 3 4 6 8
Total Well Depth (ft.): <u>14.74</u>	Depth to Water (ft.): <u>8.26</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVG</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1101      Flow Rate: 200 ML/MIN      Pump Depth: 12'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>ML</u> )	Depth to Water (ft.)
<u>1104</u>	<u>13.64</u>	<u>6.49</u>	<u>284</u>	<u>7</u>	<u>0.66</u>	<u>-204</u>	<u>600</u>	<u>8.33</u>
<u>1107</u>	<u>13.83</u>	<u>6.58</u>	<u>286</u>	<u>3</u>	<u>0.61</u>	<u>-266</u>	<u>1200</u>	<u>8.33</u>
<u>1110</u>	<u>13.83</u>	<u>6.50</u>	<u>288</u>	<u>2</u>	<u>0.58</u>	<u>-29.2</u>	<u>1800</u>	<u>8.33</u>
<u>1113</u>	<u>13.84</u>	<u>6.51</u>	<u>289</u>	<u>2</u>	<u>0.56</u>	<u>-306</u>	<u>2400</u>	<u>8.33</u>
<u>1116</u>	<u>13.84</u>	<u>6.54</u>	<u>289</u>	<u>2</u>	<u>0.55</u>	<u>-31.9</u>	<u>3000</u>	<u>8.33</u>

Did well dewater? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Amount actually evacuated: <u>3L</u>
Sampling Time: <u>1117</u>	Sampling Date: <u>9/19/19</u>
Sample I.D.: <u>MW-312</u>	Laboratory: <u>TA</u>
Analyzed for: <u>TPH-G</u> <u>BTEX</u> MTBE TPH-D	Other:
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190917-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>9/17/19</u>
Well I.D.: <u>MW-313</u>	Well Diameter (in.): <u>2</u> 3 4 6 8 <u>    </u>
Total Well Depth (ft.): <u>13.39</u>	Depth to Water (ft.): <u>6.82</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>VSE 586</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0923      Flow Rate: 200 mL / MIN      Pump Depth: 12'

Time	Temp. ( <del>°C</del> or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <del>ml</del> )	Depth to Water (ft.)
0926	15.46	6.51	327	14	1.06	-4.5	600	6.91
0929	15.58	6.56	334	11	0.89	-21.6	1200	6.91
0932	15.68	6.59	339	8	0.74	-22.9	1800	6.91
0935	15.70	6.62	340	8	0.72	-24.1	2400	6.91
0938	15.71	6.65	343	7	0.71	-25.3	3000	6.91

Did well dewater? Yes  No       Amount actually evacuated: 3L

Sampling Time: 0939      Sampling Date: 9/19/19

Sample I.D.: MW-313      Laboratory: TA

Analyzed for: TPH-D BTEX MTBE TPH-D      Other: \_\_\_\_\_

Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_





## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190917-LB1</u>	Client: <u>AECOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>9/17/19</u>
Well I.D.: <u>MW-315</u>	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): <u>15.90</u>	Depth to Water (ft.): <u>9.48</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0951      Flow Rate: 200 ML / MIN      Pump Depth: 11

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0954	13.25	6.40	299	12	0.83	-27.4	600	9.48
0957	13.17	6.38	300	9	0.82	-32.3	1200	9.48
1000	13.11	6.38	303	4	0.78	-35.9	1800	9.48
1003	13.04	6.33	308	4	0.61	-39.2	2400	9.48
1006	13.03	6.35	310	3	0.60	-40.1	3000	9.48
1009	13.01	6.37	311	4	0.58	-41.8	3600	9.48

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: <u>3.6L</u>
Sampling Time: <u>1010</u>	Sampling Date: <u>9/19/19</u>
Sample I.D.: <u>MW-315</u>	Laboratory: <u>TA</u>
Analyzed for: <input checked="" type="checkbox"/> TPH-G <input checked="" type="checkbox"/> BTEX    MTBE <input checked="" type="checkbox"/> TPH-D    Other: _____	
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190917-LB1</u>	Client: <u>AECCOM</u>
Sampler: <u>LB</u>	Gauging Date: <u>9/17/19</u>
Well I.D.: <u>TX-03A</u>	Well Diameter (in.): <u>2</u> 3 4 6 8 <u>    </u>
Total Well Depth (ft.): <u>14.93</u>	Depth to Water (ft.): <u>6.42</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSL 686</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_

Start Purge Time: 1337      Flow Rate: 200 mL / MIN      Pump Depth: 11'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1340	16.21	6.24	344	17	1.50	27.0	600	6.45
1343	16.47	6.25	342	13	1.24	15.2	1200	6.45
1346	16.56	6.26	341	11	1.18	11.0	1800	6.45
1349	16.67	6.34	343	9	1.00	5.9	2400	6.45
1352	16.74	6.39	344	9	0.98	4.3	3000	6.45
1355	16.79	6.41	348	8	0.97	3.1	3600	6.45

Did well dewater? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: <u>3.6L</u>
Sampling Time: <u>1356</u>	Sampling Date: <u>9/19/19</u>
Sample I.D.: <u>TX-03A</u>	Laboratory: <u>TA</u>
Analyzed for: <u>TPH-G</u> <u>BTEX</u> MTBE TPH-D	Other: _____
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____



Monitoring Well Gauging Field Log- Shoreline

Date:  
Job No : ~~60411678~~ 60595460, 0301.19  
SAP: 3547032  
Incident No 300036  
Location: 2555 13<sup>th</sup> Ave SW Seattle (Harbor Island Terminal)  
Personnel: DAVE LEWIS, NATE GWYN

Well ID	Time Gauged	Depth to Water	Depth to Product	Comments
MW-208	1025	5.61	—	
MW-210	1033	6.47	6.45	0.02 ft. product change sock Absorbant Sock
MW-211	1030	5.77	—	
MW-212	1027	6.36	—	change sock Absorbant Sock



Monitoring Well Gauging Field Log- Shoreline

Date: 11-5-19  
Job No: ~~60411070~~  
SAP: 3547032  
Incident No: 300036  
Location: 2555 13<sup>th</sup> Ave SW Seattle (Harbor Island Terminal)  
Personnel: N Gwyn DREWIS

Well ID	Time Gauged	Depth to Water	Depth to Product	Comments
MW 208	0953	5.62	-	
MW 210	0959	6.78	6.68	Absorbant Sock <i>changed sock</i>
MW 211	0957	6.01	-	
MW 212	0955	6.51	-	Absorbant Sock <i>changed sock</i>

4Q Groundwater Monitoring Program Field Form  
Shell Harbor Island Terminal  
Seattle, Washington

4th Quarter Program							
	Time Gauged	Depth to GW	Depth to Product	Sample Analytes	Total Depth (ft bgs)	Screened Interval (ft bgs)	Comments
<b>TX-03A Area - North Tank Farm</b>							
MW-201	0946	14.52	--	BTEX, Gx, Dx ✓	15	5.0 - 14.5	Good
MW-202	0936	14.10	--	BTEX, Gx, Dx, NAP ✓	15	5.0 - 14.5	Good
MW-203	0950	8.13	--	Gx, Dx, NAP ✓	15	5.0 - 14.5	Good 3/3 BM, WB
MW-204	0932	11.54	--	BTEX, Gx, Dx ✓	15	5.0 - 14.5	Good
MW-206A	0952	9.98	--	BTEX, Gx, Dx ✓	15	5.0 - 14.5	Good
<b>TX-03A Area - Excluding the North Tank Farm</b>							
MW-101	1225	11.82	--	BTEX, Gx, Dx ✓	15	5.0 - 14.5	standpipe
MW-102	1238	9.23	--	BTEX, Gx, Dx ✓	15	5.0 - 14.5	standpipe
MW-301	0915	6.27 6.41	--	BTEX, Gx ✓	15	5.0 - 15.0	Good WB, 1/2 BM
MW-302	0919	6.75	--	BTEX, Gx, Dx, NAP ✓	15	5.0 - 15.0	Good
MW-303	0912	6.54	--	BTEX, Gx, Dx ✓	15	5.0 - 15.0	Good
MW-304	0922	6.58	--	BTEX, Gx, Dx, NAP ✓	15	5.0 - 15.0	Good -
MW-307	1232	9.34	--	BTEX, Gx, Dx, NAP ✓	15	5.0 - 15.0	Good
MW-308	1220	9.34	--	BTEX, Gx, NAP ✓	15	5.0 - 15.0	standpipe
MW-309	0907	6.59	--	BTEX, Gx, Dx ✓	15	5.0 - 15.0	Good
MW-310	0925	7.41	--	BTEX, Gx, Dx, NAP ✓	15	5.0 - 15.0	Good
MW-311	1152	8.64	--	BTEX, Gx, NAP ✓	15	5.0 - 15.0	NL, WB
MW-312	1147	8.12	--	BTEX, Gx, NAP ✓	15	5.0 - 15.0	WB, NL -
MW-313	1142	6.74	--	BTEX, Gx, Dx ✓	15	5.0 - 15.0	NL
MW-314	1131	7.46	--	BTEX, Gx, Dx ✓	15	5.0 - 15.0	NL
MW-315	1136	8.21	--	BTEX, Gx, Dx ✓	15	5.0 - 15.0	odor
TES-MW-1	1215	9.99	--	BTEX, Gx, Dx ✓	18	3.0 - 18.0	stand
TX-03A	0927	6.27	--	BTEX, Gx, Dx, NAP ✓	16	6.0 - 16.0	Good -
<b>SH-04 Area</b>							
MW-05	1101	7.09	--	BTEX, Gx, Dx ✓	15	5.0 - 15.0	Good
MW-111	1055	5.66	--	BTEX, Gx, Dx ✓	15	5.0 - 14.5	2/3 BM
MW-112A	1116	6.73	--	BTEX, Gx, Dx ✓	15	5.5 - 15.0	2/2 TS
SH-04	1110	10.50	--	BTEX, Gx, Dx ✓	16	6.0 - 16.0	standpipe
MW-104	1059	6.99	--	Total lead, Gx, Dx ✓	15	5.0 - 14.5	3/3 BM, CB
<b>Additional Compliance Monitoring Wells</b>							
MW-105	1050	5.83	--	Total lead, BTEX, Gx, Dx ✓	15	5.0 - 14.5	3/2 TB / CB
TX-04	1202	11.22	--	BTEX, Gx, Dx ✓	16	6.0 - 16.0	standpipe
TX-06A	1125	5.20	--	BTEX, Gx, Dx ✓	15.8	5.5 - 15.5	2/2 TS
<b>Shoreline Manifold Area</b>							
MW-208	1002	5.08	n/a	--	16.5	5.0 - 14.5	Good
MW-210	1005	6.27	n/a	--	15	unknown	Good
MW-211	1011	5.54	n/a	--	13	5.0 - 13.0	Good
MW-212	1008	6.14	n/a	--	12	unknown	Good
MW-213	0959	6.26	--	BTEX, Gx, Dx, PAHs ✓	30	30.0 - 40.0	Good
MW-214	1015	6.39	--	BTEX, Gx, Dx, PAHs ✓	30	30.0 - 40.0	Good

4Q Groundwater Monitoring Program Field Form  
Shell Harbor Island Terminal  
Seattle, Washington

4th Quarter Program							Comments
Time Gauged	Depth to GW	Depth to Product	Sample Analytes	Total Depth (ft bgs)	Screened Interval (ft bgs)		
<b>Additional Wells (Included in Annual Inspection only)</b>							
ASW-1	--	--	--	--	14	13 - 14	Good
PSV-1	--	--	--	--	4	3 - 4	Good
PSV-2	--	--	--	--	4	3 - 4	Good
SVE-1	--	--	--	--	4	3 - 4	Good
TW-01	--	--	--	--	14	4 - 14	Good
DP-06	--	--	--	--	unknown	unknown	Good - Standpipe NL
MW-06	--	--	--	--	unknown	unknown	Good
MW-103	--	--	--	--	unknown	unknown	Good
MW-106	--	--	--	--	unknown	unknown	Good
MW-108	--	--	--	--	unknown	unknown	Good
MW-109	--	--	--	--	unknown	unknown	Good
MW-110	--	--	--	--	unknown	unknown	✓ unable to access
MW-205	--	--	--	--	unknown	unknown	Good
MW-209	--	--	--	--	unknown	unknown	Good
MW-305	--	--	--	--	unknown	unknown	NL, WB
MW-306	--	--	--	--	unknown	unknown	NL, WB
AMW-8	--	--	--	--	unknown	unknown	Good - Connected to system
AMW-X	--	--	--	--	unknown	unknown	Good - lid doesn't fit over cap

Notes: MW-107 \_\_\_\_\_ Good

BTEX = benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8260B  
 ft bgs = below ground surface  
 NAP = Nitrate, Nitrite by EPA 353.2, Sulfate by EPA 300.0, Diss Iron and Manganese by EPA 6010B/6020A (Lab Filtered), Ferrous Iron field collected  
 PAHs = polycyclic aromatic hydrocarbons by EPA Method 8270C-SIM  
 Total Lead by EPA Method 6020  
 TPH-Gx = total petroleum hydrocarbons as gasoline by NWTPH-Gx  
 TPH-Dx = total petroleum hydrocarbons as diesel by NWTPH-Dx





### Monitoring Well Gauging Field Log - Shoreline

Date:  
Job No: 60595460  
SAP: 3547032  
Incident No: 300036  
Location: 2555 13th Ave SW, Seattle (Harbor Island Terminal)  
Personnel:

Well ID	Time Gauged	Depth to Water	Depth to Product	Comments
MW-208	1002	5.08'	n/a	
MW-210	1005	6.27'	n/a	Absorbant sock
MW-211	1011	5.54'	n/a	
MW-212	1008	6.14'	n/a	Absorbant sock

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HPI	Client: AECOM-SLO
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-201	Well Diameter (in.): ② 3 4 6 8
Total Well Depth (ft.): 14.95	Depth to Water (ft.): 14.52
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: ~~2" Grundfos Pump~~ Peristaltic Pump ~~Bladder Pump~~  
 Sampling Method: ~~Dedicated Tubing~~ New Tubing Other \_\_\_\_\_  
 Start Purge Time: \_\_\_\_\_ Flow Rate: \_\_\_\_\_ Pump Depth: \_\_\_\_\_

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
— Insufficient water to purge or sample —								
— No samples taken —								

Did well dewater? Yes No	Amount actually evacuated:
Sampling Time:	Sampling Date:
Sample I.D.:	Laboratory:
Analyzed for: TPH-G BTEX MTBE TPH-D	Other:
Equipment Blank I.D.:	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-MPI	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-202	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 21.50	Depth to Water (ft.): 14.10
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>PVC</u> Grade	Flow Cell Type: YSI 55b

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0934      Flow Rate: 200 mL/min      Pump Depth: 17.5'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0937	12.07	6.10	282	16	6.94	12.8	600	14.19
0940	12.56	6.11	279	48	6.86	-3.4	1200	14.20
0943	12.77	6.08	279	46	5.10	-6.9	1800	14.20
0946	12.86	6.06	278	48	5.04	-9.3	2400	14.20
0949	12.88	6.12	278	50	4.97	-10.2	3000	14.20
						Fe <sup>2+</sup> = 3.5	mg/L	

Did well dewater? Yes <input type="radio"/> No <input checked="" type="radio"/>	Amount actually evacuated: 3.0L
Sampling Time: 0950	Sampling Date: 12/10/19
Sample I.D.: MW-202	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see coc
Equipment Blank I.D.: @ _____	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-203	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 14.16	Depth to Water (ft.): 8.13
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>FO</u> Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1050      Flow Rate: 200 mL/min      Pump Depth: 11.5'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
1053	12.97	5.67	431	51	4.93	3.2	600	8.26
1056	12.87	5.33	437	47	4.70	4.6	1200	8.31
1059	12.76	5.25	440	42	4.66	5.8	1800	8.31
1102	12.76	5.27	440	42	4.79	1.7	2400	8.31
1105	12.77	5.30	441	41	4.84	0.5	3000	8.31
					Fe <sup>2+</sup> = 3.0	mg/L		

Did well dewater? Yes  No       Amount actually evacuated: 3.0L

Sampling Time: 1106      Sampling Date: 12/10/19

Sample I.D.: MW-203      Laboratory: TA

Analyzed for: TPH-G BTEX MTBE TPH-D      Other: see COC

Equipment Blank I.D.: @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-204	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 17.48	Depth to Water (ft.): 11.54
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1016      Flow Rate: 200 ml/min      Pump Depth: 14.5'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
1019	13.22	6.19	342	28	2.26	-10.9	600	11.56
1022	13.30	6.11	342	25	2.04	-9.1	1200	11.56
1025	13.38	6.07	341	24	1.97	-6.8	1800	11.56
1028	13.39	6.03	340	23	1.85	-6.5	2400	11.58
1031	13.47	6.01	340	22	1.83	-6.0	3000	11.58

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: <u>3.0 L</u>
Sampling Time: <u>1032</u>	Sampling Date: <u>12/10/19</u>
Sample I.D.: <u>MW-204</u>	Laboratory: <u>TA</u>
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: <u>see COC</u>
Equipment Blank I.D.: _____ @ _____ Time	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-206A	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 16.49	Depth to Water (ft.): 9.98
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>RVC</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1120      Flow Rate: 200 ml/min      Pump Depth: 13.5'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1123	13.27	5.53	590	12	5.30	-16.4	600	10.07
1126	13.33	5.50	590	14	4.83	-18.2	1200	10.07
1129	13.26	6.04	611	14	2.50	-33.7	1800	10.04
1132	13.15	6.09	612	11	2.42	-39.7	2400	10.05
1135	13.11	6.10	615	10	2.33	-42.1	3000	10.05
1138	13.08	6.07	617	11	2.28	-41.9	3600	10.05

Did well dewater? Yes <input type="radio"/> No <input checked="" type="radio"/>	Amount actually evacuated: 3.6L
Sampling Time: 1139	Sampling Date: 12/10/19
Sample I.D.: MW-206A	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see coc
Equipment Blank I.D.: @	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HPI	Client: AECOM - Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-101	Well Diameter (in.): 2 3 4 6 8 <u>    </u>
Total Well Depth (ft.): 20.10	Depth to Water (ft.): 11.82
Depth to Free Product: <u>    </u>	Thickness of Free Product (feet): <u>    </u>
Referenced to: <u>(PVC)</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump                      Peristaltic Pump                      Bladder Pump  
 Sampling Method: Dedicated Tubing                      New Tubing                      Other  
 Start Purge Time: 1306                      Flow Rate: 200 mL/min                      Pump Depth: (11.82) 18'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1309	12.62	6.87	211	51	5.12	-59.2	600	11.88
1312	12.80	6.60	209	47	4.57	-66.5	1200	11.90
1315	12.96	6.55	207	45	3.84	-68.8	1800	11.90
1318	13.04	6.54	207	44	3.66	-68.1	2400	11.90
1321	13.13	<del>6.49</del> 6.49	207	44	3.59	-69.6	3000	11.90

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: 3.0L
Sampling Time: 1322	Sampling Date: 12/9/19
Sample I.D.: MW-101	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: <u>see COC</u>
Equipment Blank I.D.: @ Time	Duplicate I.D.:



## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-102	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 17.35	Depth to Water (ft.): 9.23
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>AVO</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1302      Flow Rate: 200 ml/min      Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or <del>µS/cm</del> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
1305	13.34	6.01	406	48	3.90	63.0	600	9.26
1308	13.53	6.12	408	34	3.78	62.1	1200	9.26
1311	13.58	6.19	409	29	3.60	62.0	1800	9.26
1314	13.57	6.15	410	29	3.57	60.7	2400	9.26
1317	13.55	6.16	410	27	3.43	59.4	3000	9.26

Did well dewater? Yes <input checked="" type="radio"/> No <input type="radio"/>	Amount actually evacuated: 3.0L
Sampling Time: 1318	Sampling Date: 12/10/19
Sample I.D.: MW-102	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see col
Equipment Blank I.D.: @ <small>Time</small>	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/11/19
Well I.D.: MW-301	Well Diameter (in.): <input checked="" type="radio"/> 2 3 4 6 8
Total Well Depth (ft.): 14.59	Depth to Water (ft.): 6.41
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <input checked="" type="radio"/> Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1059      Flow Rate: 200 ml/min      Pump Depth: 10.5'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1102	14.12	7.83	782	101	10.91	53.9	600	6.55
1105	14.38	7.22	760	75	10.38	57.2	1200	6.58
1108	14.33	7.09	758	70	10.29	57.0	1800	6.61
1111	14.29	7.11	757	65	10.18	56.5	2400	6.62
1114	14.25	7.15	755	64	10.14	55.9	3000	6.62

Did well dewater? Yes  No

Amount actually evacuated: 3.0 L

Sampling Time: 1115      Sampling Date: 12/11/19

Sample I.D.: MW-301      Laboratory: TA

Analyzed for: TPH-G BTEX MTBE TPH-D      Other: see coc

Equipment Blank I.D.: @ Time      Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-KPI	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/19/19
Well I.D.: MW-302	Well Diameter (in.): ② 3 4 6 8
Total Well Depth (ft.): 14.70	Depth to Water (ft.): 6.75
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: PVO Grade	Flow Cell Type: 491 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1000      Flow Rate: 200 ml/min      Pump Depth: 10.5'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or μS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1003	16.58	8.36	1436	26	4.19	-38.9	600	6.79
1006	16.82	8.18	1393	24	2.17	-51.8	1200	6.79
1009	16.89	8.09	1378	20	2.18	-54.6	1800	6.79
1012	16.93	8.07	1364	19	2.06	-56.8	2400	6.80
1015	16.95	8.06	1359	19	2.13	-57.4	3000	6.80
						Fe <sup>2+</sup> = 3.0	mg/L	

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: 3.0L
Sampling Time: 1016	Sampling Date: 12/11/19
Sample I.D.: MW-302	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see COC
Equipment Blank I.D.: @	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM - Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-303	Well Diameter (in.): <input checked="" type="radio"/> 2 3 4 6 8
Total Well Depth (ft.): 14.66	Depth to Water (ft.): 6.54
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <input checked="" type="radio"/> PVC Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1150      Flow Rate: 200 mL/min      Pump Depth: 10.5'

Time	Temp. ( <input checked="" type="radio"/> °C or °F)	pH	Cond. (mS/cm or μS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1153	13.72	7.73	552	88	0.95	-62.0	600	6.71
1156	13.77	7.77	558	61	0.80	-61.4	1200	6.73
1159	13.78	7.78	559	50	0.72	-58.1	1800	6.73
1202	13.85	7.80	567	45	0.72	-56.0	2400	6.76
1205	13.86	7.78	569	42	0.77	-55.1	3000	6.76
1206	13.89	7.80	570	41	0.71	-53.9	3600	6.76

Did well dewater? Yes  No

Amount actually evacuated: 3.6L

Sampling Time: 1207      Sampling Date: 12/11/19

Sample I.D.: MW-303      Laboratory: TA

Analyzed for: TPH-G    BTEX    MTBE    TPH-D      Other: see coc

Equipment Blank I.D.: @ Time      Duplicate I.D.:









## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HPI	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-309	Well Diameter (in.): (2) 3 4 6 8 ____
Total Well Depth (ft.): 17.60	Depth to Water (ft.): 6.59
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: (PVC) Grade	Flow Cell Type: Y51 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1129      Flow Rate: 200 ml/min      Pump Depth: 10.5'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1127	14.72	7.51	550	48	0.55	-62.2	600	6.63
1130	14.81	7.50	551	39	0.42	-67.5	1200	6.63
1133	14.83	7.52	552	36	0.47	-69.2	1800	6.66
1136	14.82	7.55	553	37	0.41	-70.8	2400	6.66
1139	14.91	7.49	554	37	0.37	-70.1	3000	6.66

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: 3.0 L
Sampling Time: 1140	Sampling Date: 12/11/19
Sample I.D.: MW-309	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see col
Equipment Blank I.D.: @	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AELOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-310	Well Diameter (in.): (2) 3 4 6 8
Total Well Depth (ft.): 17.58	Depth to Water (ft.): 7.44
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: (PVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1029      Flow Rate: 200 ml/min      Pump Depth: 11'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or gal)	Depth to Water (ft.)
1032	16.29	7.20	1561	36	10.08	150.6	600	7.44
1035	16.39	6.98	1551	31	12.60	154.0	1200	7.44
1038	16.38	6.95	1551	30	12.69	154.8	1800	7.44
1041	16.39	6.94	1551	29	12.49	155.4	2400	7.44
1044	16.40	6.92	1551	28	12.52	155.8	3000	7.44
						Fe <sup>2+</sup> = 5.0	mg/L	

Did well dewater? Yes <input type="radio"/> No <input checked="" type="radio"/>	Amount actually evacuated: 3.0 L
Sampling Time: 1045	Sampling Date: 12/11/19
Sample I.D.: MW-310	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see WOL
Equipment Blank I.D.: @	Duplicate I.D.:





## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-313	Well Diameter (in.): ② 3 4 6 8
Total Well Depth (ft.): 13.38	Depth to Water (ft.): 6.74
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <input checked="" type="checkbox"/> VC Grade	Flow Cell Type: VSI 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0840      Flow Rate: 200 ml/min      Pump Depth: 10'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0843	14.87	8.06	575	11	1.18	-74.7	600	6.75
0846	14.91	8.01	574	6	0.98	-64.3	1200	6.75
0849	14.89	8.05	574	6	0.76	-59.6	1800	6.78
0852	14.88	8.02	574	6	0.67	-58.0	2400	6.78
0855	14.86	7.99	574	5	0.64	-55.7	3000	6.78

Did well dewater? Yes <input checked="" type="checkbox"/> No	Amount actually evacuated: 3.0L
Sampling Time: 0856	Sampling Date: 12/12/19
Sample I.D.: MW-313	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see coc
Equipment Blank I.D.: @	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-314	Well Diameter (in.): (2) 3 4 6 8
Total Well Depth (ft.): 11.82	Depth to Water (ft.): 7.46
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: (FVC) Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1330      Flow Rate: 200 ml/min      Pump Depth: 11'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1333	14.16	5.55	737	9	2.14	-50.2	600	7.52
1336	14.04	5.60	725	8	1.83	-43.9	1200	7.52
1339	14.01	5.64	724	8	1.57	-38.1	1800	7.55
1342	14.01	5.65	724	8	1.59	-37.7	2400	7.56
1345	13.97	5.67	725	7	1.55	-36.0	3000	7.56

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: 3.0L
Sampling Time: 1346	Sampling Date: 12/10/19
Sample I.D.: MW-314	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see coc
Equipment Blank I.D.: @	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HPI	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-315	Well Diameter (in.): <input checked="" type="radio"/> 2   3   4   6   8   ___
Total Well Depth (ft.): 15.88	Depth to Water (ft.): 8.21
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <input checked="" type="radio"/> Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0909      Flow Rate: 200 ml/min      Pump Depth: 11'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0912	14.18	7.90	602	6	1.03	-55.9	600	8.29
0915	14.34	7.92	592	5	0.99	-57.8	1200	8.29
0918	14.43	7.92	588	3	0.97	-61.6	1800	8.29
0921	14.41	7.98	587	3	0.84	-65.4	2400	8.29
0924	14.40	7.98	587	3	0.79	-67.8	3000	8.29

Did well dewater? Yes <input checked="" type="radio"/> No	Amount actually evacuated: 3.0 L
Sampling Time: 0925	Sampling Date: 12/12/19
Sample I.D.: MW-315	Laboratory: TA
Analyzed for: TPH-G   BTEX   MTBE   TPH-D	Other: see COL
Equipment Blank I.D.: @ <small>Time</small>	Duplicate I.D.:



## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HPI	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: TES-mw-1	Well Diameter (in.): <del>3</del> 3 (4) 6 8
Total Well Depth (ft.): 15.62'	Depth to Water (ft.): 9.99
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <del>VC</del> Grade	Flow Cell Type: Y51 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1338      Flow Rate: 200 ml/min      Pump Depth: 13'

Time	Temp. (C or F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1341	13.12	6.81	170	13	6.55	52.6	600	10.33
1344	13.39	6.73	171	11	6.30	53.2	1200	10.40
1347	13.38	6.54	172	12	6.25	57.8	1800	10.40
1350	13.40	6.49	172	11	6.19	63.3	2400	10.40
1353	13.42	6.51	172	11	6.20	63.9	3000	10.40

Did well dewater? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Amount actually evacuated: 3.0L
Sampling Time: 1354	Sampling Date: 12/9/19
Sample I.D.: TES-mw-1	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: See COC
Equipment Blank I.D.: @	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: TX-03A	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 19.89	Depth to Water (ft.): 6.27
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0902      Flow Rate: 200 ml/min      Pump Depth: 10.5'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>ml</u> )	Depth to Water (ft.)
0905	16.64	9.55	1709	11	2.55	-104.0	600	6.34
0908	16.05	8.71	1650	8	2.07	-96.5	1200	6.36
0911	16.49	8.67	1540	6	2.01	-97.9	1800	6.36
0914	16.62	8.65	1519	5	1.98	-93.4	2400	6.36
0917	16.75	8.64	1514	5	1.86	-94.0	3000	6.36
					Fe <sup>2+</sup> =	3.0	mg/L	

Did well dewater? Yes  No      Amount actually evacuated: 3.0L  
 Sampling Time: 0918      Sampling Date: 12/11/19  
 Sample I.D.: TX-03A      Laboratory: TA  
 Analyzed for: TPH-G BTEX MTBE TPH-D      Other: see COC  
 Equipment Blank I.D.: \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: mw-05	Well Diameter (in.): <u>(2)</u> 3 4 6 8
Total Well Depth (ft.): 18.89	Depth to Water (ft.): 7.09
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>(PVC)</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1405      Flow Rate: 200 ml/min      Pump Depth: 13'

Time	Temp. ( <u>(C)</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>(mL)</u> )	Depth to Water (ft.)
1408	14.52	5.64	311	19	5.76	29.8	600	7.13
1411	14.44	5.85	308	18	4.92	34.7	1200	7.16
1414	14.37	5.89	304	16	4.60	37.8	1800	7.16
1417	14.32	5.90	303	16	4.70	35.0	2400	7.18
1418	14.31	5.91	300	16	4.76	32.8	3000	7.18

Did well dewater? Yes <u>(No)</u>	Amount actually evacuated: 3.0L
Sampling Time: 1419	Sampling Date: 12/10/19
Sample I.D.: MW-05	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: <u>see col</u>
Equipment Blank I.D.: @ <small>Time</small>	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM - Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-111	Well Diameter (in.): <input checked="" type="radio"/> 2   3   4   6   8   ___
Total Well Depth (ft.): 14.66	Depth to Water (ft.): 5.66
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <input checked="" type="radio"/> PVC   Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1413      Flow Rate: 200 ml/min      Pump Depth: 10'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1416	15.23	7.69	285	14	1.04	-3.0	600	5.69
1419	15.28	7.67	284	12	0.98	-6.2	1200	5.69
1422	15.33	7.64	283	10	0.88	-7.5	1800	5.69
1425	15.39	7.55	281	7	0.61	-10.1	2400	5.69
1428	15.39	7.54	281	6	0.54	-12.1	3000	5.69
1431	15.42	7.54	280	6	0.40	-13.1	3600	5.69

Did well dewater? Yes  No      Amount actually evacuated: 3.6 L

Sampling Time: 1432      Sampling Date: 12/11/19

Sample I.D.: MW-111      Laboratory: TA

Analyzed for: TPH-G   BTEX   MTBE   TPH-D      (Other): see WOC

Equipment Blank I.D.: @      Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-MP1	Client: AECOM - Shell
Sampler: MP	Gauging Date: 12/9/19
Well I.D.: MW-112A	Well Diameter (in.): <u>(2)</u> 3 4 6 8
Total Well Depth (ft.): 14.55	Depth to Water (ft.): 6.73
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>(FVC)</u> Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0744      Flow Rate: 200 ml/min      Pump Depth: 10.5'

Time	Temp. ( <u>(C)</u> or °F)	pH	Cond. (mS/cm or <u>(C)</u> μS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>(C)</u> mL)	Depth to Water (ft.)
0747	13.42	9.46	625	18	1.18	-66.5	600	6.69
0750	13.56	9.29	623	17	0.92	-78.3	1200	6.69
0753	13.78	8.95	622	12	0.69	-80.0	1800	6.69
0756	13.80	8.91	621	12	0.65	-80.3	2400	6.69
0759	13.87	8.90	620	12	0.50	-80.8	3000	6.70

Did well dewater? Yes <u>(No)</u>	Amount actually evacuated: 3.0 L
Sampling Time: 0800	Sampling Date: 12/12/19
Sample I.D.: MW-112A	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see WOC
Equipment Blank I.D.: @ _____	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: SH-04	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 17.94	Depth to Water (ft.): 10.50
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1300      Flow Rate: 200 mL/min      Pump Depth: 14'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
1303	14.60	7.81	389	33	1.03	-1.6	600	10.51
1306	14.48	7.71	390	30	0.47	-10.4	1200	10.51
1309	14.49	7.55	390	21	0.54	-10.9	1800	10.51
1312	14.43	7.53	391	20	0.60	-11.2	2400	10.51
1315	14.43	7.51	391	19	0.63	-12.1	3000	10.51

Did well dewater? Yes No      Amount actually evacuated: 3.0L  
 Sampling Time: 1316      Sampling Date: 12/11/19  
 Sample I.D.: SH-04      Laboratory: TA  
 Analyzed for: TPH-G BTEX MTBE TPH-D      Other: see log  
 Equipment Blank I.D.: @ \_\_\_\_\_      Duplicate I.D.: \_\_\_\_\_

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HPI	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-104	Well Diameter (in.): ② 3 4 6 8
Total Well Depth (ft.): 14.72	Depth to Water (ft.): 6.99
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump                      Peristaltic Pump                      Bladder Pump  
 Sampling Method: Dedicated Tubing                      New Tubing                      Other \_\_\_\_\_  
 Start Purge Time: 1429                      Flow Rate: 200 ml/min                      Pump Depth: 10.5'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1432	15.70	5.21	340	46	6.17	134.2	600	7.05
1435	15.65	5.22	341	42	3.28	100.6	1200	7.05
1438	15.52	5.34	342	39	2.82	80.6	1800	7.05
1441	15.49	5.35	343	36	2.64	76.4	2400	7.05
1444	15.35	5.40	345	36	2.66	74.8	3000	7.05

Did well dewater? Yes <input checked="" type="radio"/> No <input type="radio"/>	Amount actually evacuated: 3.02
Sampling Time: 1445	Sampling Date: 12/10/19
Sample I.D.: MW-104	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see WOL
Equipment Blank I.D.: @	Duplicate I.D.:



## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AELOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-105	Well Diameter (in.): <input checked="" type="radio"/> 2   3   4   6   8   ___
Total Well Depth (ft.): 13.77	Depth to Water (ft.): 5.83
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <input checked="" type="radio"/> Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1328      Flow Rate: 200 mL/min      Pump Depth: 10'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1331	15.21	7.69	162	108	1.24	-14.9	600	5.89
1334	15.28	7.52	159	48	0.55	-12.5	1200	5.89
1337	15.32	7.47	158	42	0.41	-12.7	1800	5.90
1340	15.33	7.47	159	45	0.48	-14.5	2400	5.91
1343	15.47	7.29	160	26	0.49	-15.3	3000	5.91
1346	15.50	7.28	165	25	0.50	-17.1	3600	5.91
1349	15.53	7.31	166	25	0.48	-17.2	4200	5.91

Did well dewater? Yes <input checked="" type="radio"/> No	Amount actually evacuated: 4.2L
Sampling Time: 1350	Sampling Date: 12/14/19
Sample I.D.: MW-105	Laboratory: TA
Analyzed for: TPH-G   BTEX   MTBE   TPH-D	Other: see coc
Equipment Blank I.D.: @	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: TX-04	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 17.99	Depth to Water (ft.): 11.22
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>451 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0812      Flow Rate: 200 ml/min      Pump Depth: 15'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
0815	14.96	8.56	302	16	1.41	-70.6	600	11.26
0818	14.64	8.55	299	15	0.89	-76.2	1200	11.26
0821	14.73	8.49	295	15	0.67	-79.2	1800	11.26
0824	14.76	8.46	295	14	0.59	-81.5	2400	11.26
0827	14.81	8.46	295	14	0.44	-83.3	3000	11.26

Did well dewater? Yes <input type="radio"/> No <input checked="" type="radio"/>	Amount actually evacuated: 3.0 L
Sampling Time: 0828	Sampling Date: 12/12/19
Sample I.D.: TX-04	Laboratory: JA
Analyzed for: TPH-G BTEX MTBE TPH-D	<u>Other</u> see LOC
Equipment Blank I.D.: @	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: <del>12190</del> <sup>110</sup> 191204-NPI	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: TX-06A	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 19.50	Depth to Water (ft.): 5.20
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>PVC</u> Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 1229      Flow Rate: 200 ml/min      Pump Depth: 10'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>ml</u> )	Depth to Water (ft.)
1232	13.12	5.33	229	15	4.99	20.8	600	5.26
1235	13.21	5.62	230	14	4.88	17.2	1200	5.29
1238	13.38	5.62	229	12	4.87	16.1	1800	5.29
1241	13.45	5.63	230	11	4.60	15.1	2400	5.31
1244	13.51	5.67	231	12	4.59	12.5	3000	5.31
1247	13.58	5.62	230	12	4.49	8.6	3600	5.31

Did well dewater? Yes <u>No</u>	Amount actually evacuated: 3.6L
Sampling Time: 1248	Sampling Date: 12/10/19
Sample I.D.: TX-06A	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see Col
Equipment Blank I.D.: @ _____	Duplicate I.D.: _____

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AECOM-Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-213	Well Diameter (in.): ② 3 4 6 8
Total Well Depth (ft.): 38.91	Depth to Water (ft.): 6.26
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: PVO Grade	Flow Cell Type: 451 556

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0757      Flow Rate: 200 ml/min      Pump Depth: 32'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or μS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0800	10.76	8.05	1257	15	4.28	-73.1	600	6.29
0803	10.79	8.36	1300	14	2.62	-94.6	1200	6.29
0806	10.89	8.49	1317	16	1.56	-107.2	1800	6.29
0809	10.91	8.52	1320	16	1.37	-109.8	2400	6.30
0812	10.94	8.51	1321	17	1.31	-111.2	3000	6.31
0815	10.91	8.51	1322	16	1.28	-112.7	3600	6.31

Did well dewater? Yes <input checked="" type="radio"/> No	Amount actually evacuated: 3.6L
Sampling Time: 0816	Sampling Date: 12/11/19
Sample I.D.: MW-213	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: see coc
Equipment Blank I.D.: @ Time	Duplicate I.D.:

## LOW FLOW WELL MONITORING DATA SHEET

Project #: 191209-HP1	Client: AEIOM - Shell
Sampler: HP	Gauging Date: 12/9/19
Well I.D.: MW-214	Well Diameter (in.): <u>2</u> 3 4 6 8
Total Well Depth (ft.): 39.22	Depth to Water (ft.): 6.39
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <u>PVO</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump      Peristaltic Pump      Bladder Pump  
 Sampling Method: Dedicated Tubing      New Tubing      Other \_\_\_\_\_  
 Start Purge Time: 0828      Flow Rate: 200 ml/min      Pump Depth: 32'

Time	Temp. ( <u>C</u> or °F)	pH	Cond. (mS/cm or <u>µS/cm</u> )	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>mL</u> )	Depth to Water (ft.)
0831	10.65	10.25	9876	10	4.96	-122.9	600	6.48
0834	11.37	10.38	1280	9	2.53	-170.1	1200	6.48
0837	11.68	10.35	1546	10	1.08	-206.8	1800	6.49
0840	11.44	10.27	1573	9	1.03	-209.4	2400	6.49
0843	11.41	10.33	1576	9	1.16	-211.5	3000	6.49

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: 3.02
Sampling Time: 0844	Sampling Date: 12/11/19
Sample I.D.: MW-214	Laboratory: TA
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: <u>see coc</u>
Equipment Blank I.D.: @ _____	Duplicate I.D.: _____

## **Appendix B Data Validation and Laboratory Analytical Reports**

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Spokane

11922 East 1st Ave

Spokane, WA 99206

Tel: (509)924-9200

TestAmerica Job ID: 590-10620-1

Client Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Sampling Event: Quarterly Groundwater Monitoring

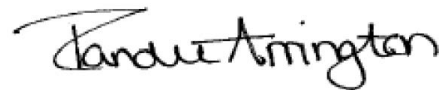
For:

AECOM

111 SW Columbia Street, Suite 1500

Portland, Oregon 97201

Attn: Nicky Moody



Authorized for release by:

3/28/2019 11:45:59 AM

Randee Arrington, Project Manager II

(509)924-9200

[randee.arrington@testamericainc.com](mailto:randee.arrington@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.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.*





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# Case Narrative

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

**Job ID: 590-10620-1**

**Laboratory: TestAmerica Spokane**

## Narrative

### Receipt

The samples were received on 3/20/2019 1:26 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6° C.

### GC/MS VOA

Method 8260C: The following sample was above calibration for Benzene: (590-10620-B-1 DU). Results were reported as estimate values for QC purposes; the source sample was diluted and re-analyzed.

Method 8260C: The following samples were above calibration for Ethylbenzene: (590-10620-B-3 MS) and (590-10620-C-3 MSD). Results were reported as estimate values for QC purposes; the source sample was diluted and re-analyzed.

Method 8260C: The result for Ethylbenzene exceeded the calibration range in sample (590-10620-C-5 DU), but the source sample was within range. The result was flagged as an estimate value and reported for RPD calculation.

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

### GC Semi VOA

Method NWTPH-Dx: Detected hydrocarbons appear to be due to heavily weathered diesel in the following samples: MW-313 (590-10620-10) and MW-314 (590-10620-11).

Method NWTPH-Dx: Detected hydrocarbons appear to be due to weathered diesel and/or a heavy gas/light diesel range component in the following sample: MW-315 (590-10620-12).

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

### Organic Prep

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

### VOA Prep

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

# Sample Summary

Client: AECOM

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-10620-1	MW-301	Ground Water	03/19/19 10:11	03/20/19 13:26
590-10620-2	MW-302	Ground Water	03/19/19 12:13	03/20/19 13:26
590-10620-3	MW-303	Ground Water	03/19/19 09:39	03/20/19 13:26
590-10620-4	MW-304	Ground Water	03/19/19 11:08	03/20/19 13:26
590-10620-5	MW-307	Ground Water	03/18/19 12:16	03/20/19 13:26
590-10620-6	MW-308	Ground Water	03/18/19 12:45	03/20/19 13:26
590-10620-7	MW-310	Ground Water	03/19/19 11:45	03/20/19 13:26
590-10620-8	MW-311	Ground Water	03/18/19 14:15	03/20/19 13:26
590-10620-9	MW-312	Ground Water	03/19/19 09:09	03/20/19 13:26
590-10620-10	MW-313	Water	03/19/19 08:37	03/20/19 13:26
590-10620-11	MW-314	Water	03/19/19 08:04	03/20/19 13:26
590-10620-12	MW-315	Water	03/18/19 13:41	03/20/19 13:26
590-10620-13	TX-03A	Ground Water	03/19/19 10:43	03/20/19 13:26
590-10620-14	TB-1	Ground Water	03/18/19 08:00	03/20/19 13:26

# Method Summary

Client: AECOM

TestAmerica Job ID: 590-10620-1

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL SPK
5030C	Purge and Trap	SW846	TAL SPK

#### Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL SPK = TestAmerica Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

# Detection Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Client Sample ID: MW-301

## Lab Sample ID: 590-10620-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	99.9		4.00	0.930	ug/L	10		8260C	Total/NA
Ethylbenzene	9.23		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	1.61	J	2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.205	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	1.82		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	1.82	J	3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	1340		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-302

## Lab Sample ID: 590-10620-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	13.3		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	12.2		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	3.40		2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.933	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	0.823	J	1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	4.33		3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	1840	J	3000	1410	ug/L	20		NWTPH-Gx	Total/NA

## Client Sample ID: MW-303

## Lab Sample ID: 590-10620-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	34.6		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	194		10.0	1.98	ug/L	10		8260C	Total/NA
m,p-Xylene	9.81		2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	1.32		1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	6.11		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	11.1		3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	2480		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-304

## Lab Sample ID: 590-10620-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.448		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	0.514	J	1.00	0.198	ug/L	1		8260C	Total/NA
Gasoline	105	J F2	150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-307

## Lab Sample ID: 590-10620-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	58.7		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	50.0		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	3.54		2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.398	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	2.69		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	3.93		3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	965		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-308

## Lab Sample ID: 590-10620-6

This Detection Summary does not include radiochemical test results.

