



SoundEarth Strategies, Inc.  
2811 Fairview Avenue East, Suite 2000  
Seattle, Washington 98102

August 12, 2019

Mr. Dale Myers  
Washington State Department of Ecology  
3190 160th Avenue Southeast  
Bellevue, Washington 98008

**SUBJECT: SECOND QUARTER 2019 SUMMARY REPORT**  
**SKS Shell Station Site**  
**3901 Southwest Alaska Street**  
**Seattle, Washington**  
**Project Number: 0914-001**

Dear Mr. Myers:

SoundEarth Strategies, Inc. (SoundEarth) is pleased to present the Washington State Department of Ecology (Ecology) with a status report for the Second Quarter 2019 post-cleanup compliance and reporting activities for the SKS Shell Station Site (SKS Site; Figure 1). The construction phase of the cleanup for the SKS Site was implemented in 2015 under the Prospective Purchaser Consent Decree (PPCD) #13-2-27556-2, entered on July 29, 2013. Remediation of petroleum-contaminated soil and groundwater, as well as post-cleanup groundwater monitoring has been performed in accordance with the PPCD and Chapter 173-340 of the Washington Administrative Code. Cleanup and development activities at the SKS Site included dewatering, extensive soil excavation, and the installation of a vapor barrier to eliminate the potential vapor intrusion exposure pathway in the mixed-use building constructed on the property. Cleanup of the SKS Site has been coordinated with remedial activities conducted at the adjacent Huling Brothers Property and Kennedy Family Limited Partnership Property, which are being managed separately under the Voluntary Cleanup Program (ID #NW2715).

#### **SECOND QUARTER 2019 SUMMARY**

Second Quarter groundwater sampling was conducted on June 6 and 7, 2019, for 13 on-property and off-property compliance wells. Well MW103 in the intersection northeast of the SKS Site was not sampled due to an insufficient volume of water in the well.

The Second Quarter groundwater sampling event is the 14th such event since cleanup was completed in 2015, and the 9th consecutive event in which all wells in the network work were sampled. SoundEarth uploaded Environmental Information Management (EIM) analytical and location data for the Fourth Quarter data, which was then approved by Ecology August 12, 2019.

Data from the June 2019 sampling event is tabulated below. Washington State Model Toxics Control Act Method A exceedances are highlighted in red and bolded:

**Second Quarter 2019 Groundwater Analytical Results**

Well ID	Sample Date	Analytical Results (micrograms per liter)		
		GRPH	Benzene	DRPH
MW101	06/06/19	<100	<1	<50
MW102	06/06/19	<100	<1	61
MW104	06/06/19	210	<1	<b>750</b>
MW105	06/06/19	<100	<1	96
MW108	06/06/19	<100	<1	<b>590</b>
MW109	06/06/19	<100	<1	140
MW110	06/06/19	<100	<1	91
MW111	06/06/19	<100	<1	84
MW112	06/06/19	<100	<1	59
MW113	06/06/19	<100	<1	89
RW03	06/07/19	410	<1	<b>680</b>
RW04	06/07/19	240	<1	470
RW05	06/06/19	<100	<1	99
<b>MTCA Method A Cleanup Level</b>		<b>1,000/800</b>	<b>5</b>	<b>500</b>

**NOTES:**

**RED** denotes indicates concentration exceeds MTCA Method A cleanup level.

< = not detected above the laboratory reporting limit

DRPH = diesel-range petroleum hydrocarbons

GRPH = gasoline-range petroleum hydrocarbons

MTCA = Washington State Model Toxics Control Act

Please see the attached Groundwater Monitoring Report—Second Quarter 2019, for a more detailed discussion of the results and overall decreasing groundwater concentration trends for the SKS Site over the past four years.

**PLANNED THIRD QUARTER 2019 ACTIVITIES**

SoundEarth plans to conduct Third Quarter 2019 groundwater sampling in September 2019. Groundwater levels and analytical data trends will continue to be evaluated.

**PROJECT SCHEDULE**

The following summarizes the work conducted to date and the current schedule for anticipated reporting and monitoring work at the SKS Site.

Cleanup Plan Task	Status: Date
UST Fuel Removal and Station Shutdown	Conducted: July 2013
Installation of Shoring for UST removal	Conducted: November 2013
UST System Cleaning and Removal	Conducted: December 2013
Submit UST Removal Report	Conducted: January 2014
Permitting for Wells	Conducted: May 2014
Master Use Permit	Conducted: June 2014
Install Dewatering Wells (8 Wells)	Conducted: July 2014

<u>Cleanup Plan Task</u>	<u>Status: Date</u>
Install West Bounding Well MW107 (post demolition)	Conducted: October 2014
SKS Site Demolition and Hoist Removal	Conducted: October–November 2014
Construct Dewatering System in ROW Wells	Conducted: March 2015
Operate Dewatering System	Conducted: March–June 2015
Contaminated Soil Excavation and Confirmation Sampling	Conducted: March–May 2015
Removal of Three Previously Unknown USTs	Conducted: March 2015
Backfill Excavation and Install Membrane Barrier	Conducted: August–September 2015
Install Compliance Wells MW108, MW109, and MW110	Conducted: September 2015
Prepare Interim Cleanup Action Report	Conducted: December–February 2016
First Quarter Post Cleanup Groundwater Monitoring	Conducted: March 2016
Submit preliminary Cleanup Action Report	Conducted: October 2016
Notice of Intent to Decommission Wells	Conducted: May 2017
Groundwater Elevation Study	In Progress: 2017–2018
Revised Agency-Review Cleanup Action Report	Conducted: January 2018
Alaska St. well closure technical meeting	Conducted: May 2018
Well Installation of MW113	Conducted: March 2018
Well Installation of MW111	Conducted: October 2018
Well Installation of MW112	Conducted: March 2019
Well Decommissioning (RW06–RW09, MW107)	Conducted: December 2018
Contingent ChemOx Injection*	Pending: 2020
Groundwater Monitoring (Quarterly)	Ongoing: 2019–2021

NOTES:

\* = to be determined

ChemOx = Chemical Oxidant

ROW = right-of-way

SKS Site = SKS Shell Station Site

UST = underground storage tank

**CLOSING**

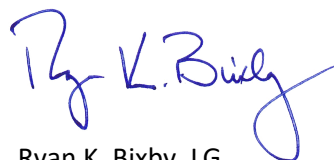
Please let me know if you would like to meet on-site or at your office to discuss any of the specific remedial activities. If you have any questions about the schedule and the cleanup activities, please contact Rob Roberts at 206-306-1900.

Respectfully,

**SoundEarth Strategies, Inc.**



Rob Roberts  
Senior Scientist



Ryan K. Bixby, LG  
Managing Principal

Attachment: Groundwater Monitoring Report—Second Quarter 2019

cc: Mr. Phil Carmody, GID

Mr. Jason Sweatt, GID  
Mr. William Joyce, Joyce Ziker Parkinson, PLLC  
Mr. Dave Cook, Aspect Consulting

CER/RKB:rt/cms

# **GROUNDWATER MONITORING REPORT—SECOND QUARTER 2019**



SoundEarth Strategies, Inc.  
2811 Fairview Avenue East, Suite 2000  
Seattle, Washington 98102

August 12, 2019

Mr. Phil Carmody  
LMI West Seattle Holdings, LLC  
125 High Street  
High Street Tower, 24th Floor  
Boston, Massachusetts 02110

**SUBJECT: GROUNDWATER MONITORING REPORT—SECOND QUARTER 2019**  
**SKS Shell Station Site**  
**3901 Southwest Alaska Street**  
**Seattle, Washington**  
**Project Number: 0914-001**

Dear Mr. Carmody:

SoundEarth Strategies, Inc. (SoundEarth) has prepared this report to present the results of the Second Quarter 2019 groundwater monitoring event conducted at the SKS Shell Station Site located generally at 3901 Southwest Alaska Street in Seattle, Washington (SKS Site), as shown on Figure 1. The groundwater monitoring event was conducted to evaluate the long-term effectiveness of the cleanup activities completed on and beneath the SKS Site that are being performed pursuant to the Cleanup Action Plan under Prospective Purchase Consent Decree #13-2-27556-2, entered on July 29, 2013.

## **BACKGROUND**

The SKS Site was developed as a gasoline station and an automotive repair facility in 1934. In 1950, the original 1934 gasoline fueling equipment was removed and two 4,000-gallon underground storage tanks (USTs) were installed. The pump island and service station office were removed in 1961 and replaced with a new pump island, relocated to the locations shown on Figure 2. An additional 8,000-gallon UST was installed in 1974. The 1950-vintage USTs were removed in 1984 and replaced with one 10,000-gallon UST and two 12,000-gallon USTs. Over time, leaded and unleaded gasoline and diesel fuel have been used and stored in various USTs at the SKS Site. In December 2013, the three 1984-vintage USTs and the 1974-vintage UST were decommissioned and removed from the SKS Site.

SoundEarth conducted remedial activities on the SKS Site in 2015 as part of the Whittaker multifamily/mixed use development. Remedial activities included lot-line to lot-line remedial excavation of petroleum-contaminated soil to approximately 29.5 feet below ground surface (bgs; 240 feet North American Vertical Datum 1988 [NAVD88]), right-of-way (ROW) dewatering to facilitate removal of contaminated water, and vapor barrier installation. Approximately 9,755 tons of petroleum-contaminated soil were removed from the SKS Site.

On September 1, 2015, monitoring wells MW108 through MW110 were installed in the basement/parking garage level of the building now located on the SKS Site to complete compliance groundwater monitoring.

On March 16, 2018, monitoring well MW113 was installed west of the SKS Site at the former Howden-Kennedy Funeral Home parcel (Kennedy Property) in the basement/parking garage level of the building (Figure 2). This well was installed to assess the lateral extent of groundwater impacts to the southwest of the SKS Site and to confirm that no residual groundwater contamination remains on the Kennedy Property. This well was also installed to provide groundwater elevation information for the evaluation of the reversal in groundwater flow direction at the SKS Site.

On October 3, 2018, monitoring well MW111 was installed in the Southwest Alaska Street sidewalk on the northeastern portion of the SKS Site. On March 1, 2019, MW112 was installed in Southwest Alaska Street approximately 26 feet east of MW111. These wells were installed to evaluate groundwater flow direction and gradient, natural attenuation, the potential for plume expansion or contraction, and to evaluate whether future chemical injections are warranted.

## FIELD ACTIVITIES

The Second Quarter monitoring event was conducted on June 6 and 7, 2019, to evaluate the long-term effectiveness of cleanup activities. Groundwater sampling was conducted on a total of 13 on-property and off-property compliance wells. The monitoring event included measuring depths to groundwater and sampling monitoring wells MW108 through MW110 and MW113 located in the building parking garage; wells MW101, MW102, MW104, MW105, and RW03 through RW05, located within the Fautleroy Way Southwest ROW; and wells MW111 and MW112, located within the Southwest Alaska Street ROW. Consistent with the First Quarter 2019 monitoring event, remediation wells RW01 and RW02 were not included in this monitoring event, based on a telephone discussion between Dale Myers of Ecology and Rob Roberts of SoundEarth prior to the Third Quarter 2017 groundwater sampling event.

Upon arrival at the SKS Site, SoundEarth personnel opened the monitoring wells and permitted water levels to equilibrate with atmospheric pressure for a minimum of 30 minutes before groundwater level measurements were obtained. Groundwater levels were measured relative to the top of well casing to an accuracy of 0.01 feet using an electronic water level meter. Monitoring well MW103 was observed to contain less than 0.05 feet of water and was therefore not sampled.

Groundwater samples were collected from monitoring wells MW101, MW102, MW104, MW105, and MW108 through MW113 and remediation wells RW03 through RW05, in accordance with the US Environmental Protection Agency (EPA) *Low-Flow (Minimal Drawdown) Ground-Water Procedures* (April 1996). Purging and sampling of each monitoring well were performed using a peristaltic pump and dedicated polyethylene tubing at flow rates ranging from 100 to 160 milliliters per minute. The intake was placed approximately 2 to 3 feet below the surface of the groundwater or mid-screen, if well screen was submerged, in each monitoring well. During purging, water quality was monitored using a YSI water quality meter equipped with a flow-through cell. The water quality parameters that were monitored and recorded included temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential. Each monitoring well was purged until a minimum subset of pH, specific conductivity, and dissolved oxygen and/or turbidity stabilized. Monitoring wells MW104 and MW108 were purged dry while filling the flow-through cell. Therefore, a grab sample was collected from each of these wells once the wells had recharged to their initial groundwater levels. The low recharge rates observed during purging at wells MW104 and MW108 are similar to conditions observed during previous events.

Following purging, groundwater samples were collected from the pump outlet tubing located upstream of the flow-through cell and placed directly into clean, laboratory-prepared sample containers. Each container was labeled with a unique sample identification number, placed on ice in a cooler, and transported to Friedman & Bruya, Inc., of Seattle, Washington, under standard chain-of-custody protocols for laboratory analysis.

The groundwater samples were submitted for analysis of gasoline-range petroleum hydrocarbons (GRPH) by Northwest Total Petroleum Hydrocarbon (NWTPH) Method NWTPH-Gx; benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B; and diesel- and oil-range petroleum hydrocarbons (DRPH and ORPH, respectively) by Method NWTPH-Dx.

Purge water generated during the monitoring event was placed in an appropriately labeled 55-gallon steel drum and temporarily stored on the SKS Site pending receipt of analytical data and proper disposal.

## RESULTS

### Groundwater Elevations and Flow Direction

Groundwater elevations measured on June 6, 2019, ranged from approximately 241.46 (MW102 in the Fautleroy Way Southwest ROW) to 239.82 (MW109 in the building parking garage) feet NAVD88 (Table 1). Historical groundwater measurements have indicated that groundwater at the Fautleroy Way Southwest and Southwest Alaska Street intersection consistently flowed at a moderate gradient of 0.015 feet per foot to the north–northeast. However, groundwater elevation data collected more recently since 2017 indicate a groundwater flow direction to the west at an average gradient of approximately 0.014 feet per foot along the Fautleroy Way Southwest property edge. During Second Quarter 2019, the observed gradient was 0.0092 feet per foot, with a groundwater flow direction to the west-southwest beneath the eastern side of the SKS Site. Groundwater elevations are relatively flat on the eastern side of the SKS Site beneath the building. Groundwater elevations measured in wells MW108, MW109, and MW110, located within the parking garage adjacent to the building footings along the northern and eastern sides of the building, are approximately 0.25 foot lower than elevations measured in wells MW104, MW111, MW112, and RW03 through RW05, which are located outside of the building footings along the northern and eastern sides of the building. Figure 2 provides a rose diagram showing the groundwater flow directions and gradients prior to the remedial excavation, as well as the groundwater flow directions and gradients from all sampling events conducted after the remedial excavation. The change in groundwater flow observed during 2017 through Second Quarter 2019 is likely due to the footing drains and associated sub-slab drainage system that were installed between July and September 2015 for the underground parking garage, as discussed in the Conclusions section. Groundwater on the eastern side of the SKS Site beneath the Fautleroy Way Southwest and Southwest Alaska Street ROWs appears to have reversed its flow direction due to the lower groundwater elevations observed in the vicinity of the building footings.

### Groundwater Chemical Analytical Results

Groundwater analytical results from the monitoring event are summarized below (Figure 3; Table 1). The analytical results for groundwater samples collected from MW101, MW102, MW105, MW109 through MW113, RW04, and RW05 were below Washington State Model Toxics Control Act (MTCA) Method A cleanup levels (CULs) for the chemicals of concern at the SKS Site, including GRPH, DRPH, ORPH, and BTEX. Data from the Second Quarter 2019 sampling event are tabulated in Table A below.



**Table A, Second Quarter 2019 Groundwater Analytical Results**

Well ID	Sample Date	Analytical Results (micrograms per liter)		
		GRPH	Benzene	DRPH
MW101	06/06/19	<100	<1	<50
MW102	06/06/19	<100	<1	61
MW103	Insufficient water column to sample			
MW104	06/06/19	210	<1	750
MW105	06/06/19	<100	<1	96
MW108	06/06/19	<100	<1	590
MW109	06/06/19	<100	<1	140
MW110	06/06/19	<100	<1	91
MW111	06/06/19	<100	<1	84
MW112	06/06/19	<100	<1	59
MW113	06/06/19	<100	<1	89
RW03	06/07/19	410	<1	680
RW04	06/07/19	240	<1	470
RW05	06/06/19	<100	<1	99
<b>MTCA Method A Cleanup Level</b>		<b>1,000/800</b>	<b>5</b>	<b>500</b>

**NOTES:**

**Red** indicates concentration exceeds MTCA Method A cleanup level.

< = not detected above the laboratory reporting limit

DRPH = diesel-range petroleum hydrocarbons

GRPH = gasoline-range petroleum hydrocarbons

MTCA = Washington State Model Toxics Control Act

A summary of the analytical results for the primary chemicals of concern for the SKS Site, including GRPH, benzene, and DRPH, is provided below:

- **Gasoline-Range Petroleum Hydrocarbons.** GRPH concentrations in groundwater samples collected from all sampled wells were below the MTCA Method A CUL of 800 micrograms per liter ( $\mu\text{g}/\text{L}$ ) for GRPH. GRPH concentrations detected in wells MW104 and RW04 during the Second Quarter 2019 sampling event were generally similar to the concentrations detected in these wells during the First Quarter 2019 groundwater sampling event. The groundwater sample collected from RW03 contained 410  $\mu\text{g}/\text{L}$  of GRPH, which is lower than the concentrations detected in this well during Second Quarter 2018 (730  $\mu\text{g}/\text{L}$ ) and First Quarter 2019 (1,700  $\mu\text{g}/\text{L}$ ).
- **Benzene.** The groundwater samples collected from all sampled monitoring wells were below the laboratory reporting limit for benzene.
- **Diesel-Range Petroleum Hydrocarbons.** DRPH concentrations in groundwater samples collected from wells MW101, MW102, MW105, MW109 through MW113, RW04, and RW05 were below the MTCA Method A CUL of 500  $\mu\text{g}/\text{L}$  for DRPH. The groundwater samples collected from wells MW104, MW108, and RW03 contained DRPH concentrations of 750, 590, and 680  $\mu\text{g}/\text{L}$ , respectively, exceeding the MTCA Method A CUL. The DRPH concentrations in wells MW104 and RW03 were generally similar to concentrations detected in these wells during Second Quarter 2018 and First Quarter 2019.

The DRPH concentration of 590 mg/kg in the sample collected from well MW108 during Second Quarter 2019 is lower than the DRPH concentration of 680 µg/L detected in this well during First Quarter 2019. These DRPH concentrations are anomalous compared with previous DRPH concentrations in this well. Prior to First Quarter 2019, concentrations had not exceeded the CUL in well MW108 during any monitoring events. Additional groundwater monitoring will be completed at MW108 to evaluate whether this concentration represents a trend.

As shown in the attached Charts 1 through 6, which summarize trends in GRPH and benzene concentrations in monitoring wells MW104, MW108, MW109, MW110, RW03, and RW04 since 2011, GRPH and benzene in the four monitoring wells during Second Quarter 2019 are significantly lower than concentrations observed before the remedial excavation was completed. Aside from well RW03, GRPH and benzene concentrations in all six wells have remained below laboratory reporting limits or the MTCA Method A CULs since First Quarter 2017. Figure 4 includes trend charts as well as data comparison tables from the six ROW monitoring wells. The tables on Figure 4 illustrate that ROW groundwater concentrations were either non-detect for GRPH and benzene before and after the 2015 excavation (MW101 through MW103 and MW105), or that concentrations are significantly reduced (RW02 and RW04).

A copy of the laboratory analytical report is provided as Attachment A.

## DATA VALIDATION

SoundEarth contracted with Validata, LLC to conduct a Stage 2A-level quality assurance/quality control (QA/QC) review of the analytical results. The data were reviewed using the guidance and QC criteria documented in the EPA's *National Functional Guidelines for Organic Superfund Data Review* (2017). The quality control requirements that were reviewed included sample receipt, handling, and holding times; recoveries for method blanks, surrogates, spikes, and field duplicates; and reporting limits.

**Results.** The DRPH results for groundwater samples collected from wells MW102, MW104, MW105, MW108, MW109, MW110, MW111, MW112, MW113, RW03, RW04, and RW05, and the ORPH result for the groundwater sample collected from MW104 were qualified as estimated (J) since the laboratory reported the diesel and/or oil range results as "x", indicating that the chromatographic pattern does not match the standard. All other QA/QC criteria were confirmed to be acceptable for the groundwater samples, and the analytical results are considered to be acceptable for use. A copy of the data validation report is provided as Attachment B.

Following data validation, the groundwater data were uploaded to Ecology's Environmental Information Management system on June 26, 2019 and confirmed by Ecology as successfully uploaded on August 12, 2019.

## CONCLUSIONS

Petroleum hydrocarbons (GRPH, DRPH, ORPH, and BTEX) were either not detected above laboratory reporting limits or detected at concentrations less than MTCA Method A CULs in 10 of the 13 wells sampled for groundwater at the SKS Site during the Second Quarter 2019 monitoring event. The three wells in which MTCA Method A CUL exceedances were encountered included:

- Remediation well RW03, which contained a concentration of DRPH exceeding the MTCA Method A CUL.

- Monitoring well MW104, which contained a concentration of DRPH exceeding the MTCA Method A CUL.
- Monitoring well MW108, which contained a concentration of DRPH slightly exceeding the MTCA Method A CUL.

Wells RW03 and MW104 are both located in the Fautleroy Way southwest sidewalk. Well MW108 is located in the building parking garage near the northwestern corner of the SKS Site.

Although concentrations of GRPH and/or DRPH remain in exceedance of CULs at wells RW03 and MW104, analytical data trends indicate that concentrations of these contaminants have decreased significantly between December 2016 and June 2019. It is recommended that groundwater monitoring continue to further assess the natural attenuation of petroleum hydrocarbons at these well locations and to confirm the degradation trends. The DRPH concentrations exceeding the MTCA cleanup level in on-property well MW108 during First and Second Quarters 2019 are anomalously high compared to DRPH concentrations detected in this well since sampling began in First Quarter 2016. Prior to First Quarter 2019, MW108 had not previously exhibited an exceedance of the applicable cleanup levels for any contaminants of concern. The DRPH detections were flagged by the laboratory as not representative of the diesel fuel standard. This data and associated trends will be reevaluated following subsequent groundwater monitoring events. At this time, the analytical groundwater data and monitoring trends indicate that no additional treatment is warranted.

The historical groundwater flow direction was documented to be north–northeast prior to development, but based on the most recent groundwater elevations, the flow direction has changed to the west (see Rose Diagrams in Figure 2). As shown on Figures 5 and 6, the building is equipped with a sub-slab drainage system that should (based on location) intercept groundwater at the southern and western boundaries of the new sub-grade parking levels. The two-level parking garage includes a grid-work of sub-slab drains and vertical wall footing drains that lead to a 300-foot-long, 6-foot-internal-diameter stormwater retention pipe located beneath the eastern side of the building (Figure 5). The southwestern portion of the parking garage was constructed approximately 28 feet bgs, and the current building footing drain system appears to be intercepting that groundwater beneath the SKS Site and the entire Whittaker property. During Second Quarter 2019, groundwater flow direction was measured to be toward the west-southwest on the eastern side of the SKS Site, with relatively consistent groundwater elevations on the western side of the SKS Site beneath the building. SoundEarth is currently analyzing whether the building drainage system is affecting the groundwater elevation and flow direction at the northeast corner of the Whittaker property.

During March 2018, monitoring well MW113 was installed in the parking garage beneath the building on the Kennedy Property to the west of the SKS Site. GRPH, DRPH, ORPH, and BTEX were all below the applicable MTCA Method A CULs in groundwater samples collected from this well during 2018 and First and Second Quarters 2019, indicating that the change in groundwater flow direction has not impacted groundwater to the west of the SKS Site.

## **SCHEDULE**

SoundEarth will conduct a monitoring event of the well network at the SKS Site in Third Quarter 2019; the results will be included in a groundwater monitoring report.

## RECOMMENDATION

SoundEarth recommends the decommissioning of wells MW101 and MW102, which are located on the east side of, and within, Fauntleroy Way, respectively. Groundwater samples collected from these wells have not contained concentrations of GRPH, DRPH, ORPH, or BTEX exceeding the applicable laboratory reporting limits and/or CULs since sampling was first conducted in 2012. Additionally, a significant redevelopment and mass excavation is occurring on the property to the east, near these wells. Furthermore, sampling of well MW102 is very difficult and costly to sample because it is located in the Alaska Street/Fauntleroy Way intersection, presenting safety concerns, creating obstructions to traffic flow in a major arterial, and affecting access to an adjacent Rapid Ride Metro bus stop.

## CLOSING

SoundEarth appreciates this opportunity to provide LMI West Seattle Holdings, LLC, with environmental consulting services. Please call Rob Roberts at 206-306-1900 if you have any questions or comments regarding the content of this report.

