

October 10, 2013

Mr. Walter Sprague
Director of Retail Services
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Project No. 611
VCP Project No. CE0381

Confirmation Soil Sampling Report

Site 01-056

500 George Washington Way
Richland, Washington

Dear Mr. Sprague:

Environ Strategy Consultants, Inc. (Environ Strategy) is pleased to submit to Pacific Convenience and Fuels, LLC (PC&F) this *Confirmation Soil Sampling Report* summarizing activities performed at the above-referenced site (Figure 1). Site assessment activities were conducted from July 29 to August 1, 2013, and consisted of advancing seven confirmation soil borings (identified as CB-1 through CB-7) to evaluate current soil conditions in areas where residual contamination was identified during previous investigations. Soil samples were collected from each boring and analyzed for contaminants of concern (COCs). The activities were completed in general accordance with Task 3 of the *Site Closure Plan* (SCP), dated January 21, 2011, with modification to focus sampling to onsite locations based on comments provided by the Washington State Department of Ecology (Ecology) in the Opinion Letter dated March 1, 2013.

Laboratory analytical results indicate that confirmation soil samples did not contain detectible levels of petroleum hydrocarbon constituents, with the exception of one sample which contained total petroleum hydrocarbons quantified as gasoline (TPH-Gx) at a concentration below the applicable Model Toxics Control Act (MTCA) Method A Cleanup Level.

Based on the findings of the confirmation soil sampling, and prior site assessment results, the site appears to be sufficiently characterized. Laboratory analytical results show that hydrocarbon-affected soil has been effectively remediated and meets MTCA cleanup criteria. Groundwater monitoring results from June 2012 (the most recent data) indicate that residual dissolved-phase hydrocarbons exceeding MTCA Method A cleanup levels are localized to the area near MW-32, located southwest of the former UST cavity. Environ Strategy recommends proceeding with the remedial strategy as outlined in SCP, including conducting consecutive quarterly groundwater monitoring (Task 2) and evaluation of groundwater conditions.

A summary of the field observations, findings and results of the present study are presented in the following sections.

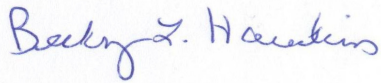
Confirmation Soil Sampling Report

Station 01-056
Richland, Washington

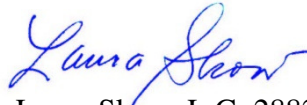
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If there are questions regarding this report, or if additional information is required, please do not hesitate to contact the undersigned at (714) 919-6500.

Sincerely,
ENVIRON STRATEGY



Becky L. Hawkins, L.G. 2880
Project Geologist



Laura Skow, L.G. 2882
Project Manager



LAURA B. SKOW

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Richland, Washington

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SITE AND CONTRACTOR OVERVIEW

Site Location: Site 01-056
500 George Washington Way
Richland, Washington

Environmental Consultant: Environ Strategy Consultants, Inc.
1036 West Taft Avenue, Suite 200
Orange, California 92865

Drilling Contractor: Cascade Drilling, LP
P.O. Box 1184
Woodinville, Washington 98072
Drilling License No. 1425 (Jeff Jones)

Laboratory Contactor: ESN Northwest, Inc.
1210 Eastside Street SE, Suite 200
Olympia, Washington 98501
WADOE Accreditation No. C574-11

Waste Transporter: NRC
720 North California Street, Suite E
Pasco, WA 99301
U.S. DOT License No. 502728

SITE DESCRIPTION

The site is located at 500 George Washington Way in Richland, Washington. The site is an approximate 1.42-acre parcel located on the east side of George Washington Way approximately 800 feet west of the Columbia River. The site is currently an active retail fueling station with a convenience store, two pump islands with one dispenser each and three 10,000-gallon underground storage tanks (USTs). The site is located in a commercial and residential land-use area with a large public park located to the east. Pertinent site features are shown on Figure 2.

The subject site lies at an elevation of approximately 375 feet above mean sea level (amsl). The topography slopes to the east-northeast toward the Columbia River (Lake Wallula) in the immediate vicinity of the site. The Columbia River is located adjacent to the site and flows in a southerly direction.

SCOPE OF WORK

Seven confirmation soil borings (identified as CB-1 through CB-7) were advanced in the vicinity of the existing pump islands and the former UST cavity to evaluate current soil conditions. The confirmation boring locations are shown on Figure 2.

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The confirmation borings were advanced in areas that contained elevated concentrations of petroleum hydrocarbons in soil based on historical soil sample results and near monitoring wells where residual impact to groundwater was reported based on recent groundwater analytical results. Soil analytical results from previous assessment borings are summarized in Table 1 and shown on Figure 3. Historical groundwater analytical results are summarized in the tables provided as Appendix A. As shown in Table 1 and Figure 3, historical analytical results indicate that soil samples collected from MW-1 (former UST cavity) and RW-1 prior to remediation, contained TPH-Dx, TPH-Gx, and BTEX (benzene, toluene, ethylbenzene and total xylenes) compounds above MTCA Method A Cleanup Levels. A submerged hydrocarbon smear zone was also identified beneath the site at a depth of approximately 5 to 10 feet below the water table (35 to 40 feet bgs) based on a review of historical data and soil boring logs. Figures prepared by others showing the extent of the submerged smear zone are included as Appendix B.

Past remedial efforts at the site have included operation of an SVE/AS system from 1996 through mid-2008, hydrogen peroxide pilot testing in 2003, hydrogen peroxide injection into monitoring wells in 2005, and remediation wells equipped with Plume Eater technology which operated intermittently from 2006 through 2007. During this period, a reduction in COCs was reported based on site O&M and groundwater monitoring data; however, confirmation soil sampling had not been performed. A summary of site assessment and remedial activities is provided as Appendix C.

Groundwater monitoring and sampling was conducted in the Second Quarter 2012 (June 6 & 7, 2012) and results indicated that dissolved-phase hydrocarbons are at low to non-detectable levels in a majority of the site monitoring wells. Only one groundwater sample (MW-32) collected during the June 2012 event contained fuel hydrocarbons (TPH-Gx) at a concentration exceeding the respective MTCA Method A Cleanup Level (Appendix A). The groundwater plume appears localized to the area of Wells MW-01, MW-04, MW-05, MW-06, MW-07, MW-32 and MW-33, located downgradient of the former tank cavity. A review of historical groundwater analytical results show fluctuating TPH-Gx and benzene concentrations in Wells MW-4 and MW-32 at levels above and below the MTCA Method A Cleanup Levels. Overall, hydrocarbon trend analyses for TPH-Gx and benzene show generally stable to decreasing concentrations in a majority of the site wells. Additional details regarding the groundwater monitoring results are presented in the *Second Quarter 2012 Groundwater Monitoring Report*, dated August 9, 2012.

The objective of this assessment was to collect additional soil data to support site closure. The MTCA Method A Cleanup Levels for Unrestricted Land Use are the primary criteria for determining whether soil and groundwater have been effectively remediated.

The following section provides a brief summary of the confirmation soil sampling field activities and analytical results. Subsequent sections provide a more detailed summary of the field activities, observations and findings and analytical results along with conclusions and recommendations.

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SITE ASSESSMENT SUMMARY DATA

Field Activity Details

Drilling & Sampling Date(s): July 29, to August 2, 2013
One-Call Ticket No.: 13188481
Number of Borings: 7
Drilling Method: AMS Roto Sonic 17-C track mounted rig
Depth to Groundwater: ~35 to 40 feet bgs⁽¹⁾
Total Depth: 45 feet bgs⁽²⁾
Total Drums Generated: 9 (55-gallon, 7 soil cuttings, 2 decon water)

Soil Sampling Details

Sampling Method: Rotosonic, core barrel with EPA 5035 Preparation
Number of Samples: 58
Highest PID Reading: 1,412 ppmv
Sample Analyses: TPH-Gx by EPA 5035/NWTPH-Gx
TPH-Dx/Ox by EPA 5035/NWTPH-Dx/Dx Extended
B/T/E/X by EPA 5035/8260

Soil Analytical Results (see Table 2)

TPH-Gx Detects:	1	Maximum: 16 mg/kg
TPH-Dx Detects:	0	Maximum: ND (<50 mg/kg)
TPH-Ox Detects:	0	Maximum: ND (<100 mg/kg)
B/T/E/X Detects:	0	Maximum: ND (<0.02/<0.05/<0.05/<0.15 mg/kg)

(1): Based on field data

(2): Total depth of Borings CB-4 and CB-6; Borings CB-1 through CB-3 and CB-7 were drilled to 40 ft bgs.

FIELD ACTIVITIES

The following subsections provide a summary of the field activities conducted as part of the scope of work. Field activities were conducted in accordance with the Site Health and Safety Plan (HASP), dated May 2013. Before commencing field activities a daily “tailgate” health and safety meeting was conducted by Environ Strategy personnel with contracted employees. The site safety briefing form is included as Appendix D. Upon request, an electronic copy of the HASP will be forwarded to PC&F as a separate, stand-alone document.

Pre-marking, Permitting and Notifications

The proposed boring locations were pre-marked in white spray paint and cleared of potential subsurface utilities/structures using geophysical techniques and reviewing as-built drawings. A private utility locator (Utilities Plus, LLC) was contracted to identify onsite subsurface utilities/structures within the proposed work areas.

A Notice of Intent to Construct permit was submitted to the Department of Ecology (DOE) by the drilling contractor (Cascade Drilling, LP). The DOE was notified 72 hours before drilling in

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accordance with the permit requirements. In addition, the State of Washington's mandatory underground utility locator, One-Call, was notified 72 hours before initiating field activities and requested to mark and delineate underground utilities servicing the site.

Drilling and Soil Sampling Activities

From July 29 to August 1, 2013, drilling and soil sampling activities were conducted at the site. Seven confirmation soil borings (CB-1 through CB-7) were advanced using a Sonic CRS-17-C drill rig. Borings CB-1 and CB-2 were advanced adjacent to the existing pump islands, CB-3 was advanced adjacent to the former UST cavity and near VW-1 where contamination (pre-remediation) was identified in boring logs, and CB-4 was advanced through the former tank cavity (source area). Borings CB-5, CB-6 and CB-7 were advanced to provide coverage of the area downgradient of the former tank cavity and near Well MW-32 which had a groundwater exceedance for benzene in November 2011.

Each soil boring was cleared of potential subsurface utilities to an approximate depth of 5 feet bgs using a hand auger. The borings were continuously sampled using a double-cased system consisting of an inner core barrel (10 feet long, 3.5-inch diameter) and a larger override casing (6-inch diameter). The core barrel was advanced and then the override casing was vibrated around the core barrel to case the borehole and allow for retrieval of the soil core. The soil core was extruded from the core barrel directly into a plastic bag, forming a sleeve around the sample. The next sample interval was collected using a clean section of core barrel and overriding casing was added to the drill string to continue advancement of the boring. This process was repeated until reaching the terminal depth at each borehole. Borings CB-1 through CB-3, CB-5 and CB-7 were advanced to a depth of 40 feet bgs; CB-4 and CB-6 were advanced to 45 feet bgs.

The retrieved soil cores were inspected and logged in accordance with the Unified Soil Classification System by a licensed Professional Geologist. Consistent with previous investigations, subsurface soil consisted of silty sand with gravel and gravel with sand to approximately 45 feet bgs, the maximum depth explored during this assessment.

Soil samples were collected at approximate 5-foot depth intervals for laboratory analysis and field screening. Field screening for volatile organic compounds (VOCs) was performed using a photo-ionization detector (PID) by placing a disaggregated portion of each sample in a sealed container and monitoring the soil for head-space volatility. The lithologic descriptions, PID readings, and other visual and olfactory observations were recorded in the boring logs and are presented in Appendix E.

Soil samples submitted for laboratory analysis were collected in accordance with EPA Method 5035 using laboratory-prepared VOA (volatile organic aromatics) vials. Each soil sample was comprised of two, 5-gram soil cores inserted into the vials and one 4-ounce glass soil jar. Sample containers were capped, labeled, immediately stored on ice in a cooler and delivered to the analytical laboratory under chain-of-custody.

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Down-hole drilling and sampling equipment were cleaned using a decontamination process consisting of a non-phosphate, laboratory-grade detergent wash and triple-rinsed. Tools and drilling rods were allowed to dry prior to use. Soil sampling equipment was cleaned in a soapy wash with a laboratory-grade detergent and triple rinsed.

Soil borings were backfilled with hydrated bentonite chips and capped at the surface to match surrounding surface conditions. Additional details regarding the general field procedures used during the assessment are provided in Appendix E.

Laboratory Analysis

Soil samples were submitted under chain-of-custody to ESN Northwest, Inc., of Olympia, Washington for chemical analysis. Soil samples were analyzed for TPH-Gx by Method NWTPH-Gx, TPH-Dx and TPH-Ox by Method NWTPH-DX/Dx Extended, and BTEX by EPA Method 8260.

A copy of the laboratory analytical report is provided as Appendix F. The soil analytical results are summarized in Table 2 and illustrated in Figure 3.

Waste Management

Soil cuttings and decontamination fluids generated during the field activities were placed into nine Department of Transportation approved drums. The drums were appropriately sealed, labeled and staged in a secure location onsite pending waste characterization. The drums were removed from the site on August 26, 2013 by a certified waste hauler. A copy of the non-hazardous waste manifest documenting the transportation and disposal of the waste material is included as Appendix G.

ASSESSMENT FINDINGS

The results of the confirmation soil sampling are bulleted below. For discussion purposes, analytical results are evaluated based on the DOE's *MTCA Chapter 70.105D RCW and Cleanup Regulation Chapter 173-340 WAC* (Publication No. 94-06, revised October 2007). Specifically, the soil analytical results from this assessment are summarized in Table 2 and are compared to the respective MTCA Method A Cleanup Levels for Unrestricted Land Use (Table 745-1). Historical soil analytical results are summarized in Table 1. Historical groundwater monitoring data and figures showing the groundwater gradient and distribution of dissolved-phase fuel hydrocarbons on June 6, 2012 are included as Appendix A.

- Soil encountered during this assessment consists predominately of silty sand with gravel and gravel with sand to approximately 45 feet bgs, the maximum depth explored.
- Groundwater was encountered at between 35 to 40 feet bgs during drilling activities.
- As shown in the boring logs for CB-1, CB-3 and CB-7, there was no evidence of petroleum hydrocarbon impact based on visual and olfactory observations, and field PID readings were negligible (<10 ppm, see Table 2). Slight petroleum odor was noted in

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borings CB-4 between 35 and 40 feet bgs (saturated soils) and field PID readings were recorded at 211 ppm in the 35-foot soil sample (CB-4-35) and attenuated with depth (12.1 ppm, CB-4-45). Field PID readings exceeding 10 ppm were also recorded for the following samples: CB-2-30 (48.7), CB-2-40 (26 ppm), CB-5-30 (24.4 ppm), CB-6-35 (1,412 ppm), CB-5-30 (48.7 ppm); field PID readings for the remaining soil samples were negligible.

- A total of 58 soil samples were collected and submitted for laboratory analysis of the following COCs: TPH-Gx, TPH-Dx, TPH-Ox and BTEX. As shown in Table 2, TPH-Gx was detected in only one soil sample (CB-4-35) at a concentration of 16 mg/kg; remaining soil samples did not contain detectable levels of TPH-Gx (<10 mg/kg). Further, TPH-Dx, TPH-Ox and BTEX were not detected at or above the laboratory detection limits in any of the analyzed soil samples collected during this assessment. The TPH-Gx detection in sample CB-4-35 and the laboratory detection limits for the remaining COCs are below the respective MTCA Method A soil cleanup levels.
- For comparison, TPH-Gx and benzene soil sample results from this assessment and previous assessments are shown on Figure 3. As shown in Figure 3, analytical results for the confirmation samples indicate that current adsorbed-phase petroleum hydrocarbon concentrations are lower than pre-remediation soil levels and are well below MTCA Method A cleanup levels (Table 1 and Table 2). For example, pre-remediation samples MW-1@20' and MW-1@25 (former UST cavity) contained TPH-Gx at 1,500 mg/kg and 570 mg/kg, respectively; whereas TPH-Gx was non-detect (<10 mg/kg) in the corresponding confirmation samples CB-4-20 and CB-4-25. Further, confirmation samples collected from 35 to 45 feet bgs (saturated zone) generally correspond to the depth of the submerged smear zone identified during previous assessments; laboratory analytical results for these samples demonstrate that COC concentrations in soil within this interval are below cleanup levels.
- Analytical results for Borings CB-3 and CB-4 located near and within the former tank cavity, respectively, fill recognized data gaps and confirm that residual contamination at the source area meets soil cleanup criteria. Similarly, analytical results for CB-1 and CB-2 show that soil in the area of the existing pump islands is below cleanup levels and the site does not appear to be impacted by ongoing fueling activities. Borings CB-5, CB-6 and CB-7 confirm that soil cleanup criteria is met downgradient of the source area and near impacted groundwater monitoring wells (Table 1, Table 2 and Figure 3).

CONCLUSIONS AND RECOMMENDATIONS

The field and analytical results for confirmation borings CB-1 through CB-7 have further characterized the nature and extent of soil contamination beneath the site and demonstrate that COC concentrations in soil collected in the vicinity of the former USTs and existing pump islands are below MTCA Method A cleanup levels. Based on these findings, soil beneath the property is in compliance with MTCA cleanup criteria and meets the standard points of compliance.

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The DOE provided an opinion on the completed corrective actions and proposed remedial strategy in response to the application submitted to the Voluntary Cleanup Program (VCP). A copy of the letter dated March 1, 2012 is provided in Appendix H. With regard to DOE comments, analytical results for confirmation soil samples collected in the areas of the former tank cavity, existing pump islands and near impacted wells show that soil cleanup levels have been met in the source area. Based on these findings, it appears that soil contamination detected in prior investigations was remediated by prior cleanup efforts (AS/SVE, hydrogen peroxide injection) and/or has attenuated over time. Consequently, the nature and extent of hydrocarbon impact beneath the site appears to be adequately defined and additional soil assessment does not appear warranted at this time.

A groundwater monitoring and sampling event is planned for the Fourth Quarter 2013. Data obtained will be used to evaluate current groundwater conditions and to select an appropriate cleanup action for residual groundwater impacts. It is recommended that consecutive quarterly groundwater monitoring (Task 2 of the SCP) be conducted to better evaluate well concentrations over seasonal variations and provide the data required for the direct comparison approach for compliance evaluation. As indicated in the DOE Opinion Letter, a minimum of eight consecutive quarters of groundwater monitoring data will be required to demonstrate compliance with MTCA.

Environ Strategy is pleased to be of service to Pacific Convenience and Fuels, LLC. If there are questions regarding this report or if additional site information is required, please do not hesitate to contact Environ Strategy at (714) 919-6500.

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REFERENCES

AGRA Earth and Environmental, Inc. (AGRA), 1995, *Subsurface Petroleum Hydrocarbon Assessment and Remedial Investigation*, dated June 19, 1995.

_____, 1997, *Pilot Study Report*, dated April 30, 1997.

Environmental Science and Engineering, Inc. (ESE), 1993, *Soil Vapor Survey*, dated April 30, 1993.

Environ Strategy Consultants, Inc. (Environ Strategy), 2012, *Second Quarter 2012 Groundwater Monitoring Report, Site 01-056, 500 George Washington Way, Richland, Washington*, dated August 9, 2012.

GeoEngineers, Inc. (GeoEngineers), 1998, *Remedial Pilot Testing – Howard Amon Park*, dated May 7, 1998.

_____, 1998, *Remedial Activities – April 1997 through July 1998*, dated September 3, 1998.

Sound Environmental Strategies Corporation (SES), 2006, *Remedial Action Alternatives Analyses*, dated May 19, 2006.

_____, 2007, *Groundwater Monitoring and Operations and Maintenance Report – Fourth Quarter 2006*, dated January 25, 2007.

Washington State Department of Ecology (DOE) 2005, *Model Toxics Control Act Chapter 70.105D RCW (Amended 2005) and Cleanup Regulation Chapter 173-340 WAC (Amended February 12, 2001)*, Publication No. 94-06, October 2005.

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FIGURES

Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3	Soil Analytical Results

TABLES

Table 1	Historical Soil Sample Analytical Results
Table 2	Confirmation Soil Sample Analytical Results

APPENDICES

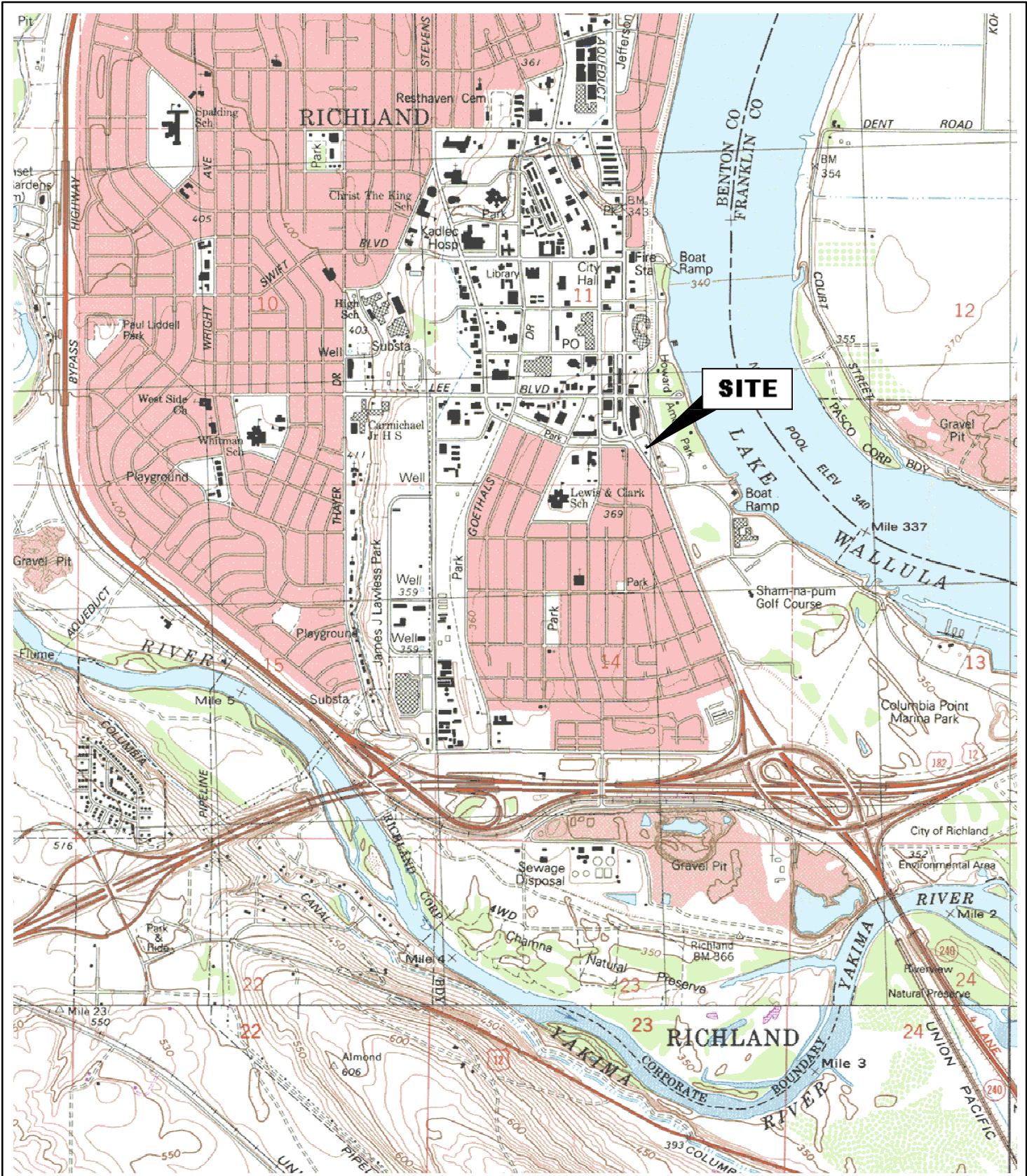
Appendix A	Historical Groundwater Monitoring Data and Figures
Appendix B	Figures Showing Extent of Submerged Smear Zone
Appendix C	Site Background Information
Appendix D	Safety Briefing Form
Appendix E	General Field Procedures and Boring Logs
Appendix F	Laboratory Analytical Report
Appendix G	Non-hazardous Waste Manifest
Appendix H	Agency Correspondence

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ACRONYMS

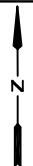
amsl:	above mean sea level
bgs:	below ground surface
BTEX:	benzene, toluene, ethylbenzene and total xylenes
DOE:	Department of Ecology
DOT:	Department of Transportation
EPA:	Environmental Protection Agency
ft:	feet
HASP:	health and safety plan
mg/kg:	milligrams per kilogram
MTBE:	methyl tert-butyl ether
na:	not applicable
ND:	not detected
Pb:	lead
PID:	photo-ionization detector
ppb:	parts per billion
ppm:	parts per million
CB:	confirmation soil boring
TPH-Dx:	total diesel-range petroleum hydrocarbons
TPH-Gx:	total gasoline-range petroleum hydrocarbons
TPH-Ox:	total lube oil-range petroleum hydrocarbons
UST:	underground storage tank
VOA:	volatile organic analysis
VOCs:	volatile organic compounds

FIGURES



Map Information:
 Maptech Terrain Navigator, Std. Ed.
 Mt. Rainier/Moses Lake/Pasco (WA)
 46°16'21"N 119°16'21"W

es
environ strategy consultants, inc.
 1036 W. Taft Avenue, Suite 200
 Orange, California 92865



0 2000

APPROX. SCALE: 1" = 2000'