TestAmerica Spokane

# Detection Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Client Sample ID: MW-308 (Continued)

## Lab Sample ID: 590-10620-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.815		0.400	0.0930	ug/L	1		8260C	Total/NA

## Client Sample ID: MW-310

## Lab Sample ID: 590-10620-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.27		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	0.226	J	1.00	0.198	ug/L	1		8260C	Total/NA
Gasoline	297		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-311

## Lab Sample ID: 590-10620-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.107	J	0.400	0.0930	ug/L	1		8260C	Total/NA
m,p-Xylene	0.321	J	2.00	0.280	ug/L	1		8260C	Total/NA
Toluene	0.409	J	1.00	0.312	ug/L	1		8260C	Total/NA
Gasoline	300		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-312

## Lab Sample ID: 590-10620-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	183		4.00	0.930	ug/L	10		8260C	Total/NA
Ethylbenzene	4.72		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	3.84		2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.623	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	3.72		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	4.47		3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	2070		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-313

## Lab Sample ID: 590-10620-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.174	J	0.233	0.107	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-314

## Lab Sample ID: 590-10620-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	157		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.608		0.234	0.107	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.139	J	0.390	0.117	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-315

## Lab Sample ID: 590-10620-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	23.3		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	0.959	J	1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	3.49		2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.415	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	3.63		1.00	0.312	ug/L	1		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Spokane

# Detection Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Client Sample ID: MW-315 (Continued)

Lab Sample ID: 590-10620-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	3.90		3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	1400		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	1.89		0.237	0.109	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.149	J	0.395	0.118	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: TX-03A

Lab Sample ID: 590-10620-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	13.1		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	1.43		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	0.296	J	2.00	0.280	ug/L	1		8260C	Total/NA
Gasoline	938		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: TB-1

Lab Sample ID: 590-10620-14

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Spokane



# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

**Client Sample ID: MW-301**

**Date Collected: 03/19/19 10:11**

**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-1**

**Matrix: Ground Water**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	99.9		4.00	0.930	ug/L			03/27/19 15:43	10
Ethylbenzene	9.23		1.00	0.198	ug/L			03/22/19 19:08	1
m,p-Xylene	1.61	J	2.00	0.280	ug/L			03/22/19 19:08	1
o-Xylene	0.205	J	1.00	0.162	ug/L			03/22/19 19:08	1
Toluene	1.82		1.00	0.312	ug/L			03/22/19 19:08	1
Xylenes, Total	1.82	J	3.00	0.442	ug/L			03/22/19 19:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 125		03/22/19 19:08	1
1,2-Dichloroethane-d4 (Surr)	93		70 - 125		03/25/19 23:16	1
1,2-Dichloroethane-d4 (Surr)	103		70 - 125		03/27/19 15:43	10
4-Bromofluorobenzene (Surr)	88		69 - 120		03/22/19 19:08	1
4-Bromofluorobenzene (Surr)	90		69 - 120		03/25/19 23:16	1
4-Bromofluorobenzene (Surr)	100		69 - 120		03/27/19 15:43	10
Dibromofluoromethane (Surr)	102		80 - 120		03/22/19 19:08	1
Dibromofluoromethane (Surr)	106		80 - 120		03/25/19 23:16	1
Dibromofluoromethane (Surr)	97		80 - 120		03/27/19 15:43	10
Toluene-d8 (Surr)	98		80 - 120		03/22/19 19:08	1
Toluene-d8 (Surr)	97		80 - 120		03/25/19 23:16	1
Toluene-d8 (Surr)	108		80 - 120		03/27/19 15:43	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1340		150	70.4	ug/L			03/22/19 19:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		68.7 - 141		03/22/19 19:08	1

**Client Sample ID: MW-302**

**Date Collected: 03/19/19 12:13**

**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-2**

**Matrix: Ground Water**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	13.3		0.400	0.0930	ug/L			03/25/19 23:37	1
Ethylbenzene	12.2		1.00	0.198	ug/L			03/25/19 23:37	1
m,p-Xylene	3.40		2.00	0.280	ug/L			03/25/19 23:37	1
o-Xylene	0.933	J	1.00	0.162	ug/L			03/25/19 23:37	1
Toluene	0.823	J	1.00	0.312	ug/L			03/25/19 23:37	1
Xylenes, Total	4.33		3.00	0.442	ug/L			03/25/19 23:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 125		03/25/19 23:37	1
4-Bromofluorobenzene (Surr)	91		69 - 120		03/25/19 23:37	1
Dibromofluoromethane (Surr)	104		80 - 120		03/25/19 23:37	1
Toluene-d8 (Surr)	98		80 - 120		03/25/19 23:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1840	J	3000	1410	ug/L			03/22/19 19:50	20

TestAmerica Spokane

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Client Sample ID: MW-302

Date Collected: 03/19/19 12:13

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-2

Matrix: Ground Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		68.7 - 141		03/22/19 19:50	20

## Client Sample ID: MW-303

Date Collected: 03/19/19 09:39

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-3

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	34.6		0.400	0.0930	ug/L			03/22/19 20:54	1
Ethylbenzene	194		10.0	1.98	ug/L			03/25/19 23:58	10
m,p-Xylene	9.81		2.00	0.280	ug/L			03/22/19 20:54	1
o-Xylene	1.32		1.00	0.162	ug/L			03/22/19 20:54	1
Toluene	6.11		1.00	0.312	ug/L			03/22/19 20:54	1
Xylenes, Total	11.1		3.00	0.442	ug/L			03/22/19 20:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 125		03/22/19 20:54	1
1,2-Dichloroethane-d4 (Surr)	97		70 - 125		03/25/19 23:58	10
4-Bromofluorobenzene (Surr)	97		69 - 120		03/22/19 20:54	1
4-Bromofluorobenzene (Surr)	89		69 - 120		03/25/19 23:58	10
Dibromofluoromethane (Surr)	96		80 - 120		03/22/19 20:54	1
Dibromofluoromethane (Surr)	100		80 - 120		03/25/19 23:58	10
Toluene-d8 (Surr)	96		80 - 120		03/22/19 20:54	1
Toluene-d8 (Surr)	94		80 - 120		03/25/19 23:58	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2480		150	70.4	ug/L			03/22/19 20:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		68.7 - 141		03/22/19 20:54	1

## Client Sample ID: MW-304

Date Collected: 03/19/19 11:08

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-4

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.448		0.400	0.0930	ug/L			03/26/19 00:20	1
Ethylbenzene	0.514	J	1.00	0.198	ug/L			03/26/19 00:20	1
m,p-Xylene	ND		2.00	0.280	ug/L			03/26/19 00:20	1
o-Xylene	ND		1.00	0.162	ug/L			03/26/19 00:20	1
Toluene	ND		1.00	0.312	ug/L			03/26/19 00:20	1
Xylenes, Total	ND		3.00	0.442	ug/L			03/26/19 00:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 125		03/26/19 00:20	1
4-Bromofluorobenzene (Surr)	93		69 - 120		03/26/19 00:20	1
Dibromofluoromethane (Surr)	99		80 - 120		03/26/19 00:20	1
Toluene-d8 (Surr)	95		80 - 120		03/26/19 00:20	1

TestAmerica Spokane

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Client Sample ID: MW-304

Date Collected: 03/19/19 11:08

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-4

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	105	J F2	150	70.4	ug/L			03/22/19 21:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		68.7 - 141					03/22/19 21:58	1

## Client Sample ID: MW-307

Date Collected: 03/18/19 12:16

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-5

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	58.7		0.400	0.0930	ug/L			03/26/19 00:41	1
Ethylbenzene	50.0		1.00	0.198	ug/L			03/26/19 00:41	1
m,p-Xylene	3.54		2.00	0.280	ug/L			03/26/19 00:41	1
o-Xylene	0.398	J	1.00	0.162	ug/L			03/26/19 00:41	1
Toluene	2.69		1.00	0.312	ug/L			03/26/19 00:41	1
Xylenes, Total	3.93		3.00	0.442	ug/L			03/26/19 00:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 125					03/26/19 00:41	1
4-Bromofluorobenzene (Surr)	95		69 - 120					03/26/19 00:41	1
Dibromofluoromethane (Surr)	102		80 - 120					03/26/19 00:41	1
Toluene-d8 (Surr)	92		80 - 120					03/26/19 00:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	965		150	70.4	ug/L			03/23/19 23:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		68.7 - 141					03/23/19 23:01	1

## Client Sample ID: MW-308

Date Collected: 03/18/19 12:45

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-6

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.815		0.400	0.0930	ug/L			03/26/19 01:23	1
Ethylbenzene	ND		1.00	0.198	ug/L			03/26/19 01:23	1
m,p-Xylene	ND		2.00	0.280	ug/L			03/26/19 01:23	1
o-Xylene	ND		1.00	0.162	ug/L			03/26/19 01:23	1
Toluene	ND		1.00	0.312	ug/L			03/26/19 01:23	1
Xylenes, Total	ND		3.00	0.442	ug/L			03/26/19 01:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 125					03/26/19 01:23	1
4-Bromofluorobenzene (Surr)	90		69 - 120					03/26/19 01:23	1
Dibromofluoromethane (Surr)	102		80 - 120					03/26/19 01:23	1
Toluene-d8 (Surr)	94		80 - 120					03/26/19 01:23	1

TestAmerica Spokane

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Client Sample ID: MW-308

Date Collected: 03/18/19 12:45

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-6

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			03/23/19 23:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		68.7 - 141					03/23/19 23:23	1

## Client Sample ID: MW-310

Date Collected: 03/19/19 11:45

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-7

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.27		0.400	0.0930	ug/L			03/26/19 02:26	1
Ethylbenzene	0.226	J	1.00	0.198	ug/L			03/26/19 02:26	1
m,p-Xylene	ND		2.00	0.280	ug/L			03/26/19 02:26	1
o-Xylene	ND		1.00	0.162	ug/L			03/26/19 02:26	1
Toluene	ND		1.00	0.312	ug/L			03/26/19 02:26	1
Xylenes, Total	ND		3.00	0.442	ug/L			03/26/19 02:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 125					03/26/19 02:26	1
4-Bromofluorobenzene (Surr)	90		69 - 120					03/26/19 02:26	1
Dibromofluoromethane (Surr)	100		80 - 120					03/26/19 02:26	1
Toluene-d8 (Surr)	91		80 - 120					03/26/19 02:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	297		150	70.4	ug/L			03/26/19 02:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		68.7 - 141					03/26/19 02:26	1

## Client Sample ID: MW-311

Date Collected: 03/18/19 14:15

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-8

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.107	J	0.400	0.0930	ug/L			03/26/19 03:30	1
Ethylbenzene	ND		1.00	0.198	ug/L			03/26/19 03:30	1
m,p-Xylene	0.321	J	2.00	0.280	ug/L			03/26/19 03:30	1
o-Xylene	ND		1.00	0.162	ug/L			03/26/19 03:30	1
Toluene	0.409	J	1.00	0.312	ug/L			03/26/19 03:30	1
Xylenes, Total	ND		3.00	0.442	ug/L			03/26/19 03:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 125					03/26/19 03:30	1
4-Bromofluorobenzene (Surr)	88		69 - 120					03/26/19 03:30	1
Dibromofluoromethane (Surr)	100		80 - 120					03/26/19 03:30	1
Toluene-d8 (Surr)	90		80 - 120					03/26/19 03:30	1

TestAmerica Spokane

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Client Sample ID: MW-311

Date Collected: 03/18/19 14:15

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-8

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	300		150	70.4	ug/L			03/26/19 03:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		68.7 - 141					03/26/19 03:30	1

## Client Sample ID: MW-312

Date Collected: 03/19/19 09:09

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-9

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	183		4.00	0.930	ug/L			03/27/19 16:05	10
Ethylbenzene	4.72		1.00	0.198	ug/L			03/26/19 03:51	1
m,p-Xylene	3.84		2.00	0.280	ug/L			03/26/19 03:51	1
o-Xylene	0.623	J	1.00	0.162	ug/L			03/26/19 03:51	1
Toluene	3.72		1.00	0.312	ug/L			03/26/19 03:51	1
Xylenes, Total	4.47		3.00	0.442	ug/L			03/26/19 03:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		70 - 125					03/26/19 03:51	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 125					03/27/19 16:05	10
4-Bromofluorobenzene (Surr)	94		69 - 120					03/26/19 03:51	1
4-Bromofluorobenzene (Surr)	98		69 - 120					03/27/19 16:05	10
Dibromofluoromethane (Surr)	97		80 - 120					03/26/19 03:51	1
Dibromofluoromethane (Surr)	97		80 - 120					03/27/19 16:05	10
Toluene-d8 (Surr)	93		80 - 120					03/26/19 03:51	1
Toluene-d8 (Surr)	101		80 - 120					03/27/19 16:05	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2070		150	70.4	ug/L			03/26/19 03:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		68.7 - 141					03/26/19 03:51	1

## Client Sample ID: MW-313

Date Collected: 03/19/19 08:37

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-10

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			03/26/19 04:12	1
Ethylbenzene	ND		1.00	0.198	ug/L			03/26/19 04:12	1
m,p-Xylene	ND		2.00	0.280	ug/L			03/26/19 04:12	1
o-Xylene	ND		1.00	0.162	ug/L			03/26/19 04:12	1
Toluene	ND		1.00	0.312	ug/L			03/26/19 04:12	1
Xylenes, Total	ND		3.00	0.442	ug/L			03/26/19 04:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 125					03/26/19 04:12	1
4-Bromofluorobenzene (Surr)	90		69 - 120					03/26/19 04:12	1

TestAmerica Spokane

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

**Client Sample ID: MW-313**

**Lab Sample ID: 590-10620-10**

**Date Collected: 03/19/19 08:37**

**Matrix: Water**

**Date Received: 03/20/19 13:26**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	98		80 - 120		03/26/19 04:12	1
Toluene-d8 (Surr)	95		80 - 120		03/26/19 04:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			03/26/19 04:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		68.7 - 141		03/26/19 04:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.174</b>	<b>J</b>	0.233	0.107	mg/L		03/27/19 11:23	03/27/19 18:11	1

Residual Range Organics (RRO) (C25-C36)	ND		0.389	0.117	mg/L		03/27/19 11:23	03/27/19 18:11	1
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Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150	03/27/19 11:23	03/27/19 18:11	1
n-Triacontane-d62	66		50 - 150	03/27/19 11:23	03/27/19 18:11	1

**Client Sample ID: MW-314**

**Lab Sample ID: 590-10620-11**

**Date Collected: 03/19/19 08:04**

**Matrix: Water**

**Date Received: 03/20/19 13:26**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			03/26/19 04:33	1
Ethylbenzene	ND		1.00	0.198	ug/L			03/26/19 04:33	1
m,p-Xylene	ND		2.00	0.280	ug/L			03/26/19 04:33	1
o-Xylene	ND		1.00	0.162	ug/L			03/26/19 04:33	1
Toluene	ND		1.00	0.312	ug/L			03/26/19 04:33	1
Xylenes, Total	ND		3.00	0.442	ug/L			03/26/19 04:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 125		03/26/19 04:33	1
4-Bromofluorobenzene (Surr)	89		69 - 120		03/26/19 04:33	1
Dibromofluoromethane (Surr)	102		80 - 120		03/26/19 04:33	1
Toluene-d8 (Surr)	90		80 - 120		03/26/19 04:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>157</b>		150	70.4	ug/L			03/26/19 04:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		68.7 - 141		03/26/19 04:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.608</b>		0.234	0.107	mg/L		03/27/19 11:23	03/27/19 18:30	1

TestAmerica Spokane



# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

**Client Sample ID: MW-314**

**Date Collected: 03/19/19 08:04**

**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-11**

**Matrix: Water**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Residual Range Organics (RRO) (C25-C36)</b>	<b>0.139</b>	<b>J</b>	0.390	0.117	mg/L		03/27/19 11:23	03/27/19 18:30	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o</i> -Terphenyl	89		50 - 150				03/27/19 11:23	03/27/19 18:30	1
<i>n</i> -Triacontane-d62	74		50 - 150				03/27/19 11:23	03/27/19 18:30	1

**Client Sample ID: MW-315**

**Date Collected: 03/18/19 13:41**

**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-12**

**Matrix: Water**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>23.3</b>		0.400	0.0930	ug/L			03/25/19 20:13	1
<b>Ethylbenzene</b>	<b>0.959</b>	<b>J</b>	1.00	0.198	ug/L			03/25/19 20:13	1
<b>m,p-Xylene</b>	<b>3.49</b>		2.00	0.280	ug/L			03/25/19 20:13	1
<b>o-Xylene</b>	<b>0.415</b>	<b>J</b>	1.00	0.162	ug/L			03/25/19 20:13	1
<b>Toluene</b>	<b>3.63</b>		1.00	0.312	ug/L			03/25/19 20:13	1
<b>Xylenes, Total</b>	<b>3.90</b>		3.00	0.442	ug/L			03/25/19 20:13	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>1,2</i> -Dichloroethane-d4 (Surr)	101		70 - 125					03/25/19 20:13	1
<i>4</i> -Bromofluorobenzene (Surr)	105		69 - 120					03/25/19 20:13	1
<i>Dibromofluoromethane</i> (Surr)	94		80 - 120					03/25/19 20:13	1
<i>Toluene</i> -d8 (Surr)	101		80 - 120					03/25/19 20:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>1400</b>		150	70.4	ug/L			03/25/19 20:13	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>4</i> -Bromofluorobenzene (Surr)	105		68.7 - 141					03/25/19 20:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>1.89</b>		0.237	0.109	mg/L		03/27/19 11:23	03/27/19 18:49	1
<b>Residual Range Organics (RRO) (C25-C36)</b>	<b>0.149</b>	<b>J</b>	0.395	0.118	mg/L		03/27/19 11:23	03/27/19 18:49	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o</i> -Terphenyl	86		50 - 150				03/27/19 11:23	03/27/19 18:49	1
<i>n</i> -Triacontane-d62	73		50 - 150				03/27/19 11:23	03/27/19 18:49	1

**Client Sample ID: TX-03A**

**Date Collected: 03/19/19 10:43**

**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-13**

**Matrix: Ground Water**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>13.1</b>		0.400	0.0930	ug/L			03/25/19 20:57	1
<b>Ethylbenzene</b>	<b>1.43</b>		1.00	0.198	ug/L			03/25/19 20:57	1

TestAmerica Spokane



# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

**Client Sample ID: TX-03A**

**Date Collected: 03/19/19 10:43**

**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-13**

**Matrix: Ground Water**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>m,p-Xylene</b>	<b>0.296</b>	<b>J</b>	2.00	0.280	ug/L	-		03/25/19 20:57	1
o-Xylene	ND		1.00	0.162	ug/L	-		03/25/19 20:57	1
Toluene	ND		1.00	0.312	ug/L	-		03/25/19 20:57	1
Xylenes, Total	ND		3.00	0.442	ug/L	-		03/25/19 20:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 125		03/25/19 20:57	1
4-Bromofluorobenzene (Surr)	105		69 - 120		03/25/19 20:57	1
Dibromofluoromethane (Surr)	96		80 - 120		03/25/19 20:57	1
Toluene-d8 (Surr)	98		80 - 120		03/25/19 20:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>938</b>		150	70.4	ug/L	-		03/25/19 20:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		68.7 - 141		03/25/19 20:57	1

**Client Sample ID: TB-1**

**Date Collected: 03/18/19 08:00**

**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-14**

**Matrix: Ground Water**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L	-		03/25/19 21:42	1
Ethylbenzene	ND		1.00	0.198	ug/L	-		03/25/19 21:42	1
m,p-Xylene	ND		2.00	0.280	ug/L	-		03/25/19 21:42	1
o-Xylene	ND		1.00	0.162	ug/L	-		03/25/19 21:42	1
Toluene	ND		1.00	0.312	ug/L	-		03/25/19 21:42	1
Xylenes, Total	ND		3.00	0.442	ug/L	-		03/25/19 21:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 125		03/25/19 21:42	1
4-Bromofluorobenzene (Surr)	103		69 - 120		03/25/19 21:42	1
Dibromofluoromethane (Surr)	96		80 - 120		03/25/19 21:42	1
Toluene-d8 (Surr)	104		80 - 120		03/25/19 21:42	1

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

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

**Lab Sample ID: MB 590-21432/5**  
**Matrix: Water**  
**Analysis Batch: 21432**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			03/22/19 12:44	1
Ethylbenzene	ND		1.00	0.198	ug/L			03/22/19 12:44	1
m,p-Xylene	ND		2.00	0.280	ug/L			03/22/19 12:44	1
o-Xylene	ND		1.00	0.162	ug/L			03/22/19 12:44	1
Toluene	ND		1.00	0.312	ug/L			03/22/19 12:44	1
Xylenes, Total	ND		3.00	0.442	ug/L			03/22/19 12:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 125		03/22/19 12:44	1
4-Bromofluorobenzene (Surr)	101		69 - 120		03/22/19 12:44	1
Dibromofluoromethane (Surr)	100		80 - 120		03/22/19 12:44	1
Toluene-d8 (Surr)	104		80 - 120		03/22/19 12:44	1

**Lab Sample ID: LCS 590-21432/1003**  
**Matrix: Water**  
**Analysis Batch: 21432**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	11.45		ug/L		115	80 - 120
Ethylbenzene	10.0	10.93		ug/L		109	80 - 120
m,p-Xylene	10.0	11.04		ug/L		110	80 - 120
o-Xylene	10.0	10.73		ug/L		107	80 - 120
Toluene	10.0	10.95		ug/L		109	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 125
4-Bromofluorobenzene (Surr)	94		69 - 120
Dibromofluoromethane (Surr)	99		80 - 120
Toluene-d8 (Surr)	95		80 - 120

**Lab Sample ID: LCSD 590-21432/6**  
**Matrix: Water**  
**Analysis Batch: 21432**

**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
Benzene	10.0	11.67		ug/L		117	80 - 120	2	25
Ethylbenzene	10.0	11.11		ug/L		111	80 - 120	2	25
m,p-Xylene	10.0	11.15		ug/L		112	80 - 120	1	25
o-Xylene	10.0	11.32		ug/L		113	80 - 120	5	25
Toluene	10.0	10.88		ug/L		109	80 - 123	1	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 125
4-Bromofluorobenzene (Surr)	95		69 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	98		80 - 120

TestAmerica Spokane

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 590-10620-3 MS**  
**Matrix: Ground Water**  
**Analysis Batch: 21432**

**Client Sample ID: MW-303**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	34.6		10.0	44.63		ug/L		100	50 - 150
Ethylbenzene	150	E	10.0	155.6	E 4	ug/L		53	50 - 150
m,p-Xylene	9.81		10.0	19.93		ug/L		101	50 - 150
o-Xylene	1.32		10.0	12.06		ug/L		107	50 - 150
Toluene	6.11		10.0	17.50		ug/L		114	50 - 150
<b>MS MS</b>									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	98		70 - 125						
4-Bromofluorobenzene (Surr)	98		69 - 120						
Dibromofluoromethane (Surr)	96		80 - 120						
Toluene-d8 (Surr)	95		80 - 120						

**Lab Sample ID: 590-10620-3 MSD**  
**Matrix: Ground Water**  
**Analysis Batch: 21432**

**Client Sample ID: MW-303**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	34.6		10.0	44.02		ug/L		94	50 - 150	1	35
Ethylbenzene	150	E	10.0	154.1	E 4	ug/L		39	50 - 150	1	35
m,p-Xylene	9.81		10.0	20.26		ug/L		104	50 - 150	2	35
o-Xylene	1.32		10.0	12.32		ug/L		110	50 - 150	2	35
Toluene	6.11		10.0	17.52		ug/L		114	50 - 150	0	35
<b>MSD MSD</b>											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	101		70 - 125								
4-Bromofluorobenzene (Surr)	99		69 - 120								
Dibromofluoromethane (Surr)	97		80 - 120								
Toluene-d8 (Surr)	96		80 - 120								

**Lab Sample ID: 590-10620-1 DU**  
**Matrix: Ground Water**  
**Analysis Batch: 21432**

**Client Sample ID: MW-301**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	109	E	110.8	E	ug/L		2	20
Ethylbenzene	9.23		9.563		ug/L		4	20
m,p-Xylene	1.61	J	1.533	J	ug/L		5	20
o-Xylene	0.205	J	0.2364	J	ug/L		14	20
Toluene	1.82		1.778		ug/L		2	20
Xylenes, Total	1.82	J	1.769	J	ug/L		3	20
<b>DU DU</b>								
Surrogate	%Recovery	Qualifier	Limits					
1,2-Dichloroethane-d4 (Surr)	95		70 - 125					
4-Bromofluorobenzene (Surr)	92		69 - 120					
Dibromofluoromethane (Surr)	102		80 - 120					
Toluene-d8 (Surr)	96		80 - 120					

TestAmerica Spokane

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 590-21464/5**  
**Matrix: Water**  
**Analysis Batch: 21464**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			03/25/19 18:23	1
Ethylbenzene	ND		1.00	0.198	ug/L			03/25/19 18:23	1
m,p-Xylene	ND		2.00	0.280	ug/L			03/25/19 18:23	1
o-Xylene	ND		1.00	0.162	ug/L			03/25/19 18:23	1
Toluene	ND		1.00	0.312	ug/L			03/25/19 18:23	1
Xylenes, Total	ND		3.00	0.442	ug/L			03/25/19 18:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 125		03/25/19 18:23	1
4-Bromofluorobenzene (Surr)	100		69 - 120		03/25/19 18:23	1
Dibromofluoromethane (Surr)	96		80 - 120		03/25/19 18:23	1
Toluene-d8 (Surr)	105		80 - 120		03/25/19 18:23	1

**Lab Sample ID: LCS 590-21464/1003**  
**Matrix: Water**  
**Analysis Batch: 21464**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	9.370		ug/L		94	80 - 120
Ethylbenzene	10.0	10.07		ug/L		101	80 - 120
m,p-Xylene	10.0	10.20		ug/L		102	80 - 120
o-Xylene	10.0	9.748		ug/L		97	80 - 120
Toluene	10.0	9.977		ug/L		100	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 125
4-Bromofluorobenzene (Surr)	100		69 - 120
Dibromofluoromethane (Surr)	102		80 - 120
Toluene-d8 (Surr)	107		80 - 120

**Lab Sample ID: LCSD 590-21464/6**  
**Matrix: Water**  
**Analysis Batch: 21464**

**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
Benzene	10.0	9.106		ug/L		91	80 - 120	3	25
Ethylbenzene	10.0	10.04		ug/L		100	80 - 120	0	25
m,p-Xylene	10.0	9.987		ug/L		100	80 - 120	2	25
o-Xylene	10.0	9.940		ug/L		99	80 - 120	2	25
Toluene	10.0	10.24		ug/L		102	80 - 123	3	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 125
4-Bromofluorobenzene (Surr)	104		69 - 120
Dibromofluoromethane (Surr)	102		80 - 120
Toluene-d8 (Surr)	109		80 - 120

TestAmerica Spokane

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 590-10620-12 DU**  
**Matrix: Water**  
**Analysis Batch: 21464**

**Client Sample ID: MW-315**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Benzene	23.3		23.60		ug/L		1	20
Ethylbenzene	0.959	J	1.007		ug/L		5	20
m,p-Xylene	3.49		3.435		ug/L		2	20
o-Xylene	0.415	J	0.4359	J	ug/L		5	20
Toluene	3.63		3.673		ug/L		1	20
Xylenes, Total	3.90		3.870		ug/L		0.8	20

Surrogate	%Recovery	DU Qualifier	DU Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 125
4-Bromofluorobenzene (Surr)	106		69 - 120
Dibromofluoromethane (Surr)	94		80 - 120
Toluene-d8 (Surr)	100		80 - 120

**Lab Sample ID: 590-10620-13 DU**  
**Matrix: Ground Water**  
**Analysis Batch: 21464**

**Client Sample ID: TX-03A**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Benzene	13.1		18.55	F3	ug/L		34	20
Ethylbenzene	1.43		1.911	F5	ug/L		29	20
m,p-Xylene	0.296	J	0.3131	J	ug/L		5	20
o-Xylene	ND		ND		ug/L		NC	20
Toluene	ND		ND		ug/L		NC	20
Xylenes, Total	ND		ND		ug/L		NC	20

Surrogate	%Recovery	DU Qualifier	DU Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 125
4-Bromofluorobenzene (Surr)	107		69 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	100		80 - 120

**Lab Sample ID: MB 590-21468/5**  
**Matrix: Water**  
**Analysis Batch: 21468**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		0.400	0.0930	ug/L			03/25/19 18:19	1
Ethylbenzene	ND		1.00	0.198	ug/L			03/25/19 18:19	1
m,p-Xylene	ND		2.00	0.280	ug/L			03/25/19 18:19	1
o-Xylene	ND		1.00	0.162	ug/L			03/25/19 18:19	1
Toluene	ND		1.00	0.312	ug/L			03/25/19 18:19	1
Xylenes, Total	ND		3.00	0.442	ug/L			03/25/19 18:19	1

Surrogate	%Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 125		03/25/19 18:19	1
4-Bromofluorobenzene (Surr)	94		69 - 120		03/25/19 18:19	1
Dibromofluoromethane (Surr)	102		80 - 120		03/25/19 18:19	1

TestAmerica Spokane

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 590-21468/5**  
**Matrix: Water**  
**Analysis Batch: 21468**

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	101		80 - 120		03/25/19 18:19	1

**Lab Sample ID: LCS 590-21468/1003**  
**Matrix: Water**  
**Analysis Batch: 21468**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	11.28		ug/L		113	80 - 120
Ethylbenzene	10.0	10.95		ug/L		110	80 - 120
m,p-Xylene	10.0	11.18		ug/L		112	80 - 120
o-Xylene	10.0	11.28		ug/L		113	80 - 120
Toluene	10.0	11.03		ug/L		110	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 125
4-Bromofluorobenzene (Surr)	93		69 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	99		80 - 120

**Lab Sample ID: LCSD 590-21468/6**  
**Matrix: Water**  
**Analysis Batch: 21468**

**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
Benzene	10.0	11.89		ug/L		119	80 - 120	5	25
Ethylbenzene	10.0	11.62		ug/L		116	80 - 120	6	25
m,p-Xylene	10.0	11.77		ug/L		118	80 - 120	5	25
o-Xylene	10.0	11.88		ug/L		119	80 - 120	5	25
Toluene	10.0	11.55		ug/L		116	80 - 123	5	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 125
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	100		80 - 120
Toluene-d8 (Surr)	98		80 - 120

**Lab Sample ID: 590-10620-7 MS**  
**Matrix: Ground Water**  
**Analysis Batch: 21468**

**Client Sample ID: MW-310**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	1.27		10.0	14.33		ug/L		131	50 - 150
Ethylbenzene	0.226	J	10.0	11.86		ug/L		116	50 - 150
m,p-Xylene	ND		10.0	10.75		ug/L		107	50 - 150
o-Xylene	ND		10.0	10.58		ug/L		106	50 - 150
Toluene	ND		10.0	11.58		ug/L		116	50 - 150

TestAmerica Spokane

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 590-10620-7 MS**  
**Matrix: Ground Water**  
**Analysis Batch: 21468**

**Client Sample ID: MW-310**  
**Prep Type: Total/NA**

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 125
4-Bromofluorobenzene (Surr)	93		69 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	93		80 - 120

**Lab Sample ID: 590-10620-7 MSD**  
**Matrix: Ground Water**  
**Analysis Batch: 21468**

**Client Sample ID: MW-310**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.27		10.0	13.87		ug/L		126	50 - 150	3	35
Ethylbenzene	0.226	J	10.0	11.31		ug/L		111	50 - 150	5	35
m,p-Xylene	ND		10.0	10.10		ug/L		101	50 - 150	6	35
o-Xylene	ND		10.0	10.08		ug/L		101	50 - 150	5	35
Toluene	ND		10.0	11.27		ug/L		113	50 - 150	3	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		70 - 125
4-Bromofluorobenzene (Surr)	96		69 - 120
Dibromofluoromethane (Surr)	100		80 - 120
Toluene-d8 (Surr)	91		80 - 120

**Lab Sample ID: 590-10620-5 DU**  
**Matrix: Ground Water**  
**Analysis Batch: 21468**

**Client Sample ID: MW-307**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	58.7		58.72		ug/L		0	20
Ethylbenzene	50.0		52.26	E	ug/L		4	20
m,p-Xylene	3.54		3.575		ug/L		1	20
o-Xylene	0.398	J	0.4531	J	ug/L		13	20
Toluene	2.69		2.900		ug/L		7	20
Xylenes, Total	3.93		4.028		ug/L		2	20

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		70 - 125
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	93		80 - 120

**Lab Sample ID: 590-10620-C-6 DU**  
**Matrix: Ground Water**  
**Analysis Batch: 21468**

**Client Sample ID: MW-308**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	0.815		1.016	F5	ug/L		22	20
Ethylbenzene	ND		ND		ug/L		NC	20

TestAmerica Spokane



# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 590-10620-C-6 DU**  
**Matrix: Ground Water**  
**Analysis Batch: 21468**

**Client Sample ID: MW-308**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
m,p-Xylene	ND		ND		ug/L		NC	20
o-Xylene	ND		ND		ug/L		NC	20
Toluene	ND		ND		ug/L		NC	20
Xylenes, Total	ND		ND		ug/L		NC	20

Surrogate	DU	DU	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	98		70 - 125
4-Bromofluorobenzene (Surr)	88		69 - 120
Dibromofluoromethane (Surr)	102		80 - 120
Toluene-d8 (Surr)	93		80 - 120

**Lab Sample ID: MB 590-21494/5**  
**Matrix: Water**  
**Analysis Batch: 21494**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		0.400	0.0930	ug/L			03/27/19 14:59	1
Ethylbenzene	ND		1.00	0.198	ug/L			03/27/19 14:59	1
m,p-Xylene	ND		2.00	0.280	ug/L			03/27/19 14:59	1
o-Xylene	ND		1.00	0.162	ug/L			03/27/19 14:59	1
Toluene	ND		1.00	0.312	ug/L			03/27/19 14:59	1
Xylenes, Total	ND		3.00	0.442	ug/L			03/27/19 14:59	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	96		70 - 125		03/27/19 14:59	1
4-Bromofluorobenzene (Surr)	100		69 - 120		03/27/19 14:59	1
Dibromofluoromethane (Surr)	95		80 - 120		03/27/19 14:59	1
Toluene-d8 (Surr)	108		80 - 120		03/27/19 14:59	1

**Lab Sample ID: LCS 590-21494/1003**  
**Matrix: Water**  
**Analysis Batch: 21494**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	10.0	10.18		ug/L		102	80 - 120
m,p-Xylene	10.0	10.03		ug/L		100	80 - 120
o-Xylene	10.0	9.766		ug/L		98	80 - 120
Toluene	10.0	10.20		ug/L		102	80 - 123

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		70 - 125
4-Bromofluorobenzene (Surr)	97		69 - 120
Dibromofluoromethane (Surr)	99		80 - 120
Toluene-d8 (Surr)	105		80 - 120

TestAmerica Spokane

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 590-21494/6**  
**Matrix: Water**  
**Analysis Batch: 21494**

**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
Benzene	10.0	8.862		ug/L		89	80 - 120	5	25
Ethylbenzene	10.0	10.03		ug/L		100	80 - 120	1	25
m,p-Xylene	10.0	10.04		ug/L		100	80 - 120	0	25
o-Xylene	10.0	9.745		ug/L		97	80 - 120	0	25
Toluene	10.0	9.745		ug/L		97	80 - 123	5	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 125
4-Bromofluorobenzene (Surr)	102		69 - 120
Dibromofluoromethane (Surr)	99		80 - 120
Toluene-d8 (Surr)	108		80 - 120

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

**Lab Sample ID: MB 590-21433/5**  
**Matrix: Water**  
**Analysis Batch: 21433**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			03/22/19 12:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		68.7 - 141		03/22/19 12:44	1

**Lab Sample ID: LCS 590-21433/1004**  
**Matrix: Water**  
**Analysis Batch: 21433**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	1099		ug/L		110	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		68.7 - 141

**Lab Sample ID: LCSD 590-21433/1015**  
**Matrix: Water**  
**Analysis Batch: 21433**

**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
Gasoline	1000	1076		ug/L		108	80 - 120	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	90		68.7 - 141

TestAmerica Spokane

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

**Lab Sample ID: 590-10620-4 MS**  
**Matrix: Ground Water**  
**Analysis Batch: 21433**

**Client Sample ID: MW-304**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	105	J F2	1000	1085		ug/L		98	55.6 - 126
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
4-Bromofluorobenzene (Surr)	90		68.7 - 141						

**Lab Sample ID: 590-10620-4 MSD**  
**Matrix: Ground Water**  
**Analysis Batch: 21433**

**Client Sample ID: MW-304**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	105	J F2	1000	832.3	F2	ug/L		73	55.6 - 126	26	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
4-Bromofluorobenzene (Surr)	89		68.7 - 141								

**Lab Sample ID: 590-10620-1 DU**  
**Matrix: Ground Water**  
**Analysis Batch: 21433**

**Client Sample ID: MW-301**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gasoline	1340		1318		ug/L		1	35
<b>Surrogate</b>	<b>%Recovery</b>	<b>DU Qualifier</b>	<b>Limits</b>					
4-Bromofluorobenzene (Surr)	92		68.7 - 141					

**Lab Sample ID: MB 590-21463/5**  
**Matrix: Water**  
**Analysis Batch: 21463**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			03/25/19 18:23	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
4-Bromofluorobenzene (Surr)	100		68.7 - 141		03/25/19 18:23	1			

**Lab Sample ID: LCS 590-21463/1004**  
**Matrix: Water**  
**Analysis Batch: 21463**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	922.2		ug/L		92	80 - 120
<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
4-Bromofluorobenzene (Surr)	107		68.7 - 141				

TestAmerica Spokane

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

**Lab Sample ID: LCS 590-21463/1015**  
**Matrix: Water**  
**Analysis Batch: 21463**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	904.6		ug/L		90	80 - 120
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
4-Bromofluorobenzene (Surr)	103		68.7 - 141				

**Lab Sample ID: 590-10620-12 DU**  
**Matrix: Water**  
**Analysis Batch: 21463**

**Client Sample ID: MW-315**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gasoline	1400		1391		ug/L		0.3	35
<b>Surrogate</b>	<b>%Recovery</b>	<b>DU Qualifier</b>	<b>Limits</b>					
4-Bromofluorobenzene (Surr)	106		68.7 - 141					

**Lab Sample ID: 590-10620-13 DU**  
**Matrix: Ground Water**  
**Analysis Batch: 21463**

**Client Sample ID: TX-03A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gasoline	938		1088		ug/L		15	35
<b>Surrogate</b>	<b>%Recovery</b>	<b>DU Qualifier</b>	<b>Limits</b>					
4-Bromofluorobenzene (Surr)	107		68.7 - 141					

**Lab Sample ID: MB 590-21469/5**  
**Matrix: Water**  
**Analysis Batch: 21469**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			03/25/19 18:19	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
4-Bromofluorobenzene (Surr)	94		68.7 - 141		03/25/19 18:19	1			

**Lab Sample ID: LCS 590-21469/1004**  
**Matrix: Water**  
**Analysis Batch: 21469**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	1120		ug/L		112	80 - 120
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
4-Bromofluorobenzene (Surr)	93		68.7 - 141				

TestAmerica Spokane

# QC Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

**Lab Sample ID: LCSD 590-21469/1017**

**Matrix: Water**

**Analysis Batch: 21469**

**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
Gasoline	1000	1094		ug/L		109	80 - 120	2	20
<b>Surrogate</b>		<b>%Recovery</b>	<b>LCSD Qualifier</b>				<b>Limits</b>		
4-Bromofluorobenzene (Surr)		91					68.7 - 141		

**Lab Sample ID: 590-10620-C-6 DU**

**Matrix: Ground Water**

**Analysis Batch: 21469**

**Client Sample ID: 590-10620-C-6 DU**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gasoline	ND		ND		ug/L		NC	35
<b>Surrogate</b>		<b>DU %Recovery</b>	<b>DU Qualifier</b>				<b>Limits</b>	
4-Bromofluorobenzene (Surr)		88					68.7 - 141	

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

**Lab Sample ID: MB 590-21485/1-A**

**Matrix: Water**

**Analysis Batch: 21487**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 21485**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.240	0.110	mg/L		03/27/19 11:23	03/27/19 13:39	1
Residual Range Organics (RRO) (C25-C36)	ND		0.400	0.120	mg/L		03/27/19 11:23	03/27/19 13:39	1
<b>Surrogate</b>		<b>MB %Recovery</b>	<b>MB Qualifier</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
o-Terphenyl		89					03/27/19 11:23	03/27/19 13:39	1
n-Triacontane-d62		82					03/27/19 11:23	03/27/19 13:39	1

**Lab Sample ID: LCS 590-21485/2-A**

**Matrix: Water**

**Analysis Batch: 21487**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 21485**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	1.60	1.167		mg/L		73	50 - 150
Residual Range Organics (RRO) (C25-C36)	1.60	1.422		mg/L		89	50 - 150
<b>Surrogate</b>		<b>LCS %Recovery</b>	<b>LCS Qualifier</b>				<b>Limits</b>
o-Terphenyl		86					50 - 150
n-Triacontane-d62		87					50 - 150

TestAmerica Spokane

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

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

**Lab Sample ID: LCSD 590-21485/3-A**  
**Matrix: Water**  
**Analysis Batch: 21487**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 21485**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.134		mg/L		71	50 - 150	3	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.418		mg/L		89	50 - 150	0	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	90		50 - 150
<i>n</i> -Triacontane-d62	92		50 - 150



# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## GC/MS VOA

### Analysis Batch: 21432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-10620-1	MW-301	Total/NA	Ground Water	8260C	
590-10620-3	MW-303	Total/NA	Ground Water	8260C	
MB 590-21432/5	Method Blank	Total/NA	Water	8260C	
LCS 590-21432/1003	Lab Control Sample	Total/NA	Water	8260C	
LCSD 590-21432/6	Lab Control Sample Dup	Total/NA	Water	8260C	
590-10620-3 MS	MW-303	Total/NA	Ground Water	8260C	
590-10620-3 MSD	MW-303	Total/NA	Ground Water	8260C	
590-10620-1 DU	MW-301	Total/NA	Ground Water	8260C	

### Analysis Batch: 21433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-10620-1	MW-301	Total/NA	Ground Water	NWTPH-Gx	
590-10620-2	MW-302	Total/NA	Ground Water	NWTPH-Gx	
590-10620-3	MW-303	Total/NA	Ground Water	NWTPH-Gx	
590-10620-4	MW-304	Total/NA	Ground Water	NWTPH-Gx	
590-10620-5	MW-307	Total/NA	Ground Water	NWTPH-Gx	
590-10620-6	MW-308	Total/NA	Ground Water	NWTPH-Gx	
MB 590-21433/5	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 590-21433/1004	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 590-21433/1015	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	
590-10620-4 MS	MW-304	Total/NA	Ground Water	NWTPH-Gx	
590-10620-4 MSD	MW-304	Total/NA	Ground Water	NWTPH-Gx	
590-10620-1 DU	MW-301	Total/NA	Ground Water	NWTPH-Gx	

### Analysis Batch: 21463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-10620-12	MW-315	Total/NA	Water	NWTPH-Gx	
590-10620-13	TX-03A	Total/NA	Ground Water	NWTPH-Gx	
MB 590-21463/5	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 590-21463/1004	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCS 590-21463/1015	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
590-10620-12 DU	MW-315	Total/NA	Water	NWTPH-Gx	
590-10620-13 DU	TX-03A	Total/NA	Ground Water	NWTPH-Gx	

### Analysis Batch: 21464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-10620-12	MW-315	Total/NA	Water	8260C	
590-10620-13	TX-03A	Total/NA	Ground Water	8260C	
590-10620-14	TB-1	Total/NA	Ground Water	8260C	
MB 590-21464/5	Method Blank	Total/NA	Water	8260C	
LCS 590-21464/1003	Lab Control Sample	Total/NA	Water	8260C	
LCSD 590-21464/6	Lab Control Sample Dup	Total/NA	Water	8260C	
590-10620-12 DU	MW-315	Total/NA	Water	8260C	
590-10620-13 DU	TX-03A	Total/NA	Ground Water	8260C	

### Analysis Batch: 21468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-10620-1	MW-301	Total/NA	Ground Water	8260C	
590-10620-2	MW-302	Total/NA	Ground Water	8260C	
590-10620-3	MW-303	Total/NA	Ground Water	8260C	
590-10620-4	MW-304	Total/NA	Ground Water	8260C	

TestAmerica Spokane



# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## GC/MS VOA (Continued)

### Analysis Batch: 21468 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-10620-5	MW-307	Total/NA	Ground Water	8260C	
590-10620-6	MW-308	Total/NA	Ground Water	8260C	
590-10620-7	MW-310	Total/NA	Ground Water	8260C	
590-10620-8	MW-311	Total/NA	Ground Water	8260C	
590-10620-9	MW-312	Total/NA	Ground Water	8260C	
590-10620-10	MW-313	Total/NA	Water	8260C	
590-10620-11	MW-314	Total/NA	Water	8260C	
MB 590-21468/5	Method Blank	Total/NA	Water	8260C	
LCS 590-21468/1003	Lab Control Sample	Total/NA	Water	8260C	
LCSD 590-21468/6	Lab Control Sample Dup	Total/NA	Water	8260C	
590-10620-7 MS	MW-310	Total/NA	Ground Water	8260C	
590-10620-7 MSD	MW-310	Total/NA	Ground Water	8260C	
590-10620-5 DU	MW-307	Total/NA	Ground Water	8260C	
590-10620-C-6 DU	MW-308	Total/NA	Ground Water	8260C	

### Analysis Batch: 21469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-10620-7	MW-310	Total/NA	Ground Water	NWTPH-Gx	
590-10620-8	MW-311	Total/NA	Ground Water	NWTPH-Gx	
590-10620-9	MW-312	Total/NA	Ground Water	NWTPH-Gx	
590-10620-10	MW-313	Total/NA	Water	NWTPH-Gx	
590-10620-11	MW-314	Total/NA	Water	NWTPH-Gx	
MB 590-21469/5	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 590-21469/1004	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 590-21469/1017	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	
590-10620-C-6 DU	590-10620-C-6 DU	Total/NA	Ground Water	NWTPH-Gx	

### Analysis Batch: 21494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-10620-1	MW-301	Total/NA	Ground Water	8260C	
590-10620-9	MW-312	Total/NA	Ground Water	8260C	
MB 590-21494/5	Method Blank	Total/NA	Water	8260C	
LCS 590-21494/1003	Lab Control Sample	Total/NA	Water	8260C	
LCSD 590-21494/6	Lab Control Sample Dup	Total/NA	Water	8260C	

## GC Semi VOA

### Prep Batch: 21485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-10620-10	MW-313	Total/NA	Water	3510C	
590-10620-11	MW-314	Total/NA	Water	3510C	
590-10620-12	MW-315	Total/NA	Water	3510C	
MB 590-21485/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-21485/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-21485/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 21487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-10620-10	MW-313	Total/NA	Water	NWTPH-Dx	21485
590-10620-11	MW-314	Total/NA	Water	NWTPH-Dx	21485

TestAmerica Spokane

# QC Association Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## GC Semi VOA (Continued)

### Analysis Batch: 21487 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-10620-12	MW-315	Total/NA	Water	NWTPH-Dx	21485
MB 590-21485/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	21485
LCS 590-21485/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	21485
LCSD 590-21485/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	21485

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# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

**Client Sample ID: MW-301**  
**Date Collected: 03/19/19 10:11**  
**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-1**  
**Matrix: Ground Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	43 mL	43 mL	21494	03/27/19 15:43	MRS	TAL SPK
Total/NA	Analysis	8260C		1	43 mL	43 mL	21432	03/22/19 19:08	MRS	TAL SPK
Total/NA	Analysis	8260C		1	43 mL	43 mL	21468	03/25/19 23:16	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21433	03/22/19 19:08	MRS	TAL SPK

**Client Sample ID: MW-302**  
**Date Collected: 03/19/19 12:13**  
**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-2**  
**Matrix: Ground Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21468	03/25/19 23:37	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		20	43 mL	43 mL	21433	03/22/19 19:50	MRS	TAL SPK

**Client Sample ID: MW-303**  
**Date Collected: 03/19/19 09:39**  
**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-3**  
**Matrix: Ground Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21432	03/22/19 20:54	MRS	TAL SPK
Total/NA	Analysis	8260C		10	43 mL	43 mL	21468	03/25/19 23:58	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21433	03/22/19 20:54	MRS	TAL SPK

**Client Sample ID: MW-304**  
**Date Collected: 03/19/19 11:08**  
**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-4**  
**Matrix: Ground Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21468	03/26/19 00:20	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21433	03/22/19 21:58	MRS	TAL SPK

**Client Sample ID: MW-307**  
**Date Collected: 03/18/19 12:16**  
**Date Received: 03/20/19 13:26**

**Lab Sample ID: 590-10620-5**  
**Matrix: Ground Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21468	03/26/19 00:41	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21433	03/23/19 23:01	MRS	TAL SPK

# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Client Sample ID: MW-308

Date Collected: 03/18/19 12:45  
 Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-6

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21468	03/26/19 01:23	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21433	03/23/19 23:23	MRS	TAL SPK

## Client Sample ID: MW-310

Date Collected: 03/19/19 11:45  
 Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-7

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21468	03/26/19 02:26	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21469	03/26/19 02:26	MRS	TAL SPK

## Client Sample ID: MW-311

Date Collected: 03/18/19 14:15  
 Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-8

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21468	03/26/19 03:30	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21469	03/26/19 03:30	MRS	TAL SPK

## Client Sample ID: MW-312

Date Collected: 03/19/19 09:09  
 Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-9

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	43 mL	43 mL	21494	03/27/19 16:05	MRS	TAL SPK
Total/NA	Analysis	8260C		1	43 mL	43 mL	21468	03/26/19 03:51	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21469	03/26/19 03:51	MRS	TAL SPK

## Client Sample ID: MW-313

Date Collected: 03/19/19 08:37  
 Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21468	03/26/19 04:12	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21469	03/26/19 04:12	MRS	TAL SPK
Total/NA	Prep	3510C			257.2 mL	2 mL	21485	03/27/19 11:23	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			21487	03/27/19 18:11	NMI	TAL SPK

TestAmerica Spokane

# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## Client Sample ID: MW-314

Date Collected: 03/19/19 08:04

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21468	03/26/19 04:33	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21469	03/26/19 04:33	MRS	TAL SPK
Total/NA	Prep	3510C			256.3 mL	2 mL	21485	03/27/19 11:23	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			21487	03/27/19 18:30	NMI	TAL SPK

## Client Sample ID: MW-315

Date Collected: 03/18/19 13:41

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21464	03/25/19 20:13	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21463	03/25/19 20:13	MRS	TAL SPK
Total/NA	Prep	3510C			253.2 mL	2 mL	21485	03/27/19 11:23	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			21487	03/27/19 18:49	NMI	TAL SPK

## Client Sample ID: TX-03A

Date Collected: 03/19/19 10:43

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-13

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21464	03/25/19 20:57	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	21463	03/25/19 20:57	MRS	TAL SPK

## Client Sample ID: TB-1

Date Collected: 03/18/19 08:00

Date Received: 03/20/19 13:26

## Lab Sample ID: 590-10620-14

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	21464	03/25/19 21:42	MRS	TAL SPK

### Laboratory References:

TAL SPK = TestAmerica Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

# Definitions/Glossary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

TestAmerica Job ID: 590-10620-1

## 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.
E	Result exceeded calibration range.
F3	Duplicate RPD exceeds the control limit
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
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

### 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.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

# Accreditation/Certification Summary

Client: AECOM

TestAmerica Job ID: 590-10620-1

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

## Laboratory: TestAmerica Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C569	01-06-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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LAB (LOCATION)

- ACCUTEST ( )
- CALSCIENCE ( )
- TESTAMERICA ( )
- Other ( )

Lab Vendor # Dropdown



# Shell Oil Products US Chain Of Custody Record



<p style="text-align: center;"><b>Please Check Appropriate Box:</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px;"><input type="checkbox"/> BGW FDG</td> <td style="border: 1px solid black; padding: 2px;"><input type="checkbox"/> PIPELINE</td> <td style="border: 1px solid black; padding: 2px;"><input type="checkbox"/> RETAIL</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;"><input type="checkbox"/> CHEMICALS</td> <td style="border: 1px solid black; padding: 2px;"><input type="checkbox"/> CONSULTANT</td> <td style="border: 1px solid black; padding: 2px;"><input type="checkbox"/> LUBES</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;"><input type="checkbox"/> TRANSPORTATION</td> <td colspan="2" style="border: 1px solid black; padding: 2px;"><input type="checkbox"/> OTHER</td> </tr> </table>	<input type="checkbox"/> BGW FDG	<input type="checkbox"/> PIPELINE	<input type="checkbox"/> RETAIL	<input type="checkbox"/> CHEMICALS	<input type="checkbox"/> CONSULTANT	<input type="checkbox"/> LUBES	<input type="checkbox"/> TRANSPORTATION	<input type="checkbox"/> OTHER		<p style="text-align: center;"><b>Print Bill To Contact Name:</b></p>	<p style="text-align: center;"><b>PlaNet Site or Project ID</b></p>	<p style="text-align: center;"><input type="checkbox"/> CHECK IF NO INCIDENT # APPLIES</p>
<input type="checkbox"/> BGW FDG	<input type="checkbox"/> PIPELINE	<input type="checkbox"/> RETAIL										
<input type="checkbox"/> CHEMICALS	<input type="checkbox"/> CONSULTANT	<input type="checkbox"/> LUBES										
<input type="checkbox"/> TRANSPORTATION	<input type="checkbox"/> OTHER											
	<b>PO #</b>	<b>GSAP Project ID</b>	DATE: <b>3/19/19</b>									
			PAGE: <b>2</b> of <b>2</b>									

<p><b>SAMPLING COMPANY:</b> Blaine Tech Services, Inc</p> <p><b>LOG CODE:</b> BTSS</p> <p><b>ADDRESS:</b> 1680 Rogers Ave, San Jose, CA, 95112</p> <p><b>PROJECT CONTACT (Hardcopy or PDF Report to):</b> Nicky Moody</p> <p><b>TELEPHONE:</b> (206) 438-2371    <b>FAX:</b>    <b>BIT To Contact E-MAIL:</b> nicky.moody@aecom.com</p> <p><b>TURNAROUND TIME (CALENDAR DAYS):</b>  <input checked="" type="checkbox"/> STANDARD (14 DAY)    <input type="checkbox"/> 3 DAYS    <input type="checkbox"/> 5 DAYS    <input type="checkbox"/> 4 HOURS    <input type="checkbox"/> RESULTS NEEDED ON WEEKEND</p> <p><input type="checkbox"/> LA - RWQCB REPORT FORMAT    <input type="checkbox"/> UST AGENCY:</p> <p><b>DELIVERABLES:</b>    <input type="checkbox"/> LEVEL 1    <input type="checkbox"/> LEVEL 2    <input type="checkbox"/> LEVEL 3    <input type="checkbox"/> LEVEL 4    <input type="checkbox"/> OTHER (SPECIFY)</p> <p><b>TEMPERATURE ON RECEIPT C*:</b>    Cooler #1:    Cooler #2:    Cooler #3:</p> <p><b>SPECIAL INSTRUCTIONS OR NOTES:</b></p> <p style="font-size: small;"> <input type="checkbox"/> SHELL CONTRACT RATE APPLIES  <input type="checkbox"/> STATE REIMBURSEMENT RATE APPLIES  <input type="checkbox"/> LEDD NOT NEEDED  <input type="checkbox"/> RECEIPT VERIFICATION REQUESTED  <input type="checkbox"/> PROVIDE LEDD DISK                 </p>	<p><b>SITE ADDRESS: Street and City</b> 2555 13th Avenue</p> <p><b>State</b> WA</p> <p><b>AECOM Project / Task Number:</b> 60561813</p> <p><b>EDF DELIVERABLE TO (Name, Company, Office Location):</b> Nicky Moody, AECOM, portland, OR    <b>PHONE NO.:</b> (503) 969-6310    <b>E-MAIL:</b> nicky.moody@aecom.com</p> <p><b>SAMPLER NAME(S) (Print):</b> LEE BURES</p> <p style="text-align: right; font-size: small;"><b>LAB USE ONLY</b></p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th colspan="2">UNIT COST</th> <th colspan="2">REQUESTED ANALYSIS</th> <th colspan="2">NON-UNIT COST</th> <th rowspan="2">FIELD NOTES:</th> </tr> <tr> <th>ANALYSIS</th> <th>UNIT COST</th> <th>ANALYSIS</th> <th>UNIT COST</th> <th>ANALYSIS</th> <th>UNIT COST</th> </tr> </thead> <tbody> <tr> <td>8290C BTEX</td> <td></td> <td>8290A Total Lead</td> <td></td> <td>300.0 Chloride</td> <td></td> <td rowspan="10">TEMPERATURE ON RECEIPT C*  Container PID Readings or Laboratory Notes</td> </tr> <tr> <td>NWTPH-04</td> <td></td> <td>353.2 Nitrate &amp; Nitrite</td> <td></td> <td>8020A Dis. Iron &amp; Manganese (lab filter)</td> <td></td> </tr> <tr> <td>8270D 3M PAHs</td> <td></td> <td></td> <td></td> <td>2320B Alkalinity</td> <td></td> </tr> <tr> <td>300.0 Sulfate</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	UNIT COST		REQUESTED ANALYSIS		NON-UNIT COST		FIELD NOTES:	ANALYSIS	UNIT COST	ANALYSIS	UNIT COST	ANALYSIS	UNIT COST	8290C BTEX		8290A Total Lead		300.0 Chloride		TEMPERATURE ON RECEIPT C*  Container PID Readings or Laboratory Notes	NWTPH-04		353.2 Nitrate & Nitrite		8020A Dis. Iron & Manganese (lab filter)		8270D 3M PAHs				2320B Alkalinity		300.0 Sulfate																																									
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LAB USE ONLY	Field Sample Identification		SAMPLING		MATRIX	PRESERVATIVE					NO. OF CONT.	REQUESTED ANALYSIS							FIELD NOTES:										
			DATE	TIME		HCL	HNO3	H2SO4	NONE	OTHER		8290C BTEX	NWTPH-04	8270D 3M PAHs	300.0 Sulfate	NWTPH-GX	8020A Total Lead	353.2 Nitrate & Nitrite		8020A Dis. Iron & Manganese (lab filter)	300.0 Chloride	2320B Alkalinity							
	MW-314		3/19/19	0804	WG	X						6	X	X															
	MW-315		3/19/19	1341	WG	X						6	X	X															
	TX-03A		3/19/19	1043	WG	X						4	X																
	TB-1		3/19/19	0800	WG	X						2	X																

<p>Relinquished by: (Signature) </p>	<p>Received by: (Signature) <i>SHEPPED VIA FEDEX</i></p>	<p>Date: 3/19/19</p>	<p>Time:</p>
<p>Relinquished by: (Signature)</p>	<p>Received by: (Signature) <i>MARIA CHOLE</i></p>	<p>Date: 3/20/19</p>	<p>Time: 13:26</p>
<p>Relinquished by: (Signature)</p>	<p>Received by: (Signature)</p>	<p>Date:</p>	<p>Time:</p>

*16°C*

## Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-10620-1

**Login Number: 10620**

**List Source: TestAmerica Spokane**

**List Number: 1**

**Creator: O'Toole, Maria C**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	125843
Sample custody seals, if present, are intact.	N/A	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.



