Interim Remedial Action and Groundwater Monitoring Report

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

September 10, 2018
Terracon Project No. 81167550
TPCHD UST Permit #0000648

Prepared for:
Albertsons Companies
Boise, Idaho

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

September 10, 2018

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

Attn: Mr. Doug Kasefang

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

Dear Mr. Kasefang:

Terracon Consultants, Inc. (Terracon) is pleased to submit this Remedial Action and Interim Groundwater Monitoring Report for the site referenced above (the Site). The services described herein were performed in general accordance with Terracon's *Proposal for Soil and Groundwater Remedial Treatment at MW2* (Proposal No. P81187038) dated March 22, 2018; and our 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.

Kyle Bennett, G.I.T.
Staff Geologist

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

State of Washington
2872
Licensed Geologist
Matthew Y. Wheaton

David Wolfgram
Office Manager

TABLE OF CONTENTS

Interim Remedial Action and Groundwater Monitoring Report

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

Terracon Project No. 81167550
September 10, 2018

1.0 SITE DESCRIPTION & PROJECT BACKGROUND

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 72nd 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 numerous subsurface investigations were completed by others prior to and during the removal of the My Uncle's Store USTs and associated appurtenances. Approximately 5,100 tons of petroleum contaminated soil (PCS) were removed from the excavation for offsite disposal. Approximately 54,000 gallons of hydrocarbon-impacted water with some petroleum sheen were also removed from the excavation, treated, and disposed in the City of Tacoma sanitary sewer system.

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.

As detailed in Terracon's *Groundwater Monitoring Well Installation and Sampling Report*, dated February 10, 2017, Terracon advanced four soil borings (MW1 through MW4) 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. The borings were advanced to approximately 20 feet bgs and completed as 2-inch diameter polyvinyl chloride (PVC) groundwater monitoring wells.

Soil and groundwater samples collected from the borings completed as groundwater monitoring wells were analyzed for gasoline-, diesel-, and oil-range TPH, and for benzene, toluene, ethylbenzene, and total xylenes (BTEX). A subsurface soil sample collected at approximately 6.5 feet bgs from boring MW2 (located in the northwest corner of the Site) had a concentration of benzene detected at 0.3 mg/kg, which exceeds the MTCA Method A cleanup level of 0.03 mg/kg. The remaining soil sample results were either below the laboratory method reporting limits (MRLs) or below the MTCA Method A cleanup levels. Groundwater samples were collected from all monitoring wells in November 2016 and again in March 2017 (representing the first quarter sampling event). The groundwater sample collected from monitoring well MW2 during the first quarter sampling event contained gasoline-range TPH and benzene at concentrations of 970 micrograms per liter (µg/l) and 18 µg/l, respectively. These concentrations exceed the MTCA Method A cleanup levels of 800 µg/l and 5 µg/l, respectively. The remaining groundwater sample results were either below the laboratory MRLs or below MTCA cleanup levels.

Quarterly groundwater monitoring has been completed by Terracon on groundwater monitoring wells MW1 through MW4. The quarterly results are presented in Terracon's second, third and fourth quarter *Groundwater Monitoring Reports*, dated August 4, 2017, December 18, 2017 and January 23, 2018, respectively. Measured depth to groundwater in the wells has ranged from approximately 4 to 8 feet bgs during the quarterly sampling events, with a generalized horizontal groundwater gradient toward the west.

During each quarterly sampling event, groundwater samples were analyzed for gasoline-, diesel-, and oil-range TPH, and for BTEX. The groundwater sample collected from well MW2 during the first quarter sampling event was additionally analyzed for volatile organic compounds (VOCs) gasoline oxygenates and additives, including ethanol, methyl tert butyl ether (MTBE), diisopropyl ether, ethyl t-butyl ether, tert-amyl methyl ether (TAME), and tert-butanol. During the second quarter sampling event each of the groundwater monitoring wells were analyzed for these additional compounds.

With the exception of benzene identified in monitoring well MW2, none of the analytes were identified at concentrations exceeding MTCA cleanup levels in the groundwater samples collected during the second, third and fourth quarterly monitoring events. Benzene was identified at a concentration of 6.7 µg/l and 8.2 µg/l during the second and fourth quarter monitoring events, respectively. It should be noted that gasoline-range TPH was identified in MW2 during the second and fourth quarter monitoring events at concentrations of 670 µg/l and 600 µg/l.

Terracon conducted a groundwater monitoring event in March 2018, collecting groundwater samples from MW1 and MW2. With the exception of benzene identified in monitoring well MW2, none of the analytes were identified at concentrations exceeding MTCA cleanup levels in the groundwater samples collected. Benzene was identified at a concentration of 6.6 µg/l.

Based on the residual benzene impacts and in an effort to reduce benzene concentrations in groundwater monitoring well MW2 to concentrations below the MTCA cleanup level, Terracon completed an interim remedial action in the area of MW2. The remedial action and subsequent groundwater monitoring results are presented herein.