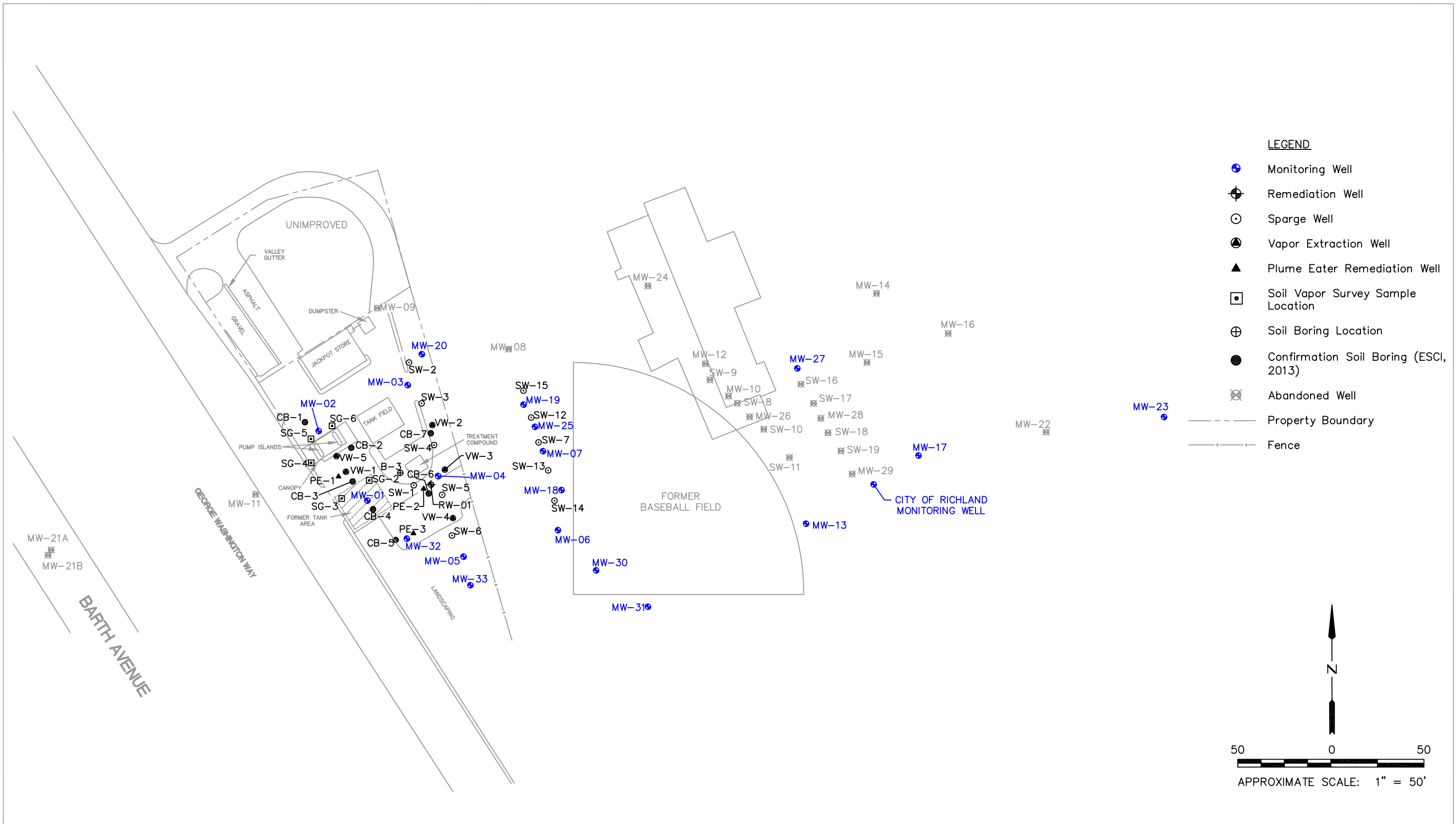
FIGURE 1
SITE LOCATION MAP

Pacific Convenience & Fuels
 Site #01-056
 500 George Washington Way
 Richland, Washington

DATE
 01/15/12

PROJECT NO.
 611

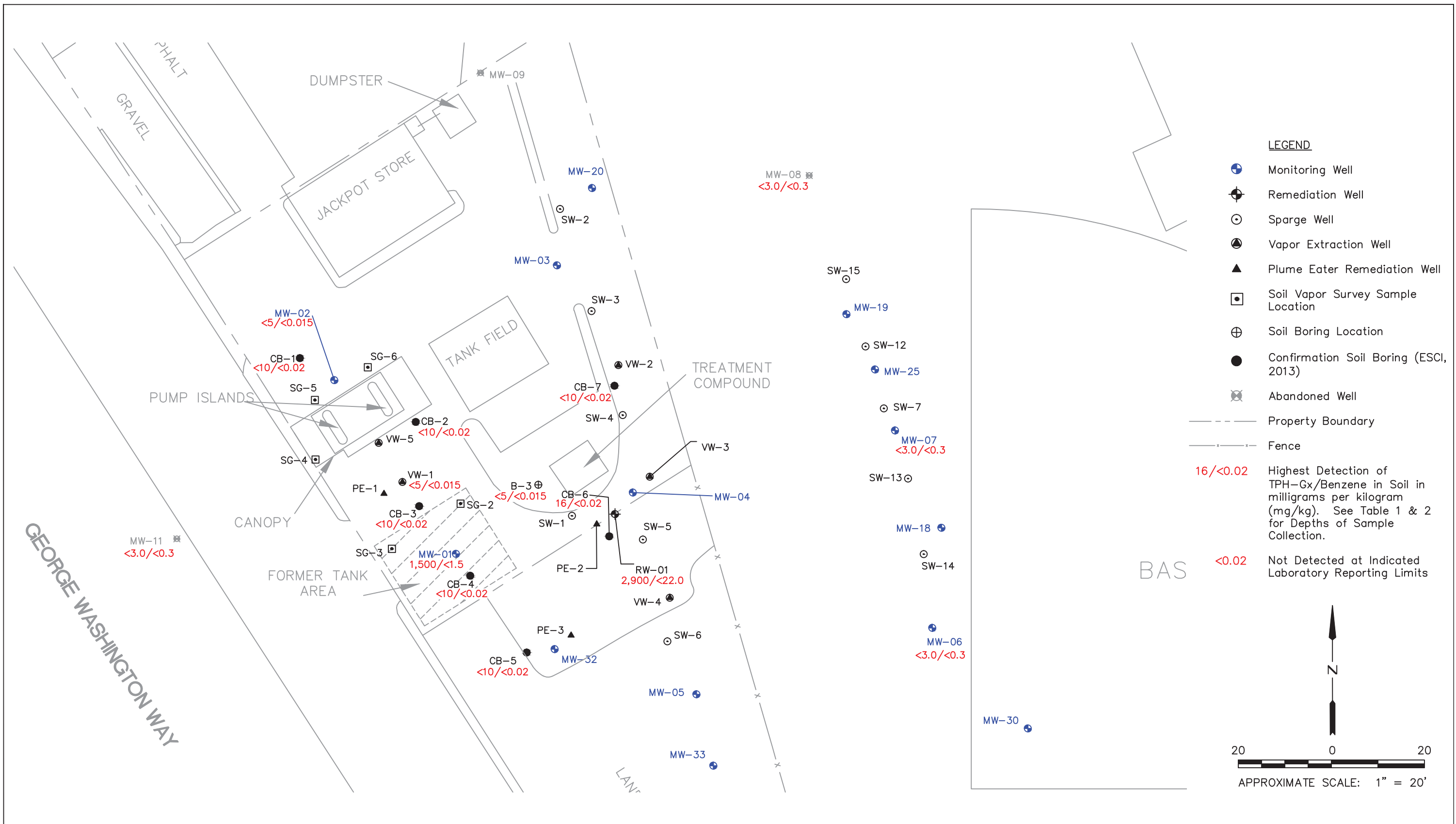
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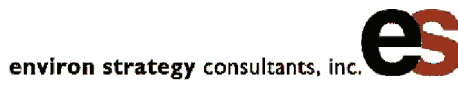



 1036 W. Taft Avenue, Suite 200
 Orange, California 92865

FIGURE 2
SITE PLAN
 Pacific Convenience & Fuels Site #01-056
 500 George Washington Way
 Richland, Washington

DATE 09/27/2013
PROJECT NO. 611
FILE NO. 611F2-SP



 1036 W. Taft Avenue, Suite 200 Orange, California 92865	FIGURE 3 SOIL ANALYTICAL RESULTS	DATE 10/09/2013
	Pacific Convenience & Fuels Site #01-056 500 George Washington Way Richland, Washington	PROJECT NO. 611
		FILE NO. 611F3-SAR

TABLES

TABLE 1
Historical Soil Sample Analytical Results
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Soil Boring ID	Sample Number	Sample Date	Sample Depth (ft bgs)	TPH-Dx	TPH-Gx	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)
				(mg/kg)	(mg/kg)				
				WTPH-D	WTPH-G				
MW-1	MW-1 @ 20'	6/7/93	20	1,000	1,500	ND<0.75	6.7	22	340
	MW-1 @ 25'	6/7/93	25	400	570	ND<1.5	6.4	11	95
VW-1	VW-1 @ 15'	6/7/93	15	ND<50	ND<5	ND<0.015	ND<0.015	ND<0.015	ND<0.045
	VW-1 @ 25'	6/7/93	25	ND<50	ND<5	ND<0.015	ND<0.015	ND<0.015	ND<0.045
MW-2	MW-2 @ 5'	6/8/93	5	ND<50	ND<5	ND<0.015	ND<0.015	ND<0.015	ND<0.045
	MW-2 @ 10'	6/8/93	10	ND<50	ND<5	ND<0.015	ND<0.015	ND<0.015	ND<0.045
	MW-2 @ 27'	6/8/93	27	ND<50	ND<5	ND<0.015	ND<0.015	ND<0.015	ND<0.045
B-3	B-3 @ 18'	6/7/93	18	ND<50	ND<5	ND<0.015	ND<0.015	ND<0.015	ND<0.045
	B-3 @ 30'	6/7/93	30	ND<50	ND<5	ND<0.015	ND<0.015	ND<0.015	ND<0.045
MW-6	MW-6 S-2	3/21/95	9.2-10.7	<17.0	<3.0	<0.3	<0.3	<0.3	<0.3
MW-7	MW-7 S-2	3/20/95	8.0-9.0	<15.0	<3.0	<0.3	<0.3	<0.3	<0.3
	MW-7 S-3C	3/20/95	15.0-16.0	<16.0	<3.0	<0.3	<0.3	<0.3	<0.3
MW-8	MW-8 S-2	3/21/95	9.0-10.4	<16.0	<3.0	<0.3	<0.3	<0.3	<0.3
MW-9	MW-9 S-1	3/22/95	9.0-10.5	<16.0	<3.0	<0.3	<0.3	<0.3	<0.3
	MW-9 S-3	3/22/95	27.0-28.5	<16.0	<3.0	<0.3	<0.3	<0.3	<0.3
MW-10	MW-10 S-1	3/21/95	4.5-6.0	<18.0	<4.0	<0.4	<0.4	<0.4	<0.4
	MW-10 S-2	3/21/95	10.0-12.0	<18.0	<4.0	<0.4	<0.4	<0.4	<0.4
	MW-10 S-3	3/21/95	14.5-16.0	<16.0	<3.0	<0.3	<0.3	<0.3	<0.3
MW-11	MW-11 S-2	3/22/95	19.0-20.0	<15.0	<3.0	<0.3	<0.3	<0.3	<0.3
	MW-11 S-4	3/22/95	27.5-28.5	<16.0	<3.0	<0.3	<0.3	<0.3	<0.3
RW-1	MW-12 S-2	3/23/95	33.0-34.5	220	2,900	<22.0	<22.0	27	110
MTCA Method A Cleanup Levels ⁽¹⁾				200	100	0.5	40	20	20

Notes:

Bold where results exceeded cleanup levels at the time
(1): MTCA Method A Table 740-1 for unrestricted land use, WAC 173-340-900 Tables, Historical Cleanup Level
Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8020
ND: Not detected at indicated detection limit
<: Not detected at indicated detection limit
ft bgs: feet below ground surface
mg/kg: milligrams per kilogram
TPH-Dx: total petroleum hydrocarbons quantified as diesel, Ecology Method WTPH-D
TPH-Gx: total petroleum hydrocarbons quantified as gasoline, Ecology Method WTPH-G

TABLE 2
Confirmation Soil Sample Analytical Results
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Richland, Washington
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Soil Boring ID	Sample Number	Sample Date	Sample Depth (ft bgs)	PID Reading (ppmv)	TPH-Gx	TPH-Dx	B	T	E	X
					(mg/kg) NWTPH-Gx	(mg/kg) NWTPH-Dx	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
CB-1	CB-1-5	07/29/13	5	1.6	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-1-10	07/29/13	10	7.3	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-1-15	07/29/13	15	8.3	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-1-20	07/29/13	20	2.8	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-1-25	07/29/13	25	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-1-30	07/29/13	30	0.8	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-1-35	07/29/13	35	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-1-40	07/29/13	40	0	<10	<50	<0.02	<0.05	<0.05	<0.15
CB-2	CB-2-5	07/30/13	5	0.6	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-2-10	07/30/13	10	0.4	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-2-15	07/30/13	15	0.7	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-2-20	07/30/13	20	0.9	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-2-25	07/30/13	25	3.4	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-2-30	07/30/13	30	48.7	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-2-35	07/30/13	35	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-2-40	07/30/13	40	26	<10	<50	<0.02	<0.05	<0.05	<0.15
CB-3	CB-3-5	07/30/13	5	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-3-10	07/30/13	10	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-3-15	07/30/13	15	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-3-20	07/30/13	20	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-3-25	07/30/13	25	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-3-30	07/30/13	30	6.4	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-3-35	07/30/13	35	3.2	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-3-40	07/30/13	40	2.0	<10	<50	<0.02	<0.05	<0.05	<0.15
CB-4	CB-4-5	07/31/13	5	1.1	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-4-10	07/31/13	10	1.7	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-4-15	07/31/13	15	2.2	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-4-20	07/31/13	20	0.0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-4-25	07/31/13	25	0.0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-4-30	07/31/13	30	3.1	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-4-35	07/31/13	35	211	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-4-40	07/31/13	40	44.4	<10	<50	<0.02	<0.05	<0.05	<0.15
CB-5	CB-5-5	07/29/13	5	4.2	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-5-10	07/29/13	10	2.5	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-5-15	07/29/13	15	3.3	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-5-20	07/29/13	20	2.1	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-5-25	07/30/13	25	5.8	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-5-30	07/30/13	30	25.5	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-5-35	07/30/13	35	1.8	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-5-40	07/30/13	40	0	<10	<50	<0.02	<0.05	<0.05	<0.15

TABLE 2
Confirmation Soil Sample Analytical Results
Site 01-056
Richland, Washington
Page 2 of 2

Soil Boring ID	Sample Number	Sample Date	Sample Depth (ft bgs)	PID Reading (ppmv)	TPH-Gx	TPH-Dx	B	T	E	X
					(mg/kg) NWTPH-Gx	(mg/kg) NWTPH-Dx	(mg/kg)	(mg/kg) EPA Method 5035/8260		
CB-6	CB-6-5	07/31/13	5	0.9	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-6-10	07/31/13	10	0.8	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-6-15	07/31/13	15	2.0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-6-20	07/31/13	20	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-6-25	07/31/13	25	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-6-30	07/31/13	30	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-6-35	07/31/13	35	1,412	16	<50	<0.02	<0.05	<0.05	<0.15
	CB-6-40	07/31/13	40	4.4	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-6-45	07/31/13	45	3.0	<10	<50	<0.02	<0.05	<0.05	<0.15
CB-7	CB-7-5	07/31/13	5	0.5	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-7-10	07/31/13	10	0.6	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-7-15	07/31/13	15	8.3	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-7-20	07/31/13	20	0	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-7-25	07/31/13	25	2.5	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-7-30	08/01/13	30	4.2	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-7-35	08/01/13	35	6	<10	<50	<0.02	<0.05	<0.05	<0.15
	CB-7-40	08/01/13	40	0	<10	<50	<0.02	<0.05	<0.05	<0.15
MTCA Method A Cleanup Levels ⁽¹⁾					100/30 ⁽²⁾	2,000	0.03	7	6	9
<p><i>Notes:</i> Bold where results exceed cleanup levels (1): MTCA Method A Table 740-1 for unrestricted land use, WAC 173-340-900 Tables (2): 100 mg/kg when benzene is absent and 30 mg/kg when benzene is present <: not detected above laboratory reporting limit BTEX: benzene, toluene, ethylbenzene, total xylenes ft bgs: feet below ground surface</p> <p style="text-align: right;">mg/kg: milligrams per kilogram MTCA: Model Toxics Control Act PID: photoionization detector ppmv: parts per million by volume TPH-Dx: total diesel-range petroleum hydrocarbons TPH-Gx: total gasoline-range petroleum hydrocarbons</p>										

APPENDIX A
HISTORICAL GROUNDWATER MONITORING DATA
AND FIGURES

Table 1
Summary of Groundwater Monitoring Data - Second Quarter 2012
Pacific Convenience and Fuels Site 01-056
Richland, Washington
Page 1 of 1

WELL ID	WELL STATUS	SAMPLE DATE	ANALYTICAL PARAMETERS										WATER QUALITY PARAMETERS						MONITORING PARAMETERS				WELL ELEVATION			WELL			
			TPH-Gx (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	EDB (µg/L)	EDC (µg/L)	Lead (µg/L) *	Other VOCs	Dissolved Oxygen (mg/L)	ORP (mV)	Conductivity (µs/cm)	pH	Temp (°C)	Turbidity (NTU)	Ferrous Iron (mg/L)	DTP (ft btoc)	DTW (ft btoc)	DTB (ft btoc)	PT (feet)	CASING (ft amsl)	GW (ft amsl)	DTW Δ (ft amsl)	DIA (inches)	SCREEN (ft bgs)	
MW-01	Active	06/07/12	108	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	(3)	0.71	-67.4	1,130	7.09	16.85	14	1.4	na	30.94	45.30	na	372.77	341.83	1.23	4	12-47
MW-02	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	31.79	44.60	na	373.81	342.02	1.23	4	5-45
MW-03	Active	06/07/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	(4)	3.74	37.9	1,385	7.21	17.71	58	0.0	na	30.48	33.56	na	372.68	342.20	1.37	2	19-44
MW-04	Active	06/07/12	256	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	(5)	0.35	-97.1	1,056	7.20	16.89	7	2.2	na	30.81	39.60	na	372.92	342.11	1.37	2	19.5-44.5
MW-05	Active	06/06/12	834	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	(6)	0.81	-96.5	1,003	7.29	19.45	10	1.9	na	30.90	42.30	na	373.03	342.13	1.40	2	19.5-44.5
MW-06	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	14.11	19.08	na	354.52	340.41	1.25	2	4-19
MW-07	Active	06/06/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	na	4.09	91.8	572	6.92	15.88	4	0.0	na	14.96	18.93	na	355.83	340.87	1.02	2	4-20
MW-13	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	12.42	21.15	na	353.67	341.25	1.34	2	4-19
MW-17	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	12.82	18.90	na	354.28	341.46	1.47	2	2-22
MW-18	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	14.10	25.54	na	354.51	340.41	--	4	4-24
MW-19	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	14.97	17.50	na	356.17	341.20	--	4	4-19
MW-20	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	32.12	38.63	na	374.30	342.18	--	2	19-39
MW-23	Active	06/06/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	na	1.86	118.7	766	6.90	14.01	4	0.0	na	10.05	23.75	na	352.01	341.96	1.67	2	4-24
MW-25	Active	06/06/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	(7)	0.81	89.8	948	7.07	16.42	6	0.0	na	14.68	25.03	na	355.96	341.28	1.25	2	5-25
MW-27	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	12.42	21.48	na	354.62	342.20	1.44	2	7-22
MW-30	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	13.41	24.08	na	355.43	342.02	--	2	10-25
MW-31	Active	06/06/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	(8)	0.34	45.1	871	7.20	15.55	11	0.0	na	13.02	24.11	na	355.03	342.01	1.27	2	10-25
MW-32	Active	06/06/12	981	0.89 J	<0.5	0.84 J	<0.5	<0.5	<0.5	<0.5	<0.5	--	(9)	0.39	-131.7	1,110	7.16	18.73	4	2.8	na	31.95	44.58	na	374.06	342.11	1.20	2	25-45
MW-33	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	31.72	44.60	na	373.95	342.23	--	2	25-45
MTCA Method A Cleanup Goals ⁽¹⁾			1,000/800 ⁽²⁾	5	1,000	700	1,000	20	0.01	5	15	†	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

Notes:

Results in **BOLD** indicate detections that exceed MTCA Method A cleanup levels for groundwater

* Select samples were further analyzed for dissolved lead by EPA Method 7420

(1): MTCA Method A Table 720-1 for groundwater, WAC 173-340-900 Tables

(2): 1,000 µg/L when benzene is absent and 800 µg/L when present

(3): MW-01: sec-Butylbenzene (2.89 µg/L)

(4): MW-03: Chloroform (1.31 µg/L); PCE (4.3 µg/L)

(5): MW-04: Cis-1,2-Dichloroethene (2.2 µg/L); TCE (1.48 µg/L); sec-Butylbenzene (5.1 µg/L)

(6): MW-05: Vinyl Chloride (1.17 µg/L); Cis-1,2-dichloroethene (2.06 µg/L); Isopropyl benzene (1.75 µg/L);

n-Propyl benzene (1.32 µg/L); tert-Butylbenzene (0.68 J µg/L); sec-Butylbenzene (9.64 µg/L); n-Butylbenzene (1.47 µg/L)

(7): MW-25: PCE (4.01 µg/L)

(8): MW-31: TCE (1.13 µg/L); PCE (1.04 µg/L)

(9): MW-32: Cis-1,2-Dichloroethene (3.54 µg/L); TCE (0.66 J µg/L); Isopropyl benzene (7.89 µg/L);

n-Propyl benzene (33.2 µg/L); tert-Butylbenzene (0.77 J µg/L); p-Isopropyl toluene (0.95 J µg/L);

1,2,4-Trimethyl benzene (5.54 µg/L); sec-Butylbenzene (14.7); n-Butylbenzene (5.28);

--: not analyzed / not measured / unknown

<: less than the laboratory reporting limit

°C: degree celsius

µg/L: micrograms per Liter

µs/cm: microsiemens per centimeter

Active: groundwater well currently used for monitoring

amsl: above mean sea level

bgs: below ground surface

BTEX: benzene, toluene, ethylbenzene, and total xylenes

btoc: below top of casing

DIA: casing diameter

DTB: depth to bottom

DTP: depth to product

DTW: depth to water

EDB: 1,2-dibromoethane

EDC: 1,2-dichloroethane

ft: feet

GW: groundwater

J: value detected between method detection limit and reporting limit. See attached laboratory report for reporting limits.

mg/L: milligrams per Liter

MTBE: methyl tert-butyl ether

MTCA: Model Toxics Control Act

mV: millivolts

na: not applicable

NTU: Nephelometric turbidity unit

ORP: oxygen reduction potential

PT: product thickness

PCE: tetrachloroethylene

TCE: trichloroethylene

TPH-Gx: total gasoline-range petroleum hydrocarbons, analyzed by Northwest Method NWTPH-Gx

†: Cleanup level designated for TCE and PCE is 5 µg/L; MTCA Table 720-1, "Method A Ground Water Cleanup Levels" does not designate cleanup levels for the additional VOCs detected.