## Laboratory Data Quality Review

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### Shell – 2019 First Quarter Progress Report – Harbor Island

Laboratory & Report No.	Test America Laboratories, Incorporated, #590-10620-1
Report Date	May 9, 2019
Sampling Event	March 18 to March 19, 2019
Site Location	Seattle Terminal/Harbor Island, WA
AECOM Project No.	60561813, Task 03001
Project Name	1 <sup>st</sup> Quarter Groundwater Monitoring

This document summarizes the data quality review of 13 primary groundwater samples and one trip blank sample collected on March 18 and March 19, 2019, at the Harbor Island site in Seattle, Washington. Samples were submitted to TestAmerica Laboratories, Incorporated (TA) in Spokane, Washington and analyzed for one or more of the following:

- The volatile organic compounds (VOCs) benzene, ethylbenzene, toluene, and o-, m,p- and total xylenes (BTEX) using US Environmental Protection Agency (EPA) Method 8260C
- Volatile petroleum products using Northwest (NW) total petroleum hydrocarbons (TPH) method for gasoline (Washington State Department of Ecology Method NWTPH-Gx)
- Semivolatile petroleum products using NWTPH method for diesel-range organics (DRO) (C10-C25) and residual range organics (RRO) (C25-C36) (Washington State Department of Ecology Method NWTPH-Dx)

All analyses were performed by TA of Spokane, Washington and the analytical data was reported under TA job number 590-106020-1. Data were evaluated based on the EPA's *National Functional Guidelines (NFGs) for Organic Superfund Methods Data Review* (EPA, 2017a), and using standard laboratory quality control (QC) criteria. Items reviewed included, where applicable: chain-of-custody (COC) records and holding times, along with results for method blanks, surrogate recoveries, laboratory control and laboratory control sample duplicates (LCS/LCSDs), matrix spike and matrix spike duplicates (MS/MSDs), and the trip blank. Qualifiers assigned as a result of this data review are summarized in Table 1, found at the end of this report.

The evaluations of reviewed criteria are:

- COC Records – Acceptable
- Temperature – Acceptable
- Preservation – Acceptable
- Holding Times – Acceptable
- Method Blanks – Acceptable
- Trip Blank – Acceptable
- Surrogates – Acceptable
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable

- Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable except as noted below:
  - BTEX by EPA Method 8260C – An MS/MSD was performed using MW-303. The percent recovery for ethylbenzene in the MSD (39%) was outside the control limits of 50-150%. The sample concentration for ethylbenzene in this sample was more than four times the spike concentration. The percent recovery for ethylbenzene in the MS and the relative percent difference (RPD) for the MS/MSD pair were acceptable; therefore, data were not qualified based on this MSD result.

An MS/MSD was performed using MW-310. Results were acceptable.
  - Gasoline Range Organics by Method NWTPH-Gx – An MS/MSD was performed using MW-304. The RPD for gasoline range organics (26%) exceeded the control limit of 20%. The percent recoveries for gasoline in the MS and MSD were acceptable; therefore, data were not qualified based on the elevated RPD result.
  - Diesel Range Organics by Method NWTPH-Dx – An MS/MSD was not performed in association with this analysis. Accuracy was assessed using the LCS/LCSD percent recoveries.
- Laboratory Duplicates – Acceptable except as noted below:
  - BTEX by EPA Method 8260C – Laboratory duplicates were performed on MW-301, MW-315, and MW-307. Results were comparable.

A laboratory duplicate was performed using TX-03A. The RPDs for benzene (34%) and ethylbenzene (29%) exceeded the control limit of 20%. The concentration for ethylbenzene in this sample was less than five times the reporting limit; therefore, data were not qualified for ethylbenzene based on this laboratory duplicate result. The result for benzene in TX-03A was qualified as estimated and flagged 'J' based on this laboratory duplicate result.

A laboratory duplicate was performed using MW-308. The RPD for benzene (22%) exceeded the control limit of 20%. The concentration for benzene in this sample was less than five times the reporting limit; therefore, data were not qualified based on this duplicate result.
  - Gasoline Range Organics by Method NWTPH-Gx – Laboratory duplicates were performed using MW-301, MW-315, TX-03A, and MW-308. Results were comparable.
  - Diesel Range Organics by Method NWTPH-Dx – A laboratory duplicate was not performed in association with this analysis. Precision was assessed using the LCS/LCSD RPDs.
- Field Duplicates
  - General - A field duplicate was not collected as part of this sampling event.
- Reporting Limits – Acceptable
  - General - The results for one or more analytes were flagged with 'J' qualifiers by the laboratory to indicate that the reported concentrations were above the method detection limits (MDLs) but below the reporting limits. All J-flagged results are considered estimated.
- Laboratory Notes – Acceptable:
  - Diesel Range Organics by Method NWTPH-Dx – The laboratory noted that the detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel in

MW-313 and MW-314. The laboratory also noted that the detected hydrocarbons in the diesel range appear to be due to gasoline/light diesel range components in MW-315. No qualifications are necessary. The laboratory notes are provided in the laboratory report.

**Overall Assessment of Data**

The completeness of the analytical reports for this quarter laboratory analysis is 100%. The usefulness of the data is based on the US EPA guidance documents referenced in the introduction of this report. Upon consideration of the information presented above, the data are considered usable. Data qualifiers assigned during this review are provided in Table 1, below. The data qualifiers assigned by the laboratory are shown on the laboratory reports and in the electronic data deliverable (EDD).

**Data Qualifier Definitions**

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria.
- DNR Do Not Report. Another result is available that is more reliable.

**References**

EPA, 2017a. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-2017-002. January 2017.

**Summary**

**Table 1. Summary of Data Qualifications for 1st Quarter Groundwater Monitoring**

Client Sample ID	Laboratory Sample ID	Analyte	Result	Units	Final Result	Rationale
TX-03A	590-10620-13	Benzene	13.1	µg/L	13.1 J	Laboratory Duplicate RPD

**Notes:**

J - estimated concentration  
 µg/L - microgram per liter  
 RPD – relative percent difference

## ANALYTICAL REPORT

Eurofins TestAmerica, Spokane  
11922 East 1st Ave  
Spokane, WA 99206  
Tel: (509)924-9200

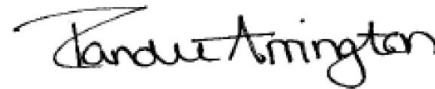
Laboratory Job ID: 590-11023-1

Client Project/Site: 2555 13th Avenue, Seattle Terminal Harbo  
Sampling Event: Quarterly Groundwater Monitoring

For:

AECOM  
111 SW Columbia Street, Suite 1500  
Portland, Oregon 97201

Attn: Nicky Moody



Authorized for release by:  
6/3/2019 1:34:05 PM

Randee Arrington, Project Manager II  
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### LINKS

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*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.*





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# Case Narrative

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

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## Job ID: 590-11023-1

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Laboratory: Eurofins TestAmerica, Spokane

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### Narrative

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#### Receipt

The samples were received on 5/17/2019 12:04 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.2° C, 2.9° C and 3.3° C.

#### GC/MS VOA

Method 8260C: Analysis of the following sample was performed outside of the analytical holding time due to laboratory error: TX-03A (590-11023-16).

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

#### GC/MS Semi VOA

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

#### GC VOA

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

#### GC Semi VOA

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to gasoline overlap in the following sample: MW-202 (590-11023-1).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to gasoline overlap as well as weathered diesel in the following samples: MW-307 (590-11023-7), MW-314 (590-11023-14), MW-315 (590-11023-15), MW-104 (590-11023-19), MW-112A (590-11023-20) and SH-04 (590-11023-21).

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

#### Metals

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

#### Organic Prep

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

#### VOA Prep

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

# Sample Summary

Client: AECOM

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
590-11023-1	MW-202	Ground Water	05/16/19 11:22	05/17/19 12:04	
590-11023-2	MW-203	Ground Water	05/16/19 13:52	05/17/19 12:04	
590-11023-3	MW-301	Ground Water	05/16/19 10:52	05/17/19 12:04	
590-11023-4	MW-302	Ground Water	05/16/19 12:20	05/17/19 12:04	
590-11023-5	MW-303	Ground Water	05/16/19 13:23	05/17/19 12:04	
590-11023-6	MW-304	Ground Water	05/16/19 12:51	05/17/19 12:04	
590-11023-7	MW-307	Ground Water	05/16/19 13:07	05/17/19 12:04	
590-11023-8	MW-308	Ground Water	05/16/19 12:35	05/17/19 12:04	
590-11023-9	MW-309	Ground Water	05/16/19 10:17	05/17/19 12:04	
590-11023-10	MW-310	Ground Water	05/16/19 11:50	05/17/19 12:04	
590-11023-11	MW-311	Ground Water	05/16/19 10:46	05/17/19 12:04	
590-11023-12	MW-312	Ground Water	05/16/19 09:07	05/17/19 12:04	
590-11023-13	MW-313	Water	05/16/19 10:16	05/17/19 12:04	
590-11023-14	MW-314	Water	05/16/19 09:45	05/17/19 12:04	
590-11023-15	MW-315	Water	05/16/19 09:42	05/17/19 12:04	
590-11023-16	TX-03A	Ground Water	05/16/19 11:18	05/17/19 12:04	
590-11023-17	MW-05	Ground Water	05/15/19 13:25	05/17/19 12:04	
590-11023-18	MW-111	Ground Water	05/15/19 12:04	05/17/19 12:04	
590-11023-19	MW-104	Ground Water	05/15/19 12:37	05/17/19 12:04	
590-11023-20	MW-112A	Ground Water	05/16/19 08:46	05/17/19 12:04	
590-11023-21	SH-04	Ground Water	05/16/19 08:20	05/17/19 12:04	
590-11023-22	MW-213	Ground Water	05/16/19 14:02	05/17/19 12:04	
590-11023-23	MW-214	Ground Water	05/16/19 14:46	05/17/19 12:04	

# Method Summary

Client: AECOM

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL NSH
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	TAL NSH
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
6020A	Metals (ICP/MS)	SW846	TAL NSH
3010A	Preparation, Total Metals	SW846	TAL NSH
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL SPK
5030B	Purge and Trap	SW846	TAL NSH
5030C	Purge and Trap	SW846	TAL NSH

#### Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL NSH = Eurofins TestAmerica, Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

# Detection Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-202

## Lab Sample ID: 590-11023-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	3040		1000	550	ug/L	10		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	11.8		0.238	0.109	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.718		0.397	0.119	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-203

## Lab Sample ID: 590-11023-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	471		100	55.0	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.185	J	0.236	0.108	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.159	J	0.393	0.118	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-301

## Lab Sample ID: 590-11023-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	6.84		1.00	0.200	ug/L	1		8260C	Total/NA
Ethylbenzene	0.357	J	1.00	0.190	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	483		100	55.0	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-302

## Lab Sample ID: 590-11023-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.50		1.00	0.200	ug/L	1		8260C	Total/NA
Ethylbenzene	6.78		1.00	0.190	ug/L	1		8260C	Total/NA
m,p-Xylene	1.54	J	2.00	0.380	ug/L	1		8260C	Total/NA
o-Xylene	0.227	J	1.00	0.200	ug/L	1		8260C	Total/NA
Toluene	0.363	J	1.00	0.170	ug/L	1		8260C	Total/NA
Xylenes, Total	1.77	J	3.00	0.580	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	578		100	55.0	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-303

## Lab Sample ID: 590-11023-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	17.3		1.00	0.200	ug/L	1		8260C	Total/NA
Ethylbenzene	86.9		1.00	0.190	ug/L	1		8260C	Total/NA
m,p-Xylene	5.16		2.00	0.380	ug/L	1		8260C	Total/NA
o-Xylene	0.249	J	1.00	0.200	ug/L	1		8260C	Total/NA
Toluene	1.70		1.00	0.170	ug/L	1		8260C	Total/NA
Xylenes, Total	5.41		3.00	0.580	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	1330		100	55.0	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-304

## Lab Sample ID: 590-11023-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

# Detection Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-307

## Lab Sample ID: 590-11023-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	32.4		1.00	0.200	ug/L	1		8260C	Total/NA
Ethylbenzene	26.0		1.00	0.190	ug/L	1		8260C	Total/NA
m,p-Xylene	10.3		2.00	0.380	ug/L	1		8260C	Total/NA
o-Xylene	0.971	J	1.00	0.200	ug/L	1		8260C	Total/NA
Toluene	6.93		1.00	0.170	ug/L	1		8260C	Total/NA
Xylenes, Total	11.3		3.00	0.580	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	2470		1000	550	ug/L	10		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	2.74		0.232	0.107	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.265	J	0.387	0.116	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-308

## Lab Sample ID: 590-11023-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	7.03		1.00	0.200	ug/L	1		8260C	Total/NA
m,p-Xylene	0.551	J	2.00	0.380	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	397		100	55.0	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-309

## Lab Sample ID: 590-11023-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	300		100	55.0	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-310

## Lab Sample ID: 590-11023-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	240		100	55.0	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-311

## Lab Sample ID: 590-11023-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.237	J	1.00	0.200	ug/L	1		8260C	Total/NA
Toluene	0.976	J	1.00	0.170	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	618		100	55.0	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-312

## Lab Sample ID: 590-11023-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	189		1.00	0.200	ug/L	1		8260C	Total/NA
Ethylbenzene	3.53		1.00	0.190	ug/L	1		8260C	Total/NA
m,p-Xylene	2.62		2.00	0.380	ug/L	1		8260C	Total/NA
o-Xylene	0.281	J	1.00	0.200	ug/L	1		8260C	Total/NA
Toluene	2.86		1.00	0.170	ug/L	1		8260C	Total/NA
Xylenes, Total	2.90	J	3.00	0.580	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	2500		100	55.0	ug/L	1		NWTPH-Gx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

# Detection Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-313

## Lab Sample ID: 590-11023-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	80.7		100	55.0	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.207	J	0.231	0.106	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.164	J	0.385	0.115	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-314

## Lab Sample ID: 590-11023-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	201		100	55.0	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	2.09		0.240	0.110	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.248	J	0.400	0.120	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-315

## Lab Sample ID: 590-11023-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	56.5		1.00	0.200	ug/L	1		8260C	Total/NA
Ethylbenzene	0.584	J	1.00	0.190	ug/L	1		8260C	Total/NA
m,p-Xylene	3.99		2.00	0.380	ug/L	1		8260C	Total/NA
Toluene	3.93		1.00	0.170	ug/L	1		8260C	Total/NA
Xylenes, Total	3.99		3.00	0.580	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	2160		100	55.0	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	2.38		0.255	0.117	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.179	J	0.425	0.127	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: TX-03A

## Lab Sample ID: 590-11023-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	102	H	1.00	0.200	ug/L	1		8260C	Total/NA
Ethylbenzene	1.15	H	1.00	0.190	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	991		100	55.0	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-05

## Lab Sample ID: 590-11023-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	58.9		100	55.0	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-111

## Lab Sample ID: 590-11023-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	4.84		1.00	0.200	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	149		100	55.0	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.195	J	0.234	0.107	mg/L	1		NWTPH-Dx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane



# Detection Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-104

## Lab Sample ID: 590-11023-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	2590		100	55.0	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	1.64		0.244	0.112	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.316	J	0.407	0.122	mg/L	1		NWTPH-Dx	Total/NA
Lead	0.00163	J	0.00200	0.000100	mg/L	1		6020A	Total/NA

## Client Sample ID: MW-112A

## Lab Sample ID: 590-11023-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	11.1		1.00	0.200	ug/L	1		8260C	Total/NA
Ethylbenzene	23.1		1.00	0.190	ug/L	1		8260C	Total/NA
m,p-Xylene	1.80	J	2.00	0.380	ug/L	1		8260C	Total/NA
o-Xylene	0.278	J	1.00	0.200	ug/L	1		8260C	Total/NA
Toluene	1.73		1.00	0.170	ug/L	1		8260C	Total/NA
Xylenes, Total	2.08	J	3.00	0.580	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	2000		100	55.0	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	2.37		0.219	0.101	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.222	J	0.366	0.110	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: SH-04

## Lab Sample ID: 590-11023-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.69		1.00	0.200	ug/L	1		8260C	Total/NA
Ethylbenzene	2.25		1.00	0.190	ug/L	1		8260C	Total/NA
m,p-Xylene	2.07		2.00	0.380	ug/L	1		8260C	Total/NA
o-Xylene	0.202	J	1.00	0.200	ug/L	1		8260C	Total/NA
Toluene	0.346	J	1.00	0.170	ug/L	1		8260C	Total/NA
Xylenes, Total	2.27	J	3.00	0.580	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	1350		100	55.0	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.582		0.242	0.111	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.174	J	0.403	0.121	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-213

## Lab Sample ID: 590-11023-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
m,p-Xylene	0.490	J	2.00	0.380	ug/L	1		8260C	Total/NA
Toluene	0.349	J	1.00	0.170	ug/L	1		8260C	Total/NA
Gasoline Range Organics (GRO) -C6-C12	91.2		100	55.0	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.153	J	0.245	0.112	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-214

## Lab Sample ID: 590-11023-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
m,p-Xylene	0.439	J	2.00	0.380	ug/L	1		8260C	Total/NA
Toluene	0.303	J	1.00	0.170	ug/L	1		8260C	Total/NA
Naphthalene	0.0645	J	0.0894	0.0527	ug/L	1		8270D SIM	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

# Detection Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

**Client Sample ID: MW-214 (Continued)**

**Lab Sample ID: 590-11023-23**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Methylnaphthalene	0.0550	J	0.0894	0.0437	ug/L	1		8270D SIM	Total/NA
1-Methylnaphthalene	0.0324	J	0.0894	0.0229	ug/L	1		8270D SIM	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.213	J	0.244	0.112	mg/L	1		NWTPH-Dx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane



# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-202

Date Collected: 05/16/19 11:22

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-1

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	3040		1000	550	ug/L			05/29/19 11:20	10
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
a,a,a-Trifluorotoluene	100		50 - 150					05/29/19 11:20	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	11.8		0.238	0.109	mg/L		05/22/19 13:39	05/23/19 00:08	1
Residual Range Organics (RRO) (C25-C36)	0.718		0.397	0.119	mg/L		05/22/19 13:39	05/23/19 00:08	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
o-Terphenyl	99		50 - 150				05/22/19 13:39	05/23/19 00:08	1
n-Triacontane-d62	97		50 - 150				05/22/19 13:39	05/23/19 00:08	1

## Client Sample ID: MW-203

Date Collected: 05/16/19 13:52

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-2

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	471		100	55.0	ug/L			05/28/19 18:46	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
a,a,a-Trifluorotoluene	99		50 - 150					05/28/19 18:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.185	J	0.236	0.108	mg/L		05/22/19 13:39	05/23/19 00:28	1
Residual Range Organics (RRO) (C25-C36)	0.159	J	0.393	0.118	mg/L		05/22/19 13:39	05/23/19 00:28	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
o-Terphenyl	83		50 - 150				05/22/19 13:39	05/23/19 00:28	1
n-Triacontane-d62	74		50 - 150				05/22/19 13:39	05/23/19 00:28	1

## Client Sample ID: MW-301

Date Collected: 05/16/19 10:52

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-3

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	6.84		1.00	0.200	ug/L			05/23/19 18:46	1
Ethylbenzene	0.357	J	1.00	0.190	ug/L			05/23/19 18:46	1
m,p-Xylene	ND		2.00	0.380	ug/L			05/23/19 18:46	1
o-Xylene	ND		1.00	0.200	ug/L			05/23/19 18:46	1
Toluene	ND		1.00	0.170	ug/L			05/23/19 18:46	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/23/19 18:46	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-301

Date Collected: 05/16/19 10:52

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-3

Matrix: Ground Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		70 - 130		05/23/19 18:46	1
4-Bromofluorobenzene (Surr)	99		70 - 130		05/23/19 18:46	1
Dibromofluoromethane (Surr)	102		70 - 130		05/23/19 18:46	1
Toluene-d8 (Surr)	99		70 - 130		05/23/19 18:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	483		100	55.0	ug/L			05/28/19 19:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	100		50 - 150		05/28/19 19:22	1

## Client Sample ID: MW-302

Date Collected: 05/16/19 12:20

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-4

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3.50		1.00	0.200	ug/L			05/22/19 18:44	1
Ethylbenzene	6.78		1.00	0.190	ug/L			05/22/19 18:44	1
m,p-Xylene	1.54	J	2.00	0.380	ug/L			05/22/19 18:44	1
o-Xylene	0.227	J	1.00	0.200	ug/L			05/22/19 18:44	1
Toluene	0.363	J	1.00	0.170	ug/L			05/22/19 18:44	1
Xylenes, Total	1.77	J	3.00	0.580	ug/L			05/22/19 18:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 130		05/22/19 18:44	1
4-Bromofluorobenzene (Surr)	102		70 - 130		05/22/19 18:44	1
Dibromofluoromethane (Surr)	102		70 - 130		05/22/19 18:44	1
Toluene-d8 (Surr)	106		70 - 130		05/22/19 18:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	578		100	55.0	ug/L			05/28/19 19:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	100		50 - 150		05/28/19 19:59	1

## Client Sample ID: MW-303

Date Collected: 05/16/19 13:23

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-5

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	17.3		1.00	0.200	ug/L			05/23/19 19:12	1
Ethylbenzene	86.9		1.00	0.190	ug/L			05/23/19 19:12	1
m,p-Xylene	5.16		2.00	0.380	ug/L			05/23/19 19:12	1
o-Xylene	0.249	J	1.00	0.200	ug/L			05/23/19 19:12	1
Toluene	1.70		1.00	0.170	ug/L			05/23/19 19:12	1
Xylenes, Total	5.41		3.00	0.580	ug/L			05/23/19 19:12	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-303

Date Collected: 05/16/19 13:23

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-5

Matrix: Ground Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 130		05/23/19 19:12	1
4-Bromofluorobenzene (Surr)	98		70 - 130		05/23/19 19:12	1
Dibromofluoromethane (Surr)	103		70 - 130		05/23/19 19:12	1
Toluene-d8 (Surr)	98		70 - 130		05/23/19 19:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	1330		100	55.0	ug/L			05/29/19 13:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	98		50 - 150		05/29/19 13:43	1

## Client Sample ID: MW-304

Date Collected: 05/16/19 12:51

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-6

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/21/19 18:06	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/21/19 18:06	1
m,p-Xylene	ND		2.00	0.380	ug/L			05/21/19 18:06	1
o-Xylene	ND		1.00	0.200	ug/L			05/21/19 18:06	1
Toluene	ND		1.00	0.170	ug/L			05/21/19 18:06	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/21/19 18:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 130		05/21/19 18:06	1
4-Bromofluorobenzene (Surr)	97		70 - 130		05/21/19 18:06	1
Dibromofluoromethane (Surr)	105		70 - 130		05/21/19 18:06	1
Toluene-d8 (Surr)	99		70 - 130		05/21/19 18:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	ND		100	55.0	ug/L			05/28/19 22:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	98		50 - 150		05/28/19 22:23	1

## Client Sample ID: MW-307

Date Collected: 05/16/19 13:07

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-7

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	32.4		1.00	0.200	ug/L			05/21/19 18:32	1
Ethylbenzene	26.0		1.00	0.190	ug/L			05/21/19 18:32	1
m,p-Xylene	10.3		2.00	0.380	ug/L			05/21/19 18:32	1
o-Xylene	0.971	J	1.00	0.200	ug/L			05/21/19 18:32	1
Toluene	6.93		1.00	0.170	ug/L			05/21/19 18:32	1
Xylenes, Total	11.3		3.00	0.580	ug/L			05/21/19 18:32	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-307

Date Collected: 05/16/19 13:07

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-7

Matrix: Ground Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 130		05/21/19 18:32	1
4-Bromofluorobenzene (Surr)	97		70 - 130		05/21/19 18:32	1
Dibromofluoromethane (Surr)	104		70 - 130		05/21/19 18:32	1
Toluene-d8 (Surr)	97		70 - 130		05/21/19 18:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	2470		1000	550	ug/L			05/29/19 12:31	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	99		50 - 150		05/29/19 12:31	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	2.74		0.232	0.107	mg/L		05/22/19 13:39	05/23/19 00:48	1
Residual Range Organics (RRO) (C25-C36)	0.265	J	0.387	0.116	mg/L		05/22/19 13:39	05/23/19 00:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	99		50 - 150	05/22/19 13:39	05/23/19 00:48	1
n-Triacontane-d62	92		50 - 150	05/22/19 13:39	05/23/19 00:48	1

## Client Sample ID: MW-308

Date Collected: 05/16/19 12:35

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-8

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	7.03		1.00	0.200	ug/L			05/21/19 18:58	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/21/19 18:58	1
m,p-Xylene	0.551	J	2.00	0.380	ug/L			05/21/19 18:58	1
o-Xylene	ND		1.00	0.200	ug/L			05/21/19 18:58	1
Toluene	ND		1.00	0.170	ug/L			05/21/19 18:58	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/21/19 18:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 130		05/21/19 18:58	1
4-Bromofluorobenzene (Surr)	98		70 - 130		05/21/19 18:58	1
Dibromofluoromethane (Surr)	105		70 - 130		05/21/19 18:58	1
Toluene-d8 (Surr)	98		70 - 130		05/21/19 18:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	397		100	55.0	ug/L			05/28/19 20:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	102		50 - 150		05/28/19 20:36	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

**Client Sample ID: MW-309**

**Lab Sample ID: 590-11023-9**

Date Collected: 05/16/19 10:17

Matrix: Ground Water

Date Received: 05/17/19 12:04

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/21/19 19:24	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/21/19 19:24	1
m,p-Xylene	ND		2.00	0.380	ug/L			05/21/19 19:24	1
o-Xylene	ND		1.00	0.200	ug/L			05/21/19 19:24	1
Toluene	ND		1.00	0.170	ug/L			05/21/19 19:24	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/21/19 19:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 130		05/21/19 19:24	1
4-Bromofluorobenzene (Surr)	98		70 - 130		05/21/19 19:24	1
Dibromofluoromethane (Surr)	105		70 - 130		05/21/19 19:24	1
Toluene-d8 (Surr)	100		70 - 130		05/21/19 19:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	300		100	55.0	ug/L			05/28/19 21:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	101		50 - 150		05/28/19 21:12	1

**Client Sample ID: MW-310**

**Lab Sample ID: 590-11023-10**

Date Collected: 05/16/19 11:50

Matrix: Ground Water

Date Received: 05/17/19 12:04

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/21/19 19:49	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/21/19 19:49	1
m,p-Xylene	ND		2.00	0.380	ug/L			05/21/19 19:49	1
o-Xylene	ND		1.00	0.200	ug/L			05/21/19 19:49	1
Toluene	ND		1.00	0.170	ug/L			05/21/19 19:49	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/21/19 19:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 130		05/21/19 19:49	1
4-Bromofluorobenzene (Surr)	99		70 - 130		05/21/19 19:49	1
Dibromofluoromethane (Surr)	104		70 - 130		05/21/19 19:49	1
Toluene-d8 (Surr)	99		70 - 130		05/21/19 19:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	240		100	55.0	ug/L			05/28/19 21:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	100		50 - 150		05/28/19 21:48	1



# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

**Client Sample ID: MW-311**

**Lab Sample ID: 590-11023-11**

Date Collected: 05/16/19 10:46

Matrix: Ground Water

Date Received: 05/17/19 12:04

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>0.237</b>	<b>J</b>	1.00	0.200	ug/L	-		05/21/19 20:15	1
Ethylbenzene	ND		1.00	0.190	ug/L	-		05/21/19 20:15	1
m,p-Xylene	ND		2.00	0.380	ug/L	-		05/21/19 20:15	1
o-Xylene	ND		1.00	0.200	ug/L	-		05/21/19 20:15	1
<b>Toluene</b>	<b>0.976</b>	<b>J</b>	1.00	0.170	ug/L	-		05/21/19 20:15	1
Xylenes, Total	ND		3.00	0.580	ug/L	-		05/21/19 20:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		70 - 130		05/21/19 20:15	1
4-Bromofluorobenzene (Surr)	96		70 - 130		05/21/19 20:15	1
Dibromofluoromethane (Surr)	107		70 - 130		05/21/19 20:15	1
Toluene-d8 (Surr)	99		70 - 130		05/21/19 20:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline Range Organics (GRO) -C6-C12</b>	<b>618</b>		100	55.0	ug/L	-		05/28/19 23:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	104		50 - 150		05/28/19 23:35	1

**Client Sample ID: MW-312**

**Lab Sample ID: 590-11023-12**

Date Collected: 05/16/19 09:07

Matrix: Ground Water

Date Received: 05/17/19 12:04

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>189</b>		1.00	0.200	ug/L	-		05/23/19 19:38	1
<b>Ethylbenzene</b>	<b>3.53</b>		1.00	0.190	ug/L	-		05/23/19 19:38	1
<b>m,p-Xylene</b>	<b>2.62</b>		2.00	0.380	ug/L	-		05/23/19 19:38	1
<b>o-Xylene</b>	<b>0.281</b>	<b>J</b>	1.00	0.200	ug/L	-		05/23/19 19:38	1
<b>Toluene</b>	<b>2.86</b>		1.00	0.170	ug/L	-		05/23/19 19:38	1
<b>Xylenes, Total</b>	<b>2.90</b>	<b>J</b>	3.00	0.580	ug/L	-		05/23/19 19:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 130		05/23/19 19:38	1
4-Bromofluorobenzene (Surr)	97		70 - 130		05/23/19 19:38	1
Dibromofluoromethane (Surr)	104		70 - 130		05/23/19 19:38	1
Toluene-d8 (Surr)	97		70 - 130		05/23/19 19:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline Range Organics (GRO) -C6-C12</b>	<b>2500</b>		100	55.0	ug/L	-		05/29/19 00:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	98		50 - 150		05/29/19 00:10	1

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

**Client Sample ID: MW-313**

**Lab Sample ID: 590-11023-13**

Date Collected: 05/16/19 10:16

Matrix: Water

Date Received: 05/17/19 12:04

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/21/19 20:41	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/21/19 20:41	1
m,p-Xylene	ND		2.00	0.380	ug/L			05/21/19 20:41	1
o-Xylene	ND		1.00	0.200	ug/L			05/21/19 20:41	1
Toluene	ND		1.00	0.170	ug/L			05/21/19 20:41	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/21/19 20:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 130		05/21/19 20:41	1
4-Bromofluorobenzene (Surr)	97		70 - 130		05/21/19 20:41	1
Dibromofluoromethane (Surr)	104		70 - 130		05/21/19 20:41	1
Toluene-d8 (Surr)	99		70 - 130		05/21/19 20:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	80.7		100	55.0	ug/L			05/29/19 00:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	100		50 - 150		05/29/19 00:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.207	J	0.231	0.106	mg/L		05/22/19 13:39	05/23/19 01:09	1
Residual Range Organics (RRO) (C25-C36)	0.164	J	0.385	0.115	mg/L		05/22/19 13:39	05/23/19 01:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	85		50 - 150	05/22/19 13:39	05/23/19 01:09	1
n-Triacontane-d62	80		50 - 150	05/22/19 13:39	05/23/19 01:09	1

**Client Sample ID: MW-314**

**Lab Sample ID: 590-11023-14**

Date Collected: 05/16/19 09:45

Matrix: Water

Date Received: 05/17/19 12:04

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/21/19 21:07	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/21/19 21:07	1
m,p-Xylene	ND		2.00	0.380	ug/L			05/21/19 21:07	1
o-Xylene	ND		1.00	0.200	ug/L			05/21/19 21:07	1
Toluene	ND		1.00	0.170	ug/L			05/21/19 21:07	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/21/19 21:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 130		05/21/19 21:07	1
4-Bromofluorobenzene (Surr)	97		70 - 130		05/21/19 21:07	1
Dibromofluoromethane (Surr)	104		70 - 130		05/21/19 21:07	1
Toluene-d8 (Surr)	100		70 - 130		05/21/19 21:07	1

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-314

Date Collected: 05/16/19 09:45

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-14

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	201		100	55.0	ug/L			05/29/19 01:21	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
a,a,a-Trifluorotoluene	99		50 - 150					05/29/19 01:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	2.09		0.240	0.110	mg/L		05/22/19 13:39	05/23/19 01:29	1
Residual Range Organics (RRO) (C25-C36)	0.248	J	0.400	0.120	mg/L		05/22/19 13:39	05/23/19 01:29	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
o-Terphenyl	100		50 - 150				05/22/19 13:39	05/23/19 01:29	1
n-Triacontane-d62	95		50 - 150				05/22/19 13:39	05/23/19 01:29	1

## Client Sample ID: MW-315

Date Collected: 05/16/19 09:42

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-15

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	56.5		1.00	0.200	ug/L			05/21/19 21:33	1
Ethylbenzene	0.584	J	1.00	0.190	ug/L			05/21/19 21:33	1
m,p-Xylene	3.99		2.00	0.380	ug/L			05/21/19 21:33	1
o-Xylene	ND		1.00	0.200	ug/L			05/21/19 21:33	1
Toluene	3.93		1.00	0.170	ug/L			05/21/19 21:33	1
Xylenes, Total	3.99		3.00	0.580	ug/L			05/21/19 21:33	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	106		70 - 130					05/21/19 21:33	1
4-Bromofluorobenzene (Surr)	97		70 - 130					05/21/19 21:33	1
Dibromofluoromethane (Surr)	107		70 - 130					05/21/19 21:33	1
Toluene-d8 (Surr)	97		70 - 130					05/21/19 21:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	2160		100	55.0	ug/L			05/29/19 01:56	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
a,a,a-Trifluorotoluene	97		50 - 150					05/29/19 01:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	2.38		0.255	0.117	mg/L		05/22/19 13:39	05/23/19 01:49	1
Residual Range Organics (RRO) (C25-C36)	0.179	J	0.425	0.127	mg/L		05/22/19 13:39	05/23/19 01:49	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
o-Terphenyl	101		50 - 150				05/22/19 13:39	05/23/19 01:49	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-315

Date Collected: 05/16/19 09:42

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-15

Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Triacontane-d62	94		50 - 150	05/22/19 13:39	05/23/19 01:49	1

## Client Sample ID: TX-03A

Date Collected: 05/16/19 11:18

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-16

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	102	H	1.00	0.200	ug/L			05/31/19 23:11	1
Ethylbenzene	1.15	H	1.00	0.190	ug/L			05/31/19 23:11	1
m,p-Xylene	ND	H	2.00	0.380	ug/L			05/31/19 23:11	1
o-Xylene	ND	H	1.00	0.200	ug/L			05/31/19 23:11	1
Toluene	ND	H	1.00	0.170	ug/L			05/31/19 23:11	1
Xylenes, Total	ND	H	3.00	0.580	ug/L			05/31/19 23:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		70 - 130		05/31/19 23:11	1
4-Bromofluorobenzene (Surr)	99		70 - 130		05/31/19 23:11	1
Dibromofluoromethane (Surr)	101		70 - 130		05/31/19 23:11	1
Toluene-d8 (Surr)	99		70 - 130		05/31/19 23:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	991		100	55.0	ug/L			05/29/19 02:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	101		50 - 150		05/29/19 02:32	1

## Client Sample ID: MW-05

Date Collected: 05/15/19 13:25

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-17

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/23/19 20:04	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/23/19 20:04	1
m,p-Xylene	ND		2.00	0.380	ug/L			05/23/19 20:04	1
o-Xylene	ND		1.00	0.200	ug/L			05/23/19 20:04	1
Toluene	ND		1.00	0.170	ug/L			05/23/19 20:04	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/23/19 20:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		70 - 130		05/23/19 20:04	1
4-Bromofluorobenzene (Surr)	98		70 - 130		05/23/19 20:04	1
Dibromofluoromethane (Surr)	101		70 - 130		05/23/19 20:04	1
Toluene-d8 (Surr)	99		70 - 130		05/23/19 20:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	58.9		100	55.0	ug/L			05/29/19 03:07	1

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# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

**Client Sample ID: MW-05**  
**Date Collected: 05/15/19 13:25**  
**Date Received: 05/17/19 12:04**

**Lab Sample ID: 590-11023-17**  
**Matrix: Ground Water**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>a,a,a</i> -Trifluorotoluene	98		50 - 150		05/29/19 03:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.236	0.108	mg/L		05/22/19 13:39	05/23/19 02:09	1
Residual Range Organics (RRO) (C25-C36)	ND		0.393	0.118	mg/L		05/22/19 13:39	05/23/19 02:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	82		50 - 150	05/22/19 13:39	05/23/19 02:09	1
<i>n</i> -Triacontane-d62	77		50 - 150	05/22/19 13:39	05/23/19 02:09	1

**Client Sample ID: MW-111**  
**Date Collected: 05/15/19 12:04**  
**Date Received: 05/17/19 12:04**

**Lab Sample ID: 590-11023-18**  
**Matrix: Ground Water**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>4.84</b>		1.00	0.200	ug/L			05/23/19 20:30	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/23/19 20:30	1
<i>m,p</i> -Xylene	ND		2.00	0.380	ug/L			05/23/19 20:30	1
<i>o</i> -Xylene	ND		1.00	0.200	ug/L			05/23/19 20:30	1
Toluene	ND		1.00	0.170	ug/L			05/23/19 20:30	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/23/19 20:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>1,2</i> -Dichloroethane-d4 (Surr)	107		70 - 130		05/21/19 23:42	10
<i>1,2</i> -Dichloroethane-d4 (Surr)	106		70 - 130		05/23/19 20:30	1
<i>4</i> -Bromofluorobenzene (Surr)	97		70 - 130		05/21/19 23:42	10
<i>4</i> -Bromofluorobenzene (Surr)	99		70 - 130		05/23/19 20:30	1
Dibromofluoromethane (Surr)	105		70 - 130		05/21/19 23:42	10
Dibromofluoromethane (Surr)	102		70 - 130		05/23/19 20:30	1
Toluene-d8 (Surr)	98		70 - 130		05/21/19 23:42	10
Toluene-d8 (Surr)	99		70 - 130		05/23/19 20:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline Range Organics (GRO) -C6-C12</b>	<b>149</b>		100	55.0	ug/L			05/29/19 03:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>a,a,a</i> -Trifluorotoluene	100		50 - 150		05/29/19 03:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.195</b>	<b>J</b>	0.234	0.107	mg/L		05/22/19 13:39	05/23/19 02:29	1
Residual Range Organics (RRO) (C25-C36)	ND		0.390	0.117	mg/L		05/22/19 13:39	05/23/19 02:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	96		50 - 150	05/22/19 13:39	05/23/19 02:29	1

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# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-111

Date Collected: 05/15/19 12:04

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-18

Matrix: Ground Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>n</i> -Triacontane-d62	86		50 - 150	05/22/19 13:39	05/23/19 02:29	1

## Client Sample ID: MW-104

Date Collected: 05/15/19 12:37

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-19

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	2590		100	55.0	ug/L			05/29/19 04:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>a,a,a</i> -Trifluorotoluene	98		50 - 150		05/29/19 04:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	1.64		0.244	0.112	mg/L		05/22/19 13:39	05/23/19 03:09	1
Residual Range Organics (RRO) (C25-C36)	0.316	J	0.407	0.122	mg/L		05/22/19 13:39	05/23/19 03:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	94		50 - 150	05/22/19 13:39	05/23/19 03:09	1
<i>n</i> -Triacontane-d62	91		50 - 150	05/22/19 13:39	05/23/19 03:09	1

### Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.00163	J	0.00200	0.000100	mg/L		05/24/19 19:52	05/28/19 12:05	1

## Client Sample ID: MW-112A

Date Collected: 05/16/19 08:46

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-20

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	11.1		1.00	0.200	ug/L			05/22/19 19:10	1
Ethylbenzene	23.1		1.00	0.190	ug/L			05/22/19 19:10	1
<i>m,p</i> -Xylene	1.80	J	2.00	0.380	ug/L			05/22/19 19:10	1
<i>o</i> -Xylene	0.278	J	1.00	0.200	ug/L			05/22/19 19:10	1
Toluene	1.73		1.00	0.170	ug/L			05/22/19 19:10	1
Xylenes, Total	2.08	J	3.00	0.580	ug/L			05/22/19 19:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>1,2</i> -Dichloroethane-d4 (Surr)	112		70 - 130		05/22/19 19:10	1
<i>4</i> -Bromofluorobenzene (Surr)	103		70 - 130		05/22/19 19:10	1
Dibromofluoromethane (Surr)	102		70 - 130		05/22/19 19:10	1
Toluene-d8 (Surr)	107		70 - 130		05/22/19 19:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	2000		100	55.0	ug/L			05/29/19 04:53	1

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# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-112A

Date Collected: 05/16/19 08:46

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-20

Matrix: Ground Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	98		50 - 150		05/29/19 04:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	2.37		0.219	0.101	mg/L		05/22/19 13:39	05/23/19 03:29	1
Residual Range Organics (RRO) (C25-C36)	0.222	J	0.366	0.110	mg/L		05/22/19 13:39	05/23/19 03:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150	05/22/19 13:39	05/23/19 03:29	1
n-Triacontane-d62	80		50 - 150	05/22/19 13:39	05/23/19 03:29	1

## Client Sample ID: SH-04

Date Collected: 05/16/19 08:20

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-21

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.69		1.00	0.200	ug/L			05/22/19 17:25	1
Ethylbenzene	2.25		1.00	0.190	ug/L			05/22/19 17:25	1
m,p-Xylene	2.07		2.00	0.380	ug/L			05/22/19 17:25	1
o-Xylene	0.202	J	1.00	0.200	ug/L			05/22/19 17:25	1
Toluene	0.346	J	1.00	0.170	ug/L			05/22/19 17:25	1
Xylenes, Total	2.27	J	3.00	0.580	ug/L			05/22/19 17:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 130		05/22/19 17:25	1
4-Bromofluorobenzene (Surr)	104		70 - 130		05/22/19 17:25	1
Dibromofluoromethane (Surr)	103		70 - 130		05/22/19 17:25	1
Toluene-d8 (Surr)	105		70 - 130		05/22/19 17:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	1350		100	55.0	ug/L			05/29/19 14:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	98		50 - 150		05/29/19 14:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.582		0.242	0.111	mg/L		05/22/19 13:39	05/23/19 03:50	1
Residual Range Organics (RRO) (C25-C36)	0.174	J	0.403	0.121	mg/L		05/22/19 13:39	05/23/19 03:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	87		50 - 150	05/22/19 13:39	05/23/19 03:50	1
n-Triacontane-d62	84		50 - 150	05/22/19 13:39	05/23/19 03:50	1



# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

**Client Sample ID: MW-213**

**Lab Sample ID: 590-11023-22**

**Date Collected: 05/16/19 14:02**

**Matrix: Ground Water**

**Date Received: 05/17/19 12:04**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/22/19 17:51	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/22/19 17:51	1
<b>m,p-Xylene</b>	<b>0.490</b>	<b>J</b>	2.00	0.380	ug/L			05/22/19 17:51	1
o-Xylene	ND		1.00	0.200	ug/L			05/22/19 17:51	1
<b>Toluene</b>	<b>0.349</b>	<b>J</b>	1.00	0.170	ug/L			05/22/19 17:51	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/22/19 17:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		70 - 130		05/22/19 17:51	1
4-Bromofluorobenzene (Surr)	100		70 - 130		05/22/19 17:51	1
Dibromofluoromethane (Surr)	104		70 - 130		05/22/19 17:51	1
Toluene-d8 (Surr)	106		70 - 130		05/22/19 17:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0893	0.0526	ug/L		05/23/19 14:34	05/23/19 17:01	1
2-Methylnaphthalene	ND		0.0893	0.0436	ug/L		05/23/19 14:34	05/23/19 17:01	1
1-Methylnaphthalene	ND		0.0893	0.0228	ug/L		05/23/19 14:34	05/23/19 17:01	1
Acenaphthylene	ND		0.0893	0.0159	ug/L		05/23/19 14:34	05/23/19 17:01	1
Acenaphthene	ND		0.0893	0.0218	ug/L		05/23/19 14:34	05/23/19 17:01	1
Fluorene	ND		0.0893	0.0159	ug/L		05/23/19 14:34	05/23/19 17:01	1
Phenanthrene	ND		0.0893	0.0555	ug/L		05/23/19 14:34	05/23/19 17:01	1
Anthracene	ND		0.0893	0.0248	ug/L		05/23/19 14:34	05/23/19 17:01	1
Fluoranthene	ND		0.0893	0.0169	ug/L		05/23/19 14:34	05/23/19 17:01	1
Pyrene	ND		0.0893	0.0258	ug/L		05/23/19 14:34	05/23/19 17:01	1
Benzo[a]anthracene	ND		0.0893	0.0119	ug/L		05/23/19 14:34	05/23/19 17:01	1
Chrysene	ND		0.0893	0.00893	ug/L		05/23/19 14:34	05/23/19 17:01	1
Benzo[b]fluoranthene	ND		0.0893	0.0109	ug/L		05/23/19 14:34	05/23/19 17:01	1
Benzo[k]fluoranthene	ND		0.0893	0.0149	ug/L		05/23/19 14:34	05/23/19 17:01	1
Benzo[a]pyrene	ND		0.0893	0.0119	ug/L		05/23/19 14:34	05/23/19 17:01	1
Indeno[1,2,3-cd]pyrene	ND		0.0893	0.0218	ug/L		05/23/19 14:34	05/23/19 17:01	1
Dibenz(a,h)anthracene	ND		0.0893	0.0129	ug/L		05/23/19 14:34	05/23/19 17:01	1
Benzo[g,h,i]perylene	ND		0.0893	0.0208	ug/L		05/23/19 14:34	05/23/19 17:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	74		36 - 126	05/23/19 14:34	05/23/19 17:01	1
2-Fluorobiphenyl (Surr)	68		44 - 120	05/23/19 14:34	05/23/19 17:01	1
p-Terphenyl-d14	72		51 - 121	05/23/19 14:34	05/23/19 17:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline Range Organics (GRO) -C6-C12</b>	<b>91.2</b>		100	55.0	ug/L			05/29/19 05:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	100		50 - 150		05/29/19 05:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.153</b>	<b>J</b>	0.245	0.112	mg/L		05/30/19 14:35	05/30/19 18:48	1

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# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-213

Date Collected: 05/16/19 14:02

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-22

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Residual Range Organics (RRO) (C25-C36)	ND		0.409	0.123	mg/L		05/30/19 14:35	05/30/19 18:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	87		50 - 150				05/30/19 14:35	05/30/19 18:48	1
<i>n</i> -Triacontane-d62	78		50 - 150				05/30/19 14:35	05/30/19 18:48	1

## Client Sample ID: MW-214

Date Collected: 05/16/19 14:46

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-23

Matrix: Ground Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/22/19 18:17	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/22/19 18:17	1
<b>m,p-Xylene</b>	<b>0.439</b>	<b>J</b>	2.00	0.380	ug/L			05/22/19 18:17	1
<i>o</i> -Xylene	ND		1.00	0.200	ug/L			05/22/19 18:17	1
<b>Toluene</b>	<b>0.303</b>	<b>J</b>	1.00	0.170	ug/L			05/22/19 18:17	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/22/19 18:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>1,2</i> -Dichloroethane-d4 (Surr)	109		70 - 130					05/22/19 18:17	1
<i>4</i> -Bromofluorobenzene (Surr)	103		70 - 130					05/22/19 18:17	1
<i>Dibromofluoromethane</i> (Surr)	103		70 - 130					05/22/19 18:17	1
<i>Toluene-d8</i> (Surr)	106		70 - 130					05/22/19 18:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Naphthalene</b>	<b>0.0645</b>	<b>J</b>	0.0894	0.0527	ug/L		05/23/19 14:34	05/23/19 17:27	1
<b>2-Methylnaphthalene</b>	<b>0.0550</b>	<b>J</b>	0.0894	0.0437	ug/L		05/23/19 14:34	05/23/19 17:27	1
<b>1-Methylnaphthalene</b>	<b>0.0324</b>	<b>J</b>	0.0894	0.0229	ug/L		05/23/19 14:34	05/23/19 17:27	1
Acenaphthylene	ND		0.0894	0.0159	ug/L		05/23/19 14:34	05/23/19 17:27	1
Acenaphthene	ND		0.0894	0.0219	ug/L		05/23/19 14:34	05/23/19 17:27	1
Fluorene	ND		0.0894	0.0159	ug/L		05/23/19 14:34	05/23/19 17:27	1
Phenanthrene	ND		0.0894	0.0556	ug/L		05/23/19 14:34	05/23/19 17:27	1
Anthracene	ND		0.0894	0.0248	ug/L		05/23/19 14:34	05/23/19 17:27	1
Fluoranthene	ND		0.0894	0.0169	ug/L		05/23/19 14:34	05/23/19 17:27	1
Pyrene	ND		0.0894	0.0258	ug/L		05/23/19 14:34	05/23/19 17:27	1
Benzo[a]anthracene	ND		0.0894	0.0119	ug/L		05/23/19 14:34	05/23/19 17:27	1
Chrysene	ND		0.0894	0.00894	ug/L		05/23/19 14:34	05/23/19 17:27	1
Benzo[b]fluoranthene	ND		0.0894	0.0109	ug/L		05/23/19 14:34	05/23/19 17:27	1
Benzo[k]fluoranthene	ND		0.0894	0.0149	ug/L		05/23/19 14:34	05/23/19 17:27	1
Benzo[a]pyrene	ND		0.0894	0.0119	ug/L		05/23/19 14:34	05/23/19 17:27	1
Indeno[1,2,3-cd]pyrene	ND		0.0894	0.0219	ug/L		05/23/19 14:34	05/23/19 17:27	1
Dibenz(a,h)anthracene	ND		0.0894	0.0129	ug/L		05/23/19 14:34	05/23/19 17:27	1
Benzo[g,h,i]perylene	ND		0.0894	0.0209	ug/L		05/23/19 14:34	05/23/19 17:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Nitrobenzene-d5</i>	75		36 - 126				05/23/19 14:34	05/23/19 17:27	1
<i>2-Fluorobiphenyl</i> (Surr)	72		44 - 120				05/23/19 14:34	05/23/19 17:27	1
<i>p</i> -Terphenyl-d14	76		51 - 121				05/23/19 14:34	05/23/19 17:27	1

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# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

**Client Sample ID: MW-214**

**Lab Sample ID: 590-11023-23**

Date Collected: 05/16/19 14:46

Matrix: Ground Water

Date Received: 05/17/19 12:04

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	ND		100	55.0	ug/L			05/29/19 06:03	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>a,a,a-Trifluorotoluene</i>	100		50 - 150					05/29/19 06:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.213</b>	<b>J</b>	0.244	0.112	mg/L		05/30/19 14:35	05/30/19 19:08	1
Residual Range Organics (RRO) (C25-C36)	ND		0.407	0.122	mg/L		05/30/19 14:35	05/30/19 19:08	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o-Terphenyl</i>	92		50 - 150				05/30/19 14:35	05/30/19 19:08	1
<i>n-Triacontane-d62</i>	82		50 - 150				05/30/19 14:35	05/30/19 19:08	1

