Chevron Environmental Management Company

PROGRESS REPORT NO. 130
SECOND SEMI-ANNUAL 2021

Former Unocal Seattle

Marketing Terminal 0724

3001 Elliott Avenue

Seattle, Washington

04 March 2022

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SECOND SEMI-ANNUAL 2021

Former Unocal Seattle Marketing Terminal 0724

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1 INTRODUCTION

On behalf of Chevron Environmental Management Company (Chevron), Arcadis U.S., Inc. (Arcadis) has prepared this report to document the second semi-annual 2021 groundwater sampling results for the former Seattle Marketing Terminal (Unocal 0724) located at 3001 Elliott Avenue in Seattle, Washington (site). A site location map is included as Figure 1. This report summarizes the results of the groundwater gauging and sampling events conducted on September 20-21, and December 1-3, 2021 by Arcadis.

The site is formally known as Unocal Seattle Marketing Terminal in Ecology's database. Identifiers are:

- Facility Site Identification Number (FSID): 2208
- Cleanup Site Identification Number (CSID): 1428

Chevron is conducting cleanup of the site as required by the Washington State Department of Ecology (Ecology) pursuant to Order on Consent DE88-N223 and Amendments 1 through 5. Order on Consent DE88-N223 and its amendments require quarterly/semi-annual groundwater monitoring and quarterly light non-aqueous phase liquid (LNAPL) monitoring. The site is defined in Order on Consent DE88-N223 and is divided into four contiguous areas: Upper Yard, Elliott Avenue, Lower Yard and the Offsite Area. The Upper Yard consists of the approximate area between Elliott Avenue and Western Avenue to the east and west, and Bay Street and Broad Street to the north and south. The Elliott Avenue area includes the length of Elliott Avenue between Bay Street and Broad Street. The Lower Yard consists of the area between Elliott Avenue and the Burlington Northern Santa Fe (BNSF) railroad tracks to the east and west, and Bay Street and Broad Street to the north and south. The Offsite Area generally comprises the BNSF railroad tracks right-of-way and Alaskan Way between Bay Street and Broad Street. A site map is included as Figure 2.

Site history, historical LNAPL monitoring, and historical remedial activities are summarized in Appendix A. Monitoring well history is summarized in Table 1.

2 GROUNDWATER MONITORING

2.1 Methodology

During both quarters, gauging activities were conducted to ensure that groundwater levels were within the monitoring well screen intervals. Gauging activities were conducted using an oil/water interface probe to determine depth to water and LNAPL thickness. Groundwater elevation data are summarized in Table 2. Groundwater elevations are shown on Figures 3a and 3b.

During both quarters, monitoring wells were purged and sampled with a peristaltic pump in general accordance with the procedures outlined in *Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells* (Arcadis, 2009). This standard operating procedure (SOP) is included in Appendix B. Note that at the request of site stakeholders, tubing placement deviated from specifications in the SOP; tubing was placed within 6-inches of the groundwater surface in each monitoring well. Groundwater levels were conducted from each well prior to purging to assure the tubing was placed correctly. New, disposable polyethylene tubing was used for sampling. Water quality parameters including temperature, pH, electrical conductivity, dissolved oxygen oxidation/reduction potential, and turbidity were measured approximately every three minutes using an In-Situ® Aqua Troll 600 low-flow groundwater sampling system and were recorded on the field data sheets included in Appendix C.

Samples were collected in clean, laboratory-supplied containers with appropriate preservatives and were stored in iced coolers. Samples were then shipped via overnight delivery, under chain-of-custody procedures, to Eurofins Lancaster Laboratories in Lancaster, Pennsylvania and Pace Analytical Laboratories. Groundwater samples were analyzed for the following:

- Total petroleum hydrocarbons as gasoline (TPH-G) by Northwest Method NWTPH-Gx;
- Total petroleum hydrocarbons as diesel and heavy oil (TPH-D and TPH-O) by Northwest Method NWTPH-Dx with silica gel cleanup;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency (USEPA) Method 8260D; and
- Benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene collectively referred to as carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by USEPA Method 8270E SIM.