Table 2
Summary of Historical Groundwater Monitoring Data
Pacific Convenience and Fuels Site 01-056
Richland, Washington
Page 1 of 15

WELL ID	WELL STATUS	SAMPLE DATE	WELL ELEVATION				ANALYTICAL PARAMETERS									
			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)
MW-01	Active	08/01/05	372.77	31.51	341.26	--	1,020	3.33	<0.500	7.66	4.19	<5.00	<0.500	<0.500	21.5	--
	Active	10/03/05	372.77	--	--	--	--	--	--	--	--	--	--	--	1.15	1.11
	Active	06/14/06	372.77	30.82	341.95	--	167	<0.500	<0.500	<0.500	<1.00	--	--	--	1.54	<1.00
	Active	08/16/06	372.77	30.84	341.93	-0.02	557	2.66	<0.500	0.797	2.00	--	--	--	5.36	<1.00
	Active	11/13/06	372.77	31.19	341.58	-0.35	240	<1	3	<1	<3	--	--	--	<1	<1
	Active	02/24/07	372.77	32.11	340.66	-0.92	1,000	3	28	4	8	--	--	--	4.30	<1
	Active	06/14/07	372.77	30.52	342.25	1.59	550	4	19	2	4	--	--	--	3.53	<1
	Active	09/11/07	372.77	30.32	342.45	0.2	860	<1	23	3	4	--	--	--	--	--
	Active	12/18/07	372.77	32.21	340.56	-1.89	760	<1	27	4	6	--	--	--	--	--
	Active	03/26/08	372.77	32.52	340.25	-0.31	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	06/16/08	372.77	30.80	341.97	1.72	510	<1	18	2	4	--	--	--	<1	--
	Active	07/12/10	372.77	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	372.77	32.17	340.60	-1.37	<50	6.09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Active	06/07/12	372.77	30.94	341.83	1.23	108	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
MW-02	Active	08/02/05	373.81	32.32	341.49	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	3.17	--
	Active	11/09/05	373.81	32.56	341.25	-0.24	<50.0	<1.00	<1.00	<1.00	<3.00	<5.00	<1.00	<1.00	3.90	--
	Active	02/16/06	373.81	32.94	340.87	-0.38	<50.0	<0.500	<0.500	<0.500	<3.00	--	--	--	<1.00	<1.00
	Active	04/14/06	373.81	31.67	342.14	1.27	161	0.518	<0.500	<0.500	<1.00	--	--	--	<1.00	--
	Active	08/16/06	373.81	31.38	342.43	0.29	63.4	<0.500	<0.500	<0.500	<1.00	--	--	--	2.58	--
	Active	11/01/06	373.81	32.01	341.80	-0.63	<100	<1	<1	<1	<3	--	--	--	1.58	--
	Active	02/24/07	373.81	32.95	340.86	-0.94	<100	<1	<1	<1	<3	--	--	--	3.18	--
	Active	06/14/07	373.81	31.41	342.40	1.54	<100	<1	<1	<1	<3	--	--	--	1.66	--
	Active	09/11/07	373.81	31.27	342.54	0.14	950	<1	30	12	9	--	--	--	--	--
	Active	12/18/07	373.81	33.04	340.77	-1.77	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	03/26/08	373.81	33.35	340.46	-0.31	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	06/16/08	373.81	31.65	342.16	1.70	--	--	--	--	--	--	--	--	--	--
	Active	07/13/10	373.81	32.14	341.67	-0.49	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	12.5
Active	11/10/11	373.81	33.02	340.79	-0.88	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<10	
Active	06/06/12	373.81	31.79	342.02	1.23	--	--	--	--	--	--	--	--	--	--	
MW-03	Active	08/03/05	372.68	31.41	341.27	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	15.3	--
	Active	10/03/05	372.68	--	--	--	--	--	--	--	--	--	--	--	5.96	<1.00
	Active	08/16/06	372.68	30.58	342.10	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	19.6	<1.00
	Active	02/22/07	372.68	31.81	340.87	-1.23	--	--	--	--	--	--	--	--	--	--
	Active	06/11/07	372.68	30.30	342.38	1.51	--	--	--	--	--	--	--	--	--	--

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WELL ID	WELL STATUS	SAMPLE DATE	WELL ELEVATION				ANALYTICAL PARAMETERS									
			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)
MW-03 con't	Active	09/11/07	372.68	30.24	342.44	0.06	<100	<1	<1	<1	<3	--	--	--	4.05	--
	Active	12/18/07	372.68	31.93	340.75	-1.69	--	--	--	--	--	--	--	--	--	--
	Active	03/27/08	372.68	32.22	340.46	-0.29	--	--	--	--	--	--	--	--	--	--
	Active	06/16/08	372.68	30.46	342.22	1.76	--	--	--	--	--	--	--	--	--	--
	Active	07/12/10	372.68	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/10/11	372.68	31.85	340.83	-1.39	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<10
	Active	06/07/12	372.68	30.48	342.20	1.37	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	--
MW-04	Active	08/02/05	372.92	31.52	341.40	--	1,040	8.11	<0.500	4.3	1.93	<5.00	<0.500	<0.500	<1.00	--
	Active	06/14/06	372.92	30.83	342.09	0.69	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	--
	Active	08/17/06	372.92	30.86	342.06	-0.03	512	11.4	1.61	2.15	2.63	--	--	--	1.95	--
	Active	11/01/06	372.92	31.20	341.72	-0.34	1,500	<1	15	6	8	--	--	--	<1	--
	Active	02/25/07	372.92	32.12	340.80	-0.92	1,200	3	34	5	8	--	--	--	2.14	--
	Active	06/14/07	372.92	30.56	342.36	1.56	490	5	14	1	4	--	--	--	1.60	--
	Active	09/10/07	372.92	30.41	342.51	0.15	290	<1	7	<1	<3	--	--	--	--	--
	Active	12/18/07	372.92	32.22	340.70	-1.81	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	03/27/08	372.92	32.52	340.40	-0.30	330	<1	8	<1	<3	--	--	--	--	--
	Active	06/16/08	372.92	30.81	342.11	1.71	360	1	15	2	<3	--	--	--	--	--
	Active	07/12/10	372.92	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	372.92	32.18	340.74	-1.37	619	28	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
	Active	06/07/12	372.92	30.81	342.11	1.37	256	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
MW-05	Active	08/02/05	373.03	31.60	341.43	--	196	1.89	<0.500	<0.500	1.03	<5.00	<0.500	<0.500	66.3	--
	Active	10/03/05	373.03	--	--	--	--	--	--	--	--	--	--	--	--	<1.00
	Active	11/09/05	373.03	31.81	341.22	--	942	<1.00	<1.00	3.59	<3.00	<5.00	<1.00	<1.00	1.31	<1.00
	Active	02/16/06	373.03	32.21	340.82	-0.40	79.6	<0.500	<0.500	<0.500	<3.00	--	--	--	3.15	<1.00
	Active	06/14/06	373.03	30.89	342.14	1.32	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	<1.00
	Active	08/17/06	373.03	30.93	342.10	-0.04	69.5	<0.500	<0.500	<0.500	<1.00	--	--	--	1.99	<1.00
	Active	11/01/06	373.03	31.27	341.76	-0.34	820	<1	6	8	<3	--	--	--	1.45	<1
	Active	02/25/07	373.03	32.21	340.82	-0.94	310	1	10	1	<3	--	--	--	3.3	<1
	Active	06/14/07	373.03	30.58	342.45	1.63	140	<1	4	<1	<3	--	--	--	1.38	<1
	Active	09/10/07	373.03	30.38	342.65	0.20	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	12/18/07	373.03	32.31	340.72	-1.93	260	<1	<1	1	<3	--	--	--	--	--
	Active	03/27/08	373.03	32.63	340.40	-0.32	660	<1	8	6	<3	--	--	--	--	--
	Active	06/16/08	373.03	30.90	342.13	1.73	630	2	17	12	<3	--	--	--	--	--
	Active	07/13/10	373.03	31.42	341.61	-0.52	67.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	22

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WELL ID	WELL STATUS	SAMPLE DATE	WELL ELEVATION				ANALYTICAL PARAMETERS										
			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)	
MW-05 con't	Active	11/10/11	373.03	32.30	340.73	-0.88	692	<0.5	0.51 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<10
	Active	06/06/12	373.03	30.90	342.13	1.40	834	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
MW-06	Active	08/04/05	354.52	14.65	339.87	--	516	1.08	<0.500	2.99	<1.00	<5.00	<0.500	<1.00	--	--	
	Active	11/10/05	354.52	14.94	339.58	-0.29	358	<1.00	<1.00	4.79	<3.00	<5.00	<1.00	<1.00	--	--	
	Active	02/15/06	354.52	15.31	339.21	-0.37	451	<0.500	<0.500	2.17	<3.00	--	--	<1.00	--	--	
	Active	06/15/06	354.52	13.97	340.55	1.34	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	<1.00	--	--	
	Active	08/17/06	354.52	14.03	340.49	-0.06	<80.0	1.02	<0.500	<0.500	<1.00	--	--	<1.00	--	--	
	Active	10/31/06	354.52	14.37	340.15	-0.34	130	<1	2	<1	<3	--	--	<1	--	--	
	Active	02/25/07	354.52	15.31	339.21	-0.94	780	1	16	4	5	--	--	1.51	--	--	
	Active	06/15/07	354.52	13.70	340.82	1.61	<100	<1	<1	<1	<3	--	--	--	--	--	
	Active	09/11/07	354.52	13.52	341.00	0.18	<100	<1	<1	<1	<3	--	--	--	--	--	
	Active	12/18/07	354.52	15.42	339.10	-1.90	320	<1	<1	2	<3	--	--	--	--	--	
	Active	03/27/08	354.52	15.72	338.80	-0.30	520	<1	10	3	<3	--	--	--	--	--	
	Active	06/16/08	354.52	13.97	340.55	1.75	<100	<1	<1	<1	<3	--	--	--	--	--	
	Active	07/13/10	354.52	14.53	339.99	-0.56	377	<0.5	<0.5	0.52 J	<0.5	<0.5	<0.5	<0.5	--	--	
	Active	11/10/11	354.52	15.36	339.16	-0.83	197	<0.5	2.44	<0.5	0.57 J	<0.5	<0.5	<0.5	--	<10	
	Active	06/06/12	354.52	14.11	340.41	1.25	--	--	--	--	--	--	--	--	--	--	
MW-07	Active	08/04/05	355.83	15.39	340.44	--	249	0.653	<0.500	0.642	<1.00	<5.00	<0.500	<0.500	10.8	--	
	Active	11/10/05	355.83	15.61	340.22	-0.22	1,450	<1.00	<1.00	7.90	<3.00	<5.00	<1.00	<1.00	1.91	--	
	Active	02/17/06	355.83	15.95	339.88	-0.34	776	<0.500	<0.500	0.980	<3.00	--	--	--	<1.00	<1.00	
	Active	06/15/06	355.83	14.67	341.16	1.28	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	--	
	Active	08/18/06	355.83	14.71	341.12	-0.04	884	12.6	2.19	23.3	4.91	--	--	--	16.3	--	
	Active	10/31/06	355.83	15.05	340.78	-0.34	430	<1	2	2	<3	--	--	--	1.52	<1	
	Active	02/25/07	355.83	15.96	339.87	-0.91	530	<1	12	2	<3	--	--	--	<1	--	
	Active	06/15/07	355.83	14.42	341.41	1.54	<100	<1	<1	<1	<3	--	--	--	<1	--	
	Active	09/11/07	355.83	14.37	341.46	0.05	7,300	4	38	84	34	--	--	--	3.46	--	
	Active	12/18/07	355.83	16.06	339.77	-1.69	1,400	<1	40	9	8	--	--	--	--	--	
	Active	03/27/07	355.83	16.37	339.46	-0.31	590	<1	10	3	<3	--	--	--	--	--	
	Active	06/16/08	355.83	14.63	341.20	1.74	170	<1	3	1	<3	--	--	--	--	--	
	Active	07/13/10	355.83	15.18	340.65	-0.55	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	14.2	
	Active	11/10/11	355.83	15.98	339.85	-0.80	162	<0.5	0.66 J	0.61 J	<0.5	<0.5	<0.5	<0.5	--	<10	
Active	06/06/12	355.83	14.96	340.87	1.02	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	--		
MW-13	Active	08/04/05	353.67	13.15	340.52	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	<1.00	--	
	Active	11/09/05	353.67	13.35	340.32	-0.20	<50.0	<1.00	<1.00	<1.00	<3.00	<5.00	<1.00	<1.00	<1.00	--	

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			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)
MW-13 con't	Active	02/17/06	353.67	13.71	339.96	-0.36	<50.0	<0.500	<0.500	<0.500	<3.00	--	--	--	<1.00	--
	Active	08/17/06	353.67	12.46	341.21	1.25	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	--
	Active	02/22/07	353.67	13.69	339.98	-1.23	--	--	--	--	--	--	--	--	--	--
	Active	06/11/07	353.67	12.14	341.53	1.55	--	--	--	--	--	--	--	--	--	--
	Active	09/11/07	353.67	12.23	341.44	-0.09	<100	<1	<1	<1	--	--	--	--	--	--
	Active	12/18/07	353.67	13.89	339.78	-1.66	--	--	--	--	--	--	--	--	--	--
	Active	03/27/08	353.67	14.08	339.59	-0.19	--	--	--	--	--	--	--	--	--	--
	Active	06/16/08	353.67	12.27	341.40	1.81	--	--	--	--	--	--	--	--	--	--
	Active	07/12/10	353.67	12.91	340.76	-0.64	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
	Active	11/09/11	353.67	13.76	339.91	-0.85	<50	<0.5	0.73 J	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Active	06/06/12	353.67	12.42	341.25	1.34	--	--	--	--	--	--	--	--	--	--	
MW-17	Active	08/05/05	354.28	13.84	340.44	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	<1.00	--
	Active	11/09/05	354.28	13.93	340.35	-0.09	<50.0	<1.00	<1.00	<1.00	<3.00	<5.00	<1.00	<1.00	<1.00	--
	Active	02/17/06	354.28	14.20	340.08	-0.27	<50.0	<0.500	<0.500	<0.500	<3.00	--	--	--	<1.00	--
	Active	08/17/06	354.28	13.03	341.25	1.17	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	--
	Active	02/22/07	354.28	14.13	340.15	-1.10	--	--	--	--	--	--	--	--	--	--
	Active	06/11/07	354.28	12.67	341.61	1.46	--	--	--	--	--	--	--	--	--	--
	Active	09/11/07	354.28	13.15	341.13	-0.48	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	12/18/07	354.28	14.42	339.86	-1.27	--	--	--	--	--	--	--	--	--	--
	Active	03/27/08	354.28	14.48	339.80	-0.06	--	--	--	--	--	--	--	--	--	--
	Active	07/12/10	354.28	13.32	340.96	1.16	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Active	11/09/11	354.28	14.29	339.99	-0.97	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
Active	6//6/12	354.28	12.82	341.46	1.47	--	--	--	--	--	--	--	--	--	--	
MW-18	Active	08/04/05	354.51	14.71	339.80	--	756	2.57	0.747	19.1	2.89	<5.00	<0.500	<0.500	2.17	--
	Active	06/15/06	354.51	13.99	340.52	0.72	794	<0.500	<0.500	1.76	1.63	--	--	--	1.77	--
	Active	08/18/06	354.51	14.03	340.48	-0.04	410	6.36	0.865	14.2	3.82	--	--	--	7.28	--
	Active	10/31/06	354.51	14.39	340.12	-0.36	--	<1	15	20	10	--	--	--	2.54	--
	Active	02/25/07	354.51	15.29	339.22	-0.90	<100	<1	<1	<1	<3	--	--	--	<1	--
	Active	06/15/07	354.51	13.74	340.77	1.55	460	3	5	3	9	--	--	--	4.91	--
	Active	09/10/07	354.51	13.63	340.88	0.11	450	<1	6	11	13	--	--	--	--	--
	Active	12/18/07	354.51	15.41	339.10	-1.78	130	<1	<1	<1	<3	--	--	--	--	--
	Active	03/27/08	354.51	15.70	338.81	-0.29	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	06/16/08	354.51	13.97	340.54	1.73	<100	<1	<1	<1	<3	--	--	--	--	--
Active	07/13/10	354.51	--	--	--	--	--	--	--	--	--	--	--	--	--	

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			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)
MW-18	Active	11/09/11	354.51	--	--	--	--	--	--	--	--	--	--	--	--	--
	con't	Active	06/06/12	354.51	14.10	340.41	--	--	--	--	--	--	--	--	--	--
MW-19	Active	08/04/05	356.17	15.66	340.51	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	<1.00	--
	Active	08/18/06	356.17	14.94	341.23	0.72	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	10.8	--
	Active	02/22/07	356.17	16.18	339.99	-1.24	--	--	--	--	--	--	--	--	--	--
	Active	06/11/07	356.17	14.67	341.50	1.51	--	--	--	--	--	--	--	--	--	--
	Active	09/10/07	356.17	Inaccessible	--	--	--	--	--	--	--	--	--	--	--	--
	Active	12/18/07	356.17	16.30	339.87	--	--	--	--	--	--	--	--	--	--	--
	Active	03/27/08	356.17	16.60	339.57	-0.30	--	--	--	--	--	--	--	--	--	--
	Active	06/16/08	356.17	14.85	341.32	1.75	--	--	--	--	--	--	--	--	--	--
	Active	07/13/10	356.17	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	356.17	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/06/12	356.17	14.97	341.20	--	--	--	--	--	--	--	--	--	--	--
	MW-20	Active	08/02/05	374.30	32.78	341.52	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	9.65
Active		08/17/06	374.30	32.13	342.17	0.65	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	10.4	--
Active		02/22/07	374.30	33.34	340.96	-1.21	--	--	--	--	--	--	--	--	--	--
Active		06/11/07	374.30	31.87	342.43	1.47	--	--	--	--	--	--	--	--	--	--
Active		09/11/07	374.30	31.89	342.41	-0.02	<100	<1	<1	<1	--	--	--	--	3.84	--
Active		12/18/07	374.30	33.48	340.82	-1.59	--	--	--	--	--	--	--	--	--	--
Active		03/27/08	374.30	33.74	340.56	-0.26	--	--	--	--	--	--	--	--	--	--
Active		06/16/08	374.30	32.02	342.28	1.72	--	--	--	--	--	--	--	--	--	--
Active		07/13/10	374.30	--	--	--	--	--	--	--	--	--	--	--	--	--
Active		11/09/11	374.30	--	--	--	--	--	--	--	--	--	--	--	--	--
Active		06/06/12	374.30	32.12	342.18	--	--	--	--	--	--	--	--	--	--	--
MW-23	Active	08/05/05	352.01	11.37	340.64	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	<1.00	--
	Active	11/10/05	352.01	11.52	340.49	-0.15	<50.0	<1.00	<1.00	<1.00	<3.00	<5.00	<1.00	<1.00	<1.00	--
	Active	02/17/06	352.01	11.66	340.35	-0.14	<50.0	<0.500	<0.500	<0.500	<3.00	--	--	--	<1.00	--
	Active	08/17/06	352.01	10.48	341.53	1.18	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	--
	Active	02/22/07	352.01	11.49	340.52	-1.01	--	--	--	--	--	--	--	--	--	--
	Active	06/11/07	352.01	10.13	341.88	1.36	--	--	--	--	--	--	--	--	--	--
	Active	09/11/07	352.01	11.11	340.90	-0.98	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	12/18/07	352.01	12.11	339.90	-1.00	--	--	--	--	--	--	--	--	--	--
	Active	03/27/08	352.01	11.82	340.19	0.29	--	--	--	--	--	--	--	--	--	--
	Active	06/16/08	352.01	9.60	342.41	2.22	--	--	--	--	--	--	--	--	--	--

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WELL ID	WELL STATUS	SAMPLE DATE	WELL ELEVATION				ANALYTICAL PARAMETERS											
			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)		
MW-23 con't	Active	07/12/10	352.01	10.71	341.30	-1.11	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	Active	11/09/11	352.01	11.72	340.29	-1.01	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
	Active	06/06/12	352.01	10.05	341.96	1.67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
MW-25	Active	08/04/05	355.96	15.39	340.57	--	869	3.01	<0.500	1.78	2.42	<5.00	<0.500	<0.500	1.51	--	--	
	Active	11/10/05	355.96	15.58	340.38	-0.19	474	<1.00	<1.00	<1.00	<3.00	<5.00	<1.00	<1.00	<1.00	--	--	
	Active	06/15/06	355.96	15.91	340.05	-0.33	246	<0.500	<0.500	1.15	<3.00	--	--	--	<1.00	--	--	
	Active	02/17/06	355.96	14.64	341.32	1.27	212	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	--	--	
	Active	06/15/06	355.96	14.68	341.28	-0.04	126	1.35	<0.500	<0.500	<1.00	--	--	--	7.15	--	--	
	Active	08/18/06	355.96	15.03	340.93	-0.35	200	<1	3	<1	<3	--	--	--	<1	--	--	
	Active	10/31/06	355.96	15.63	340.63	-0.30	120	<1	4	<1	<3	--	--	--	1.07	--	--	
	Active	02/25/07	355.96	15.93	340.53	-0.10	100	<1	3	<1	<3	--	--	--	1.15	--	--	
	Active	06/15/07	355.96	Inaccessible	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	09/11/07	355.96	14.36	341.60	--	800	1	25	11	7	--	--	--	--	--	--	--
	Active	12/18/07	355.96	16.05	339.91	-1.69	<100	<1	<1	<1	<3	--	--	--	--	--	--	--
	Active	03/27/08	355.96	16.37	339.59	-0.32	<100	<1	2	<1	<3	--	--	--	--	--	--	--
	Active	06/16/08	355.96	14.59	341.37	1.78	<100	<1	<1	<1	<3	--	--	--	--	--	--	--
	Active	07/13/10	355.96	15.18	340.78	-0.59	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	Active	11/09/11	355.96	15.93	340.03	-0.75	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
Active	06/06/12	355.96	14.68	341.28	1.25	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	
MW-27	Active	08/04/05	354.62	13.40	341.22	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	<1.00	--	--	
	Active	11/10/05	354.62	13.47	341.15	-0.07	<50.0	<1.00	<1.00	<1.00	<3.00	<5.00	<1.00	<1.00	<1.00	--	--	
	Active	02/17/06	354.62	13.77	340.85	-0.30	<50.0	<0.500	<0.500	<0.500	<3.00	--	--	--	<1.00	--	--	
	Active	06/11/06	354.62	12.58	342.04	1.19	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--	--	--	
	Active	02/22/07	354.62	13.77	340.85	-1.19	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/11/07	354.62	12.30	342.32	1.47	--	--	--	--	--	--	--	--	--	--	--	--
	Active	09/11/07	354.62	12.50	342.12	-0.20	210	<1	7	<1	<3	--	--	--	--	--	--	
	Active	12/18/07	354.62	13.95	340.67	-1.45	--	--	--	--	--	--	--	--	--	--	--	--
	Active	03/27/07	354.62	14.14	340.68	0.01	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/16/08	354.62	12.36	342.76	2.08	--	--	--	--	--	--	--	--	--	--	--	--
	Active	07/12/10	354.62	12.98	341.64	-1.12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	Active	11/10/11	354.62	13.86	340.76	-0.88	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	<10
	Active	06/06/12	354.62	12.42	342.20	1.44	--	--	--	--	--	--	--	--	--	--	--	--
MW-30	Active	08/04/05	355.43	14.00	341.43	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	<1.00	--	--	
	Active	11/10/05	355.43	14.24	341.19	-0.24	184	<1.00	<1.00	<1.00	<3.00	<5.00	<1.00	<1.00	<1.00	--	--	

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WELL ID	WELL STATUS	SAMPLE DATE	WELL ELEVATION				ANALYTICAL PARAMETERS									
			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)
MW-30 con't	Active	02/17/06	355.43	14.62	340.81	-0.38	124	<0.500	<0.500	<0.500	<3.00	--	--	--	<1.00	--
	Active	06/15/06	355.43	13.23	342.20	1.39	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	--
	Active	08/17/06	355.43	13.31	342.12	-0.08	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	--
	Active	10/31/06	355.43	13.69	341.74	-0.38	<100	<1	<1	<1	<3	--	--	--	<1	--
	Active	02/25/07	355.43	14.62	340.81	-0.93	150	<1	6	1	<3	--	--	--	<1	--
	Active	06/15/07	355.43	12.99	342.44	1.63	<100	<1	<1	<1	<3	--	--	--	<1	--
	Active	09/11/07	355.43	12.82	342.61	0.17	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	12/18/07	355.43	14.74	340.69	-1.92	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	03/27/08	355.43	15.03	340.40	-0.29	<100	<1	1	<1	<3	--	--	--	--	--
	Active	06/16/08	355.43	13.27	342.16	1.76	<100	<1	1	<1	<3	--	--	--	--	--
	Active	07/13/10	355.43	13.79	341.64	-0.52	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
	Active	11/09/11	355.43	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/06/12	355.43	13.41	342.02	--	--	--	--	--	--	--	--	--	--	--
MW-31	Active	08/05/05	355.03	13.76	341.27	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	<1.00	--
	Active	11/10/05	355.03	13.84	341.19	-0.08	<50.0	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	--
	Active	02/17/06	355.03	14.25	340.78	-0.41	<50.0	<0.500	<0.500	<0.500	<3.00	--	--	--	<1.00	--
	Active	06/15/06	355.03	12.87	342.16	1.38	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	--
	Active	08/18/06	355.03	12.96	342.07	-0.09	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	--
	Active	10/31/06	355.03	13.31	341.72	-0.35	--	--	--	--	--	--	--	--	--	--
	Active	02/25/07	355.03	14.26	340.77	-0.95	110	<1	4	<1	<3	--	--	--	<1	--
	Active	06/15/07	355.03	Inaccessible	--	--	--	--	--	--	--	--	--	--	--	--
	Active	09/11/07	355.03	12.42	342.61	--	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	12/18/07	355.03	Inaccessible	--	--	--	--	--	--	--	--	--	--	--	--
	Active	03/27/08	355.03	14.66	340.37	--	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	06/16/08	355.03	12.91	342.12	1.75	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	07/13/10	355.03	13.50	341.53	-0.59	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
	Active	11/09/11	355.03	14.29	340.74	-0.79	<50	<0.5	0.73 J	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Active	06/06/12	355.03	13.02	342.01	1.27	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	
MW-32	Active	08/02/05	374.06	31.55	342.51	--	2,640	3.75	1.3	5.01	4.64	<5.00	<0.500	<0.500	42	--
	Active	10/03/05	374.06	--	--	--	--	--	--	--	--	--	--	--	<1.00	<1.00
	Active	11/09/05	374.06	32.76	341.30	--	4,360	<1.00	<1.00	4.16	<3.00	<5.00	<1.00	<1.00	1.07	<1.00
	Active	02/16/06	374.06	33.16	340.90	-0.40	4,630	<0.500	0.730	3.96	<3.00	--	--	--	<1.00	<1.00
	Active	06/14/06	374.06	31.85	342.21	1.31	4,180	<0.500	1.81	5.24	2.66	--	--	--	<1.00	<1.00
	Active	08/16/06	374.06	31.87	342.19	-0.02	1,400	3.44	<0.500	1.00	2.55	--	--	--	3.15	<1.00