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

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

**Lab Sample ID: MB 490-596561/6**  
**Matrix: Water**  
**Analysis Batch: 596561**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/21/19 15:06	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/21/19 15:06	1
m,p-Xylene	ND		2.00	0.380	ug/L			05/21/19 15:06	1
o-Xylene	ND		1.00	0.200	ug/L			05/21/19 15:06	1
Toluene	ND		1.00	0.170	ug/L			05/21/19 15:06	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/21/19 15:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		70 - 130		05/21/19 15:06	1
4-Bromofluorobenzene (Surr)	98		70 - 130		05/21/19 15:06	1
Dibromofluoromethane (Surr)	106		70 - 130		05/21/19 15:06	1
Toluene-d8 (Surr)	97		70 - 130		05/21/19 15:06	1

**Lab Sample ID: LCS 490-596561/3**  
**Matrix: Water**  
**Analysis Batch: 596561**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	46.55		ug/L		93	80 - 121
Ethylbenzene	50.0	48.55		ug/L		97	80 - 130
m,p-Xylene	100	100.6		ug/L		101	80 - 141
o-Xylene	50.0	51.60		ug/L		103	80 - 127
Toluene	50.0	45.54		ug/L		91	80 - 126

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	119		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130
Dibromofluoromethane (Surr)	104		70 - 130
Toluene-d8 (Surr)	97		70 - 130

**Lab Sample ID: LCSD 490-596561/4**  
**Matrix: Water**  
**Analysis Batch: 596561**

**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
Benzene	50.0	47.39		ug/L		95	80 - 121	2	12
Ethylbenzene	50.0	48.55		ug/L		97	80 - 130	0	12
m,p-Xylene	100	100.7		ug/L		101	80 - 141	0	12
o-Xylene	50.0	51.89		ug/L		104	80 - 127	1	11
Toluene	50.0	45.76		ug/L		92	80 - 126	0	13

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	121		70 - 130
4-Bromofluorobenzene (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	105		70 - 130
Toluene-d8 (Surr)	97		70 - 130

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 590-11023-18 MS**  
**Matrix: Ground Water**  
**Analysis Batch: 596561**

**Client Sample ID: MW-111**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	6.01	J	500	520.4		ug/L		103	55 - 147
Ethylbenzene	ND		500	515.6		ug/L		103	65 - 139
m,p-Xylene	ND		1000	1056		ug/L		106	70 - 130
o-Xylene	ND		500	541.3		ug/L		108	70 - 131
Toluene	ND		500	490.7		ug/L		98	64 - 136

Surrogate	MS %Recovery	MS Qualifier	MS Limits
1,2-Dichloroethane-d4 (Surr)	120		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130
Dibromofluoromethane (Surr)	104		70 - 130
Toluene-d8 (Surr)	96		70 - 130

**Lab Sample ID: 590-11023-18 MSD**  
**Matrix: Ground Water**  
**Analysis Batch: 596561**

**Client Sample ID: MW-111**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	6.01	J	500	518.9		ug/L		103	55 - 147	0	17
Ethylbenzene	ND		500	515.3		ug/L		103	65 - 139	0	15
m,p-Xylene	ND		1000	1068		ug/L		107	70 - 130	1	16
o-Xylene	ND		500	545.5		ug/L		109	70 - 131	1	14
Toluene	ND		500	490.4		ug/L		98	64 - 136	0	15

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	118		70 - 130
4-Bromofluorobenzene (Surr)	98		70 - 130
Dibromofluoromethane (Surr)	104		70 - 130
Toluene-d8 (Surr)	97		70 - 130

**Lab Sample ID: MB 490-596768/7**  
**Matrix: Water**  
**Analysis Batch: 596768**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/22/19 13:54	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/22/19 13:54	1
m,p-Xylene	ND		2.00	0.380	ug/L			05/22/19 13:54	1
o-Xylene	ND		1.00	0.200	ug/L			05/22/19 13:54	1
Toluene	ND		1.00	0.170	ug/L			05/22/19 13:54	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/22/19 13:54	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		70 - 130		05/22/19 13:54	1
4-Bromofluorobenzene (Surr)	100		70 - 130		05/22/19 13:54	1
Dibromofluoromethane (Surr)	104		70 - 130		05/22/19 13:54	1
Toluene-d8 (Surr)	106		70 - 130		05/22/19 13:54	1

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# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 490-596768/3**  
**Matrix: Water**  
**Analysis Batch: 596768**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.57		ug/L		97	80 - 121
Ethylbenzene	50.0	54.07		ug/L		108	80 - 130
m,p-Xylene	100	104.9		ug/L		105	80 - 141
o-Xylene	50.0	52.86		ug/L		106	80 - 127
Toluene	50.0	53.84		ug/L		108	80 - 126

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	104		70 - 130
Dibromofluoromethane (Surr)	104		70 - 130
Toluene-d8 (Surr)	107		70 - 130

**Lab Sample ID: LCSD 490-596768/4**  
**Matrix: Water**  
**Analysis Batch: 596768**

**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
Benzene	50.0	49.03		ug/L		98	80 - 121	1	12
Ethylbenzene	50.0	54.40		ug/L		109	80 - 130	1	12
m,p-Xylene	100	104.1		ug/L		104	80 - 141	1	12
o-Xylene	50.0	53.16		ug/L		106	80 - 127	1	11
Toluene	50.0	53.53		ug/L		107	80 - 126	1	13

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		70 - 130
4-Bromofluorobenzene (Surr)	105		70 - 130
Dibromofluoromethane (Surr)	101		70 - 130
Toluene-d8 (Surr)	104		70 - 130

**Lab Sample ID: MB 490-597209/9**  
**Matrix: Water**  
**Analysis Batch: 597209**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/23/19 15:44	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/23/19 15:44	1
m,p-Xylene	ND		2.00	0.380	ug/L			05/23/19 15:44	1
o-Xylene	ND		1.00	0.200	ug/L			05/23/19 15:44	1
Toluene	ND		1.00	0.170	ug/L			05/23/19 15:44	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/23/19 15:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 130		05/23/19 15:44	1
4-Bromofluorobenzene (Surr)	99		70 - 130		05/23/19 15:44	1
Dibromofluoromethane (Surr)	101		70 - 130		05/23/19 15:44	1
Toluene-d8 (Surr)	99		70 - 130		05/23/19 15:44	1

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 490-597209/3**  
**Matrix: Water**  
**Analysis Batch: 597209**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	51.72		ug/L		103	80 - 121
Ethylbenzene	50.0	51.85		ug/L		104	80 - 130
m,p-Xylene	100	100.6		ug/L		101	80 - 141
o-Xylene	50.0	50.72		ug/L		101	80 - 127
Toluene	50.0	50.71		ug/L		101	80 - 126

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		70 - 130
4-Bromofluorobenzene (Surr)	101		70 - 130
Dibromofluoromethane (Surr)	99		70 - 130
Toluene-d8 (Surr)	99		70 - 130

**Lab Sample ID: LCSD 490-597209/4**  
**Matrix: Water**  
**Analysis Batch: 597209**

**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
Benzene	50.0	51.51		ug/L		103	80 - 121	0	12
Ethylbenzene	50.0	51.80		ug/L		104	80 - 130	0	12
m,p-Xylene	100	99.31		ug/L		99	80 - 141	1	12
o-Xylene	50.0	50.68		ug/L		101	80 - 127	0	11
Toluene	50.0	50.92		ug/L		102	80 - 126	0	13

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130
Dibromofluoromethane (Surr)	100		70 - 130
Toluene-d8 (Surr)	100		70 - 130

**Lab Sample ID: MB 490-599072/9**  
**Matrix: Water**  
**Analysis Batch: 599072**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00	0.200	ug/L			05/31/19 19:44	1
Ethylbenzene	ND		1.00	0.190	ug/L			05/31/19 19:44	1
m,p-Xylene	ND		2.00	0.380	ug/L			05/31/19 19:44	1
o-Xylene	ND		1.00	0.200	ug/L			05/31/19 19:44	1
Toluene	ND		1.00	0.170	ug/L			05/31/19 19:44	1
Xylenes, Total	ND		3.00	0.580	ug/L			05/31/19 19:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 130		05/31/19 19:44	1
4-Bromofluorobenzene (Surr)	103		70 - 130		05/31/19 19:44	1
Dibromofluoromethane (Surr)	98		70 - 130		05/31/19 19:44	1
Toluene-d8 (Surr)	101		70 - 130		05/31/19 19:44	1

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# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 490-599072/3**  
**Matrix: Water**  
**Analysis Batch: 599072**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.63		ug/L		97	80 - 121
Ethylbenzene	50.0	48.86		ug/L		98	80 - 130
m,p-Xylene	100	96.07		ug/L		96	80 - 141
o-Xylene	50.0	48.70		ug/L		97	80 - 127
Toluene	50.0	48.97		ug/L		98	80 - 126

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	112		70 - 130
4-Bromofluorobenzene (Surr)	104		70 - 130
Dibromofluoromethane (Surr)	97		70 - 130
Toluene-d8 (Surr)	100		70 - 130

**Lab Sample ID: LCSD 490-599072/4**  
**Matrix: Water**  
**Analysis Batch: 599072**

**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
Benzene	50.0	49.89		ug/L		100	80 - 121	3	12
Ethylbenzene	50.0	50.71		ug/L		101	80 - 130	4	12
m,p-Xylene	100	99.45		ug/L		99	80 - 141	3	12
o-Xylene	50.0	50.60		ug/L		101	80 - 127	4	11
Toluene	50.0	50.77		ug/L		102	80 - 126	4	13

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		70 - 130
4-Bromofluorobenzene (Surr)	105		70 - 130
Dibromofluoromethane (Surr)	95		70 - 130
Toluene-d8 (Surr)	101		70 - 130

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

**Lab Sample ID: MB 590-22293/1-A**  
**Matrix: Water**  
**Analysis Batch: 22291**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 22293**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0900	0.0530	ug/L		05/23/19 14:34	05/23/19 15:41	1
2-Methylnaphthalene	ND		0.0900	0.0440	ug/L		05/23/19 14:34	05/23/19 15:41	1
1-Methylnaphthalene	ND		0.0900	0.0230	ug/L		05/23/19 14:34	05/23/19 15:41	1
Acenaphthylene	ND		0.0900	0.0160	ug/L		05/23/19 14:34	05/23/19 15:41	1
Acenaphthene	ND		0.0900	0.0220	ug/L		05/23/19 14:34	05/23/19 15:41	1
Fluorene	ND		0.0900	0.0160	ug/L		05/23/19 14:34	05/23/19 15:41	1
Phenanthrene	ND		0.0900	0.0560	ug/L		05/23/19 14:34	05/23/19 15:41	1
Anthracene	ND		0.0900	0.0250	ug/L		05/23/19 14:34	05/23/19 15:41	1
Fluoranthene	ND		0.0900	0.0170	ug/L		05/23/19 14:34	05/23/19 15:41	1
Pyrene	ND		0.0900	0.0260	ug/L		05/23/19 14:34	05/23/19 15:41	1
Benzo[a]anthracene	ND		0.0900	0.0120	ug/L		05/23/19 14:34	05/23/19 15:41	1
Chrysene	ND		0.0900	0.00900	ug/L		05/23/19 14:34	05/23/19 15:41	1

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# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

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

**Lab Sample ID: MB 590-22293/1-A**  
**Matrix: Water**  
**Analysis Batch: 22291**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 22293**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	ND		0.0900	0.0110	ug/L		05/23/19 14:34	05/23/19 15:41	1
Benzo[k]fluoranthene	ND		0.0900	0.0150	ug/L		05/23/19 14:34	05/23/19 15:41	1
Benzo[a]pyrene	ND		0.0900	0.0120	ug/L		05/23/19 14:34	05/23/19 15:41	1
Indeno[1,2,3-cd]pyrene	ND		0.0900	0.0220	ug/L		05/23/19 14:34	05/23/19 15:41	1
Dibenz(a,h)anthracene	ND		0.0900	0.0130	ug/L		05/23/19 14:34	05/23/19 15:41	1
Benzo[g,h,i]perylene	ND		0.0900	0.0210	ug/L		05/23/19 14:34	05/23/19 15:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	78		36 - 126	05/23/19 14:34	05/23/19 15:41	1
2-Fluorobiphenyl (Surr)	71		44 - 120	05/23/19 14:34	05/23/19 15:41	1
p-Terphenyl-d14	79		51 - 121	05/23/19 14:34	05/23/19 15:41	1

**Lab Sample ID: LCS 590-22293/2-A**  
**Matrix: Water**  
**Analysis Batch: 22291**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 22293**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	1.60	1.133		ug/L		71	52 - 120
2-Methylnaphthalene	1.60	1.130		ug/L		71	44 - 120
1-Methylnaphthalene	1.60	1.136		ug/L		71	49 - 120
Acenaphthylene	1.60	1.244		ug/L		78	57 - 120
Acenaphthene	1.60	1.183		ug/L		74	54 - 120
Fluorene	1.60	1.270		ug/L		79	59 - 120
Phenanthrene	1.60	1.249		ug/L		78	57 - 120
Anthracene	1.60	1.243		ug/L		78	66 - 120
Fluoranthene	1.60	1.290		ug/L		81	64 - 120
Pyrene	1.60	1.230		ug/L		77	52 - 120
Benzo[a]anthracene	1.60	1.300		ug/L		81	68 - 120
Chrysene	1.60	1.304		ug/L		81	69 - 120
Benzo[b]fluoranthene	1.60	1.170		ug/L		73	63 - 120
Benzo[k]fluoranthene	1.60	1.357		ug/L		85	67 - 120
Benzo[a]pyrene	1.60	1.266		ug/L		79	70 - 120
Indeno[1,2,3-cd]pyrene	1.60	1.273		ug/L		80	58 - 120
Dibenz(a,h)anthracene	1.60	1.244		ug/L		78	58 - 120
Benzo[g,h,i]perylene	1.60	1.276		ug/L		80	56 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	79		36 - 126
2-Fluorobiphenyl (Surr)	71		44 - 120
p-Terphenyl-d14	78		51 - 121

**Lab Sample ID: LCSD 590-22293/3-A**  
**Matrix: Water**  
**Analysis Batch: 22291**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 22293**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	1.60	1.066		ug/L		67	52 - 120	6	30
2-Methylnaphthalene	1.60	1.085		ug/L		68	44 - 120	4	35

Eurofins TestAmerica, Spokane

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

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

**Lab Sample ID: LCSD 590-22293/3-A**  
**Matrix: Water**  
**Analysis Batch: 22291**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 22293**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1-Methylnaphthalene	1.60	1.084		ug/L		68	49 - 120	5	35
Acenaphthylene	1.60	1.176		ug/L		73	57 - 120	6	30
Acenaphthene	1.60	1.146		ug/L		72	54 - 120	3	30
Fluorene	1.60	1.218		ug/L		76	59 - 120	4	30
Phenanthrene	1.60	1.235		ug/L		77	57 - 120	1	30
Anthracene	1.60	1.256		ug/L		79	66 - 120	1	30
Fluoranthene	1.60	1.285		ug/L		80	64 - 120	0	30
Pyrene	1.60	1.247		ug/L		78	52 - 120	1	30
Benzo[a]anthracene	1.60	1.283		ug/L		80	68 - 120	1	30
Chrysene	1.60	1.327		ug/L		83	69 - 120	2	24
Benzo[b]fluoranthene	1.60	1.168		ug/L		73	63 - 120	0	30
Benzo[k]fluoranthene	1.60	1.335		ug/L		83	67 - 120	2	30
Benzo[a]pyrene	1.60	1.239		ug/L		77	70 - 120	2	30
Indeno[1,2,3-cd]pyrene	1.60	1.254		ug/L		78	58 - 120	2	30
Dibenz(a,h)anthracene	1.60	1.226		ug/L		77	58 - 120	1	30
Benzo[g,h,i]perylene	1.60	1.237		ug/L		77	56 - 120	3	35

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Nitrobenzene-d5	77		36 - 126
2-Fluorobiphenyl (Surr)	64		44 - 120
p-Terphenyl-d14	83		51 - 121

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

**Lab Sample ID: MB 490-597908/43**  
**Matrix: Water**  
**Analysis Batch: 597908**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	ND		100	55.0	ug/L			05/29/19 08:59	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	99		50 - 150		05/29/19 08:59	1

**Lab Sample ID: MB 490-597908/7**  
**Matrix: Water**  
**Analysis Batch: 597908**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	ND		100	55.0	ug/L			05/28/19 11:21	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	99		50 - 150		05/28/19 11:21	1

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

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

**Lab Sample ID: LCS 490-597908/16**  
**Matrix: Water**  
**Analysis Batch: 597908**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C12	1000	1167		ug/L		117	39 - 143
<b>Surrogate</b>		<b>LCS %Recovery</b>	<b>LCS Qualifier</b>				<b>Limits</b>
<i>a,a,a-Trifluorotoluene</i>		91					50 - 150

**Lab Sample ID: LCS 490-597908/41**  
**Matrix: Water**  
**Analysis Batch: 597908**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C12	1000	1038		ug/L		104	39 - 143
<b>Surrogate</b>		<b>LCS %Recovery</b>	<b>LCS Qualifier</b>				<b>Limits</b>
<i>a,a,a-Trifluorotoluene</i>		92					50 - 150

**Lab Sample ID: LCSD 490-597908/17**  
**Matrix: Water**  
**Analysis Batch: 597908**

**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
Gasoline Range Organics (GRO) -C6-C12	1000	1164		ug/L		116	39 - 143	0	18
<b>Surrogate</b>		<b>LCSD %Recovery</b>	<b>LCSD Qualifier</b>				<b>Limits</b>		
<i>a,a,a-Trifluorotoluene</i>		92					50 - 150		

**Lab Sample ID: LCSD 490-597908/42**  
**Matrix: Water**  
**Analysis Batch: 597908**

**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
Gasoline Range Organics (GRO) -C6-C12	1000	1015		ug/L		102	39 - 143	2	18
<b>Surrogate</b>		<b>LCSD %Recovery</b>	<b>LCSD Qualifier</b>				<b>Limits</b>		
<i>a,a,a-Trifluorotoluene</i>		92					50 - 150		

**Lab Sample ID: 590-11023-6 DU**  
**Matrix: Ground Water**  
**Analysis Batch: 597908**

**Client Sample ID: MW-304**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12	ND		ND		ug/L		NC	18

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

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

**Lab Sample ID: 590-11023-6 DU**  
**Matrix: Ground Water**  
**Analysis Batch: 597908**

**Client Sample ID: MW-304**  
**Prep Type: Total/NA**

Surrogate	%Recovery	DU DU Qualifier	Limits
a,a,a-Trifluorotoluene	99		50 - 150

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

**Lab Sample ID: MB 590-22262/1-A**  
**Matrix: Water**  
**Analysis Batch: 22252**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 22262**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.240	0.110	mg/L		05/22/19 13:39	05/22/19 19:46	1
Residual Range Organics (RRO) (C25-C36)	ND		0.400	0.120	mg/L		05/22/19 13:39	05/22/19 19:46	1

Surrogate	%Recovery	MB MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150	05/22/19 13:39	05/22/19 19:46	1
n-Triacontane-d62	79		50 - 150	05/22/19 13:39	05/22/19 19:46	1

**Lab Sample ID: LCS 590-22262/2-A**  
**Matrix: Water**  
**Analysis Batch: 22252**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 22262**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	1.60	1.218		mg/L		76	50 - 150
Residual Range Organics (RRO) (C25-C36)	1.60	1.554		mg/L		97	50 - 150

Surrogate	%Recovery	LCS LCS Qualifier	Limits
o-Terphenyl	88		50 - 150
n-Triacontane-d62	94		50 - 150

**Lab Sample ID: LCSD 590-22262/3-A**  
**Matrix: Water**  
**Analysis Batch: 22252**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 22262**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.237		mg/L		77	50 - 150	2	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.606		mg/L		100	50 - 150	3	25

Surrogate	%Recovery	LCSD LCSD Qualifier	Limits
o-Terphenyl	95		50 - 150
n-Triacontane-d62	99		50 - 150

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

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

**Lab Sample ID: MB 590-22394/1-A**  
**Matrix: Water**  
**Analysis Batch: 22391**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 22394**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics (DRO) (C10-C25)	ND		0.240	0.110	mg/L		05/30/19 14:35	05/30/19 17:48	1
Residual Range Organics (RRO) (C25-C36)	ND		0.400	0.120	mg/L		05/30/19 14:35	05/30/19 17:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	85		50 - 150				05/30/19 14:35	05/30/19 17:48	1
<i>n</i> -Triacontane-d62	76		50 - 150				05/30/19 14:35	05/30/19 17:48	1

**Lab Sample ID: LCS 590-22394/2-A**  
**Matrix: Water**  
**Analysis Batch: 22391**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 22394**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
								RPD	Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.401		mg/L		88	50 - 150		
Residual Range Organics (RRO) (C25-C36)	1.60	1.697		mg/L		106	50 - 150		
Surrogate	%Recovery	Qualifier	Limits						
<i>o</i> -Terphenyl	95		50 - 150						
<i>n</i> -Triacontane-d62	92		50 - 150						

**Lab Sample ID: LCSD 590-22394/3-A**  
**Matrix: Water**  
**Analysis Batch: 22391**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 22394**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.272		mg/L		79	50 - 150	10	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.574		mg/L		98	50 - 150	8	25
Surrogate	%Recovery	Qualifier	Limits						
<i>o</i> -Terphenyl	87		50 - 150						
<i>n</i> -Triacontane-d62	84		50 - 150						

## Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 490-597716/1-A**  
**Matrix: Water**  
**Analysis Batch: 598227**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 597716**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Lead	ND		0.00200	0.000100	mg/L		05/24/19 19:52	05/28/19 11:21	1

# QC Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 490-597716/2-A  
Matrix: Water  
Analysis Batch: 598227

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 597716  
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lead	0.100	0.1092		mg/L		109	80 - 120

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## GC/MS VOA

### Analysis Batch: 596561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-6	MW-304	Total/NA	Ground Water	8260C	
590-11023-7	MW-307	Total/NA	Ground Water	8260C	
590-11023-8	MW-308	Total/NA	Ground Water	8260C	
590-11023-9	MW-309	Total/NA	Ground Water	8260C	
590-11023-10	MW-310	Total/NA	Ground Water	8260C	
590-11023-11	MW-311	Total/NA	Ground Water	8260C	
590-11023-13	MW-313	Total/NA	Water	8260C	
590-11023-14	MW-314	Total/NA	Water	8260C	
590-11023-15	MW-315	Total/NA	Water	8260C	
590-11023-18	MW-111	Total/NA	Ground Water	8260C	
MB 490-596561/6	Method Blank	Total/NA	Water	8260C	
LCS 490-596561/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 490-596561/4	Lab Control Sample Dup	Total/NA	Water	8260C	
590-11023-18 MS	MW-111	Total/NA	Ground Water	8260C	
590-11023-18 MSD	MW-111	Total/NA	Ground Water	8260C	

### Analysis Batch: 596768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-4	MW-302	Total/NA	Ground Water	8260C	
590-11023-20	MW-112A	Total/NA	Ground Water	8260C	
590-11023-21	SH-04	Total/NA	Ground Water	8260C	
590-11023-22	MW-213	Total/NA	Ground Water	8260C	
590-11023-23	MW-214	Total/NA	Ground Water	8260C	
MB 490-596768/7	Method Blank	Total/NA	Water	8260C	
LCS 490-596768/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 490-596768/4	Lab Control Sample Dup	Total/NA	Water	8260C	

### Analysis Batch: 597209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-3	MW-301	Total/NA	Ground Water	8260C	
590-11023-5	MW-303	Total/NA	Ground Water	8260C	
590-11023-12	MW-312	Total/NA	Ground Water	8260C	
590-11023-17	MW-05	Total/NA	Ground Water	8260C	
590-11023-18	MW-111	Total/NA	Ground Water	8260C	
MB 490-597209/9	Method Blank	Total/NA	Water	8260C	
LCS 490-597209/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 490-597209/4	Lab Control Sample Dup	Total/NA	Water	8260C	

### Analysis Batch: 599072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-16	TX-03A	Total/NA	Ground Water	8260C	
MB 490-599072/9	Method Blank	Total/NA	Water	8260C	
LCS 490-599072/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 490-599072/4	Lab Control Sample Dup	Total/NA	Water	8260C	

## GC/MS Semi VOA

### Analysis Batch: 22291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-22	MW-213	Total/NA	Ground Water	8270D SIM	22293
590-11023-23	MW-214	Total/NA	Ground Water	8270D SIM	22293

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# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## GC/MS Semi VOA (Continued)

### Analysis Batch: 22291 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 590-22293/1-A	Method Blank	Total/NA	Water	8270D SIM	22293
LCS 590-22293/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	22293
LCSD 590-22293/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM	22293

### Prep Batch: 22293

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-22	MW-213	Total/NA	Ground Water	3510C	
590-11023-23	MW-214	Total/NA	Ground Water	3510C	
MB 590-22293/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-22293/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-22293/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

## GC VOA

### Analysis Batch: 597908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-1	MW-202	Total/NA	Ground Water	NWTPH-Gx	
590-11023-2	MW-203	Total/NA	Ground Water	NWTPH-Gx	
590-11023-3	MW-301	Total/NA	Ground Water	NWTPH-Gx	
590-11023-4	MW-302	Total/NA	Ground Water	NWTPH-Gx	
590-11023-5	MW-303	Total/NA	Ground Water	NWTPH-Gx	
590-11023-6	MW-304	Total/NA	Ground Water	NWTPH-Gx	
590-11023-7	MW-307	Total/NA	Ground Water	NWTPH-Gx	
590-11023-8	MW-308	Total/NA	Ground Water	NWTPH-Gx	
590-11023-9	MW-309	Total/NA	Ground Water	NWTPH-Gx	
590-11023-10	MW-310	Total/NA	Ground Water	NWTPH-Gx	
590-11023-11	MW-311	Total/NA	Ground Water	NWTPH-Gx	
590-11023-12	MW-312	Total/NA	Ground Water	NWTPH-Gx	
590-11023-13	MW-313	Total/NA	Water	NWTPH-Gx	
590-11023-14	MW-314	Total/NA	Water	NWTPH-Gx	
590-11023-15	MW-315	Total/NA	Water	NWTPH-Gx	
590-11023-16	TX-03A	Total/NA	Ground Water	NWTPH-Gx	
590-11023-17	MW-05	Total/NA	Ground Water	NWTPH-Gx	
590-11023-18	MW-111	Total/NA	Ground Water	NWTPH-Gx	
590-11023-19	MW-104	Total/NA	Ground Water	NWTPH-Gx	
590-11023-20	MW-112A	Total/NA	Ground Water	NWTPH-Gx	
590-11023-21	SH-04	Total/NA	Ground Water	NWTPH-Gx	
590-11023-22	MW-213	Total/NA	Ground Water	NWTPH-Gx	
590-11023-23	MW-214	Total/NA	Ground Water	NWTPH-Gx	
MB 490-597908/43	Method Blank	Total/NA	Water	NWTPH-Gx	
MB 490-597908/7	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 490-597908/16	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCS 490-597908/41	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 490-597908/17	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	
LCSD 490-597908/42	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	
590-11023-6 DU	MW-304	Total/NA	Ground Water	NWTPH-Gx	

## GC Semi VOA

### Analysis Batch: 22252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-1	MW-202	Total/NA	Ground Water	NWTPH-Dx	22262

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# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## GC Semi VOA (Continued)

### Analysis Batch: 22252 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-2	MW-203	Total/NA	Ground Water	NWTPH-Dx	22262
590-11023-7	MW-307	Total/NA	Ground Water	NWTPH-Dx	22262
590-11023-13	MW-313	Total/NA	Water	NWTPH-Dx	22262
590-11023-14	MW-314	Total/NA	Water	NWTPH-Dx	22262
590-11023-15	MW-315	Total/NA	Water	NWTPH-Dx	22262
590-11023-17	MW-05	Total/NA	Ground Water	NWTPH-Dx	22262
590-11023-18	MW-111	Total/NA	Ground Water	NWTPH-Dx	22262
590-11023-19	MW-104	Total/NA	Ground Water	NWTPH-Dx	22262
590-11023-20	MW-112A	Total/NA	Ground Water	NWTPH-Dx	22262
590-11023-21	SH-04	Total/NA	Ground Water	NWTPH-Dx	22262
MB 590-22262/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	22262
LCS 590-22262/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	22262
LCSD 590-22262/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	22262

### Prep Batch: 22262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-1	MW-202	Total/NA	Ground Water	3510C	
590-11023-2	MW-203	Total/NA	Ground Water	3510C	
590-11023-7	MW-307	Total/NA	Ground Water	3510C	
590-11023-13	MW-313	Total/NA	Water	3510C	
590-11023-14	MW-314	Total/NA	Water	3510C	
590-11023-15	MW-315	Total/NA	Water	3510C	
590-11023-17	MW-05	Total/NA	Ground Water	3510C	
590-11023-18	MW-111	Total/NA	Ground Water	3510C	
590-11023-19	MW-104	Total/NA	Ground Water	3510C	
590-11023-20	MW-112A	Total/NA	Ground Water	3510C	
590-11023-21	SH-04	Total/NA	Ground Water	3510C	
MB 590-22262/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-22262/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-22262/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 22391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-22	MW-213	Total/NA	Ground Water	NWTPH-Dx	22394
590-11023-23	MW-214	Total/NA	Ground Water	NWTPH-Dx	22394
MB 590-22394/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	22394
LCS 590-22394/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	22394
LCSD 590-22394/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	22394

### Prep Batch: 22394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-22	MW-213	Total/NA	Ground Water	3510C	
590-11023-23	MW-214	Total/NA	Ground Water	3510C	
MB 590-22394/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-22394/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-22394/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

# QC Association Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Metals

### Prep Batch: 597716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-19	MW-104	Total/NA	Ground Water	3010A	
MB 490-597716/1-A	Method Blank	Total/NA	Water	3010A	
LCS 490-597716/2-A	Lab Control Sample	Total/NA	Water	3010A	

### Analysis Batch: 598227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11023-19	MW-104	Total/NA	Ground Water	6020A	597716
MB 490-597716/1-A	Method Blank	Total/NA	Water	6020A	597716
LCS 490-597716/2-A	Lab Control Sample	Total/NA	Water	6020A	597716

# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-202

Date Collected: 05/16/19 11:22

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		10	5 mL	5 mL	597908	05/29/19 11:20	GWM	TAL NSH
Total/NA	Prep	3510C			251.6 mL	2 mL	22262	05/22/19 13:39	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22252	05/23/19 00:08	NMI	TAL SPK

## Client Sample ID: MW-203

Date Collected: 05/16/19 13:52

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/28/19 18:46	GWM	TAL NSH
Total/NA	Prep	3510C			254.3 mL	2 mL	22262	05/22/19 13:39	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22252	05/23/19 00:28	NMI	TAL SPK

## Client Sample ID: MW-301

Date Collected: 05/16/19 10:52

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	597209	05/23/19 18:46	AK1	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/28/19 19:22	GWM	TAL NSH

## Client Sample ID: MW-302

Date Collected: 05/16/19 12:20

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596768	05/22/19 18:44	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/28/19 19:59	GWM	TAL NSH

## Client Sample ID: MW-303

Date Collected: 05/16/19 13:23

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	597209	05/23/19 19:12	AK1	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 13:43	GWM	TAL NSH

## Client Sample ID: MW-304

Date Collected: 05/16/19 12:51

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-6

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596561	05/21/19 18:06	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/28/19 22:23	GWM	TAL NSH

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# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

**Client Sample ID: MW-307**

**Lab Sample ID: 590-11023-7**

Date Collected: 05/16/19 13:07

Matrix: Ground Water

Date Received: 05/17/19 12:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596561	05/21/19 18:32	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		10	5 mL	5 mL	597908	05/29/19 12:31	GWM	TAL NSH
Total/NA	Prep	3510C			258.1 mL	2 mL	22262	05/22/19 13:39	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22252	05/23/19 00:48	NMI	TAL SPK

**Client Sample ID: MW-308**

**Lab Sample ID: 590-11023-8**

Date Collected: 05/16/19 12:35

Matrix: Ground Water

Date Received: 05/17/19 12:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596561	05/21/19 18:58	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/28/19 20:36	GWM	TAL NSH

**Client Sample ID: MW-309**

**Lab Sample ID: 590-11023-9**

Date Collected: 05/16/19 10:17

Matrix: Ground Water

Date Received: 05/17/19 12:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596561	05/21/19 19:24	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/28/19 21:12	GWM	TAL NSH

**Client Sample ID: MW-310**

**Lab Sample ID: 590-11023-10**

Date Collected: 05/16/19 11:50

Matrix: Ground Water

Date Received: 05/17/19 12:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596561	05/21/19 19:49	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/28/19 21:48	GWM	TAL NSH

**Client Sample ID: MW-311**

**Lab Sample ID: 590-11023-11**

Date Collected: 05/16/19 10:46

Matrix: Ground Water

Date Received: 05/17/19 12:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596561	05/21/19 20:15	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/28/19 23:35	GWM	TAL NSH

**Client Sample ID: MW-312**

**Lab Sample ID: 590-11023-12**

Date Collected: 05/16/19 09:07

Matrix: Ground Water

Date Received: 05/17/19 12:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	597209	05/23/19 19:38	AK1	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 00:10	GWM	TAL NSH

Eurofins TestAmerica, Spokane

# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-313

Date Collected: 05/16/19 10:16

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596561	05/21/19 20:41	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 00:46	GWM	TAL NSH
Total/NA	Prep	3510C			260 mL	2 mL	22262	05/22/19 13:39	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22252	05/23/19 01:09	NMI	TAL SPK

## Client Sample ID: MW-314

Date Collected: 05/16/19 09:45

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596561	05/21/19 21:07	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 01:21	GWM	TAL NSH
Total/NA	Prep	3510C			249.8 mL	2 mL	22262	05/22/19 13:39	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22252	05/23/19 01:29	NMI	TAL SPK

## Client Sample ID: MW-315

Date Collected: 05/16/19 09:42

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596561	05/21/19 21:33	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 01:56	GWM	TAL NSH
Total/NA	Prep	3510C			235.4 mL	2 mL	22262	05/22/19 13:39	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22252	05/23/19 01:49	NMI	TAL SPK

## Client Sample ID: TX-03A

Date Collected: 05/16/19 11:18

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-16

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	599072	05/31/19 23:11	JRV	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 02:32	GWM	TAL NSH

## Client Sample ID: MW-05

Date Collected: 05/15/19 13:25

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-17

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	597209	05/23/19 20:04	AK1	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 03:07	GWM	TAL NSH
Total/NA	Prep	3510C			254.3 mL	2 mL	22262	05/22/19 13:39	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22252	05/23/19 02:09	NMI	TAL SPK



# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-111

Date Collected: 05/15/19 12:04

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-18

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	10 mL	10 mL	596561	05/21/19 23:42	RP	TAL NSH
Total/NA	Analysis	8260C		1	10 mL	10 mL	597209	05/23/19 20:30	AK1	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 03:42	GWM	TAL NSH
Total/NA	Prep	3510C			256.3 mL	2 mL	22262	05/22/19 13:39	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22252	05/23/19 02:29	NMI	TAL SPK

## Client Sample ID: MW-104

Date Collected: 05/15/19 12:37

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-19

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 04:17	GWM	TAL NSH
Total/NA	Prep	3510C			245.8 mL	2 mL	22262	05/22/19 13:39	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22252	05/23/19 03:09	NMI	TAL SPK
Total/NA	Prep	3010A			50 mL	50 mL	597716	05/24/19 19:52	CAP	TAL NSH
Total/NA	Analysis	6020A		1			598227	05/28/19 12:05	LDC	TAL NSH

## Client Sample ID: MW-112A

Date Collected: 05/16/19 08:46

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-20

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596768	05/22/19 19:10	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 04:53	GWM	TAL NSH
Total/NA	Prep	3510C			273.5 mL	2 mL	22262	05/22/19 13:39	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22252	05/23/19 03:29	NMI	TAL SPK

## Client Sample ID: SH-04

Date Collected: 05/16/19 08:20

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-21

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596768	05/22/19 17:25	RP	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 14:18	GWM	TAL NSH
Total/NA	Prep	3510C			248.4 mL	2 mL	22262	05/22/19 13:39	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22252	05/23/19 03:50	NMI	TAL SPK

## Client Sample ID: MW-213

Date Collected: 05/16/19 14:02

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-22

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596768	05/22/19 17:51	RP	TAL NSH
Total/NA	Prep	3510C			252.1 mL	2 mL	22293	05/23/19 14:34	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1			22291	05/23/19 17:01	NMI	TAL SPK

Eurofins TestAmerica, Spokane

# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Client Sample ID: MW-213

Date Collected: 05/16/19 14:02

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-22

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 05:28	GWM	TAL NSH
Total/NA	Prep	3510C			244.5 mL	2 mL	22394	05/30/19 14:35	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22391	05/30/19 18:48	NMI	TAL SPK

## Client Sample ID: MW-214

Date Collected: 05/16/19 14:46

Date Received: 05/17/19 12:04

## Lab Sample ID: 590-11023-23

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	596768	05/22/19 18:17	RP	TAL NSH
Total/NA	Prep	3510C			251.6 mL	2 mL	22293	05/23/19 14:34	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1			22291	05/23/19 17:27	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	5 mL	5 mL	597908	05/29/19 06:03	GWM	TAL NSH
Total/NA	Prep	3510C			245.4 mL	2 mL	22394	05/30/19 14:35	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			22391	05/30/19 19:08	NMI	TAL SPK

### Laboratory References:

TAL NSH = Eurofins TestAmerica, Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

# Definitions/Glossary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
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.

### 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.

### Metals

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.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

# Accreditation/Certification Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11023-1

## Laboratory: Eurofins TestAmerica, Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C569	01-06-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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## Laboratory: Eurofins TestAmerica, Nashville

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C789	07-19-19

LAB (LOCATION)



Shell Oil Products US Chain Of Custody Record



ACCUTEST ( )  
 CALSCIENCE ( )  
 ESTAMERICA ( )  
 Other ( )  
 Lab Vendor #      Dropdown

Please Check Appropriate Box:

<input type="checkbox"/> RGW FDG	<input type="checkbox"/> PIPELINE	<input type="checkbox"/> RETAIL
<input type="checkbox"/> CHEMICALS	<input type="checkbox"/> CONSULTANT	<input type="checkbox"/> LUBES
<input type="checkbox"/> TRANSPORTATION	<input type="checkbox"/> OTHER	

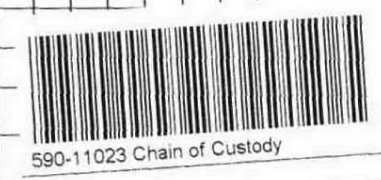
Print Bill To Contact Name: \_\_\_\_\_  
 PO # \_\_\_\_\_  
 PlaNet Site or Project ID \_\_\_\_\_  
 GSAP Project ID \_\_\_\_\_  
 CHECK IF NO INCIDENT # APPLIES  
 DATE: 5/16/19  
 PAGE: 1 of 3

SAMPLING COMPANY: Blaine Tech Services, Inc      LOG CODE: BTSS  
 ADDRESS: 1680 Rogers Ave, San Jose, CA, 95112      SITE ADDRESS: 2555 13th Avenue      State: WA      AECOM Project / Task Number: 60561813  
 PROJECT CONTACT: Nicky Moody      Nicky Moody, AECOM, portland, OR      (503) 969-6310      nicky.moody@aecom.com  
 TELEPHONE: (206) 438-2371      FAX: \_\_\_\_\_      E-MAIL: nicky.moody@aecom.com  
 TURNAROUND TIME (CALENDAR DAYS):  STANDARD (14 DAY)       3 DAYS       5 DAYS       7 DAYS       14 HOURS       RESULTS NEEDED ON WEEKEND  
 LA - RWQCB REPORT FORMAT       JUST AGENCY:  
 DELIVERABLES:  LEVEL 1       LEVEL 2       LEVEL 3       LEVEL 4       OTHER (SPECIFY) \_\_\_\_\_  
 TEMPERATURE ON RECEIPT C°: Cooler #1 \_\_\_\_\_ Cooler #2 \_\_\_\_\_ Cooler #3 \_\_\_\_\_  
 SPECIAL INSTRUCTIONS OR NOTES:  SHELL CONTRACT RATE APPLIES  
 STATE REIMBURSEMENT RATE APPLIES  
 EDD NOT NEEDED  
 RECEIPT VERIFICATION REQUESTED  
 PROVIDE LEDD DISK

AECOM Project / Task Number: 60561813  
 E-MAIL: nicky.moody@aecom.com  
 SAMPLER NAME(S) (Print): L. BURES / P. HO  
 LAB USE ONLY

REQUESTED ANALYSIS		UNIT COST	NON-UNIT COST	FIELD NOTES:
8290C BTEX	NWTPH-Gx			TEMPERATURE ON RECEIPT C°          Container PID Readings or Laboratory Notes
8270D SIM PAHs	NWTPH-Gx			
300.0 Sulfate				
6020A Total Lead	NWTPH-Gx			
353.2 Nitrate & Nitrite				
8020A Diss. Iron & Manganese (lab filter)				
300.0 Chloride				
2310B Alkalinity				

LAB USE ONLY	Field Sample Identification		SAMPLING		MATRIX	PRESERVATIVE					NO. OF CONT.	ANALYSIS							FIELD NOTES								
	DATE	TIME	DATE	TIME		HCL	HNO3	H2SO4	NONE	OTHER		8290C BTEX	NWTPH-Gx	8270D SIM PAHs	300.0 Sulfate	NWTPH-Gx	6020A Total Lead	353.2 Nitrate & Nitrite		8020A Diss. Iron & Manganese (lab filter)	300.0 Chloride	2310B Alkalinity					
	MW-202		5/16/19	1122	WG	X					6	X															
	MW-203			1352	WG	X					6	X															
	MW-301			1052	WG	X					4	X															
	MW-302			1220	WG	X					4	X															
	MW-303			1328	WG	X					4	X															
	MW-304			1251	WG	X					4	X															
	MW-307			1307	WG	X					6	X	X														
	MW-308			1235	WG	X					4	X															
	MW-309			1017	WG	X					4	X															
	MW-310			1150	WG	X					4	X															



Relinquished by (Signature):	Received by (Signature): SHIPPED VIA FEDEX	Date: 5/16/19	Time:
Relinquished by (Signature):	Received by (Signature): NANA OJALA	Date: 5/17/19	Time: 12:04
Relinquished by (Signature):	Received by (Signature):	Date:	Time:

2.2°C      3.3°C      2.9°C





LAB (LOCATION)

- ACCUTEST ( )
- CALSCIENCE ( )
- ESTAMERICA ( )
- Other ( )

Lab Vendor #  Dropdown



# Shell Oil Products US Chain Of Custody Record



<b>Please Check Appropriate Box:</b>			<b>Print Bill To Contact Name:</b>		<b>PlaNet Site or Project ID:</b>		<input type="checkbox"/> CHECK IF NO INCIDENT # APPLIES	
<input type="checkbox"/> BGW FDG	<input type="checkbox"/> PIPELINE	<input type="checkbox"/> RETAIL					DATE: <u>5/16/19</u>	
<input type="checkbox"/> CHEMICALS	<input type="checkbox"/> CONSULTANT	<input type="checkbox"/> LUBES	<b>PO #</b>		<b>GSAP Project ID</b>		PAGE: <u>3</u> of <u>3</u>	
<input type="checkbox"/> TRANSPORTATION	<input type="checkbox"/> OTHER							

<b>SAMPLING COMPANY:</b> Blaine Tech Services, Inc		<b>LOG CODE:</b> BTSS	<b>SITE ADDRESS: Street and City</b> 2555 13th Avenue		<b>State</b> WA	<b>AECOM Project / Task Number:</b> 60561813	
<b>ADDRESS</b> 1680 Rogers Ave, San Jose, CA, 95112			<b>EDF DELIVERABLE TO (Name, Company, Office Location):</b> Nicky Moody, AECOM, portland, OR		<b>PHONE NO.:</b> (503) 969-6310	<b>E-MAIL:</b> nicky.moody@aecom.com	
<b>PROJECT CONTACT (Hardcopy or PDF Report to):</b> Nicky Moody			<b>SAMPLER NAME(S) (Print):</b> L. BURG / P. HO		<b>LAB USE ONLY</b>		
<b>TELEPHONE:</b> (206) 438-2371	<b>FAX:</b>	<b>Bill To Contact E-MAIL:</b> nicky.moody@aecom.com					

**TURNAROUND TIME (CALENDAR DAYS):**  
 STANDARD (14 DAY)  
 3 DAYS  
 5 DAYS  
 7 DAYS  
 14 HOURS  
 RESULTS NEEDED ON WEEKEND

LA - RWQCB REPORT FORMAT  
 JUST AGENCY:

**DELIVERABLES:**  
 LEVEL 1  
 LEVEL 2  
 LEVEL 3  
 LEVEL 4  
 OTHER (SPECIFY) \_\_\_\_\_

**TEMPERATURE ON RECEIPT C°**  
Cooler #1: \_\_\_\_\_  
Cooler #2: \_\_\_\_\_  
Cooler #3: \_\_\_\_\_

**SPECIAL INSTRUCTIONS OR NOTES :**

SHELL CONTRACT RATE APPLIES  
 STATE REIMBURSEMENT RATE APPLIES  
 EDD NOT NEEDED  
 RECEIPT VERIFICATION REQUESTED  
 PROVIDE LEDD DISK

REQUESTED ANALYSIS												FIELD NOTES:
UNIT COST						NON-UNIT COST						
6260C BTEX	NWTPH-Dx	8270D SW PAHs	300.0 Sulfate			NWTPH-Gx	6020A Total Lead	383.2 Nitrate & Nitrite	6020A Diss. Iron & Manganese (lab filter)	300.0 Chloride	2330B Alkalinity	TEMPERATURE ON RECEIPT C°
												Container PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification		SAMPLING		MATRIX	PRESERVATIVE					NO. OF CONT.	REQUESTED ANALYSIS												
	DATE	TIME	HCL	HVO3		H2SO4	NONE	OTHER	6260C BTEX	NWTPH-Dx		8270D SW PAHs	300.0 Sulfate	NWTPH-Gx	6020A Total Lead	383.2 Nitrate & Nitrite	6020A Diss. Iron & Manganese (lab filter)	300.0 Chloride	2330B Alkalinity					
	SHO SH-04	5/16/19	0820	WG	X						6	X	X											
	MW-213		1402	WG	X			X			8	X	X	X										
	MW-214		1416	WG	X			X			8	X	X	X										

<b>Relinquished by (Signature):</b> 	<b>Received by (Signature):</b> SHEPHERD VIA FEDEX	<b>Date:</b> 5/16/19	<b>Time:</b>
<b>Relinquished by (Signature):</b>	<b>Received by (Signature):</b> MARIA ORTIZ	<b>Date:</b> 5/17/19	<b>Time:</b> 12:04
<b>Relinquished by (Signature):</b>	<b>Received by (Signature):</b>	<b>Date:</b>	<b>Time:</b>

Version: 14Dec15



## COOLER RECEIPT FORM



590-11023 Chain of Custody

Cooler Received/Opened On 05-21-2019 @ 09:50

Time Samples Removed From Cooler 1200 Time Samples Placed In Storage 1224 (2 Hour Window)

1. Tracking # 9934 (last 4 digits, FedEx) Courier: FedEx  
IR Gun ID 14740456 pH Strip Lot \_\_\_\_\_ Chlorine Strip Lot \_\_\_\_\_

2. Temperature of rep. sample or temp blank when opened: 2.1 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 (initial) TR

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 (initial) TR

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 (initial) TR

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 (initial) TR

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

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

**COOLER RECEIPT FORM**



Cooler Received/Opened On 05-21-2019 @ 09:50

Time Samples Removed From Cooler 1200 Time Samples Placed In Storage 1204 (2 Hour Window)

1. Tracking # 9945 (last 4 digits, FedEx) Courier: FedEx  
 IR Gun ID 14740456 pH Strip Lot            Chlorine Strip Lot           

2. Temperature of rep. sample or temp blank when opened: 21 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:           

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 (initial) 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           



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 (initial) TR

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 (initial) TR

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 (initial) TR

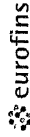
I certify that I attached a label with the unique LIMS number to each container (initial) TR

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



**Eurofins TestAmerica, Spokane**  
 11922 East 1st Ave  
 Spokane, WA 99206  
 Phone (509) 924-9200 Fax (509) 924-9290

Loc: 590  
**11023**

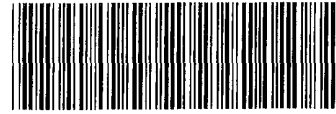


Environment Testing  
 TestAmerica

### Chain of Custody Record

<b>Client Information (Sub Contract Lab)</b> Client Contact: Arrington, Randee E Shipping/Receiving: randee.arrington@testamericainc.com Phone: Oregon Lab P/N: 590-4363.1 E-Mail:		Due Date Requested: 5/30/2019 TAT Requested (days): PO #: WO #: Project #: 59000733 SOW#:		Matrix (Water, Swallow, Overstabil, Other): Sample Type (C=comp, G=grab): Sample Time: Sample Date: Preservation Code:		Total Number of Containers: Special Instructions/Note:	
Company: TestAmerica Laboratories, Inc Address: 2960 Foster Creighton Drive, City: Nashville State, Zip: TN, 37204 Phone: 615-726-0177(Tel) 615-726-3404(Fax) Email:		Accredited Program - Washington State Program - Washington		Analysis Requested: M - Hexane N - None O - Ash/02 P - Na2SO4 Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA L - EDA Other:		Perform MS/MSD (Yes or No): Field Filtered Sample (Yes or No): 353.2 Nitrate-Nitrite 6020A/3010A (MD) Lead only	
Project Name: 2555 13th Avenue, Seattle Terminal Harbo Site: AECOM - 2555 13th Avenue, Seattle		Sample Date: 5/16/19 Sample Time: 13:56 Pacific 5/15/19 Sample Time: 12:37 Pacific		Matrix: Water Water Water		Total Number of Containers: 4 4	
Sample Identification - Client ID (Lab ID) MW-203 (590-11023-2) MW-104 (590-11023-19)		Sample Date: Sample Time:		Matrix: Sample Type: Sample Time: Sample Date: Preservation Code:		Total Number of Containers: Special Instructions/Note:	
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/parameter 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 state compliance to TestAmerica Laboratories, Inc.		Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab Special Instructions/QC Requirements:		Total Number of Containers: Special Instructions/Note:	
Empty Kit Relinquished by: Relinquished by: <i>Shedra Spas</i> Relinquished by: Relinquished by:		Date/Time: 5/20/19 1605 Date/Time: Date/Time:		Date/Time: Date/Time: Date/Time: 5/21/19		Method of Shipment: Received by: Received by: Received by:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		Cooler Temperature(s) °C and Other Remarks:		Cooler Temperature(s) °C and Other Remarks:	





## COOLER RECEIPT FORM

590-11023 Chain of Custody

Cooler Received/Opened On 5/23/2019 @ 9:50

Time Samples Removed From Cooler 1700 Time Samples Placed In Storage 1724 (2 Hour Window)

1. Tracking # 0033 (last 4 digits, FedEx) Courier: Fedex

IR Gun ID 97310166 pH Strip Lot \_\_\_\_\_ Chlorine Strip Lot \_\_\_\_\_

2. Temperature of rep. sample or temp blank when opened: 3.0 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 (initial) TR

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



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 (initial) TR

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 (initial) TR

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 (initial) TR

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

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



## Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-11023-1

**Login Number: 11023**

**List Number: 1**

**Creator: O'Toole, Maria C**

**List Source: Eurofins TestAmerica, Spokane**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	758311 758310 125855
Sample custody seals, if present, are intact.	N/A	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.