Analytical results are summarized in Table 3. Analytical results for TPH-G, TPH-D, TPH-O, and BTEX, are summarized on Figure 4a. Analytical results for cPAH are summarized on Figure 4b. The laboratory report and chains of custody are provided in Appendix D.

2.2 Third Quarter 2021 Groundwater Monitoring

On September 20 and 21, 2021, Arcadis conducted a groundwater gauging and sampling event at the site.

On September 20, 2021, Arcadis gauged monitoring wells MW-30, MW-61A-R, MW-70R, MW-200 through MW-207, and MW-209 through MW-211 according to the methodology described in Section 2.1. No measurable LNAPL thickness was observed during this event. Non-measurable sheen/LNAPL was

observed in MW-30 and MW-205 on September 20, 2021, i.e., sheen/LNAPL was observed on the interface probe but no distinct separate layer of LNAPL was measurable with the interface probe. Non-measurable sheen/LNAPL was observed in MW-201 and MW-205 on September 23, 2021. Oil absorbent socks were placed in monitoring wells MW-201 and MW-205.

Depths to groundwater measured during the third quarter 2021 groundwater monitoring event ranged from 9.47 feet below top of casing (btoc) in monitoring well MW-210 to 23.36 feet btoc in monitoring well MW-205. Groundwater levels during the third quarter 2021 gauging event were within screened intervals for all wells gauged. Groundwater elevations ranged from 2.18 feet above mean sea level (amsl) in monitoring well MW-206 to 7.52 feet amsl in monitoring well MW-30. These measurements indicate groundwater is generally flowing in a southwesterly direction, towards Elliott Bay, and is consistent with historical data.

Groundwater analytical results for the third quarter 2021 event indicate that no exceedances of the applicable BTEX, TPH-G, TPH-D, TPH-O and cPAHs remedial action levels (RALs) were detected including wells MW-201 and MW-205 where non-measurable sheen/LNAPL was observed.

2.3 Fourth Quarter 2021 Groundwater Monitoring

On December 1-3, 2021, Arcadis conducted a groundwater gauging and sampling event at the site.

On December 3, 2021, Arcadis gauged monitoring wells MW-30, MW-61A-R, MW-70R, MW-200 through MW-207, and MW-209 through MW-211 according to the methodology described in Section 2.1. No measurable LNAPL thickness was observed during this event. Non-measurable sheen/LNAPL was observed in MW-30, MW-201 and MW-205. Depths to groundwater measured during the fourth quarter 2021 groundwater monitoring event ranged from 6.21 feet btoc in monitoring well MW-210 to 21.82 feet btoc in monitoring well MW-205. Groundwater elevations ranged from 5.10 feet amsl in monitoring well MW-206 to 10.27 feet amsl in monitoring well MW-61A-R. Groundwater levels during the fourth quarter 2021 gauging event were within screened intervals for all wells gauged.

On December 1-3, 2021, monitoring wells MW-70R, MW-200 through MW-207, and MW-209 through MW-211 were sampled according to the methodology described in Section 2.1. Groundwater levels during the fourth quarter 2021 sampling event were within screened intervals for all wells sampled. Monitoring well MW-61A-R was not sampled due to new permit requirements by the City of Seattle for the Right of Way.

Groundwater analytical results for the fourth quarter 2021 event indicate that no exceedances of the applicable BTEX, TPH-D, TPH-O or cPAHs RALs (except for Indeno (1,2,3-cd) Pyrene in well MW-201) were detected in the samples collected from any of the monitoring wells. The cPAHs RAL of 0.03 microgram per liter (µg/L), is above the laboratory practicable quantitation limit (PQL[1]) of 0.05 µg/L; thus, any detection results in concentration above the cPAHs RAL. Indeno (1,2,3-cd) Pyrene was detected with an estimated concentration of 0.0320 J[2], which is below the PQL.

