

# Groundwater Monitoring Report

**Safeway #1436 Fueling Station/Former My Uncle's Store  
7201 Portland Avenue  
Tacoma, Washington**

January 16, 2020  
Terracon Project No. 81167550  
TPCHD UST Permit #0000648

**Prepared for:**  
Albertsons Companies  
Boise, Idaho

**Prepared by:**  
Terracon Consultants, Inc.  
Mountlake Terrace, Washington

[terracon.com](http://terracon.com)

**Terracon**

Environmental   ■   Facilities   ■   Geotechnical   ■   Materials

January 16, 2020



Albertsons Companies  
250 Parkcenter Blvd  
PO Box 20  
Boise, Idaho 83726

Attn: Mr. Doug Kasefang

Re: **Groundwater Monitoring Report**  
Safeway #1436 Fueling Station/Former My Uncle's Store  
7201 Portland Avenue  
Tacoma, Pierce County, Washington 98404  
TPCHD UST Permit #0000648  
Terracon Project No: 81167550

Dear Mr. Kasefang:

Terracon Consultants, Inc. (Terracon) is pleased to submit this Groundwater Monitoring Report for the site referenced above (the Site). The services described herein were performed in general accordance with Terracon's Proposal dated October 24, 2016, *Work Plan for Groundwater Monitoring Well Installations and Quarterly Monitoring* dated November 2, 2016 (Terracon Project No. 81167550), and Project Services Agreement dated October 27, 2016.

Terracon appreciates this opportunity to provide environmental services to Albertsons Companies. Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,

**Terracon Consultants, Inc.**

A handwritten signature in blue ink, appearing to read "Kyle S. Bennett".

Kyle Bennett, G.I.T.  
Staff Geologist

A handwritten signature in blue ink, appearing to read "Matt Wheaton".

Matt Wheaton, L.G., P.E.  
Principal

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Environmental ■ Facilities ■ Geotechnical ■ Materials

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**Groundwater Monitoring Report**  
**Safeway #1436 Fueling Station/Former My Uncle's Store**  
**7201 Portland Avenue**  
**Tacoma, Washington**

**Terracon Project No. 81167550**  
**January 16, 2020**

## **1.0 SITE DESCRIPTION**

The Safeway store property is an approximately 4.43-acre tract of land (Pierce County tax parcel 0320274090) located on the southeast corner of Portland Avenue and East 72<sup>nd</sup> Street in Tacoma, Washington. The Site location is depicted on Exhibit 1 in Appendix A, a portion of the 1994 Tacoma South USGS Topographic map. The Site layout is shown on Exhibit 2 in Appendix A, including the locations of current Site structures, former USTs and dispensers, approximate extents of the former UST removal and remedial excavation, and the current groundwater monitoring wells.

The northwest portion of the property parcel (the Site) was developed as a gasoline station and convenience store around 1953 and operated until the 1970s. A Chevron-branded gasoline station/convenience store (My Uncle's Store) was constructed on the Site in the late 1970s and operated until 2001, when the underground storage tanks (USTs) were removed. According to Washington State Department of Ecology (Ecology) online records, the former Chevron facility was most recently equipped with three 10,000-gallon single-walled steel USTs that were installed in 1982 and upgraded in 1997. A Safeway fueling station was constructed on the Site in 2002. The Safeway fueling station consists of two 20,000-gallon jacketed steel USTs. Double-walled fiberglass piping supplies fuel to dispensers located on seven dispenser islands, which are covered with a canopy.

Between 2000 and 2002, approximately 5,100 tons of petroleum contaminated soil (PCS) were removed from the excavation for offsite disposal. Confirmation soil samples collected from the final northern and western extents of the excavation at depths ranging from 3 to 13 feet below ground surface (bgs) contained gasoline-range total petroleum hydrocarbons (TPH) concentrations ranging from 53 to 6,500 milligrams per kilogram (mg/kg) and/or benzene concentrations ranging from 0.08 to 99 mg/kg, which exceed the Model Toxics Control Act (MTCA) Method A cleanup levels of 30 mg/kg and 0.03 mg/kg, respectively. Soil samples collected from the final extent of the southern and eastern excavation sidewalls and from the excavation bottom reportedly did not contain contaminants exceeding the MTCA Method A cleanup levels.

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As detailed in Terracon's *Groundwater Monitoring Well Installation and Sampling Report*, dated February 10, 2017, Terracon advanced four soil borings (MW1 through MW4) to depths of approximately 20 feet bgs along the western and northern property boundaries in order to address a request from the Tacoma-Pierce County Health Department (TPCHD) for additional Site characterization data. All soil borings were converted to permanent groundwater monitoring wells. With the exception of benzene and gasoline-range total petroleum hydrocarbons (TPH) identified at concentrations exceeding MTCA cleanup levels in soil and groundwater samples collected from monitoring well MW2, analytes were not detected above laboratory method reporting limits (MRLs). Additional soil and groundwater sampling results are discussed further in Terracon's February 2017 report.

Between March 2017 and March 2018, quarterly groundwater monitoring has been completed by Terracon on groundwater monitoring wells MW1 through MW4. During each sampling event, groundwater samples were analyzed for gasoline-, diesel-, and oil-range TPH, and for benzene, toluene, ethylbenzene, and xylenes (BTEX). The groundwater samples collected from well MW2 have generally contained benzene at concentrations exceeding MTCA Method A cleanup levels during all sampling events, with the exception of one event conducted in September 2017. Gasoline-range TPH was also initially detected at concentrations exceeding the MTCA Method A cleanup level; however, the detected concentrations reported for the June through March 2018 sampling events were below the MTCA cleanup level.

In May 2018, Terracon completed an interim remedial action in the area of MW2 that consisted of advancing a total of five in-situ injection points to allow for the introduction of the remedial compound, ORC-A, at depths ranging from 5 to 15 feet bgs. A total of approximately 480 pounds of ORC-A were injected throughout the approximate 400-square-foot injection area.

Subsequent to the remedial injections, three groundwater monitoring events were completed for monitoring wells MW1 and MW2. Diesel- and gasoline-range TPH were identified in the groundwater sample collected from MW2 at concentrations exceeding MTCA Method A cleanup levels during the June 2018 sampling event; however, only gasoline-range TPH was identified above the MTCA cleanup level in the subsequent, July 2018 sampling event. Although gasoline-range TPH concentrations decreased, relative to the June and July 2018 sampling events, diesel-range TPH concentration remained above the MTCA cleanup level during the October 2018 sampling event. Regardless, all TPH and benzene concentrations have decreased since the June 2018 sampling event suggesting that ORC-A injections may be contributing to the decline in concentrations of these compounds.

Terracon completed a groundwater monitoring event for MW1 and MW2 in March 13, 2019 to monitor the residual TPH and benzene concentrations at MW2 and the ORC-A injections contribution to these compounds' concentrations. The groundwater sample from MW2 detected concentrations of diesel-range TPH above the MTCA cleanup level and oil-range TPH below the

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MTCA cleanup level. Concentrations of gasoline-range TPH and BTEX were not detected above the laboratory MRLs from the MW2 groundwater sample. In addition, concentrations of gasoline-, diesel-, and oil-range TPH, and BTEX were not detected in MW1. The decreased concentrations of diesel-range and oil-range TPH suggest that the ORC-A injections are contributing to their decline.

This report presents the results of Terracon's recent quarterly groundwater monitoring event, conducted on December 6, 2019.