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			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)	
MW-32 con't	Active	11/01/06	374.06	32.23	341.83	-0.36	1,200	<1	16	3	7	--	--	--	1.08	<1	
	Active	02/25/07	374.06	33.16	340.90	-0.93	870	1	15	3	8	--	--	--	1.74	<1	
	Active	06/14/07	374.06	31.53	342.53	1.63	520	4	16	2	4	--	--	--	5.97	<1	
	Active	09/11/07	374.06	31.33	342.73	0.20	4,300	<1	52	14	9	--	--	--	--	--	
	Active	12/18/07	374.06	33.28	340.78	-1.95	3,600	<1	54	12	9	--	--	--	--	--	
	Active	03/27/08	374.06	33.59	340.47	-0.31	1,700	<1	20	3	<3	--	--	--	--	--	
	Active	06/16/08	374.06	31.86	342.30	1.83	1,300	<1	27	3	5	--	--	--	--	--	
	Active	07/13/10	374.06	32.32	341.74	-0.56	52.2	0.65 J	<0.5	0.61 J	<0.5	<0.5	<0.5	<0.5	--	13.4	
	Active	11/09/11	374.06	33.15	340.91	-0.83	692	1.05	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	--	--	
Active	06/06/12	374.06	31.95	342.11	1.20	981	0.89J	<0.5	0.84J	<0.5	<0.5	<0.5	<0.5	--	--		
MW-33	Active	08/02/05	373.95	32.45	341.50	--	114	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	105	--	
	Active	10/03/05	373.95	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	11/09/05	373.95	31.66	342.29	--	142	<1.00	<1.00	<1.00	<3.00	<5.00	<1.00	<1.00	2.72	<1.00	
	Active	02/16/06	373.95	33.06	340.89	-1.40	371	<0.500	<0.500	3.01	<3.00	--	--	--	1.84	<1.00	
	Active	06/14/06	373.95	31.73	342.22	1.33	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	3.71	<1.00	
	Active	08/16/06	373.95	31.77	342.18	-0.04	346	1.46	<0.500	<0.500	<1.00	--	--	--	6.75	<1.00	
	Active	11/01/06	373.95	32.12	341.83	-0.35	<100	<1	<1	<1	<3	--	--	--	2.20	<1	
	Active	02/25/07	373.95	33.06	340.89	-0.94	640	2	20	5	4	--	--	--	3.17	<1	
	Active	06/14/07	373.95	31.42	342.53	1.64	240	<1	9	<1	<3	--	--	--	--	--	
	Active	09/10/07	373.95	31.21	342.74	0.21	<100	<1	<1	<1	<3	--	--	--	--	--	
	Active	12/18/07	373.95	33.17	340.78	-1.96	890	<1	<1	10	7	--	--	--	--	--	
	Active	03/27/08	373.95	33.49	340.46	-0.32	810	<1	15	7	<3	--	--	--	--	--	
	Active	06/16/08	373.95	31.74	342.21	1.75	490	2	15	2	<3	--	--	--	--	--	
	Active	07/13/10	373.95	32.22	341.73	-0.48	57.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	9.28	
	Active	11/09/11	373.95	--	--	--	--	--	--	--	--	--	--	--	--	--	
Active	06/06/12	373.95	31.72	342.23	--	--	--	--	--	--	--	--	--	--	--		
VW-01	Active	08/03/05	372.67	Dry	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	11/09/05	372.67	Dry	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	08/16/06	372.67	Dry	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	02/22/07	372.67	Dry	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	06/11/07	372.67	Dry	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	09/11/07	372.67	Dry	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	12/18/07	372.67	Dry	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	03/27/08	372.67	Dry	--	--	--	--	--	--	--	--	--	--	--	--	

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			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)
VW-01 con't	Active	06/16/08	372.67	Dry	--	--	--	--	--	--	--	--	--	--	--	--
	Active	07/13/10	373.67	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	374.67	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/06/12	374.67	--	--	--	--	--	--	--	--	--	--	--	--	--
VW-02	Active	08/03/05	373.76	32.29	341.47	--	189	0.52	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	52.8	--
	Active	10/03/05	373.76	--	--	--	--	--	--	--	--	--	--	--	2	<1.00
	Active	06/14/06	373.76	31.61	342.15	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	<1.00
	Active	08/16/06	373.76	31.62	342.14	-0.01	422	1.97	<0.500	<0.500	<1.00	--	--	--	17.8	<1.00
	Active	02/24/07	373.76	32.88	340.88	-1.26	<100	<1	<1	<1	<3	--	--	--	5.81	--
	Active	06/14/07	373.76	31.36	342.40	1.52	140	<1	4	<1	<3	--	--	--	8.23	--
	Active	09/11/07	373.76	31.27	342.49	0.09	1,300	1	33	4	6	--	--	--	42.1	--
	Active	12/18/07	373.76	33.00	340.76	-1.73	<100	<1	<1	<1	<3	--	--	--	<1	--
	Active	03/27/08	373.76	33.30	340.46	-0.30	<100	<1	<1	<1	<3	--	--	--	<1	--
	Active	06/16/08	373.76	31.55	342.21	1.75	<100	<1	<1	<1	<3	--	--	--	<1	--
	Active	07/13/10	373.76	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	373.76	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/06/12	373.76	--	--	--	--	--	--	--	--	--	--	--	--	--
VW-03	Active	08/03/05	373.34	31.90	341.44	--	1,670	6.67	<0.500	4.15	2.93	<5.00	<0.500	<0.500	--	--
	Active	10/03/05	373.34	--	--	--	--	--	--	--	--	--	--	--	<1.00	<1.00
	Active	06/14/06	373.34	31.16	342.18	--	2,840	<0.500	1.72	6.22	1.30	--	--	--	1.04	<1.00
	Active	08/16/06	373.34	31.22	342.12	-0.06	1,320	6.45	<0.500	3.15	2.36	--	--	--	23.7	<1.00
	Active	10/31/06	373.34	31.58	341.76	-0.36	1,100	<1	14	4	6	--	--	--	12.2	<1
	Active	02/24/07	373.34	32.50	340.84	-0.92	1,700	4	37	8	10	--	--	--	16.3	<1
	Active	06/14/07	373.34	30.95	342.39	1.55	830	8	15	2	4	--	--	--	15.0	<1
	Active	09/10/07	373.34	30.81	342.53	0.14	2,200	<1	38	8	7	--	--	--	19.2	--
	Active	12/18/07	373.34	32.60	340.74	-1.79	690	<1	28	4	<3	--	--	--	<1	--
	Active	03/27/08	373.34	32.93	340.41	-0.33	630	<1	14	1	<3	--	--	--	<1	--
	Active	06/16/08	373.34	31.40	341.94	1.53	380	<1	15	1.6	<3	--	--	--	<1	--
	Active	07/13/10	373.34	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	373.34	--	--	--	--	--	--	--	--	--	--	--	--	--
Active	11/09/11	373.34	--	--	--	--	--	--	--	--	--	--	--	--	--	
VW-04	Active	08/03/05	373.71	32.26	341.45	--	4,290	2.68	<0.500	26.5	61.2	<5.00	<0.500	<0.500	17.1	--
	Active	10/03/05	373.71	--	--	--	--	--	--	--	--	--	--	--	<1.00	<1.00
	Active	06/14/06	373.71	31.55	342.16	--	7,670	<2.50	<2.50	49.1	72.1	--	--	--	<1.00	<1.00

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WELL ID	WELL STATUS	SAMPLE DATE	WELL ELEVATION				ANALYTICAL PARAMETERS										
			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)	
VW-04 con't	Active	08/16/06	373.71	31.59	342.12	-0.04	1,960	2.82	<0.500	11.7	10.6	--	--	--	7.64	<1.00	
	Active	10/31/06	373.71	31.93	341.78	-0.34	4,500	<5	12	40	48	--	--	--	<1	<1	
	Active	02/24/07	373.71	32.86	340.85	-0.93	5,700	7	22	34	63	--	--	--	6.38	<1	
	Active	06/14/07	373.71	31.27	342.44	1.59	2,800	16	18	24	27	--	--	--	4.73	<1	
	Active	09/10/07	373.71	31.08	342.63	0.19	3,800	<1	25	36	61	--	--	--	--	--	
	Active	12/18/07	373.71	32.96	340.75	-1.88	5,000	<1	<1	32	57	--	--	--	--	--	
	Active	03/27/08	373.71	33.30	340.41	-0.34	3,200	<1	17	27	18	--	--	--	--	--	
	Active	06/16/08	373.71	31.54	342.17	1.76	1,900	<1	28	34	15	--	--	--	--	--	
	Active	07/13/10	373.71	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	11/09/11	373.71	--	--	--	--	--	--	--	--	--	--	--	--	--	
Active	06/06/12	373.71	--	--	--	--	--	--	--	--	--	--	--	--	--		
VW-05	Active	08/03/05	373.21	31.74	341.47	--	3,510	0.759	<0.500	5.24	7.29	<5.00	<0.500	<0.500	84.6	--	
	Active	10/03/05	373.21	--	--	--	--	--	--	--	--	--	--	--	27	3.85	
	Active	06/14/06	373.21	31.07	342.14	--	1,640	<0.500	<0.500	0.816	1.86	--	--	--	9.40	4.44	
	Active	08/16/06	373.21	31.07	342.14	0.00	988	0.644	<0.500	1.07	2.36	--	--	--	35.9	<1.00	
	Active	10/31/06	373.21	31.42	341.79	-0.35	720	<1	4	2	<3	--	--	--	2.99	<1	
	Active	02/24/07	373.21	32.36	340.85	-0.94	800	<1	8	3	5	--	--	--	33.4	<1	
	Active	06/14/07	373.21	30.81	342.40	1.55	320	1	10	3	<3	--	--	--	12.4	<1	
	Active	09/10/07	373.21	30.65	342.56	0.16	690	<1	16	3	5	--	--	--	39.0	--	
	Active	12/18/07	373.21	32.45	340.76	-1.8	350	<1	<1	2	3	--	--	--	<1	--	
	Active	03/27/08	373.21	32.78	340.43	-0.33	110	<1	3	<1	<3	--	--	--	<1	--	
	Active	06/16/08	373.21	31.07	342.14	1.71	--	--	--	--	--	--	--	--	--	--	
	Active	07/13/10	373.21	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	11/09/11	373.21	--	--	--	--	--	--	--	--	--	--	--	--	--	
Active	06/06/12	373.21	--	--	--	--	--	--	--	--	--	--	--	--	--		
SW-01	Active	08/01/05	373.67	32.17	341.50	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	103	--	
	Active	10/03/05	373.67	--	--	--	--	--	--	--	--	--	--	--	16.1	<1.00	
	Active	08/17/06	373.67	31.50	342.17	--	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	15.7	--	
	Active	02/22/07	373.67	32.77	340.90	-1.27	--	--	--	--	--	--	--	--	--	--	
	Active	06/11/07	373.67	31.20	342.47	1.57	--	--	--	--	--	--	--	--	--	--	
	Active	09/10/07	373.67	31.02	342.65	0.18	<100	<1	<1	<1	<3	--	--	--	4.97	--	
	Active	12/18/07	373.67	30.84	342.83	0.18	--	--	--	--	--	--	--	--	--	--	
	Active	03/27/08	373.67	31.19	342.48	-0.35	--	--	--	--	--	--	--	--	--	--	
	Active	06/16/08	373.67	30.99	342.68	0.20	--	--	--	--	--	--	--	--	--	--	

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WELL ID	WELL STATUS	SAMPLE DATE	WELL ELEVATION				ANALYTICAL PARAMETERS									
			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)
SW-01 con't	Active	07/13/10	373.67	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	373.67	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/06/12	373.67	--	--	--	--	--	--	--	--	--	--	--	--	--
SW-02	Active	08/02/05	374.25	32.28	341.97	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	3.20	--
	Active	08/17/06	374.25	31.63	342.62	0.65	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	6.71	--
	Active	02/22/07	374.25	32.89	341.36	-1.26	--	--	--	--	--	--	--	--	--	--
	Active	06/11/07	374.25	31.39	342.86	1.5	--	--	--	--	--	--	--	--	--	--
	Active	09/11/07	374.25	31.36	342.89	0.03	--	--	--	--	--	--	--	--	--	--
	Active	12/18/07	374.25	33.00	341.25	-1.64	--	--	--	--	--	--	--	--	--	--
	Active	03/27/08	374.25	33.30	340.95	-0.30	--	--	--	--	--	--	--	--	--	--
	Active	06/16/08	374.25	31.54	342.71	1.76	--	--	--	--	--	--	--	--	--	--
	Active	07/13/10	374.25	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	374.25	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/06/12	374.25	--	--	--	--	--	--	--	--	--	--	--	--	--
SW-03	Active	08/02/05	374.20	32.25	341.95	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	3.94	--
	Active	08/16/06	374.20	31.61	342.59	0.64	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	3.84	--
	Active	02/22/07	374.20	32.85	341.35	-1.24	--	--	--	--	--	--	--	--	--	--
	Active	06/11/07	374.20	31.34	342.86	1.51	--	--	--	--	--	--	--	--	--	--
	Active	09/11/07	374.20	31.27	342.93	0.07	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	12/18/07	374.20	32.99	341.21	-1.72	--	--	--	--	--	--	--	--	--	--
	Active	03/27/08	374.20	33.26	340.94	-0.27	--	--	--	--	--	--	--	--	--	--
	Active	06/16/08	374.20	31.52	342.68	1.74	--	--	--	--	--	--	--	--	--	--
	Active	07/13/10	374.20	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	374.20	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/06/12	374.20	--	--	--	--	--	--	--	--	--	--	--	--	--
SW-04	Active	08/02/05	373.91	32.00	341.91	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	--	--
	Active	08/16/06	373.91	31.34	342.57	0.66	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	<1.00	--
	Active	02/22/07	373.91	32.61	341.30	-1.27	--	--	--	--	--	--	--	--	<1.00	--
	Active	06/11/07	373.91	31.06	342.85	1.55	--	--	--	--	--	--	--	--	--	--
	Active	09/10/07	373.91	30.94	342.97	0.12	<100	<1	<1	<1	<3	--	--	--	--	--
	Active	12/18/07	373.91	32.76	341.15	-1.82	--	--	--	--	--	--	--	--	--	--
	Active	03/27/08	373.91	33.30	340.61	-0.54	--	--	--	--	--	--	--	--	--	--
	Active	06/16/08	373.91	31.26	342.65	2.04	--	--	--	--	--	--	--	--	--	--
	Active	07/13/10	373.91	--	--	--	--	--	--	--	--	--	--	--	--	--

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WELL ID	WELL STATUS	SAMPLE DATE	WELL ELEVATION				ANALYTICAL PARAMETERS									
			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)
SW-04	Active	11/09/11	373.91	--	--	--	--	--	--	--	--	--	--	--	--	--
	con't	Active	06/06/12	373.91	--	--	--	--	--	--	--	--	--	--	--	--
SW-05	Active	08/02/05	373.80	31.92	341.88	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	2.25	--
	Active	08/17/06	373.80	31.27	342.53	0.65	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	1.32	--
	Active	02/22/07	373.80	32.54	341.26	-1.27	--	--	--	--	--	--	--	--	--	--
	Active	06/11/07	373.80	30.97	342.83	1.57	--	--	--	--	--	--	--	--	--	--
	Active	09/10/07	373.80	30.80	343.00	0.17	<100.0	<1	<1	<1	<3	--	--	--	--	--
	Active	12/18/07	373.80	32.66	341.14	-1.86	--	--	--	--	--	--	--	--	--	--
	Active	03/27/08	373.80	32.96	340.84	-0.30	--	--	--	--	--	--	--	--	--	--
	Active	06/16/08	373.80	31.21	342.59	1.75	--	--	--	--	--	--	--	--	--	--
	Active	07/13/10	373.80	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	373.80	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/06/12	373.80	--	--	--	--	--	--	--	--	--	--	--	--	--
	SW-06	Active	08/02/05	373.42	31.79	341.63	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	20.1
Active		10/03/05	373.42	--	--	--	--	--	--	--	--	--	--	--	3.96	<1.00
Active		08/16/06	373.42	31.13	342.29	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	30.2	<1.00
Active		02/22/07	373.42	32.41	341.01	-1.28	--	--	--	--	--	--	--	--	--	--
Active		06/11/07	373.42	30.80	342.62	1.61	--	--	--	--	--	--	--	--	--	--
Active		09/10/07	373.42	30.59	342.83	0.21	<100	<1	<1	<1	<3	--	--	--	2.12	--
Active		12/18/07	373.42	32.53	340.89	-1.94	--	--	--	--	--	--	--	--	--	--
Active		03/27/08	373.42	32.82	340.60	-0.29	--	--	--	--	--	--	--	--	--	--
Active		06/16/08	373.42	31.08	342.34	1.74	--	--	--	--	--	--	--	--	--	--
Active		07/13/10	373.42	--	--	--	--	--	--	--	--	--	--	--	--	--
Active		11/09/11	373.42	--	--	--	--	--	--	--	--	--	--	--	--	--
Active		06/06/12	373.42	--	--	--	--	--	--	--	--	--	--	--	--	--
SW-07	Active	08/03/05	356.65	15.25	341.40	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	1.46	--
	Active	08/18/06	356.65	14.56	342.09	0.69	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	17.1	<1.00
	Active	02/22/07	356.65	15.81	340.84	-1.25	--	--	--	--	--	--	--	--	--	--
	Active	06/15/07	356.65	Inaccessible	--	--	--	--	--	--	--	--	--	--	--	--
	Active	09/11/07	356.65	14.21	342.44	--	<100	<1	<1	<1	<3	--	--	--	2.48	--
	Active	12/18/07	356.65	15.92	340.73	-1.71	--	--	--	--	--	--	--	--	--	--
	Active	03/27/08	356.65	16.22	340.43	-0.30	--	--	--	--	--	--	--	--	--	--
	Active	06/16/08	356.65	14.47	342.18	1.75	--	--	--	--	--	--	--	--	--	--
	Active	07/13/10	356.65	--	--	--	--	--	--	--	--	--	--	--	--	--

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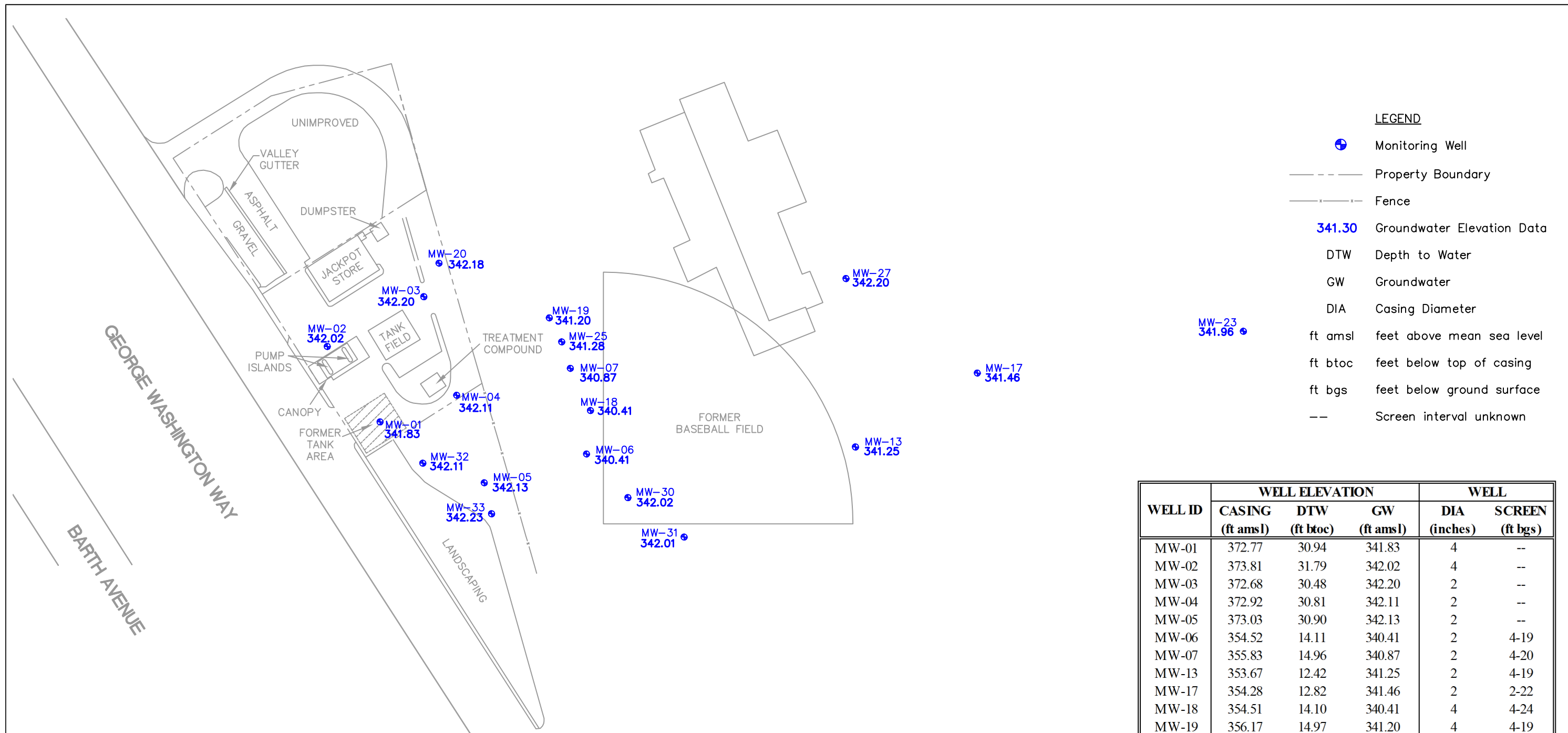
WELL ID	WELL STATUS	SAMPLE DATE	WELL ELEVATION				ANALYTICAL PARAMETERS									
			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)
SW-07	Active	11/09/11	356.65	--	--	--	--	--	--	--	--	--	--	--	--	--
	con't	Active	06/06/12	356.65	--	--	--	--	--	--	--	--	--	--	--	--
SW-12	Active	08/03/05	356.86	14.44	342.42	--	140	1.4	0.792	<0.500	<1.00	<5.00	<0.500	<0.500	3.1	--
	Active	06/15/06	356.86	14.72	342.14	-0.28	65.5	<0.500	<0.500	<0.500	<1.00	--	--	--	5.04	--
	Active	08/18/06	356.86	14.76	342.10	-0.04	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	37.2	--
	Active	10/31/06	356.86	15.11	341.75	-0.35	<100	<1	<1	<1	<3	--	--	--	1.53	--
	Active	02/25/07	356.86	16.00	343.59	1.84	<100	<1	<1	<1	<3	--	--	--	4.85	--
	Active	06/11/07	356.86	14.49	342.37	-1.22	--	--	--	--	--	--	--	--	--	--
	Active	09/11/07	356.86	14.24	342.62	0.25	330	1	11	2	3	--	--	--	4.81	--
	Active	12/18/07	356.86	16.14	340.72	-1.90	<100	<1	<1	<1	<3	--	--	--	1.39	--
	Active	03/27/08	356.86	16.41	340.45	-0.27	<100	<1	<1	<1	<3	--	--	--	<1	--
	Active	06/16/08	356.86	14.68	342.18	1.73	<100	<1	<1	<1	<3	--	--	--	<1	--
	Active	07/13/10	356.86	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	356.86	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/06/12	356.86	--	--	--	--	--	--	--	--	--	--	--	--	--
SW-13	Active	08/03/05	356.47	15.05	341.42	--	<50.0	<0.500	<0.500	<0.500	<1.00	<5.00	<0.500	<0.500	3.17	--
	Active	06/15/06	356.47	14.33	342.14	0.72	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	1.52	--
	Active	08/18/06	356.47	14.37	342.10	-0.04	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	110	--
	Active	10/31/06	356.47	14.72	341.75	-0.35	<100	<1	<1	<1	<3	--	--	--	21.9	--
	Active	02/25/07	356.47	15.63	340.84	-0.91	<100	<1	<1	<1	<3	--	--	--	2.60	--
	Active	06/11/07	356.47	14.49	341.98	1.14	--	--	--	--	--	--	--	--	--	--
	Active	09/11/07	356.47	14.02	342.45	0.47	<100	<1	<1	<1	<3	--	--	--	1.45	--
	Active	12/18/07	356.47	15.74	340.73	-1.72	<100	<1	<1	<1	<3	--	--	--	1.94	--
	Active	03/27/08	356.47	16.04	340.43	-0.30	<100	<1	<1	<1	<3	--	--	--	<1	--
	Active	06/16/08	356.47	14.29	342.18	1.75	<100	<1	<1	<1	<3	--	--	--	2.50	--
	Active	07/13/10	356.47	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	11/09/11	356.47	--	--	--	--	--	--	--	--	--	--	--	--	--
	Active	06/06/12	356.47	--	--	--	--	--	--	--	--	--	--	--	--	--
SW-14	Active	08/04/05	356.24	14.83	341.41	--	726	2.83	0.705	28.6	1.89	<5.00	<0.500	<0.500	17.8	--
	Active	10/03/05	356.24	--	--	--	--	--	--	--	--	--	--	--	483	2.51
	Active	06/15/06	356.24	14.11	342.13	--	<50.0	<0.500	<0.500	<0.500	<1.00	--	--	--	4.91	<1.00
	Active	08/17/06	356.24	14.15	342.09	-0.04	222	2.32	1.23	8.16	2.90	--	--	--	1.53	<1.00
	Active	10/31/06	356.24	--	--	--	150	<1	<1	<1	<3	--	--	--	1.21	<1
	Active	02/25/07	356.24	15.43	340.81	--	<100	<1	1	<1	<3	--	--	--	21.5	<1

Table 2
Summary of Historical Groundwater Monitoring Data
Pacific Convenience and Fuels Site 01-056
Richland, Washington
Page 14 of 15