## Laboratory Data Quality Review

### Shell – 2019 Second Quarter Progress Report – Harbor Island

Laboratory & Report No.	Test America Laboratories, Incorporated, #590-11023-1
Report Date	August 2, 2019
Sampling Event	May 15 to May 16, 2019
Site Location	Seattle Terminal/Harbor Island, WA
AECOM Project No.	60595460, Task 03001
Project Name	2 <sup>nd</sup> Quarter Groundwater Monitoring

This document summarizes the data quality review of 23 primary groundwater samples collected on May 15 and May 16, 2019, at the Harbor Island site in Seattle, Washington. Samples were submitted to TestAmerica Laboratories, Incorporated (TA) in Spokane, Washington and analyzed for one or more of the following:

- The volatile organic compounds (VOCs) benzene, ethylbenzene, toluene, and o-, m,p- and total xylenes (BTEX) using US Environmental Protection Agency (EPA) Method 8260C
- Volatile petroleum products using Northwest (NW) total petroleum hydrocarbons (TPH) method for gasoline (Washington State Department of Ecology Method NWTPH-Gx)
- Semivolatile petroleum products using NWTPH method for diesel-range organics (DRO) (C10-C25) and residual range organics (RRO) (C25-C36) (Washington State Department of Ecology Method NWTPH-Dx)
- Polyaromatic Hydrocarbons using EPA Method 8270D modified by selected ion monitoring (SIM)
- Lead using EPA Method 6020A

Analyses were performed by TA of Spokane, Washington and Nashville, Tennessee, and the analytical data was reported under TA job number 590-11023-1. Data were evaluated based on the EPA's *National Functional Guidelines (NFGs) for Organic Superfund Methods Data Review* (EPA, 2017a), and *National Functional Guidelines for Inorganic Superfund Methods data review* (EPA, 2017b), and using standard laboratory quality control (QC) criteria. Items reviewed included, where applicable: chain-of-custody (COC) records and holding times, along with results for method blanks, surrogate recoveries, laboratory control and laboratory control sample duplicates (LCS/LCSDs), matrix spike and matrix spike duplicates (MS/MSDs), and the trip blank. Qualifiers assigned as a result of this data review are summarized in Table 1, found at the end of this report.

The evaluations of reviewed criteria are:

- COC Records – Acceptable
- Temperature – Acceptable
- Preservation – Acceptable
- Holding Times – Acceptable except as noted below:
  - BTEX by EPA Method 8260C – TX-03A was analyzed 1 day past the method recommended 14 day holding time due to a laboratory oversight; therefore, the results for all BTEX compounds in TX-03A were qualified as estimated and flagged 'J' and 'UJ' based on holding time exceedance.
- Method Blanks – Acceptable



- Trip Blank
  - A trip blank was not submitted with this sample set.
- Surrogates – Acceptable
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable where applicable
  - General - An MS/MSD was not performed in association with the NWTPH-Gx, NWTPH-Dx, PAH, and lead analyses. Accuracy was assessed using the LCS and/or LCSD percent recoveries. Precision for the BTEX, NWTPH-Dx, and PAH analyses was assessed using the LCS/LCSD relative percent differences (RPDs). Precision was not assessed for the lead analysis.
  - BTEX by EPA Method 8260C – An MS/MSD was performed using MW-111. Results were acceptable.
- Laboratory Duplicates – Acceptable
  - General – Laboratory duplicates were not performed in association with the BTEX, NWTPH-Dx, PAH, and lead analyses. Precision for the BTEX, NWTPH-Dx, and PAH analyses was assessed using the LCS/LCSD RPDs. Precision was not assessed for the lead analysis.
  - NWTPH-Gx – A laboratory duplicate was performed using MW-304. Results were comparable.
- Field Duplicates
  - General - A field duplicate was not collected as part of this sampling event.
- Reporting Limits – Acceptable
  - General - The results for one or more analytes in multiple samples were flagged with ‘J’ qualifiers by the laboratory to indicate that the reported concentrations were above the method detection limits (MDLs) but below the reporting limits. All J-flagged results are considered estimated.
- Laboratory Notes – Acceptable:
  - Diesel Range Organics by Method NWTPH-Dx – The laboratory noted that the detected hydrocarbons in the diesel range appear to be due to gasoline overlap and/or weathered diesel in MW-202, MW-307, MW-314, MW-315, MW-104, MW-112A, and SH-04. No qualifications were assigned based on these qualitative notes. The laboratory notes are provided in the laboratory report.

**Overall Assessment of Data**

The completeness of the analytical reports for this quarter laboratory analysis is 100%. The usefulness of the data is based on the US EPA guidance documents referenced in the introduction of this report. Upon consideration of the information presented above, the data are considered usable. Data qualifiers assigned during this review are provided in Table 1, below. The data qualifiers assigned by the laboratory are shown on the laboratory reports and in the electronic data deliverable (EDD).

**Data Qualifier Definitions**

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria.
- DNR Do Not Report. Another result is available that is more reliable.

**References**

EPA, 2017a. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-2017-002. January 2017.

EPA, 2017b. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-540-R-2017-001. January 2017.

**Summary**

**Table 1. Summary of Data Qualifications for 2<sup>nd</sup> Quarter Groundwater Monitoring**

Client Sample ID	Laboratory Sample ID	Analyte	Result	Units	Final Result	Rationale
TX-03A	590-11023-16	Benzene	102	µg/L	102 J	Holding Time
		Ethylbenzene	1.15	µg/L	1.15 J	Holding Time
		m,p-Xylene	2.00 U	µg/L	2.00 UJ	Holding Time
		o-Xylene	1.00 U	µg/L	1.00 UJ	Holding Time
		Toluene	1.00 U	µg/L	1.00 UJ	Holding Time
		Xylenes, Total	3.00 U	µg/L	3.00 UJ	Holding Time

**Notes:**

- J – estimated value
- U – Analyte was not detected at the reporting limit shown.
- µg/L - microgram per liter
- UJ – Analyte was not detected at the reporting limit shown. The reporting limit is an estimated value.

## ANALYTICAL REPORT

Eurofins TestAmerica, Spokane  
11922 East 1st Ave  
Spokane, WA 99206  
Tel: (509)924-9200

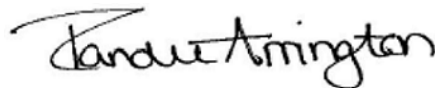
Laboratory Job ID: 590-11905-1

Client Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

**For:**

AECOM  
111 SW Columbia Street, Suite 1500  
Portland, Oregon 97201

Attn: Nicky Moody



*Authorized for release by:  
10/6/2019 8:37:32 PM*

Randee Arrington, Project Manager II  
(509)924-9200  
[randee.arrington@testamericainc.com](mailto:randee.arrington@testamericainc.com)

### LINKS

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*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.*



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# Case Narrative

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

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**Job ID: 590-11905-1**

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**Laboratory: Eurofins TestAmerica, Spokane**

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## Narrative

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### Receipt

The samples were received on 9/25/2019 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2° C.

### GC/MS VOA

Method NWTPH-Gx: The Gasoline Range Organics (GRO) concentration reported for the following sample is due to the presence of discrete peaks: MW-303 (590-11905-3). Gasoline

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

### GC Semi VOA

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

### Organic Prep

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

### VOA Prep

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



# Sample Summary

Client: AECOM

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
590-11905-1	MW-301	Water	09/19/19 12:14	09/26/19 09:15	
590-11905-2	MW-302	Water	09/19/19 15:10	09/26/19 09:15	
590-11905-3	MW-303	Water	09/19/19 12:44	09/26/19 09:15	
590-11905-4	MW-304	Water	09/19/19 14:33	09/26/19 09:15	
590-11905-5	MW-307	Water	09/19/19 08:50	09/26/19 09:15	
590-11905-6	MW-308	Water	09/19/19 08:25	09/26/19 09:15	
590-11905-7	MW-310	Water	09/19/19 15:50	09/26/19 09:15	
590-11905-8	MW-311	Water	09/19/19 11:45	09/26/19 09:15	
590-11905-9	MW-312	Water	09/19/19 11:17	09/26/19 09:15	
590-11905-10	MW-313	Water	09/19/19 09:39	09/26/19 09:15	
590-11905-11	MW-315	Water	09/19/19 10:10	09/26/19 09:15	
590-11905-12	TX-03A	Water	09/19/19 13:56	09/26/19 09:15	
590-11905-13	TB	Water	09/19/19 08:00	09/26/19 09:15	

# Method Summary

Client: AECOM

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL SPK
5030C	Purge and Trap	SW846	TAL SPK

**Protocol References:**

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200



# Detection Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

## Client Sample ID: MW-301

## Lab Sample ID: 590-11905-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.0937	J	0.400	0.0930	ug/L	1		8260C	Total/NA

## Client Sample ID: MW-302

## Lab Sample ID: 590-11905-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	17.4		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	21.7		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	3.72		2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.560	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	1.15		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	4.28		3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	662		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-303

## Lab Sample ID: 590-11905-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	7.76		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	71.7		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	2.98		2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.289	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	2.07		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	3.26		3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	785		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-304

## Lab Sample ID: 590-11905-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.242	J	0.400	0.0930	ug/L	1		8260C	Total/NA

## Client Sample ID: MW-307

## Lab Sample ID: 590-11905-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	12.6		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	1.35		1.00	0.198	ug/L	1		8260C	Total/NA
Gasoline	444		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-308

## Lab Sample ID: 590-11905-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	9.60		0.400	0.0930	ug/L	1		8260C	Total/NA

## Client Sample ID: MW-310

## Lab Sample ID: 590-11905-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.104	J	0.400	0.0930	ug/L	1		8260C	Total/NA

## Client Sample ID: MW-311

## Lab Sample ID: 590-11905-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.211	J	0.400	0.0930	ug/L	1		8260C	Total/NA
Gasoline	461		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

# Detection Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

## Client Sample ID: MW-312

## Lab Sample ID: 590-11905-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	92.8		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	3.07		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	1.78	J	2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.420	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	2.33		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	2.20	J	3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	1640		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: MW-313

## Lab Sample ID: 590-11905-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.237		0.228	0.105	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-315

## Lab Sample ID: 590-11905-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	36.1		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	0.542	J	1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	3.19		2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.338	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	3.60		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	3.53		3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	1290		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	2.61		0.229	0.105	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.133	J	0.381	0.114	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: TX-03A

## Lab Sample ID: 590-11905-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	6.42		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	7.22		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	0.430	J	2.00	0.280	ug/L	1		8260C	Total/NA
Gasoline	446		150	70.4	ug/L	1		NWTPH-Gx	Total/NA

## Client Sample ID: TB

## Lab Sample ID: 590-11905-13

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

**Client Sample ID: MW-301**

**Lab Sample ID: 590-11905-1**

Date Collected: 09/19/19 12:14

Matrix: Water

Date Received: 09/26/19 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>0.0937</b>	<b>J</b>	0.400	0.0930	ug/L			09/27/19 14:51	1
Ethylbenzene	ND		1.00	0.198	ug/L			09/27/19 14:51	1
m,p-Xylene	ND		2.00	0.280	ug/L			09/27/19 14:51	1
o-Xylene	ND		1.00	0.162	ug/L			09/27/19 14:51	1
Toluene	ND		1.00	0.312	ug/L			09/27/19 14:51	1
Xylenes, Total	ND		3.00	0.442	ug/L			09/27/19 14:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		80 - 120		09/27/19 14:51	1
4-Bromofluorobenzene (Surr)	95		80 - 120		09/27/19 14:51	1
Dibromofluoromethane (Surr)	105		80 - 120		09/27/19 14:51	1
Toluene-d8 (Surr)	99		80 - 120		09/27/19 14:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			09/27/19 14:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		68.7 - 141		09/27/19 14:51	1

**Client Sample ID: MW-302**

**Lab Sample ID: 590-11905-2**

Date Collected: 09/19/19 15:10

Matrix: Water

Date Received: 09/26/19 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>17.4</b>		0.400	0.0930	ug/L			09/27/19 15:33	1
<b>Ethylbenzene</b>	<b>21.7</b>		1.00	0.198	ug/L			09/27/19 15:33	1
<b>m,p-Xylene</b>	<b>3.72</b>		2.00	0.280	ug/L			09/27/19 15:33	1
<b>o-Xylene</b>	<b>0.560</b>	<b>J</b>	1.00	0.162	ug/L			09/27/19 15:33	1
<b>Toluene</b>	<b>1.15</b>		1.00	0.312	ug/L			09/27/19 15:33	1
<b>Xylenes, Total</b>	<b>4.28</b>		3.00	0.442	ug/L			09/27/19 15:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		09/27/19 15:33	1
4-Bromofluorobenzene (Surr)	95		80 - 120		09/27/19 15:33	1
Dibromofluoromethane (Surr)	106		80 - 120		09/27/19 15:33	1
Toluene-d8 (Surr)	96		80 - 120		09/27/19 15:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>662</b>		150	70.4	ug/L			09/27/19 15:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		68.7 - 141		09/27/19 15:33	1

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

**Client Sample ID: MW-303**

**Lab Sample ID: 590-11905-3**

Date Collected: 09/19/19 12:44

Matrix: Water

Date Received: 09/26/19 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	7.76		0.400	0.0930	ug/L			09/27/19 16:16	1
Ethylbenzene	71.7		1.00	0.198	ug/L			09/27/19 16:16	1
m,p-Xylene	2.98		2.00	0.280	ug/L			09/27/19 16:16	1
o-Xylene	0.289	J	1.00	0.162	ug/L			09/27/19 16:16	1
Toluene	2.07		1.00	0.312	ug/L			09/27/19 16:16	1
Xylenes, Total	3.26		3.00	0.442	ug/L			09/27/19 16:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		09/27/19 16:16	1
4-Bromofluorobenzene (Surr)	93		80 - 120		09/27/19 16:16	1
Dibromofluoromethane (Surr)	102		80 - 120		09/27/19 16:16	1
Toluene-d8 (Surr)	95		80 - 120		09/27/19 16:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	785		150	70.4	ug/L			09/27/19 16:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		68.7 - 141		09/27/19 16:16	1

**Client Sample ID: MW-304**

**Lab Sample ID: 590-11905-4**

Date Collected: 09/19/19 14:33

Matrix: Water

Date Received: 09/26/19 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.242	J	0.400	0.0930	ug/L			09/27/19 16:37	1
Ethylbenzene	ND		1.00	0.198	ug/L			09/27/19 16:37	1
m,p-Xylene	ND		2.00	0.280	ug/L			09/27/19 16:37	1
o-Xylene	ND		1.00	0.162	ug/L			09/27/19 16:37	1
Toluene	ND		1.00	0.312	ug/L			09/27/19 16:37	1
Xylenes, Total	ND		3.00	0.442	ug/L			09/27/19 16:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		09/27/19 16:37	1
4-Bromofluorobenzene (Surr)	96		80 - 120		09/27/19 16:37	1
Dibromofluoromethane (Surr)	107		80 - 120		09/27/19 16:37	1
Toluene-d8 (Surr)	94		80 - 120		09/27/19 16:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			09/27/19 16:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		68.7 - 141		09/27/19 16:37	1

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

**Client Sample ID: MW-307**

**Lab Sample ID: 590-11905-5**

Date Collected: 09/19/19 08:50

Matrix: Water

Date Received: 09/26/19 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	12.6		0.400	0.0930	ug/L			09/27/19 16:58	1
Ethylbenzene	1.35		1.00	0.198	ug/L			09/27/19 16:58	1
m,p-Xylene	ND		2.00	0.280	ug/L			09/27/19 16:58	1
o-Xylene	ND		1.00	0.162	ug/L			09/27/19 16:58	1
Toluene	ND		1.00	0.312	ug/L			09/27/19 16:58	1
Xylenes, Total	ND		3.00	0.442	ug/L			09/27/19 16:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		09/27/19 16:58	1
4-Bromofluorobenzene (Surr)	95		80 - 120		09/27/19 16:58	1
Dibromofluoromethane (Surr)	109		80 - 120		09/27/19 16:58	1
Toluene-d8 (Surr)	90		80 - 120		09/27/19 16:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	444		150	70.4	ug/L			09/27/19 16:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		68.7 - 141		09/27/19 16:58	1

**Client Sample ID: MW-308**

**Lab Sample ID: 590-11905-6**

Date Collected: 09/19/19 08:25

Matrix: Water

Date Received: 09/26/19 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	9.60		0.400	0.0930	ug/L			09/27/19 17:19	1
Ethylbenzene	ND		1.00	0.198	ug/L			09/27/19 17:19	1
m,p-Xylene	ND		2.00	0.280	ug/L			09/27/19 17:19	1
o-Xylene	ND		1.00	0.162	ug/L			09/27/19 17:19	1
Toluene	ND		1.00	0.312	ug/L			09/27/19 17:19	1
Xylenes, Total	ND		3.00	0.442	ug/L			09/27/19 17:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		09/27/19 17:19	1
4-Bromofluorobenzene (Surr)	94		80 - 120		09/27/19 17:19	1
Dibromofluoromethane (Surr)	106		80 - 120		09/27/19 17:19	1
Toluene-d8 (Surr)	90		80 - 120		09/27/19 17:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			09/27/19 17:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		68.7 - 141		09/27/19 17:19	1

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

**Client Sample ID: MW-310**

**Lab Sample ID: 590-11905-7**

**Date Collected: 09/19/19 15:50**

**Matrix: Water**

**Date Received: 09/26/19 09:15**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>0.104</b>	<b>J</b>	0.400	0.0930	ug/L	-		09/27/19 18:01	1
Ethylbenzene	ND		1.00	0.198	ug/L	-		09/27/19 18:01	1
m,p-Xylene	ND		2.00	0.280	ug/L	-		09/27/19 18:01	1
o-Xylene	ND		1.00	0.162	ug/L	-		09/27/19 18:01	1
Toluene	ND		1.00	0.312	ug/L	-		09/27/19 18:01	1
Xylenes, Total	ND		3.00	0.442	ug/L	-		09/27/19 18:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		09/27/19 18:01	1
4-Bromofluorobenzene (Surr)	96		80 - 120		09/27/19 18:01	1
Dibromofluoromethane (Surr)	104		80 - 120		09/27/19 18:01	1
Toluene-d8 (Surr)	94		80 - 120		09/27/19 18:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L	-		09/27/19 18:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		68.7 - 141		09/27/19 18:01	1

**Client Sample ID: MW-311**

**Lab Sample ID: 590-11905-8**

**Date Collected: 09/19/19 11:45**

**Matrix: Water**

**Date Received: 09/26/19 09:15**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>0.211</b>	<b>J</b>	0.400	0.0930	ug/L	-		09/27/19 18:22	1
Ethylbenzene	ND		1.00	0.198	ug/L	-		09/27/19 18:22	1
m,p-Xylene	ND		2.00	0.280	ug/L	-		09/27/19 18:22	1
o-Xylene	ND		1.00	0.162	ug/L	-		09/27/19 18:22	1
Toluene	ND		1.00	0.312	ug/L	-		09/27/19 18:22	1
Xylenes, Total	ND		3.00	0.442	ug/L	-		09/27/19 18:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		09/27/19 18:22	1
4-Bromofluorobenzene (Surr)	97		80 - 120		09/27/19 18:22	1
Dibromofluoromethane (Surr)	103		80 - 120		09/27/19 18:22	1
Toluene-d8 (Surr)	98		80 - 120		09/27/19 18:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>461</b>		150	70.4	ug/L	-		09/27/19 18:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		68.7 - 141		09/27/19 18:22	1

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

**Client Sample ID: MW-312**

**Lab Sample ID: 590-11905-9**

Date Collected: 09/19/19 11:17

Matrix: Water

Date Received: 09/26/19 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	92.8		0.400	0.0930	ug/L			09/27/19 18:43	1
Ethylbenzene	3.07		1.00	0.198	ug/L			09/27/19 18:43	1
m,p-Xylene	1.78	J	2.00	0.280	ug/L			09/27/19 18:43	1
o-Xylene	0.420	J	1.00	0.162	ug/L			09/27/19 18:43	1
Toluene	2.33		1.00	0.312	ug/L			09/27/19 18:43	1
Xylenes, Total	2.20	J	3.00	0.442	ug/L			09/27/19 18:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		09/27/19 18:43	1
4-Bromofluorobenzene (Surr)	92		80 - 120		09/27/19 18:43	1
Dibromofluoromethane (Surr)	101		80 - 120		09/27/19 18:43	1
Toluene-d8 (Surr)	92		80 - 120		09/27/19 18:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1640		150	70.4	ug/L			09/27/19 18:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		68.7 - 141		09/27/19 18:43	1

**Client Sample ID: MW-313**

**Lab Sample ID: 590-11905-10**

Date Collected: 09/19/19 09:39

Matrix: Water

Date Received: 09/26/19 09:15

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			09/27/19 19:05	1
Ethylbenzene	ND		1.00	0.198	ug/L			09/27/19 19:05	1
m,p-Xylene	ND		2.00	0.280	ug/L			09/27/19 19:05	1
o-Xylene	ND		1.00	0.162	ug/L			09/27/19 19:05	1
Toluene	ND		1.00	0.312	ug/L			09/27/19 19:05	1
Xylenes, Total	ND		3.00	0.442	ug/L			09/27/19 19:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		80 - 120		09/27/19 19:05	1
4-Bromofluorobenzene (Surr)	93		80 - 120		09/27/19 19:05	1
Dibromofluoromethane (Surr)	107		80 - 120		09/27/19 19:05	1
Toluene-d8 (Surr)	98		80 - 120		09/27/19 19:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			09/27/19 19:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		68.7 - 141		09/27/19 19:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.237		0.228	0.105	mg/L		10/02/19 09:36	10/02/19 20:25	1
Residual Range Organics (RRO) (C25-C36)	ND		0.381	0.114	mg/L		10/02/19 09:36	10/02/19 20:25	1

Eurofins TestAmerica, Spokane



# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

## Client Sample ID: MW-313

Date Collected: 09/19/19 09:39

Date Received: 09/26/19 09:15

## Lab Sample ID: 590-11905-10

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	85		50 - 150	10/02/19 09:36	10/02/19 20:25	1
<i>n</i> -Triacontane-d62	91		50 - 150	10/02/19 09:36	10/02/19 20:25	1

## Client Sample ID: MW-315

Date Collected: 09/19/19 10:10

Date Received: 09/26/19 09:15

## Lab Sample ID: 590-11905-11

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	36.1		0.400	0.0930	ug/L			09/27/19 19:26	1
Ethylbenzene	0.542	J	1.00	0.198	ug/L			09/27/19 19:26	1
<i>m,p</i> -Xylene	3.19		2.00	0.280	ug/L			09/27/19 19:26	1
<i>o</i> -Xylene	0.338	J	1.00	0.162	ug/L			09/27/19 19:26	1
Toluene	3.60		1.00	0.312	ug/L			09/27/19 19:26	1
Xylenes, Total	3.53		3.00	0.442	ug/L			09/27/19 19:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		09/27/19 19:26	1
4-Bromofluorobenzene (Surr)	94		80 - 120		09/27/19 19:26	1
Dibromofluoromethane (Surr)	100		80 - 120		09/27/19 19:26	1
Toluene-d8 (Surr)	95		80 - 120		09/27/19 19:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1290		150	70.4	ug/L			09/27/19 19:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		68.7 - 141		09/27/19 19:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	2.61		0.229	0.105	mg/L		10/02/19 09:36	10/02/19 20:46	1
Residual Range Organics (RRO) (C25-C36)	0.133	J	0.381	0.114	mg/L		10/02/19 09:36	10/02/19 20:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	89		50 - 150	10/02/19 09:36	10/02/19 20:46	1
<i>n</i> -Triacontane-d62	94		50 - 150	10/02/19 09:36	10/02/19 20:46	1

## Client Sample ID: TX-03A

Date Collected: 09/19/19 13:56

Date Received: 09/26/19 09:15

## Lab Sample ID: 590-11905-12

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	6.42		0.400	0.0930	ug/L			09/27/19 19:47	1
Ethylbenzene	7.22		1.00	0.198	ug/L			09/27/19 19:47	1
<i>m,p</i> -Xylene	0.430	J	2.00	0.280	ug/L			09/27/19 19:47	1
<i>o</i> -Xylene	ND		1.00	0.162	ug/L			09/27/19 19:47	1
Toluene	ND		1.00	0.312	ug/L			09/27/19 19:47	1
Xylenes, Total	ND		3.00	0.442	ug/L			09/27/19 19:47	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

**Client Sample ID: TX-03A**

**Date Collected: 09/19/19 13:56**

**Date Received: 09/26/19 09:15**

**Lab Sample ID: 590-11905-12**

**Matrix: Water**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120		09/27/19 19:47	1
4-Bromofluorobenzene (Surr)	95		80 - 120		09/27/19 19:47	1
Dibromofluoromethane (Surr)	106		80 - 120		09/27/19 19:47	1
Toluene-d8 (Surr)	92		80 - 120		09/27/19 19:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	446		150	70.4	ug/L			09/27/19 19:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		68.7 - 141		09/27/19 19:47	1

**Client Sample ID: TB**

**Date Collected: 09/19/19 08:00**

**Date Received: 09/26/19 09:15**

**Lab Sample ID: 590-11905-13**

**Matrix: Water**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			09/27/19 20:08	1
Ethylbenzene	ND		1.00	0.198	ug/L			09/27/19 20:08	1
m,p-Xylene	ND		2.00	0.280	ug/L			09/27/19 20:08	1
o-Xylene	ND		1.00	0.162	ug/L			09/27/19 20:08	1
Toluene	ND		1.00	0.312	ug/L			09/27/19 20:08	1
Xylenes, Total	ND		3.00	0.442	ug/L			09/27/19 20:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		09/27/19 20:08	1
4-Bromofluorobenzene (Surr)	94		80 - 120		09/27/19 20:08	1
Dibromofluoromethane (Surr)	103		80 - 120		09/27/19 20:08	1
Toluene-d8 (Surr)	95		80 - 120		09/27/19 20:08	1

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

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

**Lab Sample ID: MB 590-24388/5**  
**Matrix: Water**  
**Analysis Batch: 24388**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			09/27/19 11:47	1
Ethylbenzene	ND		1.00	0.198	ug/L			09/27/19 11:47	1
m,p-Xylene	ND		2.00	0.280	ug/L			09/27/19 11:47	1
o-Xylene	ND		1.00	0.162	ug/L			09/27/19 11:47	1
Toluene	ND		1.00	0.312	ug/L			09/27/19 11:47	1
Xylenes, Total	ND		3.00	0.442	ug/L			09/27/19 11:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		09/27/19 11:47	1
4-Bromofluorobenzene (Surr)	100		80 - 120		09/27/19 11:47	1
Dibromofluoromethane (Surr)	104		80 - 120		09/27/19 11:47	1
Toluene-d8 (Surr)	104		80 - 120		09/27/19 11:47	1

**Lab Sample ID: LCS 590-24388/1003**  
**Matrix: Water**  
**Analysis Batch: 24388**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	8.738		ug/L		87	80 - 126
Ethylbenzene	10.0	8.710		ug/L		87	80 - 120
m,p-Xylene	10.0	8.459		ug/L		85	80 - 120
o-Xylene	10.0	8.961		ug/L		90	80 - 120
Toluene	10.0	9.035		ug/L		90	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		80 - 120
4-Bromofluorobenzene (Surr)	93		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	96		80 - 120

**Lab Sample ID: LCSD 590-24388/6**  
**Matrix: Water**  
**Analysis Batch: 24388**

**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
Benzene	10.0	8.976		ug/L		90	80 - 126	3	25
Ethylbenzene	10.0	9.024		ug/L		90	80 - 120	4	25
m,p-Xylene	10.0	8.786		ug/L		88	80 - 120	4	25
o-Xylene	10.0	9.527		ug/L		95	80 - 120	6	25
Toluene	10.0	9.656		ug/L		97	80 - 123	7	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
Toluene-d8 (Surr)	98		80 - 120

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 590-11905-1 DU**  
**Matrix: Water**  
**Analysis Batch: 24388**

**Client Sample ID: MW-301**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Benzene	0.0937	J	0.1769	J F5	ug/L		62	20
Ethylbenzene	ND		ND		ug/L		NC	20
m,p-Xylene	ND		ND		ug/L		NC	20
o-Xylene	ND		ND		ug/L		NC	20
Toluene	ND		ND		ug/L		NC	20
Xylenes, Total	ND		ND		ug/L		NC	20

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
Toluene-d8 (Surr)	96		80 - 120

**Lab Sample ID: 590-11905-2 DU**  
**Matrix: Water**  
**Analysis Batch: 24388**

**Client Sample ID: MW-302**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Benzene	17.4		17.26		ug/L		1	20
Ethylbenzene	21.7		20.96		ug/L		3	20
m,p-Xylene	3.72		3.404		ug/L		9	20
o-Xylene	0.560	J	0.5329	J	ug/L		5	20
Toluene	1.15		1.093		ug/L		5	20
Xylenes, Total	4.28		3.937		ug/L		8	20

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	93		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120
Toluene-d8 (Surr)	95		80 - 120

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

**Lab Sample ID: MB 590-24387/5**  
**Matrix: Water**  
**Analysis Batch: 24387**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline	ND		150	70.4	ug/L			09/27/19 11:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		68.7 - 141		09/27/19 11:47	1

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

**Lab Sample ID: LCS 590-24387/1004**  
**Matrix: Water**  
**Analysis Batch: 24387**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	1034		ug/L		103	80 - 120
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>LCS Limits</b>				
4-Bromofluorobenzene (Surr)	95		68.7 - 141				

**Lab Sample ID: 590-11905-1 DU**  
**Matrix: Water**  
**Analysis Batch: 24387**

**Client Sample ID: MW-301**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gasoline	ND		ND		ug/L		NC	35
<b>Surrogate</b>	<b>%Recovery</b>	<b>DU Qualifier</b>	<b>DU Limits</b>					
4-Bromofluorobenzene (Surr)	96		68.7 - 141					

**Lab Sample ID: 590-11905-2 DU**  
**Matrix: Water**  
**Analysis Batch: 24387**

**Client Sample ID: MW-302**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gasoline	662		637.0		ug/L		4	35
<b>Surrogate</b>	<b>%Recovery</b>	<b>DU Qualifier</b>	<b>DU Limits</b>					
4-Bromofluorobenzene (Surr)	93		68.7 - 141					

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

**Lab Sample ID: MB 590-24464/1-A**  
**Matrix: Water**  
**Analysis Batch: 24472**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 24464**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.240	0.110	mg/L		10/02/19 09:36	10/02/19 12:51	1
Residual Range Organics (RRO) (C25-C36)	ND		0.400	0.120	mg/L		10/02/19 09:36	10/02/19 12:51	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>	<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>			
o-Terphenyl	84		50 - 150	10/02/19 09:36	10/02/19 12:51	1			
n-Triacontane-d62	87		50 - 150	10/02/19 09:36	10/02/19 12:51	1			

**Lab Sample ID: LCS 590-24464/2-A**  
**Matrix: Water**  
**Analysis Batch: 24472**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 24464**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	1.60	1.380		mg/L		86	50 - 150

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# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

## GC/MS VOA

### Analysis Batch: 24387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11905-1	MW-301	Total/NA	Water	NWTPH-Gx	
590-11905-2	MW-302	Total/NA	Water	NWTPH-Gx	
590-11905-3	MW-303	Total/NA	Water	NWTPH-Gx	
590-11905-4	MW-304	Total/NA	Water	NWTPH-Gx	
590-11905-5	MW-307	Total/NA	Water	NWTPH-Gx	
590-11905-6	MW-308	Total/NA	Water	NWTPH-Gx	
590-11905-7	MW-310	Total/NA	Water	NWTPH-Gx	
590-11905-8	MW-311	Total/NA	Water	NWTPH-Gx	
590-11905-9	MW-312	Total/NA	Water	NWTPH-Gx	
590-11905-10	MW-313	Total/NA	Water	NWTPH-Gx	
590-11905-11	MW-315	Total/NA	Water	NWTPH-Gx	
590-11905-12	TX-03A	Total/NA	Water	NWTPH-Gx	
MB 590-24387/5	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 590-24387/1004	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
590-11905-1 DU	MW-301	Total/NA	Water	NWTPH-Gx	
590-11905-2 DU	MW-302	Total/NA	Water	NWTPH-Gx	

### Analysis Batch: 24388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11905-1	MW-301	Total/NA	Water	8260C	
590-11905-2	MW-302	Total/NA	Water	8260C	
590-11905-3	MW-303	Total/NA	Water	8260C	
590-11905-4	MW-304	Total/NA	Water	8260C	
590-11905-5	MW-307	Total/NA	Water	8260C	
590-11905-6	MW-308	Total/NA	Water	8260C	
590-11905-7	MW-310	Total/NA	Water	8260C	
590-11905-8	MW-311	Total/NA	Water	8260C	
590-11905-9	MW-312	Total/NA	Water	8260C	
590-11905-10	MW-313	Total/NA	Water	8260C	
590-11905-11	MW-315	Total/NA	Water	8260C	
590-11905-12	TX-03A	Total/NA	Water	8260C	
590-11905-13	TB	Total/NA	Water	8260C	
MB 590-24388/5	Method Blank	Total/NA	Water	8260C	
LCS 590-24388/1003	Lab Control Sample	Total/NA	Water	8260C	
LCSD 590-24388/6	Lab Control Sample Dup	Total/NA	Water	8260C	
590-11905-1 DU	MW-301	Total/NA	Water	8260C	
590-11905-2 DU	MW-302	Total/NA	Water	8260C	

## GC Semi VOA

### Prep Batch: 24464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11905-10	MW-313	Total/NA	Water	3510C	
590-11905-11	MW-315	Total/NA	Water	3510C	
MB 590-24464/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-24464/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-24464/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 24472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11905-10	MW-313	Total/NA	Water	NWTPH-Dx	24464

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# QC Association Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

## GC Semi VOA (Continued)

### Analysis Batch: 24472 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-11905-11	MW-315	Total/NA	Water	NWTPH-Dx	24464
MB 590-24464/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	24464
LCS 590-24464/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	24464
LCSD 590-24464/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	24464

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Lab Chronicle

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

## Client Sample ID: MW-301

Date Collected: 09/19/19 12:14

Date Received: 09/26/19 09:15

## Lab Sample ID: 590-11905-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 14:51	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 14:51	JSP	TAL SPK

## Client Sample ID: MW-302

Date Collected: 09/19/19 15:10

Date Received: 09/26/19 09:15

## Lab Sample ID: 590-11905-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 15:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 15:33	JSP	TAL SPK

## Client Sample ID: MW-303

Date Collected: 09/19/19 12:44

Date Received: 09/26/19 09:15

## Lab Sample ID: 590-11905-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 16:16	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 16:16	JSP	TAL SPK

## Client Sample ID: MW-304

Date Collected: 09/19/19 14:33

Date Received: 09/26/19 09:15

## Lab Sample ID: 590-11905-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 16:37	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 16:37	JSP	TAL SPK

## Client Sample ID: MW-307

Date Collected: 09/19/19 08:50

Date Received: 09/26/19 09:15

## Lab Sample ID: 590-11905-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 16:58	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 16:58	JSP	TAL SPK

## Client Sample ID: MW-308

Date Collected: 09/19/19 08:25

Date Received: 09/26/19 09:15

## Lab Sample ID: 590-11905-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 17:19	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 17:19	JSP	TAL SPK

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# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

## Client Sample ID: MW-310

## Lab Sample ID: 590-11905-7

Date Collected: 09/19/19 15:50

Matrix: Water

Date Received: 09/26/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 18:01	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 18:01	JSP	TAL SPK

## Client Sample ID: MW-311

## Lab Sample ID: 590-11905-8

Date Collected: 09/19/19 11:45

Matrix: Water

Date Received: 09/26/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 18:22	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 18:22	JSP	TAL SPK

## Client Sample ID: MW-312

## Lab Sample ID: 590-11905-9

Date Collected: 09/19/19 11:17

Matrix: Water

Date Received: 09/26/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 18:43	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 18:43	JSP	TAL SPK

## Client Sample ID: MW-313

## Lab Sample ID: 590-11905-10

Date Collected: 09/19/19 09:39

Matrix: Water

Date Received: 09/26/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 19:05	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 19:05	JSP	TAL SPK
Total/NA	Prep	3510C			262.8 mL	2 mL	24464	10/02/19 09:36	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			24472	10/02/19 20:25	NMI	TAL SPK

## Client Sample ID: MW-315

## Lab Sample ID: 590-11905-11

Date Collected: 09/19/19 10:10

Matrix: Water

Date Received: 09/26/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 19:26	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 19:26	JSP	TAL SPK
Total/NA	Prep	3510C			262.3 mL	2 mL	24464	10/02/19 09:36	AMB	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			24472	10/02/19 20:46	NMI	TAL SPK

## Client Sample ID: TX-03A

## Lab Sample ID: 590-11905-12

Date Collected: 09/19/19 13:56

Matrix: Water

Date Received: 09/26/19 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 19:47	JSP	TAL SPK

Eurofins TestAmerica, Spokane

# Lab Chronicle

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

## Client Sample ID: TX-03A

Date Collected: 09/19/19 13:56

Date Received: 09/26/19 09:15

Lab Sample ID: 590-11905-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	24387	09/27/19 19:47	JSP	TAL SPK

## Client Sample ID: TB

Date Collected: 09/19/19 08:00

Date Received: 09/26/19 09:15

Lab Sample ID: 590-11905-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	24388	09/27/19 20:08	JSP	TAL SPK

### Laboratory References:

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

# Definitions/Glossary

Client: AECOM

Job ID: 590-11905-1

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
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
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

# Accreditation/Certification Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-11905-1

## Laboratory: Eurofins TestAmerica, Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C569	01-06-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
-----------------	-------------	--------	---------

- 1
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Shell Oil Products US Chain Of Custody Record



LAB (LOCATION)  
 Accutest  
 CalScience  
 TestAmerica  
 Other

Please Check Appropriate Box:  
 Bgw FDG  
 Pipeline  
 Chemicals  
 Consultant  
 Lubes  
 Transportation  
 Other

Blaine Tech Services, Inc  
 1680 Rogers Ave, San Jose, CA, 95112

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 1680 Rogers Ave, San Jose, CA, 95112

Print Bill To Contact Name:  
 Planet Site or Project ID  
 PO #  
 GSAP Project ID  
 DATE: 9/14/19  
 PAGE: 2 of 2

2555 13th Avenue  
 Nicky Moody, AECOM, Portland, OR  
 L. Bures

Requested Analysis  
 UNIT COST  
 REQUESTED ANALYSIS  
 NON-UNIT COST

6260C BTEX  
 NWTPH-Dx  
 8270D SIM PAHs  
 300.0 Sulfate  
 NWTPH-Gx  
 6020A Total Lead  
 353.2 Nitrate & Nitrite  
 6020A Diss. Iron & Manganese (lab filter)  
 300.0 Chloride  
 2320B Alkalinity

Field Sample Identification  
 DATE: 9/19/19  
 TIME: 0800  
 MATRIX: W6, W5, W5  
 NO OF CONT: 6, 4, 2

RECEIVED BY (SIGNATURE)  
 RECEIVED BY (SIGNATURE)  
 RECEIVED BY (SIGNATURE)

SHIPPED VIA FedEx  
 MARIA OTBOLC

DATE: 9/23/19  
 TIME: 9:15

DATE: 9/28/19  
 TIME: 9:15

# Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-11905-1

**Login Number: 11905**

**List Number: 1**

**Creator: O'Toole, Maria C**

**List Source: Eurofins TestAmerica, Spokane**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	421463 421461
Sample custody seals, if present, are intact.	N/A	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.



## Laboratory Data Quality Review

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### Shell – 2019 Second Quarter Progress Report – Harbor Island

Laboratory & Report No.	Test America Laboratories, Incorporated, #590-11905-1
Report Date	October 21, 2019
Sampling Event	September 19, 2019
Site Location	Seattle Terminal/2555 13 <sup>th</sup> Avenue
AECOM Project No.	60595460, Task 03001
Project Name	3 <sup>rd</sup> Quarter Groundwater Monitoring

This document summarizes the data quality review of 12 primary groundwater samples and one trip blank collected on September 19, 2019, at the Harbor Island site in Seattle, Washington. Samples were submitted to TestAmerica Laboratories, Incorporated (TA) in Spokane, Washington, and analyzed for one or more of the following:

- The volatile organic compounds (VOCs) benzene, ethylbenzene, toluene, and o-, m,p- and total xylenes (BTEX) using US Environmental Protection Agency (EPA) Method 8260C
- Volatile petroleum products using Northwest (NW) total petroleum hydrocarbons (TPH) method for gasoline (Washington State Department of Ecology Method NWTPH-Gx)
- Semivolatile petroleum products using NWTPH method for diesel-range organics (DRO) (C10-C25) and residual range organics (RRO) (C25-C36) (Washington State Department of Ecology Method NWTPH-Dx)

Analyses were performed by TA of Spokane, Washington, and the analytical data was reported under TA job number 590-11905-1. Data were evaluated based on the EPA's *National Functional Guidelines (NFGs) for Organic Superfund Methods Data Review* (EPA, 2017a) and using standard laboratory quality control (QC) criteria. Items reviewed included, where applicable: chain-of-custody (COC) records and holding times, along with results for method blanks, surrogate recoveries, laboratory control and laboratory control sample duplicates (LCS/LCSDs), matrix spike and matrix spike duplicates (MS/MSDs), and the trip blank. Qualifiers assigned as a result of this data review are summarized in Table 1, found at the end of this report.

The evaluations of reviewed criteria are:

- COC Records – Acceptable
- Temperature – Acceptable
- Preservation – Acceptable
- Holding Times – Acceptable
- Method Blanks – Acceptable
- Trip Blank – Acceptable
- Surrogates – Acceptable
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable

- Matrix Spike/Matrix Spike Duplicate (MS/MSD)
  - An MS/MSD was not performed in association with any of the analytical parameters. Accuracy and precision were assessed using the LCS/LCSD recoveries and/or relative percent differences (RPDs), where applicable.
- Laboratory Duplicates – Acceptable except as noted below:
  - BTEX by 8260C – A laboratory duplicate was performed using MW-302. Results were comparable.  
  
A laboratory duplicate was performed using MW-301. The RPD for benzene (62%) was greater than the control limit of 20%. The result for benzene in MW-301 was less than five times the reporting limit; therefore, data were not qualified based on this laboratory duplicate RPD.
  - Gasoline Range Organics NWTPH-Gx – Laboratory duplicates were performed using MW-301 and MW-302. Results were comparable.
  - Diesel Range Organics by NWTPH-Dx – A laboratory duplicate was not performed in association with this parameter. Precision was assessed using the LCS/LCSD RPDs.
- Field Duplicates
  - General - A field duplicate was not collected as part of this sampling event.
- Reporting Limits – Acceptable
  - General - The results for one or more analytes in multiple samples were flagged with ‘J’ qualifiers by the laboratory to indicate that the reported concentrations were above the method detection limits (MDLs) but below the reporting limits. All J-flagged results are considered estimated.
- Laboratory Notes
  - Gasoline Range Organics by Method NWTPH-Gx – The laboratory noted that the gasoline result for MW-303 was due to the presence of discrete peaks. No qualifications were assigned based on these qualitative notes. The laboratory notes are provided in the laboratory report.

**Overall Assessment of Data**

The completeness of the analytical report for this quarter laboratory analysis is 100%. The usefulness of the data is based on the US EPA guidance documents referenced in the introduction of this report. Upon consideration of the information presented above, the data are considered usable. Data qualifiers assigned during this review are provided in Table 1, below. The data qualifiers assigned by the laboratory are shown on the laboratory reports and in the electronic data deliverable (EDD).

**Data Qualifier Definitions**

- U     The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J     The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ    The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R     The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria.
- DNR   Do Not Report. Another result is available that is more reliable.

**References**

EPA, 2017a. National Functional Guidelines for Organic Superfund Methods Data Review.  
EPA-540-R-2017-002. January 2017.

**Summary****Table 1. Summary of Data Qualifications for 3<sup>rd</sup> Quarter Groundwater Monitoring**

<b>Client Sample ID</b>	<b>Laboratory Sample ID</b>	<b>Analyte</b>	<b>Result</b>	<b>Units</b>	<b>Final Result</b>	<b>Rationale</b>
No data were qualified based on this data validation.						

## ANALYTICAL REPORT

Eurofins TestAmerica, Spokane  
11922 East 1st Ave  
Spokane, WA 99206  
Tel: (509)924-9200

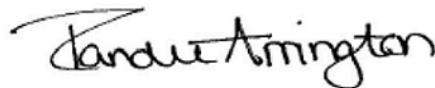
Laboratory Job ID: 590-12426-1

Client Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

**For:**

AECOM  
111 SW Columbia Street, Suite 1500  
Portland, Oregon 97201

Attn: Nicky Moody



*Authorized for release by:  
12/30/2019 9:19:13 AM*

Randee Arrington, Project Manager II  
(509)924-9200  
[randee.arrington@testamericainc.com](mailto:randee.arrington@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.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.*

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# Case Narrative

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

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## Job ID: 590-12426-1

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Laboratory: Eurofins TestAmerica, Spokane

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### Narrative

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#### Receipt

The samples were received on 12/11/2019 1:18 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.5° C and 5.0° C.

#### Receipt Exceptions

Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following samples were received with insufficient preservation: MW-308 (590-12426-4), MW-202 (590-12426-9), MW-203 (590-12426-10) and MW-307 (590-12426-13). The samples were preserved to the appropriate pH in the laboratory.

#### GC/MS VOA

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

#### GC Semi VOA

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to gasoline overlap in the following samples: MW-101 (590-12426-3), MW-104 (590-12426-8), MW-202 (590-12426-9) and MW-203 (590-12426-10).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel as well as possible biogenic interference in the following samples: TX-06A (590-12426-5), MW-204 (590-12426-11) and MW-206A (590-12426-12).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to heavy gas/light diesel range components in the following samples: MW-307 (590-12426-13) and MW-314 (590-12426-14).

Method 300.0: The following sample was diluted due to the nature of the sample matrix: MW-203 (590-12426-10). 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.

#### Metals

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

#### General Chemistry

Method 353.2: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 319607 were outside control limits. 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.

#### Organic Prep

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

#### VOA Prep

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

# Sample Summary

Client: AECOM

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
590-12426-1	TB-1	Water	12/09/19 06:00	12/11/19 13:18	
590-12426-2	TES-MW-1	Water	12/09/19 13:54	12/11/19 13:18	
590-12426-3	MW-101	Water	12/09/19 13:22	12/11/19 13:18	
590-12426-4	MW-308	Water	12/09/19 14:20	12/11/19 13:18	
590-12426-5	TX-06A	Water	12/10/19 12:48	12/11/19 13:18	
590-12426-6	MW-05	Water	12/10/19 14:19	12/11/19 13:18	
590-12426-7	MW-102	Water	12/10/19 13:18	12/11/19 13:18	
590-12426-8	MW-104	Water	12/10/19 14:45	12/11/19 13:18	
590-12426-9	MW-202	Water	12/10/19 09:50	12/11/19 13:18	
590-12426-10	MW-203	Water	12/10/19 11:06	12/11/19 13:18	
590-12426-11	MW-204	Water	12/10/19 10:32	12/11/19 13:18	
590-12426-12	MW-206A	Water	12/10/19 11:39	12/11/19 13:18	
590-12426-13	MW-307	Water	12/10/19 08:27	12/11/19 13:18	
590-12426-14	MW-314	Water	12/10/19 13:46	12/11/19 13:18	

# Method Summary

Client: AECOM

Job ID: 590-12426-1

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
300.0	Anions, Ion Chromatography	MCAWW	TAL SPK
6020B	Metals (ICP/MS)	SW846	TAL SEA
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SEA
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SEA
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL SPK
5030C	Purge and Trap	SW846	TAL SPK

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

# Detection Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Client Sample ID: TB-1

Lab Sample ID: 590-12426-1

No Detections.

## Client Sample ID: TES-MW-1

Lab Sample ID: 590-12426-2

No Detections.