## 2.0 SCOPE OF SERVICES

Terracon's scope of work was conducted in general accordance with our proposal, dated October 24, 2016; *Work Plan for Groundwater Monitoring Well Installations and Quarterly Monitoring*, dated November 2, 2016; and Project Services Agreement, dated October 27, 2016. At the Client's request, our scope of services included completion of the following tasks:

- § Collect groundwater samples from all four of the on-site groundwater monitoring wells (MW1 through MW4);
- § Complete laboratory analyses of the four groundwater samples; and
- § Prepare this Groundwater Monitoring summary report.

### 2.1 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal and work plan.

### 2.2 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable, or not present during these services. We cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this investigation. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests,

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assessments, investigations, or exploratory services. The data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

### 2.3 Reliance

This report has been prepared for the exclusive use of Albertsons Companies, and any authorization for use or reliance by any other party (except for a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Albertsons Companies and Terracon. Any unauthorized distribution or reuse is at Albertsons Companies' sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal, report, and the Master Environmental Services Agreement between Terracon and Albertsons Companies.

## 3.0 GROUNDWATER SAMPLING

On December 6, 2019, a Terracon representative mobilized to the Site to perform groundwater monitoring activities and collect groundwater samples from wells MW1 through MW4.

Prior to sample collection, monitoring wells MW1 through MW4 were opened and exposed to surficial atmospheric conditions, and static depth to groundwater below the top of the well casing (TOC) was measured in each well. The water level probe was decontaminated using a non-phosphate soap wash and distilled water rinse before use in each well.

Measured depth to water in the wells ranged from 4.91 feet below TOC at MW2 to 7.69 feet below TOC at MW4. Based on depth to water measurements and well TOC survey data, the groundwater elevations at the monitoring wells ranged from 411.24 feet at monitoring well MW1 to 412.71 feet at monitoring well MW2 (see Table 1 in Appendix B). Based on groundwater level measurements collected during Terracon's groundwater sampling event, the groundwater flow direction at the Site is generally toward the south-southwest (see Exhibit 3 Groundwater Contour and Flow Map in Appendix A).

The groundwater samples were collected using a peristaltic pump and dedicated tubing. Prior to sample collection, each well was purged at a low flow rate (less than 500 milliliters per minute [mL/min]). During the purging process, groundwater quality parameters, including temperature, electrical conductivity (EC), pH, turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP), were measured at regular intervals using a Horiba U-22 or equivalent water quality meter. Purging was considered complete when three consecutive readings for EC, pH, turbidity, DO, and ORP were observed within 10% of one-another.

Samples were collected using the peristaltic pump. The same low flow rate used for purging the wells was used for collecting the samples. The discharge from the peristaltic pump was directed

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into laboratory-supplied glassware. The sample containers were labeled with the project number, date, time, well number, and sample number and placed in a chilled cooler immediately after sampling. The sample containers were subsequently transported to ALS Laboratory Group (ALS), a Washington-certified analytical laboratory, under standard chain-of-custody procedures.

## 4.0 ANALYTICAL RESULTS

Groundwater samples were analyzed for gasoline-range TPH by Northwest Method NWTPH-Gx, diesel- and oil-range TPH by Northwest Method NWTPH-Dx, and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8260. In addition, the groundwater sample collected from MW2 was analyzed for Extractable Petroleum Hydrocarbons (EPH) and Volatile Petroleum Hydrocarbons (VPH) by Northwest Method NWEPH and NWVPH, respectively. The analysis for EPH and VPH may yield information that helps to determine the chemical composition of the petroleum product(s) present and allow for calculations to establish alternative site-specific cleanup levels for those contaminants in groundwater at that location, assuming specific carbon chains are reported in the analyses.

Reported groundwater concentrations were compared with the MTCA Method A cleanup levels for unrestricted land use, as applicable, established under Chapter 70.105D Revised Code of Washington (RCW) and its implementing regulation, MTCA Chapter 173-340 Washington Administrative Code (WAC).

The laboratory analytical report and chain-of-custody record are attached in Appendix C.

### 4.1 Groundwater Analytical Results

Diesel- and oil-range TPH were detected in the groundwater sample collected from monitoring well MW2 at concentrations of 490 µg/l and 380 µg/l, respectively. The concentrations of diesel- and oil-range TPH did not exceed their MTCA Method A cleanup level of 500 µg/l for oil and diesel.

Given the low concentrations of diesel- and oil-range TPH in reported in the sample from MW2, the sample was additionally analyzed for EPH and VPH in order to develop a site specific MTCA Method B cleanup level. The NWEPH method includes sample cleanup using a modification of the Massachusetts Department of Environmental Protection EPH method (silica gel cleanup). According to the laboratory report, concentrations of aliphatic and aromatic carbon chains were not identified at concentrations exceeding the laboratory Method Reporting Limits (MRLs).

Benzene was detected in the groundwater sample collected from monitoring well MW2 at a concentration of 3.3 µg/l, which is below the MTCA Method A cleanup level of 5 µg/l for benzene.

Gasoline-range TPH, toluene, ethylbenzene, and xylenes were not detected at concentrations above laboratory MRLs) in the groundwater sample collected from monitoring well MW2.

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Gasoline-, diesel-, or oil-range TPH, benzene, toluene, ethylbenzene, or xylenes were not detected at concentrations above laboratory MRLs in the groundwater samples collected from monitoring wells MW1, MW3 and MW4.

The groundwater analytical results are summarized in Table 1 of Appendix B and on Exhibit 4 in Appendix A.

### 4.2 Quality Assurance/Quality Control Results

The analytical results for the current investigation were checked for completeness upon receipt from the laboratory to ensure that data and quality assurance and quality control (QA/QC) information requested were present. Data quality was assessed by considering hold times, surrogate recovery, method blanks, matrix spike and matrix spike duplicate (MS/MSD) recovery, and detection limits. Our evaluation assumes that the QA/QC is correct as reported by the laboratory, and merely provides an interpretation of the QA/QC results.

Based upon our interpretation of quality control information provided by the laboratories, it is our opinion that the overall dataset is useable as qualified for the purposes of this investigation.

## 5.0 INVESTIGATION DERIVED WASTES

Investigation derived wastes (IDW) generated during the groundwater monitoring activities, which consisted of equipment decontamination water and well purge water, were containerized in one Department of Transportation (DOT) approved 55-gallon drum, properly labeled, and temporarily staged onsite, pending receipt of laboratory analytical results. The IDW drum was staged on the east side of the grocery store building near the loading dock. The drum will be properly disposed by a licensed disposal facility. Once picked up and disposed, Terracon will forward the waste manifest to the Client.

## 6.0 FINDINGS AND CONCLUSIONS

Based on the scope of services described in this report, and subject to the limitations described herein, Terracon concludes the following:

- n Measured depth to groundwater in the monitoring wells MW1 through MW4 ranged from approximately 4.91 to 7.69 feet bgs, with a groundwater gradient toward the south-southwest. This gradient is consistent with previously recorded groundwater migration directions.
- n Diesel- and oil-range TPH and benzene were identified in the groundwater sample collected from monitoring well MW2, but at concentrations below their respective MTCA Method A cleanup levels.

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- n Following EPH and VPH analyses of the groundwater sample collected from monitoring well MW2, aliphatic and aromatic carbon chains were not detected at concentrations above laboratory MRLS.
- n Gasoline-, diesel-, and oil-range TPH, and BTEX were not detected at concentrations above laboratory MRLS in the groundwater samples collected from MW1, MW3, and MW4.

Gasoline-, diesel-, and oil-range TPH, and BTEX concentrations have decreased relative to the June, July, and October 2018, and March 2019 sampling events, and have decreased to below MTCA cleanup levels. TPH and BTEX concentrations have shown a decreasing trend since the May 2018 ORC-A injections, suggesting that the remedial amendment is likely contributing to the decline in the concentrations of these compounds.