2.0 SCOPE OF SERVICES

Terracon's scope of work was conducted in general accordance with our *Proposal for Soil and Groundwater Remedial Treatment at MW2* dated March 22, 2018 and the *Additional Service Directive #4*, dated April 18, 2018. Our scope of services included completion of the following tasks:

- Prepared an Ecology online Underground Injection Control (UIC) permit application for performing the In-Situ Chemical Oxidation (ISCO) injections.
- Updated the existing site specific health and safety plan to include the ISCO injection work.
- Arranged for and coordinated the services of a drilling and ISCO injection subcontractor.
- Obtained the proposed ISCO product.
- No later than 72 hours prior to intrusive activities, Terracon contacted the utility locator service to arrange for underground utility clearance for the proposed injection locations.
- Collected groundwater samples following remedial treatment from two of the onsite groundwater monitoring wells (MW1 and MW2);
- Complete laboratory analyses of groundwater samples; and
- Prepared this Remedial Action and Interim Groundwater Monitoring 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, 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. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to Albertsons Companies and all relying parties unless otherwise agreed in writing.

3.0 IN-SITU REMEDIAL INJECTIONS

Terracon has a commitment to the safety of all its employees. As such, and in accordance with our *Incident and Injury Free*® safety goals, Terracon conducted the fieldwork under a site-specific health and safety plan developed for this project. Work was performed using the Occupational Health and Safety Administration (OSHA) Level D work attire consisting of hard hats, safety glasses, protective gloves, and protective boots. In an effort to locate underground utilities in the work area, Terracon contacted the Washington State Utility Notification Center to arrange for public underground utility clearance at the Site. In addition, a private utility location service was subcontracted by Terracon to identify the locations and depths of the various utilities located near the proposed injection borings.

3.1 Treatment Technology Description – ORC-Advanced

Injection of Regenesis ORC Advanced® (ORC-A) involves the addition of an organic substrate to stimulate microbial growth from pre-existing populations and their development as well as creating an aerobic environment in the subsurface. Petroleum hydrocarbon plumes are typically depleted in oxygen which limits the ability for petrophyllic microorganisms to degrade petroleum hydrocarbons.

The application of ORC-A to the formation stimulates microbial activity and facilitates biodegradation of contaminants. This involves the injection of the substrate through numerous injection points in accessible areas of the Site. Based on the concentrations of contaminants identified in previous investigations, and considering the limited area available for the installation of injection points, this technology will only serve as an amendment in order to stimulate existing microbial populations. Injections were advanced in locations below the groundwater interface.

Based on the inferred soil lithology at MW2, which consists of hard to very dense clayey silt and sandy silt with gravel, the ISCO product injection borings were centered around monitoring well MW2 and were spaced approximately 8 to 10 feet apart and were located approximately 8 to 10 feet radially from MW2. Further detail regarding the injection methodology and application process is provided in Section 3.3. The approximate ISCO injection point locations are depicted on Exhibit 2, Appendix A. This remedial treatment action was not designed to treat other areas of the site that may contain residual impacts, and the soil and groundwater at MW2 may be impacted in the future if the surrounding soil and/or groundwater contain residual impacts.

3.2 Regulatory Permitting

An Underground Injection Permit (UIC site number 33986) was acquired from Ecology for the Site prior to performing injections and is attached in Appendix D. Ecology maintains a database of sites with discharges to subsurface features or wells. The permit requires that groundwater quality

be monitored following the injections, specifically to monitor the concentration and distribution of nitrate and sulfate and to confirm that their presence is confined to the subject site or plume boundary. Nitrate and sulfate are regulated under the Water Quality Criteria for Groundwater of the State of Washington at 10 mg/L and 250 mg/L, respectively.

3.3 Injection Program

The injection program was completed on May 31, 2018 under the supervision of Terracon field geologist, Kyle Bennett. A total of five injection locations throughout the target area around MW2 were completed. The target zone of the treatment (vertical distribution of contamination) was between approximately 5 feet (the top of the groundwater table) to 15 feet bgs, and measures approximately 20 feet by 20 feet (400 square feet) horizontally.

Prior to injecting, the ORC-A was mixed in 25- to 50-gallon batches using a steel drum and pumps/water jets until mixed, at a ratio of 96 pounds of ORC-A to 27 gallons of water, for a slurry concentration of approximately 30%. Approximately 480 pounds of ORC-A mixed with 134 gallons of potable water were injected, a total of approximately 155 gallons of mixed slurry.

The injection borings were advanced by Holocene, a Washington State-licensed driller, using a track-mounted direct-push drill rig. Five-foot long hollow steel rods with an expendable tip were advanced into the ground using a 32 hertz, percussion hammer. The injection rods were advanced in five-foot intervals to approximate depths of 5 feet, 10 feet, and 15 feet bgs. Once at the desired injection interval depth, a manifold with a pressure gauge and pressure release valve was attached to the top of the injection rod.