Respectfully,

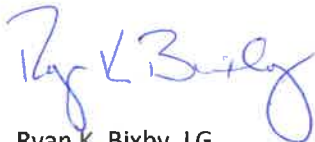
**SoundEarth Strategies, Inc.**



Clare Tohilin, LG  
Associate Geologist



Rob Roberts  
Senior Scientist



Ryan K. Bixby, LG  
Managing Principal

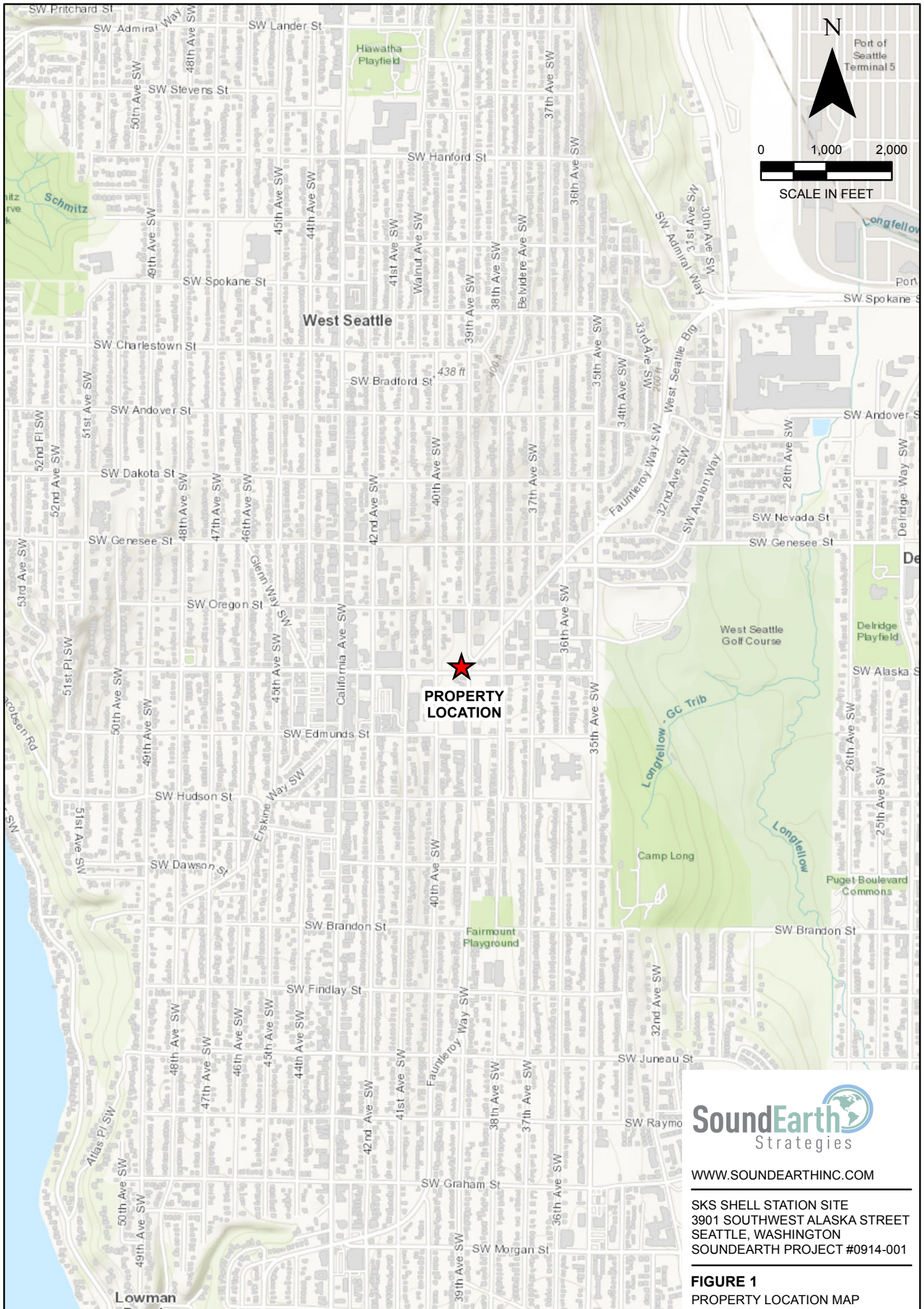


Attachments: Figure 1, Property Location Map  
Figure 2, Groundwater Elevation Contour Map (June 6, 2019)  
Figure 3, 2019 Q2 Groundwater Analytical Data  
Figure 4, GRPH and Benzene Concentration Trends in Groundwater  
Figure 5, Sub-Slab Drainage Plan with Cross Section Location  
Figure 6, Cross Section A-A'  
Table 1, Summary of Groundwater Data  
Chart 1, GRPH and Benzene Concentrations—MW104  
Chart 2, GRPH and Benzene Concentrations—GLMW01/MW109  
Chart 3, GRPH and Benzene Concentrations—MW110/MW-2  
Chart 4, GRPH and Benzene Concentrations—MW-3/MW108  
Chart 5, GRPH and Benzene Concentrations—RW03  
Chart 6, GRPH and Benzene Concentrations—RW04  
A, Laboratory Analytical Report

*Friedman & Bruya, Inc. #906144 amended*  
B, Data Validation Report  
*Validata, LLC #906144 amended*

CJT/CER:dnm/cms

## FIGURES



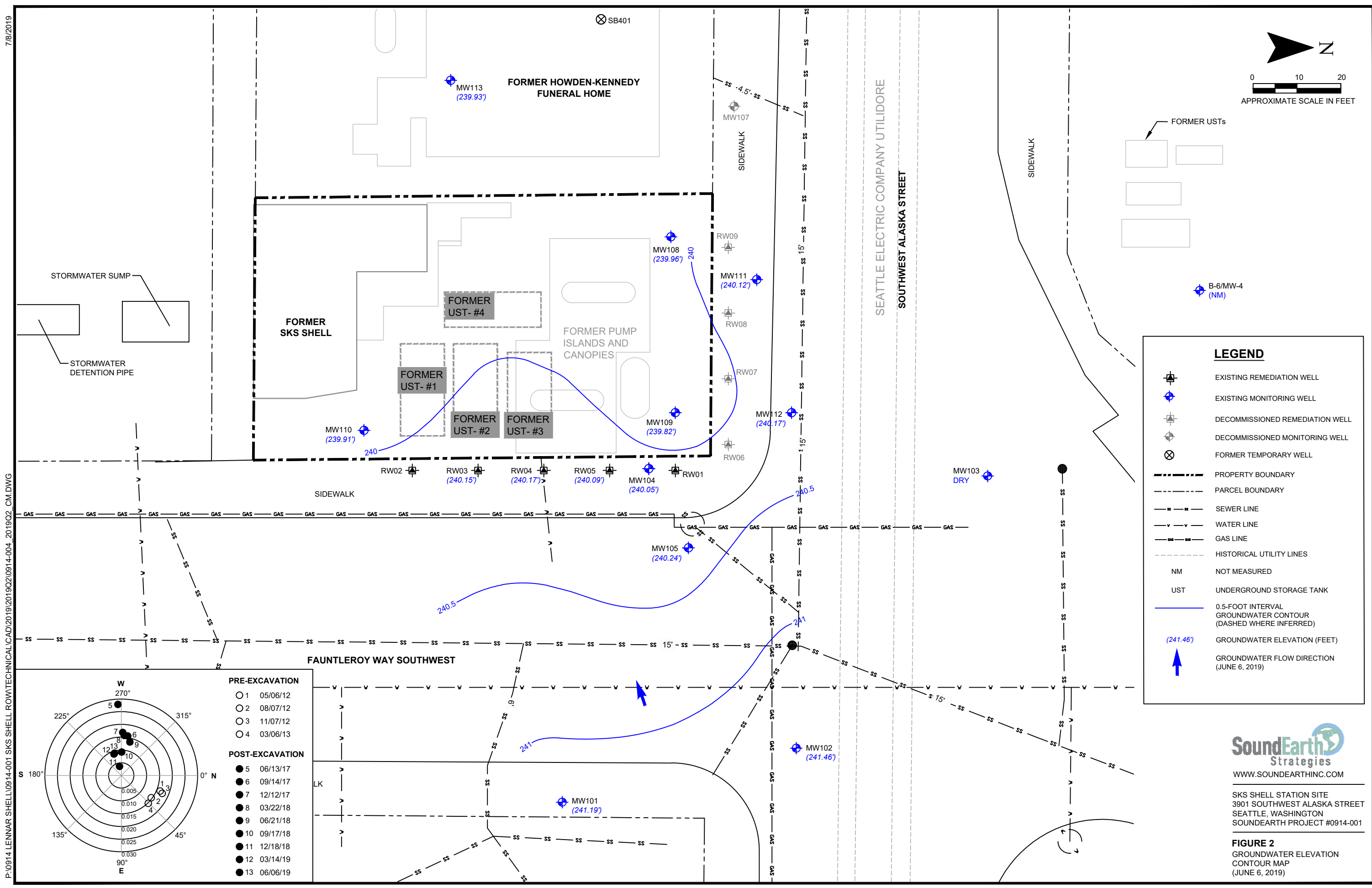
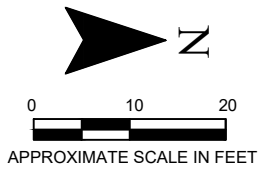
**SoundEarth**  
Strategies

WWW.SOUNDEARTHINC.COM

SKS SHELL STATION SITE  
3901 SOUTHWEST ALASKA STREET  
SEATTLE, WASHINGTON  
SOUNDEARTH PROJECT #0914-001

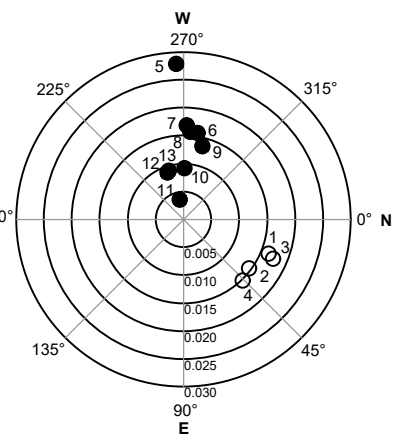
**FIGURE 1**  
PROPERTY LOCATION MAP

7/8/2019  
P:\0914 LENNAR SHELLO\0914-001 SKS SHELL ROW\TECHNICAL\CAD\2019\2019Q2\0914-004\_2019Q2\_CM.DWG



**LEGEND**

- EXISTING REMEDIATION WELL
- EXISTING MONITORING WELL
- DECOMMISSIONED REMEDIATION WELL
- DECOMMISSIONED MONITORING WELL
- FORMER TEMPORARY WELL
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- SEWER LINE
- WATER LINE
- GAS LINE
- HISTORICAL UTILITY LINES
- NM NOT MEASURED
- UST UNDERGROUND STORAGE TANK
- 0.5-FOOT INTERVAL GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION (FEET)
- GROUNDWATER FLOW DIRECTION (JUNE 6, 2019)



PRE-EXCAVATION	
○ 1	05/06/12
○ 2	08/07/12
○ 3	11/07/12
○ 4	03/06/13
POST-EXCAVATION	
● 5	06/13/17
● 6	09/14/17
● 7	12/12/17
● 8	03/22/18
● 9	06/21/18
● 10	09/17/18
● 11	12/18/18
● 12	03/14/19
● 13	06/06/19

**SoundEarth Strategies**  
WWW.SOUNDEARTHINC.COM

SKS SHELL STATION SITE  
3901 SOUTHWEST ALASKA STREET  
SEATTLE, WASHINGTON  
SOUNDEARTH PROJECT #0914-001

**FIGURE 2**  
GROUNDWATER ELEVATION CONTOUR MAP (JUNE 6, 2019)



7/9/2019  
P:0914 LENNAR S HELL 0914-001 SKS SHELL ROWWTECHNICAL/CAD/2019/2019Q2/0914-004\_2019Q2\_GD.DWG

**KEY**

GRPH  
DRPH  
BENZENE

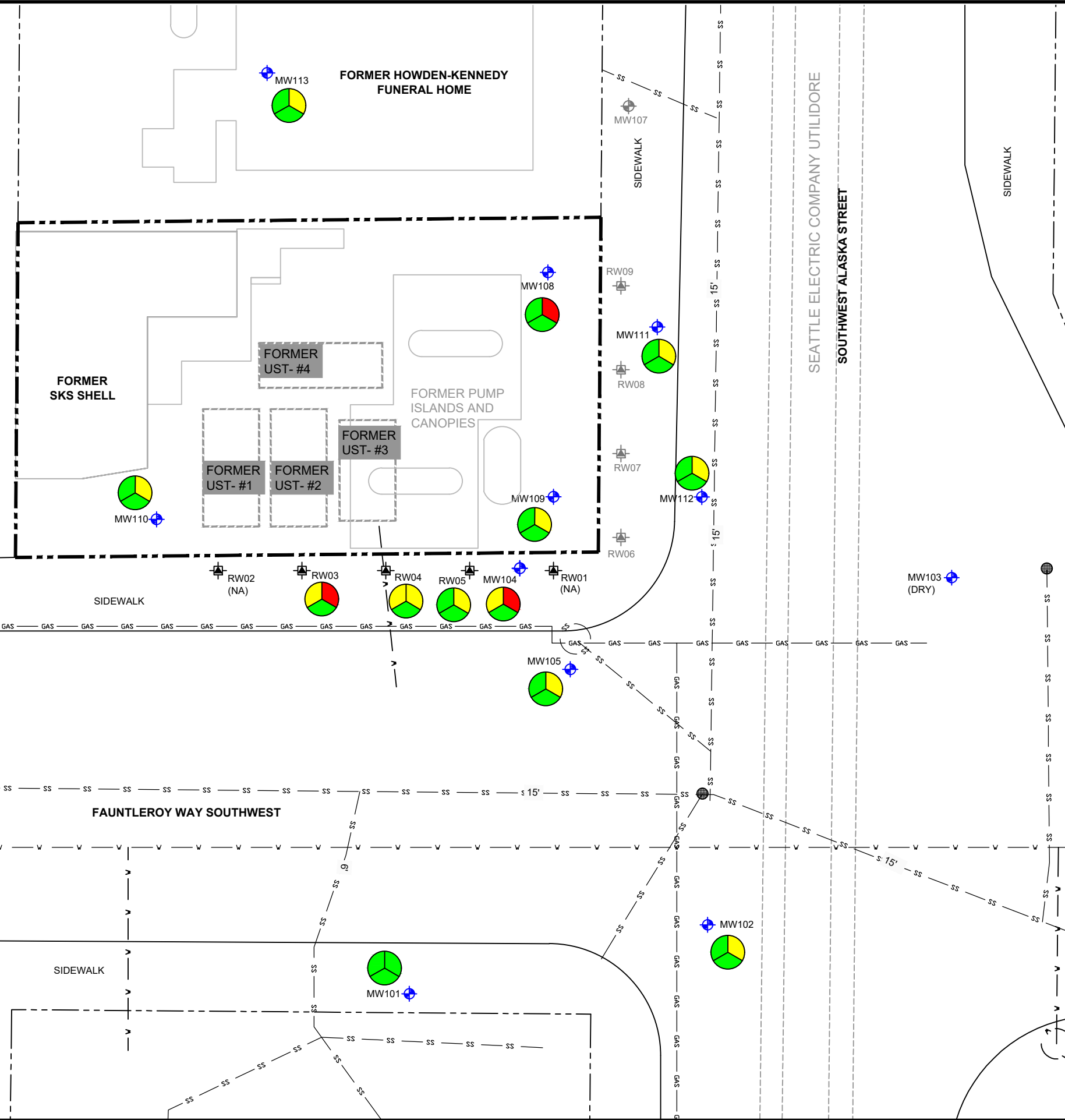
DENOTES CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL

DENOTES CONCENTRATION BELOW LABORATORY REPORTING LIMIT

DENOTES CONCENTRATION DETECTED ABOVE LABORATORY REPORTING LIMIT BUT BELOW MTCA METHOD A CLEANUP LEVEL

NOT ANALYZED

Well ID	Sample Date	Analytical Results (micrograms per liter)			
		GRPH	Benzene	DRPH	ORPH
MW101	09/17/18	<100	<1	<50	<250
	12/18/18	<100	<1	210	<300
	03/14/19	<100	<1	<50	<250
	06/06/19	<100	<1	<50	<250
MW102	09/17/18	<100	<1	<50	<250
	12/18/18	<100	<1	<50	<250
	03/14/19	<100	<1	<50	<250
	06/06/19	<100	<1	61	<250
MW103	09/17/18	<100	<1	<750	<1,500
	12/18/18	Insufficient water column to sample			
	03/14/19	Insufficient water column to sample			
	06/06/19	Insufficient water column to sample			
MW104	09/17/18	<100	<1	480	<350
	12/18/18	<100	<1	390	<250
	03/14/19	170	<1	690	<300
	06/06/19	210	<1	750	290
MW105	09/17/18	<100	<1	<50	<250
	12/18/18	<100	<1	<50	<250
	03/14/19	<100	<1	<50	<250
	06/06/19	<100	<1	96	<250
MW108	09/17/18	<100	<1	110	<480
	12/18/18	<100	<1	<50	<250
	03/14/19	<100	<1	680	<350
	06/06/19	<100	<1	590	<250
MW109	09/17/18	150	<1	110	<250
	12/18/18	<100	<1	61	<250
	03/14/19	140	<1	<60	<300
	06/06/19	<100	<1	140	<250
MW110	09/17/18	<100	<1	<50	<250
	12/18/18	<100	<1	<50	<250
	03/14/19	<100	<1	74	<300
	06/06/19	<100	<1	91	<250
MW111	09/17/18	<100	<1	55	<250
	12/18/18	<100	<1	<50	<250
	03/14/19	<100	<1	83	<250
	06/06/19	<100	<1	84	<250
MW112	03/14/19	<100	<1	58	<250
	06/06/19	<100	<1	59	<250
	09/17/18	<100	<1	<50	<250
	12/18/18	<100	<1	100	<250
MW113	03/14/19	<100	<1	79	<250
	06/06/19	<100	<1	89	<250
	09/17/18	<100	<1	<50	<250
	12/18/18	<100	<1	100	<250
RW02	06/14/17	<100	<1	<50	<250
	09/17/18	370	<1	430	<250
	12/18/18	2,800	6.5	1,600	<250
	03/15/19	1,700	1.9	730	<250
RW03	06/07/19	410	<1	680	<250
	09/17/18	130	<1	120	<250
	12/18/18	160	<1	510	<250
	03/15/19	300	<1	310	<250
RW04	06/07/19	240	<1	470	<250
	09/17/18	140	<1	140	<250
	12/18/18	110	<1	160	<250
	03/14/19	<100	<1	120	<250
RW05	06/06/19	<100	<1	99	<250
	09/17/18	<100	<1	99	<250
	12/18/18	<100	<1	99	<250
	03/14/19	<100	<1	99	<250
MTCA Method A Cleanup Level		1,000/800	5	500	500



**LEGEND**

- EXISTING REMEDIATION WELL
- EXISTING MONITORING WELL
- DECOMMISSIONED REMEDIATION WELL
- DECOMMISSIONED MONITORING WELL
- FORMER TEMPORARY WELL
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- SEWER LINE
- WATER LINE
- GAS LINE
- HISTORICAL UTILITY LINES
- GASOLINE-RANGE PETROLEUM HYDROCARBONS
- DIESEL-RANGE PETROLEUM HYDROCARBONS
- OIL-RANGE PETROLEUM HYDROCARBONS
- WASHINGTON STATE MODEL TOXICS CONTROL ACT
- UNDERGROUND STORAGE TANK
- DENOTES CONCENTRATION EXCEEDS MTCA METHOD A CLEANUP LEVEL
- RESULT BELOW LABORATORY REPORTING LIMITS
- NOT ANALYZED

**SoundEarth Strategies**  
WWW.SOUNDEARTHINC.COM

SKS SHELL STATION SITE  
3901 SOUTHWEST ALASKA STREET  
SEATTLE, WASHINGTON  
SOUNDEARTH PROJECT #0914-001

**FIGURE 3**  
2019 Q2 GROUNDWATER ANALYTICAL DATA

CHART 1: MW104 – GRPH AND BENZENE

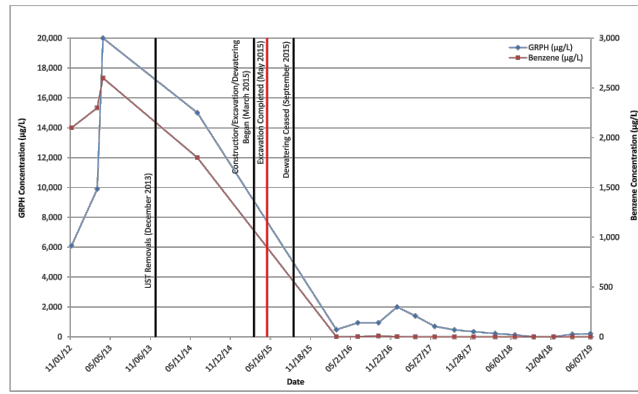


CHART 2: GLMW01 / MW109 – GRPH AND BENZENE

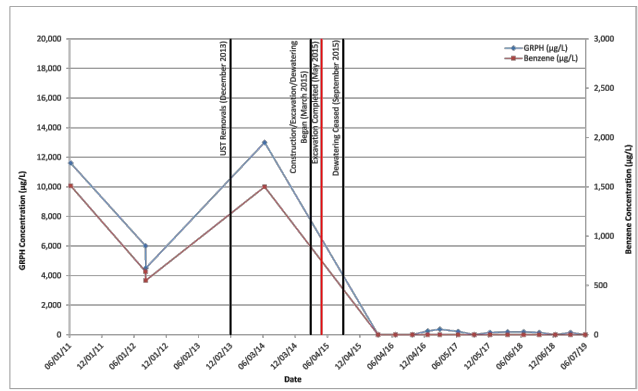


CHART 3: MW-2 / MW110 – GRPH AND BENZENE

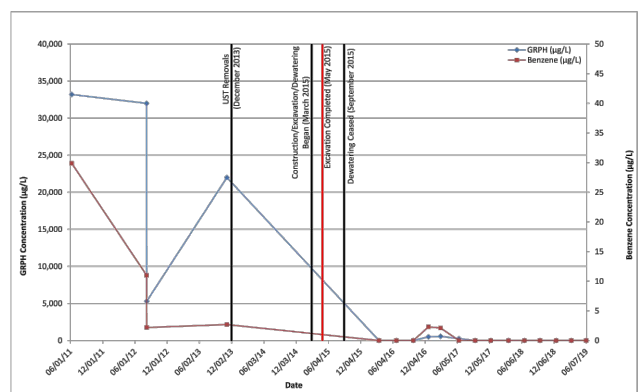
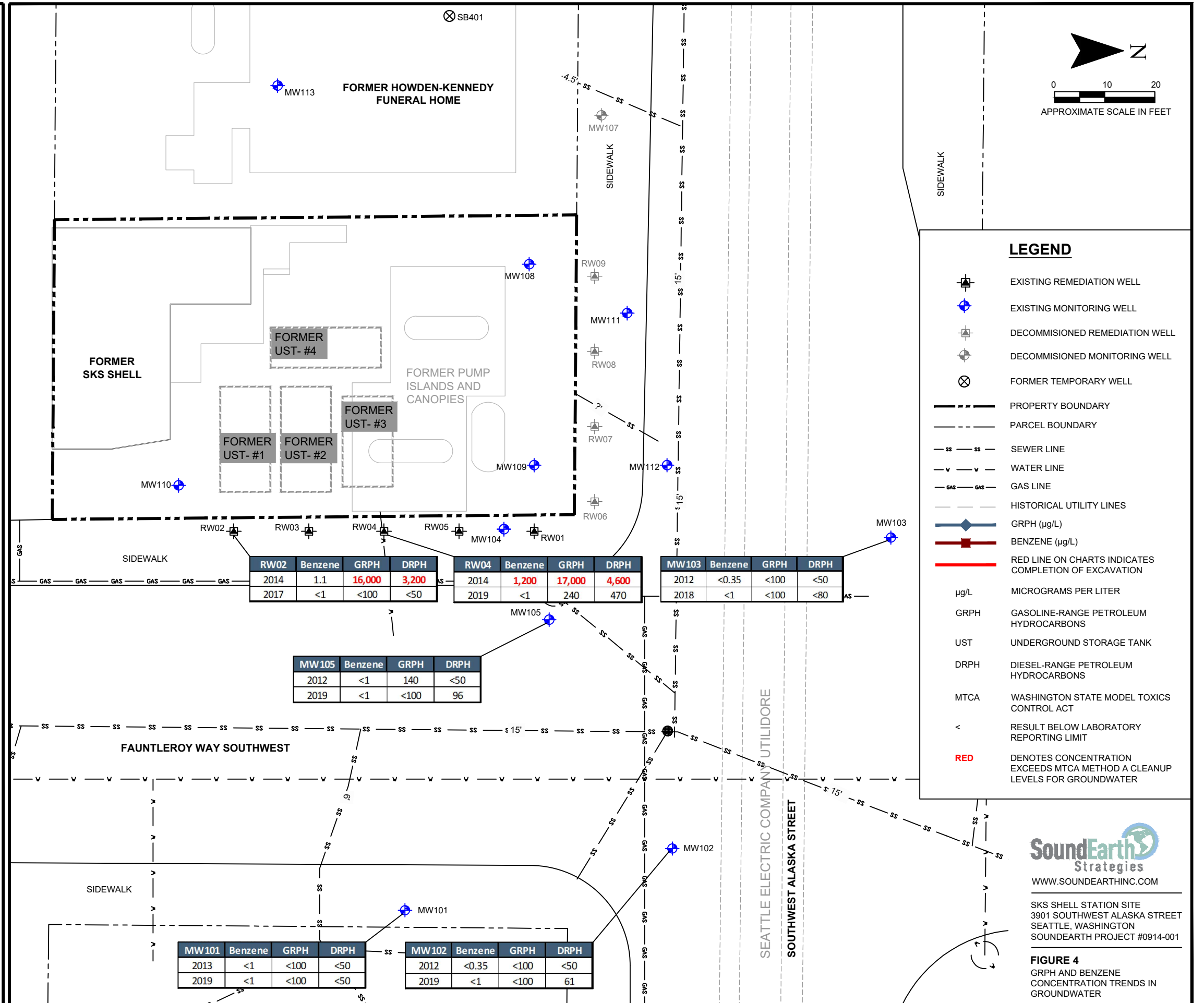
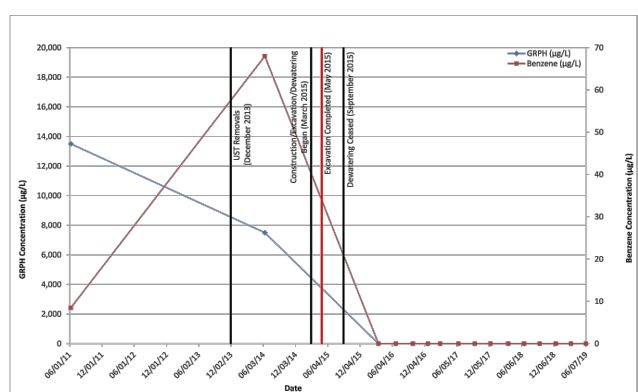