Based on the EPH/VPH results for the groundwater sample collected from monitoring well MW2 and given the use of a silica gel cleanup prior to analyses, the reported concentrations of diesel- and oil-range TPH may represent a weathered/degraded hydrocarbon, or these concentrations may also represent the potential presence of biogenic material (e.g., naturally occurring organics) in the groundwater in the vicinity of MW2.

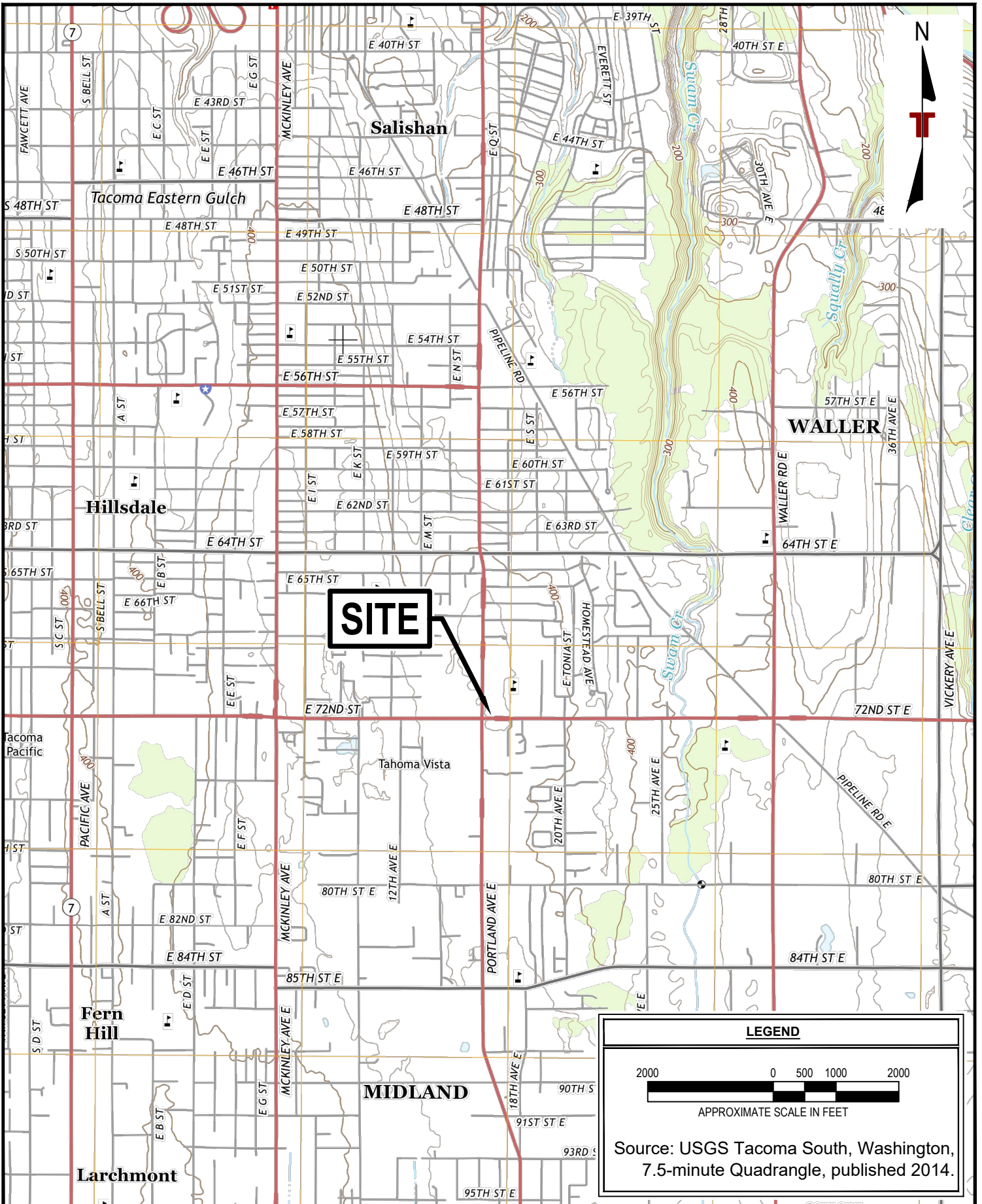
## **APPENDIX A - EXHIBITS**

Exhibit 1 – Topographic Map

Exhibit 2 – Site Diagram

Exhibit 3 – Groundwater Contour & Flow Map – December 2019

Exhibit 4 – Groundwater Sample Concentrations



**LEGEND**

2000 0 500 1000 2000

APPROXIMATE SCALE IN FEET

Source: USGS Tacoma South, Washington, 7.5-minute Quadrangle, published 2014.

Project Mngr:	KSB
Drawn By:	AMP
Checked By:	KSB
Approved By:	MYW

Project No.	81167550
Scale:	AS SHOWN
File No.	Exhibit 1
Date:	DEC 2019

**Terracon**  
 Consulting Engineers and Scientists

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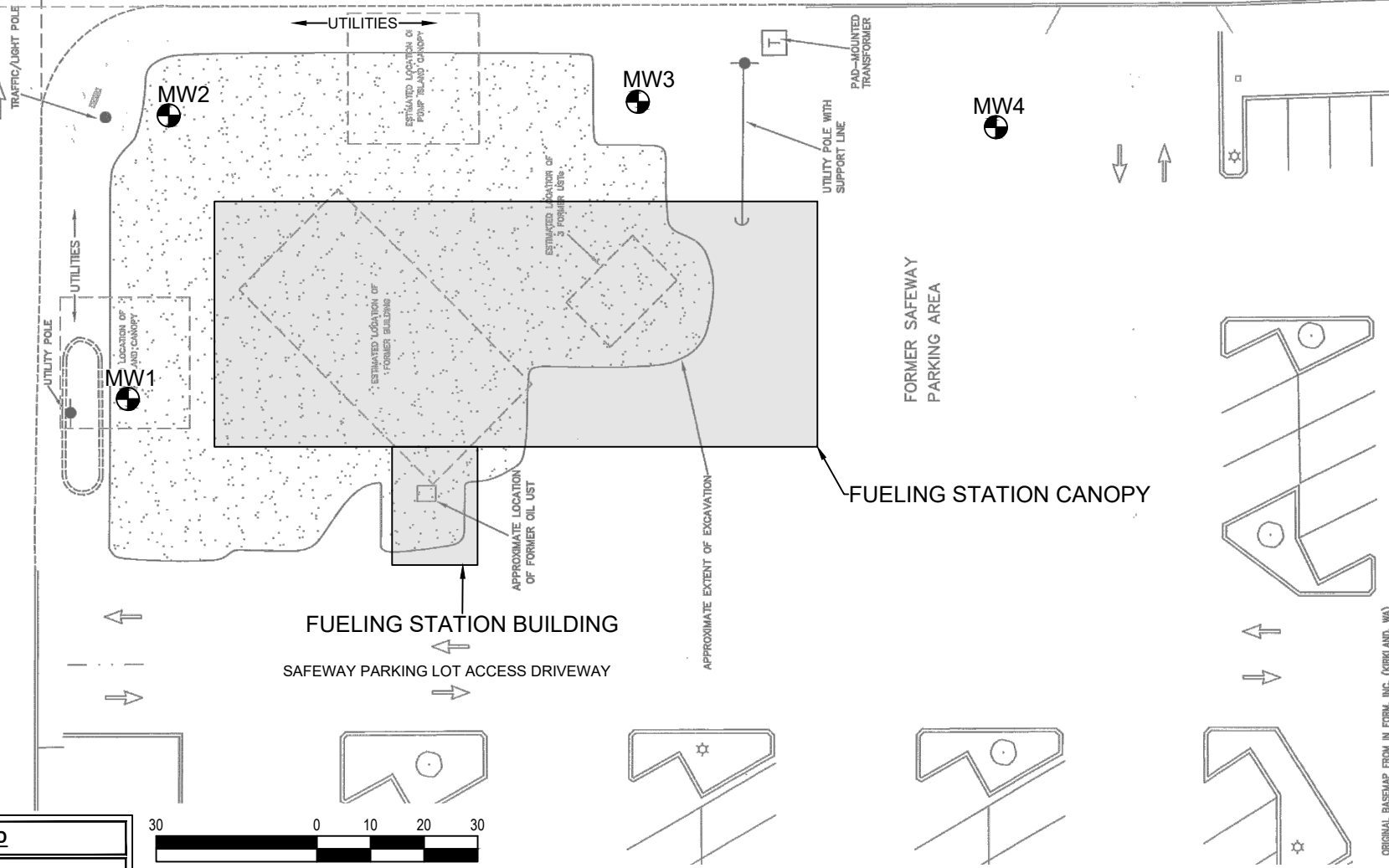
**TOPOGRAPHIC MAP**  
 Safeway #1436 Fueling Station  
 7201 Portland Ave E  
 Tacoma, Pierce County, Washington