The slurry was then pumped directly through the rods into the subsurface at approximately 50 to 100 lbs per square inch (psi). Once approximately 10 gallons of slurry was injected at the interval, the rods were depressurized, the manifold was removed, and an additional five-foot rod was advanced to the next interval depth. This was process was repeated to the approximate depth of 15 feet bgs. Approximately 31 gallons of mixed slurry was successfully injected into each of the five injection borings, approximately 10 gallons per interval at 5 feet, 10 feet, and 15 feet bgs.

Surfacing of the slurry was not observed at the time of injections, and it is in our opinion the proposed amount of ORC-A mixture appears to have been injected into the select intervals successfully.

4.0 POST-INJECTION GROUNDWATER MONITORING

4.1 Groundwater Monitoring

Following an approximately 30-day period after the injections, the first post-injection groundwater monitoring event was conducted on June 25, 2018, followed by an additional event on July 25, 2018. Groundwater samples were only collected from MW2 in June 2018 and MW1 and MW2 in July 2018, groundwater levels were not measured from all on-site monitoring wells. Approximate monitoring well locations are depicted on Exhibit 2 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.

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

4.2 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 BTEX by EPA Method 8260.

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).

4.3 Groundwater Analytical Results

The groundwater sample from monitoring well MW1 did not have reported concentrations of gasoline-, diesel-, or oil-range TPH; or BTEX above laboratory MRLs.

On June 25, 2018, the groundwater sample collected from monitoring well MW2 contained gasoline at a concentration of 1,000 µg/l, diesel at a concentration of 1,100 µg/l, and benzene at a concentration of 21 µg/l, which exceed their respective MTCA Method A cleanup levels of 800 µg/l, 500 µg/l, and 5 µg/l respectively. The remaining groundwater sample results were either below the laboratory MRLs or below the MTCA Method A or MTCA Method B cleanup levels.

On July 25, 2018, the groundwater sample collected from monitoring well MW2 contained gasoline at a concentration of 1,100 µg/l, and benzene at a concentration of 18 µg/l, which exceed their respective MTCA Method A cleanup levels of 800 µg/l, and 5 µg/l respectively. The diesel-range TPH concentration had reduced to 250 µg/l during this sampling event. The remaining groundwater sample results were either below the laboratory MRLs or below the MTCA Method A or MTCA Method B cleanup levels.

The groundwater analytical results are summarized in Table 1 of Appendix B.

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

4.4 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. QA/QC review was completed using guidance described in *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (Draft Final, USEPA, 2005). 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.

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:

- A total of five injection locations in the area of MW2 were completed to address soil and groundwater contamination at intervals between 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, groundwater monitoring well MW2 was sampled in June 2018, and monitoring wells MW1 and MW2 were sampled July 2018. Per TPCHD approval, wells MW3 and MW4 were not sampled.

- Groundwater samples collected from monitoring wells MW-1 and MW-2 were analyzed for gasoline-, diesel-, and oil-range TPH; and for BTEX.

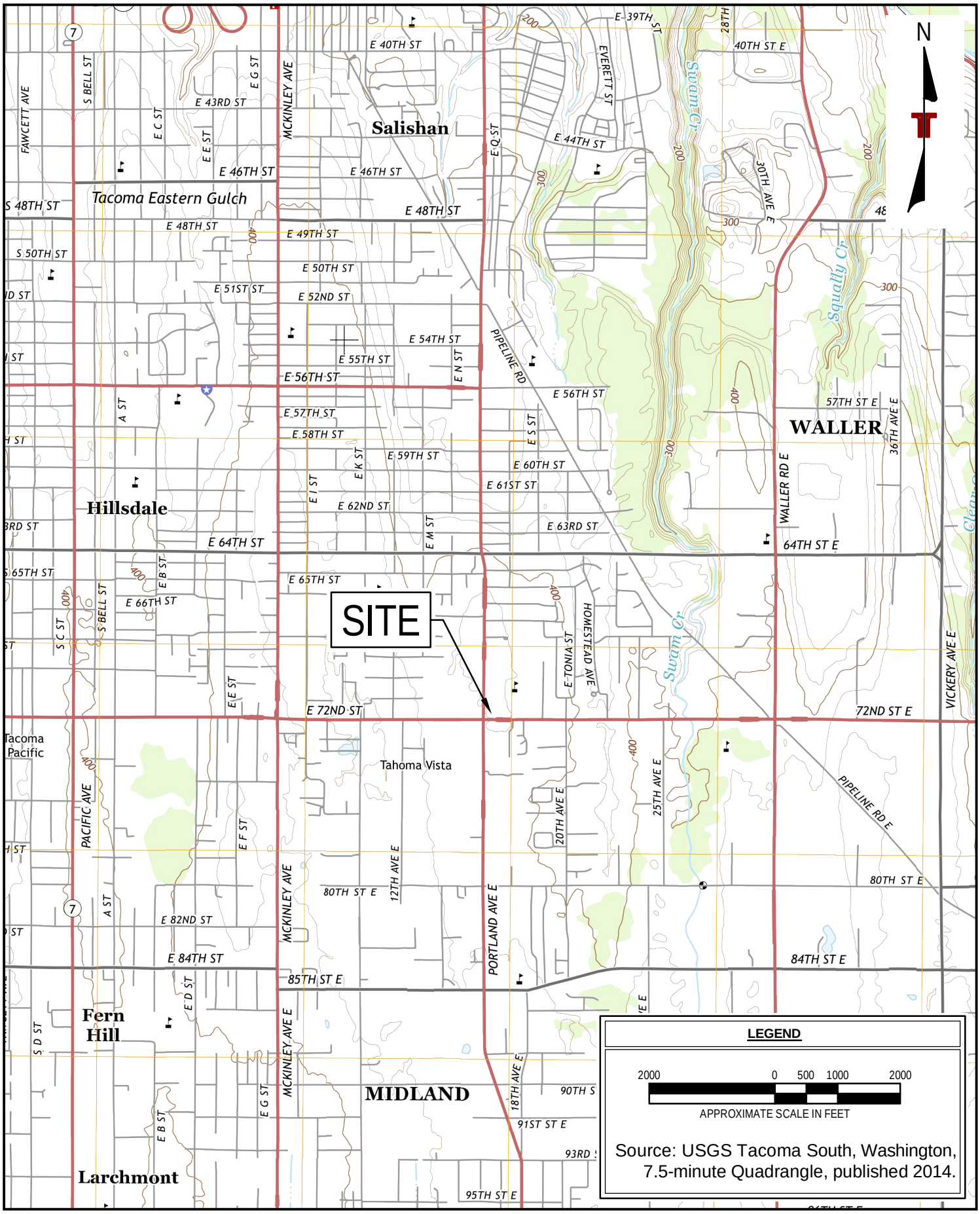
The groundwater samples collected from monitoring well MW2 contained gasoline and benzene at concentrations exceeding their respective MTCA Method a cleanup level. The remaining groundwater samples results were either below the laboratory MRLs or below the MTCA Method A cleanup levels.