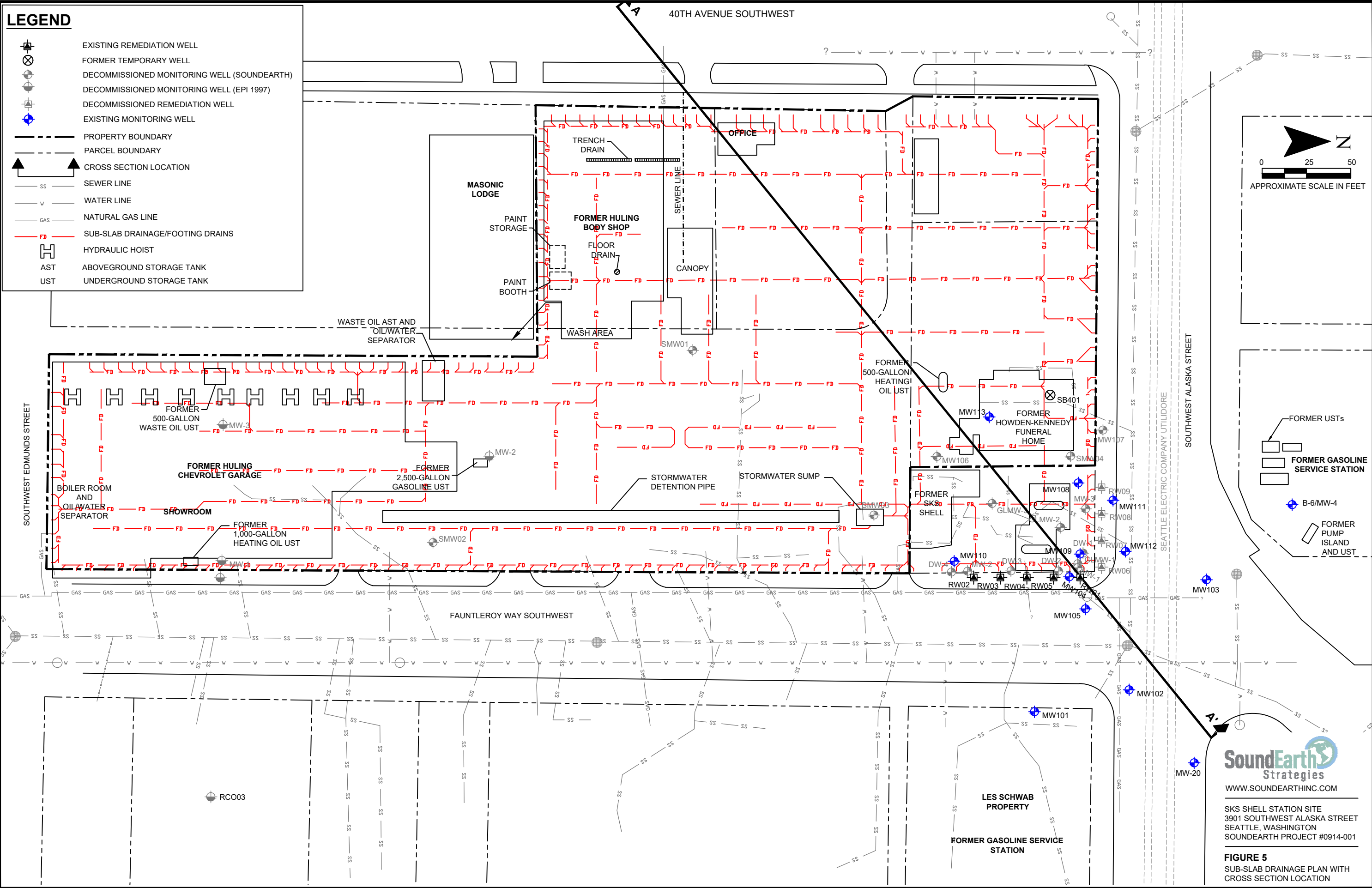
CHART 4: MW-3 / MW108 – GRPH AND BENZENE



WWW.SOUNDEARTHINC.COM  
 SKS SHELL STATION SITE  
 3901 SOUTHWEST ALASKA STREET  
 SEATTLE, WASHINGTON  
 SOUNDEARTH PROJECT #0914-001

**FIGURE 4**  
 GRPH AND BENZENE  
 CONCENTRATION TRENDS IN  
 GROUNDWATER

7/8/2019  
P:\0914 LENNAR SELLER\0914-001 SKS SHELL ROW\TECHNICAL\CAD\2019\2019Q2\0914-004\_2019Q2\_EL.DWG



**LEGEND**

- EXISTING REMEDIATION WELL
- FORMER TEMPORARY WELL
- DECOMMISSIONED MONITORING WELL (SOUNDEARTH)
- DECOMMISSIONED MONITORING WELL (EPI 1997)
- DECOMMISSIONED REMEDIATION WELL
- EXISTING MONITORING WELL
- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- CROSS SECTION LOCATION
- SEWER LINE
- WATER LINE
- NATURAL GAS LINE
- SUB-SLAB DRAINAGE/FOOTING DRAINS
- HYDRAULIC HOIST
- ABOVEGROUND STORAGE TANK
- UNDERGROUND STORAGE TANK

N

0 25 50

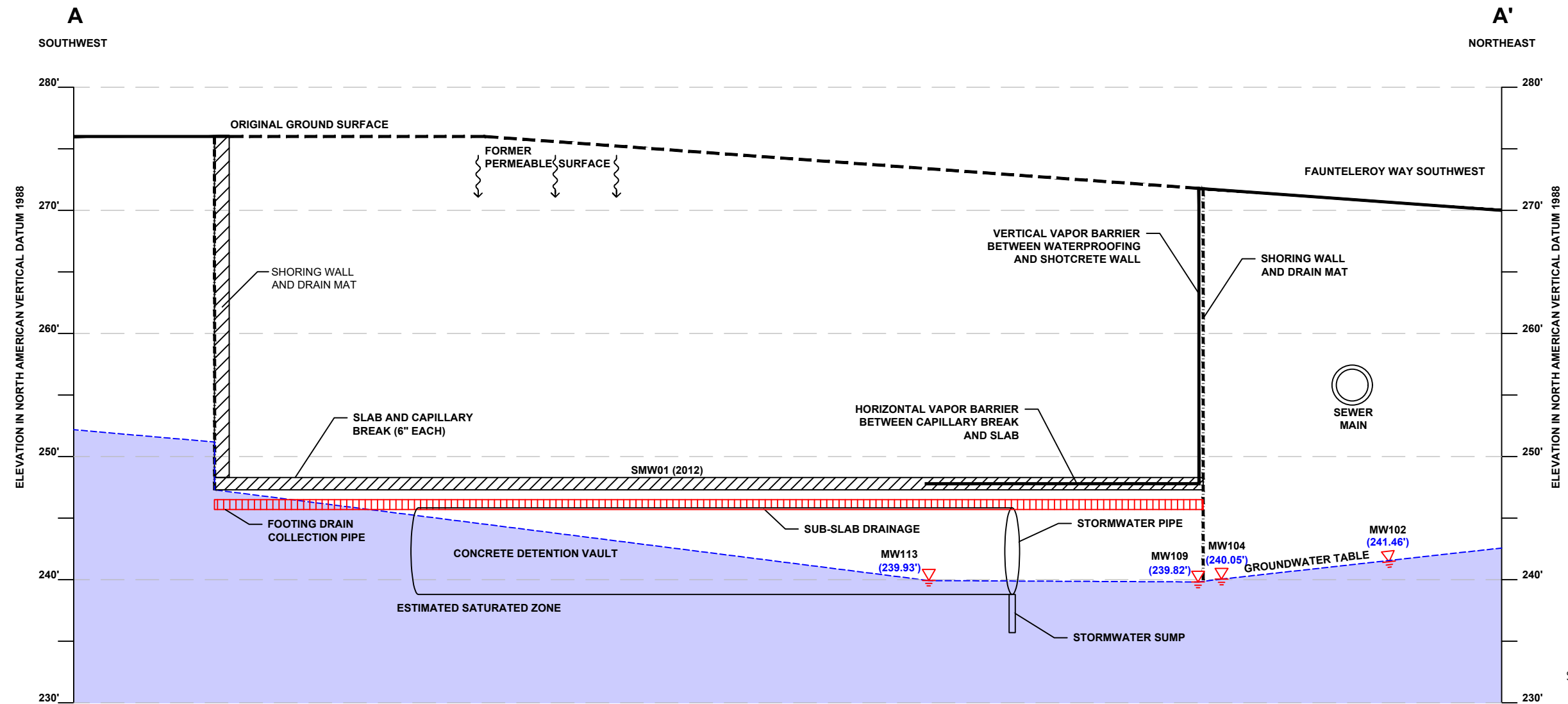
APPROXIMATE SCALE IN FEET

**SoundEarth Strategies**  
WWW.SOUNDEARTHINC.COM

SKS SHELL STATION SITE  
3901 SOUTHWEST ALASKA STREET  
SEATTLE, WASHINGTON  
SOUNDEARTH PROJECT #0914-001

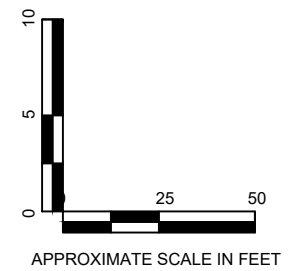
**FIGURE 5**  
SUB-SLAB DRAINAGE PLAN WITH  
CROSS SECTION LOCATION

P:\0914 LENNAR SHELL\0914-001 SKS SHELL ROW\TECHNICAL\CAD\2019\2019Q2\0914-004\_2019Q2\_XAA.DWG 7/8/2019



**LEGEND**

▽ GROUNDWATER ELEVATION 06/06/19



**SoundEarth**  
Strategies  
WWW.SOUNDEARTHINC.COM

SKS SHELL STATION SITE  
3901 SOUTHWEST ALASKA STREET  
SEATTLE, WASHINGTON  
SOUNDEARTH PROJECT #0914-001

**FIGURE 6**  
CROSS SECTION A-A'

## TABLE



Table 1  
 Summary of Groundwater Data  
 SKS Shell Station Site  
 3901 Southwest Alaska Street  
 Seattle, Washington

Well ID	Sample Date	Top of Well Casing	Depth to Groundwater (feet below TOC)	Relative Groundwater Elevation <sup>(1)(7)</sup>	Analytical Results (µg/L)													
					GRPH <sup>(2)</sup>	Benzene <sup>(3)</sup>	Toluene <sup>(3)</sup>	Ethylbenzene <sup>(3)</sup>	Total Xylenes <sup>(3)</sup>	MTBE <sup>(3)</sup>	EDC <sup>(3)</sup>	EDB <sup>(3)</sup>	DRPH <sup>(2)</sup>	DRPH with Silica Gel <sup>(4)</sup>	ORPH <sup>(2)</sup>	ORPH with Silica Gel <sup>(4)</sup>		
MW101	08/06/12	269.54	24.39	245.15	<100	<0.35	<1	<1	<1	<3	<1	<1	<1	--	--	--	--	
	04/01/13		24.67	244.87	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	06/14/17		25.80	243.74	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	09/13/17		26.91	242.63	<100	<1	<1	<1	<1	<3	--	--	--	<60	--	<300	--	
	12/12/17		27.62	241.92	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	03/22/18		27.20	242.34	<100	<1	<1	<1	<1	<3	--	--	--	<60	--	<300	--	
	06/21/18		27.34	242.20	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	09/17/18		28.07	241.47	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	12/18/18		28.55	240.99	<100	<1	<1	<1	<1	<3	--	--	--	210	--	<300	--	
	03/14/19		28.02	241.52	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
06/06/19	28.35	241.19	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--			
MW102	11/07/12	269.06	25.41	243.65	<100	<0.35	<1	<1	<1	<3	<1	<1	<1	100	<50	<250	<250	
	06/13/17		25.42	243.64	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	09/13/17		26.54	242.52	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	12/12/17		27.15	241.91	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	03/22/18		26.69	242.37	<100	<1	<1	<1	<1	<3	--	--	--	<65	--	<320	--	
	06/22/18		27.37	241.69	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	09/17/18		27.75	241.31	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	12/18/18		28.25	240.81	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	03/14/19		27.50	241.56	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	06/06/19		27.60	241.46	<100	<1	<1	<1	<1	<3	--	--	--	61*	--	<250	--	
MW103 <sup>(8)</sup>	11/07/12	269.55	27.80	241.75	<100	<0.35	<1	<1	<1	<3	<1	<1	<1	130	<50	<250	<250	
	06/13/17		28.56	240.99	<100	<1	<1	<1	<1	<3	--	--	--	<60	--	<300	--	
	09/13/17		29.12	240.43	<100	<1	<1	<1	<1	<3	--	--	--	140*	--	<375	--	
	12/12/17		29.29	240.26	<100	<1	<1	<1	<1	<3	--	--	--	120	--	<250	--	
	03/22/18		29.14	240.41	<100	<1	<1	<1	<1	<3	--	--	--	<80	--	<400	--	
	06/21/18		29.45	240.10	Insufficient water column to sample													
	09/17/18		29.66	239.89	<100	<1	<1	<1	<1	<3	--	--	--	<750	--	<1,500	--	
	12/18/18		Dry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	03/14/19		Dry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	06/06/19		29.70	239.85	Insufficient water column to sample													
MW104	11/07/12	269.35	24.41	244.94	6,100	2,100	10	120	418	<1	<1	<1	4,000	--	<250	--		
	03/06/13		23.24	246.11	9,900	2,300	110	470	870	--	--	--	1,900*	--	<250	--		
	04/01/13		23.37	245.98	20,000	2,600	140	640	1,300	--	--	--	--	540*	--	<250		
	06/12/14		25.50	243.85	15,000	1,800	120	480	1,330	--	--	<0.01	14,000*	--	250*	--		
	03/17/16		26.41	242.94	480	1.2	1.8	2.2	5.7	--	--	--	1,200*	--	<300	--		
	06/24/16		25.16	244.19	940	2.5	2.0	3.0	9.5	--	--	--	3,200	--	<250	--		
	09/28/16		25.55	243.80	940	7.2	<1	3.7	4,000*	--	--	--	4,000*	--	340*	--		
	12/23/16		27.28	242.07	2,000	2.1	2.1	17	27	--	--	--	16,000	180*	380*	<250		
	03/17/17	27.55	241.80	1,400	<1	<1	8.5	10	--	--	--	7,900	290*	<400	<400			
	06/15/17	27.92	241.45	700	<1	<1	4.0	3.1	--	--	--	3,000	370*	<250	<250			
	09/14/17	28.21	241.16	460	<1	<1	1.3	<3	--	--	--	2,200	230*	<300	<250			
	12/12/17	28.86	240.51	340	<1	1.1	1.3	<3	--	--	--	780*	--	<350	--			
	03/22/18	28.88	240.49	220	<1	<1	<1	<1	<3	--	--	590*	--	<250	--			
	06/21/18	28.96	240.41	130	<1	<1	<1	<1	<3	--	--	720	--	<350	--			
	09/17/18	29.27	240.10	<100	<1	<1	<1	<1	<3	--	--	480	--	<350	--			
	12/18/18	29.02	240.35	<100	<1	<1	<1	<1	<3	--	--	390	--	<250	--			
03/14/19	29.25	240.12	170	<1	<1	<1	<1	<3	--	--	690*	--	<300	--				
06/06/19	29.32	240.05	210	<1	<1	<1	<1	<3	--	--	750*	--	290*	--				
MW105	12/13/12	269.30	24.25	245.05	140	<1	<1	<1	<3	--	--	--	820*	<50	<250	<250		
	03/06/13		23.33	245.97	<100	<0.35	<1	<1	<1	<3	--	--	--	61*	--	<250	--	
	06/13/17		27.36	241.94	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	09/13/17		27.96	241.34	<100	<1	<1	<1	<1	<3	--	--	--	<60	--	<300	--	
	12/12/17		28.41	240.89	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	03/22/18		28.45	240.85	<100	<1	<1	<1	<1	<3	--	--	--	<65	--	<320	--	
	06/21/18		28.56	240.74	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	09/17/18		28.96	240.34	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	12/18/18		28.90	240.40	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	03/14/19		28.66	240.64	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
06/06/19	29.06	240.24	<100	<1	<1	<1	<1	<3	--	--	--	96*	--	<250	--			
RW02	07/16/14	268.60	--	--	16,000	1.1	2.5	380	1,400	--	--	--	3,200*	--	<250	--		
	06/14/17		27.22	241.38	<100	<1	<1	<1	<1	<3	--	--	<50	--	<250	--		
MTCA Method A Cleanup Levels for Groundwater <sup>(5)</sup>					1,000/800 <sup>(6)</sup>	5	1,000	700	1,000	20	5	0.01	500	500	500	500		



Table 1  
Summary of Groundwater Data  
SKS Shell Station Site  
3901 Southwest Alaska Street  
Seattle, Washington

Well ID	Sample Date	Top of Well Casing	Depth to Groundwater (feet below TOC)	Relative Groundwater Elevation <sup>(1)(7)</sup>	Analytical Results (µg/L)											
					GRPH <sup>(2)</sup>	Benzene <sup>(3)</sup>	Toluene <sup>(3)</sup>	Ethylbenzene <sup>(3)</sup>	Total Xylenes <sup>(3)</sup>	MTBE <sup>(3)</sup>	EDC <sup>(3)</sup>	EDB <sup>(3)</sup>	DRPH <sup>(2)</sup>	DRPH with Silica Gel <sup>(4)</sup>	ORPH <sup>(2)</sup>	ORPH with Silica Gel <sup>(4)</sup>
RW03	03/17/16	--	26.23	--	2,300	41	6.9	51	260	--	--	--	1,400 <sup>x</sup>	--	<250	--
	06/24/16		25.40	--	1,600	27	4.4	27	59	--	--	--	3,600	--	<250	--
	09/28/16		25.71	--	1,100	6.7	<1	20	45	--	--	--	2,400 <sup>x</sup>	--	<300	--
	12/23/16		26.77	--	9,000	470	16	380	750	--	--	--	11,000	720 <sup>x</sup>	<300	<300
	03/02/17		27.22	--	4,900	150	<10	220	190	--	--	--	11,000 <sup>x</sup>	880 <sup>x</sup>	<250	<250
	06/14/17	269.50	27.91	241.59	1,300	7.0	<1	32	11	--	--	--	1,500	320 <sup>x</sup>	<250	<250
	09/14/17		28.30	241.20	560	2.8	1.3	15	4.5	--	--	--	690 <sup>x</sup>	140 <sup>x</sup>	<300	<300
	12/12/17		28.82	240.68	2,500	8.8	1.7	39	170	--	--	--	1,000 <sup>x</sup>	--	<300	--
	03/22/18		28.85	240.65	2,100	3.0	5.2	29	140	--	--	--	760 <sup>x</sup>	--	<250	--
	06/22/18		28.94	240.56	730	<1	2.3	31	34	--	--	--	740 <sup>x</sup>	--	<250	--
	09/17/18		29.28	240.22	370	<1	<11	11	15	--	--	--	430	--	<250	--
	12/18/18		29.05	240.45	2,800	6.5	5.0	75	250	--	--	--	1,600	--	<250	--
	03/15/19		29.05	240.45	1,700	1.9	1.7	46	140	--	--	--	730 <sup>x</sup>	--	<250	--
	06/07/19		29.35	240.15	410	<1	<1	14	4.3	--	--	--	680 <sup>x</sup>	--	<250	--
RW04	07/16/14	269.22	--	--	17,000	1,200	270	360	1,700	--	--	--	4,600 <sup>x</sup>	--	270 <sup>x</sup>	--
	06/14/17		27.62	241.60	790	2.5	<1	16	<3	--	--	--	400	--	<250	--
	09/14/17		27.93	241.29	400	6.4	<1	26	21	--	--	--	330 <sup>x</sup>	--	<250	--
	12/12/17		28.55	240.67	360	3.0	1.1	12	5.2	--	--	--	200 <sup>x</sup>	--	<300	--
	03/22/18		28.57	240.65	450	1.5	<1	14	<3	--	--	--	500 <sup>x</sup>	--	<250	--
	06/21/18		28.60	240.62	360	<1	2.6	4.8	4.5	--	--	--	400 <sup>x</sup>	--	<250	--
	09/17/18		29.08	240.14	130	<1	<1	1.5	<3	--	--	--	120	--	<250	--
	12/18/18		28.74	240.48	160	<1	<1	1.1	<3	--	--	--	510	--	<250	--
	03/15/19		28.76	240.46	300	<1	<1	1.9	<3	--	--	--	310 <sup>x</sup>	--	<250	--
	06/07/19		29.05	240.17	240	<1	<1	<1	<3	--	--	--	470 <sup>x</sup>	--	<250	--
	RW05		06/14/17	269.09	27.64	241.45	400	<1	<1	4.4	<3	--	--	--	470	--
09/14/17		27.91	241.18		280	<1	1.2	1.5	<3	--	--	--	300 <sup>x</sup>	--	<300	--
12/12/17		28.54	240.55		230	<1	1.3	1.5	<3	--	--	--	170 <sup>x</sup>	--	<300	--
03/22/18		28.56	240.53		180	<1	<1	1.4	<3	--	--	--	140 <sup>x</sup>	--	<260	--
06/21/18		28.63	240.46		140	<1	1.4	1.4	<3	--	--	--	180 <sup>x</sup>	--	<250	--
09/17/18		28.96	240.13		140	<1	<1	2.1	<3	--	--	--	140	--	<250	--
12/18/18		28.75	240.34		110	<1	<1	1.4	<3	--	--	--	160 <sup>x</sup>	--	<250	--
03/14/19		28.74	240.35		<100	<1	<1	<1	<3	--	--	--	120 <sup>x</sup>	--	<250	--
06/06/19		29.00	240.09		<100	<1	<1	<1	<3	--	--	--	99 <sup>†</sup>	--	<250	--
RW07	07/16/14	--	--	1,600	110	8.3	8.3	17	--	--	--	1,100 <sup>x</sup>	--	<250	--	
RW09	07/16/14	--	--	2,600	10	18	70	34	--	--	--	700 <sup>x</sup>	--	<250	--	
MW108	03/17/16	--	5.52	--	<100	<1	<1	<1	<3	--	--	--	93 <sup>†</sup>	--	<300	--
	06/24/16		3.33	--	<100	<1	<1	<1	<3	--	--	--	<50	--	<250	--
	09/28/16		3.85	--	<100	<1	<1	<1	<3	--	--	--	<60	--	<300	--
	12/23/16		6.56	--	<100	<1	<1	<1	<3	--	--	--	94 <sup>†</sup>	<70	<350	<350
	03/03/17		6.64	--	<100	<1	<1	<1	<3	--	--	--	<80	<80	<400	<400
	06/14/17	247.83	7.06	240.77	<100	<1	<1	<1	<3	--	--	--	140 <sup>x</sup>	--	<250	--
	09/14/17		6.69	241.14	<100	<1	<1	<1	<3	--	--	--	160 <sup>x</sup>	--	<250	--
	12/12/17		7.70	240.13	<100	<1	<1	<1	<3	--	--	--	<50	--	<250	--
	03/23/18		7.44	240.39	<100	<1	<1	<1	<3	--	--	--	71 <sup>†</sup>	--	<250	--
	06/21/18		7.75	240.08	<100	<1	<1	<1	<3	--	--	--	150 <sup>x</sup>	--	<450	--
	09/17/18		7.83	240.00	<100	<1	<1	<1	<3	--	--	--	110	--	<480	--
	12/18/18		7.98	239.85	<100	<1	<1	<1	<3	--	--	--	<50	--	<250	--
	03/14/19		7.78	240.05	<100	<1	<1	<1	<3	--	--	--	680 <sup>x</sup>	--	<350	--
	06/06/19		7.87	239.96	<100	<1	<1	<1	<3	--	--	--	590 <sup>x</sup>	--	<250	--
MW109	03/17/16	--	5.42	--	<100	<1	<1	<1	<3	--	--	--	97 <sup>†</sup>	--	<250	--
	06/24/16		3.35	--	<100	<1	<1	<1	<3	--	--	--	160 <sup>x</sup>	--	<250	--
	09/28/16		3.96	--	<100	<1	<1	<1	<3	--	--	--	260 <sup>x</sup>	--	<250	--
	12/23/16		6.59	--	250	<1	<1	<1	<3	--	--	--	430 <sup>x</sup>	<50	<250	<250
	03/03/17		6.70	--	370	<1	<1	1.2	<3	--	--	--	490 <sup>x</sup>	55 <sup>x</sup>	<250	<250
	06/14/17	247.92	6.87	241.05	220	<1	<1	<1	<3	--	--	--	330	--	<250	--
	09/14/17		6.84	241.08	<100	<1	<1	<1	<3	--	--	--	140 <sup>x</sup>	--	<300	--
	12/12/17		7.69	240.23	150	<1	1.1	<1	<3	--	--	--	<50	--	<250	--
	03/23/18		7.75	240.17	190	<1	<1	1.1	<3	--	--	--	110 <sup>x</sup>	--	<250	--
	06/21/18		7.87	240.05	190	<1	1.2	<1	<3	--	--	--	200	--	<250	--
	09/17/18		8.05	239.87	150	<1	<1	1.8	<3	--	--	--	110 <sup>x</sup>	--	<250	--
	12/18/18		7.61	240.31	<100	<1	<1	<1	<3	--	--	--	61 <sup>†</sup>	--	<250	--
	03/14/19		7.94	239.98	140	<1	<1	<1	<3	--	--	--	<60	--	<300	--
	06/06/19		8.10	239.82	<100	<1	<1	<1	<3	--	--	--	140 <sup>x</sup>	--	<250	--
MTCA Method A Cleanup Levels for Groundwater <sup>(5)</sup>					1,000/800 <sup>(6)</sup>	5	1,000	700	1,000	20	5	0.01	500	500	500	500



**Table 1**  
**Summary of Groundwater Data**  
**SKS Shell Station Site**  
**3901 Southwest Alaska Street**  
**Seattle, Washington**

Well ID	Sample Date	Top of Well Casing	Depth to Groundwater (feet below TOC)	Relative Groundwater Elevation <sup>(1),(7)</sup>	Analytical Results (µg/L)												
					GRPH <sup>(2)</sup>	Benzene <sup>(3)</sup>	Toluene <sup>(3)</sup>	Ethylbenzene <sup>(3)</sup>	Total Xylenes <sup>(3)</sup>	MTBE <sup>(3)</sup>	EDC <sup>(3)</sup>	EDB <sup>(3)</sup>	DRPH <sup>(2)</sup>	DRPH with Silica Gel <sup>(4)</sup>	ORPH <sup>(2)</sup>	ORPH with Silica Gel <sup>(4)</sup>	
MW110	03/17/16	--	5.70	--	<100	<1	<1	<1	<1	<3	--	--	--	<50	--	<250	--
	06/24/16		3.56	--	<100	<1	<1	<1	<1	<3	--	--	--	100 <sup>x</sup>	--	<250	--
	09/28/16		4.19	--	<100	<1	<1	<1	<1	<3	--	--	--	590 <sup>x</sup>	--	440 <sup>x</sup>	--
	12/23/16		6.96	--	500	2.3	<1	9.7	18	--	--	--	1,200	68 <sup>x</sup>	<300	<300	
	03/03/17		7.57	--	570	2.1	<1	9.3	4.7	--	--	--	1,000 <sup>x</sup>	110 <sup>x</sup>	<250	<250	
	06/14/17	248.21	7.78	240.43	260	<1	<1	2.0	<3	--	--	--	520	--	<250	--	
	09/14/17		7.44	240.77	<100	<1	<1	<1	<3	--	--	--	150 <sup>x</sup>	--	<250	--	
	12/12/17		8.02	240.19	<100	<1	<1	<1	<3	--	--	--	99 <sup>†</sup>	--	<250	--	
	03/23/18		8.05	240.16	<100	<1	<1	<1	<3	--	--	--	73 <sup>†</sup>	--	<250	--	
	06/21/18		8.15	240.06	<100	<1	<1	<1	<3	--	--	--	96 <sup>†</sup>	--	<250	--	
	09/17/18		8.40	239.81	<100	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	12/18/18		7.98	240.23	<100	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	03/14/19		8.20	240.01	<100	<1	<1	<1	<3	--	--	--	74 <sup>†</sup>	--	<300	--	
06/06/19	8.30	239.91	<100	<1	<1	<1	<3	--	--	--	91 <sup>†</sup>	--	<250	--			
MW111	10/09/18	270.62	30.51	240.11	<100	<1	<1	<1	<3	--	--	--	55 <sup>†</sup>	--	<250	--	
	12/18/18		29.90	240.72	<100	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	03/14/19		30.15	240.47	<100	<1	<1	<1	<3	--	--	--	83 <sup>†</sup>	--	<250	--	
	06/06/19		30.50	240.12	<100	<1	<1	<1	<3	--	--	--	84 <sup>†</sup>	--	<250	--	
MW112	03/14/19	269.32	28.88	240.44	<100	<1	<1	<1	<3	--	--	--	58 <sup>†</sup>	--	<250	--	
	06/06/19		29.15	240.17	<100	<1	<1	<1	<3	--	--	--	59 <sup>†</sup>	--	<250	--	
MW113	03/23/18	248.06	7.68	240.38	<100	<1	<1	<1	<3	--	--	--	93 <sup>†</sup>	--	<250	--	
	06/21/18		7.81	240.25	<100	<1	<1	<1	<3	--	--	--	71 <sup>†</sup>	--	<250	--	
	09/17/18		8.05	240.01	<100	<1	<1	<1	<3	--	--	--	<50	--	<250	--	
	12/18/18		7.58	240.48	<100	<1	<1	<1	<3	--	--	--	100 <sup>x</sup>	--	<250	--	
	03/14/19		7.98	240.08	<100	<1	<1	<1	<3	--	--	--	79 <sup>†</sup>	--	<250	--	
	06/06/19		8.13	239.93	<100	<1	<1	<1	<3	--	--	--	89 <sup>†</sup>	--	<250	--	
<b>MTCA Method A Cleanup Levels for Groundwater<sup>(5)</sup></b>					<b>1,000/800<sup>(6)</sup></b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>1,000</b>	<b>20</b>	<b>5</b>	<b>0.01</b>	<b>500</b>	<b>500</b>	<b>500</b>	<b>500</b>	

**NOTES:**

**Red** indicates concentrations exceeding MTCA Method A cleanup levels for groundwater.

Samples analyzed by Friedman & Bruya, Inc. of Seattle, Washington.