EXHIBIT

1




**PORTLAND AVENUE**

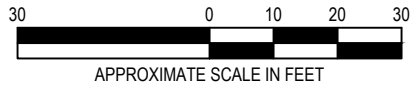
**72ND STREET**



ORIGINAL BASEMAP FROM IN FORM, INC. (ORCLAND, WA) PROJECT ENVIRONMENTAL 08256.2

**LEGEND**

-  **MW1** APPROXIMATE LOCATION OF MONITORING WELL
-  APPROXIMATE LOCATION OF REMEDIAL INJECTION POINT
-  INFERRED GROUNDWATER FLOW DIRECTION (MARCH 2018)



Project Mngr:	KSB	Project No.	81167550
Drawn By:	AMP	Scale:	AS SHOWN
Checked By:	KSB	File No.	Exhibit 2
Approved By:	MYW	Date:	DEC 2019

**Terracon**  
Consulting Engineers and Scientists

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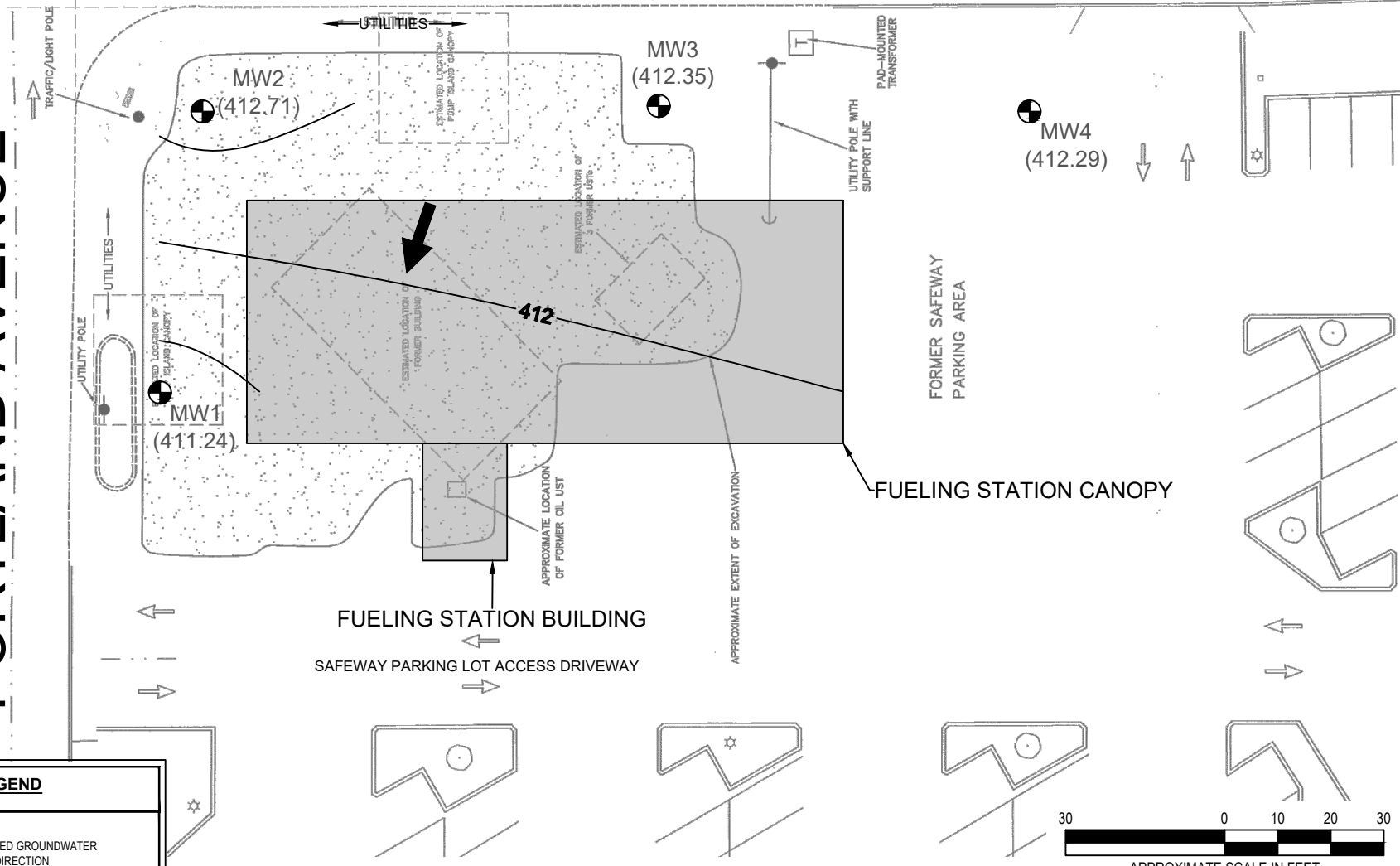
**SITE DIAGRAM**  
Safeway #1436 Fueling Station  
7201 Portland Ave E  
Tacoma, Pierce County, Washington

EXHIBIT  
**2**

PORTLAND AVENUE

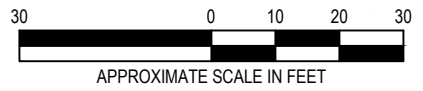
72ND STREET

ENVIRONMENTAL PROJECT 08268.2



ASEMAP FROM IN FORM, INC. (KIRKLAND, WA)

JEL



LEGEND	
	INFERRED GROUNDWATER FLOW DIRECTION
	APPROXIMATE LOCATION AND NUMBER OF PERMANENT GROUNDWATER MONITORING WELL, GROUNDWATER ELEVATION (FEET)
	GROUNDWATER CONTOUR ELEVATION (FEET)

Project Mng'r:	KSB	Project No.	81167550
Drawn By:	JWD	Scale:	AS SHOWN
Checked By:	KSB	File No.	Exhibit 3
Approved By:	MYW	Date:	DEC 2019

**Terracon**  
Consulting Engineers and Scientists

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**GROUNDWATER CONTOUR & FLOW MAP - DECEMBER 2019**

Safeway #1436 Fueling Station  
7201 Portland Ave E  
Tacoma, Pierce County, Washington