## Client Sample ID: MW-101

Lab Sample ID: 590-12426-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.155	J	0.250	0.114	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-308

Lab Sample ID: 590-12426-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.322	J	0.400	0.0930	ug/L	1		8260C	Total/NA
Gasoline	118	J	150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Sulfate	93.9		2.00	0.512	mg/L	4		300.0	Total/NA
Iron	16.1		1.00	0.178	mg/L	5		6020B	Dissolved
Manganese	1.01		0.0100	0.00230	mg/L	5		6020B	Dissolved

## Client Sample ID: TX-06A

Lab Sample ID: 590-12426-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.244		0.238	0.109	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-05

Lab Sample ID: 590-12426-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.111	J	0.243	0.111	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-102

Lab Sample ID: 590-12426-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.151	J	0.247	0.113	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-104

Lab Sample ID: 590-12426-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	956		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.713		0.244	0.112	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-202

Lab Sample ID: 590-12426-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.79		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	12.8		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	1.75	J	2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.278	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	1.59		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	2.02	J	3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	4290		1500	704	ug/L	10		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	24.0		0.222	0.102	mg/L	1		NWTPH-Dx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

# Detection Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Client Sample ID: MW-202 (Continued)

## Lab Sample ID: 590-12426-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Residual Range Organics (RRO) (C25-C36)	0.534		0.371	0.111	mg/L	1		NWTPH-Dx	Total/NA
Sulfate	8.61		5.00	1.28	mg/L	10		300.0	Total/NA
Iron	28.3		1.00	0.178	mg/L	5		6020B	Dissolved
Manganese	0.543		0.0100	0.00230	mg/L	5		6020B	Dissolved

## Client Sample ID: MW-203

## Lab Sample ID: 590-12426-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	1740		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.495		0.235	0.108	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.189	J	0.392	0.118	mg/L	1		NWTPH-Dx	Total/NA
Sulfate	1.34	J	2.00	0.512	mg/L	4		300.0	Total/NA
Iron	20.0		1.00	0.178	mg/L	5		6020B	Dissolved
Manganese	0.207		0.0100	0.00230	mg/L	5		6020B	Dissolved

## Client Sample ID: MW-204

## Lab Sample ID: 590-12426-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.05		0.400	0.0930	ug/L	1		8260C	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.238	J	0.247	0.113	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.128	J	0.412	0.124	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-206A

## Lab Sample ID: 590-12426-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.591		0.232	0.106	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.396		0.386	0.116	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-307

## Lab Sample ID: 590-12426-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	4.97		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	0.291	J	1.00	0.198	ug/L	1		8260C	Total/NA
Gasoline	280		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.660		0.237	0.109	mg/L	1		NWTPH-Dx	Total/NA
Sulfate	210		5.00	1.28	mg/L	10		300.0	Total/NA
Iron	60.4		1.00	0.178	mg/L	5		6020B	Dissolved
Manganese	1.21		0.0100	0.00230	mg/L	5		6020B	Dissolved

## Client Sample ID: MW-314

## Lab Sample ID: 590-12426-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.105	J	0.400	0.0930	ug/L	1		8260C	Total/NA
m,p-Xylene	0.286	J	2.00	0.280	ug/L	1		8260C	Total/NA
Toluene	0.400	J	1.00	0.312	ug/L	1		8260C	Total/NA
Gasoline	260		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	1.44		0.249	0.114	mg/L	1		NWTPH-Dx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

# Detection Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

**Client Sample ID: MW-314 (Continued)**

**Lab Sample ID: 590-12426-14**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Residual Range Organics (RRO) (C25-C36)	0.178	J	0.416	0.125	mg/L	1		NWTPH-Dx	Total/NA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Client Sample ID: TB-1

## Lab Sample ID: 590-12426-1

Date Collected: 12/09/19 06:00

Matrix: Water

Date Received: 12/11/19 13:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/13/19 22:28	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/13/19 22:28	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/13/19 22:28	1
o-Xylene	ND		1.00	0.162	ug/L			12/13/19 22:28	1
Toluene	ND		1.00	0.312	ug/L			12/13/19 22:28	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/13/19 22:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		80 - 120		12/13/19 22:28	1
4-Bromofluorobenzene (Surr)	105		80 - 120		12/13/19 22:28	1
Dibromofluoromethane (Surr)	97		80 - 120		12/13/19 22:28	1
Toluene-d8 (Surr)	101		80 - 120		12/13/19 22:28	1

## Client Sample ID: TES-MW-1

## Lab Sample ID: 590-12426-2

Date Collected: 12/09/19 13:54

Matrix: Water

Date Received: 12/11/19 13:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/13/19 22:49	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/13/19 22:49	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/13/19 22:49	1
o-Xylene	ND		1.00	0.162	ug/L			12/13/19 22:49	1
Toluene	ND		1.00	0.312	ug/L			12/13/19 22:49	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/13/19 22:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		12/13/19 22:49	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/13/19 22:49	1
Dibromofluoromethane (Surr)	95		80 - 120		12/13/19 22:49	1
Toluene-d8 (Surr)	99		80 - 120		12/13/19 22:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/13/19 22:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		68.7 - 141		12/13/19 22:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.242	0.111	mg/L		12/18/19 12:42	12/18/19 16:29	1
Residual Range Organics (RRO) (C25-C36)	ND		0.404	0.121	mg/L		12/18/19 12:42	12/18/19 16:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	75		50 - 150	12/18/19 12:42	12/18/19 16:29	1
n-Triacontane-d62	81		50 - 150	12/18/19 12:42	12/18/19 16:29	1

Eurofins TestAmerica, Spokane



# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

**Client Sample ID: MW-101**

**Lab Sample ID: 590-12426-3**

**Date Collected: 12/09/19 13:22**

**Matrix: Water**

**Date Received: 12/11/19 13:18**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/13/19 23:31	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/13/19 23:31	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/13/19 23:31	1
o-Xylene	ND		1.00	0.162	ug/L			12/13/19 23:31	1
Toluene	ND		1.00	0.312	ug/L			12/13/19 23:31	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/13/19 23:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		12/13/19 23:31	1
4-Bromofluorobenzene (Surr)	99		80 - 120		12/13/19 23:31	1
Dibromofluoromethane (Surr)	99		80 - 120		12/13/19 23:31	1
Toluene-d8 (Surr)	90		80 - 120		12/13/19 23:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/13/19 23:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		68.7 - 141		12/13/19 23:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.155</b>	<b>J</b>	0.250	0.114	mg/L		12/18/19 12:42	12/18/19 16:51	1
Residual Range Organics (RRO) (C25-C36)	ND		0.416	0.125	mg/L		12/18/19 12:42	12/18/19 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150	12/18/19 12:42	12/18/19 16:51	1
n-Triacontane-d62	88		50 - 150	12/18/19 12:42	12/18/19 16:51	1

**Client Sample ID: MW-308**

**Lab Sample ID: 590-12426-4**

**Date Collected: 12/09/19 14:20**

**Matrix: Water**

**Date Received: 12/11/19 13:18**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>0.322</b>	<b>J</b>	0.400	0.0930	ug/L			12/14/19 00:35	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/14/19 00:35	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/14/19 00:35	1
o-Xylene	ND		1.00	0.162	ug/L			12/14/19 00:35	1
Toluene	ND		1.00	0.312	ug/L			12/14/19 00:35	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/14/19 00:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		12/14/19 00:35	1
4-Bromofluorobenzene (Surr)	97		80 - 120		12/14/19 00:35	1
Dibromofluoromethane (Surr)	102		80 - 120		12/14/19 00:35	1
Toluene-d8 (Surr)	90		80 - 120		12/14/19 00:35	1

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

**Client Sample ID: MW-308**

**Lab Sample ID: 590-12426-4**

Date Collected: 12/09/19 14:20

Matrix: Water

Date Received: 12/11/19 13:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	118	J	150	70.4	ug/L	-		12/14/19 00:35	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	98		68.7 - 141					12/14/19 00:35	1

**Method: 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	93.9		2.00	0.512	mg/L	-		12/18/19 10:59	4

**Method: 6020B - Metals (ICP/MS) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	16.1		1.00	0.178	mg/L	-	12/20/19 09:48	12/23/19 16:09	5
Manganese	1.01		0.0100	0.00230	mg/L	-	12/20/19 09:48	12/23/19 16:09	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND	F1	0.150	0.0600	mg/L	-		12/24/19 13:29	1

**Client Sample ID: TX-06A**

**Lab Sample ID: 590-12426-5**

Date Collected: 12/10/19 12:48

Matrix: Water

Date Received: 12/11/19 13:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L	-		12/14/19 00:56	1
Ethylbenzene	ND		1.00	0.198	ug/L	-		12/14/19 00:56	1
m,p-Xylene	ND		2.00	0.280	ug/L	-		12/14/19 00:56	1
o-Xylene	ND		1.00	0.162	ug/L	-		12/14/19 00:56	1
Toluene	ND		1.00	0.312	ug/L	-		12/14/19 00:56	1
Xylenes, Total	ND		3.00	0.442	ug/L	-		12/14/19 00:56	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	98		80 - 120					12/14/19 00:56	1
4-Bromofluorobenzene (Surr)	93		80 - 120					12/14/19 00:56	1
Dibromofluoromethane (Surr)	101		80 - 120					12/14/19 00:56	1
Toluene-d8 (Surr)	95		80 - 120					12/14/19 00:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L	-		12/14/19 00:56	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	94		68.7 - 141					12/14/19 00:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.244</b>		0.238	0.109	mg/L	-	12/18/19 12:42	12/18/19 17:12	1
Residual Range Organics (RRO) (C25-C36)	ND		0.396	0.119	mg/L	-	12/18/19 12:42	12/18/19 17:12	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
o-Terphenyl	81		50 - 150				12/18/19 12:42	12/18/19 17:12	1

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# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Client Sample ID: TX-06A

Date Collected: 12/10/19 12:48

Date Received: 12/11/19 13:18

## Lab Sample ID: 590-12426-5

Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>n</i> -Triacontane-d62	86		50 - 150	12/18/19 12:42	12/18/19 17:12	1

## Client Sample ID: MW-05

Date Collected: 12/10/19 14:19

Date Received: 12/11/19 13:18

## Lab Sample ID: 590-12426-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/14/19 01:38	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/14/19 01:38	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/14/19 01:38	1
o-Xylene	ND		1.00	0.162	ug/L			12/14/19 01:38	1
Toluene	ND		1.00	0.312	ug/L			12/14/19 01:38	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/14/19 01:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>1,2</i> -Dichloroethane-d4 (Surr)	103		80 - 120		12/14/19 01:38	1
<i>4</i> -Bromofluorobenzene (Surr)	94		80 - 120		12/14/19 01:38	1
<i>Dibromofluoromethane</i> (Surr)	100		80 - 120		12/14/19 01:38	1
<i>Toluene-d8</i> (Surr)	96		80 - 120		12/14/19 01:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/14/19 01:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>4</i> -Bromofluorobenzene (Surr)	95		68.7 - 141		12/14/19 01:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.111</b>	<b>J</b>	0.243	0.111	mg/L		12/18/19 12:42	12/18/19 17:32	1
Residual Range Organics (RRO) (C25-C36)	ND		0.404	0.121	mg/L		12/18/19 12:42	12/18/19 17:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	86		50 - 150	12/18/19 12:42	12/18/19 17:32	1
<i>n</i> -Triacontane-d62	92		50 - 150	12/18/19 12:42	12/18/19 17:32	1

## Client Sample ID: MW-102

Date Collected: 12/10/19 13:18

Date Received: 12/11/19 13:18

## Lab Sample ID: 590-12426-7

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/14/19 01:59	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/14/19 01:59	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/14/19 01:59	1
o-Xylene	ND		1.00	0.162	ug/L			12/14/19 01:59	1
Toluene	ND		1.00	0.312	ug/L			12/14/19 01:59	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/14/19 01:59	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

**Client Sample ID: MW-102**

**Lab Sample ID: 590-12426-7**

Date Collected: 12/10/19 13:18

Matrix: Water

Date Received: 12/11/19 13:18

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		12/14/19 01:59	1
4-Bromofluorobenzene (Surr)	96		80 - 120		12/14/19 01:59	1
Dibromofluoromethane (Surr)	93		80 - 120		12/14/19 01:59	1
Toluene-d8 (Surr)	100		80 - 120		12/14/19 01:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/14/19 01:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		68.7 - 141		12/14/19 01:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.151</b>	<b>J</b>	0.247	0.113	mg/L		12/18/19 12:42	12/18/19 17:53	1

Residual Range Organics (RRO) (C25-C36)	ND		0.412	0.123	mg/L		12/18/19 12:42	12/18/19 17:53	1
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Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150	12/18/19 12:42	12/18/19 17:53	1
n-Triacontane-d62	93		50 - 150	12/18/19 12:42	12/18/19 17:53	1

**Client Sample ID: MW-104**

**Lab Sample ID: 590-12426-8**

Date Collected: 12/10/19 14:45

Matrix: Water

Date Received: 12/11/19 13:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>956</b>		150	70.4	ug/L			12/14/19 02:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		68.7 - 141		12/14/19 02:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.713</b>		0.244	0.112	mg/L		12/18/19 12:42	12/18/19 18:14	1

Residual Range Organics (RRO) (C25-C36)	ND		0.406	0.122	mg/L		12/18/19 12:42	12/18/19 18:14	1
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Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	83		50 - 150	12/18/19 12:42	12/18/19 18:14	1
n-Triacontane-d62	89		50 - 150	12/18/19 12:42	12/18/19 18:14	1

**Method: 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00400	0.000995	mg/L		12/18/19 12:53	12/19/19 12:17	5

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

**Client Sample ID: MW-202**

**Lab Sample ID: 590-12426-9**

Date Collected: 12/10/19 09:50

Matrix: Water

Date Received: 12/11/19 13:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.79		0.400	0.0930	ug/L			12/14/19 02:41	1
Ethylbenzene	12.8		1.00	0.198	ug/L			12/14/19 02:41	1
m,p-Xylene	1.75	J	2.00	0.280	ug/L			12/14/19 02:41	1
o-Xylene	0.278	J	1.00	0.162	ug/L			12/14/19 02:41	1
Toluene	1.59		1.00	0.312	ug/L			12/14/19 02:41	1
Xylenes, Total	2.02	J	3.00	0.442	ug/L			12/14/19 02:41	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120					12/14/19 02:41	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 120					12/16/19 12:51	10
4-Bromofluorobenzene (Surr)	101		80 - 120					12/14/19 02:41	1
4-Bromofluorobenzene (Surr)	100		80 - 120					12/16/19 12:51	10
Dibromofluoromethane (Surr)	83		80 - 120					12/14/19 02:41	1
Dibromofluoromethane (Surr)	100		80 - 120					12/16/19 12:51	10
Toluene-d8 (Surr)	96		80 - 120					12/14/19 02:41	1
Toluene-d8 (Surr)	100		80 - 120					12/16/19 12:51	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	4290		1500	704	ug/L			12/16/19 12:51	10

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		68.7 - 141					12/16/19 12:51	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	24.0		0.222	0.102	mg/L		12/18/19 12:42	12/18/19 18:35	1
Residual Range Organics (RRO) (C25-C36)	0.534		0.371	0.111	mg/L		12/18/19 12:42	12/18/19 18:35	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	79		50 - 150				12/18/19 12:42	12/18/19 18:35	1
n-Triacontane-d62	83		50 - 150				12/18/19 12:42	12/18/19 18:35	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	8.61		5.00	1.28	mg/L			12/18/19 11:11	10

### Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	28.3		1.00	0.178	mg/L		12/20/19 09:48	12/23/19 16:11	5
Manganese	0.543		0.0100	0.00230	mg/L		12/20/19 09:48	12/23/19 16:11	5

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.150	0.0600	mg/L			12/24/19 13:34	1

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

**Client Sample ID: MW-203**

**Lab Sample ID: 590-12426-10**

Date Collected: 12/10/19 11:06

Matrix: Water

Date Received: 12/11/19 13:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1740		150	70.4	ug/L			12/14/19 03:02	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	94		68.7 - 141					12/14/19 03:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.495		0.235	0.108	mg/L		12/18/19 12:42	12/18/19 18:56	1
Residual Range Organics (RRO) (C25-C36)	0.189	J	0.392	0.118	mg/L		12/18/19 12:42	12/18/19 18:56	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
o-Terphenyl	86		50 - 150				12/18/19 12:42	12/18/19 18:56	1
n-Triacontane-d62	96		50 - 150				12/18/19 12:42	12/18/19 18:56	1

**Method: 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.34	J	2.00	0.512	mg/L			12/18/19 11:22	4

**Method: 6020B - Metals (ICP/MS) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	20.0		1.00	0.178	mg/L		12/20/19 09:48	12/23/19 16:14	5
Manganese	0.207		0.0100	0.00230	mg/L		12/20/19 09:48	12/23/19 16:14	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.150	0.0600	mg/L			12/24/19 13:35	1

**Client Sample ID: MW-204**

**Lab Sample ID: 590-12426-11**

Date Collected: 12/10/19 10:32

Matrix: Water

Date Received: 12/11/19 13:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.05		0.400	0.0930	ug/L			12/14/19 03:23	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/14/19 03:23	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/14/19 03:23	1
o-Xylene	ND		1.00	0.162	ug/L			12/14/19 03:23	1
Toluene	ND		1.00	0.312	ug/L			12/14/19 03:23	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/14/19 03:23	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	101		80 - 120					12/14/19 03:23	1
4-Bromofluorobenzene (Surr)	97		80 - 120					12/14/19 03:23	1
Dibromofluoromethane (Surr)	97		80 - 120					12/14/19 03:23	1
Toluene-d8 (Surr)	94		80 - 120					12/14/19 03:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/14/19 03:23	1

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# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Client Sample ID: MW-204

Date Collected: 12/10/19 10:32

Date Received: 12/11/19 13:18

## Lab Sample ID: 590-12426-11

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		68.7 - 141		12/14/19 03:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.238	J	0.247	0.113	mg/L		12/18/19 12:42	12/18/19 19:17	1
Residual Range Organics (RRO) (C25-C36)	0.128	J	0.412	0.124	mg/L		12/18/19 12:42	12/18/19 19:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150	12/18/19 12:42	12/18/19 19:17	1
n-Triacontane-d62	88		50 - 150	12/18/19 12:42	12/18/19 19:17	1

## Client Sample ID: MW-206A

Date Collected: 12/10/19 11:39

Date Received: 12/11/19 13:18

## Lab Sample ID: 590-12426-12

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/14/19 03:44	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/14/19 03:44	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/14/19 03:44	1
o-Xylene	ND		1.00	0.162	ug/L			12/14/19 03:44	1
Toluene	ND		1.00	0.312	ug/L			12/14/19 03:44	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/14/19 03:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		12/14/19 03:44	1
4-Bromofluorobenzene (Surr)	96		80 - 120		12/14/19 03:44	1
Dibromofluoromethane (Surr)	101		80 - 120		12/14/19 03:44	1
Toluene-d8 (Surr)	97		80 - 120		12/14/19 03:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/14/19 03:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		68.7 - 141		12/14/19 03:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.591		0.232	0.106	mg/L		12/18/19 12:42	12/18/19 19:38	1
Residual Range Organics (RRO) (C25-C36)	0.396		0.386	0.116	mg/L		12/18/19 12:42	12/18/19 19:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150	12/18/19 12:42	12/18/19 19:38	1
n-Triacontane-d62	90		50 - 150	12/18/19 12:42	12/18/19 19:38	1



# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

**Client Sample ID: MW-307**

**Lab Sample ID: 590-12426-13**

Date Collected: 12/10/19 08:27

Matrix: Water

Date Received: 12/11/19 13:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.97		0.400	0.0930	ug/L			12/14/19 04:05	1
Ethylbenzene	0.291	J	1.00	0.198	ug/L			12/14/19 04:05	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/14/19 04:05	1
o-Xylene	ND		1.00	0.162	ug/L			12/14/19 04:05	1
Toluene	ND		1.00	0.312	ug/L			12/14/19 04:05	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/14/19 04:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		12/14/19 04:05	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/14/19 04:05	1
Dibromofluoromethane (Surr)	98		80 - 120		12/14/19 04:05	1
Toluene-d8 (Surr)	93		80 - 120		12/14/19 04:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	280		150	70.4	ug/L			12/14/19 04:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		68.7 - 141		12/14/19 04:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.660		0.237	0.109	mg/L		12/18/19 12:42	12/18/19 20:19	1
Residual Range Organics (RRO) (C25-C36)	ND		0.395	0.118	mg/L		12/18/19 12:42	12/18/19 20:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150	12/18/19 12:42	12/18/19 20:19	1
n-Triacontane-d62	99		50 - 150	12/18/19 12:42	12/18/19 20:19	1

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	210		5.00	1.28	mg/L			12/18/19 11:57	10

## Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	60.4		1.00	0.178	mg/L		12/20/19 09:48	12/23/19 16:17	5
Manganese	1.21		0.0100	0.00230	mg/L		12/20/19 09:48	12/23/19 16:17	5

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.150	0.0600	mg/L			12/24/19 13:36	1

**Client Sample ID: MW-314**

**Lab Sample ID: 590-12426-14**

Date Collected: 12/10/19 13:46

Matrix: Water

Date Received: 12/11/19 13:18

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.105	J	0.400	0.0930	ug/L			12/14/19 04:47	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/14/19 04:47	1

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# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

**Client Sample ID: MW-314**

**Lab Sample ID: 590-12426-14**

**Date Collected: 12/10/19 13:46**

**Matrix: Water**

**Date Received: 12/11/19 13:18**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>m,p-Xylene</b>	<b>0.286</b>	<b>J</b>	2.00	0.280	ug/L			12/14/19 04:47	1
o-Xylene	ND		1.00	0.162	ug/L			12/14/19 04:47	1
<b>Toluene</b>	<b>0.400</b>	<b>J</b>	1.00	0.312	ug/L			12/14/19 04:47	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/14/19 04:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		12/14/19 04:47	1
4-Bromofluorobenzene (Surr)	93		80 - 120		12/14/19 04:47	1
Dibromofluoromethane (Surr)	97		80 - 120		12/14/19 04:47	1
Toluene-d8 (Surr)	96		80 - 120		12/14/19 04:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>260</b>		150	70.4	ug/L			12/14/19 04:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		68.7 - 141		12/14/19 04:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>1.44</b>		0.249	0.114	mg/L		12/18/19 12:42	12/18/19 20:40	1
<b>Residual Range Organics (RRO) (C25-C36)</b>	<b>0.178</b>	<b>J</b>	0.416	0.125	mg/L		12/18/19 12:42	12/18/19 20:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150	12/18/19 12:42	12/18/19 20:40	1
n-Triacontane-d62	97		50 - 150	12/18/19 12:42	12/18/19 20:40	1

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

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

**Lab Sample ID: MB 590-25644/5**  
**Matrix: Water**  
**Analysis Batch: 25644**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/13/19 21:46	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/13/19 21:46	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/13/19 21:46	1
o-Xylene	ND		1.00	0.162	ug/L			12/13/19 21:46	1
Toluene	ND		1.00	0.312	ug/L			12/13/19 21:46	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/13/19 21:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		12/13/19 21:46	1
4-Bromofluorobenzene (Surr)	108		80 - 120		12/13/19 21:46	1
Dibromofluoromethane (Surr)	99		80 - 120		12/13/19 21:46	1
Toluene-d8 (Surr)	103		80 - 120		12/13/19 21:46	1

**Lab Sample ID: LCS 590-25644/1003**  
**Matrix: Water**  
**Analysis Batch: 25644**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.89		ug/L		109	80 - 126
Ethylbenzene	10.0	10.74		ug/L		107	80 - 120
m,p-Xylene	10.0	11.26		ug/L		113	80 - 120
o-Xylene	10.0	11.08		ug/L		111	80 - 120
Toluene	10.0	10.28		ug/L		103	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	92		80 - 120
Toluene-d8 (Surr)	93		80 - 120

**Lab Sample ID: LCSD 590-25644/6**  
**Matrix: Water**  
**Analysis Batch: 25644**

**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
Benzene	10.0	10.41		ug/L		104	80 - 126	4	25
Ethylbenzene	10.0	10.86		ug/L		109	80 - 120	1	25
m,p-Xylene	10.0	11.11		ug/L		111	80 - 120	1	25
o-Xylene	10.0	11.24		ug/L		112	80 - 120	1	25
Toluene	10.0	10.37		ug/L		104	80 - 123	1	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		80 - 120
4-Bromofluorobenzene (Surr)	90		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	98		80 - 120

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 590-12426-3 MS**  
**Matrix: Water**  
**Analysis Batch: 25644**

**Client Sample ID: MW-101**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		10.0	10.94		ug/L		109	80 - 126
Ethylbenzene	ND		10.0	11.10		ug/L		111	80 - 120
m,p-Xylene	ND		10.0	9.836		ug/L		98	80 - 120
o-Xylene	ND		10.0	9.854		ug/L		99	80 - 120
Toluene	ND		10.0	9.696		ug/L		97	80 - 123

Surrogate	MS %Recovery	MS Qualifier	MS Limits
1,2-Dichloroethane-d4 (Surr)	94		80 - 120
4-Bromofluorobenzene (Surr)	92		80 - 120
Dibromofluoromethane (Surr)	93		80 - 120
Toluene-d8 (Surr)	90		80 - 120

**Lab Sample ID: 590-12426-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 25644**

**Client Sample ID: MW-101**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		10.0	10.99		ug/L		110	80 - 126	0	25
Ethylbenzene	ND		10.0	10.46		ug/L		105	80 - 120	6	25
m,p-Xylene	ND		10.0	9.396		ug/L		94	80 - 120	5	25
o-Xylene	ND		10.0	9.066		ug/L		91	80 - 120	8	25
Toluene	ND		10.0	9.719		ug/L		97	80 - 123	0	25

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	90		80 - 120

**Lab Sample ID: 590-12426-2 DU**  
**Matrix: Water**  
**Analysis Batch: 25644**

**Client Sample ID: TES-MW-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	ND		ND		ug/L		NC	20
Ethylbenzene	ND		ND		ug/L		NC	20
m,p-Xylene	ND		ND		ug/L		NC	20
o-Xylene	ND		ND		ug/L		NC	20
Toluene	ND		ND		ug/L		NC	20
Xylenes, Total	ND		ND		ug/L		NC	20

Surrogate	DU %Recovery	DU Qualifier	DU Limits
1,2-Dichloroethane-d4 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120
Toluene-d8 (Surr)	98		80 - 120

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 590-12426-13 DU**  
**Matrix: Water**  
**Analysis Batch: 25644**

**Client Sample ID: MW-307**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Benzene	4.97		4.978		ug/L		0.2	20
Ethylbenzene	0.291	J	ND		ug/L		NC	20
m,p-Xylene	ND		ND		ug/L		NC	20
o-Xylene	ND		ND		ug/L		NC	20
Toluene	ND		ND		ug/L		NC	20
Xylenes, Total	ND		ND		ug/L		NC	20

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	85		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120
Toluene-d8 (Surr)	95		80 - 120

**Lab Sample ID: MB 590-25659/5**  
**Matrix: Water**  
**Analysis Batch: 25659**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/16/19 10:13	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/16/19 10:13	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/16/19 10:13	1
o-Xylene	ND		1.00	0.162	ug/L			12/16/19 10:13	1
Toluene	ND		1.00	0.312	ug/L			12/16/19 10:13	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/16/19 10:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		12/16/19 10:13	1
4-Bromofluorobenzene (Surr)	101		80 - 120		12/16/19 10:13	1
Dibromofluoromethane (Surr)	102		80 - 120		12/16/19 10:13	1
Toluene-d8 (Surr)	102		80 - 120		12/16/19 10:13	1

**Lab Sample ID: LCS 590-25659/1003**  
**Matrix: Water**  
**Analysis Batch: 25659**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	9.748		ug/L		97	80 - 126
Ethylbenzene	10.0	9.738		ug/L		97	80 - 120
m,p-Xylene	10.0	9.667		ug/L		97	80 - 120
o-Xylene	10.0	9.664		ug/L		97	80 - 120
Toluene	10.0	9.950		ug/L		100	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120
Toluene-d8 (Surr)	100		80 - 120

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 590-25659/6**  
**Matrix: Water**  
**Analysis Batch: 25659**

**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
Benzene	10.0	10.05		ug/L		100	80 - 126	3	25
Ethylbenzene	10.0	9.904		ug/L		99	80 - 120	2	25
m,p-Xylene	10.0	9.829		ug/L		98	80 - 120	2	25
o-Xylene	10.0	9.897		ug/L		99	80 - 120	2	25
Toluene	10.0	10.21		ug/L		102	80 - 123	3	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	97		80 - 120

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

**Lab Sample ID: MB 590-25646/5**  
**Matrix: Water**  
**Analysis Batch: 25646**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/13/19 21:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		68.7 - 141		12/13/19 21:46	1

**Lab Sample ID: LCS 590-25646/1004**  
**Matrix: Water**  
**Analysis Batch: 25646**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	1054		ug/L		105	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		68.7 - 141

**Lab Sample ID: 590-12426-2 DU**  
**Matrix: Water**  
**Analysis Batch: 25646**

**Client Sample ID: TES-MW-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Gasoline	ND		ND		ug/L		NC	35

Surrogate	DU %Recovery	DU Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		68.7 - 141

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

**Lab Sample ID: 590-12426-13 DU**  
**Matrix: Water**  
**Analysis Batch: 25646**

**Client Sample ID: MW-307**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Gasoline	280		310.6		ug/L		11	35
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>					
4-Bromofluorobenzene (Surr)	86		68.7 - 141					

**Lab Sample ID: MB 590-25658/5**  
**Matrix: Water**  
**Analysis Batch: 25658**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/16/19 10:13	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	101		68.7 - 141					12/16/19 10:13	1

**Lab Sample ID: LCS 590-25658/1004**  
**Matrix: Water**  
**Analysis Batch: 25658**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	920.0		ug/L		92	80 - 120
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
4-Bromofluorobenzene (Surr)	97		68.7 - 141				

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

**Lab Sample ID: MB 590-25727/1-A**  
**Matrix: Water**  
**Analysis Batch: 25726**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 25727**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.240	0.110	mg/L		12/18/19 12:42	12/18/19 14:42	1
Residual Range Organics (RRO) (C25-C36)	ND		0.400	0.120	mg/L		12/18/19 12:42	12/18/19 14:42	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
o-Terphenyl	82		50 - 150				12/18/19 12:42	12/18/19 14:42	1
n-Triacontane-d62	90		50 - 150				12/18/19 12:42	12/18/19 14:42	1

**Lab Sample ID: LCS 590-25727/2-A**  
**Matrix: Water**  
**Analysis Batch: 25726**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 25727**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	1.60	1.365		mg/L		85	50 - 150

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# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

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

Lab Sample ID: LCS 590-25727/2-A  
 Matrix: Water  
 Analysis Batch: 25726

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 25727

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Residual Range Organics (RRO) (C25-C36)	1.60	1.582		mg/L		99	50 - 150
<b>LCS LCS</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
<i>o</i> -Terphenyl	95		50 - 150				
<i>n</i> -Triacontane-d62	100		50 - 150				

Lab Sample ID: LCSD 590-25727/3-A  
 Matrix: Water  
 Analysis Batch: 25726

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 25727

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.328		mg/L		83	50 - 150	3	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.501		mg/L		94	50 - 150	5	25
<b>LCSD LCSD</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
<i>o</i> -Terphenyl	91		50 - 150						
<i>n</i> -Triacontane-d62	95		50 - 150						

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 590-25707/1002  
 Matrix: Water  
 Analysis Batch: 25707

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		0.500	0.128	mg/L			12/18/19 09:14	1

Lab Sample ID: LCS 590-25707/1003  
 Matrix: Water  
 Analysis Batch: 25707

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	12.5	12.76		mg/L		102	90 - 110

## Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-319147/22-A  
 Matrix: Water  
 Analysis Batch: 319315

Client Sample ID: Method Blank  
 Prep Type: Total Recoverable  
 Prep Batch: 319147

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00400	0.000995	mg/L		12/18/19 12:53	12/19/19 10:55	5

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 580-319147/23-A  
 Matrix: Water  
 Analysis Batch: 319315

Client Sample ID: Lab Control Sample  
 Prep Type: Total Recoverable  
 Prep Batch: 319147  
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lead	1.00	0.9783		mg/L		98	80 - 120

Lab Sample ID: LCSD 580-319147/24-A  
 Matrix: Water  
 Analysis Batch: 319315

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total Recoverable  
 Prep Batch: 319147  
 %Rec. RPD

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	1.00	0.9749		mg/L		97	80 - 120	0	20

Lab Sample ID: MB 580-319324/19-A  
 Matrix: Water  
 Analysis Batch: 319573

Client Sample ID: Method Blank  
 Prep Type: Total Recoverable  
 Prep Batch: 319324

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		1.00	0.178	mg/L		12/20/19 09:48	12/23/19 15:23	5
Manganese	ND		0.0100	0.00230	mg/L		12/20/19 09:48	12/23/19 15:23	5

Lab Sample ID: LCS 580-319324/20-A  
 Matrix: Water  
 Analysis Batch: 319573

Client Sample ID: Lab Control Sample  
 Prep Type: Total Recoverable  
 Prep Batch: 319324  
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Iron	20.0	19.11		mg/L		96	80 - 120
Manganese	1.00	0.9488		mg/L		95	80 - 120

Lab Sample ID: LCSD 580-319324/21-A  
 Matrix: Water  
 Analysis Batch: 319573

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total Recoverable  
 Prep Batch: 319324  
 %Rec. RPD

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Iron	20.0	18.93		mg/L		95	80 - 120	1	20
Manganese	1.00	0.9424		mg/L		94	80 - 120	1	20

## Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 580-319607/12  
 Matrix: Water  
 Analysis Batch: 319607

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.150	0.0600	mg/L			12/24/19 13:18	1

Lab Sample ID: LCS 580-319607/13  
 Matrix: Water  
 Analysis Batch: 319607

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Nitrate Nitrite as N	1.00	1.028		mg/L		103	90 - 110

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# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

**Lab Sample ID: LCSD 580-319607/14**  
**Matrix: Water**  
**Analysis Batch: 319607**

**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
Nitrate Nitrite as N	1.00	1.033		mg/L		103	90 - 110	0	20

**Lab Sample ID: 590-12426-4 MS**  
**Matrix: Water**  
**Analysis Batch: 319607**

**Client Sample ID: MW-308**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	ND	F1	0.500	0.1690	F1	mg/L		34	90 - 110		

**Lab Sample ID: 590-12426-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 319607**

**Client Sample ID: MW-308**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	ND	F1	0.500	0.1670	F1	mg/L		33	90 - 110	1	20

**Lab Sample ID: 590-12426-4 DU**  
**Matrix: Water**  
**Analysis Batch: 319607**

**Client Sample ID: MW-308**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate Nitrite as N	ND	F1	ND		mg/L		NC	20

# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## GC/MS VOA

### Analysis Batch: 25644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-1	TB-1	Total/NA	Water	8260C	
590-12426-2	TES-MW-1	Total/NA	Water	8260C	
590-12426-3	MW-101	Total/NA	Water	8260C	
590-12426-4	MW-308	Total/NA	Water	8260C	
590-12426-5	TX-06A	Total/NA	Water	8260C	
590-12426-6	MW-05	Total/NA	Water	8260C	
590-12426-7	MW-102	Total/NA	Water	8260C	
590-12426-9	MW-202	Total/NA	Water	8260C	
590-12426-11	MW-204	Total/NA	Water	8260C	
590-12426-12	MW-206A	Total/NA	Water	8260C	
590-12426-13	MW-307	Total/NA	Water	8260C	
590-12426-14	MW-314	Total/NA	Water	8260C	
MB 590-25644/5	Method Blank	Total/NA	Water	8260C	
LCS 590-25644/1003	Lab Control Sample	Total/NA	Water	8260C	
LCSD 590-25644/6	Lab Control Sample Dup	Total/NA	Water	8260C	
590-12426-3 MS	MW-101	Total/NA	Water	8260C	
590-12426-3 MSD	MW-101	Total/NA	Water	8260C	
590-12426-2 DU	TES-MW-1	Total/NA	Water	8260C	
590-12426-13 DU	MW-307	Total/NA	Water	8260C	

### Analysis Batch: 25646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-2	TES-MW-1	Total/NA	Water	NWTPH-Gx	
590-12426-3	MW-101	Total/NA	Water	NWTPH-Gx	
590-12426-4	MW-308	Total/NA	Water	NWTPH-Gx	
590-12426-5	TX-06A	Total/NA	Water	NWTPH-Gx	
590-12426-6	MW-05	Total/NA	Water	NWTPH-Gx	
590-12426-7	MW-102	Total/NA	Water	NWTPH-Gx	
590-12426-8	MW-104	Total/NA	Water	NWTPH-Gx	
590-12426-10	MW-203	Total/NA	Water	NWTPH-Gx	
590-12426-11	MW-204	Total/NA	Water	NWTPH-Gx	
590-12426-12	MW-206A	Total/NA	Water	NWTPH-Gx	
590-12426-13	MW-307	Total/NA	Water	NWTPH-Gx	
590-12426-14	MW-314	Total/NA	Water	NWTPH-Gx	
MB 590-25646/5	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 590-25646/1004	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
590-12426-2 DU	TES-MW-1	Total/NA	Water	NWTPH-Gx	
590-12426-13 DU	MW-307	Total/NA	Water	NWTPH-Gx	

### Analysis Batch: 25658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-9	MW-202	Total/NA	Water	NWTPH-Gx	
MB 590-25658/5	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 590-25658/1004	Lab Control Sample	Total/NA	Water	NWTPH-Gx	

### Analysis Batch: 25659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-9	MW-202	Total/NA	Water	8260C	
MB 590-25659/5	Method Blank	Total/NA	Water	8260C	
LCS 590-25659/1003	Lab Control Sample	Total/NA	Water	8260C	
LCSD 590-25659/6	Lab Control Sample Dup	Total/NA	Water	8260C	

# QC Association Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## GC Semi VOA

### Analysis Batch: 25726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-2	TES-MW-1	Total/NA	Water	NWTPH-Dx	25727
590-12426-3	MW-101	Total/NA	Water	NWTPH-Dx	25727
590-12426-5	TX-06A	Total/NA	Water	NWTPH-Dx	25727
590-12426-6	MW-05	Total/NA	Water	NWTPH-Dx	25727
590-12426-7	MW-102	Total/NA	Water	NWTPH-Dx	25727
590-12426-8	MW-104	Total/NA	Water	NWTPH-Dx	25727
590-12426-9	MW-202	Total/NA	Water	NWTPH-Dx	25727
590-12426-10	MW-203	Total/NA	Water	NWTPH-Dx	25727
590-12426-11	MW-204	Total/NA	Water	NWTPH-Dx	25727
590-12426-12	MW-206A	Total/NA	Water	NWTPH-Dx	25727
590-12426-13	MW-307	Total/NA	Water	NWTPH-Dx	25727
590-12426-14	MW-314	Total/NA	Water	NWTPH-Dx	25727
MB 590-25727/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	25727
LCS 590-25727/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	25727
LCSD 590-25727/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	25727

### Prep Batch: 25727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-2	TES-MW-1	Total/NA	Water	3510C	
590-12426-3	MW-101	Total/NA	Water	3510C	
590-12426-5	TX-06A	Total/NA	Water	3510C	
590-12426-6	MW-05	Total/NA	Water	3510C	
590-12426-7	MW-102	Total/NA	Water	3510C	
590-12426-8	MW-104	Total/NA	Water	3510C	
590-12426-9	MW-202	Total/NA	Water	3510C	
590-12426-10	MW-203	Total/NA	Water	3510C	
590-12426-11	MW-204	Total/NA	Water	3510C	
590-12426-12	MW-206A	Total/NA	Water	3510C	
590-12426-13	MW-307	Total/NA	Water	3510C	
590-12426-14	MW-314	Total/NA	Water	3510C	
MB 590-25727/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-25727/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-25727/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

## HPLC/IC

### Analysis Batch: 25707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-4	MW-308	Total/NA	Water	300.0	
590-12426-9	MW-202	Total/NA	Water	300.0	
590-12426-10	MW-203	Total/NA	Water	300.0	
590-12426-13	MW-307	Total/NA	Water	300.0	
MB 590-25707/1002	Method Blank	Total/NA	Water	300.0	
LCS 590-25707/1003	Lab Control Sample	Total/NA	Water	300.0	

## Metals

### Prep Batch: 319147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-8	MW-104	Total Recoverable	Water	3005A	
MB 580-319147/22-A	Method Blank	Total Recoverable	Water	3005A	
LCS 580-319147/23-A	Lab Control Sample	Total Recoverable	Water	3005A	

Eurofins TestAmerica, Spokane

# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Metals (Continued)

### Prep Batch: 319147 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 580-319147/24-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

### Analysis Batch: 319315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-8	MW-104	Total Recoverable	Water	6020B	319147
MB 580-319147/22-A	Method Blank	Total Recoverable	Water	6020B	319147
LCS 580-319147/23-A	Lab Control Sample	Total Recoverable	Water	6020B	319147
LCSD 580-319147/24-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	319147

### Prep Batch: 319324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-4	MW-308	Dissolved	Water	3005A	
590-12426-9	MW-202	Dissolved	Water	3005A	
590-12426-10	MW-203	Dissolved	Water	3005A	
590-12426-13	MW-307	Dissolved	Water	3005A	
MB 580-319324/19-A	Method Blank	Total Recoverable	Water	3005A	
LCS 580-319324/20-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 580-319324/21-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

### Analysis Batch: 319573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-4	MW-308	Dissolved	Water	6020B	319324
590-12426-9	MW-202	Dissolved	Water	6020B	319324
590-12426-10	MW-203	Dissolved	Water	6020B	319324
590-12426-13	MW-307	Dissolved	Water	6020B	319324
MB 580-319324/19-A	Method Blank	Total Recoverable	Water	6020B	319324
LCS 580-319324/20-A	Lab Control Sample	Total Recoverable	Water	6020B	319324
LCSD 580-319324/21-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	319324

## General Chemistry

### Analysis Batch: 319607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12426-4	MW-308	Total/NA	Water	353.2	
590-12426-9	MW-202	Total/NA	Water	353.2	
590-12426-10	MW-203	Total/NA	Water	353.2	
590-12426-13	MW-307	Total/NA	Water	353.2	
MB 580-319607/12	Method Blank	Total/NA	Water	353.2	
LCS 580-319607/13	Lab Control Sample	Total/NA	Water	353.2	
LCSD 580-319607/14	Lab Control Sample Dup	Total/NA	Water	353.2	
590-12426-4 MS	MW-308	Total/NA	Water	353.2	
590-12426-4 MSD	MW-308	Total/NA	Water	353.2	
590-12426-4 DU	MW-308	Total/NA	Water	353.2	

# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Client Sample ID: TB-1

Lab Sample ID: 590-12426-1

Date Collected: 12/09/19 06:00

Matrix: Water

Date Received: 12/11/19 13:18

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/13/19 22:28	JSP	TAL SPK

## Client Sample ID: TES-MW-1

Lab Sample ID: 590-12426-2

Date Collected: 12/09/19 13:54

Matrix: Water

Date Received: 12/11/19 13:18

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/13/19 22:49	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/13/19 22:49	JSP	TAL SPK
Total/NA	Prep	3510C			247.7 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 16:29	NMI	TAL SPK

## Client Sample ID: MW-101

Lab Sample ID: 590-12426-3

Date Collected: 12/09/19 13:22

Matrix: Water

Date Received: 12/11/19 13:18

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/13/19 23:31	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/13/19 23:31	JSP	TAL SPK
Total/NA	Prep	3510C			240.4 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 16:51	NMI	TAL SPK

## Client Sample ID: MW-308

Lab Sample ID: 590-12426-4

Date Collected: 12/09/19 14:20

Matrix: Water

Date Received: 12/11/19 13:18

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/14/19 00:35	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/14/19 00:35	JSP	TAL SPK
Total/NA	Analysis	300.0		4			25707	12/18/19 10:59	AMB	TAL SPK
Dissolved	Prep	3005A			50 mL	50 mL	319324	12/20/19 09:48	A1B	TAL SEA
Dissolved	Analysis	6020B		5	50 mL	50 mL	319573	12/23/19 16:09	FCW	TAL SEA
Total/NA	Analysis	353.2		1	50 mL	50 mL	319607	12/24/19 13:29	JKM	TAL SEA

## Client Sample ID: TX-06A

Lab Sample ID: 590-12426-5

Date Collected: 12/10/19 12:48

Matrix: Water

Date Received: 12/11/19 13:18

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/14/19 00:56	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/14/19 00:56	JSP	TAL SPK
Total/NA	Prep	3510C			252.6 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 17:12	NMI	TAL SPK

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# Lab Chronicle

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Client Sample ID: MW-05

Date Collected: 12/10/19 14:19

Date Received: 12/11/19 13:18

## Lab Sample ID: 590-12426-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/14/19 01:38	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/14/19 01:38	JSP	TAL SPK
Total/NA	Prep	3510C			247.4 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 17:32	NMI	TAL SPK

## Client Sample ID: MW-102

Date Collected: 12/10/19 13:18

Date Received: 12/11/19 13:18

## Lab Sample ID: 590-12426-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/14/19 01:59	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/14/19 01:59	JSP	TAL SPK
Total/NA	Prep	3510C			243 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 17:53	NMI	TAL SPK

## Client Sample ID: MW-104

Date Collected: 12/10/19 14:45

Date Received: 12/11/19 13:18

## Lab Sample ID: 590-12426-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/14/19 02:20	JSP	TAL SPK
Total/NA	Prep	3510C			246.4 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 18:14	NMI	TAL SPK
Total Recoverable	Prep	3005A			50 mL	50 mL	319147	12/18/19 12:53	A1B	TAL SEA
Total Recoverable	Analysis	6020B		5	50 mL	50 mL	319315	12/19/19 12:17	FCW	TAL SEA

## Client Sample ID: MW-202

Date Collected: 12/10/19 09:50

Date Received: 12/11/19 13:18

## Lab Sample ID: 590-12426-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	43 mL	43 mL	25659	12/16/19 12:51	JSP	TAL SPK
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/14/19 02:41	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	43 mL	43 mL	25658	12/16/19 12:51	JSP	TAL SPK
Total/NA	Prep	3510C			269.7 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 18:35	NMI	TAL SPK
Total/NA	Analysis	300.0		10			25707	12/18/19 11:11	AMB	TAL SPK
Dissolved	Prep	3005A			50 mL	50 mL	319324	12/20/19 09:48	A1B	TAL SEA
Dissolved	Analysis	6020B		5	50 mL	50 mL	319573	12/23/19 16:11	FCW	TAL SEA
Total/NA	Analysis	353.2		1	50 mL	50 mL	319607	12/24/19 13:34	JKM	TAL SEA

Eurofins TestAmerica, Spokane

# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Client Sample ID: MW-203

## Lab Sample ID: 590-12426-10

Date Collected: 12/10/19 11:06

Matrix: Water

Date Received: 12/11/19 13:18

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/14/19 03:02	JSP	TAL SPK
Total/NA	Prep	3510C			254.8 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 18:56	NMI	TAL SPK
Total/NA	Analysis	300.0		4			25707	12/18/19 11:22	AMB	TAL SPK
Dissolved	Prep	3005A			50 mL	50 mL	319324	12/20/19 09:48	A1B	TAL SEA
Dissolved	Analysis	6020B		5	50 mL	50 mL	319573	12/23/19 16:14	FCW	TAL SEA
Total/NA	Analysis	353.2		1	50 mL	50 mL	319607	12/24/19 13:35	JKM	TAL SEA

## Client Sample ID: MW-204

## Lab Sample ID: 590-12426-11

Date Collected: 12/10/19 10:32

Matrix: Water

Date Received: 12/11/19 13:18

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/14/19 03:23	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/14/19 03:23	JSP	TAL SPK
Total/NA	Prep	3510C			242.7 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 19:17	NMI	TAL SPK

## Client Sample ID: MW-206A

## Lab Sample ID: 590-12426-12

Date Collected: 12/10/19 11:39

Matrix: Water

Date Received: 12/11/19 13:18

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/14/19 03:44	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/14/19 03:44	JSP	TAL SPK
Total/NA	Prep	3510C			259.1 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 19:38	NMI	TAL SPK

## Client Sample ID: MW-307

## Lab Sample ID: 590-12426-13

Date Collected: 12/10/19 08:27

Matrix: Water

Date Received: 12/11/19 13:18

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/14/19 04:05	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/14/19 04:05	JSP	TAL SPK
Total/NA	Prep	3510C			253.4 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 20:19	NMI	TAL SPK
Total/NA	Analysis	300.0		10			25707	12/18/19 11:57	AMB	TAL SPK
Dissolved	Prep	3005A			50 mL	50 mL	319324	12/20/19 09:48	A1B	TAL SEA
Dissolved	Analysis	6020B		5	50 mL	50 mL	319573	12/23/19 16:17	FCW	TAL SEA
Total/NA	Analysis	353.2		1	50 mL	50 mL	319607	12/24/19 13:36	JKM	TAL SEA

# Lab Chronicle

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

**Client Sample ID: MW-314**

**Lab Sample ID: 590-12426-14**

**Date Collected: 12/10/19 13:46**

**Matrix: Water**

**Date Received: 12/11/19 13:18**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25644	12/14/19 04:47	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25646	12/14/19 04:47	JSP	TAL SPK
Total/NA	Prep	3510C			240.6 mL	2 mL	25727	12/18/19 12:42	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25726	12/18/19 20:40	NMI	TAL SPK

#### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

# Definitions/Glossary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## 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 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.

### HPLC/IC

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.

### General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

# Accreditation/Certification Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12426-1

## Laboratory: Eurofins TestAmerica, Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C569	01-06-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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## Laboratory: Eurofins TestAmerica, Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C553	02-17-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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LAB (LOCATION)

ACUREST  
 CALSCIENCE  
 ESTAMERICA  
 Other

BSW PDG  
 CHEMICALS  
 TRANSPORTATION  
 PIPELINE  
 CONSULTANT  
 OTHER

RETAIL  
 LUBES

Print Bill To Contact Name:  
 PO #  
 GSAP Project ID  
 DATE: 12-10-19  
 PAGE: 1 of 2



Shell Oil Products US Chain Of Custody Record



Blaine Tech Services, Inc

1680 Rogers Ave, San Jose, CA, 95112

PROJECT CONTACT (Hardcopy # PDF Report to):  
 Nicky Moody  
 nicky.moody@aecom.com

TELEPHONE: (206) 438-2371  
 FAX:

TURNOUROUND TIME (CALENDAR DAYS):  
 STANDARD (14 DAY)  5 DAYS  7 DAYS  9 HOURS

LA - RWCCS REPORT FORMAT  JUST AGENCY:

DELIVERABLES:  LEVEL 1  LEVEL 2  LEVEL 3  LEVEL 4  OTHER (SPECIFY)

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:  
 BHEL CONTRACT RATE APPLIES  
 STATE REIMBURSEMENT RATE APPLIES  
 EOD NOT NEEDED  
 RECEIPT VERIFICATION REQUESTED  
 PROVIDE LEAD DISK

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	TIME	MATRIX	PRESERVATIVE					NO OF CONT.	REQUESTED ANALYSIS	NON-UNIT COST	FIELD NOTES:
					HCL	HNO3	H2SO4	NONE	OTHER				
	TB-1	12-9	0600Z	W	X					2	X		
	TES-mw-1	12-9	1359	W	X					6	X		
	MW-101	12-9	1302	W	X					6	X		
	MW-308	12-9	1420	W	X		X			7	X		
	TX-06A	12-10	1248	W	X					6	X		
	MW-05	12-10	1419	W	X					6	X		
	MW-102	12-10	1318	W	X					6	X		
	MW-104	12-10	1445	W	X	X				7	X		
	MW-202	12-10	0950	W	X		X			9	X		
	MW-203	12-10	1106	W	X		X			9	X		

Requisitioned by (Signature): Patrick Hs  
 Requisitioned by (Signature):  
 Requisitioned by (Signature):

Received by (Signature):  
 Received by (Signature):  
 Received by (Signature):

Shipped by FedEx  
 MARGARETO RC

Date: 12/10/19  
 Date: 12/11/19  
 Date:

Time: 1800  
 Time: 13:18  
 Time:



4.8-550

1.3-1.54



LAB (LOCATION)

ACQUITT ( )  
 CALIFORNIA ( )  
 ESTERAMERICA ( )  
 Other ( )

BOW FOG  
 CHEMICALS  
 TRANSPORTATION  
 PIPELINE  
 CONSULTANT  
 OTHER



Shell Oil Products US Chain Of Custody Record



Blaine Tech Services, Inc  
1680 Rogers Ave, San Jose, CA, 95112

Print Bill To Contact Name: Planet Site or Project ID  
 PO #  
 GSAP Project ID  
 DATE: 12-10-19  
 PAGE: 2 of 2

ADDRESS: 1680 Rogers Ave, San Jose, CA, 95112  
 LOG CODE: BTSS

SITE ADDRESS, Street and City: 2555 13th Avenue  
 STATE: WA  
 PHONE NO: (509) 969-6310  
 AECOM Project / Task Number:

PROJECT CONTACT (Thursday or PDF Report to): Nicky Moody  
 TEL: (206) 438-2371 FAX:

NICKY MOODY, AECOM, portland, OR  
 PHONE NO: (503) 969-6310  
 E-MAIL: nicky.moody@aecom.com  
 AECOM Project ID:

TURNAROUND TIME (CALENDAR DAYS):  
 7 DAYS  
 14 DAYS  
 21 DAYS  
 28 DAYS

UNIT COST  
 REQUESTED ANALYSIS  
 NON-UNIT COST

DELIVERABLES:  LEVEL 1  LEVEL 2  LEVEL 3  LEVEL 4  OTHER (SPECIFY)

FIELD NOTES:  
 TEMPERATURE ON RECEIPT C°

SPECIAL INSTRUCTIONS OR NOTES:

CONTAINER PID READINGS  
 OR LABORATORY NOTES

SHELL CONTRACT RATE APPLIES  
 STATE REIMBURSEMENT RATE APPLIES  
 EDD NOT NEEDED  
 RECEIPT VERIFICATION REQUESTED  
 PROVIDE LEDD DISK

8260C BTEX	NWTPH-Dx	8270D SIM PAHs	300.0 Sulfate	NWTPH-Gx	6020A Total Lead	353.2 Nitrate & Nitrite	6020A Diss. Iron & Manganese (lab filter)	300.0 Chloride	2320B Alkalinity
------------	----------	----------------	---------------	----------	------------------	-------------------------	---	----------------	------------------

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	PRESERVATIVE				NO. OF CONT.
		DATE	TIME		HCL	HNO3	H2SO4	NONE	
	MW-201	12-10	1032	W	X				X
	MW-206A	12-10	1139	W	X				X
	MW-307	12-10	0827	W	X	X			X
	MW-314	12-10	1346	W	X				X

REMOVED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME
<i>Patsisk Ho</i>	<i>Shipped by Fedex</i>	12/10/19	1800





## Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-12426-1

**Login Number: 12426**

**List Number: 1**

**Creator: O'Toole, Maria C**

**List Source: Eurofins TestAmerica, Spokane**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	Pace Analytical Custody Seal
Sample custody seals, if present, are intact.	N/A	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

## Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-12426-1

**Login Number: 12426**  
**List Number: 2**  
**Creator: Zboralski, Edward R**

**List Source: Eurofins TestAmerica, Seattle**  
**List Creation: 12/16/19 08:17 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-12426-1

**Login Number: 12426**  
**List Number: 3**  
**Creator: Zboralski, Edward R**

**List Source: Eurofins TestAmerica, Seattle**  
**List Creation: 12/16/19 08:20 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	True	
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

Eurofins TestAmerica, Spokane  
11922 East 1st Ave  
Spokane, WA 99206  
Tel: (509)924-9200

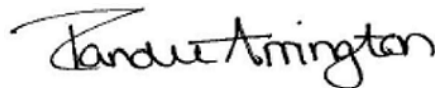
Laboratory Job ID: 590-12447-1

Client Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

**For:**

AECOM  
111 SW Columbia Street, Suite 1500  
Portland, Oregon 97201

Attn: Nicky Moody



*Authorized for release by:  
12/30/2019 9:50:12 AM*

Randee Arrington, Project Manager II  
(509)924-9200  
[randee.arrington@testamericainc.com](mailto:randee.arrington@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.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.*

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# Case Narrative

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Job ID: 590-12447-1

Laboratory: Eurofins TestAmerica, Spokane

### Narrative

#### Receipt

The samples were received on 12/13/2019 1:54 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.7° C, 2.7° C and 4.1° C.