2011 Samples analyzed for G-Logics by Fremont Analytical of Seattle, Washington.

2012 Samples analyzed by Friedman & Bruya, Inc. of Seattle, Washington.

<sup>(1)</sup>Elevation reference datum North American Vertical Datum of 1988 (Dowl HKM November 2012).

<sup>(2)</sup>Analyzed by Method NWTPH-Gx (gasoline) and NWTPH-Dx (diesel and oil).

<sup>(3)</sup>Analyzed by EPA Method 8260B, 8260C, or 8021B.

<sup>(4)</sup>Analyzed by Method NWTPH-Dx; sample extracts passed through a silica gel column prior to analysis.

<sup>(5)</sup>MTCA Cleanup Regulation, Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

<sup>(6)</sup>1,000 µg/L when benzene is not present and 800 µg/L when benzene is present.

<sup>(7)</sup>Top of well casing elevations for MW108, MW109, MW110, and MW113 are estimated based on parking garage design elevations.

<sup>(8)</sup>MW103 elevated detection limits due to low sample volume.

**Laboratory Note:**

\*The sample chromatographic pattern does not resemble the fuel standard used for quantitation. Concentration is estimated.

-- = not analyzed, not measured

< = not detected above the laboratory reporting limit

µg/L = micrograms per liter

DRPH = diesel-range petroleum hydrocarbons

EDB = 1,2 dibromoethane

EDC = 1,2 dichloroethane

EPA = US Environmental Protection Agency

GRPH = gasoline-range petroleum hydrocarbons

MTBE = methyl tertiary-butyl ether

MTCA = Washington State Model Toxics Control Act

NWTPH = Northwest Total Petroleum Hydrocarbon

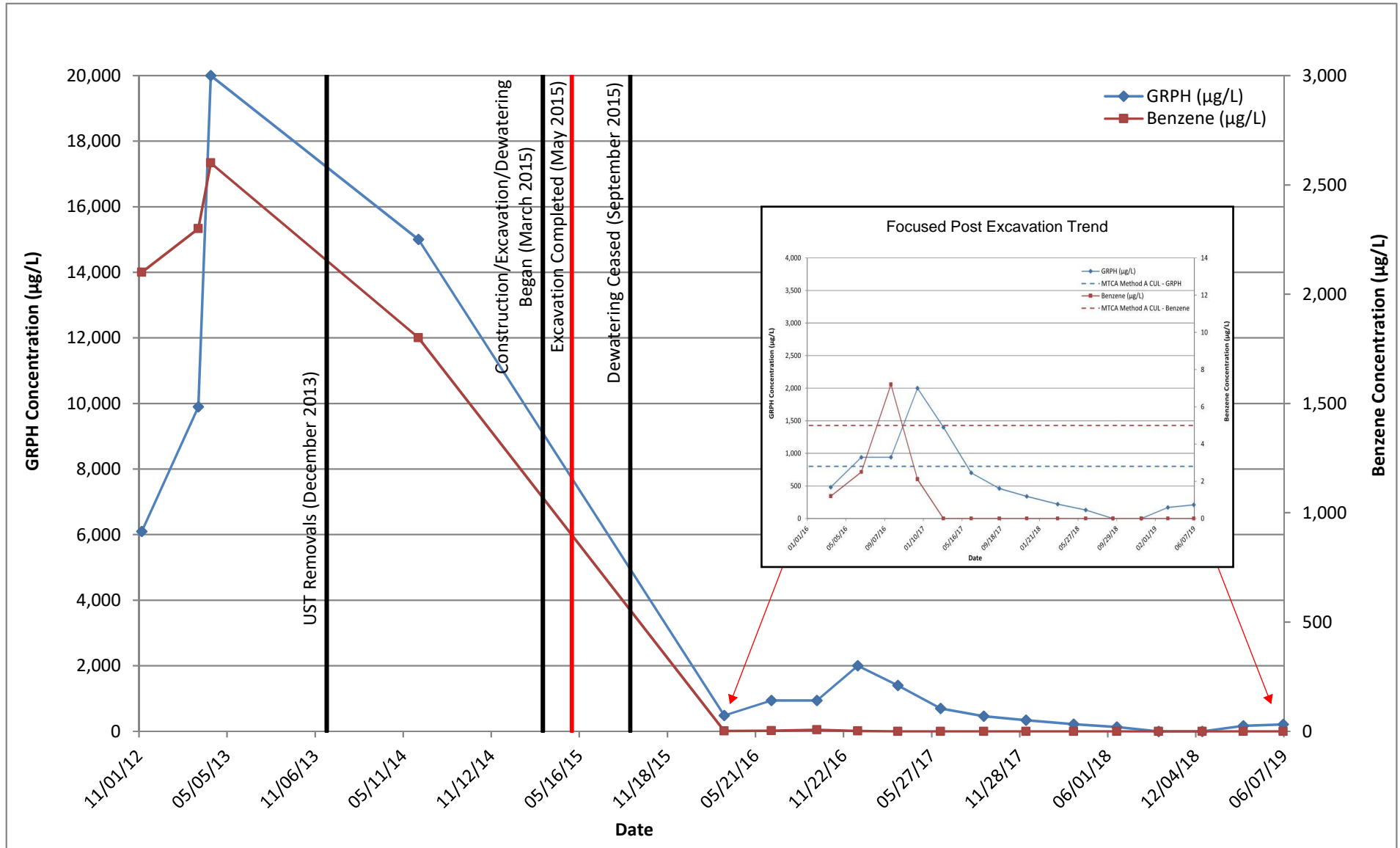
ORPH = oil-range petroleum hydrocarbons

TOC = top of casing elevation

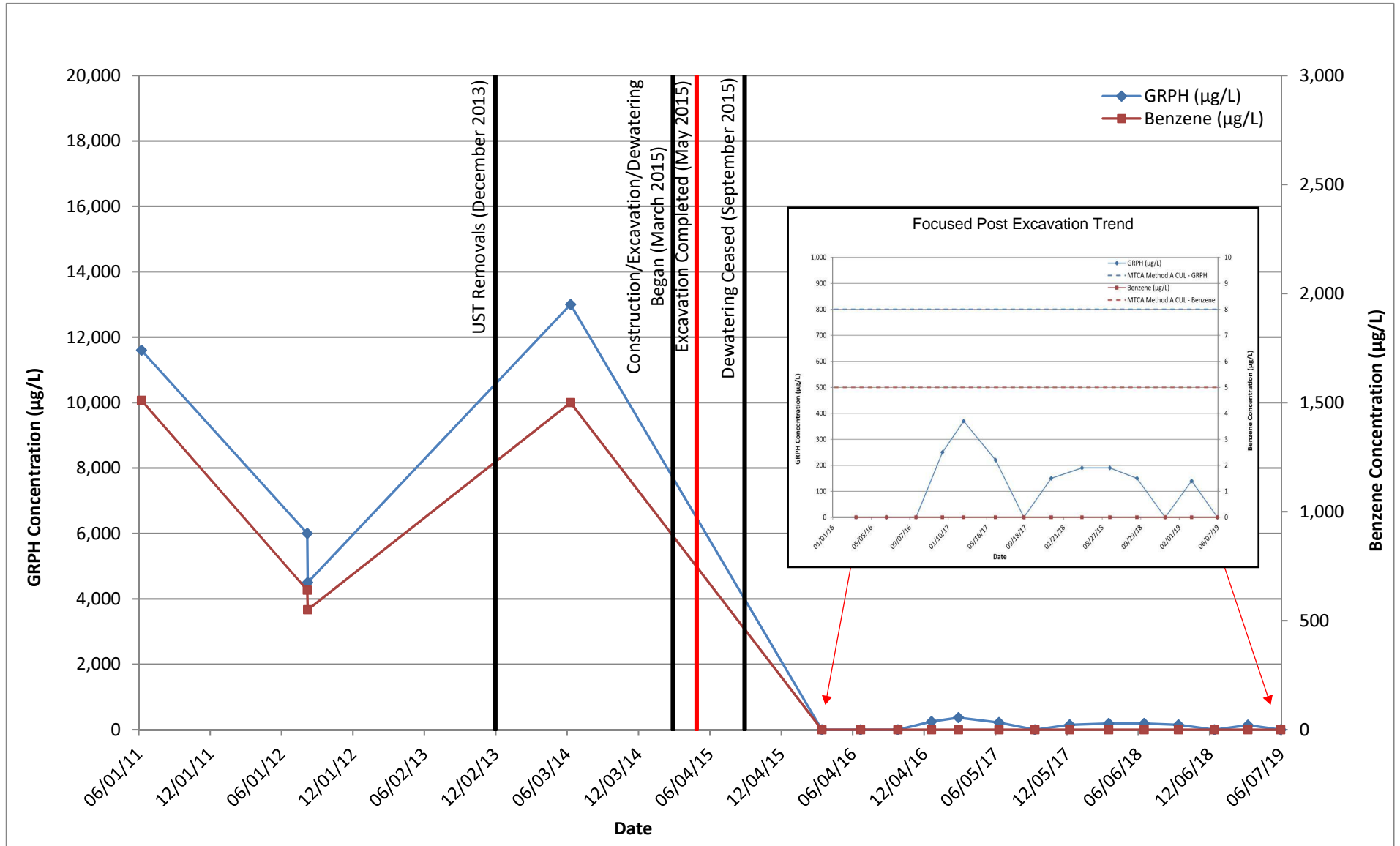


## CHARTS

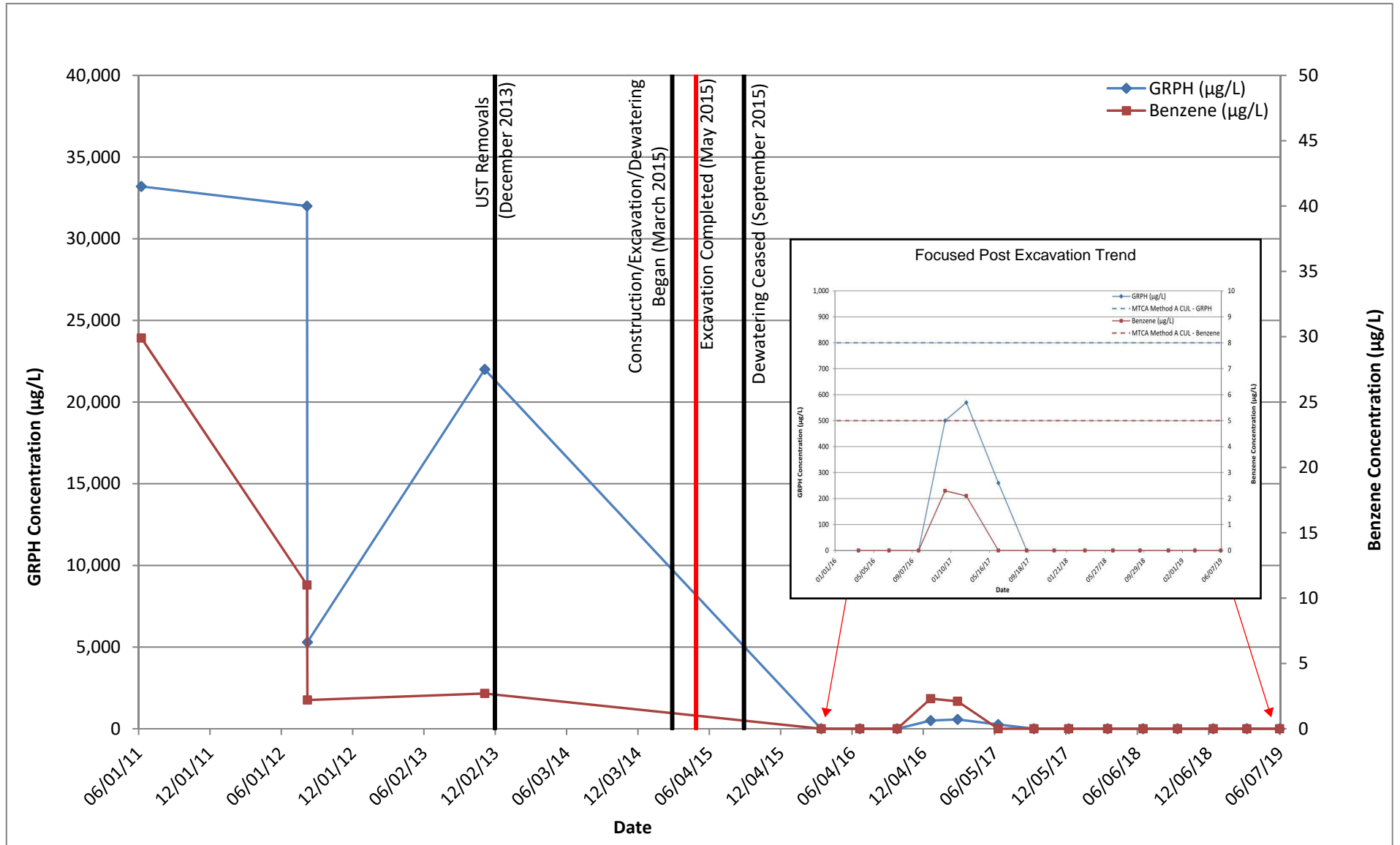
**Chart 1**  
**GRPH and Benzene Concentrations - MW104**  
**SKS Shell Station Site**  
**3901 Southwest Alaska Street**  
**Seattle, Washington**



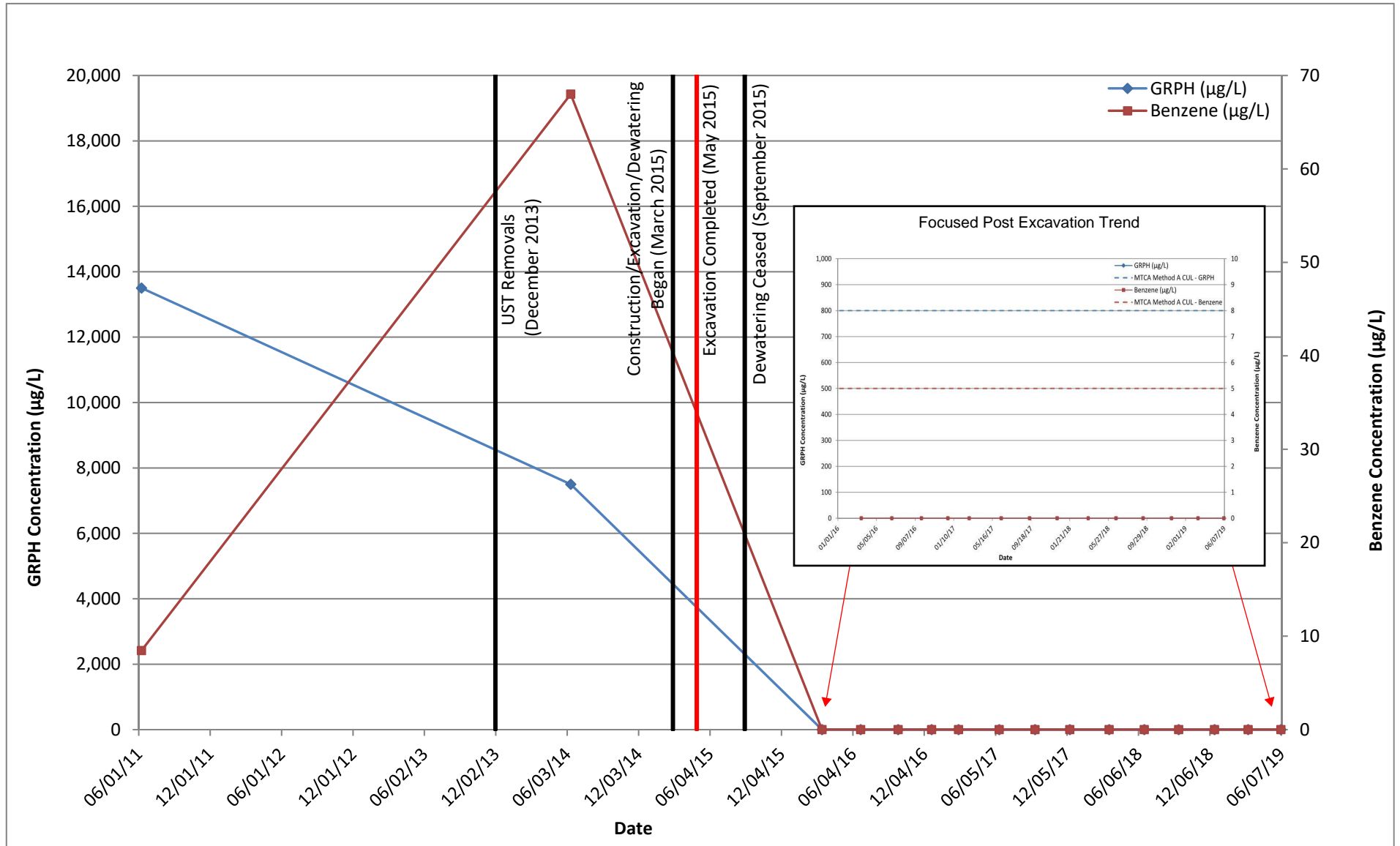
**Chart 2**  
**GRPH and Benzene Concentrations - GLMW01/MW109**  
**SKS Shell Station Site**  
**3901 Southwest Alaska Street**  
**Seattle, Washington**



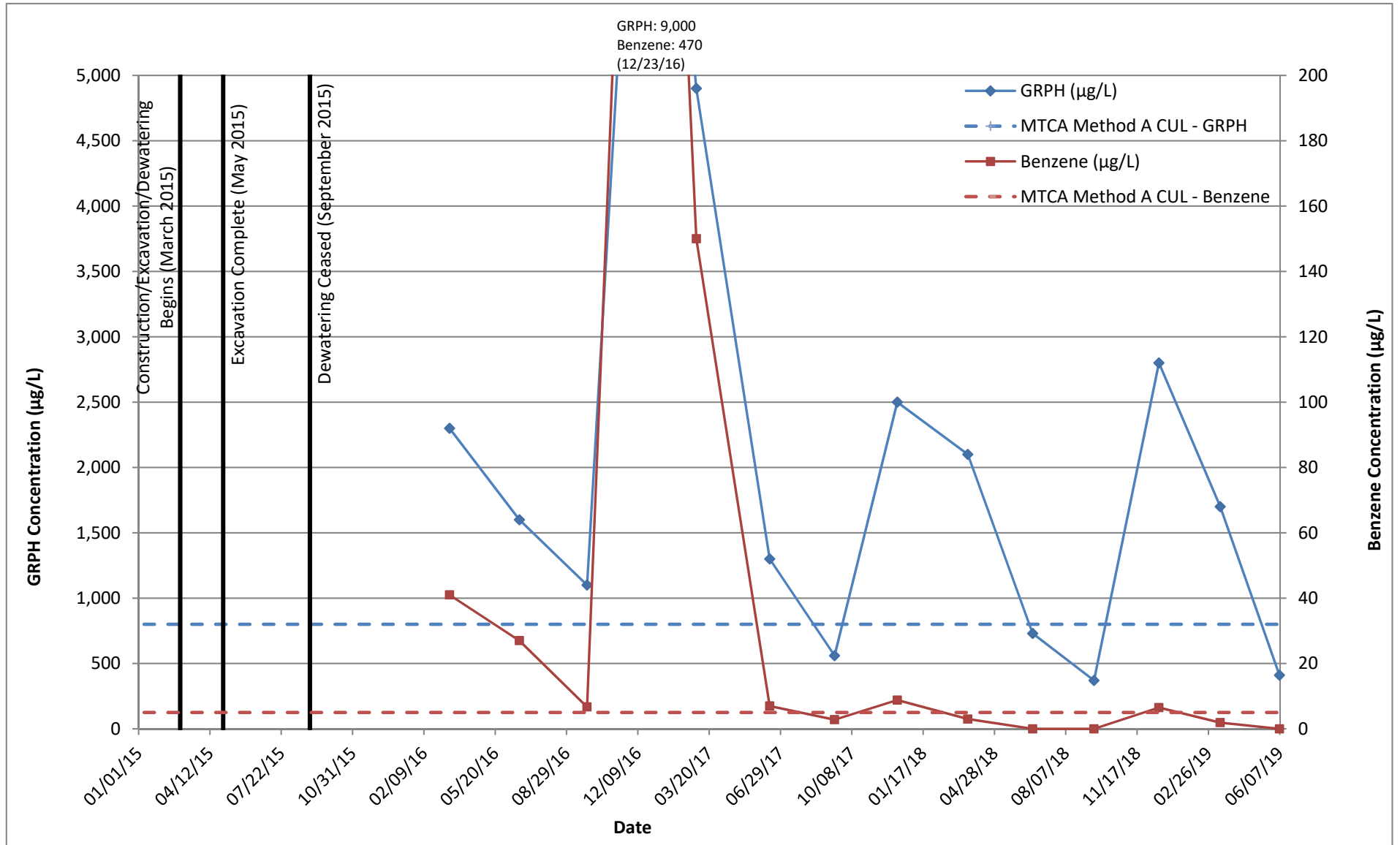
**Chart 3**  
**GRPH and Benzene Concentrations - MW110/MW-2**  
**SKS Shell Station Site**  
**3901 Southwest Alaska Street**  
**Seattle, Washington**