The initial June 2018 post-injection monitoring event analytical results show that concentrations of the contaminants of concern have increased since the treatment injections in monitoring well MW2. This is potentially due to mobilization of absorbed contaminant mass in the capillary-fringe smear zone that was saturated during the injection process thereby increasing groundwater concentrations. The July 2018 post-injection monitoring event analytical results indicate a minor decrease in concentrations of the contaminates of concern in MW2 from the initial event, which may indicate that petroleum hydrocarbons are starting to degrade, possibly due to ORC-A injections.

APPENDIX A - EXHIBITS

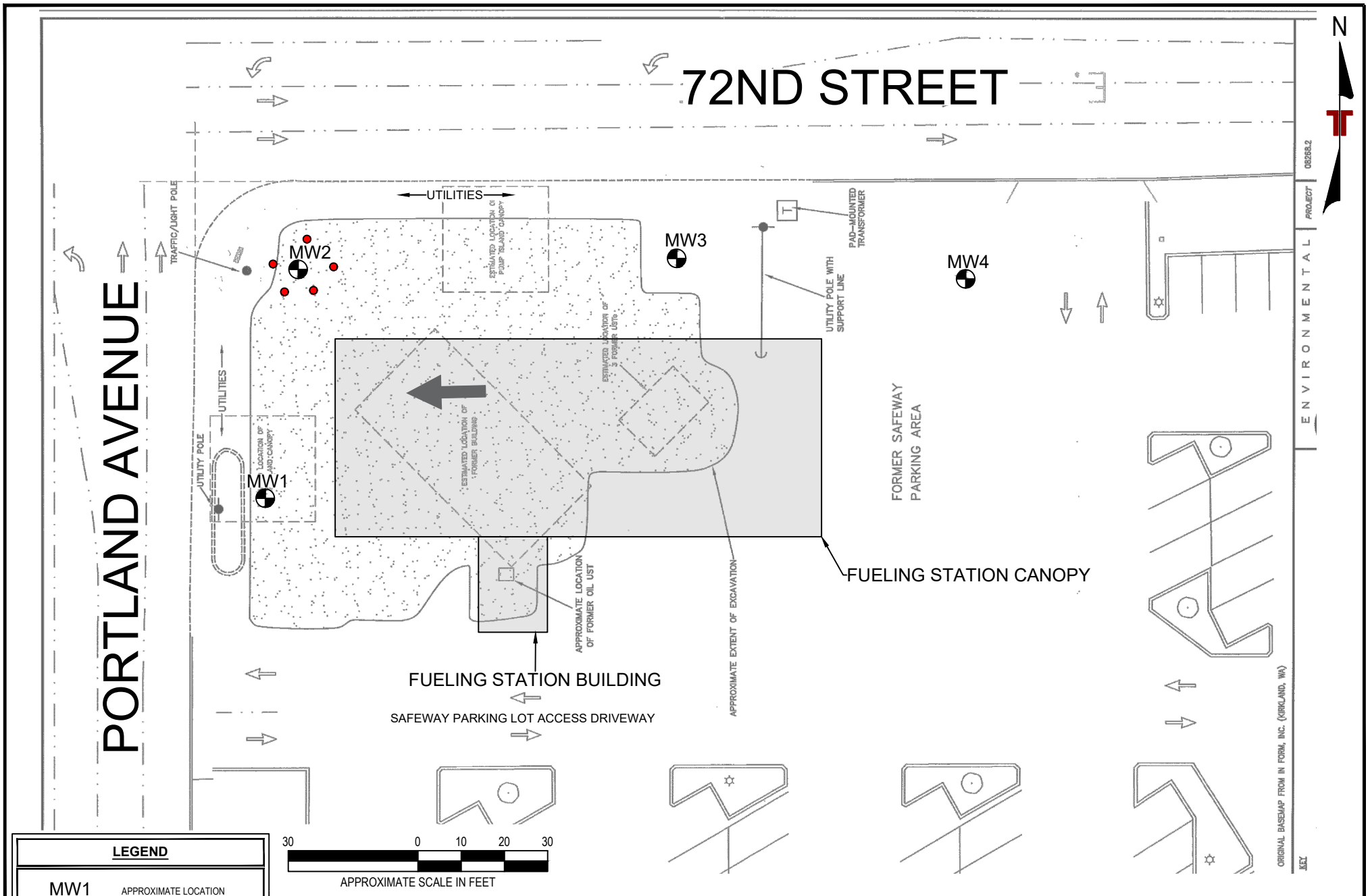
Exhibit 1 - Topographic Map

Exhibit 2 - Site Diagram



Project Mngr: MDN	Project No. 81167550	Terracon Consulting Engineers and Scientists	**TOPOGRAPHIC MAP**
Drawn By: AMP	Scale: AS SHOWN	21905 64th Avenue W., Ste 100 Mountlake Terrace, WA 98043	Safeway #1436 Fueling Station
Checked By: MDN	File No. Exhibit 1	PH. (425) 771-3304 FAX. (425) 771-3549	7201 Portland Ave E
Approved By: MDN	Date: April 2018		Tacoma, Pierce County, Washington

EXHIBIT 1



LEGEND

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

30 0 10 20 30

APPROXIMATE SCALE IN FEET

Project Mngr:	MDN
Drawn By:	AMP
Checked By:	MDN
Approved By:	MDN
Project No.	81167550
Scale:	AS SHOWN
File No.	Exhibit 2
Date:	September 2018

Terracon
Consulting Engineers and Scientists
21905 64th Avenue W., Ste 100 Mountlake Terrace, WA 98043
PH. (425) 771-3304 FAX. (425) 771-3549

SITE DIAGRAM

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

EXHIBIT 2

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

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

Well ID (Top of Casing Elevation [feet amsl])	Sample Date	Depth to Water (feet)	Ground-water Elevation (feet)	TPH			VOCs										