#### Receipt Exceptions

The COC requested method NWTPH-Dx for the following samples but the correct containers (250ml HCL preserved amber glass) were not recieved: MW-311 (590-12447-15) and MW-312 (590-12447-16). The client was contacted and the anlysis was canceled.

#### GC/MS VOA

Method NWTPH-Gx: The Gasoline Range Organics (GRO) concentration reported for the following sample is due to the presence of discrete peaks: MW-112A (590-12447-14).

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

#### GC/MS Semi VOA

Method 8270D SIM: The method blank for preparation batch 590-25695 and analytical batch 590-25688 contained Benzo[a]pyrene 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.

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

#### GC Semi VOA

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel as well as possible biogenic interference in the following samples: MW-105 (590-12447-3), MW-111 (590-12447-4), MW-213 (590-12447-5), MW-214 (590-12447-6), MW-304 (590-12447-10) and MW-310 (590-12447-12).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to gasoline overlap as well as possible biogenic interference in the following sample: SH-04 (590-12447-2).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to a light weight, weathered diesel in the following samples: TX-03A (590-12447-1), MW-302 (590-12447-8), MW-303 (590-12447-9) and MW-309 (590-12447-11).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to weathered diesel in the following samples: MW-112A (590-12447-14) and MW-315 (590-12447-18).

Method NWTPH-Dx: Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel in the following sample: MW-313 (590-12447-17).

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

#### Metals

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

#### General Chemistry

Method 353.2: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 319607 were outside control limits. 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.

#### Organic Prep

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



# Case Narrative

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

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## Job ID: 590-12447-1 (Continued)

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### Laboratory: Eurofins TestAmerica, Spokane (Continued)

#### VOA Prep

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

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# Sample Summary

Client: AECOM

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
590-12447-1	TX-03A	Water	12/11/19 09:18	12/13/19 13:54	
590-12447-2	SH-04	Water	12/11/19 13:16	12/13/19 13:54	
590-12447-3	MW-105	Water	12/11/19 13:50	12/13/19 13:54	
590-12447-4	MW-111	Water	12/11/19 14:32	12/13/19 13:54	
590-12447-5	MW-213	Water	12/11/19 08:16	12/13/19 13:54	
590-12447-6	MW-214	Water	12/11/19 08:44	12/13/19 13:54	
590-12447-7	MW-301	Water	12/11/19 11:15	12/13/19 13:54	
590-12447-8	MW-302	Water	12/11/19 10:16	12/13/19 13:54	
590-12447-9	MW-303	Water	12/11/19 12:07	12/13/19 13:54	
590-12447-10	MW-304	Water	12/11/19 09:48	12/13/19 13:54	
590-12447-11	MW-309	Water	12/11/19 11:40	12/13/19 13:54	
590-12447-12	MW-310	Water	12/11/19 10:45	12/13/19 13:54	
590-12447-13	TX-04	Water	12/12/19 08:28	12/13/19 13:54	
590-12447-14	MW-112A	Water	12/12/19 08:00	12/13/19 13:54	
590-12447-15	MW-311	Water	12/12/19 10:25	12/13/19 13:54	
590-12447-16	MW-312	Water	12/12/19 09:54	12/13/19 13:54	
590-12447-17	MW-313	Water	12/12/19 08:56	12/13/19 13:54	
590-12447-18	MW-315	Water	12/12/19 09:25	12/13/19 13:54	
590-12447-19	TB-2	Water	12/11/19 08:00	12/13/19 13:54	

# Method Summary

Client: AECOM

Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
300.0	Anions, Ion Chromatography	MCAWW	TAL SPK
6020B	Metals (ICP/MS)	SW846	TAL SEA
300.0	Anions, Ion Chromatography	MCAWW	TAL SEA
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SEA
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SEA
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL SPK
5030C	Purge and Trap	SW846	TAL SPK

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

# Detection Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: TX-03A

## Lab Sample ID: 590-12447-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.73		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	1.70		1.00	0.198	ug/L	1		8260C	Total/NA
Gasoline	521		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	1.72		0.233	0.107	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.154	J	0.389	0.117	mg/L	1		NWTPH-Dx	Total/NA
Iron	104		1.00	0.178	mg/L	5		6020B	Dissolved
Manganese	2.99		0.0100	0.00230	mg/L	5		6020B	Dissolved
Sulfate	704		120	26.0	mg/L	100		300.0	Total/NA

## Client Sample ID: SH-04

## Lab Sample ID: 590-12447-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	12.0		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	1.39		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	2.89		2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.525	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	1.86		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	3.42		3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	805		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	1.26		0.241	0.111	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-105

## Lab Sample ID: 590-12447-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.388		0.239	0.110	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.382	J	0.398	0.119	mg/L	1		NWTPH-Dx	Total/NA
Lead	0.00754		0.00400	0.000995	mg/L	5		6020B	Total Recoverable

## Client Sample ID: MW-111

## Lab Sample ID: 590-12447-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.270	J	0.400	0.0930	ug/L	1		8260C	Total/NA
m,p-Xylene	0.422	J	2.00	0.280	ug/L	1		8260C	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.225	J	0.250	0.114	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-213

## Lab Sample ID: 590-12447-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[a]pyrene	0.0200	J B	0.0896	0.0119	ug/L	1		8270D SIM	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.147	J	0.233	0.107	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-214

## Lab Sample ID: 590-12447-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	0.0246	J	0.0921	0.0174	ug/L	1		8270D SIM	Total/NA
Benzo[a]anthracene	0.0141	J	0.0921	0.0123	ug/L	1		8270D SIM	Total/NA
Benzo[a]pyrene	0.0263	J B	0.0921	0.0123	ug/L	1		8270D SIM	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

# Detection Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: MW-214 (Continued)

Lab Sample ID: 590-12447-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.239	J	0.242	0.111	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-301

Lab Sample ID: 590-12447-7

No Detections.

## Client Sample ID: MW-302

Lab Sample ID: 590-12447-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	13.2		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	9.76		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	2.22		2.00	0.280	ug/L	1		8260C	Total/NA
Toluene	0.741	J	1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	2.22	J	3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	297		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	3.69		0.222	0.102	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.179	J	0.371	0.111	mg/L	1		NWTPH-Dx	Total/NA
Sulfate	629		5.00	1.28	mg/L	10		300.0	Total/NA
Iron	67.4		1.00	0.178	mg/L	5		6020B	Dissolved
Manganese	3.52		0.0100	0.00230	mg/L	5		6020B	Dissolved

## Client Sample ID: MW-303

Lab Sample ID: 590-12447-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.14		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	40.4		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	1.34	J	2.00	0.280	ug/L	1		8260C	Total/NA
Toluene	0.373	J	1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	1.34	J	3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	371		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	2.73		0.241	0.111	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.281	J	0.402	0.121	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-304

Lab Sample ID: 590-12447-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.188	J	0.239	0.110	mg/L	1		NWTPH-Dx	Total/NA
Sulfate	908		5.00	1.28	mg/L	10		300.0	Total/NA
Iron	11.3		1.00	0.178	mg/L	5		6020B	Dissolved
Manganese	4.79		0.0100	0.00230	mg/L	5		6020B	Dissolved

## Client Sample ID: MW-309

Lab Sample ID: 590-12447-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	80.4	J	150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.614		0.241	0.110	mg/L	1		NWTPH-Dx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

# Detection Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: MW-310

## Lab Sample ID: 590-12447-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline	73.9	J	150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	0.453		0.239	0.110	mg/L	1		NWTPH-Dx	Total/NA
Sulfate	999		5.00	1.28	mg/L	10		300.0	Total/NA
Iron	53.1		1.00	0.178	mg/L	5		6020B	Dissolved
Manganese	7.24		0.0100	0.00230	mg/L	5		6020B	Dissolved

## Client Sample ID: TX-04

## Lab Sample ID: 590-12447-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.122	J	0.238	0.109	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-112A

## Lab Sample ID: 590-12447-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	14.9		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	1.54		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	1.42	J	2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	2.43		1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	2.96		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	3.85		3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	1910		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	12.2		0.261	0.120	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.419	J	0.435	0.130	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-311

## Lab Sample ID: 590-12447-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.290	J	1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	0.369	J	2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.471	J	1.00	0.162	ug/L	1		8260C	Total/NA
Xylenes, Total	0.839	J	3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	751		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Iron	41.5		1.00	0.178	mg/L	5		6020B	Dissolved
Manganese	1.81		0.0100	0.00230	mg/L	5		6020B	Dissolved
Sulfate	8.28		1.20	0.260	mg/L	1		300.0	Total/NA

## Client Sample ID: MW-312

## Lab Sample ID: 590-12447-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	94.0		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	3.41		1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	2.26		2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.488	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	2.51		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	2.75	J	3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	1700		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Iron	22.0		1.00	0.178	mg/L	5		6020B	Dissolved
Manganese	0.957		0.0100	0.00230	mg/L	5		6020B	Dissolved
Sulfate	0.630		1.20	0.260	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane

# Detection Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: MW-313

## Lab Sample ID: 590-12447-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics (DRO) (C10-C25)	0.473		0.248	0.113	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.153	J	0.413	0.124	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: MW-315

## Lab Sample ID: 590-12447-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.34		0.400	0.0930	ug/L	1		8260C	Total/NA
Ethylbenzene	0.667	J	1.00	0.198	ug/L	1		8260C	Total/NA
m,p-Xylene	4.56		2.00	0.280	ug/L	1		8260C	Total/NA
o-Xylene	0.436	J	1.00	0.162	ug/L	1		8260C	Total/NA
Toluene	3.89		1.00	0.312	ug/L	1		8260C	Total/NA
Xylenes, Total	5.00		3.00	0.442	ug/L	1		8260C	Total/NA
Gasoline	1680		150	70.4	ug/L	1		NWTPH-Gx	Total/NA
Diesel Range Organics (DRO) (C10-C25)	3.96		0.233	0.107	mg/L	1		NWTPH-Dx	Total/NA
Residual Range Organics (RRO) (C25-C36)	0.266	J	0.389	0.117	mg/L	1		NWTPH-Dx	Total/NA

## Client Sample ID: TB-2

## Lab Sample ID: 590-12447-19

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Spokane



# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

**Client Sample ID: TX-03A**

**Lab Sample ID: 590-12447-1**

Date Collected: 12/11/19 09:18

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.73		0.400	0.0930	ug/L			12/16/19 19:02	1
Ethylbenzene	1.70		1.00	0.198	ug/L			12/16/19 19:02	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/16/19 19:02	1
o-Xylene	ND		1.00	0.162	ug/L			12/16/19 19:02	1
Toluene	ND		1.00	0.312	ug/L			12/16/19 19:02	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/16/19 19:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		80 - 120		12/16/19 19:02	1
4-Bromofluorobenzene (Surr)	96		80 - 120		12/16/19 19:02	1
Dibromofluoromethane (Surr)	97		80 - 120		12/16/19 19:02	1
Toluene-d8 (Surr)	97		80 - 120		12/16/19 19:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	521		150	70.4	ug/L			12/16/19 19:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		68.7 - 141		12/16/19 19:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	1.72		0.233	0.107	mg/L		12/23/19 14:13	12/24/19 04:50	1
Residual Range Organics (RRO) (C25-C36)	0.154	J	0.389	0.117	mg/L		12/23/19 14:13	12/24/19 04:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150	12/23/19 14:13	12/24/19 04:50	1
n-Triacontane-d62	91		50 - 150	12/23/19 14:13	12/24/19 04:50	1

## Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	104		1.00	0.178	mg/L		12/20/19 09:48	12/23/19 15:25	5
Manganese	2.99		0.0100	0.00230	mg/L		12/20/19 09:48	12/23/19 15:25	5

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	704		120	26.0	mg/L			12/17/19 10:57	100
Nitrate Nitrite as N	ND	F1	0.150	0.0600	mg/L			12/24/19 13:40	1

**Client Sample ID: SH-04**

**Lab Sample ID: 590-12447-2**

Date Collected: 12/11/19 13:16

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	12.0		0.400	0.0930	ug/L			12/16/19 19:44	1
Ethylbenzene	1.39		1.00	0.198	ug/L			12/16/19 19:44	1
m,p-Xylene	2.89		2.00	0.280	ug/L			12/16/19 19:44	1
o-Xylene	0.525	J	1.00	0.162	ug/L			12/16/19 19:44	1
Toluene	1.86		1.00	0.312	ug/L			12/16/19 19:44	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

**Client Sample ID: SH-04**  
**Date Collected: 12/11/19 13:16**  
**Date Received: 12/13/19 13:54**

**Lab Sample ID: 590-12447-2**  
**Matrix: Water**

### Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Xylenes, Total</b>	<b>3.42</b>		3.00	0.442	ug/L			12/16/19 19:44	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	98		80 - 120					12/16/19 19:44	1
4-Bromofluorobenzene (Surr)	92		80 - 120					12/16/19 19:44	1
Dibromofluoromethane (Surr)	90		80 - 120					12/16/19 19:44	1
Toluene-d8 (Surr)	89		80 - 120					12/16/19 19:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>805</b>		150	70.4	ug/L			12/16/19 19:44	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	93		68.7 - 141					12/16/19 19:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>1.26</b>		0.241	0.111	mg/L		12/23/19 14:13	12/24/19 05:11	1
Residual Range Organics (RRO) (C25-C36)	ND		0.402	0.121	mg/L		12/23/19 14:13	12/24/19 05:11	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
o-Terphenyl	81		50 - 150				12/23/19 14:13	12/24/19 05:11	1
n-Triacontane-d62	88		50 - 150				12/23/19 14:13	12/24/19 05:11	1

**Client Sample ID: MW-105**  
**Date Collected: 12/11/19 13:50**  
**Date Received: 12/13/19 13:54**

**Lab Sample ID: 590-12447-3**  
**Matrix: Water**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/16/19 20:05	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/16/19 20:05	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/16/19 20:05	1
o-Xylene	ND		1.00	0.162	ug/L			12/16/19 20:05	1
Toluene	ND		1.00	0.312	ug/L			12/16/19 20:05	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/16/19 20:05	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	105		80 - 120					12/16/19 20:05	1
4-Bromofluorobenzene (Surr)	96		80 - 120					12/16/19 20:05	1
Dibromofluoromethane (Surr)	101		80 - 120					12/16/19 20:05	1
Toluene-d8 (Surr)	97		80 - 120					12/16/19 20:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>ND</b>		150	70.4	ug/L			12/16/19 20:05	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	97		68.7 - 141					12/16/19 20:05	1

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# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: MW-105

Lab Sample ID: 590-12447-3

Date Collected: 12/11/19 13:50

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.388		0.239	0.110	mg/L		12/23/19 14:13	12/24/19 05:32	1
Residual Range Organics (RRO) (C25-C36)	0.382	J	0.398	0.119	mg/L		12/23/19 14:13	12/24/19 05:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	80		50 - 150				12/23/19 14:13	12/24/19 05:32	1
<i>n</i> -Triacontane-d62	87		50 - 150				12/23/19 14:13	12/24/19 05:32	1

### Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.00754		0.00400	0.000995	mg/L		12/20/19 08:28	12/23/19 18:15	5

## Client Sample ID: MW-111

Lab Sample ID: 590-12447-4

Date Collected: 12/11/19 14:32

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.270	J	0.400	0.0930	ug/L			12/16/19 22:55	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/16/19 22:55	1
<i>m,p</i> -Xylene	0.422	J	2.00	0.280	ug/L			12/16/19 22:55	1
<i>o</i> -Xylene	ND		1.00	0.162	ug/L			12/16/19 22:55	1
Toluene	ND		1.00	0.312	ug/L			12/16/19 22:55	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/16/19 22:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120					12/16/19 22:55	1
4-Bromofluorobenzene (Surr)	101		80 - 120					12/16/19 22:55	1
Dibromofluoromethane (Surr)	97		80 - 120					12/16/19 22:55	1
Toluene-d8 (Surr)	99		80 - 120					12/16/19 22:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/16/19 22:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		68.7 - 141					12/16/19 22:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.225	J	0.250	0.114	mg/L		12/23/19 14:13	12/24/19 05:53	1
Residual Range Organics (RRO) (C25-C36)	ND		0.416	0.125	mg/L		12/23/19 14:13	12/24/19 05:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	84		50 - 150				12/23/19 14:13	12/24/19 05:53	1
<i>n</i> -Triacontane-d62	92		50 - 150				12/23/19 14:13	12/24/19 05:53	1

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# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

**Client Sample ID: MW-213**

**Lab Sample ID: 590-12447-5**

**Date Collected: 12/11/19 08:16**

**Matrix: Water**

**Date Received: 12/13/19 13:54**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/16/19 23:37	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/16/19 23:37	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/16/19 23:37	1
o-Xylene	ND		1.00	0.162	ug/L			12/16/19 23:37	1
Toluene	ND		1.00	0.312	ug/L			12/16/19 23:37	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/16/19 23:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		12/16/19 23:37	1
4-Bromofluorobenzene (Surr)	98		80 - 120		12/16/19 23:37	1
Dibromofluoromethane (Surr)	99		80 - 120		12/16/19 23:37	1
Toluene-d8 (Surr)	104		80 - 120		12/16/19 23:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/16/19 23:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		68.7 - 141		12/16/19 23:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0896	0.0527	ug/L		12/17/19 12:31	12/17/19 17:04	1
2-Methylnaphthalene	ND		0.0896	0.0438	ug/L		12/17/19 12:31	12/17/19 17:04	1
1-Methylnaphthalene	ND		0.0896	0.0229	ug/L		12/17/19 12:31	12/17/19 17:04	1
Acenaphthylene	ND		0.0896	0.0159	ug/L		12/17/19 12:31	12/17/19 17:04	1
Acenaphthene	ND		0.0896	0.0219	ug/L		12/17/19 12:31	12/17/19 17:04	1
Fluorene	ND		0.0896	0.0159	ug/L		12/17/19 12:31	12/17/19 17:04	1
Phenanthrene	ND		0.0896	0.0557	ug/L		12/17/19 12:31	12/17/19 17:04	1
Anthracene	ND		0.0896	0.0249	ug/L		12/17/19 12:31	12/17/19 17:04	1
Fluoranthene	ND		0.0896	0.0169	ug/L		12/17/19 12:31	12/17/19 17:04	1
Pyrene	ND		0.0896	0.0259	ug/L		12/17/19 12:31	12/17/19 17:04	1
Benzo[a]anthracene	ND		0.0896	0.0119	ug/L		12/17/19 12:31	12/17/19 17:04	1
Chrysene	ND		0.0896	0.00995	ug/L		12/17/19 12:31	12/17/19 17:04	1
Benzo[b]fluoranthene	ND		0.0896	0.0109	ug/L		12/17/19 12:31	12/17/19 17:04	1
Benzo[k]fluoranthene	ND		0.0896	0.0149	ug/L		12/17/19 12:31	12/17/19 17:04	1
<b>Benzo[a]pyrene</b>	<b>0.0200</b>	<b>J B</b>	0.0896	0.0119	ug/L		12/17/19 12:31	12/17/19 17:04	1
Indeno[1,2,3-cd]pyrene	ND		0.0896	0.0219	ug/L		12/17/19 12:31	12/17/19 17:04	1
Dibenz(a,h)anthracene	ND		0.0896	0.0129	ug/L		12/17/19 12:31	12/17/19 17:04	1
Benzo[g,h,i]perylene	ND		0.0896	0.0209	ug/L		12/17/19 12:31	12/17/19 17:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	74		36 - 126	12/17/19 12:31	12/17/19 17:04	1
2-Fluorobiphenyl (Surr)	70		44 - 120	12/17/19 12:31	12/17/19 17:04	1
p-Terphenyl-d14	96		51 - 121	12/17/19 12:31	12/17/19 17:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.147</b>	<b>J</b>	0.233	0.107	mg/L		12/23/19 14:13	12/24/19 06:34	1

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# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: MW-213

Date Collected: 12/11/19 08:16

Date Received: 12/13/19 13:54

## Lab Sample ID: 590-12447-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Residual Range Organics (RRO) (C25-C36)	ND		0.389	0.117	mg/L		12/23/19 14:13	12/24/19 06:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	86		50 - 150				12/23/19 14:13	12/24/19 06:34	1
<i>n</i> -Triacontane-d62	92		50 - 150				12/23/19 14:13	12/24/19 06:34	1

## Client Sample ID: MW-214

Date Collected: 12/11/19 08:44

Date Received: 12/13/19 13:54

## Lab Sample ID: 590-12447-6

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/17/19 00:40	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/17/19 00:40	1
<i>m,p</i> -Xylene	ND		2.00	0.280	ug/L			12/17/19 00:40	1
<i>o</i> -Xylene	ND		1.00	0.162	ug/L			12/17/19 00:40	1
Toluene	ND		1.00	0.312	ug/L			12/17/19 00:40	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/17/19 00:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>1,2</i> -Dichloroethane-d4 (Surr)	95		80 - 120					12/17/19 00:40	1
<i>4</i> -Bromofluorobenzene (Surr)	94		80 - 120					12/17/19 00:40	1
<i>Dibromofluoromethane</i> (Surr)	98		80 - 120					12/17/19 00:40	1
<i>Toluene-d8</i> (Surr)	101		80 - 120					12/17/19 00:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/17/19 00:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>4</i> -Bromofluorobenzene (Surr)	95		68.7 - 141					12/17/19 00:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0921	0.0543	ug/L		12/17/19 12:31	12/17/19 17:28	1
2-Methylnaphthalene	ND		0.0921	0.0450	ug/L		12/17/19 12:31	12/17/19 17:28	1
1-Methylnaphthalene	ND		0.0921	0.0235	ug/L		12/17/19 12:31	12/17/19 17:28	1
Acenaphthylene	ND		0.0921	0.0164	ug/L		12/17/19 12:31	12/17/19 17:28	1
Acenaphthene	ND		0.0921	0.0225	ug/L		12/17/19 12:31	12/17/19 17:28	1
Fluorene	ND		0.0921	0.0164	ug/L		12/17/19 12:31	12/17/19 17:28	1
Phenanthrene	ND		0.0921	0.0573	ug/L		12/17/19 12:31	12/17/19 17:28	1
Anthracene	ND		0.0921	0.0256	ug/L		12/17/19 12:31	12/17/19 17:28	1
<b>Fluoranthene</b>	<b>0.0246</b>	<b>J</b>	0.0921	0.0174	ug/L		12/17/19 12:31	12/17/19 17:28	1
Pyrene	ND		0.0921	0.0266	ug/L		12/17/19 12:31	12/17/19 17:28	1
<b>Benzo[a]anthracene</b>	<b>0.0141</b>	<b>J</b>	0.0921	0.0123	ug/L		12/17/19 12:31	12/17/19 17:28	1
Chrysene	ND		0.0921	0.0102	ug/L		12/17/19 12:31	12/17/19 17:28	1
Benzo[b]fluoranthene	ND		0.0921	0.0113	ug/L		12/17/19 12:31	12/17/19 17:28	1
Benzo[k]fluoranthene	ND		0.0921	0.0154	ug/L		12/17/19 12:31	12/17/19 17:28	1
<b>Benzo[a]pyrene</b>	<b>0.0263</b>	<b>J B</b>	0.0921	0.0123	ug/L		12/17/19 12:31	12/17/19 17:28	1
Indeno[1,2,3-cd]pyrene	ND		0.0921	0.0225	ug/L		12/17/19 12:31	12/17/19 17:28	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

**Client Sample ID: MW-214**

**Lab Sample ID: 590-12447-6**

Date Collected: 12/11/19 08:44

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		0.0921	0.0133	ug/L		12/17/19 12:31	12/17/19 17:28	1
Benzo[g,h,i]perylene	ND		0.0921	0.0215	ug/L		12/17/19 12:31	12/17/19 17:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	89		36 - 126				12/17/19 12:31	12/17/19 17:28	1
2-Fluorobiphenyl (Surr)	91		44 - 120				12/17/19 12:31	12/17/19 17:28	1
p-Terphenyl-d14	87		51 - 121				12/17/19 12:31	12/17/19 17:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.239</b>	<b>J</b>	0.242	0.111	mg/L		12/23/19 14:13	12/24/19 06:55	1
Residual Range Organics (RRO) (C25-C36)	ND		0.403	0.121	mg/L		12/23/19 14:13	12/24/19 06:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	93		50 - 150				12/23/19 14:13	12/24/19 06:55	1
n-Triacontane-d62	100		50 - 150				12/23/19 14:13	12/24/19 06:55	1

**Client Sample ID: MW-301**

**Lab Sample ID: 590-12447-7**

Date Collected: 12/11/19 11:15

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/17/19 01:01	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/17/19 01:01	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/17/19 01:01	1
o-Xylene	ND		1.00	0.162	ug/L			12/17/19 01:01	1
Toluene	ND		1.00	0.312	ug/L			12/17/19 01:01	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/17/19 01:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		80 - 120					12/17/19 01:01	1
4-Bromofluorobenzene (Surr)	97		80 - 120					12/17/19 01:01	1
Dibromofluoromethane (Surr)	98		80 - 120					12/17/19 01:01	1
Toluene-d8 (Surr)	105		80 - 120					12/17/19 01:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/17/19 01:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		68.7 - 141					12/17/19 01:01	1

**Client Sample ID: MW-302**

**Lab Sample ID: 590-12447-8**

Date Collected: 12/11/19 10:16

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>13.2</b>		0.400	0.0930	ug/L			12/17/19 01:23	1

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# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

**Client Sample ID: MW-302**

**Lab Sample ID: 590-12447-8**

Date Collected: 12/11/19 10:16

Matrix: Water

Date Received: 12/13/19 13:54

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	9.76		1.00	0.198	ug/L			12/17/19 01:23	1
m,p-Xylene	2.22		2.00	0.280	ug/L			12/17/19 01:23	1
o-Xylene	ND		1.00	0.162	ug/L			12/17/19 01:23	1
Toluene	0.741	J	1.00	0.312	ug/L			12/17/19 01:23	1
Xylenes, Total	2.22	J	3.00	0.442	ug/L			12/17/19 01:23	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		80 - 120					12/17/19 01:23	1
4-Bromofluorobenzene (Surr)	88		80 - 120					12/17/19 01:23	1
Dibromofluoromethane (Surr)	101		80 - 120					12/17/19 01:23	1
Toluene-d8 (Surr)	95		80 - 120					12/17/19 01:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	297		150	70.4	ug/L			12/17/19 01:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		68.7 - 141					12/17/19 01:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3.69		0.222	0.102	mg/L		12/23/19 14:13	12/24/19 07:16	1
Residual Range Organics (RRO) (C25-C36)	0.179	J	0.371	0.111	mg/L		12/23/19 14:13	12/24/19 07:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150				12/23/19 14:13	12/24/19 07:16	1
n-Triacontane-d62	90		50 - 150				12/23/19 14:13	12/24/19 07:16	1

**Method: 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	629		5.00	1.28	mg/L			12/17/19 13:07	10

**Method: 6020B - Metals (ICP/MS) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	67.4		1.00	0.178	mg/L		12/20/19 09:48	12/23/19 15:56	5
Manganese	3.52		0.0100	0.00230	mg/L		12/20/19 09:48	12/23/19 15:56	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.150	0.0600	mg/L			12/24/19 13:43	1

**Client Sample ID: MW-303**

**Lab Sample ID: 590-12447-9**

Date Collected: 12/11/19 12:07

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.14		0.400	0.0930	ug/L			12/17/19 02:05	1
Ethylbenzene	40.4		1.00	0.198	ug/L			12/17/19 02:05	1
m,p-Xylene	1.34	J	2.00	0.280	ug/L			12/17/19 02:05	1

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# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

**Client Sample ID: MW-303**

**Lab Sample ID: 590-12447-9**

**Date Collected: 12/11/19 12:07**

**Matrix: Water**

**Date Received: 12/13/19 13:54**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.00	0.162	ug/L			12/17/19 02:05	1
<b>Toluene</b>	<b>0.373</b>	<b>J</b>	1.00	0.312	ug/L			12/17/19 02:05	1
<b>Xylenes, Total</b>	<b>1.34</b>	<b>J</b>	3.00	0.442	ug/L			12/17/19 02:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		12/17/19 02:05	1
4-Bromofluorobenzene (Surr)	93		80 - 120		12/17/19 02:05	1
Dibromofluoromethane (Surr)	100		80 - 120		12/17/19 02:05	1
Toluene-d8 (Surr)	98		80 - 120		12/17/19 02:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>371</b>		150	70.4	ug/L			12/17/19 02:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		68.7 - 141		12/17/19 02:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>2.73</b>		0.241	0.111	mg/L		12/23/19 14:13	12/24/19 07:37	1
<b>Residual Range Organics (RRO) (C25-C36)</b>	<b>0.281</b>	<b>J</b>	0.402	0.121	mg/L		12/23/19 14:13	12/24/19 07:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150	12/23/19 14:13	12/24/19 07:37	1
n-Triacontane-d62	97		50 - 150	12/23/19 14:13	12/24/19 07:37	1

**Client Sample ID: MW-304**

**Lab Sample ID: 590-12447-10**

**Date Collected: 12/11/19 09:48**

**Matrix: Water**

**Date Received: 12/13/19 13:54**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/17/19 02:26	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/17/19 02:26	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/17/19 02:26	1
o-Xylene	ND		1.00	0.162	ug/L			12/17/19 02:26	1
Toluene	ND		1.00	0.312	ug/L			12/17/19 02:26	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/17/19 02:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 120		12/17/19 02:26	1
4-Bromofluorobenzene (Surr)	94		80 - 120		12/17/19 02:26	1
Dibromofluoromethane (Surr)	100		80 - 120		12/17/19 02:26	1
Toluene-d8 (Surr)	94		80 - 120		12/17/19 02:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/17/19 02:26	1

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

**Client Sample ID: MW-304**

**Lab Sample ID: 590-12447-10**

Date Collected: 12/11/19 09:48

Matrix: Water

Date Received: 12/13/19 13:54

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		68.7 - 141		12/17/19 02:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.188</b>	<b>J</b>	0.239	0.110	mg/L		12/23/19 14:13	12/24/19 07:58	1
Residual Range Organics (RRO) (C25-C36)	ND		0.399	0.120	mg/L		12/23/19 14:13	12/24/19 07:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150	12/23/19 14:13	12/24/19 07:58	1
n-Triacontane-d62	97		50 - 150	12/23/19 14:13	12/24/19 07:58	1

**Method: 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Sulfate</b>	<b>908</b>		5.00	1.28	mg/L			12/17/19 13:19	10

**Method: 6020B - Metals (ICP/MS) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Iron</b>	<b>11.3</b>		1.00	0.178	mg/L		12/20/19 09:48	12/23/19 15:59	5
<b>Manganese</b>	<b>4.79</b>		0.0100	0.00230	mg/L		12/20/19 09:48	12/23/19 15:59	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.150	0.0600	mg/L			12/24/19 13:45	1

**Client Sample ID: MW-309**

**Lab Sample ID: 590-12447-11**

Date Collected: 12/11/19 11:40

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/17/19 02:47	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/17/19 02:47	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/17/19 02:47	1
o-Xylene	ND		1.00	0.162	ug/L			12/17/19 02:47	1
Toluene	ND		1.00	0.312	ug/L			12/17/19 02:47	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/17/19 02:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 120		12/17/19 02:47	1
4-Bromofluorobenzene (Surr)	97		80 - 120		12/17/19 02:47	1
Dibromofluoromethane (Surr)	98		80 - 120		12/17/19 02:47	1
Toluene-d8 (Surr)	96		80 - 120		12/17/19 02:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>80.4</b>	<b>J</b>	150	70.4	ug/L			12/17/19 02:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		68.7 - 141		12/17/19 02:47	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: MW-309

Lab Sample ID: 590-12447-11

Date Collected: 12/11/19 11:40

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.614</b>		0.241	0.110	mg/L		12/23/19 14:13	12/24/19 08:19	1
Residual Range Organics (RRO) (C25-C36)	ND		0.402	0.120	mg/L		12/23/19 14:13	12/24/19 08:19	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o</i> -Terphenyl	86		50 - 150				12/23/19 14:13	12/24/19 08:19	1
<i>n</i> -Triacontane-d62	93		50 - 150				12/23/19 14:13	12/24/19 08:19	1

## Client Sample ID: MW-310

Lab Sample ID: 590-12447-12

Date Collected: 12/11/19 10:45

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/17/19 03:08	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/17/19 03:08	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/17/19 03:08	1
<i>o</i> -Xylene	ND		1.00	0.162	ug/L			12/17/19 03:08	1
Toluene	ND		1.00	0.312	ug/L			12/17/19 03:08	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/17/19 03:08	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>1,2</i> -Dichloroethane-d4 (Surr)	95		80 - 120					12/17/19 03:08	1
<i>4</i> -Bromofluorobenzene (Surr)	89		80 - 120					12/17/19 03:08	1
<i>Dibromofluoromethane</i> (Surr)	102		80 - 120					12/17/19 03:08	1
<i>Toluene-d8</i> (Surr)	99		80 - 120					12/17/19 03:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>73.9</b>	<b>J</b>	150	70.4	ug/L			12/17/19 03:08	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>4</i> -Bromofluorobenzene (Surr)	90		68.7 - 141					12/17/19 03:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.453</b>		0.239	0.110	mg/L		12/23/19 14:13	12/24/19 08:40	1
Residual Range Organics (RRO) (C25-C36)	ND		0.399	0.120	mg/L		12/23/19 14:13	12/24/19 08:40	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>o</i> -Terphenyl	90		50 - 150				12/23/19 14:13	12/24/19 08:40	1
<i>n</i> -Triacontane-d62	97		50 - 150				12/23/19 14:13	12/24/19 08:40	1

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Sulfate</b>	<b>999</b>		5.00	1.28	mg/L			12/17/19 13:30	10

### Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Iron</b>	<b>53.1</b>		1.00	0.178	mg/L		12/20/19 09:48	12/23/19 16:01	5

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: MW-310

Lab Sample ID: 590-12447-12

Date Collected: 12/11/19 10:45

Matrix: Water

Date Received: 12/13/19 13:54

### Method: 6020B - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	7.24		0.0100	0.00230	mg/L		12/20/19 09:48	12/23/19 16:01	5

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.150	0.0600	mg/L			12/24/19 13:46	1

## Client Sample ID: TX-04

Lab Sample ID: 590-12447-13

Date Collected: 12/12/19 08:28

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/17/19 03:29	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/17/19 03:29	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/17/19 03:29	1
o-Xylene	ND		1.00	0.162	ug/L			12/17/19 03:29	1
Toluene	ND		1.00	0.312	ug/L			12/17/19 03:29	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/17/19 03:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		12/17/19 03:29	1
4-Bromofluorobenzene (Surr)	94		80 - 120		12/17/19 03:29	1
Dibromofluoromethane (Surr)	101		80 - 120		12/17/19 03:29	1
Toluene-d8 (Surr)	98		80 - 120		12/17/19 03:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/17/19 03:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		68.7 - 141		12/17/19 03:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.122	J	0.238	0.109	mg/L		12/26/19 11:01	12/26/19 15:04	1
Residual Range Organics (RRO) (C25-C36)	ND		0.397	0.119	mg/L		12/26/19 11:01	12/26/19 15:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150	12/26/19 11:01	12/26/19 15:04	1
n-Triacontane-d62	95		50 - 150	12/26/19 11:01	12/26/19 15:04	1

## Client Sample ID: MW-112A

Lab Sample ID: 590-12447-14

Date Collected: 12/12/19 08:00

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	14.9		0.400	0.0930	ug/L			12/17/19 03:51	1
Ethylbenzene	1.54		1.00	0.198	ug/L			12/17/19 03:51	1
m,p-Xylene	1.42	J	2.00	0.280	ug/L			12/17/19 03:51	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

**Client Sample ID: MW-112A**

**Lab Sample ID: 590-12447-14**

Date Collected: 12/12/19 08:00

Matrix: Water

Date Received: 12/13/19 13:54

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>o-Xylene</b>	<b>2.43</b>		1.00	0.162	ug/L			12/17/19 03:51	1
<b>Toluene</b>	<b>2.96</b>		1.00	0.312	ug/L			12/17/19 03:51	1
<b>Xylenes, Total</b>	<b>3.85</b>		3.00	0.442	ug/L			12/17/19 03:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		80 - 120		12/17/19 03:51	1
4-Bromofluorobenzene (Surr)	88		80 - 120		12/17/19 03:51	1
Dibromofluoromethane (Surr)	88		80 - 120		12/17/19 03:51	1
Toluene-d8 (Surr)	91		80 - 120		12/17/19 03:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>1910</b>		150	70.4	ug/L			12/17/19 03:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		68.7 - 141		12/17/19 03:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>12.2</b>		0.261	0.120	mg/L		12/26/19 11:01	12/26/19 15:25	1
<b>Residual Range Organics (RRO) (C25-C36)</b>	<b>0.419</b>	<b>J</b>	0.435	0.130	mg/L		12/26/19 11:01	12/26/19 15:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	96		50 - 150	12/26/19 11:01	12/26/19 15:25	1
n-Triacontane-d62	100		50 - 150	12/26/19 11:01	12/26/19 15:25	1

**Client Sample ID: MW-311**

**Lab Sample ID: 590-12447-15**

Date Collected: 12/12/19 10:25

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/17/19 04:12	1
<b>Ethylbenzene</b>	<b>0.290</b>	<b>J</b>	1.00	0.198	ug/L			12/17/19 04:12	1
<b>m,p-Xylene</b>	<b>0.369</b>	<b>J</b>	2.00	0.280	ug/L			12/17/19 04:12	1
<b>o-Xylene</b>	<b>0.471</b>	<b>J</b>	1.00	0.162	ug/L			12/17/19 04:12	1
Toluene	ND		1.00	0.312	ug/L			12/17/19 04:12	1
<b>Xylenes, Total</b>	<b>0.839</b>	<b>J</b>	3.00	0.442	ug/L			12/17/19 04:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		80 - 120		12/17/19 04:12	1
4-Bromofluorobenzene (Surr)	89		80 - 120		12/17/19 04:12	1
Dibromofluoromethane (Surr)	97		80 - 120		12/17/19 04:12	1
Toluene-d8 (Surr)	97		80 - 120		12/17/19 04:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>751</b>		150	70.4	ug/L			12/17/19 04:12	1

Eurofins TestAmerica, Spokane

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: MW-311

Date Collected: 12/12/19 10:25

Date Received: 12/13/19 13:54

## Lab Sample ID: 590-12447-15

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		68.7 - 141		12/17/19 04:12	1

### Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	41.5		1.00	0.178	mg/L		12/20/19 09:48	12/23/19 16:04	5
Manganese	1.81		0.0100	0.00230	mg/L		12/20/19 09:48	12/23/19 16:04	5

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	8.28		1.20	0.260	mg/L			12/17/19 10:22	1
Nitrate Nitrite as N	ND		0.150	0.0600	mg/L			12/24/19 13:47	1

## Client Sample ID: MW-312

Date Collected: 12/12/19 09:54

Date Received: 12/13/19 13:54

## Lab Sample ID: 590-12447-16

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	94.0		0.400	0.0930	ug/L			12/17/19 04:33	1
Ethylbenzene	3.41		1.00	0.198	ug/L			12/17/19 04:33	1
m,p-Xylene	2.26		2.00	0.280	ug/L			12/17/19 04:33	1
o-Xylene	0.488	J	1.00	0.162	ug/L			12/17/19 04:33	1
Toluene	2.51		1.00	0.312	ug/L			12/17/19 04:33	1
Xylenes, Total	2.75	J	3.00	0.442	ug/L			12/17/19 04:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		80 - 120		12/17/19 04:33	1
4-Bromofluorobenzene (Surr)	90		80 - 120		12/17/19 04:33	1
Dibromofluoromethane (Surr)	90		80 - 120		12/17/19 04:33	1
Toluene-d8 (Surr)	94		80 - 120		12/17/19 04:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1700		150	70.4	ug/L			12/17/19 04:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		68.7 - 141		12/17/19 04:33	1

### Method: 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	22.0		1.00	0.178	mg/L		12/20/19 09:48	12/23/19 16:06	5
Manganese	0.957		0.0100	0.00230	mg/L		12/20/19 09:48	12/23/19 16:06	5

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.630		1.20	0.260	mg/L			12/17/19 10:33	1
Nitrate Nitrite as N	ND		0.150	0.0600	mg/L			12/24/19 13:48	1

# Client Sample Results

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

**Client Sample ID: MW-313**

**Lab Sample ID: 590-12447-17**

**Date Collected: 12/12/19 08:56**

**Matrix: Water**

**Date Received: 12/13/19 13:54**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/17/19 04:54	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/17/19 04:54	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/17/19 04:54	1
o-Xylene	ND		1.00	0.162	ug/L			12/17/19 04:54	1
Toluene	ND		1.00	0.312	ug/L			12/17/19 04:54	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/17/19 04:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		12/17/19 04:54	1
4-Bromofluorobenzene (Surr)	102		80 - 120		12/17/19 04:54	1
Dibromofluoromethane (Surr)	101		80 - 120		12/17/19 04:54	1
Toluene-d8 (Surr)	96		80 - 120		12/17/19 04:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/17/19 04:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		68.7 - 141		12/17/19 04:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.473</b>		0.248	0.113	mg/L		12/26/19 11:01	12/26/19 15:47	1
<b>Residual Range Organics (RRO) (C25-C36)</b>	<b>0.153</b>	<b>J</b>	0.413	0.124	mg/L		12/26/19 11:01	12/26/19 15:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150	12/26/19 11:01	12/26/19 15:47	1
n-Triacontane-d62	95		50 - 150	12/26/19 11:01	12/26/19 15:47	1

**Client Sample ID: MW-315**

**Lab Sample ID: 590-12447-18**

**Date Collected: 12/12/19 09:25**

**Matrix: Water**

**Date Received: 12/13/19 13:54**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>3.34</b>		0.400	0.0930	ug/L			12/17/19 05:15	1
<b>Ethylbenzene</b>	<b>0.667</b>	<b>J</b>	1.00	0.198	ug/L			12/17/19 05:15	1
<b>m,p-Xylene</b>	<b>4.56</b>		2.00	0.280	ug/L			12/17/19 05:15	1
<b>o-Xylene</b>	<b>0.436</b>	<b>J</b>	1.00	0.162	ug/L			12/17/19 05:15	1
<b>Toluene</b>	<b>3.89</b>		1.00	0.312	ug/L			12/17/19 05:15	1
<b>Xylenes, Total</b>	<b>5.00</b>		3.00	0.442	ug/L			12/17/19 05:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		12/17/19 05:15	1
4-Bromofluorobenzene (Surr)	95		80 - 120		12/17/19 05:15	1
Dibromofluoromethane (Surr)	91		80 - 120		12/17/19 05:15	1
Toluene-d8 (Surr)	93		80 - 120		12/17/19 05:15	1



# Client Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

**Client Sample ID: MW-315**

**Lab Sample ID: 590-12447-18**

Date Collected: 12/12/19 09:25

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1680		150	70.4	ug/L			12/17/19 05:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		68.7 - 141					12/17/19 05:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	3.96		0.233	0.107	mg/L		12/26/19 11:01	12/26/19 16:08	1
Residual Range Organics (RRO) (C25-C36)	0.266	J	0.389	0.117	mg/L		12/26/19 11:01	12/26/19 16:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	95		50 - 150				12/26/19 11:01	12/26/19 16:08	1
n-Triacontane-d62	99		50 - 150				12/26/19 11:01	12/26/19 16:08	1

**Client Sample ID: TB-2**

**Lab Sample ID: 590-12447-19**

Date Collected: 12/11/19 08:00

Matrix: Water

Date Received: 12/13/19 13:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/17/19 05:57	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/17/19 05:57	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/17/19 05:57	1
o-Xylene	ND		1.00	0.162	ug/L			12/17/19 05:57	1
Toluene	ND		1.00	0.312	ug/L			12/17/19 05:57	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/17/19 05:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		80 - 120					12/17/19 05:57	1
4-Bromofluorobenzene (Surr)	99		80 - 120					12/17/19 05:57	1
Dibromofluoromethane (Surr)	96		80 - 120					12/17/19 05:57	1
Toluene-d8 (Surr)	100		80 - 120					12/17/19 05:57	1

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

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

**Lab Sample ID: MB 590-25661/5**  
**Matrix: Water**  
**Analysis Batch: 25661**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/16/19 10:11	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/16/19 10:11	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/16/19 10:11	1
o-Xylene	ND		1.00	0.162	ug/L			12/16/19 10:11	1
Toluene	ND		1.00	0.312	ug/L			12/16/19 10:11	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/16/19 10:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		12/16/19 10:11	1
4-Bromofluorobenzene (Surr)	108		80 - 120		12/16/19 10:11	1
Dibromofluoromethane (Surr)	96		80 - 120		12/16/19 10:11	1
Toluene-d8 (Surr)	104		80 - 120		12/16/19 10:11	1

**Lab Sample ID: LCS 590-25661/1003**  
**Matrix: Water**  
**Analysis Batch: 25661**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	11.07		ug/L		111	80 - 126
Ethylbenzene	10.0	11.16		ug/L		112	80 - 120
m,p-Xylene	10.0	11.58		ug/L		116	80 - 120
o-Xylene	10.0	11.56		ug/L		116	80 - 120
Toluene	10.0	10.41		ug/L		104	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	93		80 - 120
Toluene-d8 (Surr)	96		80 - 120

**Lab Sample ID: LCSD 590-25661/6**  
**Matrix: Water**  
**Analysis Batch: 25661**

**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
Benzene	10.0	10.13		ug/L		101	80 - 126	9	25
Ethylbenzene	10.0	10.32		ug/L		103	80 - 120	8	25
m,p-Xylene	10.0	10.97		ug/L		110	80 - 120	5	25
o-Xylene	10.0	10.51		ug/L		105	80 - 120	10	25
Toluene	10.0	9.651		ug/L		97	80 - 123	8	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	93		80 - 120
Toluene-d8 (Surr)	95		80 - 120

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 590-12447-1 DU**  
**Matrix: Water**  
**Analysis Batch: 25661**

**Client Sample ID: TX-03A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Benzene	1.73		1.592		ug/L		8	20
Ethylbenzene	1.70		1.705		ug/L		0.5	20
m,p-Xylene	ND		ND		ug/L		NC	20
o-Xylene	ND		ND		ug/L		NC	20
Toluene	ND		ND		ug/L		NC	20
Xylenes, Total	ND		ND		ug/L		NC	20

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120
Toluene-d8 (Surr)	93		80 - 120

**Lab Sample ID: MB 590-25672/5**  
**Matrix: Water**  
**Analysis Batch: 25672**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.400	0.0930	ug/L			12/16/19 22:12	1
Ethylbenzene	ND		1.00	0.198	ug/L			12/16/19 22:12	1
m,p-Xylene	ND		2.00	0.280	ug/L			12/16/19 22:12	1
o-Xylene	ND		1.00	0.162	ug/L			12/16/19 22:12	1
Toluene	ND		1.00	0.312	ug/L			12/16/19 22:12	1
Xylenes, Total	ND		3.00	0.442	ug/L			12/16/19 22:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		80 - 120		12/16/19 22:12	1
4-Bromofluorobenzene (Surr)	103		80 - 120		12/16/19 22:12	1
Dibromofluoromethane (Surr)	99		80 - 120		12/16/19 22:12	1
Toluene-d8 (Surr)	102		80 - 120		12/16/19 22:12	1

**Lab Sample ID: LCS 590-25672/1003**  
**Matrix: Water**  
**Analysis Batch: 25672**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.35		ug/L		104	80 - 126
Ethylbenzene	10.0	11.35		ug/L		113	80 - 120
m,p-Xylene	10.0	11.20		ug/L		112	80 - 120
o-Xylene	10.0	11.25		ug/L		112	80 - 120
Toluene	10.0	10.20		ug/L		102	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	96		80 - 120
Toluene-d8 (Surr)	101		80 - 120

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 590-25672/6**  
**Matrix: Water**  
**Analysis Batch: 25672**

**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
Benzene	10.0	10.75		ug/L		108	80 - 126	4	25
Ethylbenzene	10.0	10.77		ug/L		108	80 - 120	5	25
m,p-Xylene	10.0	11.06		ug/L		111	80 - 120	1	25
o-Xylene	10.0	10.70		ug/L		107	80 - 120	5	25
Toluene	10.0	10.08		ug/L		101	80 - 123	1	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	93		80 - 120
Dibromofluoromethane (Surr)	93		80 - 120
Toluene-d8 (Surr)	93		80 - 120

**Lab Sample ID: 590-12447-4 DU**  
**Matrix: Water**  
**Analysis Batch: 25672**

**Client Sample ID: MW-111**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	0.270	J	0.3863	J F5	ug/L		36	20
Ethylbenzene	ND		ND		ug/L		NC	20
m,p-Xylene	0.422	J	0.3330	J F5	ug/L		24	20
o-Xylene	ND		ND		ug/L		NC	20
Toluene	ND		0.3485	J	ug/L		NC	20
Xylenes, Total	ND		ND		ug/L		NC	20

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	104		80 - 120
Dibromofluoromethane (Surr)	99		80 - 120
Toluene-d8 (Surr)	93		80 - 120

**Lab Sample ID: 590-12447-5 DU**  
**Matrix: Water**  
**Analysis Batch: 25672**

**Client Sample ID: MW-213**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Benzene	ND		ND		ug/L		NC	20
Ethylbenzene	ND		ND		ug/L		NC	20
m,p-Xylene	ND		ND		ug/L		NC	20
o-Xylene	ND		ND		ug/L		NC	20
Toluene	ND		ND		ug/L		NC	20
Xylenes, Total	ND		ND		ug/L		NC	20

Surrogate	DU %Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	98		80 - 120

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: 590-12447-5 DU**  
**Matrix: Water**  
**Analysis Batch: 25672**

**Client Sample ID: MW-213**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Benzene	ND		ND		ug/L		NC	20
Ethylbenzene	ND		ND		ug/L		NC	20
m,p-Xylene	ND		ND		ug/L		NC	20
o-Xylene	ND		ND		ug/L		NC	20
Toluene	ND		ND		ug/L		NC	20
Xylenes, Total	ND		ND		ug/L		NC	20

Surrogate	%Recovery	DU Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	97		80 - 120
Toluene-d8 (Surr)	103		80 - 120

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

**Lab Sample ID: MB 590-25663/5**  
**Matrix: Water**  
**Analysis Batch: 25663**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L			12/16/19 10:11	1

Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		68.7 - 141		12/16/19 10:11	1