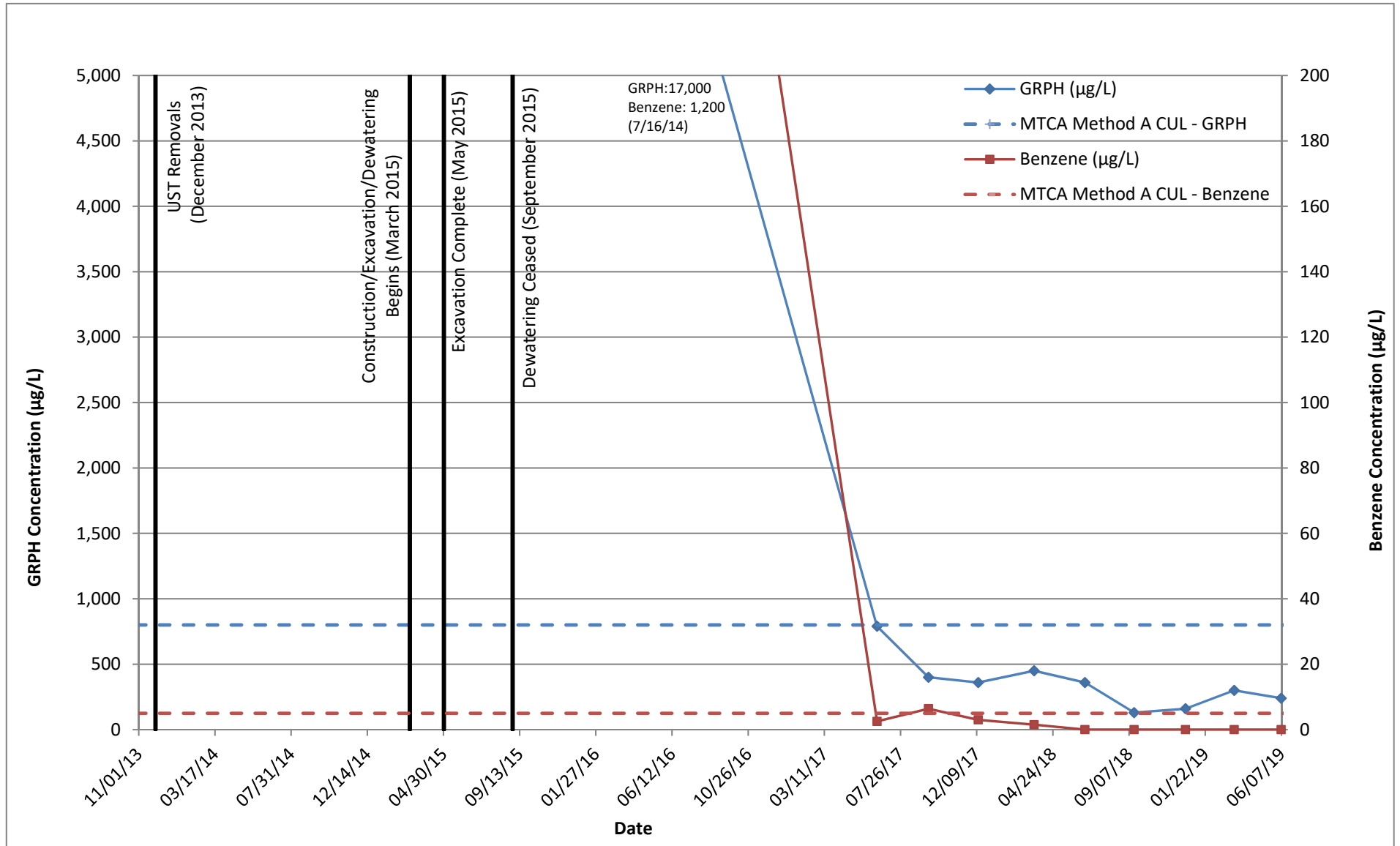
**Chart 4**  
**GRPH and Benzene Concentrations - MW-3/MW108**  
**SKS Shell Station Site**  
**3901 Southwest Alaska Street**  
**Seattle, Washington**



**Chart 5**  
**GRPH and Benzene Concentrations - RW03**  
**SKS Shell Station**  
**3501 SW Alaskan Street**  
**Seattle, Washington**



**Chart 6**  
**GRPH and Benzene Concentrations - RW04**  
**SKS Shell Station**  
**3501 SW Alaskan Street**  
**Seattle, Washington**



**ATTACHMENT A**  
**LABORATORY ANALYTICAL REPORT**



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Arina Podnozova, B.S.  
Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

June 17, 2019

Rob Roberts, Project Manager  
SoundEarth Strategies  
2811 Fairview Ave. East, Suite 2000  
Seattle, WA 98102

Dear Mr Roberts:

Included is the amended report from the testing of material submitted on June 7, 2019 from the SOU\_0914-001\_20190607, F&BI 906144 project. Samples MW108-20190606 and MW104-20190606 were qualified as not being indicative of diesel.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures

c: Jonathan Loeffler, Clare Tochilin  
SOU0613R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Arina Podnozova, B.S.  
Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

June 13, 2019

Rob Roberts, Project Manager  
SoundEarth Strategies  
2811 Fairview Ave. East, Suite 2000  
Seattle, WA 98102

Dear Mr Roberts:

Included are the results from the testing of material submitted on June 7, 2019 from the SOU\_0914-001\_ 20190607, F&BI 906144 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures

c: Jonathan Loeffler, Clare Tochilin  
SOU0613R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on June 7, 2019 by Friedman & Bruya, Inc. from the SoundEarth Strategies SOU\_0914-001\_ 20190607, F&BI 906144 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SoundEarth Strategies</u>
906144 -01	MW112-20190606
906144 -02	MW113-20190606
906144 -03	MW109-20190606
906144 -04	MW110-20190606
906144 -05	MW108-20190606
906144 -06	RW05-20190606
906144 -07	MW111-20190606
906144 -08	MW105-20190606
906144 -09	MW102-20190606
906144 -10	MW101-20190606
906144 -11	MW104-20190606
906144 -12	RW04-20190607
906144 -13	RW03-20190607
906144 -14	MW99-20190607

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/13/19  
 Date Received: 06/07/19  
 Project: SOU\_0914-001\_ 20190607, F&BI 906144  
 Date Extracted: 06/11/19  
 Date Analyzed: 06/11/19

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
 FOR BENZENE, TOLUENE, ETHYLBENZENE,  
 XYLENES AND TPH AS GASOLINE  
 USING METHODS 8021B AND NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
MW112-20190606 906144-01	<1	<1	<1	<3	<100	97
MW113-20190606 906144-02	<1	<1	<1	<3	<100	96
MW109-20190606 906144-03	<1	<1	<1	<3	<100	94
MW110-20190606 906144-04	<1	<1	<1	<3	<100	98
MW108-20190606 906144-05	<1	<1	<1	<3	<100	96
RW05-20190606 906144-06	<1	<1	<1	<3	<100	96
MW111-20190606 906144-07	<1	<1	<1	<3	<100	97
MW105-20190606 906144-08	<1	<1	<1	<3	<100	96
MW102-20190606 906144-09	<1	<1	<1	<3	<100	98
MW101-20190606 906144-10	<1	<1	<1	<3	<100	96

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/13/19  
Date Received: 06/07/19  
Project: SOU\_0914-001\_ 20190607, F&BI 906144  
Date Extracted: 06/11/19  
Date Analyzed: 06/11/19

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE,  
XYLENES AND TPH AS GASOLINE  
USING METHODS 8021B AND NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
MW104-20190606 906144-11	<1	<1	<1	<3	210	93
RW04-20190607 906144-12	<1	<1	<1	<3	240	94
RW03-20190607 906144-13	<1	<1	14	4.3	410	96
MW99-20190607 906144-14	<1	<1	14	4.4	410	96
Method Blank 09-1293 MB	<1	<1	<1	<3	<100	99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/13/19  
Date Received: 06/07/19  
Project: SOU\_0914-001\_ 20190607, F&BI 906144  
Date Extracted: 06/10/19  
Date Analyzed: 06/10/19

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-Dx**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> (% Recovery) (Limit 47-140)
MW112-20190606 906144-01	59 x	<250	99
MW113-20190606 906144-02	89 x	<250	97
MW109-20190606 906144-03	140 x	<250	97
MW110-20190606 906144-04	91 x	<250	101
MW108-20190606 906144-05	590 x	<250	92
RW05-20190606 906144-06	99 x	<250	96
MW111-20190606 906144-07	84 x	<250	97
MW105-20190606 906144-08 1/1.2	96 x	<250	99
MW102-20190606 906144-09	61 x	<250	93
MW101-20190606 906144-10	<50	<250	100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/13/19  
Date Received: 06/07/19  
Project: SOU\_0914-001\_ 20190607, F&BI 906144  
Date Extracted: 06/10/19  
Date Analyzed: 06/10/19

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> (% Recovery) (Limit 47-140)
MW104-20190606 906144-11	750 x	290 x	93
RW04-20190607 906144-12	470 x	<250	100
RW03-20190607 906144-13	680 x	<250	96
MW99-20190607 906144-14	700 x	<250	96
Method Blank 09-1357 MB	<50	<250	106

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/13/19

Date Received: 06/07/19

Project: SOU\_0914-001\_ 20190607, F&BI 906144

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,  
XYLENES, AND TPH AS GASOLINE  
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 906144-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	97	65-118
Toluene	ug/L (ppb)	50	98	72-122
Ethylbenzene	ug/L (ppb)	50	96	73-126
Xylenes	ug/L (ppb)	150	94	74-118
Gasoline	ug/L (ppb)	1,000	83	69-134



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/13/19

Date Received: 06/07/19

Project: SOU\_0914-001\_ 20190607, F&BI 906144

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	88	108	61-133	20

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

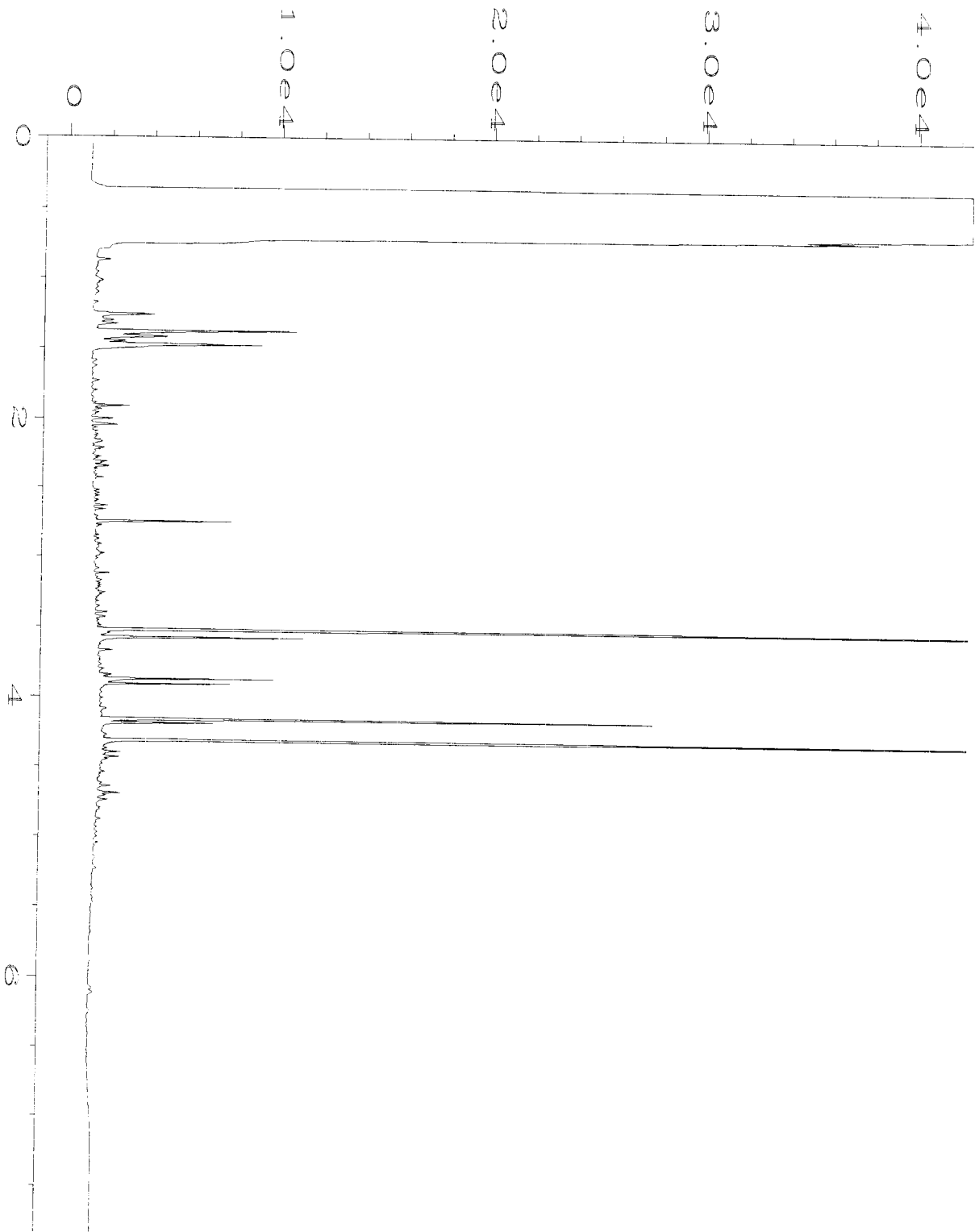
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

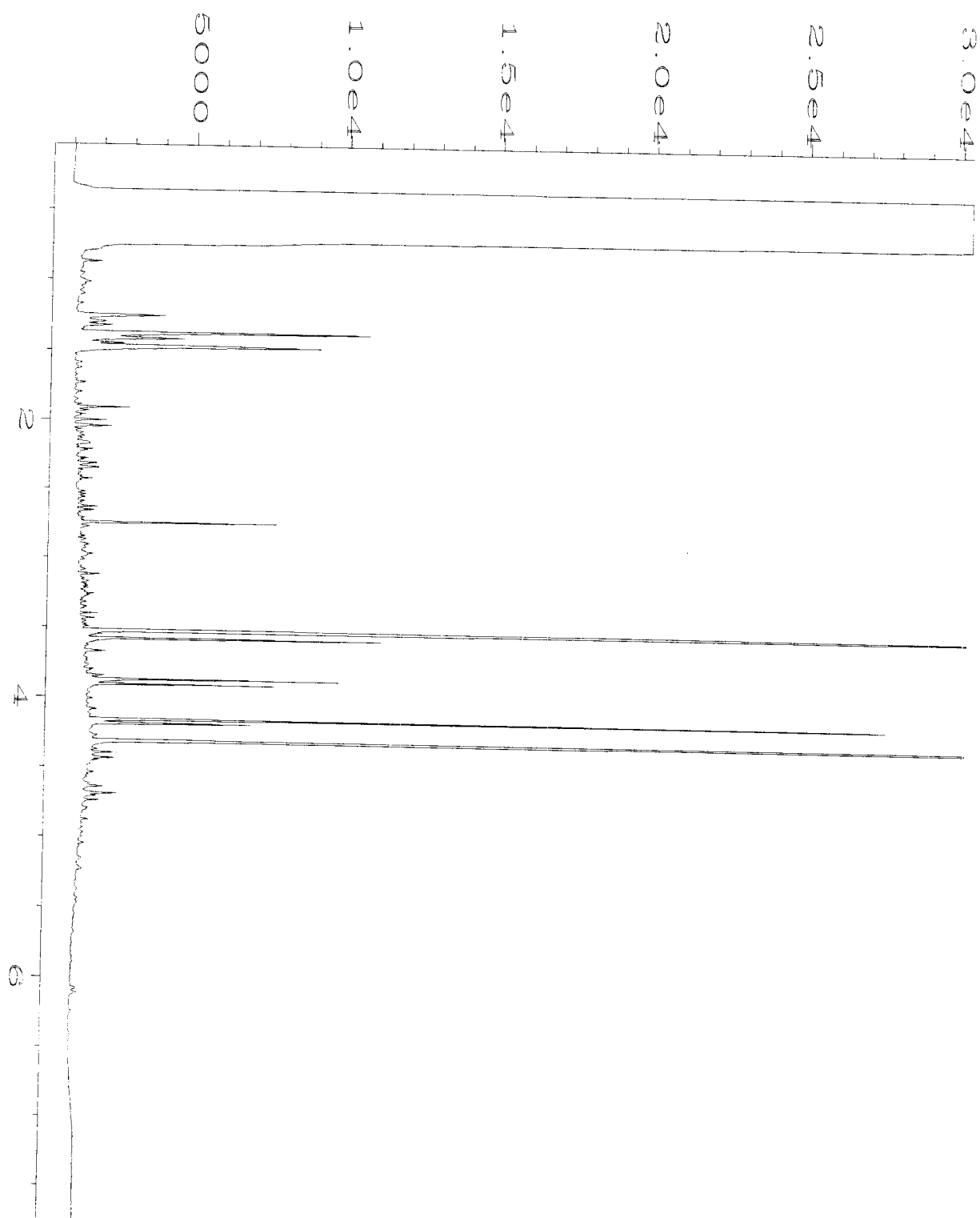
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

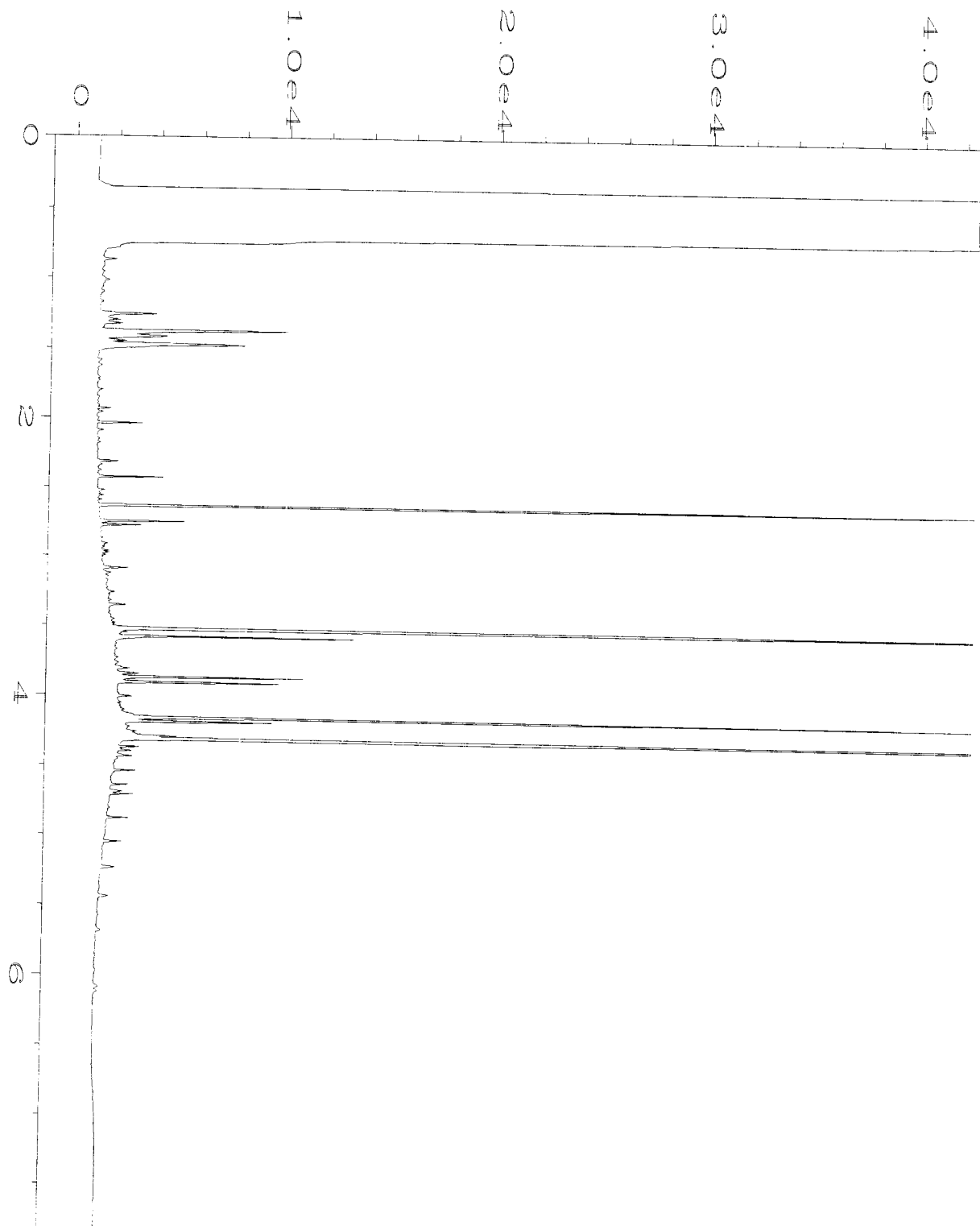
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



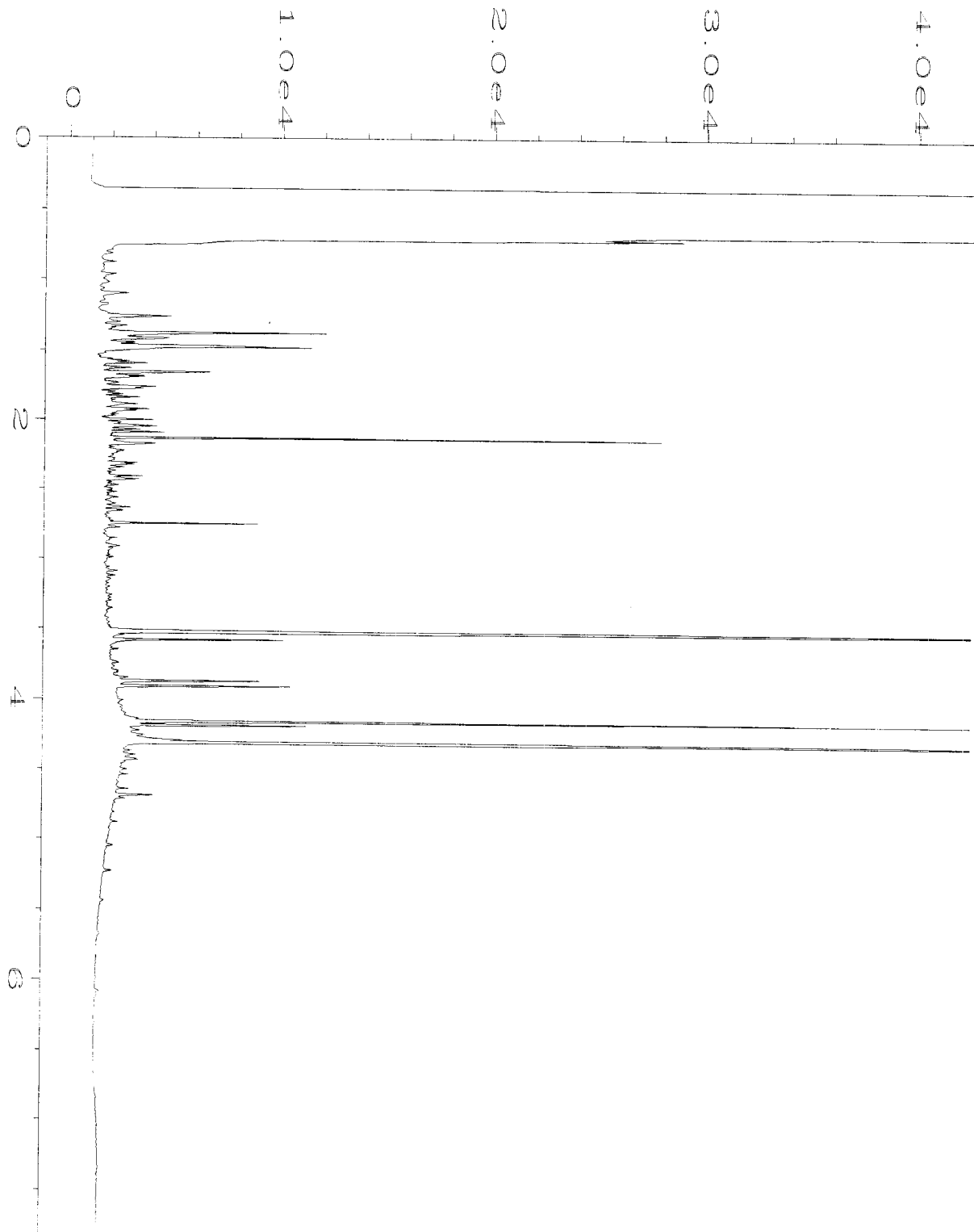
Data File Name	: C:\HPCHEM\4\DATA\06-10-19\041F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 41
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-01	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 04:37 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:49 AM		



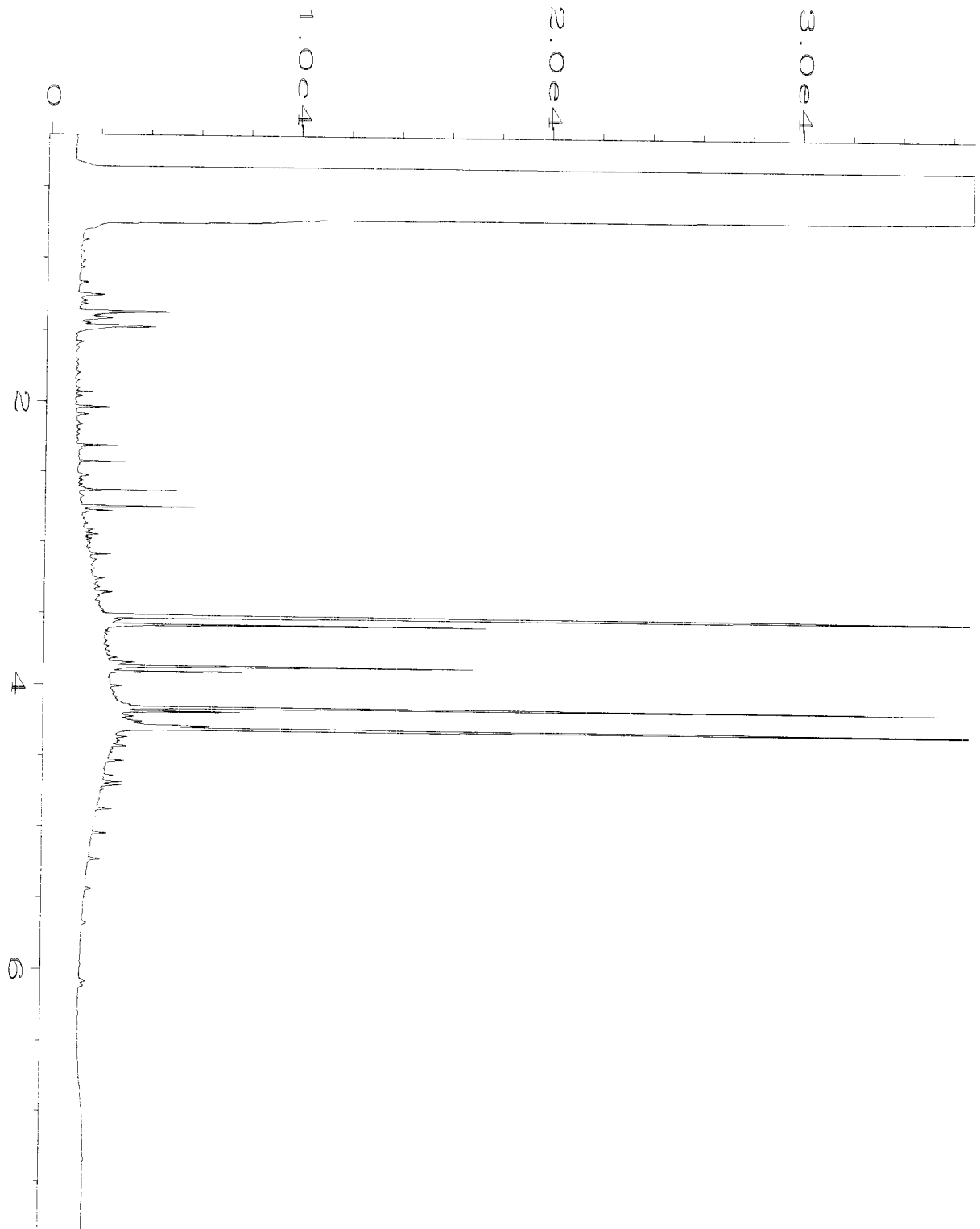
Data File Name	: C:\HPCHEM\4\DATA\06-10-19\041F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 41
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-01	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 04:37 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:49 AM		