WELL ID	WELL STATUS	SAMPLE DATE	WELL ELEVATION				ANALYTICAL PARAMETERS										
			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)	
SW-14 con't	Active	06/15/07	356.24	14.53	341.71	0.90	<100	<1	<1	<1	<3	--	--	--	6.83	<1	
	Active	09/11/07	356.24	13.75	342.49	0.78	830	<1	36	3	6.1	--	--	--	6.13	--	
	Active	12/18/07	356.24	15.53	340.71	-1.78	330	<1	<1	2	4	--	--	--	3.95	--	
	Active	03/27/08	356.24	15.83	340.41	-0.30	<100	<1	<1	<1	<3	--	--	--	3.76	--	
	Active	06/16/08	356.24	14.08	342.16	1.75	<100	<1	<1	<1	<3	--	--	--	50.9	--	
	Active	07/13/10	356.24	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	11/09/11	356.24	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	06/06/12	356.24	--	--	--	--	--	--	--	--	--	--	--	--	--	
SW-15	Active	08/03/05	356.89	15.47	341.42	--	<50.0	<0.500	0.553	<0.500	<1.00	<5.00	<0.500	<0.500	2.35	--	
	Active	08/13/06	356.89	14.81	342.08	0.66	<80.0	<0.500	<0.500	<0.500	<1.00	--	--	--	<1.00	--	
	Active	02/22/07	356.89	16.06	340.83	-1.25	--	--	--	--	--	--	--	--	--	--	
	Active	06/11/07	356.89	14.53	342.36	1.53	--	--	--	--	--	--	--	--	--	--	
	Active	09/11/07	356.89	14.52	342.37	0.01	<100	<1	2	<1	<3	--	--	--	--	--	
	Active	12/18/07	356.89	16.21	340.68	-1.69	--	--	--	--	--	--	--	--	--	--	
	Active	03/27/08	356.89	15.43	341.46	0.78	--	--	--	--	--	--	--	--	--	--	
	Active	06/16/08	356.89	14.70	342.19	0.73	<100	<1	<1	<1	<3	--	--	--	--	--	
	Active	07/13/10	356.89	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	11/09/11	356.89	--	--	--	--	--	--	--	--	--	--	--	--	--	
Active	06/06/12	356.89	--	--	--	--	--	--	--	--	--	--	--	--	--		
RW-01	Active	08/01/05	373.18	--	--	--	--	--	--	--	--	--	--	--	<1.00	<1.00	
	Active	10/03/05	373.18	31.00	342.18	--	1,420	<0.500	0.669	6.70	1.04	--	--	--	1.60	1.09	
	Active	06/14/06	373.18	31.02	341.28	-0.90	425	<0.500	<0.500	<0.500	1.25	--	--	--	5.16	<1.00	
	Active	08/16/06	373.18	31.03	342.15	0.87	596	3.03	6	<1	3	--	--	--	2.07	<1	
	Active	10/31/06	373.18	31.36	341.82	-0.33	320	<1	11	2	3	--	--	--	4.17	<1	
	Active	02/24/07	373.18	32.29	340.89	-0.93	440	<1	3	<1	<3	--	--	--	8.04	<1	
	Active	06/14/07	373.18	30.72	342.46	1.57	<100	<1	22	2	<3	--	--	--	1.78	--	
	Active	09/10/07	373.18	30.55	342.63	0.17	630	<1	13	2	4	--	--	--	--	--	
	Active	12/17/07	373.18	32.39	340.79	-1.84	310	<1	9	2	<3	--	--	--	--	--	
	Active	03/27/08	373.18	32.72	340.46	-0.33	320	<1	16	<1	<3	--	--	--	--	--	
	Active	06/16/08	373.18	30.99	342.19	1.73	510	<1	15	2	4	--	--	--	--	--	
	Active	07/13/10	373.18	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	11/09/11	373.18	--	--	--	--	--	--	--	--	--	--	--	--	--	
Active	06/06/12	373.18	--	--	--	--	--	--	--	--	--	--	--	--	--		

Table 2
Summary of Historical Groundwater Monitoring Data
Pacific Convenience and Fuels Site 01-056
Richland, Washington
Page 15 of 15

WELL ID	WELL STATUS	SAMPLE DATE	WELL ELEVATION				ANALYTICAL PARAMETERS										
			Casing (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DTW Δ (ft amsl)	TPH-Gx (μg/L)	B (μg/L)	T (μg/L)	E (μg/L)	X (μg/L)	MTBE (μg/L)	EDB (μg/L)	EDC (μg/L)	Total Lead (μg/L)	Dissolved Lead (μg/L)	
PE-01	Active	09/11/07	--	30.15	--	--	1,400	<1	38	24	9	--	--	--	--	--	
	Active	12/17/07	--	33.02	--	--	<100	<1	1	<1	<3	--	--	--	--	--	
	Active	03/26/08	--	33.34	--	--	170	<1	4	<1	<3	--	--	--	--	--	
	Active	06/16/08	--	31.62	--	--	320	<1	12	<1	4	--	--	--	--	--	
	Active	07/13/10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	11/09/11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
PE-02	Active	09/11/07	--	30.91	--	--	1,900	<1	26	4	8	--	--	--	--	--	
	Active	12/17/07	--	32.93	--	--	150	<1	4	<1	<3	--	--	--	--	--	
	Active	03/27/08	--	33.24	--	--	230	<1	5	<1	<3	--	--	--	--	--	
	Active	06/16/08	--	31.31	--	--	1,500	<1	7	<1	5	--	--	--	--	--	
	Active	07/13/10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	11/09/11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
PE-03	Active	09/11/07	--	30.85	--	--	2,300	<1	13	5	<3	--	--	--	--	--	
	Active	12/17/07	--	32.77	--	--	210	<1	<1	<1	<3	--	--	--	--	--	
	Active	03/26/08	--	33.08	--	--	<100	<1	2	<1	<3	--	--	--	--	--	
	Active	06/16/08	--	31.36	--	--	160	<1	5	<1	<3	--	--	--	--	--	
	Active	07/13/10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	11/09/11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Active	06/06/12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MTCA Method A Cleanup Goals ⁽¹⁾							1,000/800 ⁽²⁾	5	1,000	700	1,000	15	0.01	5	15	15	
<p><i>Notes:</i> Results in BOLD indicate detections that exceed MTCA Method A cleanup levels for groundwater ‡: well abandoned in June 2006 ‡‡: well abandoned on October 11, 2000 (1): MTCA Method A Table 720-1 for groundwater, WAC 173-340-900 Tables (2): 1,000 μg/L when benzene is absent and 800 μg/L when present --: not analyzed / not measured / not sampled / unknown <: less than the laboratory reporting limit °C: degree celsius μg/L: micrograms per Liter μs/cm: microsiemen per centimeter Active: groundwater well currently used for monitoring amsl: above mean sea level bgs: below ground surface BTEX: benzene, toluene, ethylbenzene, and total xylenes btoc: below top of casing DIA: casing diameter</p> <p>DTB: depth to bottom DTP: depth to product DTW: depth to water EDB: 1,2-dibromoethane EDC: 1,2-dichloroethane ft: feet GW: groundwater J: value detected between method detection and reporting limits. See attached laboratory report for reporting limits. mg/L: milligrams per Liter MTBE: methyl tert-butyl ether MTCA: Model Toxics Control Act mV: millivolts NTU: Nephelometric turbidity unit ORP: oxygen reduction potential PT: product thickness TPH-Gx: total gasoline-range petroleum hydrocarbons, analyzed by Northwest Method NWTPH-Gx</p>																	

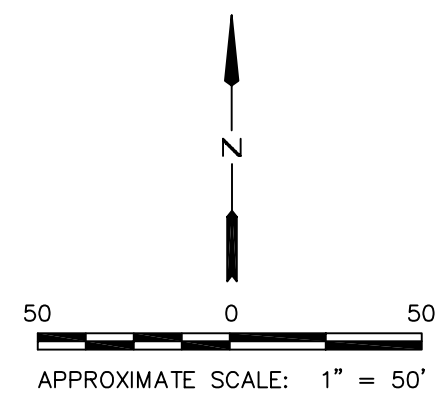


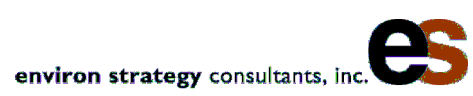
LEGEND

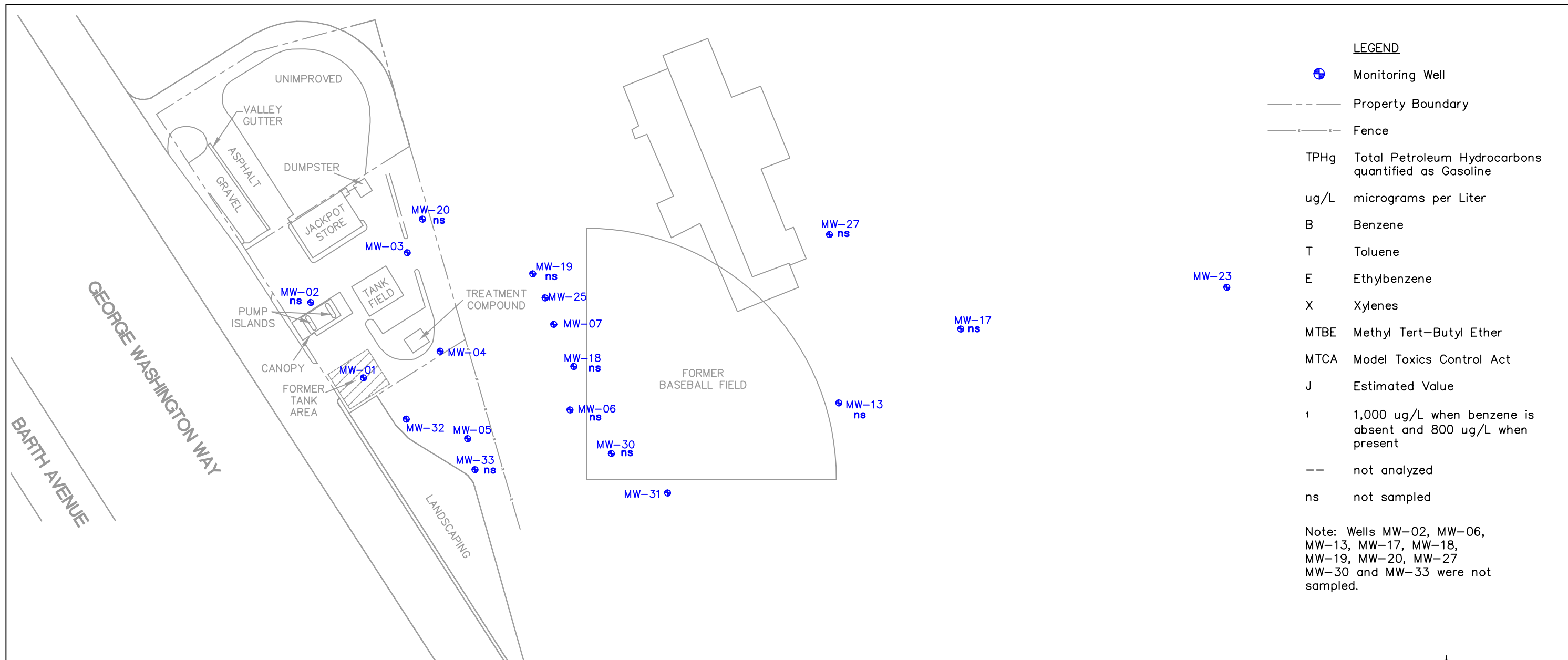
- Monitoring Well
- Property Boundary
- - - Fence
- 341.30 Groundwater Elevation Data
- DTW Depth to Water
- GW Groundwater
- DIA Casing Diameter
- ft amsl feet above mean sea level
- ft btoc feet below top of casing
- ft bgs feet below ground surface
- Screen interval unknown

WELL ID	WELL ELEVATION			WELL	
	CASING (ft amsl)	DTW (ft btoc)	GW (ft amsl)	DIA (inches)	SCREEN (ft bgs)
MW-01	372.77	30.94	341.83	4	--
MW-02	373.81	31.79	342.02	4	--
MW-03	372.68	30.48	342.20	2	--
MW-04	372.92	30.81	342.11	2	--
MW-05	373.03	30.90	342.13	2	--
MW-06	354.52	14.11	340.41	2	4-19
MW-07	355.83	14.96	340.87	2	4-20
MW-13	353.67	12.42	341.25	2	4-19
MW-17	354.28	12.82	341.46	2	2-22
MW-18	354.51	14.10	340.41	4	4-24
MW-19	356.17	14.97	341.20	4	4-19
MW-20	374.30	32.12	342.18	2	19-39
MW-23	352.01	10.05	341.96	2	4-24
MW-25	355.96	14.68	341.28	2	5-25
MW-27	354.62	12.42	342.20	2	7-22
MW-30	355.43	13.41	342.02	2	10-25
MW-31	355.03	13.02	342.01	2	10-25
MW-32	374.06	31.95	342.11	2	25-45
MW-33	373.95	31.72	342.23	2	25-45

* NOTE: DUE TO THE EXTREMELY FLAT GROUNDWATER GRADIENT, GROUNDWATER CONTOURS WERE NOT DRAWN.

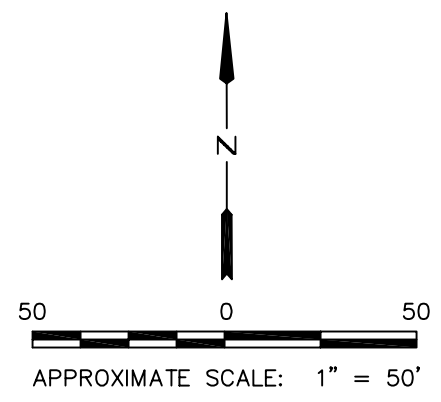


 1036 W. Taft Avenue, Suite 200 Orange, California 92865	FIGURE 3 GROUNDWATER ELEVATIONS June 6, 2012	DATE 8/2/12
	Pacific Convenience & Fuels Site #01-056 500 George Washington Way Richland, Washington	PROJECT NO. 611
		FILE NO. 611F3-GCM




- LEGEND**
- ⊕ Monitoring Well
 - Property Boundary
 - - - Fence
 - TPHg Total Petroleum Hydrocarbons quantified as Gasoline
 - ug/L micrograms per Liter
 - B Benzene
 - T Toluene
 - E Ethylbenzene
 - X Xylenes
 - MTBE Methyl Tert-Butyl Ether
 - MTCA Model Toxics Control Act
 - J Estimated Value
 - 1 1,000 ug/L when benzene is absent and 800 ug/L when present
 - not analyzed
 - ns not sampled

Note: Wells MW-02, MW-06, MW-13, MW-17, MW-18, MW-19, MW-20, MW-27, MW-30 and MW-33 were not sampled.

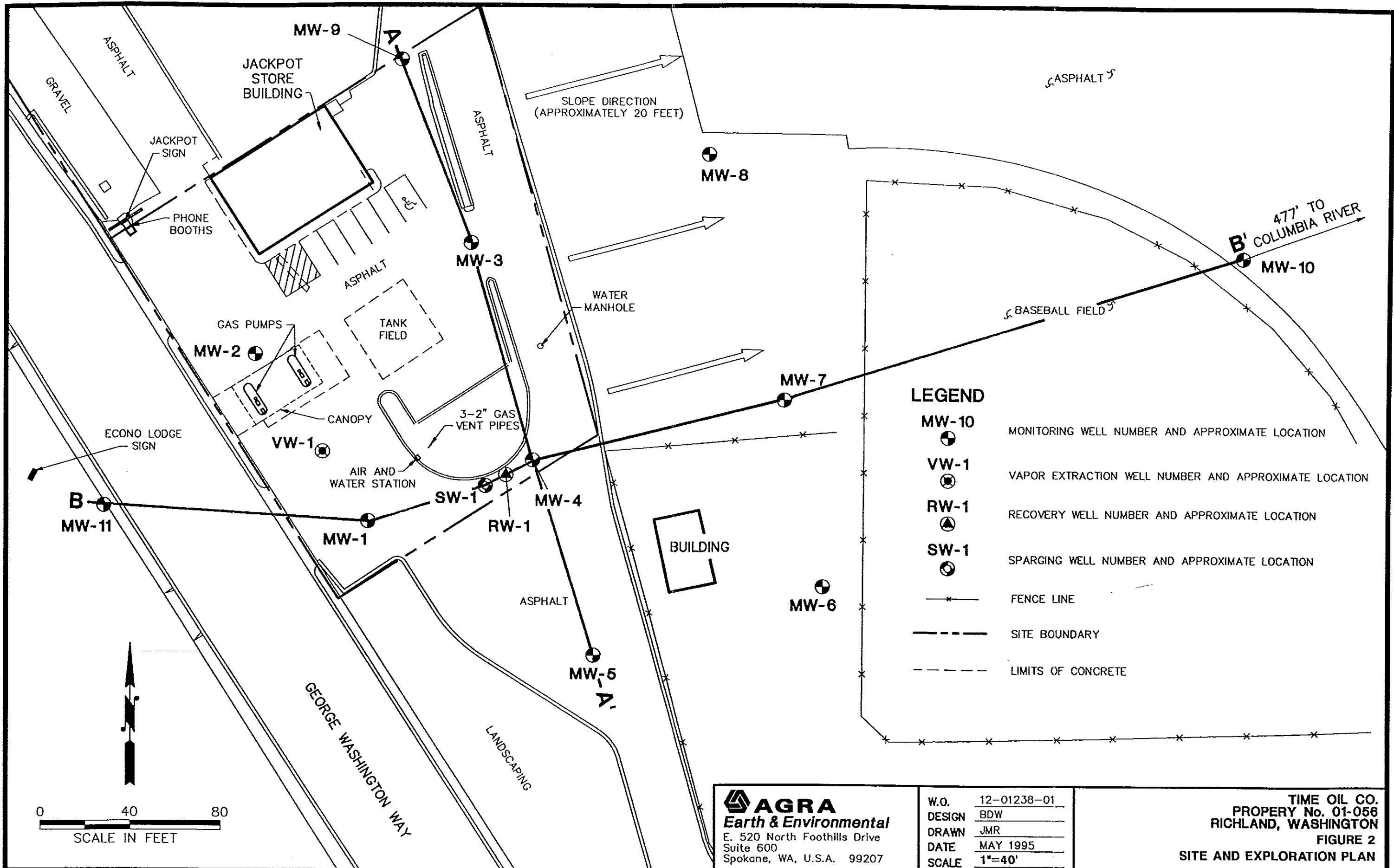


WELL ID	WELL STATUS	SAMPLE DATE	ANALYTICAL PARAMETERS									
			TPH-Gx (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	EDB (ug/L)	EDC (ug/L)	Lead (ug/L) *	
MW-01	Active	06/07/12	108	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
MW-03	Active	06/07/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
MW-04	Active	06/07/12	256	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
MW-05	Active	06/06/12	834	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
MW-07	Active	06/06/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
MW-23	Active	06/06/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
MW-25	Active	06/06/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
MW-31	Active	06/06/12	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
MW-32	Active	06/06/12	981	0.89J	<0.5	0.84J	<0.5	<0.5	<0.5	<0.5	<0.5	--
MTCA Method A Cleanup Goals			1,000/800 ¹	5	1,000	700	1,000	20	0.01	5	15	

environ strategy consultants, inc.  1036 W. Taft Avenue, Suite 200 Orange, California 92865	FIGURE 4 GROUNDWATER ANALYTICAL MAP June 6 and 7, 2012	DATE 8/2/12
	Pacific Convenience & Fuels Site #01-056 500 George Washington Way Richland, Washington	PROJECT NO. 611

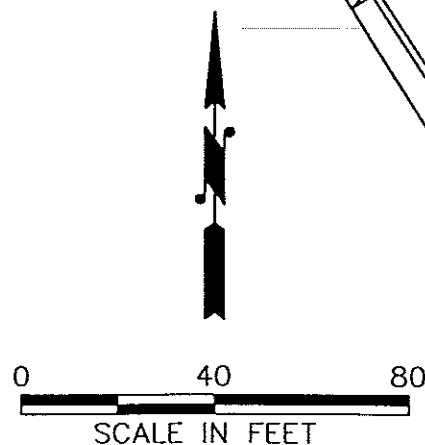
APPENDIX B

FIGURES SHOWING EXTENT OF SUBMERGED SMEAR ZONE



LEGEND

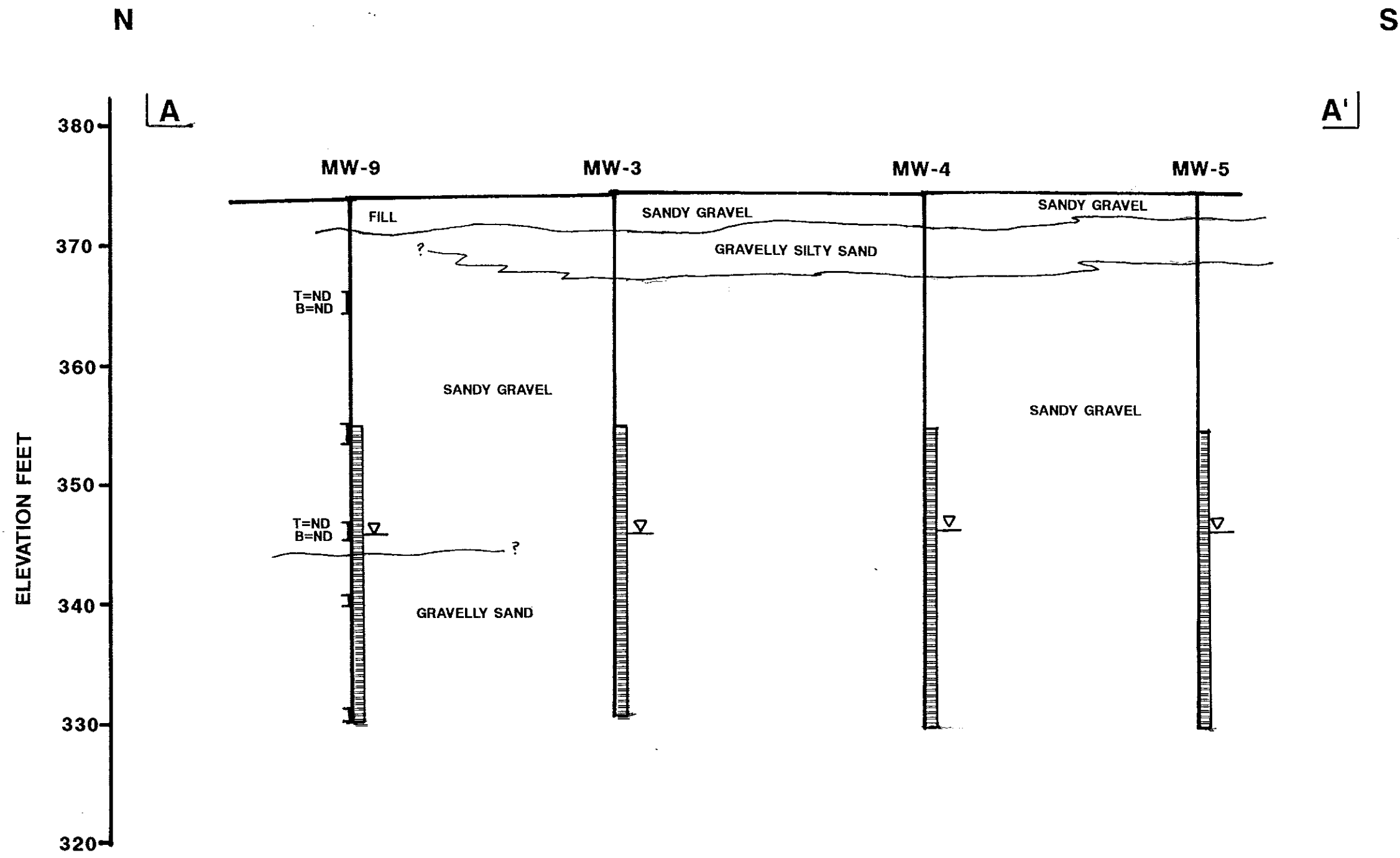
- MW-10 MONITORING WELL NUMBER AND APPROXIMATE LOCATION
- VW-1 VAPOR EXTRACTION WELL NUMBER AND APPROXIMATE LOCATION
- RW-1 RECOVERY WELL NUMBER AND APPROXIMATE LOCATION
- SW-1 SPARGING WELL NUMBER AND APPROXIMATE LOCATION
- FENCE LINE
- SITE BOUNDARY
- LIMITS OF CONCRETE



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 Suite 600
 Spokane, WA, U.S.A. 99207

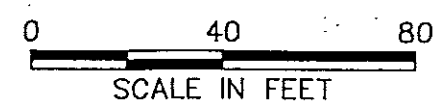
W.O. 12-01238-01
 DESIGN BDW
 DRAWN JMR
 DATE MAY 1995
 SCALE 1"=40'