**Lab Sample ID: LCS 590-25663/1004**  
**Matrix: Water**  
**Analysis Batch: 25663**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	1104		ug/L		110	80 - 120

Surrogate	%Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		68.7 - 141

**Lab Sample ID: 590-12447-1 DU**  
**Matrix: Water**  
**Analysis Batch: 25663**

**Client Sample ID: TX-03A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Gasoline	521		524.6		ug/L		0.7	35

Surrogate	%Recovery	DU Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		68.7 - 141

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

**Lab Sample ID: MB 590-25674/5**  
**Matrix: Water**  
**Analysis Batch: 25674**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150	70.4	ug/L	-		12/16/19 22:12	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		68.7 - 141					12/16/19 22:12	1

**Lab Sample ID: LCS 590-25674/1004**  
**Matrix: Water**  
**Analysis Batch: 25674**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	1097		ug/L	-	110	80 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	94		68.7 - 141				

**Lab Sample ID: 590-12447-4 DU**  
**Matrix: Water**  
**Analysis Batch: 25674**

**Client Sample ID: MW-111**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Gasoline	ND		ND		ug/L	-	NC	35
Surrogate	DU %Recovery	DU Qualifier	Limits					
4-Bromofluorobenzene (Surr)	105		68.7 - 141					

**Lab Sample ID: 590-12447-5 DU**  
**Matrix: Water**  
**Analysis Batch: 25674**

**Client Sample ID: MW-213**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Gasoline	ND		ND		ug/L	-	NC	35
Surrogate	DU %Recovery	DU Qualifier	Limits					
4-Bromofluorobenzene (Surr)	103		68.7 - 141					

**Lab Sample ID: 590-12447-5 DU**  
**Matrix: Water**  
**Analysis Batch: 25674**

**Client Sample ID: MW-213**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Gasoline	ND		ND		ug/L	-	NC	35
Surrogate	DU %Recovery	DU Qualifier	Limits					
4-Bromofluorobenzene (Surr)	100		68.7 - 141					

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

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

**Lab Sample ID: MB 590-25695/1-A**  
**Matrix: Water**  
**Analysis Batch: 25688**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 25695**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0900	0.0530	ug/L		12/17/19 12:31	12/17/19 14:22	1
2-Methylnaphthalene	ND		0.0900	0.0440	ug/L		12/17/19 12:31	12/17/19 14:22	1
1-Methylnaphthalene	ND		0.0900	0.0230	ug/L		12/17/19 12:31	12/17/19 14:22	1
Acenaphthylene	ND		0.0900	0.0160	ug/L		12/17/19 12:31	12/17/19 14:22	1
Acenaphthene	ND		0.0900	0.0220	ug/L		12/17/19 12:31	12/17/19 14:22	1
Fluorene	ND		0.0900	0.0160	ug/L		12/17/19 12:31	12/17/19 14:22	1
Phenanthrene	ND		0.0900	0.0560	ug/L		12/17/19 12:31	12/17/19 14:22	1
Anthracene	ND		0.0900	0.0250	ug/L		12/17/19 12:31	12/17/19 14:22	1
Fluoranthene	ND		0.0900	0.0170	ug/L		12/17/19 12:31	12/17/19 14:22	1
Pyrene	ND		0.0900	0.0260	ug/L		12/17/19 12:31	12/17/19 14:22	1
Benzo[a]anthracene	ND		0.0900	0.0120	ug/L		12/17/19 12:31	12/17/19 14:22	1
Chrysene	ND		0.0900	0.0100	ug/L		12/17/19 12:31	12/17/19 14:22	1
Benzo[b]fluoranthene	ND		0.0900	0.0110	ug/L		12/17/19 12:31	12/17/19 14:22	1
Benzo[k]fluoranthene	ND		0.0900	0.0150	ug/L		12/17/19 12:31	12/17/19 14:22	1
Benzo[a]pyrene	0.01957	J	0.0900	0.0120	ug/L		12/17/19 12:31	12/17/19 14:22	1
Indeno[1,2,3-cd]pyrene	ND		0.0900	0.0220	ug/L		12/17/19 12:31	12/17/19 14:22	1
Dibenz(a,h)anthracene	ND		0.0900	0.0130	ug/L		12/17/19 12:31	12/17/19 14:22	1
Benzo[g,h,i]perylene	ND		0.0900	0.0210	ug/L		12/17/19 12:31	12/17/19 14:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	78		36 - 126	12/17/19 12:31	12/17/19 14:22	1
2-Fluorobiphenyl (Surr)	79		44 - 120	12/17/19 12:31	12/17/19 14:22	1
p-Terphenyl-d14	86		51 - 121	12/17/19 12:31	12/17/19 14:22	1

**Lab Sample ID: LCS 590-25695/2-A**  
**Matrix: Water**  
**Analysis Batch: 25688**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 25695**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	1.60	1.178		ug/L		74	52 - 120
2-Methylnaphthalene	1.60	1.230		ug/L		77	44 - 120
1-Methylnaphthalene	1.60	1.223		ug/L		76	49 - 120
Acenaphthylene	1.60	1.467		ug/L		92	57 - 120
Acenaphthene	1.60	1.377		ug/L		86	54 - 120
Fluorene	1.60	1.455		ug/L		91	59 - 120
Phenanthrene	1.60	1.517		ug/L		95	57 - 120
Anthracene	1.60	1.517		ug/L		95	66 - 120
Fluoranthene	1.60	1.573		ug/L		98	64 - 120
Pyrene	1.60	1.629		ug/L		102	52 - 120
Benzo[a]anthracene	1.60	1.693		ug/L		106	68 - 120
Chrysene	1.60	1.518		ug/L		95	69 - 120
Benzo[b]fluoranthene	1.60	1.693		ug/L		106	63 - 120
Benzo[k]fluoranthene	1.60	1.369		ug/L		86	67 - 120
Benzo[a]pyrene	1.60	1.493		ug/L		93	70 - 120
Indeno[1,2,3-cd]pyrene	1.60	1.487		ug/L		93	58 - 120
Dibenz(a,h)anthracene	1.60	1.429		ug/L		89	58 - 120
Benzo[g,h,i]perylene	1.60	1.494		ug/L		93	56 - 120

Eurofins TestAmerica, Spokane



# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

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

**Lab Sample ID: LCS 590-25695/2-A**  
**Matrix: Water**  
**Analysis Batch: 25688**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 25695**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5	76		36 - 126
2-Fluorobiphenyl (Surr)	69		44 - 120
p-Terphenyl-d14	74		51 - 121

**Lab Sample ID: LCSD 590-25695/3-A**  
**Matrix: Water**  
**Analysis Batch: 25688**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 25695**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Naphthalene	1.60	1.294		ug/L		81	52 - 120	9	30	
2-Methylnaphthalene	1.60	1.339		ug/L		84	44 - 120	8	35	
1-Methylnaphthalene	1.60	1.328		ug/L		83	49 - 120	8	35	
Acenaphthylene	1.60	1.561		ug/L		98	57 - 120	6	30	
Acenaphthene	1.60	1.466		ug/L		92	54 - 120	6	30	
Fluorene	1.60	1.507		ug/L		94	59 - 120	3	30	
Phenanthrene	1.60	1.564		ug/L		98	57 - 120	3	30	
Anthracene	1.60	1.594		ug/L		100	66 - 120	5	30	
Fluoranthene	1.60	1.635		ug/L		102	64 - 120	4	30	
Pyrene	1.60	1.642		ug/L		103	52 - 120	1	30	
Benzo[a]anthracene	1.60	1.775		ug/L		111	68 - 120	5	30	
Chrysene	1.60	1.595		ug/L		100	69 - 120	5	24	
Benzo[b]fluoranthene	1.60	1.763		ug/L		110	63 - 120	4	30	
Benzo[k]fluoranthene	1.60	1.432		ug/L		89	67 - 120	4	30	
Benzo[a]pyrene	1.60	1.570		ug/L		98	70 - 120	5	30	
Indeno[1,2,3-cd]pyrene	1.60	1.592		ug/L		99	58 - 120	7	30	
Dibenz(a,h)anthracene	1.60	1.543		ug/L		96	58 - 120	8	30	
Benzo[g,h,i]perylene	1.60	1.581		ug/L		99	56 - 120	6	35	

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Nitrobenzene-d5	87		36 - 126
2-Fluorobiphenyl (Surr)	77		44 - 120
p-Terphenyl-d14	80		51 - 121

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

**Lab Sample ID: MB 590-25782/1-A**  
**Matrix: Water**  
**Analysis Batch: 25771**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 25782**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.240	0.110	mg/L		12/23/19 14:13	12/24/19 00:19	1
Residual Range Organics (RRO) (C25-C36)	ND		0.400	0.120	mg/L		12/23/19 14:13	12/24/19 00:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150	12/23/19 14:13	12/24/19 00:19	1
n-Triacontane-d62	88		50 - 150	12/23/19 14:13	12/24/19 00:19	1

Eurofins TestAmerica, Spokane

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

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

**Lab Sample ID: LCS 590-25782/2-A**  
**Matrix: Water**  
**Analysis Batch: 25771**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 25782**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	1.60	1.344		mg/L		84	50 - 150
Residual Range Organics (RRO) (C25-C36)	1.60	1.540		mg/L		96	50 - 150
		<b>LCS %Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>			
<i>o-Terphenyl</i>		88		50 - 150			
<i>n-Triacontane-d62</i>		95		50 - 150			

**Lab Sample ID: LCSD 590-25782/3-A**  
**Matrix: Water**  
**Analysis Batch: 25771**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 25782**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.487		mg/L		93	50 - 150	10	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.652		mg/L		103	50 - 150	7	25
		<b>LCSD %Recovery</b>	<b>LCSD Qualifier</b>	<b>Limits</b>					
<i>o-Terphenyl</i>		97		50 - 150					
<i>n-Triacontane-d62</i>		106		50 - 150					

**Lab Sample ID: MB 590-25799/1-A**  
**Matrix: Water**  
**Analysis Batch: 25802**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 25799**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.240	0.110	mg/L		12/26/19 11:00	12/26/19 13:37	1
Residual Range Organics (RRO) (C25-C36)	ND		0.400	0.120	mg/L		12/26/19 11:00	12/26/19 13:37	1
		<b>MB %Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>					
<i>o-Terphenyl</i>		90		50 - 150					
<i>n-Triacontane-d62</i>		99		50 - 150					

**Lab Sample ID: LCS 590-25799/2-A**  
**Matrix: Water**  
**Analysis Batch: 25802**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 25799**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO) (C10-C25)	1.60	1.418		mg/L		89	50 - 150
Residual Range Organics (RRO) (C25-C36)	1.60	1.543		mg/L		96	50 - 150
		<b>LCS %Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>			
<i>o-Terphenyl</i>		96		50 - 150			

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

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

Lab Sample ID: LCS 590-25799/2-A  
 Matrix: Water  
 Analysis Batch: 25802

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 25799

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>n</i> -Triacontane-d62	101		50 - 150

Lab Sample ID: LCSD 590-25799/3-A  
 Matrix: Water  
 Analysis Batch: 25802

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 25799

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Diesel Range Organics (DRO) (C10-C25)	1.60	1.360		mg/L		85	50 - 150	4	25
Residual Range Organics (RRO) (C25-C36)	1.60	1.499		mg/L		94	50 - 150	3	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>o</i> -Terphenyl	93		50 - 150
<i>n</i> -Triacontane-d62	97		50 - 150

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 590-25691/1002  
 Matrix: Water  
 Analysis Batch: 25691

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		0.500	0.128	mg/L			12/17/19 12:32	1

Lab Sample ID: LCS 590-25691/1003  
 Matrix: Water  
 Analysis Batch: 25691

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	12.5	13.50		mg/L		108	90 - 110

## Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-319316/14-A  
 Matrix: Water  
 Analysis Batch: 319573

Client Sample ID: Method Blank  
 Prep Type: Total Recoverable  
 Prep Batch: 319316

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00400	0.000995	mg/L		12/20/19 08:28	12/23/19 17:31	5

Lab Sample ID: LCS 580-319316/15-A  
 Matrix: Water  
 Analysis Batch: 319573

Client Sample ID: Lab Control Sample  
 Prep Type: Total Recoverable  
 Prep Batch: 319316

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	0.9613		mg/L		96	80 - 120

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Method: 6020B - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCSD 580-319316/16-A**  
**Matrix: Water**  
**Analysis Batch: 319573**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 319316**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	1.00	0.9654		mg/L		97	80 - 120	0	20

**Lab Sample ID: MB 580-319324/19-A**  
**Matrix: Water**  
**Analysis Batch: 319573**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 319324**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		1.00	0.178	mg/L		12/20/19 09:48	12/23/19 15:23	5
Manganese	ND		0.0100	0.00230	mg/L		12/20/19 09:48	12/23/19 15:23	5

**Lab Sample ID: LCS 580-319324/20-A**  
**Matrix: Water**  
**Analysis Batch: 319573**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 319324**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	20.0	19.11		mg/L		96	80 - 120
Manganese	1.00	0.9488		mg/L		95	80 - 120

**Lab Sample ID: LCSD 580-319324/21-A**  
**Matrix: Water**  
**Analysis Batch: 319573**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 319324**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	20.0	18.93		mg/L		95	80 - 120	1	20
Manganese	1.00	0.9424		mg/L		94	80 - 120	1	20

**Lab Sample ID: 590-12447-1 MS**  
**Matrix: Water**  
**Analysis Batch: 319573**

**Client Sample ID: TX-03A**  
**Prep Type: Dissolved**  
**Prep Batch: 319324**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	104		20.0	130.1	4	mg/L		129	80 - 120
Manganese	2.99		1.00	4.149		mg/L		116	80 - 120

**Lab Sample ID: 590-12447-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 319573**

**Client Sample ID: TX-03A**  
**Prep Type: Dissolved**  
**Prep Batch: 319324**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	104		20.0	127.6	4	mg/L		116	80 - 120	2	20
Manganese	2.99		1.00	4.106		mg/L		111	80 - 120	1	20

**Lab Sample ID: 590-12447-1 DU**  
**Matrix: Water**  
**Analysis Batch: 319573**

**Client Sample ID: TX-03A**  
**Prep Type: Dissolved**  
**Prep Batch: 319324**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Iron	104		104.2		mg/L		0.1	20
Manganese	2.99		3.005		mg/L		0.4	20

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# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 580-319546/3**  
**Matrix: Water**  
**Analysis Batch: 319546**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.20	0.260	mg/L			12/17/19 08:59	1

**Lab Sample ID: LCS 580-319546/4**  
**Matrix: Water**  
**Analysis Batch: 319546**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	50.0	50.12		mg/L		100	90 - 110

**Lab Sample ID: LCSD 580-319546/5**  
**Matrix: Water**  
**Analysis Batch: 319546**

**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
Sulfate	50.0	50.13		mg/L		100	90 - 110	0	15

## Method: 353.2 - Nitrogen, Nitrate-Nitrite

**Lab Sample ID: MB 580-319607/12**  
**Matrix: Water**  
**Analysis Batch: 319607**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.150	0.0600	mg/L			12/24/19 13:18	1

**Lab Sample ID: LCS 580-319607/13**  
**Matrix: Water**  
**Analysis Batch: 319607**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	1.00	1.028		mg/L		103	90 - 110

**Lab Sample ID: LCSD 580-319607/14**  
**Matrix: Water**  
**Analysis Batch: 319607**

**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
Nitrate Nitrite as N	1.00	1.033		mg/L		103	90 - 110	0	20

**Lab Sample ID: 590-12447-1 MS**  
**Matrix: Water**  
**Analysis Batch: 319607**

**Client Sample ID: TX-03A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	ND	F1	0.500	0.06900	J F1	mg/L		14	90 - 110

# QC Sample Results

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 590-12447-1 MSD  
 Matrix: Water  
 Analysis Batch: 319607

Client Sample ID: TX-03A  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	ND	F1	0.500	0.06700	J F1	mg/L	-	13	90 - 110	3	20

- 1
- 2
- 3
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- 5
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- 8
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- 10
- 11
- 12
- 13
- 14

# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## GC/MS VOA

### Analysis Batch: 25661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-1	TX-03A	Total/NA	Water	8260C	
590-12447-2	SH-04	Total/NA	Water	8260C	
590-12447-3	MW-105	Total/NA	Water	8260C	
MB 590-25661/5	Method Blank	Total/NA	Water	8260C	
LCS 590-25661/1003	Lab Control Sample	Total/NA	Water	8260C	
LCSD 590-25661/6	Lab Control Sample Dup	Total/NA	Water	8260C	
590-12447-1 DU	TX-03A	Total/NA	Water	8260C	

### Analysis Batch: 25663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-1	TX-03A	Total/NA	Water	NWTPH-Gx	
590-12447-2	SH-04	Total/NA	Water	NWTPH-Gx	
590-12447-3	MW-105	Total/NA	Water	NWTPH-Gx	
MB 590-25663/5	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 590-25663/1004	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
590-12447-1 DU	TX-03A	Total/NA	Water	NWTPH-Gx	

### Analysis Batch: 25672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-4	MW-111	Total/NA	Water	8260C	
590-12447-5	MW-213	Total/NA	Water	8260C	
590-12447-6	MW-214	Total/NA	Water	8260C	
590-12447-7	MW-301	Total/NA	Water	8260C	
590-12447-8	MW-302	Total/NA	Water	8260C	
590-12447-9	MW-303	Total/NA	Water	8260C	
590-12447-10	MW-304	Total/NA	Water	8260C	
590-12447-11	MW-309	Total/NA	Water	8260C	
590-12447-12	MW-310	Total/NA	Water	8260C	
590-12447-13	TX-04	Total/NA	Water	8260C	
590-12447-14	MW-112A	Total/NA	Water	8260C	
590-12447-15	MW-311	Total/NA	Water	8260C	
590-12447-16	MW-312	Total/NA	Water	8260C	
590-12447-17	MW-313	Total/NA	Water	8260C	
590-12447-18	MW-315	Total/NA	Water	8260C	
590-12447-19	TB-2	Total/NA	Water	8260C	
MB 590-25672/5	Method Blank	Total/NA	Water	8260C	
LCS 590-25672/1003	Lab Control Sample	Total/NA	Water	8260C	
LCSD 590-25672/6	Lab Control Sample Dup	Total/NA	Water	8260C	
590-12447-4 DU	MW-111	Total/NA	Water	8260C	
590-12447-5 DU	MW-213	Total/NA	Water	8260C	
590-12447-5 DU	MW-213	Total/NA	Water	8260C	

### Analysis Batch: 25674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-4	MW-111	Total/NA	Water	NWTPH-Gx	
590-12447-5	MW-213	Total/NA	Water	NWTPH-Gx	
590-12447-6	MW-214	Total/NA	Water	NWTPH-Gx	
590-12447-7	MW-301	Total/NA	Water	NWTPH-Gx	
590-12447-8	MW-302	Total/NA	Water	NWTPH-Gx	
590-12447-9	MW-303	Total/NA	Water	NWTPH-Gx	
590-12447-10	MW-304	Total/NA	Water	NWTPH-Gx	



# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## GC/MS VOA (Continued)

### Analysis Batch: 25674 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-11	MW-309	Total/NA	Water	NWTPH-Gx	
590-12447-12	MW-310	Total/NA	Water	NWTPH-Gx	
590-12447-13	TX-04	Total/NA	Water	NWTPH-Gx	
590-12447-14	MW-112A	Total/NA	Water	NWTPH-Gx	
590-12447-15	MW-311	Total/NA	Water	NWTPH-Gx	
590-12447-16	MW-312	Total/NA	Water	NWTPH-Gx	
590-12447-17	MW-313	Total/NA	Water	NWTPH-Gx	
590-12447-18	MW-315	Total/NA	Water	NWTPH-Gx	
MB 590-25674/5	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 590-25674/1004	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
590-12447-4 DU	MW-111	Total/NA	Water	NWTPH-Gx	
590-12447-5 DU	MW-213	Total/NA	Water	NWTPH-Gx	
590-12447-5 DU	MW-213	Total/NA	Water	NWTPH-Gx	

## GC/MS Semi VOA

### Analysis Batch: 25688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-5	MW-213	Total/NA	Water	8270D SIM	25695
590-12447-6	MW-214	Total/NA	Water	8270D SIM	25695
MB 590-25695/1-A	Method Blank	Total/NA	Water	8270D SIM	25695
LCS 590-25695/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	25695
LCSD 590-25695/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM	25695

### Prep Batch: 25695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-5	MW-213	Total/NA	Water	3510C	
590-12447-6	MW-214	Total/NA	Water	3510C	
MB 590-25695/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-25695/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-25695/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

## GC Semi VOA

### Analysis Batch: 25771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-1	TX-03A	Total/NA	Water	NWTPH-Dx	25782
590-12447-2	SH-04	Total/NA	Water	NWTPH-Dx	25782
590-12447-3	MW-105	Total/NA	Water	NWTPH-Dx	25782
590-12447-4	MW-111	Total/NA	Water	NWTPH-Dx	25782
590-12447-5	MW-213	Total/NA	Water	NWTPH-Dx	25782
590-12447-6	MW-214	Total/NA	Water	NWTPH-Dx	25782
590-12447-8	MW-302	Total/NA	Water	NWTPH-Dx	25782
590-12447-9	MW-303	Total/NA	Water	NWTPH-Dx	25782
590-12447-10	MW-304	Total/NA	Water	NWTPH-Dx	25782
590-12447-11	MW-309	Total/NA	Water	NWTPH-Dx	25782
590-12447-12	MW-310	Total/NA	Water	NWTPH-Dx	25782
MB 590-25782/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	25782
LCS 590-25782/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	25782
LCSD 590-25782/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	25782

# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## GC Semi VOA

### Prep Batch: 25782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-1	TX-03A	Total/NA	Water	3510C	
590-12447-2	SH-04	Total/NA	Water	3510C	
590-12447-3	MW-105	Total/NA	Water	3510C	
590-12447-4	MW-111	Total/NA	Water	3510C	
590-12447-5	MW-213	Total/NA	Water	3510C	
590-12447-6	MW-214	Total/NA	Water	3510C	
590-12447-8	MW-302	Total/NA	Water	3510C	
590-12447-9	MW-303	Total/NA	Water	3510C	
590-12447-10	MW-304	Total/NA	Water	3510C	
590-12447-11	MW-309	Total/NA	Water	3510C	
590-12447-12	MW-310	Total/NA	Water	3510C	
MB 590-25782/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-25782/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-25782/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Prep Batch: 25799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-13	TX-04	Total/NA	Water	3510C	
590-12447-14	MW-112A	Total/NA	Water	3510C	
590-12447-17	MW-313	Total/NA	Water	3510C	
590-12447-18	MW-315	Total/NA	Water	3510C	
MB 590-25799/1-A	Method Blank	Total/NA	Water	3510C	
LCS 590-25799/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 590-25799/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 25802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-13	TX-04	Total/NA	Water	NWTPH-Dx	25799
590-12447-14	MW-112A	Total/NA	Water	NWTPH-Dx	25799
590-12447-17	MW-313	Total/NA	Water	NWTPH-Dx	25799
590-12447-18	MW-315	Total/NA	Water	NWTPH-Dx	25799
MB 590-25799/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	25799
LCS 590-25799/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	25799
LCSD 590-25799/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	25799

## HPLC/IC

### Analysis Batch: 25691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-8	MW-302	Total/NA	Water	300.0	
590-12447-10	MW-304	Total/NA	Water	300.0	
590-12447-12	MW-310	Total/NA	Water	300.0	
MB 590-25691/1002	Method Blank	Total/NA	Water	300.0	
LCS 590-25691/1003	Lab Control Sample	Total/NA	Water	300.0	

## Metals

### Prep Batch: 319316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-3	MW-105	Total Recoverable	Water	3005A	
MB 580-319316/14-A	Method Blank	Total Recoverable	Water	3005A	
LCS 580-319316/15-A	Lab Control Sample	Total Recoverable	Water	3005A	

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# QC Association Summary

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Metals (Continued)

### Prep Batch: 319316 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 580-319316/16-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	

### Prep Batch: 319324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-1	TX-03A	Dissolved	Water	3005A	
590-12447-8	MW-302	Dissolved	Water	3005A	
590-12447-10	MW-304	Dissolved	Water	3005A	
590-12447-12	MW-310	Dissolved	Water	3005A	
590-12447-15	MW-311	Dissolved	Water	3005A	
590-12447-16	MW-312	Dissolved	Water	3005A	
MB 580-319324/19-A	Method Blank	Total Recoverable	Water	3005A	
LCS 580-319324/20-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 580-319324/21-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
590-12447-1 MS	TX-03A	Dissolved	Water	3005A	
590-12447-1 MSD	TX-03A	Dissolved	Water	3005A	
590-12447-1 DU	TX-03A	Dissolved	Water	3005A	

### Analysis Batch: 319573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-1	TX-03A	Dissolved	Water	6020B	319324
590-12447-3	MW-105	Total Recoverable	Water	6020B	319316
590-12447-8	MW-302	Dissolved	Water	6020B	319324
590-12447-10	MW-304	Dissolved	Water	6020B	319324
590-12447-12	MW-310	Dissolved	Water	6020B	319324
590-12447-15	MW-311	Dissolved	Water	6020B	319324
590-12447-16	MW-312	Dissolved	Water	6020B	319324
MB 580-319316/14-A	Method Blank	Total Recoverable	Water	6020B	319316
MB 580-319324/19-A	Method Blank	Total Recoverable	Water	6020B	319324
LCS 580-319316/15-A	Lab Control Sample	Total Recoverable	Water	6020B	319316
LCS 580-319324/20-A	Lab Control Sample	Total Recoverable	Water	6020B	319324
LCSD 580-319316/16-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	319316
LCSD 580-319324/21-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	319324
590-12447-1 MS	TX-03A	Dissolved	Water	6020B	319324
590-12447-1 MSD	TX-03A	Dissolved	Water	6020B	319324
590-12447-1 DU	TX-03A	Dissolved	Water	6020B	319324

## General Chemistry

### Analysis Batch: 319546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-1	TX-03A	Total/NA	Water	300.0	
590-12447-15	MW-311	Total/NA	Water	300.0	
590-12447-16	MW-312	Total/NA	Water	300.0	
MB 580-319546/3	Method Blank	Total/NA	Water	300.0	
LCS 580-319546/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 580-319546/5	Lab Control Sample Dup	Total/NA	Water	300.0	

### Analysis Batch: 319607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-1	TX-03A	Total/NA	Water	353.2	
590-12447-8	MW-302	Total/NA	Water	353.2	

Eurofins TestAmerica, Spokane

# QC Association Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## General Chemistry (Continued)

### Analysis Batch: 319607 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
590-12447-10	MW-304	Total/NA	Water	353.2	
590-12447-12	MW-310	Total/NA	Water	353.2	
590-12447-15	MW-311	Total/NA	Water	353.2	
590-12447-16	MW-312	Total/NA	Water	353.2	
MB 580-319607/12	Method Blank	Total/NA	Water	353.2	
LCS 580-319607/13	Lab Control Sample	Total/NA	Water	353.2	
LCSD 580-319607/14	Lab Control Sample Dup	Total/NA	Water	353.2	
590-12447-1 MS	TX-03A	Total/NA	Water	353.2	
590-12447-1 MSD	TX-03A	Total/NA	Water	353.2	

# Lab Chronicle

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: TX-03A

Date Collected: 12/11/19 09:18

Date Received: 12/13/19 13:54

## Lab Sample ID: 590-12447-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25661	12/16/19 19:02	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25663	12/16/19 19:02	JSP	TAL SPK
Total/NA	Prep	3510C			257 mL	2 mL	25782	12/23/19 14:13	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25771	12/24/19 04:50	NMI	TAL SPK
Dissolved	Prep	3005A			50 mL	50 mL	319324	12/20/19 09:48	A1B	TAL SEA
Dissolved	Analysis	6020B		5	50 mL	50 mL	319573	12/23/19 15:25	FCW	TAL SEA
Total/NA	Analysis	300.0		100	5 mL	5 mL	319546	12/17/19 10:57	JKM	TAL SEA
Total/NA	Analysis	353.2		1	50 mL	50 mL	319607	12/24/19 13:40	JKM	TAL SEA

## Client Sample ID: SH-04

Date Collected: 12/11/19 13:16

Date Received: 12/13/19 13:54

## Lab Sample ID: 590-12447-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25661	12/16/19 19:44	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25663	12/16/19 19:44	JSP	TAL SPK
Total/NA	Prep	3510C			248.5 mL	2 mL	25782	12/23/19 14:13	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25771	12/24/19 05:11	NMI	TAL SPK

## Client Sample ID: MW-105

Date Collected: 12/11/19 13:50

Date Received: 12/13/19 13:54

## Lab Sample ID: 590-12447-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25661	12/16/19 20:05	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25663	12/16/19 20:05	JSP	TAL SPK
Total/NA	Prep	3510C			251.1 mL	2 mL	25782	12/23/19 14:13	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25771	12/24/19 05:32	NMI	TAL SPK
Total Recoverable	Prep	3005A			50 mL	50 mL	319316	12/20/19 08:28	A1B	TAL SEA
Total Recoverable	Analysis	6020B		5	50 mL	50 mL	319573	12/23/19 18:15	FCW	TAL SEA

## Client Sample ID: MW-111

Date Collected: 12/11/19 14:32

Date Received: 12/13/19 13:54

## Lab Sample ID: 590-12447-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/16/19 22:55	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/16/19 22:55	JSP	TAL SPK
Total/NA	Prep	3510C			240.2 mL	2 mL	25782	12/23/19 14:13	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25771	12/24/19 05:53	NMI	TAL SPK

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# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: MW-213

Lab Sample ID: 590-12447-5

Date Collected: 12/11/19 08:16

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/16/19 23:37	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/16/19 23:37	JSP	TAL SPK
Total/NA	Prep	3510C			251.2 mL	2 mL	25695	12/17/19 12:31	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1			25688	12/17/19 17:04	NMI	TAL SPK
Total/NA	Prep	3510C			257.1 mL	2 mL	25782	12/23/19 14:13	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25771	12/24/19 06:34	NMI	TAL SPK

## Client Sample ID: MW-214

Lab Sample ID: 590-12447-6

Date Collected: 12/11/19 08:44

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 00:40	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 00:40	JSP	TAL SPK
Total/NA	Prep	3510C			244.2 mL	2 mL	25695	12/17/19 12:31	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1			25688	12/17/19 17:28	NMI	TAL SPK
Total/NA	Prep	3510C			248.2 mL	2 mL	25782	12/23/19 14:13	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25771	12/24/19 06:55	NMI	TAL SPK

## Client Sample ID: MW-301

Lab Sample ID: 590-12447-7

Date Collected: 12/11/19 11:15

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 01:01	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 01:01	JSP	TAL SPK

## Client Sample ID: MW-302

Lab Sample ID: 590-12447-8

Date Collected: 12/11/19 10:16

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 01:23	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 01:23	JSP	TAL SPK
Total/NA	Prep	3510C			269.9 mL	2 mL	25782	12/23/19 14:13	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25771	12/24/19 07:16	NMI	TAL SPK
Total/NA	Analysis	300.0		10			25691	12/17/19 13:07	AMB	TAL SPK
Dissolved	Prep	3005A			50 mL	50 mL	319324	12/20/19 09:48	A1B	TAL SEA
Dissolved	Analysis	6020B		5	50 mL	50 mL	319573	12/23/19 15:56	FCW	TAL SEA
Total/NA	Analysis	353.2		1	50 mL	50 mL	319607	12/24/19 13:43	JKM	TAL SEA

# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: MW-303

## Lab Sample ID: 590-12447-9

Date Collected: 12/11/19 12:07

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 02:05	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 02:05	JSP	TAL SPK
Total/NA	Prep	3510C			248.6 mL	2 mL	25782	12/23/19 14:13	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25771	12/24/19 07:37	NMI	TAL SPK

## Client Sample ID: MW-304

## Lab Sample ID: 590-12447-10

Date Collected: 12/11/19 09:48

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 02:26	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 02:26	JSP	TAL SPK
Total/NA	Prep	3510C			250.9 mL	2 mL	25782	12/23/19 14:13	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25771	12/24/19 07:58	NMI	TAL SPK
Total/NA	Analysis	300.0		10			25691	12/17/19 13:19	AMB	TAL SPK
Dissolved	Prep	3005A			50 mL	50 mL	319324	12/20/19 09:48	A1B	TAL SEA
Dissolved	Analysis	6020B		5	50 mL	50 mL	319573	12/23/19 15:59	FCW	TAL SEA
Total/NA	Analysis	353.2		1	50 mL	50 mL	319607	12/24/19 13:45	JKM	TAL SEA

## Client Sample ID: MW-309

## Lab Sample ID: 590-12447-11

Date Collected: 12/11/19 11:40

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 02:47	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 02:47	JSP	TAL SPK
Total/NA	Prep	3510C			249 mL	2 mL	25782	12/23/19 14:13	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25771	12/24/19 08:19	NMI	TAL SPK

## Client Sample ID: MW-310

## Lab Sample ID: 590-12447-12

Date Collected: 12/11/19 10:45

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 03:08	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 03:08	JSP	TAL SPK
Total/NA	Prep	3510C			250.9 mL	2 mL	25782	12/23/19 14:13	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25771	12/24/19 08:40	NMI	TAL SPK
Total/NA	Analysis	300.0		10			25691	12/17/19 13:30	AMB	TAL SPK
Dissolved	Prep	3005A			50 mL	50 mL	319324	12/20/19 09:48	A1B	TAL SEA
Dissolved	Analysis	6020B		5	50 mL	50 mL	319573	12/23/19 16:01	FCW	TAL SEA
Total/NA	Analysis	353.2		1	50 mL	50 mL	319607	12/24/19 13:46	JKM	TAL SEA



# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

**Client Sample ID: TX-04**

**Lab Sample ID: 590-12447-13**

Date Collected: 12/12/19 08:28

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 03:29	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 03:29	JSP	TAL SPK
Total/NA	Prep	3510C			251.8 mL	2 mL	25799	12/26/19 11:01	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25802	12/26/19 15:04	NMI	TAL SPK

**Client Sample ID: MW-112A**

**Lab Sample ID: 590-12447-14**

Date Collected: 12/12/19 08:00

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 03:51	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 03:51	JSP	TAL SPK
Total/NA	Prep	3510C			230.1 mL	2 mL	25799	12/26/19 11:01	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25802	12/26/19 15:25	NMI	TAL SPK

**Client Sample ID: MW-311**

**Lab Sample ID: 590-12447-15**

Date Collected: 12/12/19 10:25

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 04:12	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 04:12	JSP	TAL SPK
Dissolved	Prep	3005A			50 mL	50 mL	319324	12/20/19 09:48	A1B	TAL SEA
Dissolved	Analysis	6020B		5	50 mL	50 mL	319573	12/23/19 16:04	FCW	TAL SEA
Total/NA	Analysis	300.0		1	5 mL	5 mL	319546	12/17/19 10:22	JKM	TAL SEA
Total/NA	Analysis	353.2		1	50 mL	50 mL	319607	12/24/19 13:47	JKM	TAL SEA

**Client Sample ID: MW-312**

**Lab Sample ID: 590-12447-16**

Date Collected: 12/12/19 09:54

Matrix: Water

Date Received: 12/13/19 13:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 04:33	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 04:33	JSP	TAL SPK
Dissolved	Prep	3005A			50 mL	50 mL	319324	12/20/19 09:48	A1B	TAL SEA
Dissolved	Analysis	6020B		5	50 mL	50 mL	319573	12/23/19 16:06	FCW	TAL SEA
Total/NA	Analysis	300.0		1	5 mL	5 mL	319546	12/17/19 10:33	JKM	TAL SEA
Total/NA	Analysis	353.2		1	50 mL	50 mL	319607	12/24/19 13:48	JKM	TAL SEA

# Lab Chronicle

Client: AECOM  
 Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Client Sample ID: MW-313

Date Collected: 12/12/19 08:56

Date Received: 12/13/19 13:54

## Lab Sample ID: 590-12447-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 04:54	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 04:54	JSP	TAL SPK
Total/NA	Prep	3510C			242.3 mL	2 mL	25799	12/26/19 11:01	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25802	12/26/19 15:47	NMI	TAL SPK

## Client Sample ID: MW-315

Date Collected: 12/12/19 09:25

Date Received: 12/13/19 13:54

## Lab Sample ID: 590-12447-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 05:15	JSP	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	25674	12/17/19 05:15	JSP	TAL SPK
Total/NA	Prep	3510C			257.1 mL	2 mL	25799	12/26/19 11:01	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			25802	12/26/19 16:08	NMI	TAL SPK

## Client Sample ID: TB-2

Date Collected: 12/11/19 08:00

Date Received: 12/13/19 13:54

## Lab Sample ID: 590-12447-19

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	25672	12/17/19 05:57	JSP	TAL SPK

### Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

# Definitions/Glossary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
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
B	Compound was found in the blank and sample.
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
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
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.

### General Chemistry

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.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

# Accreditation/Certification Summary

Client: AECOM  
Project/Site: 2555 13th Avenue, Seattle Terminal Harbo

Job ID: 590-12447-1

## Laboratory: Eurofins TestAmerica, Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C569	01-06-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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## Laboratory: Eurofins TestAmerica, Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State Program	C553	02-17-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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LAB (LOCATION)

ACCURIST ( )  
 CALSCIENCE ( )  
 CHEMAMERICA ( )  
 Other ( )

Lab Vendor # Dropdown

Please Check Appropriate Box:  
 BAW FOG  PIPELINE  DETAIL  
 CHEMICALS  CONSULTANT  TUBES  
 TRANSPORTATION  OTHER

Blaine Tech Services, Inc

1680 Rogers Ave, San Jose, CA, 95112

LOG CODE: BTSS

TELEPHONE: (206) 438-2371

FAX: NICKY MOODY

MOBILE: nicky.moody@aecom.com

TURNAROUND TIME (CALENDAR DAYS):  
 STANDARD (14 DAY)  DAYS  DAYS  DAYS  24 HOURS

DELIVERABLES:  LEVEL 1  LEVEL 2  LEVEL 3  LEVEL 4  OTHER (SPECIFY)

TEMPERATURE ON RECEIPT C° Cooler #1 Cooler #2 Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:

SHELL CONTRACT RATE APPLIES  
 STATE REIMBURSEMENT RATE APPLIES  
 EDD NOT NEEDED  
 RECEIPT VERIFICATION REQUESTED  
 PROVIDE LEAD DISK

Shell Oil Products US Chain Of Custody Record



Print Bill To Contact Name:

PO #

Planet Site or Project ID

DATE: 12/12/2019

PAGE: 2 of 2

SITE ADDRESS: Street and City  
 2555 13th Avenue

State: WA

Profile NO.: 60551813

EDS DELIVERABLE TO NAME: Company Office Location  
 Nicky Moody, AECOM, Portland, OR

Profile NO.: (503) 969-5310

LAB USE ONLY: nicky.moody@aecom.com

Patrick P's

REQUESTED ANALYSIS

NON-UNIT COST

FIELD NOTES:

TEMPERATURE ON RECEIPT C°  
 Container PID Readings  
 or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	PRESERVATIVE				NO. OF CONT.	UNIT COST	REQUESTED ANALYSIS	NON-UNIT COST	LAB USE ONLY
		DATE	TIME		HCL	HNO3	H2SO4	NONE					
	MW- 309	12/11	1140	W	X				6	X	NWTPH-Gx	X	
	MW- 310	12/11	1045	W	X	X	X		6	X	NWTPH-Gx	X	
	TX-04	12/12	0848	W	X				6	X	6020A Total Lead	X	
	MW- 112A	12/12	0800	W	X				6	X	353.2 Nitrate & Nitrite	X	
	MW- 311	12/12	1025	W	X	X	X		9	X	6020A Diss. Iron & Manganese	X	
	MW- 312	12/12	0954	W	X	X	X		9	X	300.0 Chloride	X	
	MW- 313	12/12	0856	W	X	X	X		6	X	2320B Alkalinity	X	
	MW- 315	12/12	0925	W	X				6	X			
	TB-2	12/11	0800	W	X				2	X			

Requisitioned By (Signature): *Nicky Moody* Received By (Signature):  
 Requisitioned By (Signature): *Patrick P's* Received By (Signature):  
 Requisitioned By (Signature): Received By (Signature):

Shipped Via FedEx

12/12/19

1800





**Eurofins TestAmerica, Spokane**

11922 East 1st Ave  
 Spokane, WA 99206  
 Phone: 509-924-9200 Fax: 509-924-9290

**Chain of Custody Record**



Environment Testing  
 TestAmerica

<b>Client Information (Sub Contract Lab)</b>		Sampler:		Lab PM: Arrington, Randee E		Carrier Tracking No(s):		COC No: 590-5011.1			
Client Contact: Shipping/Receiving		Phone:		E-Mail: randee.arrington@testamericainc.com		State of Origin: Washington		Page: Page 1 of 1			
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): State Program - Washington				Job #: 590-12447-1			
Address: 5755 8th Street East,		Due Date Requested: 12/26/2019		<b>Analysis Requested</b>						<b>Preservation Codes:</b> 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:	
City: Tacoma		TAT Requested (days):									
State, Zip: WA, 98424		PO #:									
Phone: 253-922-2310(Tel) 253-922-5047(Fax)		WO #:									
Email:											
Project Name: 2555 13th Avenue, Seattle Terminal Harbo		Project #: 59000733		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers			
Site: AECOM - 2555 13th Avenue, Seattle		SSOW#:									
				353.2/353.2 Prep Nitrogen, Nitrate-Nitrite		60208/FIELD_FLTRD (MOD) Diss. Fe & Mn (FF)		60209/3005A (MOD) Diss. Fe & Mn (FF)			
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>		<b>Sample Time</b>		<b>Sample Type</b> (C=Comp, G=grab)		<b>Matrix</b> (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		<b>Special Instructions/Note:</b>	
TX-03A (590-12447-1)		12/11/19		09:18 Pacific		Water		X X 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 compliance to TestAmerica Laboratories, Inc.											
<b>Possible Hazard Identification</b>						<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>					
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> 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: Maria 0700LL		Date/Time: 12/16/19 14:32		Company: TASPO		Received by: <i>[Signature]</i>		Date/Time: 12-17-19 0940		Company: TASEA	
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:					

IR6 = -6.1/1.6



## Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-12447-1

**Login Number: 12447**

**List Number: 1**

**Creator: O'Toole, Maria C**

**List Source: Eurofins TestAmerica, Spokane**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	1054097/1054094/1054095
Sample custody seals, if present, are intact.	N/A	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

## Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-12447-1

**Login Number: 12447**

**List Number: 2**

**Creator: Hobbs, Kenneth F**

**List Source: Eurofins TestAmerica, Seattle**

**List Creation: 12/14/19 10:36 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Login Sample Receipt Checklist

Client: AECOM

Job Number: 590-12447-1

**Login Number: 12447**

**List Number: 3**

**Creator: Hobbs, Kenneth F**

**List Source: Eurofins TestAmerica, Seattle**

**List Creation: 12/14/19 10:37 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## Laboratory Data Quality Review

### Shell – 2019 Fourth Quarter Progress Report – Harbor Island

Laboratory & Report No.	Test America Laboratories, Incorporated, #590-12426-1 and 590-12447-1
Report Date	January 27, 2020
Sampling Event	December 9 through December 12, 2019
Site Location	Seattle Terminal/2555 13 <sup>th</sup> Avenue
AECOM Project No.	60595460, Task 03001
Project Name	4th Quarter Groundwater Monitoring

This document summarizes the data quality review of 31 primary groundwater samples and two trip blanks collected between on December 9 and December 12, 2019, at the Harbor Island site in Seattle, Washington. Samples were submitted to TestAmerica Laboratories, Incorporated (TA) in Spokane, Washington, and analyzed for one or more of the following:

- The volatile organic compounds (VOCs) benzene, ethylbenzene, toluene, and o-, m,p- and total xylenes (BTEX) using US Environmental Protection Agency (EPA) Method 8260C
- Volatile petroleum products using Northwest (NW) total petroleum hydrocarbons (TPH) method for gasoline (Washington State Department of Ecology Method NWTPH-Gx)
- Semivolatile petroleum products using NWTPH method for diesel-range organics (DRO) (C10-C25) and residual range organics (RRO) (C25-C36) (Washington State Department of Ecology Method NWTPH-Dx)
- Polycyclic Aromatic Hydrocarbons (PAHs) using EPA Method 8270D modified by selected ion monitoring (SIM)
- Total Lead and Dissolved Iron and Manganese using EPA Method 6020B
- Sulfate using EPA 300.0
- Nitrate-Nitrite using EPA 353.2

Analyses were performed by TA of Spokane and Tacoma Washington, and the analytical data was reported under TA job numbers 590-12426-1 and 590-12447-1. Data were evaluated based on the EPA's *National Functional Guidelines (NFGs) for Organic Superfund Methods Data Review* (EPA, 2017a) and *National Functional Guidelines (NFGs) for Inorganic Superfund Methods Data Review* (EPA, 2017a) and using standard laboratory quality control (QC) criteria. Items reviewed included, where applicable: chain-of-custody (COC) records and holding times, along with results for method blanks, surrogate recoveries, laboratory control and laboratory control sample duplicates (LCS/LCSDs), matrix spike and matrix spike duplicates (MS/MSDs), and the trip blank. Qualifiers assigned as a result of this data review are summarized in Table 1, found at the end of this report.

The evaluations of reviewed criteria are:

- COC Records – Acceptable except as noted below:
  - The incorrect containers were provided for NWTPH-Dx analysis for MW-311 and MW-312. At the direction of AECOM, NWTPH-Dx analysis was cancelled for these samples.
- Temperature – Acceptable

- Preservation – Acceptable except as noted below:
  - Samples MW-308, MW-202, MW-203, and MW-307 were not preserved to a pH of <2 standard units (S.U.) for metals analyses. The laboratory adjusted the samples pH to <2 S.U. at sample receipt. No data were qualified based on the sample pH at receipt.
- Holding Times – Acceptable
- Method Blanks – Acceptable except as noted below:
  - PAHs by 8270D-SIM – Benzo(a)pyrene (0.01957ug/L) was detected in the method blank associated with preparation batch 25695 at a concentration between the method detection limit (MDL) and the reporting limit. The results for benzo(a)pyrene in MW-213 and MW-214 were reported at concentrations between the MDLs and the reporting limits; therefore, the results for benzo(a)pyrene in these samples were qualified as not detected and flagged 'U' at the reporting limits.
- Trip Blank – Acceptable
- Surrogates – Acceptable
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) – Acceptable except as noted below:
  - MS/MSDs were not performed in association with the NWPTH-GX, NWTPH-Dx, PAH, and sulfate analyses. Accuracy were assessed using the LCS and/or LCSD recoveries.
  - BTEX by 8260C – An MS/MSD was performed using MW-101. Results were acceptable.
  - Total Iron and Manganese by 6020B – An MS/MSD was performed using TX-03A. The percent recovery for total iron in the MS (129%) exceeded the control limits of 80-120%. As the percent recovery for total iron in the MSD and the relative percent difference (RPD) for the MS/MSD pair were acceptable, data were not qualified based on the elevated MS recovery.
  - Nitrate-Nitrite by 353.2 – MS/MSDs were performed using MW-308 and TX-03A. The percent recoveries for the MS/MSD (34%/33%) using MW-308 and the MS/MSD (14%/13%) using TX-03A were below the control limits of 90-110%. The results for nitrate-nitrite in MW-308 and TX-03A were qualified as estimated and flagged 'UJ' based on these MS/MSD results.
- Laboratory Duplicates – Acceptable except as noted below:
  - Laboratory duplicates were not performed in association with the NWTPH-Dx, PAH, and sulfate analyses. Precision was assessed using the LCS/LCSD RPDs.
  - BTEX by 8260C – Laboratory duplicates were performed using TES-MW-1, MW-307 TX-03A, and MW-213. Results were comparable.

A laboratory duplicate was performed using MW-111. The RPDs for benzene (36%) and m,p-xylene (24%) were greater than the control limit of 20%. The results for benzene and m,p-xylene in MW-111 were less than five times the reporting limits; therefore, data were not qualified based on these laboratory duplicate results.
  - Gasoline Range Organics NWTPH-Gx – Laboratory duplicates were performed using TES-MW-1, MW-307 TX-03A, MW-111, and MW-213. Results were comparable.
  - Total and Dissolved Metals by 6020B – A laboratory duplicate was performed using TX-03A. Results were comparable.
  - Nitrate-Nitrite by 353.2 – A laboratory duplicate was performed using MW-308. Results were comparable.

- Field Duplicates
  - General - A field duplicate was not collected as part of this sampling event.
- Reporting Limits – Acceptable
  - General - The results for one or more analytes in multiple samples were flagged with ‘J’ qualifiers by the laboratory to indicate that the reported concentrations were above the method detection limits (MDLs) but below the reporting limits. All J-flagged results are considered estimated.
- Laboratory Notes
  - Detected hydrocarbons in the gasoline range are due to the presence of discrete peaks in MW-112A.
  - Detected hydrocarbons in the diesel range appear to be due to gasoline overlap in MW-101, MW-104, MW-202, MW-203, and SH-04 (also includes biogenic interference).
  - Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel as well as possible biogenic interference in TX-06A, MW-204, MW-206A MW-105, MW-111, MW-213, MW-214, MW-304, and MW-310.
  - Detected hydrocarbons in the diesel range appear to be due to heavy gas/light diesel range components in MW-307 and MW-314.
  - Detected hydrocarbons in the diesel range appear to be due to a light weight, weathered diesel in TX-03A, MW-302, MW-303, and MW-309.
  - Detected hydrocarbons in the diesel range diesel range appear to be due to weathered diesel in MW-112A, MW-315.
  - Detected hydrocarbons in the diesel range appear to be due to heavily weathered diesel in MW-313.

**Overall Assessment of Data**

The completeness of the analytical report for this quarter laboratory analysis is 100%. The usefulness of the data is based on the US EPA guidance documents referenced in the introduction of this report. Upon consideration of the information presented above, the data are considered usable. Data qualifiers assigned during this review are provided in Table 1, below. The data qualifiers assigned by the laboratory are shown on the laboratory reports and in the electronic data deliverable (EDD).

**Data Qualifier Definitions**

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria.
- DNR Do Not Report. Another result is available that is more reliable.



## References

EPA, 2017a. National Functional Guidelines for Organic Superfund Methods Data Review.  
EPA-540-R-2017-002. January 2017.

## Summary

**Table 1. Summary of Data Qualifications for 4<sup>th</sup> Quarter Groundwater Monitoring**

Client Sample ID	Laboratory Sample ID	Analyte	Result	Units	Final Result	Rationale
MW-308	590-12426-04	Nitrate-Nitrite	0.0600 U	mg/L	0.0600 UJ	MS/MSD Recovery
TX-03A	590-12447-01	Nitrate-Nitrite	0.0600 U	mg/L	0.0600 UJ	MS/MSD Recovery
MW-213	590-12447-05	Benzo(a)pyrene	0.0200 J	µg/L	0.0896 U	Blank
MW-214	590-12447-06	Benzo(a)pyrene	0.0263 J	µg/L	0.0921 U	Blank

**Notes:**

J – estimated value

mg/L – milligram per liter

U – Analyte was not detected at the reporting limit shown.

µg/L - microgram per liter

UJ – Analyte was not detected at the reporting limit shown. The reporting limit is an estimated value.

## About AECOM

AECOM (NYSE: ACM) is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government. With approximately 45,000 employees around the world, AECOM is a leader in all of the key markets that it serves. AECOM provides a blend of global reach, local knowledge, innovation, and collaborative technical excellence in delivering solutions that enhance and sustain the world's built, natural, and social environments. A Fortune 500 company, AECOM serves clients in more than 100 countries and has annual revenue in excess of \$6 billion.

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