[1] The PQL is the lowest constituent concentration at which a numerical concentration can be assigned with reasonable certainty that its value represents the constituent's actual concentration in the sample.
[2] The concentration result is less than the reporting limit (equal to the PQL) but greater than or equal to the method detection limit. The concentration is an approximate value.

2.4 Laboratory Data Verification Results

A trip blank sample for BTEX and TPH-G analysis was submitted with the groundwater samples for the third quarter 2021 and fourth quarter 2021 sampling events. Analyte concentrations did not exceed their respective method detection limits (MDLs) in the trip blanks.

During the third quarter and fourth quarter 2021 sampling events, a duplicate sample was collected from monitoring well MW-70R for quality assurance purposes. The duplicate sample was submitted for the same analyses as the parent sample. The duplicate analytical results were comparable to the parent sample analytical results for both quarters.

All coolers were received in good condition within temperature requirements.

2.5 Groundwater Monitoring Compliance Summary

Historical trend graphs for MW-30, MW-70R, MW-200 through MW-207, and MW-209 through MW-211 are provided in Appendix F. Historical analytical results are presented in Appendix E.

As of the December 2021 event, eight monitoring wells (MW-70R, MW-200, MW-202, MW-203, MW-206, MW-207, MW-210 and MW-211) have met a minimum of eight consecutive sampling events in compliance with the RALs established for the site. A summary of groundwater compliance as of the December 2021 event is included in Table 4.

3 CONCLUSIONS

Gauging and groundwater monitoring were conducted on September 20 to 21, and December 1 to 3, 2021. During the third and fourth quarters sampling events, there were no exceedances of BTEX, TPH-G, TPH-D, TPH-O, or cPAHs RALs in the samples collected (except for Indeno (1,2,3-cd) Pyrene). As of the December 2021 event, eight monitoring wells (MW-70R, MW-200, MW-202, MW-203, MW-206, MW-207, MW-210 and MW-211) have met a minimum of eight consecutive sampling events in compliance with the RALs established for the site. The next groundwater event is planned for first quarter 2022.