**EXHIBIT**

3

MW2							
Date:	G	D	O	B	T	E	X
12/6/2019	ND	490	380	3.3	ND	ND	ND
3/13/2019	ND	580	400	ND	ND	ND	ND
10/25/2018	640	530	250	14	2	29	5.1
7/25/2018	1,100	250	ND	18	3.7	37	12
6/26/2018	1,100	1,100	ND	21	ND	16	7.0
3/28/2018	650	ND	ND	6.6	ND	16	7.0
12/26/17	600	ND	ND	8.2	ND	7.3	5.8
9/27/17	ND	ND	ND	ND	ND	ND	ND
6/28/17	670	ND	ND	6.7	ND	ND	ND
3/21/17	970	290	ND	18	ND	25	26
11/30/16	820	190	ND	46	3.1	12	21

MW3							
Date:	G	D	O	B	T	E	X
12/6/2019	ND	ND	ND	ND	ND	ND	ND
3/13/2019	NT	NT	NT	NT	NT	NT	NT
10/25/2018	NT	NT	NT	NT	NT	NT	NT
7/25/2018	NT	NT	NT	NT	NT	NT	NT
6/26/2018	NT	NT	NT	NT	NT	NT	NT
3/28/2018	NT	NT	NT	NT	NT	NT	NT
12/26/17	ND	ND	ND	NT	NT	NT	NT
9/27/17	ND	ND	ND	ND	ND	ND	ND
6/28/17	ND	ND	ND	ND	ND	ND	ND
3/21/17	ND	ND	ND	ND	ND	ND	ND
11/30/16	ND	ND	ND	ND	ND	ND	ND

MW4							
Date:	G	D	O	B	T	E	X
12/6/2019	ND	ND	ND	ND	ND	ND	ND
3/13/2019	NT	NT	NT	NT	NT	NT	NT
10/25/2018	NT	NT	NT	NT	NT	NT	NT
7/25/2018	NT	NT	NT	NT	NT	NT	NT
6/26/2018	NT	NT	NT	NT	NT	NT	NT
3/28/2018	NT	NT	NT	NT	NT	NT	NT
12/26/17	ND	ND	ND	NT	NT	NT	NT
9/27/17	ND	ND	ND	ND	ND	ND	ND
6/28/17	ND	ND	ND	ND	ND	ND	ND
3/21/17	ND	ND	ND	ND	ND	ND	ND
11/30/16	ND	ND	ND	ND	ND	ND	ND

MW1							
Date:	G	D	O	B	T	E	X
12/6/2019	ND	ND	ND	ND	ND	ND	ND
3/13/2019	ND	ND	ND	ND	ND	ND	ND
10/25/2018	ND	ND	ND	ND	ND	ND	ND
7/25/2018	ND	ND	ND	ND	ND	ND	ND
6/26/2018	NT	NT	NT	NT	NT	NT	NT
3/28/2018	ND	ND	ND	ND	ND	ND	ND
12/26/17	ND	ND	ND	NT	NT	NT	NT
9/27/17	ND	ND	ND	ND	ND	ND	ND
6/28/17	ND	ND	ND	ND	ND	ND	ND
3/21/17	ND	ND	ND	ND	ND	ND	ND
11/30/16	ND	ND	ND	ND	ND	ND	ND

72ND STREET

PORTLAND AVENUE

**LEGEND**

MW1 APPROXIMATE LOCATION OF MONITORING WELL

INFERRED GROUNDWATER FLOW DIRECTION

Project Mngr: KSB  
 Drawn By: SPL  
 Checked By: KSB  
 Approved By: MYW

Project No: 81167550  
 Scale: AS SHOWN  
 File No: Exhibit 4  
 Date: December 2019

**Terracon**  
 Consulting Engineers and Scientists

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**GROUNDWATER SAMPLE CONCENTRATIONS**

Safeway #1436 Fueling Station  
 7201 Portland Ave E  
 Tacoma, Pierce County, Washington

ENVIRONMENT

PROJECT 08265.2

APPROXIMATE SCALE IN FEET

0 10 20 30

ANALYTICAL LEGEND

	G	D	O	B	T	E	X
	Gasoline-Range TPH	Diesel-Range	Oil-Range	Benzene	Toluene	Ethylbenzene	Total Xylenes
MTCA Method A Cleanup Level	800	500	500	5	1,000	700	1,000

All concentrations in micrograms per liter (µg/l)

TPH - Total petroleum hydrocarbons  
 MTCA - Model Toxics Control Act.  
 ND - Not detected above laboratory reporting limit.  
 NT - Not analyzed  
 RED = Exceeds MTCA Method A

4

## **APPENDIX B - TABLES**

Table 1-Summary of Groundwater Analytical Results

**TABLE 1**  
**SUMMARY OF GROUNDWATER ANALYTICAL RESULTS**  
 Safeway #1436 Fueling Station  
 7201 Portland Avenue  
 Tacoma, Washington

Terracon Project No. 81167550

all concentrations are in micrograms per liter (µg/l)

Well ID (Top of Casing Elevation [feet])	Sample Date	Depth to Water (feet)	Ground-water Elevation (feet)	TPH			VOCs										EPH <sup>1</sup>	VPH <sup>1</sup>	
				Gasoline-Range	Diesel-Range	Oil-Range	Benzene	Toluene	Ethylbenzene	Total Xylenes	Isopropylbenzene	N-Propylbenzene	1,3,5-Trimethylbenzene	1,2,4-Trimethylbenzene	S-Butylbenzene	N-Butylbenzene			Naphthalenes
<b>MTCA Method A Cleanup Level</b>				<b>800</b>	<b>500</b>	<b>500</b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>1,000</b>	<b>800*</b>	<b>800*</b>	<b>80*</b>	<b>80*</b>	<b>800*</b>	<b>400*</b>	<b>160</b>	<b>NE</b>	<b>NE</b>
MW1 (417.26)	12/6/2019	6.02	411.24	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	3/13/2019	4.83	412.43	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	10/25/2018	6.54	410.72	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	7/25/2018	6.32	410.94	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	3/28/2018	5.15	412.11	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	12/26/2017	4.02	413.24	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	9/27/2017	6.65	410.61	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	6/28/2017	5.36	411.90	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	--
	3/21/2017	3.98	413.28	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
12/1/2016	5.43	411.83	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	--	--	--	--	--	--	--	--		
MW2 (417.62)	12/6/2019	4.91	412.71	ND (<50)	<b>490</b>	<b>380</b>	<b>3.3</b>	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	ND (<50)	ND	
	3/13/2019	4.68	412.94	ND (<50)	<b>580</b>	<b>400</b>	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	10/25/2018	7.62	410.00	<b>640</b>	<b>530</b>	<b>250</b>	<b>14</b>	<b>2.0</b>	<b>29</b>	<b>5.1</b>	--	--	--	--	--	--	--	--	
	7/25/2018	7.41	410.21	<b>1,100</b>	<b>250</b>	ND (<250)	<b>18</b>	<b>3.7</b>	<b>37</b>	<b>12</b>	--	--	--	--	--	--	--	--	
	6/25/2018	6.79	410.83	<b>1,000</b>	<b>1,100</b>	<b>350</b>	<b>21</b>	<b>3.9</b>	<b>25</b>	<b>12</b>	--	--	--	--	--	--	--	--	
	3/28/2018	5.37	412.25	<b>650</b>	ND (<130)	ND (<250)	<b>6.6</b>	ND (<2)	<b>16</b>	<b>7.0</b>	--	--	--	--	--	--	--	--	
	12/26/2017	4.64	412.98	<b>600</b>	ND (<130)	ND (<250)	<b>8.2</b>	ND (<2)	<b>7.3</b>	<b>5.8</b>	--	--	--	--	--	--	--	--	
	9/27/2017	4.88	412.74	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	6/28/2017	5.46	412.16	<b>670</b>	ND (<130)	ND (<250)	<b>6.7</b>	ND (<2)	ND (<2)	ND (<4)	<b>7.2</b>	<b>24</b>	ND (<2)	ND (<2)	<b>2.6</b>	ND (<2)	<b>2.3</b>	--	
3/21/2017	4.53	413.09	<b>970</b>	<b>290</b>	ND (<250)	<b>18</b>	ND (<2)	<b>25</b>	<b>26</b>	<b>12</b>	<b>29</b>	<b>3.1</b>	<b>4.0</b>	<b>3.1</b>	<b>12</b>	<b>4.5</b>	--		
12/1/2016	5.23	412.39	<b>820</b>	<b>190</b>	ND (<250)	<b>46</b>	<b>3.1</b>	<b>12</b>	<b>21</b>	--	--	--	--	--	--	--	--		
MW3 (419.22)	12/6/2019	6.87	412.35	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	3/13/2019	4.72	414.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	10/25/2018	7.16	412.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3/28/2018	4.96	414.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/26/2017	4.33	414.89	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	9/27/2017	6.88	412.34	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	6/28/2017	5.44	413.78	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	
	3/21/2017	4.21	415.01	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
12/1/2016	5.82	413.40	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	--	--	--	--	--	--	--	--		
MW4 (419.98)	12/6/2019	7.69	412.29	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	3/13/2019	5.06	414.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	10/25/2018	8.10	411.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	3/28/2018	5.34	414.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	12/26/2017	4.75	415.23	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	9/27/2017	7.99	411.99	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
	6/28/2017	5.91	414.07	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	
	3/21/2017	4.64	415.34	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--	--	
12/1/2016	5.42	414.56	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	--	--	--	--	--	--	--	--		