				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	Naphthalene
MW1 (417.26)	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)
	3/21/2017	3.98	413.28	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--
	11/30/2016	5.43	411.83	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	--	--	--	--	--	--	--
MW2 (417.62)	7/25/2018	7.41	410.21	**1,100**	**250**	ND (<250)	**18**	**3.7**	**37**	**12**	--	--	--	--	--	--	--
	6/26/2018	6.79	410.83	**1,000**	**1,100**	**350**	**21**	**3.9**	**25**	**12**	--	--	--	--	--	--	--
	3/28/2018	5.37	412.25	**650**	ND (<130)	ND (<250)	**6.6**	ND (<2)	**16**	**7**	--	--	--	--	--	--	--
	12/26/2017	4.64	412.98	**600**	ND (<130)	ND (<250)	**8.2**	ND (<2)	**7.3**	**5.8**	--	--	--	--	--	--	--
	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	**670**	ND (<130)	ND (<250)	**6.7**	ND (<2)	ND (<2)	ND (<4)	**7.2**	**24**	ND (<2)	ND (<2)	**2.6**	ND (<2)	**2.3**
	3/21/2017	4.53	413.09	**970**	**290**	ND (<250)	**18**	ND (<2)	**25**	**26**	**12**	**29**	**3.1**	**4**	**3.1**	**12**	**4.5**
	11/30/2016	5.23	412.39	**820**	**190**	ND (<250)	**46**	**3.1**	**12**	**21**	--	--	--	--	--	--	--
MW3 (419.22)	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)
	3/21/2017	4.21	415.01	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--
	11/30/2016	5.82	413.40	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	--	--	--	--	--	--	--
MW4 (419.98)	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)
	3/21/2017	4.64	415.34	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<4)	--	--	--	--	--	--	--
	11/30/2016	5.42	414.56	ND (<50)	ND (<130)	ND (<250)	ND (<2)	ND (<2)	ND (<2)	ND (<2)	--	--	--	--	--	--	--
MTCA Method A Cleanup Level				**800**	**500**	**500**	**5**	**1,000**	**700**	**1,000**	**NE**	**800***	**80***	**NE**	**800***	**400***	**160**

Notes: Concentrations detected above laboratory method reporting limits (MRLs) are in **BOLD** type. Concentrations above MTCA cleanup levels are in red **BOLD** and shaded.