TIME OIL CO.
 PROPERTY No. 01-056
 RICHLAND, WASHINGTON
 FIGURE 2
 SITE AND EXPLORATION PLAN



LEGEND

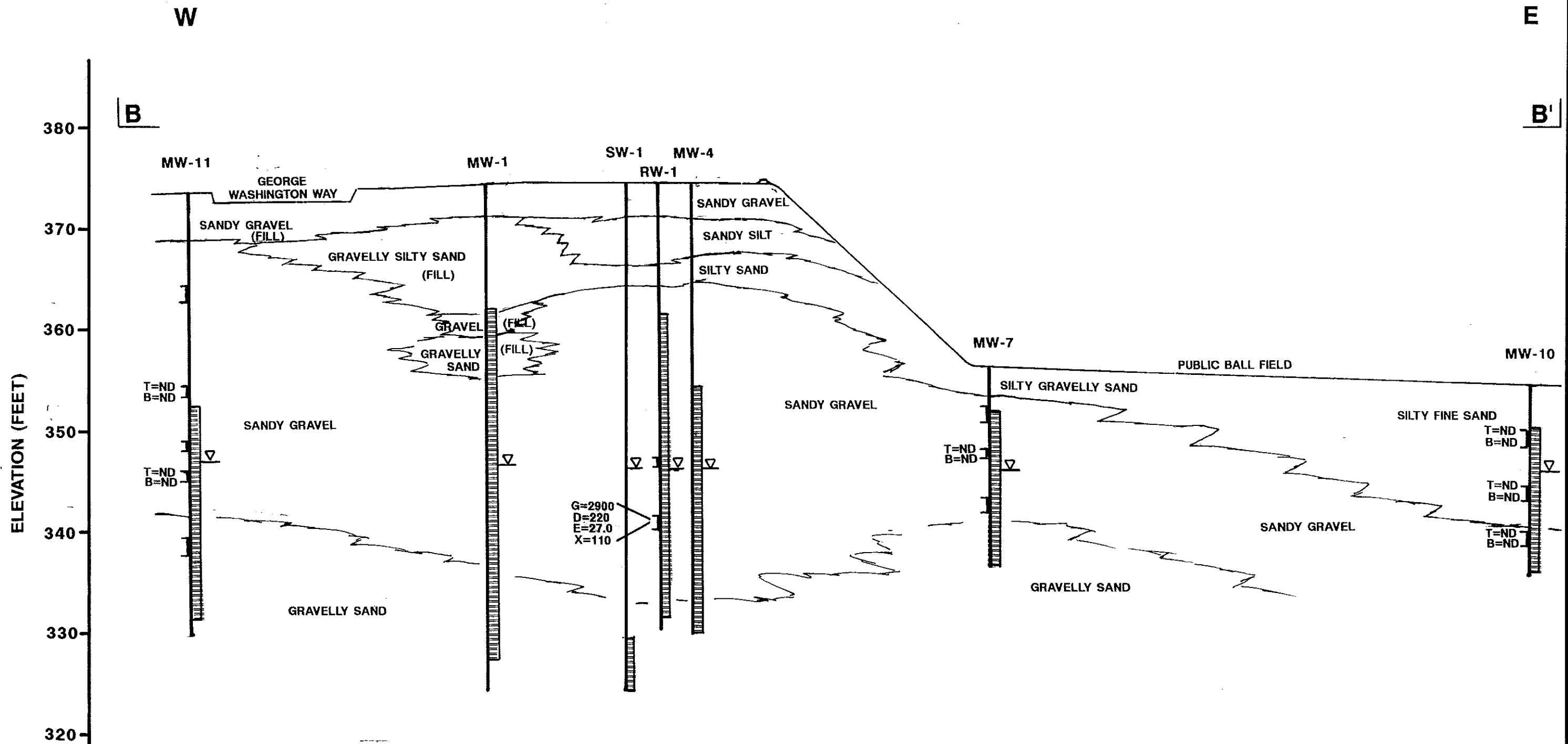
- | | | |
|------------------------|--|-----------------------------------|
| MONITORING WELL NUMBER | MW-11 | |
| T = ND | SOIL TPH (G & D) CONCENTRATIONS BELOW METHOD DETECTION LIMIT | INFERRED SOIL CONTACT |
| B = ND | SOIL BTEX CONCENTRATIONS BELOW METHOD DETECTION LIMIT | SOIL SAMPLE LOCATION |
| G=2900 | WTPH-G CONCENTRATION IN PPM | |
| D=220 | WTPH-D CONCENTRATION IN PPM | STATIC WATER LEVEL |
| E=27 | ETHYLBENZENE CONCENTRATION IN PPM | |
| X=110 | XYLENE CONCENTRATION IN PPM | MONITORING WELL SCREENED INTERVAL |



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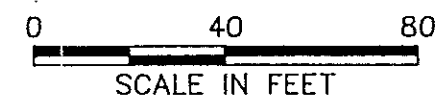
W.O. 12-1238-01
 DESIGN ENJS
 DRAWN ENJS
 DATE JUNE 1995
 SCALE NOTED

FIGURE 3
 GENERALIZED NORTH-SOUTH
 GEOLOGIC CROSS-SECTION



LEGEND

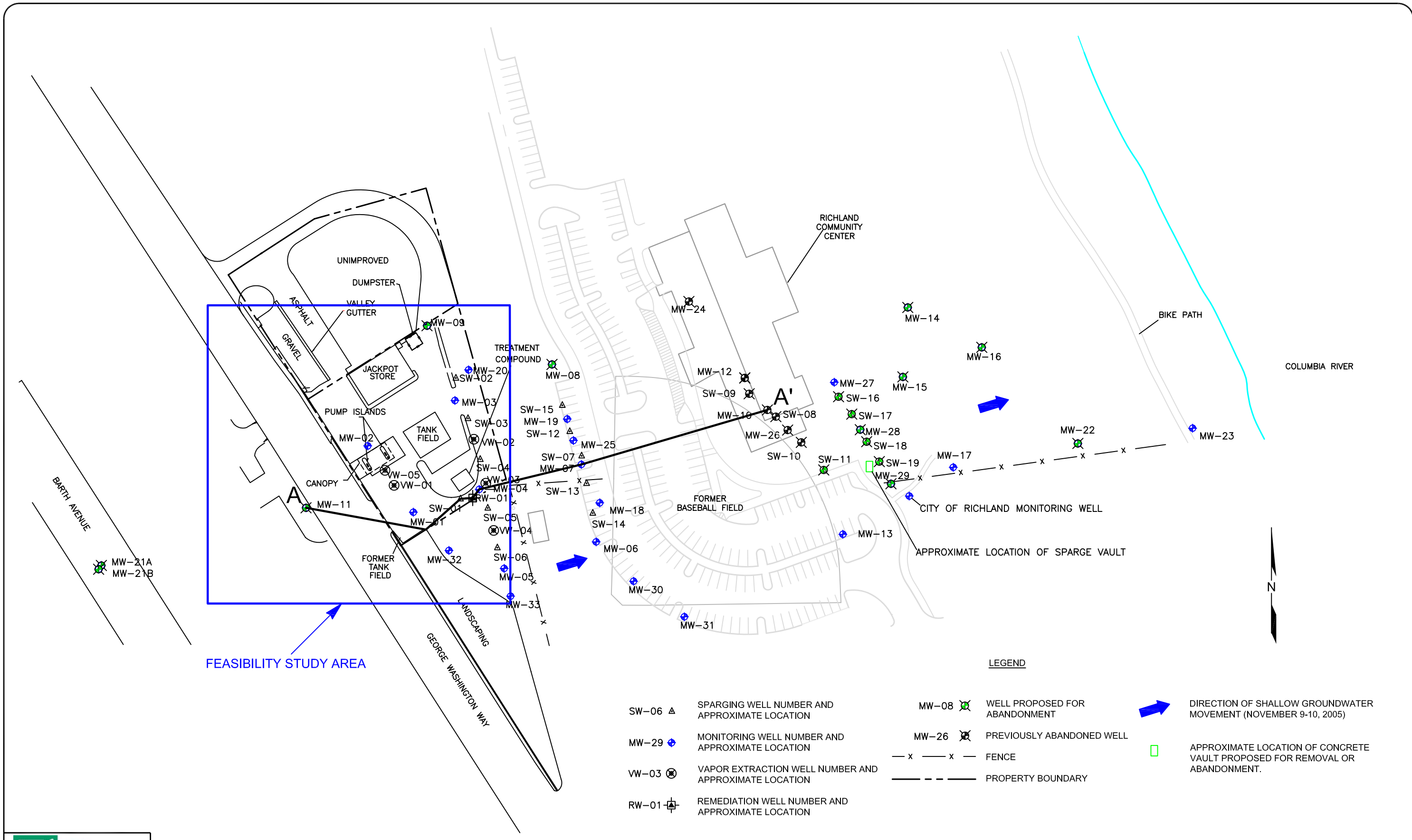
- | | | |
|------------------------|--|-----------------------------------|
| MONITORING WELL NUMBER | MW-11 | INFERRED SOIL CONTACT |
| T = ND | SOIL TPH (G & D) CONCENTRATIONS BELOW METHOD DETECTION LIMIT | SOIL SAMPLE LOCATION |
| B = ND | SOIL BTEX CONCENTRATIONS BELOW METHOD DETECTION LIMIT | |
| G=2900 | WTPH-G CONCENTRATION IN PPM | STATIC WATER LEVEL |
| D=220 | WTPH-D CONCENTRATION IN PPM | MONITORING WELL SCREENED INTERVAL |
| E=27 | ETHYLBENZENE CONCENTRATION IN PPM | |
| X=110 | XYLENE CONCENTRATION IN PPM | |



AGRA
Earth & Environmental
 E. 520 North Foothills Drive, Suite 600
 Spokane, Washington, U.S.A. 99207

W.O. 12-1238-01
 DESIGN ENJS
 DRAWN ENJS
 DATE JUNE 1995
 SCALE NOTED

FIGURE 4
 GENERALIZED EAST-WEST
 GEOLOGIC CROSS-SECTION



FEASIBILITY STUDY AREA

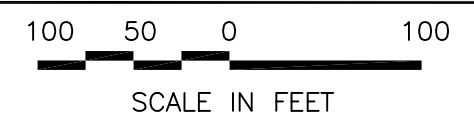
- LEGEND**
- SW-06 ▲ SPARGING WELL NUMBER AND APPROXIMATE LOCATION
 - MW-29 ◆ MONITORING WELL NUMBER AND APPROXIMATE LOCATION
 - VW-03 ⊗ VAPOR EXTRACTION WELL NUMBER AND APPROXIMATE LOCATION
 - RW-01 ⊕ REMEDIATION WELL NUMBER AND APPROXIMATE LOCATION
 - MW-08 ⊗ WELL PROPOSED FOR ABANDONMENT
 - MW-26 ⊗ PREVIOUSLY ABANDONED WELL
 - x - x - FENCE
 - - - - - PROPERTY BOUNDARY
 - ➡ DIRECTION OF SHALLOW GROUNDWATER MOVEMENT (NOVEMBER 9-10, 2005)
 - APPROXIMATE LOCATION OF CONCRETE VAULT PROPOSED FOR REMOVAL OR ABANDONMENT.



DATE: 04/18/06
 DRAWN BY: HCL
 CHK BY: JGB
 CAD FILE: 01-056 FIG 2 SP

PROJECT NAME:
 LOCATION:
 SES PROJECT NUMBER:

TIME OIL CO. FACILITY #01-056
 500 GEORGE WASHINGTON WAY
 RICHLAND, WASHINGTON
 0440-012-02



**FIGURE 2
 SITE PLAN**

LEGEND

MONITORING WELL NUMBER

T = ND SOIL TPH (G & D) CONCENTRATIONS BELOW METHOD DETECTION LIMIT

B = ND SOIL BTEX CONCENTRATIONS BELOW METHOD DETECTION LIMIT

G = 2,900 WTPH-G CONCENTRATION IN PPM

D = 220 WTPH-D CONCENTRATION IN PPM

E = 27 ETHYLBENZENE CONCENTRATION IN PPM

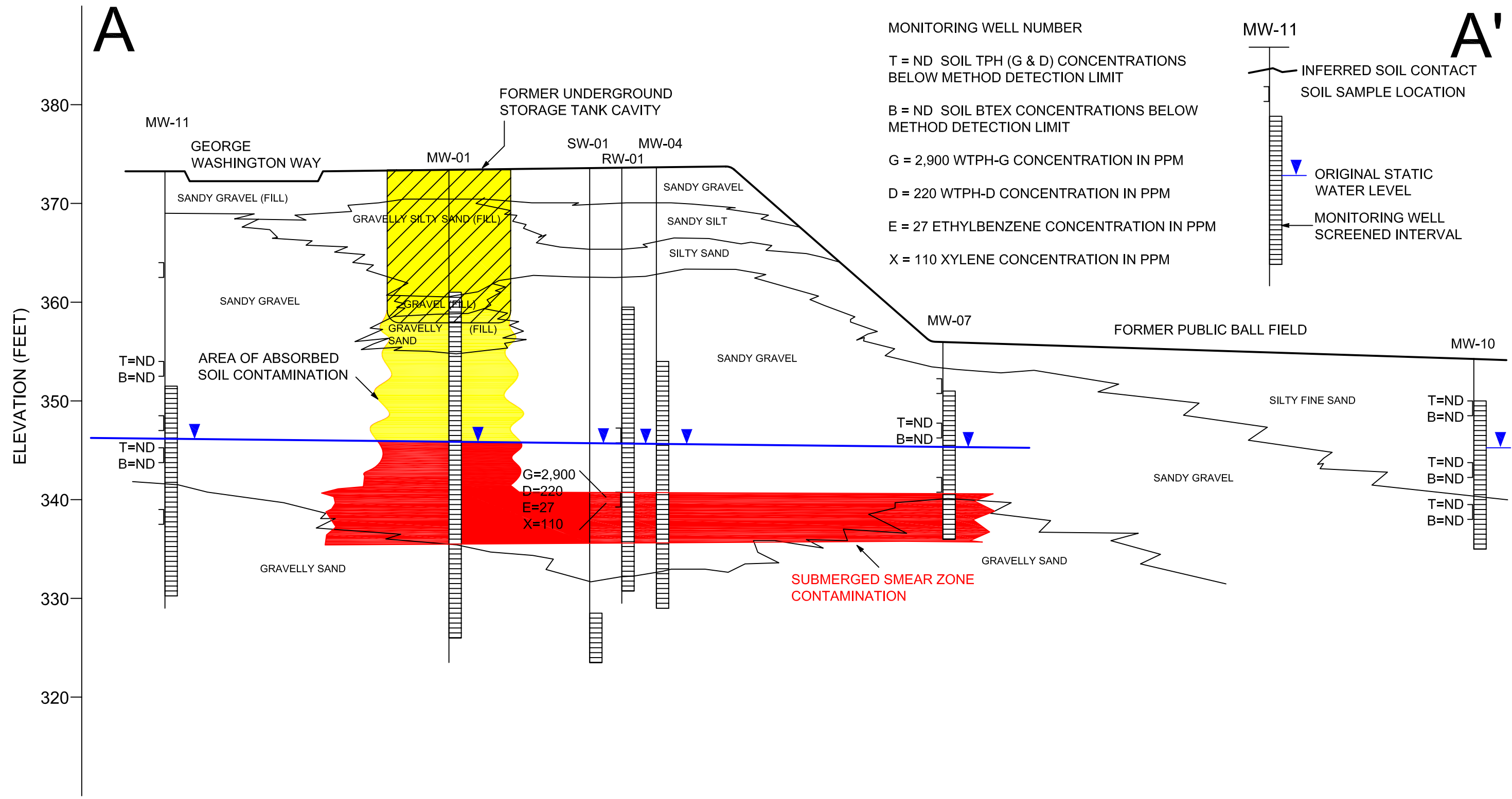
X = 110 XYLENE CONCENTRATION IN PPM

MW-11

INFERRED SOIL CONTACT
SOIL SAMPLE LOCATION

ORIGINAL STATIC
WATER LEVEL

MONITORING WELL
SCREENED INTERVAL



REFERENCE: FIGURE 4, AGRA EARTH LAND ENVIRONMENTAL, JUNE 1995



DATE: 04/18/06
DRAWN BY: HCL
CHK BY: JGB
CAD FILE: 01-056 FIG 3

PROJECT NAME: TIME OIL CO. FACILITY #01-056
LOCATION: 500 GEORGE WASHINGTON WAY
RICHLAND, WASHINGTON
SES PROJECT NUMBER: 0440-012-01

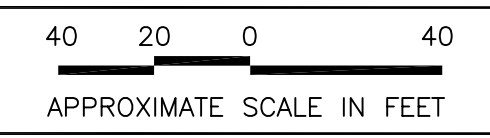


FIGURE 3
GENERALIZED EAST-WEST
GEOLOGIC CROSS-SECTION A-A'

APPENDIX C
SITE BACKGROUND INFORMATION

SITE DESCRIPTION, HISTORICAL SITE ASSESSMENT AND REMEDIAL ACTIONS

Site 01-056

**500 George Washington Way
Richland, Washington**

The following historical summary is based on a review of available documents and summaries including a draft letter report of results of a *Soil Vapor Survey* dated April 30, 1993 by Environmental Science and Engineering, Inc. (ESE), *Subsurface Petroleum Hydrocarbon Assessment and Remedial Investigation* dated June 19, 1995 by AGRA Earth and Environmental, Inc. (ARGA), *Pilot Study Report* dated April 30, 1997 by AGRA, *Remedial Pilot Testing – Howard Amon Park* dated May 7, 1998 by GeoEngineers, Inc. (GeoEngineers), *Report Remedial Activities – April 1997 through July 1998* dated September 3, 1998 by GeoEngineers, various groundwater monitoring reports completed by Sound Environmental Strategies (SES) from 2003 to 2008, *Remedial Action Alternatives Analyses* dated May 19, 2006 by SES and other various transmittal letters and agency correspondence from 2003 to 2006.

Site Description

The site is located at 500 George Washington Way in Richland, Washington. The site is an approximate 1.42-acre parcel located on the east side of George Washington Way approximately 800 feet west of the Columbia River. The site is currently an active retail fueling station with a convenience store, two pump islands with one dispenser each and three 10,000-gallon underground storage tanks (USTs). The site is located in a commercial and residential land-use area with a large public park located to the east.

Historical Site Assessment and Remedial Actions

In 1990, three steel underground storage tanks (USTs), associated piping and dispensers were removed from the site. New dispensers were installed in the same location as the previous dispensers and the new USTs were installed to the northwest. A fourth UST, known to have existed adjacent to the former USTs, was not found and is believed to have been removed prior to 1990. In addition, a 750-gallon heating oil tank is believed to have been located along the western wall of the property. No removal records for these tanks exist. Soil samples collected during the UST removal contained concentrations of TPH-Gx exceeding MTCA Method A Cleanup Levels.

In February 1993, a soil vapor survey was conducted but was mostly unsuccessful due to a high percentage of cobbles in the soil. VOCs were detected using field instrumentation. Also in 1993, a soil and groundwater site assessment was completed. During this investigation, five groundwater monitoring wells (MW-1 through MW-5) and one vapor extraction well (VW-1) were installed. Soil and groundwater contamination were identified in area of former UST cavity.

In 1995, an additional subsurface assessment was completed including the installation of six additional groundwater monitoring wells (MW-6 through MW-7), one vapor recovery well (RW-1), one air sparging well (SW-1) and the collection of soil and groundwater samples. Several rounds of groundwater elevation data were collected during this study. It was reported that the fluctuations in groundwater elevation and flow direction were likely the direct result of water level changes in nearby Lake Wallula (Columbia River) and the Yakima River. Heavy rainfall and extensive snowmelt from the nearby mountains occurred during the extent of the investigation. Additionally, the Wellsian Well Field operated by the City of Richland and located nearby, potentially affected groundwater flow. Two groundwater sampling events were completed in association with the investigation; one on February 1, 1995 (including six existing wells) and one on April 4, 1995 (including the seven wells installed during this investigation). Laboratory analysis indicated that dissolved-phase hydrocarbons above MTCA Method A Cleanup Levels were contained in a number of site wells. During the February event, the maximum concentrations of dissolved-phase hydrocarbons were identified in Well MW-1 as follows: TPH-Gx (30,000 parts per billion [ppb]); benzene (39 ppb); toluene (890 ppb); ethylbenzene (430 ppb); total xylenes (3,700 ppb); and TPH-Dx (1,800 micrograms per Liter [$\mu\text{g/L}$]). TCE and PCE were detected in two wells (MW-2 and MW-5); however, levels did not exceed the MTCA Method A Cleanup Levels. During the April event, maximum concentrations of toluene (850 $\mu\text{g/L}$) were detected in Well MW-1. Maximum concentrations of benzene (72 $\mu\text{g/L}$), ethylbenzene (1,400 $\mu\text{g/L}$) and total xylenes (6,400 $\mu\text{g/L}$) were identified in Well MW-7. Maximum concentrations of TPH-Gx (44,000 $\mu\text{g/L}$) and TPH-Dx (2,700 $\mu\text{g/L}$) were detected in Well RW-1. PCE and TCE were detected in several wells at levels below the MTCA Method A Cleanup Levels.

During March 1995, seven borings were advanced at offsite locations to the east and west of the site. Of the soil samples collected from these borings, only one (RW-1 S-2) contained detectable concentrations of fuel hydrocarbons. However, a submerged smear zone was identified that extended from Well MW-10 located to the northeast to Well MW-11 located to the southwest across George Washington Way. The smear zone was uniformly identified from approximately five to ten feet below ground surface (bgs).

On April 19 and 20, 1995 a 24-hour in-situ air sparge (AS) pilot test and two one-hour soil vapor extraction (SVE) pilot tests were conducted. Results indicated that AS/SVE was a viable method to remediate subsurface soils.

In August 1995 soil sampling activities were conducted along the west bank of the Columbia River located to the east and downgradient of the site. Soil samples were collected along an approximate 500 foot long section of the river bank. Analytical results indicated that the soil along the river had not been impacted.

In October 1995, a limited risk assessment was conducted to evaluate the risk to users of the park, baseball field and river shoreline located east of the site. The potential risk was from petroleum hydrocarbons volatilizing from subsurface soil and groundwater into the ambient air and breathing zone for park users. Based on the results of the risk assessment, exposure risk was minimal.

In November 1995, an additional twelve groundwater monitoring wells were installed. Nine wells were installed in the park, one well was installed onsite, and two wells were installed approximately 300 feet west of the site. In addition, six soil borings were advanced in the park. Onsite, five dedicated AS wells and four dedicated VE wells were installed as part of an AS/SVE pilot remedial system which also included using a number of existing wells.

In 1996/1997 a six-month SVE/AS pilot study was conducted using two separate operating systems, a constantly operating SVE system (4 wells) and a pulsed SVE/AS system (12 wells). The SVE/AS wells were aligned to form a subsurface “sparge fence” oriented perpendicular to groundwater flow and extending the width of the dissolved-phase plume. Approximately 771 pounds of TPHg and 50 pounds of BTEX were recovered from the subsurface; however, asymptotic conditions were reached in 90 days.

During December 1997, two remedial pilot tests were conducted at Howard Amon Park, located east of the site, to evaluate design parameters for an expansion of the remediation system operating at the site. As part of the pilot test design, two additional monitoring wells and two additional air sparge test wells were installed. The pilot tests were conducted in two areas referred to as the West Park Pilot Test and East Park Pilot Test. Results of the pilot tests indicated that AS/SVE was successful in terms of the distribution of dissolved oxygen and in reducing the concentrations of petroleum hydrocarbons. The West Park Pilot Test determined that SVE should be used in conjunction with AS in that part of the system; however, SVE was not necessary in the East Park part of the system. Based on the results of the remedial pilot tests, four additional AS wells, five additional SVE wells and a vapor extraction trench were installed in the areas of the West Park and East Park pilot test systems.

Operation and maintenance (O&M) of the remedial systems and groundwater monitoring and sampling conducted during 1997 and 1998 indicated that the onsite and the East Park remedial systems were effective in reducing petroleum hydrocarbon concentrations from groundwater. In May 1998, the West Park remedial system was completed and brought online. This included installing four more air sparge wells and a vapor extraction trench. Operation of the three remedial systems from start-up (1996 through 1998) through 2003 was effective in significantly lowering the concentrations of petroleum hydrocarbons at the site.

During the October 2003 groundwater monitoring event, groundwater flow direction had changed from easterly to southerly presumably due to pumping at the nearby Wellsian Well Field resulting in the migration of contaminants beyond the existing well network. Previously non-impacted wells had concentrations of dissolved-phase hydrocarbons exceeding Method A Cleanup Levels.

A peroxide injection pilot test was conducted in January 2004; however, details from that test are not available. In July 2004, four wells were installed to the south in order to delineate the dissolved-phase plume in that direction.

In 2005, approximately 9000 gallons of a 17% peroxide solution was injected into two site wells and the East Park remediation system was shut down.

In 2006, six remedial technologies were evaluated to address residual soil and groundwater contamination that persists despite implementation of the existing AS/SVE systems. Those remedial technologies evaluated were: monitored natural attenuation, dual-phase extraction and treatment, AS/SVE, enhanced bioremediation techniques and bioventing. AS/SVE was determined to be the preferred option.

Groundwater monitoring has been ongoing at the site since 1995. Results indicate that active remediation and natural attenuation have affected a decrease in the concentrations of petroleum hydrocarbons at the site. Based on current and historical groundwater analytical results, it appears that residual dissolved-phase hydrocarbons are localized to Wells MW-01, MW-04, MW-05, MW-06, MW-07, MW-32 and MW-33 and that the plume is adequately defined.

APPENDIX D
SITE SAFETY BRIEFING FORM

SITE SAFETY BRIEFING FORM

Site: Richland, WA

Date: 7/29/13 - 8/1/13

Time: 7:10, 6:30, 6:30, 7:00

Project No: 611

Task: Install 7 soil borings

Health/Safety Officer: J. McNamara

Person Providing Briefing: Becky L. Hawkins

Topics:

- Site HASP
- Chemical Hazards
- Equipment Hazards
- Electrical Hazards
- Heat Stress

- Personal Decontamination
- Personal Hygiene
- Employee Rights/Responsibilities
- Hazard Evaluations
- Emergency Response Procedures

Persons in Attendance:
(Name/Organization)

Persons in Attendance:
(Name/Organization)

Rich Jessen Utilities Plus LLC
Benny J. Hankin ESCI
Jeff Jones CDUP
Kyle King CDUP
James Richardson CDLP

7/29/13
7/29/13 - 8/1/13
7/29/13 - 8/1/13
7/29/13 - 8/1/13
7/29/13 - 8/1/13

Notes/Comments:

Each subsequent day we reviewed any issues
from the day before. No issues.