Notes: Concentrations detected above laboratory reporting limits are in **BOLD** type.  
 Concentrations above MTCA cleanup levels are in **BOLD RED** type and a shaded cell.  
 Compounds for which no cleanup level has been established are not included in this table.

TPH - total petroleum hydrocarbons  
 VOCs - volatile organic compounds  
 EPH - Extractable Petroleum Hydrocarbons  
 VPH - Volatile Petroleum Hydrocarbons  
 MTCA - Model Toxics Control Act  
 1 - See analytical results for full list of analytes.  
 NE - Not established  
 ND - Not detected above laboratory reporting limit.  
 -- - Not analyzed  
 \* - MTCA Method B Cleanup Level

## **APPENDIX C – ANALYTICAL REPORT**



December 13, 2019

Mr. Kyle Bennett  
Terracon  
21905 - 64th Ave W, Suite 100  
Mountlake Terrace, WA 98043

Dear Mr. Bennett,

On December 6th, 4 samples were received by our laboratory and assigned our laboratory project number EV19120053. The project was identified as your 81167550. The sample identification and requested analyses are outlined on the attached chain of custody record.

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

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

Sincerely,

ALS Laboratory Group

Rick Bagan  
Laboratory Director



**CERTIFICATE OF ANALYSIS**

<b>CLIENT:</b>	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	<b>DATE:</b>	12/13/2019
<b>CLIENT CONTACT:</b>	Kyle Bennett	<b>ALS JOB#:</b>	EV19120053
<b>CLIENT PROJECT:</b>	81167550	<b>ALS SAMPLE#:</b>	EV19120053-01
<b>CLIENT SAMPLE ID</b>	MW1	<b>DATE RECEIVED:</b>	12/06/2019
		<b>COLLECTION DATE:</b>	12/6/2019 10:50:00 AM
		<b>WDOE ACCREDITATION:</b>	C601

**SAMPLE DATA RESULTS**

<b>ANALYTE</b>	<b>METHOD</b>	<b>RESULTS</b>	<b>REPORTING LIMITS</b>	<b>DILUTION FACTOR</b>	<b>UNITS</b>	<b>ANALYSIS DATE</b>	<b>ANALYSIS BY</b>
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	12/11/2019	KLS
Benzene	EPA-8021	U	1.0	1	UG/L	12/11/2019	KLS
Toluene	EPA-8021	U	1.0	1	UG/L	12/11/2019	KLS
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/11/2019	KLS
Xylenes	EPA-8021	U	3.0	1	UG/L	12/11/2019	KLS
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	12/11/2019	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	12/11/2019	EBS

<b>SURROGATE</b>	<b>METHOD</b>	<b>%REC</b>	<b>ANALYSIS DATE</b>	<b>ANALYSIS BY</b>
TFT	NWTPH-GX	86.7	12/11/2019	KLS
TFT	EPA-8021	115	12/11/2019	KLS
C25	NWTPH-DX	110	12/11/2019	EBS

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



**CERTIFICATE OF ANALYSIS**

<b>CLIENT:</b>	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	<b>DATE:</b>	12/13/2019
<b>CLIENT CONTACT:</b>	Kyle Bennett	<b>ALS JOB#:</b>	EV19120053
<b>CLIENT PROJECT:</b>	81167550	<b>ALS SAMPLE#:</b>	EV19120053-02
<b>CLIENT SAMPLE ID</b>	MW2	<b>DATE RECEIVED:</b>	12/06/2019
		<b>COLLECTION DATE:</b>	12/6/2019 11:50:00 AM
		<b>WDOE ACCREDITATION:</b>	C601

**SAMPLE DATA RESULTS**

<b>ANALYTE</b>	<b>METHOD</b>	<b>RESULTS</b>	<b>REPORTING LIMITS</b>	<b>DILUTION FACTOR</b>	<b>UNITS</b>	<b>ANALYSIS DATE</b>	<b>ANALYSIS BY</b>
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	12/11/2019	KLS
Benzene	EPA-8021	3.3	1.0	1	UG/L	12/11/2019	KLS
Toluene	EPA-8021	U	1.0	1	UG/L	12/11/2019	KLS
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/11/2019	KLS
Xylenes	EPA-8021	U	3.0	1	UG/L	12/11/2019	KLS
C5-C6 Aliphatics	NWVPH	U	50	1	UG/L	12/12/2019	KLS
>C6-C8 Aliphatics	NWVPH	U	50	1	UG/L	12/12/2019	KLS
>C8-C10 Aliphatics	NWVPH	U	50	1	UG/L	12/12/2019	KLS
>C8-C10 Aromatics	NWVPH	U	50	1	UG/L	12/12/2019	KLS
Hexane	NWVPH	U	1.0	1	UG/L	12/12/2019	KLS
TPH-Diesel Range	NWTPH-DX	490	130	1	UG/L	12/11/2019	EBS
TPH-Oil Range	NWTPH-DX	380	250	1	UG/L	12/11/2019	EBS
>C10-C12 Aliphatics	NWEPH	U	50	1	UG/L	12/12/2019	EBS
>C12-C16 Aliphatics	NWEPH	U	50	1	UG/L	12/12/2019	EBS
>C16-C21 Aliphatics	NWEPH	U	50	1	UG/L	12/12/2019	EBS
>C21-C34 Aliphatics	NWEPH	U	50	1	UG/L	12/12/2019	EBS
>C10-C12 Aromatics	NWEPH	U	50	1	UG/L	12/12/2019	EBS
>C12-C16 Aromatics	NWEPH	U	50	1	UG/L	12/12/2019	EBS
>C16-C21 Aromatics	NWEPH	U	50	1	UG/L	12/12/2019	EBS
>C21-C34 Aromatics	NWEPH	U	50	1	UG/L	12/12/2019	EBS

<b>SURROGATE</b>	<b>METHOD</b>	<b>%REC</b>	<b>ANALYSIS DATE</b>	<b>ANALYSIS BY</b>
TFT	NWTPH-GX	80.7	12/11/2019	KLS
TFT	EPA-8021	111	12/11/2019	KLS
TFT - Aliphatic	NWVPH	108	12/12/2019	KLS
TFT - Aromatic	NWVPH	117	12/12/2019	KLS
TFT - Hexane	NWVPH	107	12/12/2019	KLS
C25	NWTPH-DX	105	12/11/2019	EBS
C25	NWEPH	102	12/12/2019	EBS
p-Terphenyl	NWEPH	95.0	12/12/2019	EBS

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

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and an unidentified oil range product.