TPH - total petroleum hydrocarbons
VOCs - volatile organic compounds
MTCA - Model Toxics Control Act
ND - Not detected above laboratory reporting limit.
* - MTCA Method B Cleanup Level - Unrestricted land use. Referenced when a Method A cleanup level has not been established.
-- - Not analyzed and/or sampled

APPENDIX C – ANALYTICAL REPORT

July 30, 2018

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

Dear Mr. Swart,

On July 25th, 2 samples were received by our laboratory and assigned our laboratory project number EV18070160. 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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	7/30/2018
		ALS JOB#:	EV18070160
		ALS SAMPLE#:	EV18070160-01
CLIENT CONTACT:	Lucas Swart	DATE RECEIVED:	07/25/2018
CLIENT PROJECT:	81167550	COLLECTION DATE:	7/25/2018 10:00:00 AM
CLIENT SAMPLE ID	MW-1	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	07/26/2018	JMK
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	07/26/2018	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	07/26/2018	EBS
Benzene	EPA-8260	U	2.0	1	UG/L	07/26/2018	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	07/26/2018	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	07/26/2018	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	07/26/2018	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	07/26/2018	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**93.6**	07/26/2018	JMK
C25	NWTPH-DX	**97.1**	07/26/2018	EBS
Toluene-d8	EPA-8260	**97.3**	07/26/2018	DLC

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE: ALS JOB#: ALS SAMPLE#:	7/30/2018 EV18070160 EV18070160-02
CLIENT CONTACT:	Lucas Swart	DATE RECEIVED:	07/25/2018
CLIENT PROJECT:	81167550	COLLECTION DATE:	7/25/2018 10:20:00 AM
CLIENT SAMPLE ID	MW-2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**1100**	50	1	UG/L	07/26/2018	JMK
TPH-Diesel Range	NWTPH-DX	**250**	130	1	UG/L	07/26/2018	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	07/26/2018	EBS
Benzene	EPA-8260	**18**	2.0	1	UG/L	07/26/2018	DLC
Toluene	EPA-8260	**3.7**	2.0	1	UG/L	07/26/2018	DLC
Ethylbenzene	EPA-8260	**37**	2.0	1	UG/L	07/26/2018	DLC
m,p-Xylene	EPA-8260	**12**	4.0	1	UG/L	07/26/2018	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	07/26/2018	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**131**	07/26/2018	JMK
C25	NWTPH-DX	**105**	07/26/2018	EBS
Toluene-d8	EPA-8260	**90.8**	07/26/2018	DLC

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	7/30/2018
		ALS SDG#:	EV18070160
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lucas Swart		
CLIENT PROJECT:	81167550		

LABORATORY BLANK RESULTS

MBG-072618W - Batch 130985 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	UG/L	50	07/26/2018	JMK

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

MB-072618W - Batch 130883 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	130	07/26/2018	EBS
TPH-Oil Range	NWTPH-DX	U	UG/L	250	07/26/2018	EBS

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

MB-072618W - Batch 130915 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	07/26/2018	DLC
Benzene	EPA-8260	U	UG/L	2.0	07/26/2018	DLC
Toluene	EPA-8260	U	UG/L	2.0	07/26/2018	DLC
Ethylbenzene	EPA-8260	U	UG/L	2.0	07/26/2018	DLC
m,p-Xylene	EPA-8260	U	UG/L	4.0	07/26/2018	DLC
o-Xylene	EPA-8260	U	UG/L	2.0	07/26/2018	DLC

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

CLIENT CONTACT: Lucas Swart
CLIENT PROJECT: 81167550

DATE: 7/30/2018
ALS SDG#: EV18070160
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 130985 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	**105**			66.5	122.7	07/26/2018	JMK
TPH-Volatile Range - BSD	NWTPH-GX	**106**	**1**		66.5	122.7	07/26/2018	JMK

ALS Test Batch ID: 130883 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	**97.8**			67	125.2	07/26/2018	EBS
TPH-Diesel Range - BSD	NWTPH-DX	**101**	**3**		67	125.2	07/26/2018	EBS

ALS Test Batch ID: 130915 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	**126**			72.5	136	07/26/2018	DLC
1,1-Dichloroethene - BSD	EPA-8260	**125**	**1**		72.5	136	07/26/2018	DLC
Benzene - BS	EPA-8260	**107**			74.7	143	07/26/2018	DLC
Benzene - BSD	EPA-8260	**106**	**1**		74.7	143	07/26/2018	DLC
Toluene - BS	EPA-8260	**105**			71.7	139	07/26/2018	DLC
Toluene - BSD	EPA-8260	**103**	**2**		71.7	139	07/26/2018	DLC
Ethylbenzene - BS	EPA-8260	**103**			50	150	07/26/2018	DLC
Ethylbenzene - BSD	EPA-8260	**100**	**2**		50	150	07/26/2018	DLC
m,p-Xylene - BS	EPA-8260	**98.2**			50	150	07/26/2018	DLC
m,p-Xylene - BSD	EPA-8260	**95.1**	**3**		50	150	07/26/2018	DLC
o-Xylene - BS	EPA-8260	**105**			50	150	07/26/2018	DLC
o-Xylene - BSD	EPA-8260	**103**	**2**		50	150	07/26/2018	DLC