APPENDIX E

GENERAL FIELD PROCEDURES AND BORING LOGS



SUBSURFACE EXPLORATION LOG

CLIENT: PC&F

PROJECT NUMBER: 611

LOCATION: 1-056, Richland, WA

SURFACE ELEVATION: —

GEOLOGIST: B. Hawkins

DATE DRILLED: 7/29/13

DRILLING COMPANY: Cascade Drilling

NORTHING: —

TOTAL DEPTH: 40'

DRILLING METHOD: Roto Sonic 17-C

SAMPLE METHOD: SOSS

EASTING: —

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)	GEOLOGIC DESCRIPTION																Soil Class. Symbol	Lithologic Contact (ft bgs)
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name	Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading	Additional Modifiers				
5		1155	CB-1-5	1.6	-	-	-	25	60	15	0	3" asphalt, 3" concrete Silty sand w/gravel	DK brownish grey	D	loose	-	-	R to SR	76"	W	gravel-yellow, blk, granite, white	SM			
10		1225	CB-1-10	7.3	-	-	-	25	60	15	0	SAA	"	D	loose	-	-	R to SR	>6"	W	"	SM			
15		1250	CB-1-15	8.3	-	-	-	25	60	15	0	SAA	"	D	loose	-	-	R to SR	>6"	W	"	SM			
20		1315	CB-1-20	2.8	-	-	-	15	80	5	0	well graded sand w/ gravel	"	D	loose	-	-	R to SR	>3"	W	"	SW			
25		1400	CB-1-25	0	-	-	-	30	65	5	0	well graded sand w/ gravel	"	D	loose	-	-	R to SR	>2"	W	"	SW			
Notes:								> 1/4 inch	visible - 1/4 in	visible with hand lens	not visible	See USCS flow Charts. Describe sand and gravel grading, ie, fine to coarse grained	Use Munsell color chart if available	Dry Moist Wet	Course: v. loose loose md. dense dense v. dense	Fines: v. soft soft md. Stiff v. stiff hard	high med low non	A Sa Sr R	in inches	poorly vs. well	odor, staining, minerology, stucture, cementation,				



SUBSURFACE EXPLORATION LOG

CLIENT: PC&F
 PROJECT NUMBER: 611
 LOCATION: 1-056, Richland, WA
 SURFACE ELEVATION: _____

GEOLOGIST: B. Hawkins
 DATE DRILLED: 7/29/13
 DRILLING COMPANY: Cascade Drilling
 NORTHING: _____

TOTAL DEPTH: 40'
 DRILLING METHOD: Roto Sonic 17-C
 SAMPLE METHOD: 5085
 EASTING: _____

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)	GEOLOGIC DESCRIPTION													Soil Class. Symbol	Lithologic Contact (ft bgs)	
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name	Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading			Additional Modifiers
30	1415		CB-1-30	0.8	-	-	-	25	60	15	0	Silty sand w/ gravel	blk/whit	D	loose	-	-	R to SR	72"	W	"	SM	
35	1420		CB-1-35	0	-	-	-	30	65	5	0	Well graded sand w/ gravel	whit	D	loose	-	-	R to SR	125"	W	"	SW	
40			CB-1-40	0	-	-	-	60	25	15	0	Silty gravel w/ sand	"	W	loose	-	-	R to SR	76"	W	"	GM	
Notes: Boring terminated @ 40' bgs by filter w/ - WT @ 40' bgs - Boring backfilled w/ bentonite chips - Cuttings delivered								> 1/4 inch	visible - 1/4 in.	band visible with lens	not visible	See USCS flow Charts. Describe sand and gravel grading, ie, fine to coarse grained	Use Munsell color chart if available	Dry Moist Wet	Course: v. loose loose md. dense dense v. dense	Fines: v. soft soft md. Stiff v. stiff hard	high med low non	A Sa Sr R	in inches	poorly vs. well	odor, staining, mineralogy, stucture, cementation,		



SUBSURFACE EXPLORATION LOG

CLIENT: PC&F

PROJECT NUMBER: 611

LOCATION: 1-056, Richland, WA

SURFACE ELEVATION: —

GEOLOGIST: B. Hawkins

DATE DRILLED: 7/30/13

DRILLING COMPANY: Cascade Drilling

NORTHING: —

TOTAL DEPTH: 40'

DRILLING METHOD: Roto Sonic 17-C

SAMPLE METHOD: 5035

EASTING: —

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)					GEOLOGIC DESCRIPTION										Soil Class. Symbol	Lithologic Contact (ft bgs)
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name	Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading	Additional Modifiers		
5	0940		CB-2-5	0.6	-	-	-	60	35	5	0	Well graded gravel w/ sand	gray, brn	D	loose	-	-	R to SR	>6"	W	gravel - blk, yellow, grey, white, granite	GW	
10	1000		CB-2-10	0.4	-	-	-	60	35	5	0	SAA	"	D	loose	-	-	R to SR	>6"	W	"	GW	
15	1010		CB-2-15	0.7	-	-	-	60	35	5	0	SAA	"	D	loose	-	-	R to SR	>6"	W	"	GW	
20	1120		CB-2-20	0.9	-	-	-	60	30	10	0	Well graded gravel w/ silt & sand	"	D	loose	-	-	R to SR	<6"	W	"	GW/GM	
25	1205		CB-2-25	3.4	-	-	-	60	30	10	0	SAA	"	D	loose	-	-	R to SR	<6"	W	"	GW/GM	
Notes:								> 1/4 inch	visible - 1/4 in	visible with hand lens	not visible	See USCS flow Charts. Describe sand and gravel grading, ie, fine to coarse grained	Use Munsell color chart if available	Dry Moist Wet	Course: v. loose loose md. dense dense v. dense	Fines: v. soft soft md. stiff v. stiff hard	high med low non	A Sa Sr R	in inches	poorly vs. well	odor, staining, mineralogy, stucture, cementation,		



SUBSURFACE EXPLORATION LOG

CLIENT: PC&F

PROJECT NUMBER: 611

LOCATION: 1-056, Richland, WA

SURFACE ELEVATION: —

GEOLOGIST: B. Hawkins

DATE DRILLED: 7/30/13

DRILLING COMPANY: Cascade Drilling

NORTHING: —

TOTAL DEPTH: 40'

DRILLING METHOD: Roto Sonic 17-C

SAMPLE METHOD: 5035

EASTING: —

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)	GEOLOGIC DESCRIPTION																Soil Class. Symbol	Lithologic Contact (ft bgs)
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name	Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading	Additional Modifiers				
5	1425		CB-3-5	0	/	/	/	20	75	5	0	Well graded sand w/ gravel	gray, brn	D	loose	/	/	R to SR	>6"	W	Gravel - blk, yellow, gray, granite, white.	SW			
10	1440		CB-3-10	0	/	/	/	75	20	5	0	thin clay layer emb' Well graded gravel w/ sand	"	D	loose	/	/	R to SR	>6"	W	"	SW			
15	1515		CB-3-15	0	/	/	/	20	75	5	0	Well graded sand w/ gravel	"	D	loose	/	/	R to SR	>6"	W	"	SW			
20	1600		CB-3-20	0	/	/	/	25	50	25	0	Silty sand w/ gravel	blk, white	D	loose	/	/	R to SR	<6"	W	"	SM			
25	1605		CB-3-25	0	/	/	/	25	50	25	0	Silty sand w/ gravel	blk, white	D	loose	/	/	R to SR	<6"	W	"	SM			
Notes:								> 1/4 inch	visible - 1/4 in	visible with hand lens	not visible	See USCS flow Charts. Describe sand and gravel grading, ie, fine to coarse grained	Use Munsell color chart if available	Dry Moist Wet	Course: v. loose loose md. dense dense v. dense	Fines: v. soft soft md. Stiff v. stiff hard	high med low non	A Sa Sr R	in inches	poorly vs. well	odor, staining, mineralogy, stucture, cementation,				



SUBSURFACE EXPLORATION LOG

CLIENT: PC&F

PROJECT NUMBER: 611

LOCATION: 1-056, Richland, WA

SURFACE ELEVATION: -

GEOLOGIST: R Hawkins

DATE DRILLED: 7/30/13

DRILLING COMPANY: Cascade Drilling

NORTHING: -

TOTAL DEPTH: 40'

DRILLING METHOD: Roto Sonic 17C

SAMPLE METHOD: 5035

EASTING: -

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)					GEOLOGIC DESCRIPTION										Soil Class. Symbol	Lithologic Contact (ft bgs)
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name	Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading	Additional Modifiers		
30	1630		CB-3-30	6.4	-	-	-	25	50	25	0	Silty sand w/ gravel	blk, white	D	loose	-	-	R to SR	<6"	W	1	SM	
35	1640		CB-3-35	3.2	-	-	-	10	85	5	0	Well graded sand	blk, white	D	loose	-	-	R to SR	<2.5"	W		SW	
40	1645		CB-3-40	2.0	-	-	-	20	75	5		Well graded sand w/ gravel	blk, white	W	loose	-	-	R to SR	<2.5"	W	gravel - blk, white, yellow, gray, granite	SW	
Notes: Boring terminated @ 40' bgs by field grad. WT @ 40' bgs. Boring back-filled w/ bentonite chips. Soil cuttings drummed.								> 1/4 inch	visible - 1/4 in	visible with hand lens	not visible	See USCS flow Charts. Describe sand and gravel grading, ie, fine to coarse grained	Use Munsell color chart if available	Dry Moist Wet	Course: v. loose loose md. dense dense v. dense	Fines: v. soft soft md. Stiff v. stiff hard	high med low non	A Sa Sr R	in inches	poorly vs. well	odor, staining, minerology, stucture, cementation,		



SUBSURFACE EXPLORATION LOG

CLIENT: PC&F
 PROJECT NUMBER: 611
 LOCATION: 1-056, Richland
 SURFACE ELEVATION: —

GEOLOGIST: B. Hawkins
 DATE DRILLED: 7/31/13
 DRILLING COMPANY: Cascade Drilling
 NORTHING: —

TOTAL DEPTH: 45'
 DRILLING METHOD: Roto Sonic 17-C
 SAMPLE METHOD: 5035
 EASTING: — Page 1 of 2

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)					GEOLOGIC DESCRIPTION										Soil Class. Symbol	Lithologic Contact (ft bgs)
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name	Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading	Additional Modifiers		
5	0720		CB-4-5	1.1	—	—	—	25	70	5	0	Well graded sand w/ gravel	brn, grey	D	loose	—	—	R to SR	46"	W	gravel - blk, white, yellow, grey, granite	SW	
10	0730		CB-4-10	1.7	—	—	—	20	5	25	0	Silty gravel - fine gravel, fill	grey	D	loose	—	—	R to SR	46"	P		GP	
15	0745		CB-4-15	2.2	—	—	—	25	50	25	0	Silty sand w/ gravel	brn, grey	D	loose	—	—	R to SR	46"	W	gravel - blk, white, yellow, grey, granite	SM	
22	0825		CB-4-20	0	—	—	—	25	70	5	0	Well graded sand w/ gravel	ll	D	loose	—	—	R to SR	46"	W	,	SW	
25	0855		CB-4-25	0	—	—	—	25	35	40		Silty sand w/ gravel	ll	D	loose	—	—	R to SR	<46"	W	,	SM	
Notes:								> 1/4 inch	visible - 1/4 in	visible with band lens	not visible	See USCS flow Charts. Describe sand and gravel grading, ie, fine to coarse graded	Use Munsell color chart if available	Dry Moist Wet	Course: v. loose loose md. dense dense v. dense	Fines: v. soft soft md. Stiff v. stiff hard	high med low non	A Sa Sr R	in inches	poorly vs. well	odor, staining, mineralogy, stucture, cementation,		



SUBSURFACE EXPLORATION LOG

CLIENT: P&F

PROJECT NUMBER: 611

LOCATION: 1-056, Richland, WA

SURFACE ELEVATION:

GEOLOGIST: B. Hawkins
 DATE DRILLED: 7/31/13
 DRILLING COMPANY: Cascade Drilling
 NORTHING: →

TOTAL DEPTH: 45'
 DRILLING METHOD: Proto Sonic 17-C
 SAMPLE METHOD: 5035
 EASTING: -
 Page 2 of 2

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)					GEOLOGIC DESCRIPTION										Soil Class. Symbol	Lithologic Contact (ft bgs)
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name	Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading	Additional Modifiers		
30	0905		CB-4-30	3.1	/	/	/	25	50	25	0	Silty sand w/ gravel	blk/white	D	loose	-	-	R to SR	<6"	W	"	SM	
35	0920		CB-4-35	2.1	/	/	/	25	35	40	0	Silty sand w/ gravel	brn, gray	W	loose	-	-	R to SR	<6"	W	"	SM	
40	0925		CB-4-40	4.4	/	/	/	25	35	40	0	SAA	"	W	loose	-	-	R to SR	<6"	W	Slight HC odor	SM	
45	1015		CB-4-45	12.1	/	/	/	20	30	50	0	Sandy silt w/ gravel	"	W	loose	soft	non	R to SR	<2.5"	W	Gravel- blk, grey, yellow, white, granite	ML	
Notes:								> 1/4 inch	visible - 1/4 in	visible with hand lens	not visible	See USCS flow Charts. Describe sand and gravel grading, ie, fine to coarse grained	Use Munsell color chart if available	Dry Moist Wet	Course: v. loose loose md. dense dense v. dense	Fines: v. soft soft md. Stiff v. stiff hard	high med low non	A Sa Sr R	in inches	poorly vs. well	odor, staining, mineralogy, stucture, cementation,		



SUBSURFACE EXPLORATION LOG

CLIENT: PC&F

PROJECT NUMBER: 611

LOCATION: 1-056 Richland, WA

SURFACE ELEVATION: -

GEOLOGIST: B. Hawkins

DATE DRILLED: 7/29-30/13

DRILLING COMPANY: Cascade Drilling

NORTHING: -

TOTAL DEPTH: 40'

DRILLING METHOD: Roto Sonic 17C

SAMPLE METHOD: SD35

EASTING: -

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)					GEOLOGIC DESCRIPTION										Soil Class. Symbol	Lithologic Contact (ft bgs)
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name	Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading	Additional Modifiers		
5	1542		CB-5-5	4.2	1.4	-	-	25	55	20	0	Silty sand w/ gravel	brn, gray	D	loose	-	-	R to SR	76"	W	gravel, gray, blk, white, yellow, granite	SM	
10	1555		CB-5-10	2.5	-	-	-	25	55	20	0	SAA	l	D	loose	-	-	R to SR	76"	W	l	SM	
15	1620		CB-5-15	3.3	-	-	-	25	70	5	0	well graded sand w/ gravel	blk, white	D	loose	-	-	R to SR	24"	W	l	SW	
20	1645		CB-5-20	2.1	-	-	-	25	55	20	0	Silty sand w/ gravel	l	D	loose	-	-	R to SR	24"	W	l	SM	
25	0750	7/30/13	CB-5-25	5.8	-	-	-	25	70	5	0	well graded sand w/ gravel	l	D	loose	-	-	R to R	24"	W	l	SW	
Notes:								> 1/4 inch	visible - 1/4 in	visible with hand lens	not visible	See USCS flow Charts. Describe sand and gravel grading, ie, fine to coarse grained	Use Munsell color chart if available	Dry Moist Wet	Course: v. loose loose md. dense dense v. dense	Fines: v. soft soft md. Stiff v. stiff hard	high med low non	A Sa Sr R	in inches	poorly vs. well	odor, staining, mineralogy, stucture, cementation.		



SUBSURFACE EXPLORATION LOG

CLIENT: PCLF
 PROJECT NUMBER: 611
 LOCATION: 1-056, Richland, WA
 SURFACE ELEVATION: -

GEOLOGIST: B. Hawkins
 DATE DRILLED: 7/29-30/13
 DRILLING COMPANY: Cascade Drilling
 NORTHING: -

TOTAL DEPTH: 40'
 DRILLING METHOD: Roto Sonic 17-c
 SAMPLE METHOD: 5035
 EASTING: -

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)	GEOLOGIC DESCRIPTION					Soil Class. Symbol	Lithologic Contact (ft bgs)											
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name			Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading	Additional Modifiers		
30	0820		CB-5-30	25.5	-	-	-	25	70	5	0	Well graded sand w/ gravel	"	D	loose	-	-	SR	AR	<4"	W	"	SW		
35	0830		CB-5-35	1.8	-	-	-	75	20	5	0	Well graded gravel w/ sand	"	M	loose	-	-	SR	RR	>6"	W	"	GW		
40	0840		CB-5-40	0	-	-	-	25	75	0	0	Well graded sand w/ gravel	"	W	loose	-	-	SR	RR	<25"	W	"	SW		
Notes:																									
- Boring terminated @ 40' bgs by field gen.																									
- WT @ ~ 35' bgs																									
- Boring back-filled w/ bentonite chips																									
- Cuttings drummed																									



SUBSURFACE EXPLORATION LOG

CLIENT: PctF
 PROJECT NUMBER: 611
 LOCATION: 1-056, Richland, WA
 SURFACE ELEVATION: -

GEOLOGIST: B. Hawkins
 DATE DRILLED: 7/31/13
 DRILLING COMPANY: Cascade Drilling
 NORTHING: -

TOTAL DEPTH: 45'
 DRILLING METHOD: Roto Sonic P-C Page 1 of 2
 SAMPLE METHOD: S035
 EASTING: -

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)					GEOLOGIC DESCRIPTION										Soil Class. Symbol	Lithologic Contact (ft bgs)
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name	Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading	Additional Modifiers		
5	1110		CB-6-5	0.9	/	/	-	20	30	50	0	Sandy silt w/ gravel	gry, brn	M	loose	Soft	non	R to SR	2.5'	W	gravel - white, blk, grey, yellow, granite	ML	
10	1125		CB-6-10	0.8	/	/	-	5	35	60	0	Sandy silt	l	M	loose	soft	non	R to SR	2.5'	W		ML	
15	1255		CB-6-15	2.0	/	/	-	5	90	5	0	well graded sand	blk, white	D	loose	-	-	R to SR	2.5'	W		SW	
20	1333		CB-6-20	0	/	/	-	25	50	25	0	Silty sand w/ gravel	gry, brn	D	loose	-	-	R to SR	2.5'	W	gravel - white, blk, grey, yellow, granite	SM	
25	1350		CB-6-25	0	/	/	-	20	30	50	0	Sandy silt w/ gravel	"	D	loose	-	-	R to SR	2.5'	W	l	ML	
Notes:								> 1/4 inch	visible - 1/4 in.	visible with band lens	not visible	See USCS flow Charts. Describe sand and gravel grading, ie, fine to coarse grained	Use Munsell color chart if available	Dry Moist Wet	Course: v. loose loose md. dense dense v. dense	Fines: v. soft soft md. Stiff v. stiff hard	high med low non	A Sa Sr R	in inches	poorly vs. well	odor, staining, mineralogy, stucture, cementation,		



SUBSURFACE EXPLORATION LOG

CLIENT: PC&F
 PROJECT NUMBER: 611
 LOCATION: 1-056, Richland, WA
 SURFACE ELEVATION: —

GEOLOGIST: B. Hawkins
 DATE DRILLED: 7/31/13
 DRILLING COMPANY: Cascade Drilling
 NORTHING: —

TOTAL DEPTH: 45'
 DRILLING METHOD: Roto Sonic 17-C
 SAMPLE METHOD: SO36
 EASTING: —

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)					GEOLOGIC DESCRIPTION										Soil Class. Symbol	Lithologic Contact (ft bgs)
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name	Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading	Additional Modifiers		
30	1400		CB-6-30	0	-	-	-	30	65	5	0	Well graded sand w/ gravel	blk, white	D	loose	-	-	R to SR	<6"	W	"	SW	
35	1413		CB-6-35	1412	-	-	-	65	30	5	0	Well graded gravel w/ sand	"	W	loose	-	-	R to SR	>6"	W	"	GW	
42	1420		CB-6-40	4.4	-	-	-	15	25	60	0	Sandy silt w/ gravel	gray, brn	W	loose	soft	non	R to SR	<3"	W	"	ML	
45	1455		CB-6-45	3.0	-	-	-	15	25	60	0	SAA	"	W	loose	soft	non	R to SR	<3"	W	"	ML	
Notes: Boring terminated @ 45' bgs by field goal. - WT @ 35' bgs - Boring back-filled w/ bentonite chips - Soil cuttings drummed								> 1/4 inch	visible - 1/4 in	visible with band lens	not visible	See USCS flow Charts. Describe sand and gravel grading, ie, fine to coarse grained	Use Munsell color chart if available	Dry Moist Wet	Course: v. loose loose md. dense dense v. dense	Fines: v. soft soft md. Stiff v. stiff hard	high med low non	A Sa Sr R	in inches	poorly vs. well	odor, staining, mineralogy, stucture, cementation,		



SUBSURFACE EXPLORATION LOG

CLIENT: PC&F

PROJECT NUMBER: 611

LOCATION: 1-056, Richland, WA

SURFACE ELEVATION: _____

GEOLOGIST: B. Hawkins

DATE DRILLED: 7/31 - 8/1/13

DRILLING COMPANY: Cascade Drilling

NORTHING: _____

TOTAL DEPTH: 40'

DRILLING METHOD: Roto Sonic 17-C

SAMPLE METHOD: S035

EASTING: _____

Depth (ft)	Samples	Time (24 hr)	Sample Number	FID/PID (ppm)		Blow Count	Recovery (ft)					GEOLOGIC DESCRIPTION										Soil Class. Symbol	Lithologic Contact (ft bgs)	
				Sample	Breathing Zone			% gravel	% sand	% non-plastic fines	% plastic fines	Lithologic Name	Color	Moisture	Density	Consistency	Plasticity	Angularity	Max. grain size	grading	Additional Modifiers			
30	0720		CB-7-30	4.2	/	/	/	50	25	25	0	Silty gravel w/ sand	blk, white	D	loose	/	/	SR	SR	>3"	W	1	GM	
35	0730		CB-7-35	6.4	/	/	/	60	25	25	0	SAA	"	W	loose	/	/	SR	SR	>3"	W	"	GM	
40	0735		CB-7-40	0	/	/	/	60	40	T	0	Well graded gravel w/ sand	"	W	loose	/	/	SR	SR	76"	W	"	GW	
Notes: Boring terminated @ 40' bgs by field geologist								> 1/4 inch	visible - 1/4 in.	visible with band lens	not visible	See USCS flow Charts. Describe sand and gravel grading, ie, fine to coarse grained	Use Munsell color chart if available	Dry Moist Wet	Course: v. loose loose md. dense dense v. dense	Fines: v. soft soft md. Stiff v. stiff hard	high med low non	A Sa Sr R	in inches	poorly vs. well	odor, staining, mineralogy, stucture, cementation,			

8/1/13



GENERAL FIELD PROCEDURES

General procedures used by Environ Strategy in site assessments for drilling exploratory borings and collecting samples are described herein. The general procedures may be modified as appropriate based on site conditions. A Professional state-registered geologist supervises the following procedures.

PRE-FIELD WORK ACTIVITIES

Health and Safety Plan

Field work performed by Environ Strategy at the site is conducted according to guidelines established in a Site Health and Safety Plan (HASP). The HASP is a document that describes the hazards that may be encountered in the field and specifies protective equipment, work procedures, and emergency information. A copy of the HASP is at the site and available for reference by appropriate parties during field work.

Locating Underground Utilities

Before commencement of subsurface work, the location of the excavation, boring, etc., is marked with white spray paint as required by law. An underground locating service such as One-Call is contacted 72-hours before initiating field work. The locating company contacts the owners of the various utilities in the vicinity of the site to mark the locations of their underground utilities. Invasive work is preceded by hand augering to a minimum depth of five feet below surface grade to avoid contacting potential underground utilities or structures.

FIELD METHODS AND PROCEDURES

Exploratory Soil Borings

Soil borings will be drilled using a truck-mounted, hollow stem auger (HSA) drill rig or using hydraulically actuated “direct-push” and percussion equipment, e.g. Geoprobe[®]. If HSA drilling techniques are utilized, soil samples for logging will be obtained from auger-return materials and by advancing a modified split-spoon sampler equipped with stainless steel liners or equivalent into undisturbed soil beyond the tip of the auger. Similarly, if direct-push technology (DPT) is used, soil samples will be retrieved from the borings using a 3-foot-long, 2-inch diameter continuous-core split-barrel sampler lined with six stainless steel/brass sleeves or a 4-foot-long acetate liner. Soils will be logged by a geologist according to the Unified Soil Classification System using standard geological techniques. Drill cuttings will be screened using a portable photoionization detector (PID) or a flame ionization detector (FID). Exploratory soil borings not used for monitoring well installation will be backfilled to the surface with bentonite-cement slurry and/or hydrated bentonite chips and capped at the surface to match surrounding conditions.

Soil Sample Collection

Auger Sampling: During drilling, soil samples will be collected in clean steel/brass, two by six inch tubes. The tubes will be set in an 18-inch-long split-barrel sampler. The sampler will be conveyed to the bottom of the borehole attached to a wire-line hammer

device on the drill rig. When possible, the split-barrel sampler will be driven its entire length, either hydraulically or by repeatedly pounding a 140-pound hammer using a 30-inch drop. The number of drops (blows) used to drive the sampler will be recorded on the boring log. The sampler will be extracted from the borehole, and the tubes containing the soil samples will be removed. Upon removal, the ends of the lowermost tube will be sealed with Teflon sheets and plastic caps. Soil samples for chemical analysis will be labeled, placed on ice, and delivered to a state-certified analytical laboratory, along with the appropriate chain-of-custody documentation.

Geoprobe Sampling: The push-probe system is driven by a hydraulic hammer or vibrator. Each boring will be sampled at a minimum of 5-foot intervals. Shorter sampling intervals or continuous core sampling techniques may be employed to provide subsurface definition. As the core barrel is advanced, soil is driven into an inner 1¾-inch diameter core barrel, which is either lined with steel/brass or acetate sleeves. After being driven 5 feet, the rods are removed from the borehole. Upon removal, the ends of the lowermost sleeve will be sealed with Teflon sheets and plastic caps. Soil samples for chemical analysis will be labeled, placed on ice, and delivered to a state-certified analytical laboratory, along with the appropriate chain-of-custody documentation.