**CERTIFICATE OF ANALYSIS**

<b>CLIENT:</b>	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	<b>DATE:</b>	12/13/2019
<b>CLIENT CONTACT:</b>	Kyle Bennett	<b>ALS JOB#:</b>	EV19120053
<b>CLIENT PROJECT:</b>	81167550	<b>ALS SAMPLE#:</b>	EV19120053-03
<b>CLIENT SAMPLE ID</b>	MW3	<b>DATE RECEIVED:</b>	12/06/2019
		<b>COLLECTION DATE:</b>	12/6/2019 10:05:00 AM
		<b>WDOE ACCREDITATION:</b>	C601

**SAMPLE DATA RESULTS**

<b>ANALYTE</b>	<b>METHOD</b>	<b>RESULTS</b>	<b>REPORTING LIMITS</b>	<b>DILUTION FACTOR</b>	<b>UNITS</b>	<b>ANALYSIS DATE</b>	<b>ANALYSIS BY</b>
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	12/11/2019	KLS
Benzene	EPA-8021	U	1.0	1	UG/L	12/11/2019	KLS
Toluene	EPA-8021	U	1.0	1	UG/L	12/11/2019	KLS
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/11/2019	KLS
Xylenes	EPA-8021	U	3.0	1	UG/L	12/11/2019	KLS
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	12/11/2019	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	12/11/2019	EBS

<b>SURROGATE</b>	<b>METHOD</b>	<b>%REC</b>	<b>ANALYSIS DATE</b>	<b>ANALYSIS BY</b>
TFT	NWTPH-GX	<b>83.4</b>	12/11/2019	KLS
TFT	EPA-8021	<b>112</b>	12/11/2019	KLS
C25	NWTPH-DX	<b>100</b>	12/11/2019	EBS

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



**CERTIFICATE OF ANALYSIS**

<b>CLIENT:</b>	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	<b>DATE:</b>	12/13/2019
<b>CLIENT CONTACT:</b>	Kyle Bennett	<b>ALS JOB#:</b>	EV19120053
<b>CLIENT PROJECT:</b>	81167550	<b>ALS SAMPLE#:</b>	EV19120053-04
<b>CLIENT SAMPLE ID</b>	MW4	<b>DATE RECEIVED:</b>	12/06/2019
		<b>COLLECTION DATE:</b>	12/6/2019 9:25:00 AM
		<b>WDOE ACCREDITATION:</b>	C601

**SAMPLE DATA RESULTS**

<b>ANALYTE</b>	<b>METHOD</b>	<b>RESULTS</b>	<b>REPORTING LIMITS</b>	<b>DILUTION FACTOR</b>	<b>UNITS</b>	<b>ANALYSIS DATE</b>	<b>ANALYSIS BY</b>
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	12/11/2019	KLS
Benzene	EPA-8021	U	1.0	1	UG/L	12/11/2019	KLS
Toluene	EPA-8021	U	1.0	1	UG/L	12/11/2019	KLS
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/11/2019	KLS
Xylenes	EPA-8021	U	3.0	1	UG/L	12/11/2019	KLS
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	12/11/2019	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	12/11/2019	EBS

<b>SURROGATE</b>	<b>METHOD</b>	<b>%REC</b>	<b>ANALYSIS DATE</b>	<b>ANALYSIS BY</b>
TFT	NWTPH-GX	<b>86.8</b>	12/11/2019	KLS
TFT	EPA-8021	<b>113</b>	12/11/2019	KLS
C25	NWTPH-DX	<b>105</b>	12/11/2019	EBS

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



**CERTIFICATE OF ANALYSIS**

CLIENT: Terracon DATE: 12/13/2019  
 21905 - 64th Ave W, Suite 100 ALS SDG#: EV19120053  
 Mountlake Terrace, WA 98043 WDOE ACCREDITATION: C601

CLIENT CONTACT: Kyle Bennett  
 CLIENT PROJECT: 81167550

**LABORATORY BLANK RESULTS**

**MBG-121019W - Batch 148509 - Water by NWTPH-GX**

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	UG/L	50	12/10/2019	KLS

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

**MB-121019W - Batch 148509 - Water by EPA-8021**

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	UG/L	1.0	12/10/2019	KLS
Toluene	EPA-8021	U	UG/L	1.0	12/10/2019	KLS
Ethylbenzene	EPA-8021	U	UG/L	1.0	12/10/2019	KLS
Xylenes	EPA-8021	U	UG/L	3.0	12/10/2019	KLS

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

**MBLK-R352414 - Batch R352414 - Water by NWVPH**

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	U	UG/L	50	12/12/2019	KLS
>C6-C8 Aliphatics	NWVPH	U	UG/L	50	12/12/2019	KLS
>C8-C10 Aliphatics	NWVPH	U	UG/L	50	12/12/2019	KLS
>C8-C10 Aromatics	NWVPH	U	UG/L	50	12/12/2019	KLS
Hexane	NWVPH	U	UG/L	1.0	12/12/2019	KLS

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

**MB-121119W - Batch 148623 - Water by NWTPH-DX**

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	130	12/12/2019	EBS
TPH-Oil Range	NWTPH-DX	U	UG/L	250	12/12/2019	EBS

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

**MB-121119W - Batch R352441 - Water by NWEPH**

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
>C10-C12 Aromatics	NWEPH	U	UG/L	50	12/12/2019	EBS
>C12-C16 Aromatics	NWEPH	U	UG/L	50	12/12/2019	EBS
>C16-C21 Aromatics	NWEPH	U	UG/L	50	12/12/2019	EBS
>C21-C34 Aromatics	NWEPH	U	UG/L	50	12/12/2019	EBS

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



CERTIFICATE OF ANALYSIS

CLIENT: Terracon DATE: 12/13/2019
21905 - 64th Ave W, Suite 100 ALS SDG#: EV19120053
Mountlake Terrace, WA 98043 WDOE ACCREDITATION: C601
CLIENT CONTACT: Kyle Bennett
CLIENT PROJECT: 81167550

LABORATORY BLANK RESULTS

MB-121119W - Batch R352443 - Water by NWEPH

Table with 7 columns: ANALYTE, METHOD, RESULTS, UNITS, REPORTING LIMITS, ANALYSIS DATE, ANALYSIS BY. Rows include >C10-C12 Aliphatics, >C12-C16 Aliphatics, >C16-C21 Aliphatics, >C21-C34 Aliphatics.