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

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): EV1807016O

Date 7/25/18 Page 1 Of 1

PROJECT ID: 81167550
REPORT TO COMPANY: Terracon Consultants Inc. (TC)
PROJECT MANAGER: Lucas Swart / Kyle Bennett
ADDRESS: 21905 64th Ave W. Suite 100
Mountlake Terrace, WA, 98043
PHONE: 425-771-3304 P.O. #:
E-MAIL: Lucas.Swart@Terracon.com
INVOICE TO COMPANY: Kyle.Bennett@" "
ATTENTION:
ADDRESS: Same

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 ☐	MTBE by EPA 8021 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐	Metals-MTCA-5 ☐	Metals Other (Specify)	TCLP-Metals ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. MW-1	7/25/18	1000	GW	1		X	X	X													6	
2. MW-2	↓	1020	GW	2		X	X	X													6	
3.																						
4.																						
5.																						
6.																						
7.																						
8.																						
9.																						
10.																						

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: TC, 7/25/18, 1342
   Received By: AJS, 7/25/18, 1342
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: 5 Standard | 3 | 1 | SAME DAY

OTHER:
Specify:

*Turnaround request less than standard may incur Rush Charges

June 28, 2018

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

Dear Mr. Swart,

On June 26th, 1 sample was received by our laboratory and assigned our laboratory project number EV18060152. 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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	6/28/2018
		ALS JOB#:	EV18060152
		ALS SAMPLE#:	EV18060152-01
CLIENT CONTACT:	Lucas Swart	DATE RECEIVED:	06/26/2018
CLIENT PROJECT:	81167550	COLLECTION DATE:	6/25/2018 3:35:00 PM
CLIENT SAMPLE ID	MW-2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**1000**	50	1	UG/L	06/26/2018	JMK
TPH-Diesel Range	NWTPH-DX	**1100**	130	1	UG/L	06/27/2018	GAP
TPH-Oil Range	NWTPH-DX	**350**	250	1	UG/L	06/27/2018	GAP
Benzene	EPA-8260	**21**	2.0	1	UG/L	06/26/2018	CCN
Toluene	EPA-8260	**3.9**	2.0	1	UG/L	06/26/2018	CCN
Ethylbenzene	EPA-8260	**25**	2.0	1	UG/L	06/26/2018	CCN
m,p-Xylene	EPA-8260	**12**	4.0	1	UG/L	06/26/2018	CCN
o-Xylene	EPA-8260	U	2.0	1	UG/L	06/26/2018	CCN

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**105**	06/26/2018	JMK
C25	NWTPH-DX	**88.8**	06/27/2018	GAP
Toluene-d8	EPA-8260	**90.5**	06/26/2018	CCN

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	6/28/2018
		ALS SDG#:	EV18060152
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lucas Swart		
CLIENT PROJECT:	81167550		

LABORATORY BLANK RESULTS

MBG-062618W - Batch 129834 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	UG/L	50	06/26/2018	JMK

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

MB-062618W - Batch 129914 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	130	06/27/2018	GAP
TPH-Oil Range	NWTPH-DX	U	UG/L	250	06/27/2018	GAP

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

MB-062618W - Batch 129860 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	06/26/2018	CCN
Benzene	EPA-8260	U	UG/L	2.0	06/26/2018	CCN
Toluene	EPA-8260	U	UG/L	2.0	06/26/2018	CCN
Ethylbenzene	EPA-8260	U	UG/L	2.0	06/26/2018	CCN
m,p-Xylene	EPA-8260	U	UG/L	4.0	06/26/2018	CCN
o-Xylene	EPA-8260	U	UG/L	2.0	06/26/2018	CCN

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	6/28/2018
		ALS SDG#:	EV18060152
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lucas Swart		
CLIENT PROJECT:	81167550		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 129834 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	**104**			66.5	122.7	06/26/2018	JMK
TPH-Volatile Range - BSD	NWTPH-GX	**107**	**2**		66.5	122.7	06/26/2018	JMK

ALS Test Batch ID: 129914 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	**94.2**			67	125.2	06/27/2018	GAP
TPH-Diesel Range - BSD	NWTPH-DX	**95.4**	**1**		67	125.2	06/27/2018	GAP