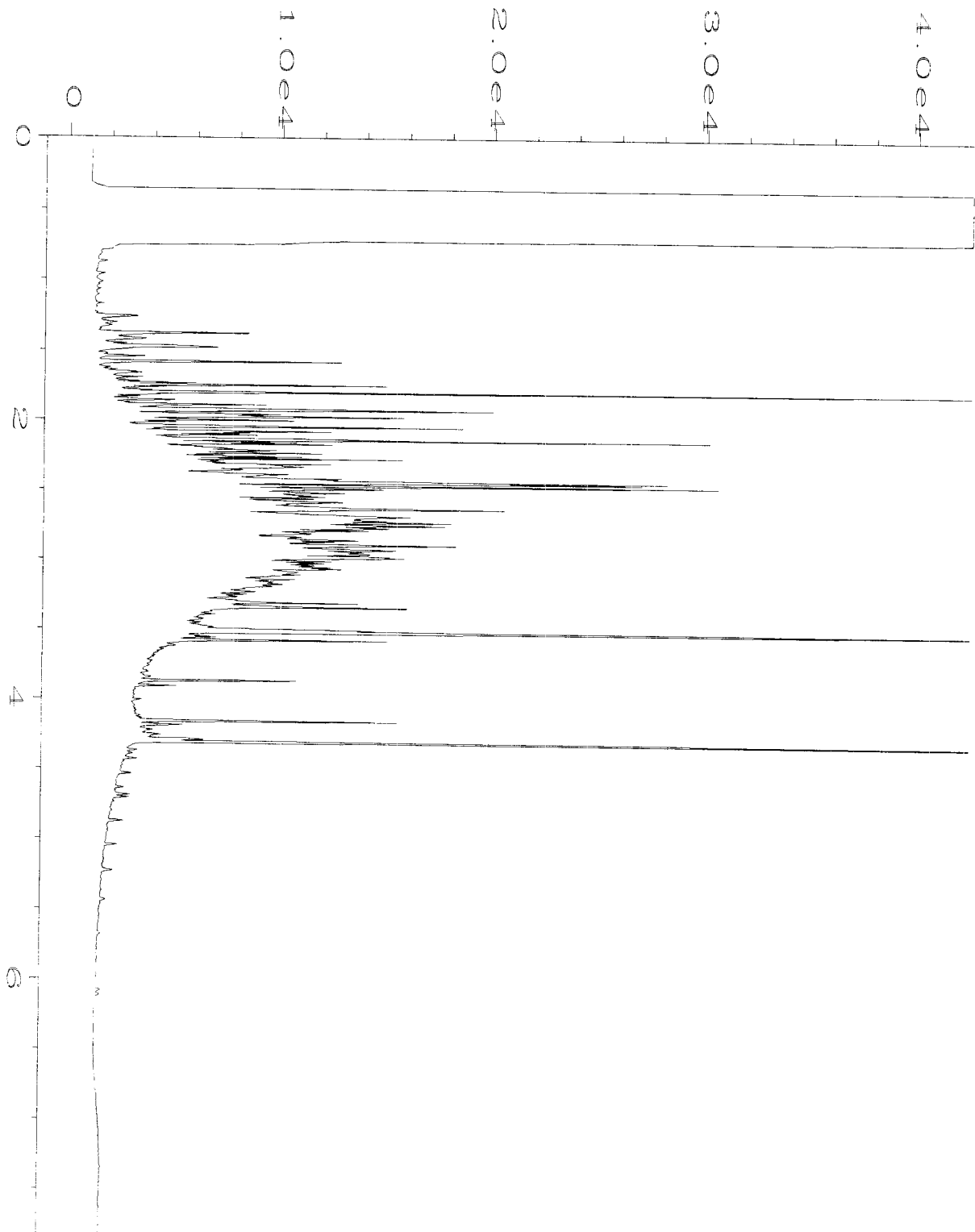
Data File Name	: C:\HPCHEM\4\DATA\06-10-19\042F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 42
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-02	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 04:50 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:49 AM		



Data File Name	: C:\HPCHEM\4\DATA\06-10-19\043F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 43
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-03	Sequence Line	: 15
Run Time Bar Code:		Instrument Method	: DX.MTH
Acquired on	: 10 Jun 19 05:02 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:49 AM		

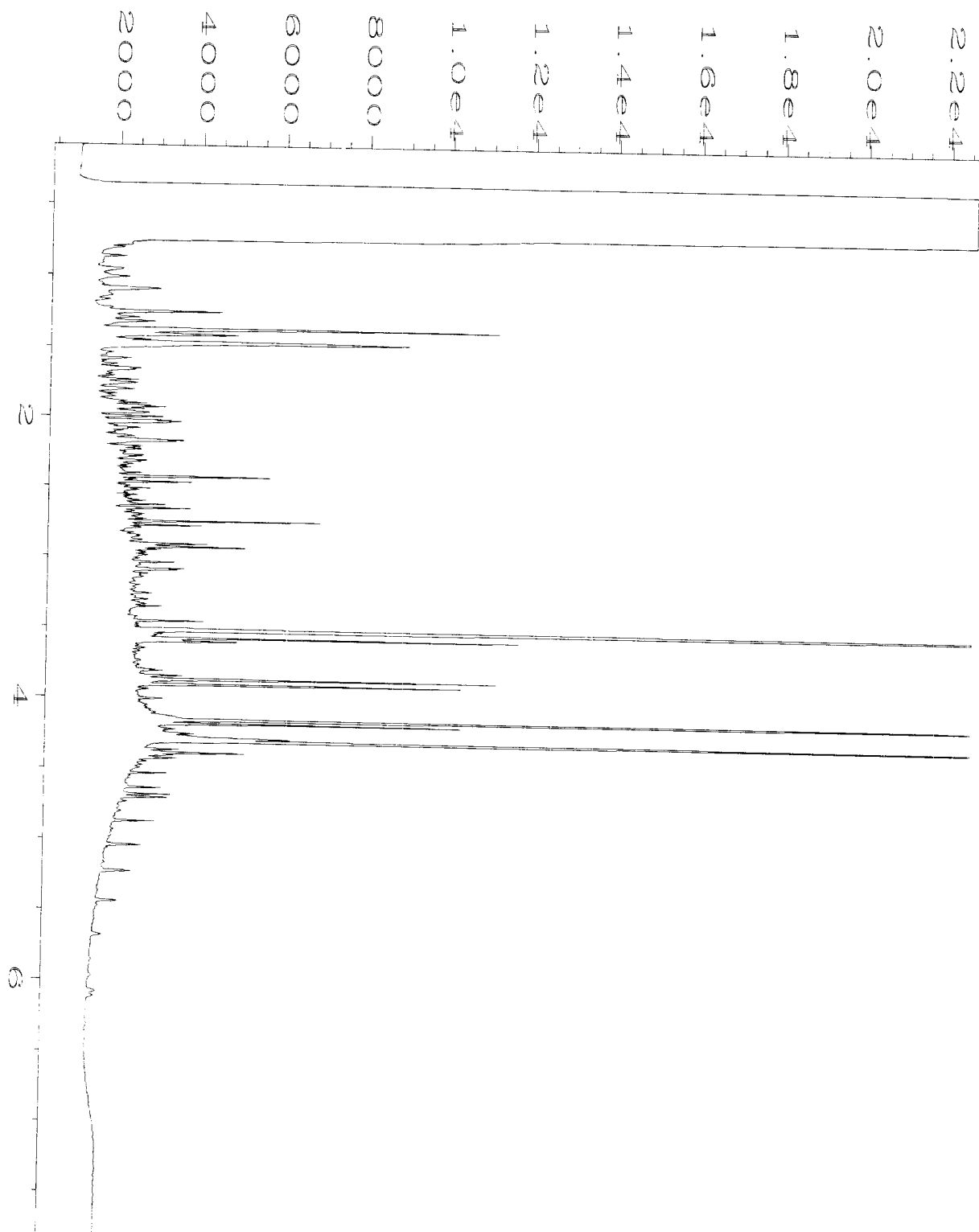


Data File Name	: C:\HPCHEM\4\DATA\06-10-19\044F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 44
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-04	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 05:15 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:50 AM		

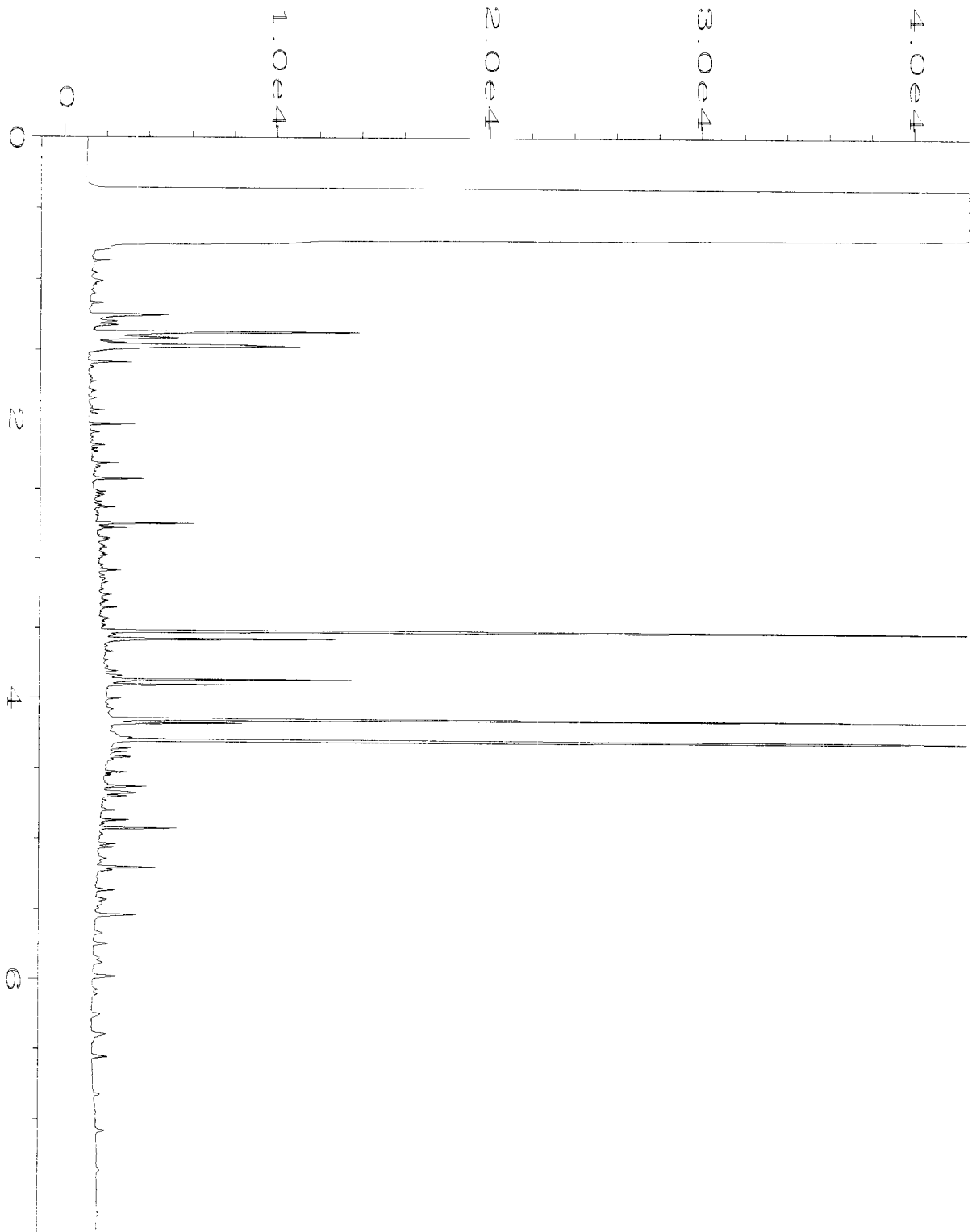


Data File Name	: C:\HPCHEM\4\DATA\06-10-19\045F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 45
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-05	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 05:27 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:50 AM		

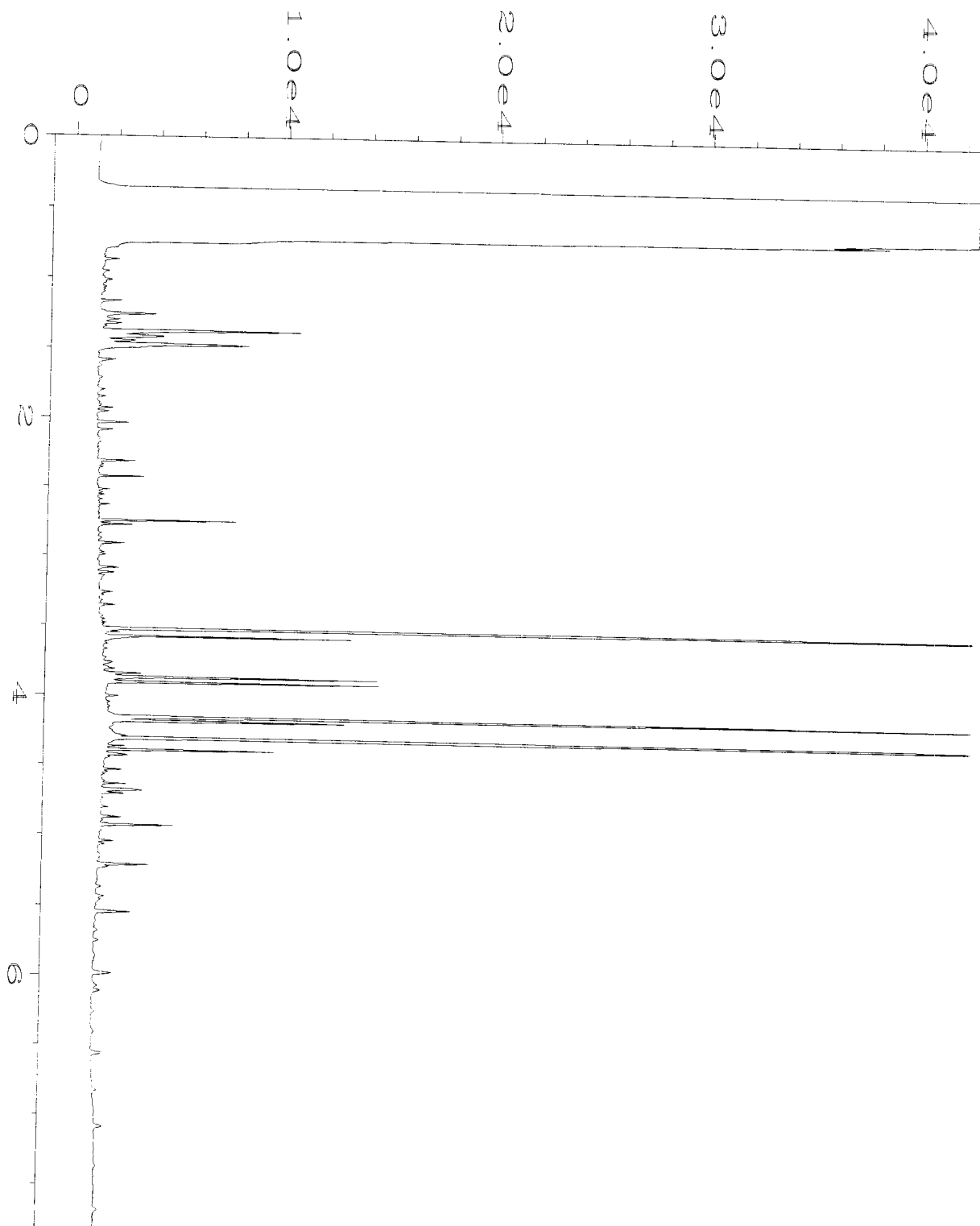




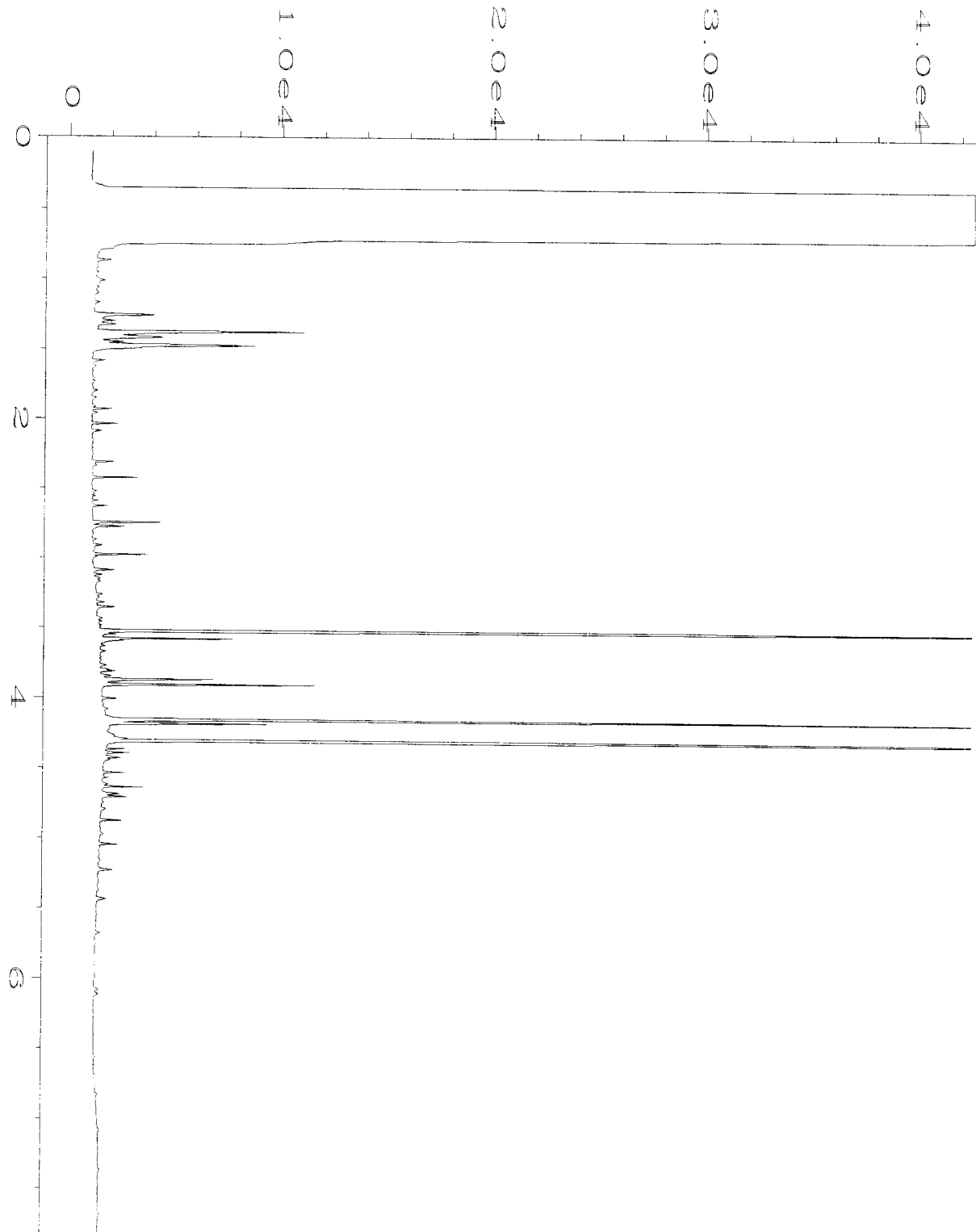
Data File Name	: C:\HPCHEM\4\DATA\06-10-19\046F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 46
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-06	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 05:40 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:50 AM		



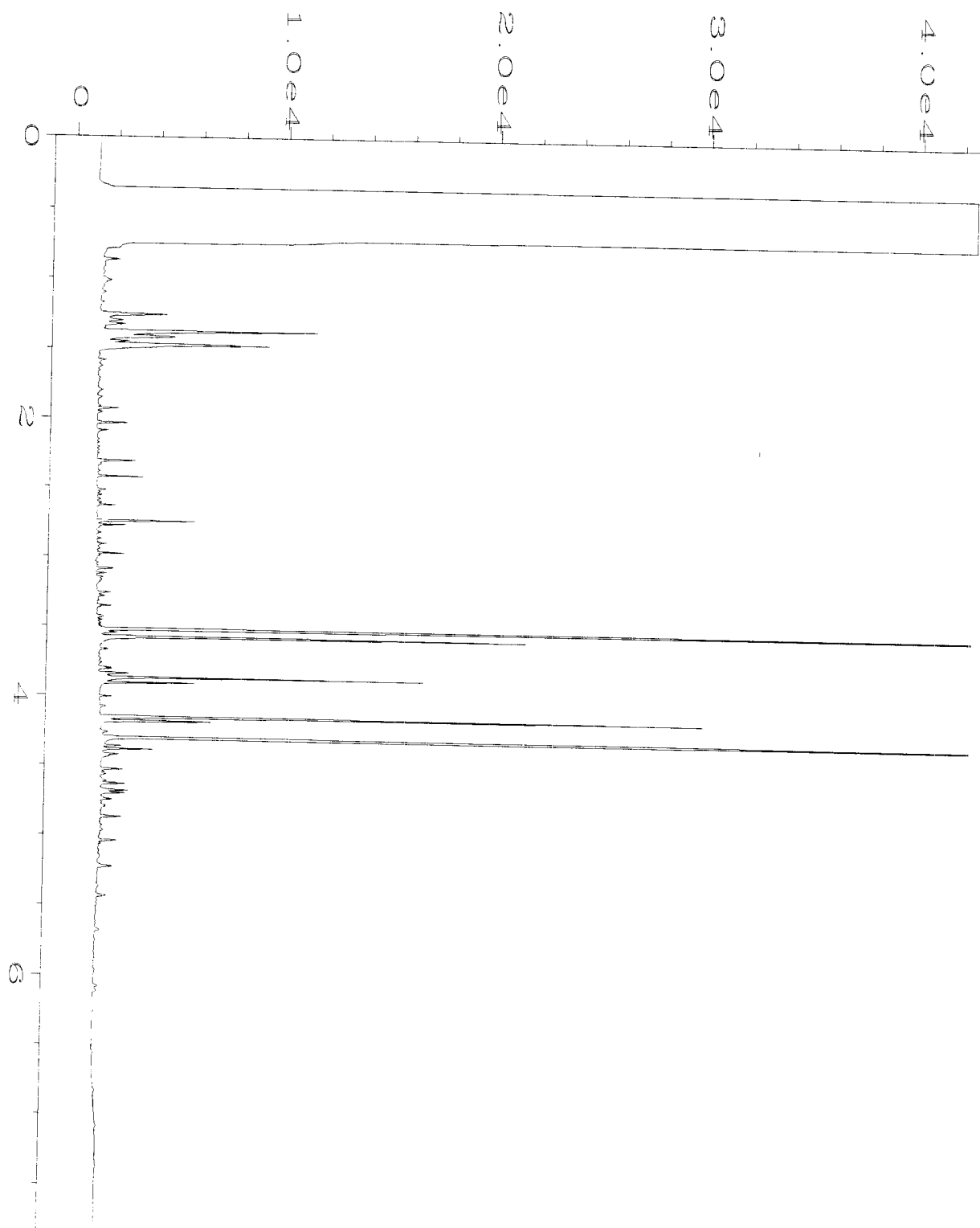
Data File Name	: C:\HPCHEM\4\DATA\06-10-19\047F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 47
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-07	Sequence Line	: 15
Run Time Bar Code:		Instrument Method	: DX.MTH
Acquired on	: 10 Jun 19 05:52 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:50 AM		



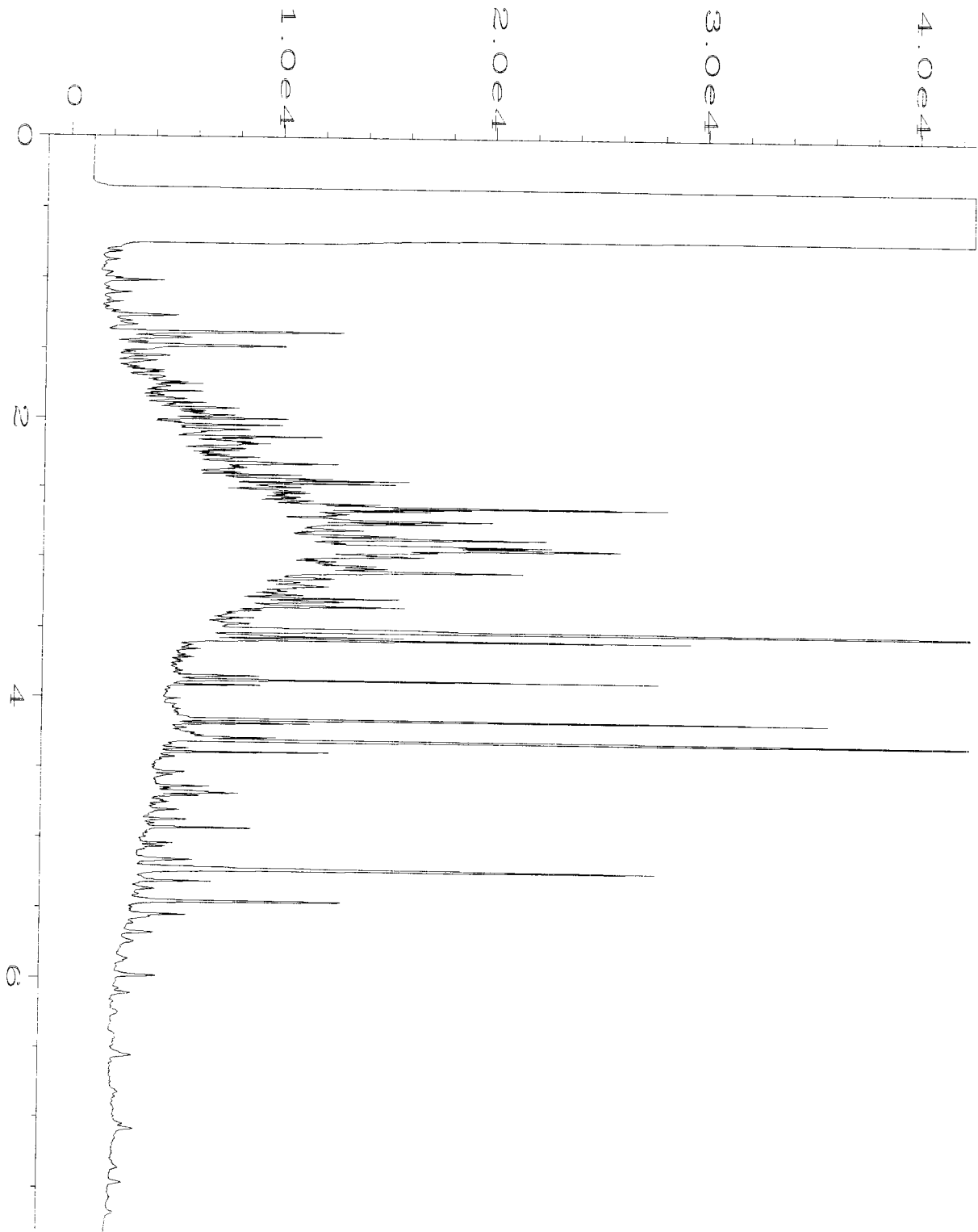
Data File Name	: C:\HPCHEM\4\DATA\06-10-19\048F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 48
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-08	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 06:05 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:51 AM		