Soil Classification

As the samples are obtained in the field, they will be classified by the field geologist in accordance with the Unified Soil Classification System. Representative portions of the samples will be retained for further examination and for verification of the field classification. Logs of the borings indicating the depth and identification of the various strata and pertinent information regarding the method of maintaining and advancing the borehole will be prepared. Specifically, for each sampling interval, field estimates of soil type, density/consistency, plasticity, grading, moisture, color, and any other pertinent information will be recorded on the boring log.

Soil Sample Screening and Sampling

Soil samples selected for chemical analysis will be determined from a headspace analysis using a PID or an FID. The soil will be placed in a Ziploc® bag or equivalent, sealed, and allowed to reach ambient temperature, at which time the PID probe will be inserted into the Ziploc bag. The total volatile hydrocarbons present are detected in parts per million (ppm). The PID will be calibrated daily to an isobutylene standard. Additionally, a water trap will be fixed to the end of the PID sampling wand to minimize potential interference from entrained soil moisture.

Generally two soil samples from each soil boring will be submitted for chemical analysis unless otherwise specified in the scope of work (See applicable workplan or the client's specified scope of work). Soil samples selected for analysis typically represent the boring bottom sample or the sample just above the first-occurrence of groundwater and sample that exhibits the highest PID reading.

Important: Environmental Protection Agency 5035 sampling methodology will be followed for the collection of samples involving the analysis of volatile organic

compounds. For additional details regarding the application, collection and preparation of 5035 soil samples see the Washington State Department of Ecology' Memorandum No. 5 titled *Collecting and Preparing Soil Samples for VOC analysis*, dated June 10, 2004.

HydroPunch® Sampling

A grab groundwater sample is collected using a Hydropunch® sampling device or equivalent. The hydropunch can be used with either a HSA drill or DPT rig. The hydropunch consists of a stainless steel probe, which is advanced in to the water-yielding zone then withdrawn to expose an internal screen. Once the probe is opened, groundwater enters while soil particles larger than silt are prevented from entering by a screen. A decontaminated stainless steel bailer or equivalent is inserted down the center of the well screen to obtain a "grab-type" groundwater sample for analysis. The samples are carefully transferred from the bailer to zero headspace, 40 milliliter glass vials fitted with Teflon-lined caps. The groundwater sample is labeled, placed on ice (i.e. chilled at approximately 4 degrees Celsius), and delivered to a state-certified analytical laboratory, along with the appropriate chain-of-custody documentation. The boring is backfilled with a cement/bentonite slurry and capped at the surface to match surface conditions.

Chain-of-Custody Protocol

Chain-of-Custody protocol is followed for all soil and groundwater samples selected for laboratory analysis. The Chain-of-Custody form(s) accompanies the samples to the laboratory and provides a continuous record of possession at all times.

Decontamination

Drill cuttings generated during the drilling procedure will be contained in labeled and marked, DOT-approved 55-gallon drums and placed in a secured onsite location. Drilling equipment is decontaminated by steam cleaning before being brought onsite. The augers are also steam cleaned before proceeding with each new. Before use, the sampler and sampling sleeves are brushed-scrubbed in a Liqui-nox and potable water solution and rinsed twice in clean potable water. Sampling equipment and sleeves are also decontaminated before each sample is collected to avoid cross-contamination between borings.

Waste Management

Soil cuttings, decontamination and/or development water will be contained in DOT-approved, 55-gallon drums. Each drum will be appropriately labeled, marked and temporarily stored in a secured onsite location pending waste characterization. Upon receipt of analytical results, contained waste will be transported offsite to an appropriate disposal/recycling facility.

Exceptions

Additional tasks or non-standard practices/procedures, if any, that may be requested or required for a particular site will be documented in the field notes on the following pages.

APPENDIX F
LABORATORY ANALYTICAL REPORT

August 9, 2013

Becky Hawkins
Environ Strategy
1036 West Taft Avenue, Suite 200
Orange, CA 92865

Dear Ms. Hawkins:

Please find enclosed the analytical data report for the I-056 Richland Project located in Richland, Washington. Soil samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWPHT-Gx and BTEX by Method 8260 on August 2 - 7, 2013.

The results of the analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this analytical work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Environ Strategy for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec
President

ESN NORTHWEST CHEMISTRY LABORATORY

Environ Strategy Consultants, Inc.
 I-056 RICHLAND PROJECT
 Client Project #611
 Richland, Washington

ESN Northwest
 1210 Eastside Street SE Suite 200
 Olympia, WA 98501
 (360) 459-4670 (360) 459-3432 Fax
 lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx/Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	8/2/2013	8/2/2013	132	nd	nd
LCS	8/2/2013	8/2/2013	100	75%	---
CB-1-5	8/2/2013	8/2/2013	116	nd	nd
CB-1-5dup	8/2/2013	8/2/2013	104	nd	nd
CB-1-10	8/2/2013	8/2/2013	103	nd	nd
CB-1-15	8/2/2013	8/2/2013	103	nd	nd
CB-1-20	8/2/2013	8/2/2013	108	nd	nd
CB-1-25	8/2/2013	8/2/2013	97	nd	nd
CB-1-30	8/2/2013	8/2/2013	108	nd	nd
CB-1-35	8/2/2013	8/2/2013	98	nd	nd
CB-1-40	8/2/2013	8/2/2013	100	nd	nd
CB-5-5	8/2/2013	8/2/2013	115	nd	nd
CB-5-10	8/2/2013	8/2/2013	89	nd	nd
CB-5-15	8/2/2013	8/2/2013	88	nd	nd
CB-5-20	8/2/2013	8/2/2013	90	nd	nd
CB-5-20dup	8/2/2013	8/2/2013	110	nd	nd
Reporting Limits				50	100

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST CHEMISTRY LABORATORY

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 lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx/Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	8/2/2013	8/2/2013	99	nd	nd
LCS	8/2/2013	8/2/2013	97	70%	---
CB-5-25	8/2/2013	8/2/2013	114	nd	nd
CB-5-25 dup	8/2/2013	8/2/2013	114	nd	nd
CB-5-30	8/2/2013	8/2/2013	124	nd	nd
CB-5-35	8/2/2013	8/2/2013	124	nd	nd
CB-5-40	8/2/2013	8/2/2013	101	nd	nd
CB-2-5	8/2/2013	8/2/2013	118	nd	nd
CB-2-10	8/2/2013	8/2/2013	109	nd	nd
CB-2-15	8/2/2013	8/2/2013	100	nd	nd
CB-2-20	8/2/2013	8/2/2013	114	nd	nd
CB-2-25	8/2/2013	8/2/2013	109	nd	nd
CB-2-30	8/2/2013	8/2/2013	100	nd	nd
CB-2-35	8/5/2013	5/5/2013	109	nd	nd
CB-2-40	8/2/2013	8/2/2013	113	nd	nd
CB-3-5	8/5/2013	8/5/2013	110	nd	nd
CB-3-10	8/5/2013	8/5/2013	89	nd	nd
CB-3-15	8/5/2013	8/5/2013	89	nd	nd
CB-3-20	8/5/2013	8/5/2013	79	nd	nd
CB-3-25	8/5/2013	8/5/2013	84	nd	nd
CB-3-30	8/5/2013	8/5/2013	81	nd	nd
CB-3-35	8/5/2013	8/5/2013	75	nd	nd
CB-3-40	8/5/2013	8/5/2013	72	nd	nd
CB-3-40 dup	8/5/2013	8/5/2013	72	nd	nd
Reporting Limits				50	100

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST CHEMISTRY LABORATORY

Environ Strategy Consultants, Inc.
 I-056 RICHLAND PROJECT
 Client Project #611
 Richland, Washington

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Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	8/5/2013	8/5/2013	nd	nd	nd	nd	nd	104
LCS	8/2/2013	8/5/2013	81%	72%	78%	75%	69%	92
LCSD	8/2/2013	8/5/2013	106%	117%	128%	119%	---	84
CB-5-25	7/30/2013	8/5/2013	nd	nd	nd	nd	nd	94
CB-5-25 dup	7/30/2013	8/5/2013	nd	nd	nd	nd	nd	96
CB-5-30	7/30/2013	8/5/2013	nd	nd	nd	nd	nd	102
CB-5-35	7/30/2013	8/5/2013	nd	nd	nd	nd	nd	109
CB-5-40	7/30/2013	8/5/2013	nd	nd	nd	nd	nd	98
CB-2-5	7/30/2013	8/5/2013	nd	nd	nd	nd	nd	99
CB-2-10	7/30/2013	8/5/2013	nd	nd	nd	nd	nd	98
CB-2-15	7/30/2013	8/5/2013	nd	nd	nd	nd	nd	107
CB-2-20	7/30/2013	8/5/2013	nd	nd	nd	nd	nd	99
CB-2-25	7/30/2013	8/5/2013	nd	nd	nd	nd	nd	103
CB-2-30	7/30/2013	8/5/2013	nd	nd	nd	nd	nd	102
CB-2-35	7/30/2013	8/6/2013	nd	nd	nd	nd	nd	99
CB-2-40	7/30/2013	8/6/2013	nd	nd	nd	nd	nd	91
CB-3-5	7/30/2013	8/6/2013	nd	nd	nd	nd	nd	95
CB-3-10	7/30/2013	8/6/2013	nd	nd	nd	nd	nd	96
CB-3-15	7/30/2013	8/6/2013	nd	nd	nd	nd	nd	85
CB-3-20	7/30/2013	8/6/2013	nd	nd	nd	nd	nd	98
CB-3-25	7/30/2013	8/6/2013	nd	nd	nd	nd	nd	97
CB-3-30	7/30/2013	8/6/2013	nd	nd	nd	nd	nd	91
CB-3-35	7/30/2013	8/6/2013	nd	nd	nd	nd	nd	91
CB-3-40	7/30/2013	8/6/2013	nd	nd	nd	nd	nd	113
CB-3-40 dup	7/30/2013	8/6/2013	nd	nd	nd	nd	nd	111
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%

ESN NORTHWEST CHEMISTRY LABORATORY

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 Richland, WA

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Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	8/7/2013	8/7/2013	nd	nd	nd	nd	nd	95
LCS	8/7/2013	8/7/2013	84%	81%	83%	85%	68%	84
LCSD	8/7/2013	8/7/2013	97%	100%	107%	105%	---	92
CB-4-5	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	97
CB-4-5 Duplicate	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	93
CB-4-10	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	93
CB-4-15	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	95
CB-4-20	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	101
CB-4-25	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	86
CB-4-30	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	96
CB-4-35	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	101
CB-4-40	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	93
CB-4-45	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	100
CB-6-5	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	103
CB-6-10	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	111
CB-6-10 Duplicate	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	92
CB-6-15	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	121
CB-6-20	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	89
CB-6-25	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	93
CB-6-30	7/31/2013	8/7/2013	nd	nd	nd	nd	nd	119
CB-6-35	7/31/2013	8/8/2013	nd	nd	nd	nd	16	101
CB-6-40	7/31/2013	8/8/2013	nd	nd	nd	nd	nd	96
CB-6-45	7/31/2013	8/8/2013	nd	nd	nd	nd	nd	95
CB-7-5	7/31/2013	8/8/2013	nd	nd	nd	nd	nd	101
CB-7-5 Duplicate	7/31/2013	8/8/2013	nd	nd	nd	nd	nd	97
CB-7-10	7/31/2013	8/8/2013	nd	nd	nd	nd	nd	97
CB-7-15	7/31/2013	8/8/2013	nd	nd	nd	nd	nd	96
CB-7-20	7/31/2013	8/8/2013	nd	nd	nd	nd	nd	99
CB-7-25	7/31/2013	8/8/2013	nd	nd	nd	nd	nd	90
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.
 "nd" Indicates not detected at the listed detection limits.
 "int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%

ESN NORTHWEST CHEMISTRY LABORATORY

Environ Strategy Consultants, Inc.
 I-056 Richland PROJECT
 Client Project #611
 Richland, WA

ESN Northwest
 1210 Eastside Street SE Suite 200
 Olympia, WA 98501
 (360) 459-4670 (360) 459-3432 Fax
 lab@esnnw.com

Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	8/1/2013	8/8/2013	nd	nd	nd	nd	nd	91
LCS	8/1/2013	8/8/2013	71%	73%	81%	78%	119%	87
LCSD	8/1/2013	8/8/2013	88%	93%	90%	92%	---	99
CB-7-30	8/1/2013	8/8/2013	nd	nd	nd	nd	nd	112
CB-7-35	8/1/2013	8/8/2013	nd	nd	nd	nd	nd	100
CB-7-40	8/1/2013	8/8/2013	nd	nd	nd	nd	nd	86
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%

ESN NORTHWEST CHEMISTRY LABORATORY

Environ Strategy Consultants, Inc.
 I-056 Richland PROJECT
 Client Project #611
 Richland, WA

ESN Northwest
 1210 Eastside Street SE Suite 200
 Olympia, WA 98501
 (360) 459-4670 (360) 459-3432 Fax
 lab@esnnw.com

**Analysis of Diesel Range Organics & Lube Oil Range Organics
 in Soil by Method NWTPH-Dx/Dx Extended**

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	8/6/2013	8/6/2013	119	nd	nd
LCS	8/6/2013	8/6/2013	108	109%	---
CB-4-5	8/6/2013	8/6/2013	125	nd	nd
CB-4-5 Duplicate	8/6/2013	8/6/2013	109	nd	nd
CB-4-10	8/6/2013	8/6/2013	96	nd	nd
CB-4-15	8/6/2013	8/6/2013	93	nd	nd
CB-4-20	8/6/2013	8/6/2013	103	nd	nd
CB-4-25	8/6/2013	8/6/2013	122	nd	nd
CB-4-30	8/6/2013	8/6/2013	105	nd	nd
CB-4-35	8/6/2013	8/6/2013	106	nd	nd
CB-4-40	8/6/2013	8/6/2013	107	nd	nd
CB-4-45	8/6/2013	8/6/2013	107	nd	nd
CB-6-5	8/6/2013	8/6/2013	113	nd	nd
CB-6-10	8/6/2013	8/7/2013	108	nd	nd
CB-6-10 Duplicate	8/6/2013	8/7/2013	100	nd	nd
CB-6-15	8/6/2013	8/7/2013	101	nd	nd
CB-6-20	8/6/2013	8/7/2013	83	nd	nd
CB-6-25	8/6/2013	8/7/2013	95	nd	nd
CB-6-30	8/6/2013	8/7/2013	100	nd	nd
CB-6-35	8/6/2013	8/7/2013	109	nd	nd
CB-6-40	8/6/2013	8/7/2013	98	nd	nd
CB-6-45	8/6/2013	8/7/2013	93	nd	nd
CB-7-5	8/6/2013	8/7/2013	105	nd	nd
CB-7-5 Duplicate	8/6/2013	8/7/2013	95	nd	nd
CB-7-10	8/6/2013	8/7/2013	147	nd	nd
CB-7-15	8/6/2013	8/7/2013	126	nd	nd
CB-7-20	8/6/2013	8/7/2013	121	nd	nd
CB-7-25	8/6/2013	8/7/2013	141	nd	nd
Reporting Limits				50	100

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST CHEMISTRY LABORATORY

Environ Strategy Consultants, Inc.
I-056 Richland PROJECT
Client Project #611
Richland, WA

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx/Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	8/7/2013	8/7/2013	102	nd	nd
LCS	8/7/2013	8/7/2013	98	122%	---
CB-7-30	8/7/2013	8/7/2013	146	nd	nd
CB-7-35	8/7/2013	8/7/2013	132	nd	nd
CB-7-40	8/7/2013	8/7/2013	134	nd	nd
CB-7-40dup	8/7/2013	8/7/2013	122	nd	nd
Reporting Limits				50	100

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST CHEMISTRY LABORATORY

Environ Strategy Consultants, Inc.
 I-056 RICHLAND PROJECT
 Client Project #611
 Richland, Washington

ESN Northwest
 1210 Eastside Street SE Suite 200
 Olympia, WA 98501
 (360) 459-4670 (360) 459-3432 Fax
 lab@esnnw.com

Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	8/2/2013	8/2/2013	nd	nd	nd	nd	nd	87
LCS	8/2/2013	8/2/2013	93%	80%	86%	79%	100%	94
LCSD	8/2/2013	8/2/2013	109%	90%	96%	94%	---	91
CB-1-5	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	97
CB-1-5dup	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	93
CB-1-10	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	107
CB-1-15	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	96
CB-1-20	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	88
CB-1-25	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	87
CB-1-30	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	100
CB-1-35	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	85
CB-1-40	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	100
CB-5-5	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	95
CB-5-10	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	99
CB-5-15	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	90
CB-5-20	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	87
CB-5-20dup	7/29/2013	8/2/2013	nd	nd	nd	nd	nd	92
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

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"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%

APPENDIX G
NON-HAZARDOUS WASTE MANIFEST

STRAIGHT BILL OF LADING - ORIGINAL - NOT NEGOTIABLE

Shipper's No. _____

Carrier NRC SCAC _____ Carrier's No. _____

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations:

at Richland, WA date 8-26-13 from 500 Broadway

the Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Finley Buttes Landsill

Destination Boardman State OR County _____ Zip 97415 Delivery Address Bombing Range RD

Route IS2 E to IS4 W to Bombing Range RD

Delivering Carrier NRC Vehicle Number 215

Number of Packages	Description of Articles	Weight (sub. to correction)	Class or Rate	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
002	<u>New Reg material By DOT Petroleum Contaminated soil</u>	<u>4550 lbs</u>	<u>Drum</u>	<u>Muller</u> (Signature of Consignor)
002	<u>New Reg material By DOT Decontamination water</u>	<u>400 lbs</u>	<u>Drum</u>	
<u>Job # 77289</u>				FREIGHT CHARGES: Prepaid <input type="checkbox"/> Collect <input type="checkbox"/>
<u>P.O. # 6765</u>				
<u>Ticket #'s 194018 / 194022</u>				COD AMT: \$ _____
Collect On Delivery and remit to \$ _____				TOTAL CHARGES: \$ _____
		COD FEE: \$ _____	Prepaid <input type="checkbox"/> Collect <input type="checkbox"/>	\$ _____

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$ _____ per _____

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).

Shipper: _____ Carrier: NRC

Per: _____ Date: _____ Per: Tony Posner Date: 8-26-13

1

S

FINLEY BUTTES LANDFILL
73221 Bombing Range Road
BOARDMAN, OR 97818

Job# 7.289

010281 NRC ENVIROMENTAL
720 N CALIFORNIA ST
PASCO WA 99301

P.O.#7

SITE	TICKET	GRID		WEIGHMASTER	
29	194022			Michelle Dekker	
DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/27/13	08/27/13	09:31	09:47	NRC007	
REFERENCE			ORIGIN		
6765			WA-BENTON CO		

Manual Gross Wt. 20500 LB Inbound - Charge ticket
Scale 2 Tare Wt. 19480 LB
Net Weight 1020 LB

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
0.51	TON	Industrial - Liquid				

Operating hours 7AM to 3:30PM Monday thru Friday.
Have a nice day!

SW# 1-13-122 ENVIRON STRATEGY
PO # JOB#77289

NET AMOUNT
TENDERED
CHECK NO.
8

202.TS TO REORDER CONTACT NORTH STAR FORMS, LLC (877) 499-0492

SIGNATURE _____

FINLEY BUTTES LANDFILL
73221 Bombing Range Road
BOARDMAN, OR 97818

Job# 77289

010281 NRC ENVIROMENTAL
720 N CALIFORNIA ST
PASCO WA 99301

P.O.#7

SITE	TICKET	GRID		WEIGHMASTER	
29	194018			Michelle Dekker	
DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
08/27/13	08/27/13	09:04	09:29	NRC007	
REFERENCE			ORIGIN		
6765			WA-BENTON CO		

Manual Gross Wt. 26100 LB Inbound - Charge ticket
Scale 2 Tare Wt. 20500 LB
Net Weight 5600 LB

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
2.80	TON	Contaminated Soil				

Operating hours 7AM to 3:30PM Monday thru Friday.
Have a nice day!

SW# 1-13-121 ENVIRON STRATEGY
PO # JOB#77289

NET AMOUNT
TENDERED
CHECK NO.
8

APPENDIX H
AGENCY CORRESPONDENCE



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

March 1, 2013

Laura Skow
Environ Strategy Consultants, Inc.
1036 West Taft Avenue, Suite 200
Orange, CA 92865

Re: Further Action at the following Site:

- **Site Name:** Jackpot Food Mart, Site 01-056
- **Site Address:** 500 George Washington Way, Richland
- **Facility/Site No.:** 38214358
- **Cleanup Site No.:** 5992
- **VCP Project No.:** CE0381

Dear Ms. Skow:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Jackpot Food Mart 056 facility (Site). Ecology appreciates your initiative in pursuing an independent remedial action under the Model Toxics Control Act (MTCA). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

YES. Ecology has determined that further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- TPH-Gx, TPH-Dx, benzene, toluene, ethylbenzene, and total xylenes into soil; and
- TPH-Gx, TPH-Dx, benzene, toluene, ethylbenzene, total xylenes, and lead into groundwater.



Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. "Site Closure Plan, PC&F Site 01-056, 500 George Washington Way, Richland, Washington, Environ Strategy Consultants, Inc., January 21, 2011.
2. "Groundwater Monitoring Report, Site 01-056, 500 George Washington Way, Richland, Washington", Environ Strategy Consultants, Inc., 3rd Quarter 2010, 4th Quarter 2011, 2nd Quarter 2012.
3. "Executive Summary: Leaking Underground Storage Tank Review", Ecology and Environment, Inc., December 2, 2008
4. Jackpot 01-056 Correspondence File, Ecology's Central Regional Office.

Those documents are kept at the Central Regional Office (CRO) of Ecology for review by appointment only. You can make an appointment by calling the CRO resource contact, Roger Johnson, at 509-454-7658.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Geologic or hydrogeologic reports submitted to Ecology for review must be under the seal of an appropriately licensed professional, as required by Chapters 18.43 and 18.220 RCW. Be aware also that consistent with Chapter 173-340-840(5) and described in Policy 840, all environmental monitoring data generated during contaminated site investigations and cleanups shall be required to be submitted to Ecology in both a written and electronic format.

Analysis of the Cleanup

Ecology has concluded that **further remedial action** may be necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. **Characterization of the Site.**

Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards and select a cleanup action.

The characterization of the Site is insufficient to establish cleanup standards. Further investigation necessary to characterize the Site may include additional soil sampling in the areas where impact to groundwater is demonstrated near the source area. As noted on page 17 of the Site Closure Plan, data gaps have been recognized, more specifically, the absence of confirmational soil samples from the area of the former tank cavity and the pump islands. Continued detection of the contaminants of concern above MCTA Method A groundwater cleanup levels is indicative of several possibilities with the likelihood of one or more of the following: remaining source material or contaminated fill material in the tank cavity area or a smear zone near the affected wells.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site do not meet the substantive requirements of MTCA.

In the areas where impact to groundwater has been confirmed, the soil cleanup level is based on the leaching exposure pathway for protection of groundwater. The applicable point of compliance for this exposure pathway is defined as throughout the Site. Furthermore, the point of compliance extends throughout the soil profile and may extend below the water table. Additional soil sampling is required to demonstrate that the cleanup level has been met at the point of compliance near the source area. Refer to Section 1 above for discussion of the incomplete soil characterization of the Site.

More specifically, petroleum contamination levels shown by the groundwater analytical results from MW-1, MW-4 and MW-32 have not sufficiently stabilized to allow Stage 2 groundwater monitoring as described in the *Guidance for Remediation of Petroleum Contaminated Sites* (Publ. 10-09-057). Groundwater impact by benzene and gasoline contamination has been detected above MCTA Method A groundwater cleanup levels on an intermittent basis over the monitoring period, most notably during the 2011 sampling event. Additionally, if groundwater contamination has been detected, quarterly monitoring is required for the direct comparison approach. The data from these three wells precludes using a statistical approach to determine compliance since it fails the three-part test.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site does not meet the substantive requirements of MTCA. Refer to the discussion in Step 2 regarding the insufficiency in meeting the substantive requirements for the cleanup standards.

Long-term groundwater monitoring by itself is not considered a cleanup action. Alternatively, the selection of monitored natural attenuation as a cleanup action consistent with WAC 173-340-370(7) requires that source control has been conducted to the following:

1. Source control has been conducted to the maximum extent practicable;
2. Leaving contaminants on-site during the restoration time frame does not pose an unacceptable risk to human health or the environment;
3. There is evidence that natural biodegradation or chemical degradation is occurring and will continue to occur at a reasonable rate at the site; and
4. Appropriate monitoring requirements are conducted to ensure that the natural attenuation process is taking place and that human health and the environment are protected.

In addition to soil sampling as mentioned in Step 1, the collection of additional groundwater parameters for the geochemical analysis is required to demonstrate that natural biodegradation or chemical degradation is occurring.

4. **Cleanup.**

Ecology has determined the cleanup you performed does not meet cleanup standards at the Site.

The cleanup performed has not yet achieved cleanup standards. The nature of the existing groundwater data does not lend itself to a determination addressing the effectiveness of the cleanup at all the points of compliance; rather the data gives the appearance of effectiveness as demonstrated specifically by the rebound of benzene in MW-1 and MW-4.

Groundwater monitoring must continue for a minimum of eight quarters (2 years) for wells, MW-1, MW-4 and MW-32, in conformance with Stage 3 groundwater monitoring as outlined in the *Guidance for the Remediation of Petroleum Contaminated Sites*.

Limitations of the Opinion

1. **Opinion does not settle liability with the state.**

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

Laura Skow
Environ Strategy Consultants, Inc.
March 1, 2013
Page 5

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion, please contact me by phone at 509-454-7836 or e-mail at john.mefford@ecy.wa.gov.

Sincerely,



John Mefford
Site Manager
CRO Toxics Cleanup Program

cc: Walter Sprague, Pacific Convenience & Fuels, LLC
Cindy Johnson, City Manager, City of Richland
Dolores Mitchell, VCP Financial Manager