ALS Test Batch ID: 129860 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	**84.2**			72.5	136	06/26/2018	CCN
1,1-Dichloroethene - BSD	EPA-8260	**75.4**	**11**		72.5	136	06/26/2018	CCN
Benzene - BS	EPA-8260	**108**			74.7	143	06/26/2018	CCN
Benzene - BSD	EPA-8260	**96.6**	**11**		74.7	143	06/26/2018	CCN
Toluene - BS	EPA-8260	**87.4**			71.7	139	06/26/2018	CCN
Toluene - BSD	EPA-8260	**77.5**	**12**		71.7	139	06/26/2018	CCN
Ethylbenzene - BS	EPA-8260	**90.9**			50	150	06/26/2018	CCN
Ethylbenzene - BSD	EPA-8260	**78.9**	**14**		50	150	06/26/2018	CCN
m,p-Xylene - BS	EPA-8260	**84.0**			50	150	06/26/2018	CCN
m,p-Xylene - BSD	EPA-8260	**74.2**	**12**		50	150	06/26/2018	CCN
o-Xylene - BS	EPA-8260	**91.7**			50	150	06/26/2018	CCN
o-Xylene - BSD	EPA-8260	**79.2**	**15**		50	150	06/26/2018	CCN

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

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): EV1806152

Date 6/26/18 Page 1 Of 1

PROJECT ID: 81167550
REPORT TO COMPANY: Kyle Bennett / Lucas Swart
PROJECT MANAGER: Lucas Swart
ADDRESS: 21905 64th Ave W. Suite 100
Mountlake Terrace, WA, 98043
PHONE: 425-771-3304 P.O. #:
E-MAIL: Lucas.Swart@Terracon.com
~~INVOICE TO COMPANY:~~ Kyle.Bennett@" "
ATTENTION:
ADDRESS: Swart

SAMPLE I.D.	DATE	TIME	TYPE	LAB#
1. MW-2	6/25/18	15:35	GW	1
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

ANALYSIS REQUESTED

	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 ☐ BTEX by EPA 8260 ☒	MTBE by EPA 8021 ☐ MTBE by EPA 8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1.		X	X	X												6	
2.																	
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

OTHER (Specify)

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: KB, TC, 6/26/18, 10:10
   Received By: Skyler Sahren AYS 6/26/18 10:10
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: ~~5~~ Standard | 3 | 1 | SAME DAY

OTHER: Specify: _____

*Turnaround request less than standard may incur Rush Charges

APPENDIX D – UNDERGROUND INJECTION PERMIT

DEPARTMENT OF ECOLOGY State of Washington

Underground Injection Control

Voluntary or Independent Cleanup Sites

For aquifer injection UIC wells at Voluntary or independent cleanup sites.

Registration Status

Site Number: 33986
Authorization Status: Rule-Authorized

Facility/Site Information

Facility Name: Safeway 1436
Address: 7201 Portland Avenue E
PO Box/Suite/Building:
City: Tacoma
State: WA **ZIP:** 98404
Phone: 425-771-3304
County: Pierce

Contact Information

Well Owner

Name: Robert DeNinno
Organization: Safeway Inc
Address: 250 Parkcenter Blvd
PO Box/Suite/Building: PO Box 20
City: Boise
State: ID **ZIP:** 83726

Voluntary Specific Information

NAIC Code: 447110
SIC Code:
Briefly describe the type or nature of business at this facility: Gasoline Station and Convenience Store
Briefly describe the overall process: Terracon proposes to engage the drilling subcontractor to inject up to 480 pounds of ORC-A mixed with 134 gallons of potable water. The ORC-A will be mixed in 25- to 50 gallon batches using a steel drum or tank and pumps/water jets until it is thoroughly mixed, at a ratio of 96 pounds of ORC-A to 27 gallons of water, for a slurry concentration of approximately 30%. Approximately 31 gallons of slurry will be injected into each boring.
Depth to ground water: 5
Characterization of the hydrogeology at the site: Site soils consist mainly of silty sands to sandy silts with variable amounts of gravel and clay. Groundwater flow direction is inferred to be to the southwest and hydraulic conductivity is low.
Injected products and by products will be contained on the site: Yes
Description of potential by-products of the process: Typical by-products from ORC-A consist of CO_2 and water as well as degradation by-products of the petroleum products present in subsurface soils and groundwater.
Description of existing ground water quality: Groundwater at the site currently is impacted by low-levels of gasoline-range TPH, benzene (above MTCA Method A), and ethylbenzene and xylenes at concentrations below MTCA Method A CULs
Dept. of Ecology Voluntary or Independent Cleanup Program Site Manager: Rob Olsen
Dept. of Ecology Voluntary or Independent Cleanup Program Site Number: SW0414
Approximately when will the injection project start? 5/21/2018
Approximately when will the injection project end? 5/22/2018
Distance from property line to the nearest surface water (approx. feet): 3115
Distance from property line to the nearest drinking water well (approx. feet): 6050
In which drinking water supply wellhead protection area is the site located in? City of Fircrest

Main Well Information

Well Name	Construction Date	EPA Well Type	Status	Depth of UIC Well (ft.)	Latitude	Longitude
IW-1	5/21/2018	5B6 - Aquifer remediation	Active	20	47.191610	-122.407580

Injectate Information

Well Name	Injection Substance	Mass	Mass Units	Volume	Volume Units	Concentration	Concentration Units
IW-1	ORC-A	96	lbs	27	gallons	30	percent