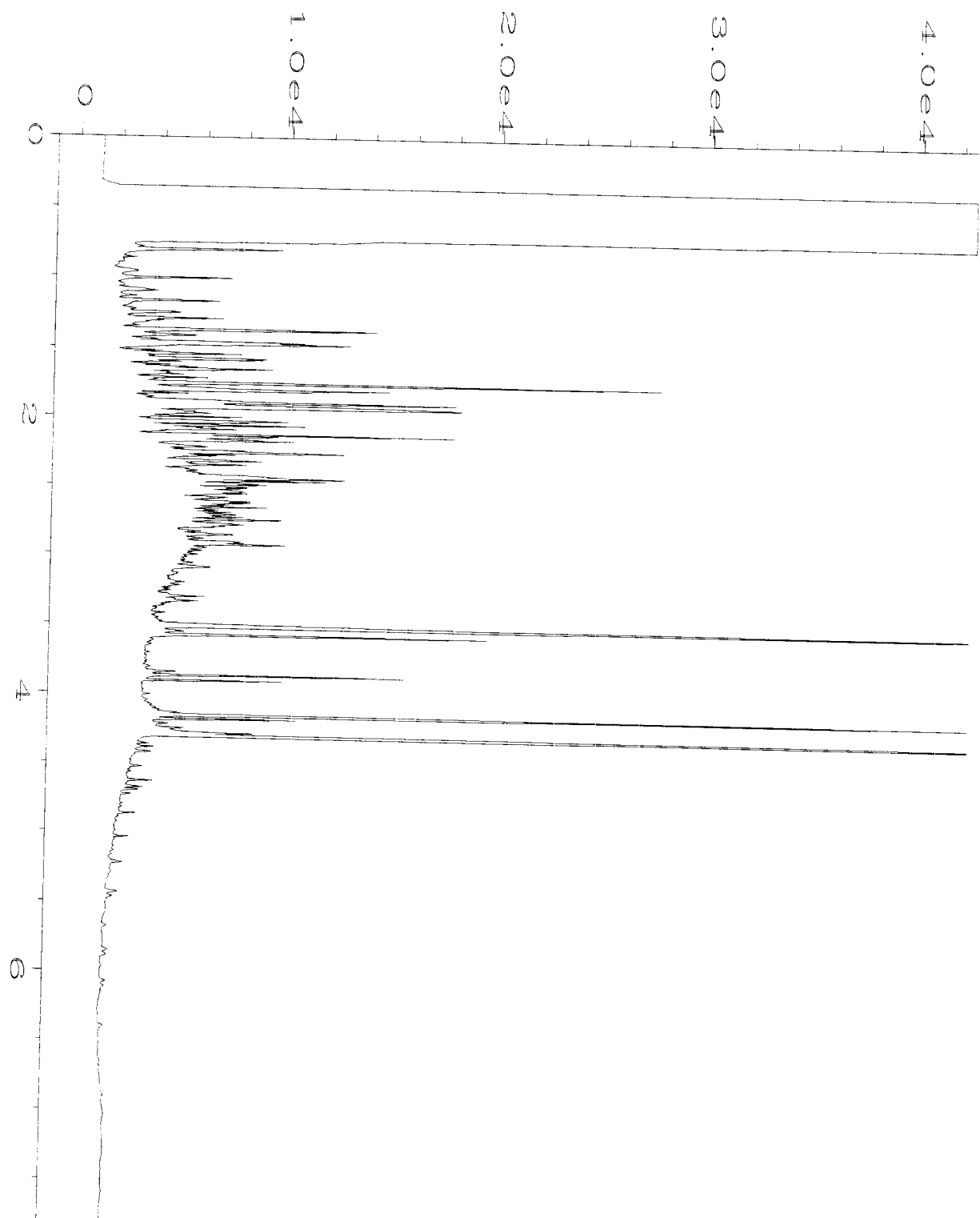
Data File Name	: C:\HPCHEM\4\DATA\06-10-19\049F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 49
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-09	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 06:17 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:51 AM		



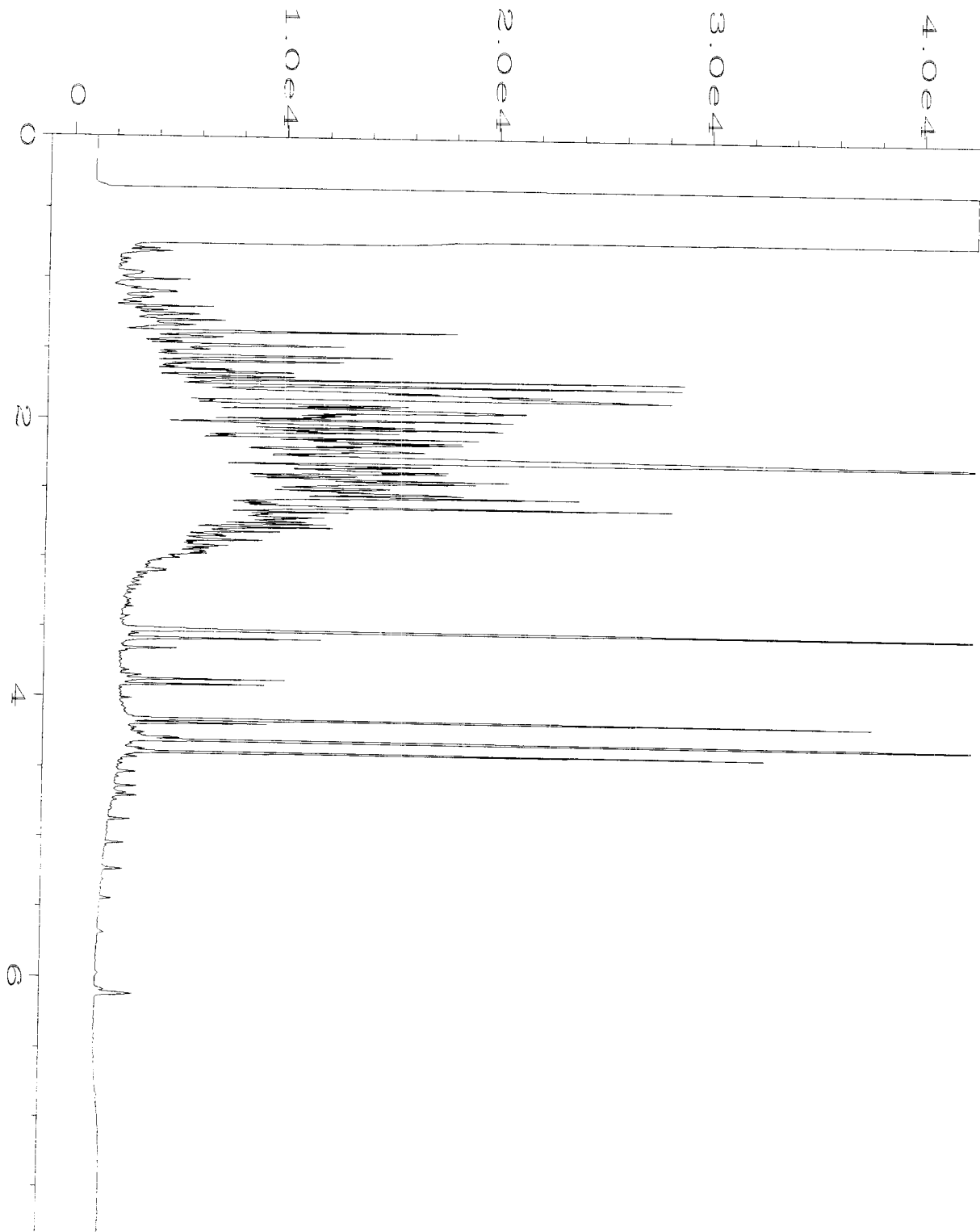
Data File Name	: C:\HPCHEM\4\DATA\06-10-19\050F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 50
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-10	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 06:30 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:51 AM		



Data File Name	: C:\HPCHEM\4\DATA\06-10-19\051F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 51
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-11	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 06:42 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:51 AM		

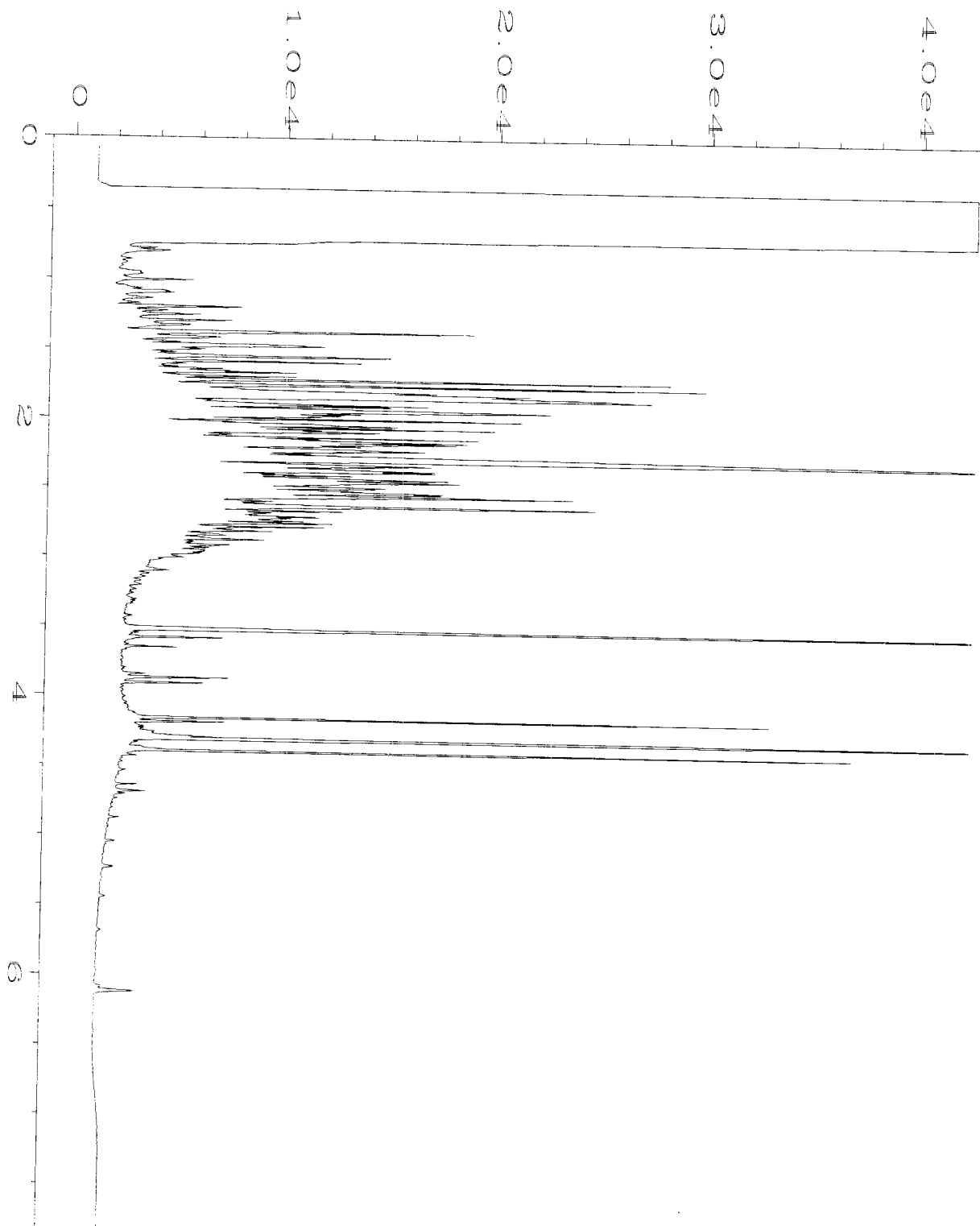


Data File Name	: C:\HPCHEM\4\DATA\06-10-19\052F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 52
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-12	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 06:55 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:51 AM		

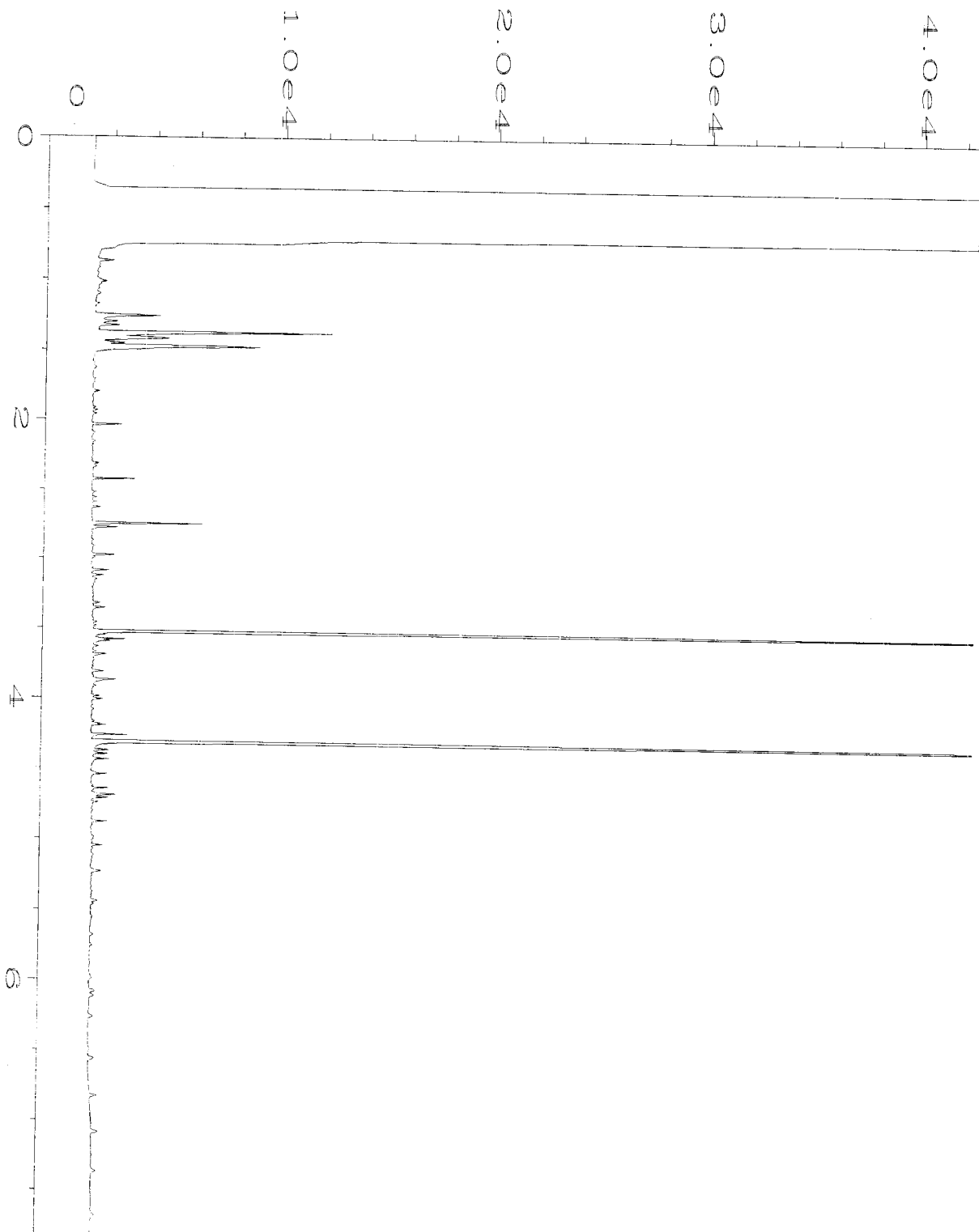


Data File Name	: C:\HPCHEM\4\DATA\06-10-19\053F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 53
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-13	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 07:07 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:52 AM		

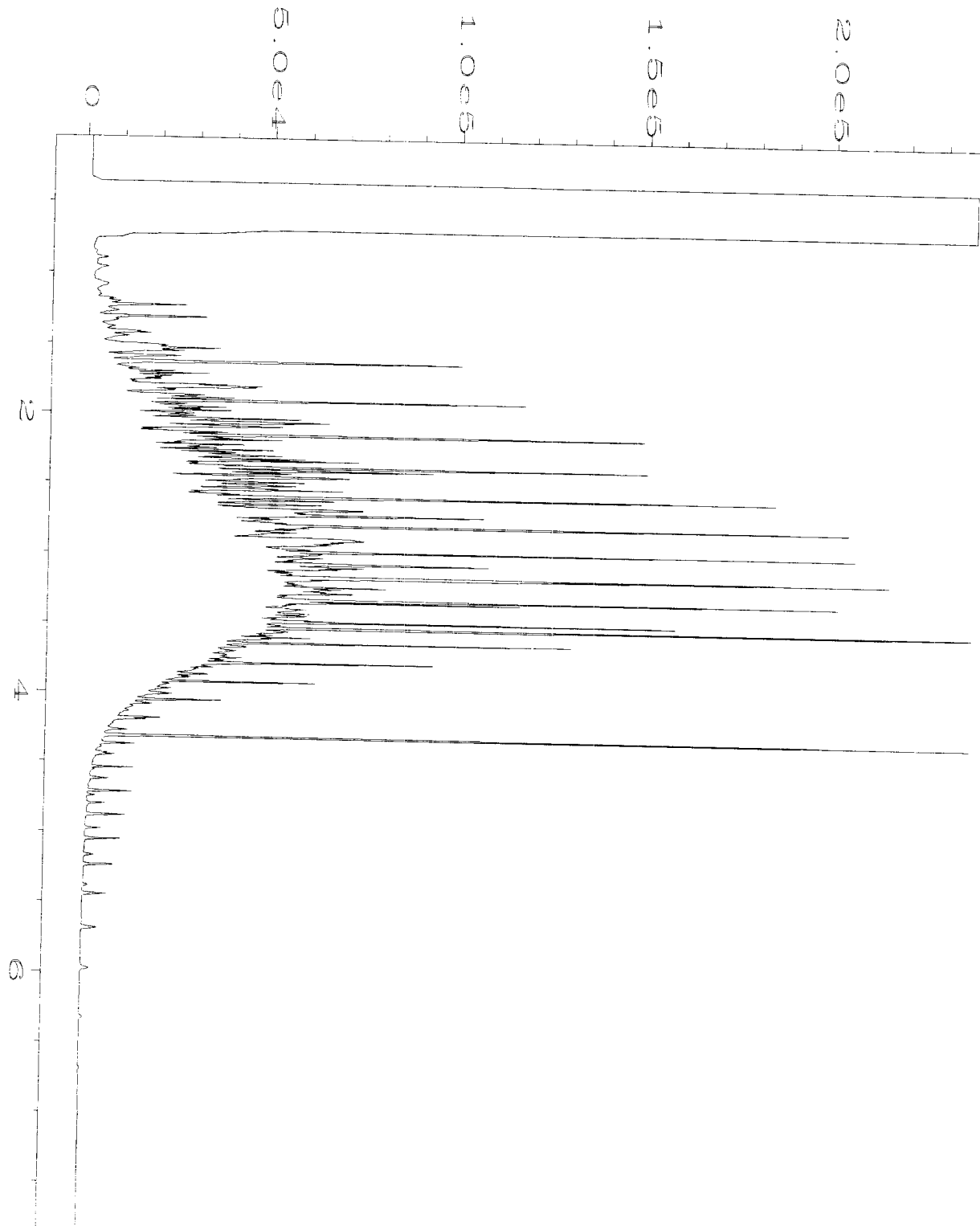




Data File Name	: C:\HPCHEM\4\DATA\06-10-19\054F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 54
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 906144-14	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 07:19 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:52 AM		



Data File Name	: C:\HPCHEM\4\DATA\06-10-19\038F1501.D	Page Number	: 1
Operator	: TL	Vial Number	: 38
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 09-1357 mb	Sequence Line	: 15
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 04:00 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:47 AM		



Data File Name	: C:\HPCHEM\4\DATA\06-10-19\003F0401.D	Page Number	: 1
Operator	: TL	Vial Number	: 3
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 500 Dx 57-78E	Sequence Line	: 4
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 10 Jun 19 08:29 AM	Analysis Method	: DEFAULT.MTH
Report Created on:	11 Jun 19 09:47 AM		

906144

SAMPLE CHAIN OF CUSTODY

ME 06-07-19

Page # 1 of 2  
 104/VW4

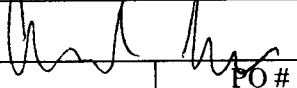
Send Report to: Rob Roberts, cc: Jon Loeffler, Clare Tochilin

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, Washington 98102

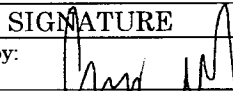

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS (signature) 	
PROJECT NAME/NO. SKS SHELL / 0914-001	PO # 0914-001
REMARKS	

TURNAROUND TIME Standard (2 Weeks) RUSH
Rush charges authorized by:
SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of Jars	ANALYSES REQUESTED				Notes
								NWTPH-Dx	NWTPH-Gx	BTEX by 8021B	CVOCs by 8260C	
MW112-20190606	MW112	-	01A-D	6/6/19	1034	W	4	X	X	X		
MW113-20190606	MW113	-	02	6/6/19	1045			X	X	X		
MW109-20190606	MW109	-	03	6/6/19	1125			X	X	X		
MW110-20190606	MW110	-	04	6/6/19	1210			X	X	X		
MW108-20190606	MW108	-	05	6/6/19	1225			X	X	X		
RW05-20190606	RW05	-	06	6/6/19	1224			X	X	X		
MW111-20190606	MW111	-	07	6/6/19	1305			X	X	X		
MW105-20190606	MW105	-	08	6/6/19	1359			X	X	X		
MW102-20190606	MW102	-	09	6/6/19	1454			X	X	X		
MW101-20190606	MW101	-	10	6/6/19	1455			X	X	X		Samples received at 4°C

Friedman & Bruya, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282  
 Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Andrey Mihniak	SES	6/7/19	1238
Received by: 	Do No	FEBI	6-7-19	12:38
Relinquished by:				
Received by:				

906144

**SAMPLE CHAIN OF CUSTODY**

ME 06-07-19

ADY / 2 ✓ VW4<sub>2</sub>

Send Report to: Rob Roberts, cc: Jon Loeffler, Clare Tochilin

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, Washington 98102

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS (signature)	
PROJECT NAME/NO. <p style="text-align: center;">SKS SHELL / 0914-001</p>	PO # <p style="text-align: center;">0914-001</p>
REMARKS	

Page # <u>2</u> of <u>2</u>
<b>TURNAROUND TIME</b>
Standard (2 Weeks)
<b>RUSH</b>
Rush charges authorized by:
<b>SAMPLE DISPOSAL</b>
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of Jars	ANALYSES REQUESTED				Notes
								NWTPH-Dx	NWTPH-Gx	BTEX by 8021B	CVOCs by 8260C	
MW 104-20190606	MW 104	-	11AD	6/6/19	1515	W	4	X	X	X		
RW04-20190607	RW04	-	12	6/7/19	1034	↓	↓	X	X	X		
RW03-20190607	RW03	-	13	6/7/19	1134	↓	↓	X	X	X		
MW99-20190607		-	14	6/7/19	1200	↓	↓	X	X	X		
<i>APM 06/07/19</i>												
											Samples received at <u>4</u> °C	

Friedman & Bruya, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282  
 Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Audrey Michniak	SES	6/7/19	1230
Received by:	D D Vo	FBI	6-7-19	12:38
Relinquished by:				
Received by:				

**ATTACHMENT B**  
**DATA VALIDATION REPORT**

# **DATA VALIDATION REPORT**

## **SKS SHELL Second Quarter 2019**

### **Prepared for:**

Sound Earth Strategies, Inc.  
2811 Fairview Ave East, Suite 2000  
Seattle, Washington 98102

### **Prepared by:**

Validata, LLC  
3346 NE 178<sup>th</sup> St.  
Lake Forest Park, Washington 98155

# PROJECT NARRATIVE

## Data Validation

This report summarizes the results of the summary level validation (Stage 2A) performed on water samples for the SKS Shell sampling project. A complete list of samples is provided in the Sample Index. Samples were analyzed by Friedman & Bruya, Inc. laboratory, Seattle, Washington. The analytical methods are listed below:

### Sample Index

ANALYSIS	METHOD	Reviewer
BTEX, TPH as Gasoline Range	SW8021B/NWTPH-Gx	C. Jensen
Total Petroleum Hydrocarbons – Diesel Range, Motor Oil	NWTPH-Dx	C. Jensen

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *USEPA National Functional Guidelines for Organic Data Review* (EPA, 1999 & 2008).

The goal of data validation is to assign data assessment qualifiers for assistance in data interpretation. Results assigned as estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. For results assigned an R, the data are rejected and should not be used for site evaluation purposes. Unqualified data implies the data meet the data quality objectives as stated in the documents and methods referenced above. A summary of the data qualifiers used in validation are included in Appendix A. The summary of Qualified Data are provided in Appendix B. All validation worksheets are provided in Appendix C.