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



**CERTIFICATE OF ANALYSIS**

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	12/13/2019
CLIENT CONTACT:	Kyle Bennett	ALS SDG#:	EV19120053
CLIENT PROJECT:	81167550	WDOE ACCREDITATION:	C601

**LABORATORY CONTROL SAMPLE RESULTS**

**ALS Test Batch ID: 148509 - Water by NWTPH-GX**

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Volatile Range - BS	NWTPH-GX	92.3			66.5	122.7	12/10/2019	KLS
TPH-Volatile Range - BSD	NWTPH-GX	87.6	5		66.5	122.7	12/10/2019	KLS

**ALS Test Batch ID: 148509 - Water by EPA-8021**

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
Benzene - BS	EPA-8021	105			83	120	12/10/2019	KLS
Benzene - BSD	EPA-8021	106	1		83	120	12/10/2019	KLS
Toluene - BS	EPA-8021	108			85	115	12/10/2019	KLS
Toluene - BSD	EPA-8021	109	1		85	115	12/10/2019	KLS
Ethylbenzene - BS	EPA-8021	106			85	113	12/10/2019	KLS
Ethylbenzene - BSD	EPA-8021	107	1		85	113	12/10/2019	KLS
Xylenes - BS	EPA-8021	105			85	116	12/10/2019	KLS
Xylenes - BSD	EPA-8021	106	1		85	116	12/10/2019	KLS

**ALS Test Batch ID: R352414 - Water by NWVPH**

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
C5-C6 Aliphatics - BS	NWVPH	89.0			70	130	12/12/2019	KLS
C5-C6 Aliphatics - BSD	NWVPH	84.0	6		70	130	12/12/2019	KLS
>C6-C8 Aliphatics - BS	NWVPH	96.0			70	130	12/12/2019	KLS
>C6-C8 Aliphatics - BSD	NWVPH	90.0	6		70	130	12/12/2019	KLS
>C8-C10 Aliphatics - BS	NWVPH	101			70	130	12/12/2019	KLS
>C8-C10 Aliphatics - BSD	NWVPH	95.0	6		70	130	12/12/2019	KLS
>C8-C10 Aromatics - BS	NWVPH	103			70	130	12/12/2019	KLS
>C8-C10 Aromatics - BSD	NWVPH	96.0	7		70	130	12/12/2019	KLS
Hexane - BS	NWVPH	92.0			70	130	12/12/2019	KLS
Hexane - BSD	NWVPH	89.0	3		70	130	12/12/2019	KLS

**ALS Test Batch ID: 148623 - Water by NWTPH-DX**

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
TPH-Diesel Range - BS	NWTPH-DX	98.1			67	125.2	12/11/2019	EBS
TPH-Diesel Range - BSD	NWTPH-DX	96.5	2		67	125.2	12/11/2019	EBS

**ALS Test Batch ID: R352441 - Water by NWEPH**

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
>C10-C12 Aromatics - BS	NWEPH	89.5			70	130	12/12/2019	EBS



**CERTIFICATE OF ANALYSIS**

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	12/13/2019
CLIENT CONTACT:	Kyle Bennett	ALS SDG#:	EV19120053
CLIENT PROJECT:	81167550	WDOE ACCREDITATION:	C601

**LABORATORY CONTROL SAMPLE RESULTS**

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
>C10-C12 Aromatics - BSD	NWEPH	103	14		70	130	12/12/2019	EBS
>C12-C16 Aromatics - BS	NWEPH	101			70	130	12/12/2019	EBS
>C12-C16 Aromatics - BSD	NWEPH	116	14		70	130	12/12/2019	EBS
>C16-C21 Aromatics - BS	NWEPH	103			70	130	12/12/2019	EBS
>C16-C21 Aromatics - BSD	NWEPH	119	14		70	130	12/12/2019	EBS
>C21-C34 Aromatics - BS	NWEPH	101			70	130	12/12/2019	EBS
>C21-C34 Aromatics - BSD	NWEPH	117	15		70	130	12/12/2019	EBS

**ALS Test Batch ID: R352443 - Water by NWEPH**

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS		ANALYSIS DATE	ANALYSIS BY
					MIN	MAX		
>C10-C12 Aliphatics - BS	NWEPH	94.0			70	130	12/12/2019	EBS
>C10-C12 Aliphatics - BSD	NWEPH	89.8	5		70	130	12/12/2019	EBS
>C12-C16 Aliphatics - BS	NWEPH	99.5			70	130	12/12/2019	EBS
>C12-C16 Aliphatics - BSD	NWEPH	101	1		70	130	12/12/2019	EBS
>C16-C21 Aliphatics - BS	NWEPH	103			70	130	12/12/2019	EBS
>C16-C21 Aliphatics - BSD	NWEPH	105	2		70	130	12/12/2019	EBS
>C21-C34 Aliphatics - BS	NWEPH	99.7			70	130	12/12/2019	EBS
>C21-C34 Aliphatics - BSD	NWEPH	102	2		70	130	12/12/2019	EBS

APPROVED BY

Laboratory Director



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

# Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

**EVI9120053**

Date 12/6/19 Page 1 Of 1

PROJECT ID: <u>81167550</u>					ANALYSIS REQUESTED												OTHER (Specify)		
REPORT TO COMPANY: <u>Terracon</u>					<input type="checkbox"/> NWTPH-HCID <input type="checkbox"/> NWTPH-DX <input type="checkbox"/> NWTPH-GX <input checked="" type="checkbox"/> BTEX by EPA 8021 <input type="checkbox"/> BTEX by EPA 8260 <input type="checkbox"/> MTBE by EPA 8021 <input type="checkbox"/> MTBE by EPA 8260 <input type="checkbox"/> Halogenated Volatiles by EPA 8260 <input type="checkbox"/> Volatile Organic Compounds by EPA 8260 <input type="checkbox"/> EDB / EDC by EPA 8260 SIM (water) <input type="checkbox"/> EDB / EDC by EPA 8260 (soil) <input type="checkbox"/> Semivolatile Organic Compounds by EPA 8270 <input type="checkbox"/> Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM <input type="checkbox"/> PCB by EPA 8082 <input type="checkbox"/> Pesticides by EPA 8081 <input type="checkbox"/> Metals-MTCA-5 <input type="checkbox"/> RCRA-8 <input type="checkbox"/> Pr Pol <input type="checkbox"/> TAL <input type="checkbox"/> Metals Other (Specify) <input type="checkbox"/> TCLP-Metals <input type="checkbox"/> VOA <input type="checkbox"/> Semi-Vol <input type="checkbox"/> Pest <input type="checkbox"/> Herbs <u>EPH + VPH</u>														
PROJECT MANAGER: <u>Kyle Bennett</u>																			
ADDRESS: <u>27905 64th Ave W, Ste 100</u>																			
<u>Mountlake Terrace</u>																			
PHONE: <u>425-771-3304</u> P.O. #:																			
E-MAIL: <u>kyle.bennett@terracon, jeff.dobbins@terracon</u>																			
INVOICE TO COMPANY:																			
ATTENTION: <u>SAME</u>																			
ADDRESS:																			
SAMPLE I.D.	DATE	TIME	TYPE	LAB#														NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. MW1	12/6/19	1050	H <sub>2</sub> O	1		X	X	X										3	
2. MW2		1150		2		X	X	X										6	
3. MW3		1005		3		X	X	X										3	
4. MW4		925		4		X	X	X										3	
5.																			
6.																			
7.																			
8.																			
9.																			
10.																			

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):  
 1. Relinquished By: Jeff Dobbins, Terracon, 12/6/19 1535  
 Received By: 73666 ALS 12-6-19 1535  
 2. Relinquished By: \_\_\_\_\_  
 Received By: \_\_\_\_\_

TURNAROUND REQUESTED in Business Days\*  
 Organic, Metals & Inorganic Analysis  
 10 Standard  5  3  2  1  SAME DAY  
 Fuels & Hydrocarbon Analysis  
 6 Standard  3  1  SAME DAY  
 OTHER: \_\_\_\_\_  
 Specify: \_\_\_\_\_

\*Turnaround request less than standard may incur Rush Charges