## SAMPLE INDEX

SDG	Sample ID	Lab Sample ID	BTEX	NWTPH-Gx	NWTPH-Dx
906144	MW112-20190606	906144-01	X	X	X
906144	MW113-20190606	906144-02	X	X	X
906144	MW109-20190606	906144-03	X	X	X
906144	RW03-20190607	906144-13	X	X	X
906144	RW04-20190607	906144-12	X	X	X
906144	RW05-20190606	906144-06	X	X	X
906144	MW101-20190606	906144-10	X	X	X
906144	MW99-20190607	906144-14	X	X	X
906144	MW102-20190606	906144-09	X	X	X
906144	MW108-20190606	906144-05	X	X	X
906144	MW105-20190606	906144-08 1/1.2	X	X	X
906144	MW110-20190606	906144-04	X	X	X
906144	MW104-20190606	906144-11	X	X	X
906144	MW111-20190606	906144-07	X	X	X

## DATA VALIDATION REPORT

### Volatile Organic Compounds - Method SW8021B – Benzene, Toluene, Ethylbenzene, Xylenes



This report documents the review of analytical data from the analyses of water samples and the associated laboratory and field quality control (QC) samples. Friedman & Bruya, Inc. laboratory, Seattle, Washington. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
906144	14	STAGE 2A

## DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables for a Stage 2A review. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

## HARDCOPY VERIFICATION

Sample IDs and results reported in the data summary spreadsheet were verified (10% verification) by comparing the spreadsheet with the laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

## TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

Sample Receipt, Preservation, and Holding Times	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
Laboratory Blanks	Field Duplicates
Field Blanks	Target Analyte List
Surrogate Compounds	Reporting Limits
Laboratory Control Samples (LCS)	Reported Results

### Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 0° to 6°C. For volatiles analysis, no action is taken if the cooler temperature is <10°C. If the cooler temperature is >10°C, associated sample results are estimated (J/UJ-1). With the exceptions noted below, the laboratory received the sample coolers within the advisory temperature range.

*SDG 906144:* The cooler temperatures were within the recommended temperature range.

### Method and Field Blanks

The method blanks were all reported as undetected for target compounds.

### Surrogate Compounds

Surrogates were added to all samples. All surrogate recoveries were within the laboratory control limits.

### Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples were not specifically analyzed for this dataset. The laboratory demonstrated precision and accuracy through the analysis of laboratory control and laboratory control sample duplicate samples (LCS/LCSD) with acceptable results.

## Field Duplicates

For water samples, the RPD control limit is 20% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 1x the RL.

*SDG 906144*: Sample pair MW99-20190607/RW03-20190607 were identified as a field duplicate pair. Field precision was acceptable as summarized below. Field data are not qualified for duplicate precision exceedance.

Sample ID	lab ID	analyte	906144-13	906144-14	RPD
MW99-20190607	906144-14	benzene	0	0	0%
RW03-20190607	904166-13	toluene	0	0	0%
		ethyl benzene	14	14	0%
		xylenes	4.3	4.4	0%

## Target Analyte List

A sampling plan was not available for review.

## Reporting Limits

The laboratory reporting limits were sufficiently below the MTCA Method A cleanup levels provided in appendix B.

## Reported Results

Reported results were considered acceptable.

## OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS recovery values. Precision was acceptable as demonstrated by the LCS and field duplicate RPD values. All data are acceptable for use.

## DATA VALIDATION REPORT

### TPH as Gasoline Range Organics - Method NWTPH-Gx

This report documents the review of analytical data from the analyses of water samples and the associated laboratory and field quality control (QC) samples. Friedman & Bruya, Inc. laboratory, Seattle, Washington. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
906144	14	STAGE 2A

## DATA PACKAGE COMPLETENESS

With the exception noted below, the laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

## **HARDCOPY VERIFICATION**

Sample IDs and results reported in the data summary spreadsheet were verified (10% verification) by comparing the spreadsheet the laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

## **TECHNICAL DATA VALIDATION**

The QC requirements that were reviewed are listed below.

Sample Receipt, Preservation, and Holding Times	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
Laboratory Blanks	Field Duplicates
Field Blanks	Target Analyte List
Surrogate Compounds	Reporting Limits
Laboratory Control Samples (LCS)	Reported Results

### **Sample Receipt, Preservation, and Holding Times**

As stated in the validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C-6°C and samples must be analyzed within 14 days. For volatiles analysis, no action is taken if the cooler temperature is <10°C. If the cooler temperature is >10°C, associated sample results are estimated (J/UJ-1). The following exceptions were noted during validation:

*SDG 906144:* The cooler temperatures were within the recommended temperature range.

### **Method and Field Blanks**

The method blanks were all reported as undetected for target compounds.

### **Surrogate Compounds**

Surrogates were added to all samples. All surrogate recoveries were within the laboratory control limits.

### **Matrix Spike/Matrix Spike Duplicates**

Matrix spike/matrix spike duplicate (MS/MSD) samples were not specifically analyzed for this dataset. The laboratory demonstrated precision and accuracy through the analysis of laboratory control and laboratory control duplicate samples (LCS/LCSD) with acceptable results.

### **Field Duplicates**

For water samples, the RPD control limit is 20% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 1x the RL.

*SDG 906144:* Sample pair MW99-20190607/RW03-20190607 were identified as a field duplicate pair. Field precision was acceptable as summarized below. Field data are not qualified for duplicate precision exceedance.

Sample ID	lab ID	analyte	906144-13	906144-14	RPD
MW99-20190607	906144-14	GRO	410	410	0%
RW03-20190607	904166-13				

### Target Analyte List

A sampling plan was not available for review.

### Reporting Limits

The laboratory reporting limits were sufficiently below the MTCA Method A cleanup levels provided in appendix B.

### Reported Results

Results reported were deemed acceptable.

## OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate and LCS recovery values. Precision was acceptable as demonstrated by the LCS and laboratory and field duplicate RPD values. All data, as qualified, are acceptable for use.

## DATA VALIDATION REPORT

### Diesel Range, Motor Oil - Method NWTPH-Dx

This report documents the review of analytical data from the analyses of water samples and the associated laboratory and field quality control (QC) samples. Friedman & Bruya, Inc. laboratory, Seattle, Washington. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
906144	14	STAGE 2A

### DATA PACKAGE COMPLETENESS

With the exception noted below, the laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative if applicable.

### HARDCOPY VERIFICATION

Sample IDs and results reported in the data summary spreadsheet were verified (10% verification) by comparing the spreadsheet the laboratory data package. Ten percent (10%) of the laboratory QC results were also verified.

### TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

Sample Receipt, Preservation, and Holding Times	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
Laboratory Blanks	Field Duplicates
Field Blanks	Target Analyte List
Surrogate Compounds	Reporting Limits
Laboratory Control Samples (LCS)	Reported Results

### Sample Preservation and Holding Times

As stated in validation guidance documents, sample shipping coolers should arrive at the laboratory within the advisory temperature range of 0°C - 6°C and be extracted within 7 days for aqueous samples and 14 days for soil samples. Sample extracts must be analyzed within 40 days of extraction.

*SDG 906144:* The cooler temperatures were within the recommended temperature range.

### Method and Field Blanks

The method blanks were all reported as undetected for target compounds. Field blanks were not submitted with this sampling event.

### Surrogate Compounds

Surrogates were added to all samples. All surrogate recoveries were within the laboratory control limits.

### Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples were not specifically analyzed for this dataset. The laboratory demonstrated precision and accuracy through the analysis of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) with acceptable results.

### Field Duplicates

For water samples, the RPD control limit is 20% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the absolute difference between the sample and replicate must be less than 1x the RL.

*SDG 906144:* Sample pair MW99-20190607/RW03-20190607 were identified as a field duplicate pair. Field precision was acceptable as summarized below. Field data are not qualified for duplicate precision exceedance.

Sample ID	lab ID	analyte	906144-13	906144-14	RPD
MW99-20190607	906144-14	Diesel Range	680	700	2.9%
RW03-20190607	904166-13	Motor Oil	0	0	0

### Target Analyte List

A sampling plan was not available for review.

### Reporting Limits

The laboratory reporting limits were sufficiently below the MTCA Method A cleanup levels provided in appendix B.

## **Reported Results**

*SDG 906144:* All samples with the exception of MW101-20190606 (which was undetected for diesel range C10-C25) were qualified as estimated (J+) and reason code 2 since the laboratory reported the diesel results as "x" indicating the chromatographic pattern does not match the standard. For motor oil, sample MW104-20190606 was qualified as estimated (J+) and reason code 2 to indicate the chromatographic pattern does not match the standard.

## **OVERALL ASSESSMENT**

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the surrogate and LCS/LCSD recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD and laboratory and field duplicate relative percent difference values. The data were qualified due to sample versus fuel reference material not matching, as indicated by the laboratory. All data, as reported, are acceptable for use.

## DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler)
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
Instrument Performance	5A	Initial Calibration (RF, %RSD, r2)
Instrument Performance	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L)1 where appropriate
Instrument Performance	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L)1 where appropriate
Blank Contamination	7	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
Blank Contamination	6	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L)1 for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L)1 where appropriate
Precision and Accuracy	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
Precision and Accuracy	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L)1 where appropriate
Precision and Accuracy	12	Reference Material Use bias flags (H,L)1 where appropriate
Precision and Accuracy	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L)1 where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
Interferences	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L)1 where appropriate
Interferences	19	Internal Standard Performance (i.e., area, retention time, recovery)
Interferences	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
Interferences	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
Identification and Quantitation	3	2nd column confirmation (RPD or %D)
Identification and Quantitation	4	Tentatively Identified Compound (TIC) (associated with NJ only)
Identification and Quantitation	20	Calibration Range or Linear Range Exceeded
Identification and Quantitation	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, reextractions, etc. Associated with "R" and "DNR" only)
Miscellaneous	14	Other (See DV report for details)
Miscellaneous	26	Method QC information not provided

## DATA VALIDATION CRITERIA

Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)

(Based on NFG 1999 & 2008 and SW-846 Method 8260, analyzed by SW8021B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
<b>Blanks</b>					
Method Blank (MB)	MB: One per matrix per batch (of ≤ 20 sample) No TICs present	NFG (2) Method (3)	U (pos) if result is < 5X or 10X action level R (pos) TICs using 10X rule	7	10X action level for methylene chloride, acetone, & 2-butanone. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review TB, qualify as needed #3 - Review FB, qualify as needed Note: Actions as per NFG 1999
Trip Blank (TB)	No detected compounds > MDL	NFG (2) Method (3)	U (pos) if result is < 5X or 10X action level	6	
Field Blank (FB)	No detected compounds > MDL	NFG (2) Method (3)	U (pos) if result is < 5X or 10X action level	6	
<b>Precision and Accuracy</b>					
LCS/LCSD (recovery)	One per matrix per batch (of ≤ 20 samples)	Method (3)	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L)4	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits.
LCS/LCSD RPD	If LCSD analyzed RPD < lab limits	Method (3)	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	Standard review	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L)4	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Surrogates	Added to all samples Within method/laboratory control limits	NFG (1) Method (3)	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if <10%	13 (H,L)4	No action if there are 4+ surrogates and only 1 outlier. Qualify all compounds if qualification is required.
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG (1) Method (3)	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG (1) Method (3)	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L)4	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG (1) Method (3)	J (pos) If RPD > control limit	9	Qualify parent sample only
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35%	Standard review	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified



	OR difference < 1X RL (for results < 5X RL)				
<b>Compound Identification and Quantitation</b>					
Retention Time Relative Ion Intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG (1) Method (3)	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG (1) Method (3)	NJ TIC R (pos) if common laboratory contaminants	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results greater than highest calibration standard	Standar d review	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Reextractions and/or Reanalyses	Report only one result per analyte	Standar d review	Report best result	11	Best value reported

1 National Functional Guidelines for Organic Data Review, June, 2008 (pos): Positive Result

2 National Functional Guidelines for Organic Data Review, Oct, 1999 (ND): Non-detect

3 Method SW846 8260C Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

4 NFG 2013 suggests using "+ / -" to indicate bias; validation uses "H" = high bias indicated; "L" = low bias indicated.

## DATA VALIDATION CRITERIA

Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range  
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx,  
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
<b>Sample Handling</b>				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6°C	1	
Holding Time	Waters: 14 days preserved 7 days unpreserved Solids: 14 Days	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
<b>Instrument Performance</b>				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: r2 ≥ 0.990 If used, RSD of response factors ≤ 20%	Narrate if fewer than 5 calibration levels or if %R > 15% J(+)/UJ(-) if r2 < 0.990 J(+)/UJ(-) if %RSD > 20% 5A Mid-range Calibration Check Std. Analyzed before and after each analysis shift & every 20 samples. Recovery range 80% to 120%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 80% to 120%	Narrate if frequency not met. J(+)/UJ(-) if %R < 80% J(+) if %R > 120%	5B	
<b>Blank Contamination</b>				
Method Blank	At least one per batch (≤ 10 samples)	U (at the RL) if sample result is < RL & < 5X blank result. U (at reported sample value) if sample result is ≥ RL and < 5X blank result	7	
Trip Blank (if required by project)	No results > RL	Action is same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned.	18	
Field Blanks (if required by project)	No results > RL	remaining in field blank after method and trip blank qualifiers are assigned.	6	
<b>Precision and Accuracy</b>				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. > 5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤ 10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10%	10	Professional Judgement
Surrogates	1,4-difluorobenzene added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP default: water: RPD < 35% solids: RPD < 50%	Narrate outliers If required by project, qualify with J(+)/UJ(-)	9	
<b>Compound ID and Calculation</b>				
Two analyses for one sample (e.g., dilution)	Report only one result per analyte	best value chosen	11	

## DATA VALIDATION CRITERIA

Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range  
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,  
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
<b>Sample Handling</b>				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6 deg. C	1	
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
<b>Instrument Performance</b>				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: r <sup>2</sup> ≥0.990 If used, RSD of response factors ≤20%	Narrate if fewer than 5 calibration levels or if %R >15% J(+)/UJ(-) if r <sup>2</sup> <0.990 J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. J(+)/UJ(-) if %R < 85% J(+) if %R >115%	5B	
<b>Blank Contamination</b>				
Method Blank	At least one per batch (≤20 samples) Method Blank No results >R	U (at the RL) if sample result is < RL & < 5X blank result. 7 U (at reported sample value) if sample result is ≥ RL and < 5X blank result	7	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.	6	
<b>Precision and Accuracy</b>				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10%	10	Professional Judgement
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R <10% No action if 2 or more surrogates are used, and only one is outside control limits	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP default: water: RPD < 35% solids: RPD < 50%	Narrate (Use Professional Judgement to qualify)	9	
<b>Compound ID and Calculation</b>				
Two analyses for one sample (dilution)	Report only one result per analyte	all results that should not be reported.	11	

**APPENDIX B**  
**QUALIFIED DATA SUMMARY TABLE**

ID	Sample Date	GRPH <sup>(2)</sup>	Benzene <sup>(3)</sup>	Toluene <sup>(3)</sup>	Ethyl-benzene <sup>(3)</sup>	Total Xylenes <sup>(3)</sup>	DRPH <sup>(2)</sup>	validation qualifier	ORPH <sup>(2)</sup>	validation qualifier
MW101	6/06/19	<100	<1	<1	<1	<3	<50		<250	
MW102	6/06/19	<100	<1	<1	<1	<3	61x	J+, 2	<250	
MW104	6/06/19	210	<1	<1	<1	<3	750x	J+, 2	290x	J+,2
MW105	6/06/19	<100	<1	<1	<1	<3	96x	J+, 2	<250	
RW03	6/07/19	410	<1	<1	14	4.3	680x	J+, 2	<250	
RW04	6/07/19	240	<1	<1	<1	<3	470x	J+, 2	<250	
RW05	6/06/19	<100	<1	<1	<1	<3	99x	J+, 2	<250	
MW108	6/06/19	<100	<1	<1	<1	<3	590x	J+, 2	<250	
MW109	6/06/19	<100	<1	<1	<1	<3	140x	J+, 2	<250	
MW99	6/07/19	410	<1	<1	14	4.4	700x	J+, 2	<300	
MW113	6/06/19	<100	<1	<1	<1	<3	89x	J+, 2	<250	
MW112	6/06/19	<100	<1	<1	<1	<3	59x	J+, 2	<250	
MW111	6/06/19	<100	<1	<1	<1	<3	84x	J+, 2	<250	
MW110	6/06/19	<100	<1	<1	<1	<3	91x	J+, 2	<250	
<b>MTCA GW criteria</b>		<b>1,000/800<sup>(6)</sup></b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>1,000</b>	<b>500</b>		<b>500</b>	

Red indicates concentrations exceeding MTCA Method A cleanup levels for groundwater.

Samples analyzed by Friedman & Bruya, Inc. of Seattle, Washington.

<sup>(2)</sup>Analyzed by Method NWTPH-Gx (gasoline) and NWTPH-Dx (diesel and oil).

<sup>(3)</sup>Analyzed by EPA Method 8260B or 8260C.

<sup>(4)</sup>Analyzed by Method NWTPH-Dx; sample extracts passed through a silica gel column prior to analysis.

<sup>(5)</sup>MTCA Cleanup Regulation, Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

<sup>(6)</sup>1,000 µg/L when benzene is not present and 800 µg/L when benzene is present.

Laboratory Note:

\*The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Validation qualifiers

J+ numerical value is the approximate concentration

Validation Codes

2 Chromatographic pattern in sample does not match pattern of calibration standard

DRPH = diesel-range petroleum hydrocarbons

EPA = U.S. Environmental Protection Agency

GRPH = gasoline-range petroleum hydrocarbons

MTCA = Washington State Model Toxics Control Act

NWTPH = Northwest Total Petroleum Hydrocarbon

ORPH = oil-range petroleum hydrocarbons

SoundEarth = SoundEarth Strategies, Inc.

**APPENDIX C**  
**DATA VALIDATION CHECKLISTS**

### VALIDATION WORKSHEET

Method: TPH-DRO  
 Date Reviewed: 6.17.19  
 Sample Collection Dates: 6.6.19, 6.7.19

SDG: 906144  
 Reviewer: C Jensen

The following data validation areas were reviewed:

Sample Identification	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Validation Criteria	MW112-20190606	MW113-20190606	MW109-20190606	MW110-20190606	MW108-20190606	RW05-20190606	MW111-20190606	MW105-20190606	MW102-20190606	MW101-20190606	MW104-20190606	RW04-20190607	RW03-20190607	MW99-20190607							
Sample results	A																				
Holding Times	A																				
Completion	A																				
Method Blanks	A																				
LCS duplicate RPD	A																				
MS/MSD:																					

Note: X = Criteria were evaluated and not met. A = Criteria were evaluated and met. N = Data was not available for review. NA = Not applicable.

**Comments:**

spl 6.6.19 6.7.19  
 prep 6.10.19  
 run 6.10.19

x-pattern not met for  
 diesel & slug by lab H2, H3 all except 108, 101, 104  
 in oil & slug by lab 104.

VALIDATION WORKSHEET

Method: ATEX TPH GVO  
 Date Reviewed: 6.14.19  
 Sample Collection Dates: 6.6.19, 6.7.19  
 The following data validation areas were reviewed:

SDG: 906144  
 Reviewer: C Jensen

Sample Identification	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Validation Criteria	MW112-20190606	MW113-20190606	MW109-20190606	MW110-20190606	MW108-20190606	RW05-20190606	MW111-20190606	MW105-20190606	MW102-20190606	MW101-20190606	MW104-20190606	RW04-20190607	RW03-20190607	MW99-20190607							
Sample results	A																				
Holding Times	A																				
Completion	A																				
Method Blanks	A																				
LCS	A																				
duplicate RPD	A																				
MS/MSD:																					

Note: X = Criteria were evaluated and not met. A = Criteria were evaluated and met. N = Data was not available for review. NA = Not applicable.

Comments:

Spl 6.6.19 6.7.19  
 Prep 6.11.19  
 msh 6.11.19



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/13/19  
 Date Received: 06/07/19  
 Project: SOU\_0914-001\_20190607, F&BI 906144  
 Date Extracted: 06/11/19  
 Date Analyzed: 06/11/19

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
 FOR BENZENE, TOLUENE, ETHYLBENZENE,  
 XYLENES AND TPH AS GASOLINE  
 USING METHODS 8021B AND NWTPH-Gx**  
 Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
MW112-20190606 906144-01	<1	<1	<1	<3	<100	97
MW113-20190606 906144-02	<1	<1	<1	<3	<100	96
MW109-20190606 906144-03	<1	<1	<1	<3	<100	94
MW110-20190606 906144-04	<1	<1	<1	<3	<100	98
MW108-20190606 906144-05	<1	<1	<1	<3	<100	96
RW05-20190606 906144-06	<1	<1	<1	<3	<100	96
MW111-20190606 906144-07	<1	<1	<1	<3	<100	97
MW105-20190606 906144-08	<1	<1	<1	<3	<100	96
MW102-20190606 906144-09	<1	<1	<1	<3	<100	98
MW101-20190606 906144-10	<1	<1	<1	<3	<100	96

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 06/13/19  
Date Received: 06/07/19  
Project: SOU\_0914-001\_20190607, F&BI 906144  
Date Extracted: 06/11/19  
Date Analyzed: 06/11/19

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE,  
XYLENES AND TPH AS GASOLINE  
USING METHODS 8021B AND NWTPH-Gx**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
MW104-20190606 906144-11	<1	<1	<1	<3	210	93
RW04-20190607 906144-12	<1	<1	<1	<3	240	94
RW03-20190607 906144-13	<1	<1	14	4.3	410	96
MW99-20190607 906144-14	<1	<1	14	4.4	410	96
Method Blank 09-1293 MB	<1	<1	<1	<3	<100	99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

1 of 2

Date of Report: 06/13/19  
 Date Received: 06/07/19  
 Project: SOU\_0914-001\_ 20190607, F&BI 906144  
 Date Extracted: 06/10/19  
 Date Analyzed: 06/10/19

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
 FOR TOTAL PETROLEUM HYDROCARBONS AS  
 DIESEL AND MOTOR OIL  
 USING METHOD NWTPH-Dx  
 Results Reported as ug/L (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> (% Recovery) (Limit 47-140)
MW112-20190606 906144-01	59 x J+, 2	<250	99
MW113-20190606 906144-02	89 x J+, 2	<250	97
MW109-20190606 906144-03	140 x J+, 2	<250	97
MW110-20190606 906144-04	91 x J+, 2	<250	101
MW108-20190606 906144-05	590 x J+, 2	<250	92
RW05-20190606 906144-06	99 x J+, 2	<250	96
MW111-20190606 906144-07	84 x J+, 2	<250	97
MW105-20190606 906144-08 1/1.2	96 x J+, 2	<250	99
MW102-20190606 906144-09	61 x J+, 2	<250	93
MW101-20190606 906144-10	<50	<250	100

revised 9  
 results 6/18/19

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

272

Date of Report: 06/13/19  
Date Received: 06/07/19  
Project: SOU\_0914-001\_ 20190607, F&BI 906144  
Date Extracted: 06/10/19  
Date Analyzed: 06/10/19

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-Dx**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> (% Recovery) (Limit 47-140)
MW104-20190606 906144-11	750 x Jt, 2	290 x	93
RW04-20190607 906144-12	470 x Jt, 2	<250	100
RW03-20190607 906144-13	680 x Jt, 2	<250	96
MW99-20190607 906144-14	700 x Jt, 2	<250	96
Method Blank 09-1357 MB	<50	<250	106

revised 9  
results 6/18/19

906144

SAMPLE CHAIN OF CUSTODY ME 06-07-19

Page # 1 of 2  
TURNAROUND TIME  
Standard (2 Weeks)  
RUSH

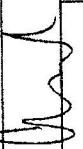
Send Report to: Rob Roberts, cc: Jon Loeffler, Clare Tochilin

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, Washington 98102

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS (signature) 

PROJECT NAME/NO. SKS SHELL / 0914-001

REMARKS

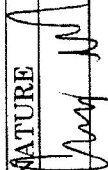

Page # 1 of 2

TURNAROUND TIME  
Standard (2 Weeks)  
RUSH

Rush charges authorized by: \_\_\_\_\_

SAMPLE DISPOSAL  
Dispose after 30 days  
Return samples  
Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX by 8021B	CVOCs by 8260C	Notes
MW112-20190606	MW112	-	0129	6/6/19	1034	W	4	X	X	X		
MW113-20190606	MW113	-	02	6/6/19	1045			X	X	X		
MW109-20190606	MW109	-	03	6/6/19	1125			X	X	X		
MW110-20190606	MW110	-	04	6/6/19	1210			X	X	X		
MW108-20190606	MW108	-	05	6/6/19	1225			X	X	X		
RW05-20190606	RW05	-	06	6/6/19	1224			X	X	X		
MW111-20190606	MW111	-	07	6/6/19	1305			X	X	X		
MW105-20190606	MW105	-	08	6/6/19	1359			X	X	X		
MW102-20190606	MW102	-	09	6/6/19	1454			X	X	X		
MW101-20190606	MW101	-	10	6/6/19	1455			X	X	X		Samples received at 4:00

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Andrew Michniak	SES	6/7/19	1238
Received by: 	DO DO	FEBI	6-7-19	12-38
Relinquished by:				
Received by:				


Friedman & Bruya, Inc.  
3012 16th Avenue West  
Seattle, WA 98119-2029  
Ph. (206) 285-8282  
Fax (206) 283-5044

906144

SAMPLE CHAIN OF CUSTODY ME 06-07-19

Page # 104 of 2

Send Report to: Rob Roberts, cc: Jon Loeffler, Clare Tochilin  
 Company SoundEarth Strategies, Inc.  
 Address 2811 Fairview Avenue E, Suite 2000  
 City, State, ZIP Seattle, Washington 98102  
 Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS (signature) 

PROJECT NAME/NO. SKS SHELL / 0914-001



PO # 0914-001

REMARKS

TURNAROUND TIME  
Standard (2 Weeks)  
RUSH  
Rush charges authorized by:

SAMPLE DISPOSAL  
Dispose after 30 days  
Return samples  
Will call with instructions

Sample ID	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of Jars	ANALYSES REQUESTED				Notes
								NWTPH-Dx	NWTPH-Gx	BTEX by 8021B	CVOCs by 8260C	
MW 104-20190606	MW 104	-	11RD	6/6/19	1515	W	4	X	X	X		
RW 04-20190607	RW 04	-	12	6/7/19	1034	↓	↓	X	X	X		
RW 03-20190607	RW 03	-	13	6/7/19	1134	↓	↓	X	X	X		
MW 99-20190607		-	14	6/7/19	1200	↓	↓	X	X	X		
<del>ATM 06/07/19</del>												
Samples received at <u>4</u> °C												

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	Andrew Michnick	SES	6/7/19	1230
	D d 126	FBI	6-7-19	12.38
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282  
 Fax (206) 283-5044