TABLES

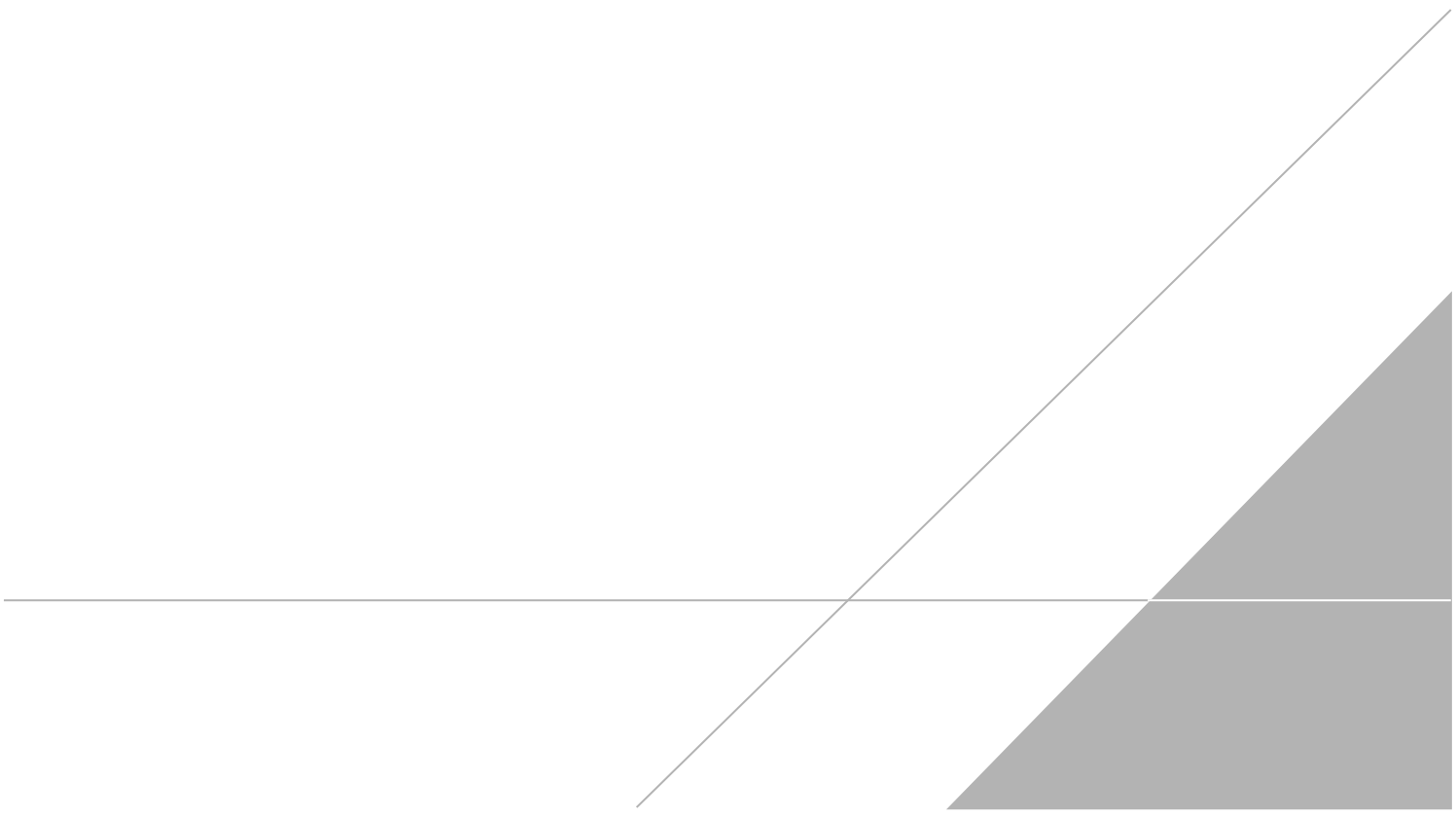


Table 1. Monitoring Well History
Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue, Seattle, Washington

Well ID	Installation Date	Compliance Parameters	Compliance/Removal Date
Upper Yard			
MW-37	06/1990	**LNAPL-TPH - BTEX (MW-61A-R)**	12/1995
MW-38	06/1990		1992
MW-39	06/1990		1992
MW-40	06/1990		1992
MW-58	09/1995		01/2004
MW-61	1995		1997
MW-61A	01/1998		01/2004
MW-61A-R	**03/2006**		**not sampled**
MW-62	1995		1997
MW-62A	01/1998		01/2004
MW-63	1995		1997
MW-63A	01/1998		01/2004
MW-64	1995		01/2004
Elliott Avenue			
MW-30	**1989**	**LNAPL - TPH - BTEX (MW-30)**	**not sampled**
MW-31	1989		12/2003
MW-32	1989		04/1991
MW-59	03/1998		*no data*
MW-65	03/1998		ABANDONED 12/07
MW-66	03/1998		ABANDONED 12/07
MW-69	*no data*		*no data*
Lower Yard			
MW-1	*no data*	**No wells in Lower Yard currently sampled for compliance parameters**	1998
MW-2	*no data*		1998
MW-18	*no data*		1998
MW-22	*no data*		1998
MW-23	*no data*		1998
MW-33	*no data*		1998
MW-34	*no data*		1998
MW-35	*no data*		1998
MW-49	*no data*		1998
MW-50	*no data*		1998
MW-51	*no data*		1998
MW-53	*no data*		1998
MW-54	*no data*		1998
MW-55	*no data*		1998
MW-56	*no data*		1998
MW-57	*no data*		1998
MW-60	*no data*		1998
MW-81	09/1998		06/2002
MW-82	09/1998		06/2002
MW-83	09/1998		06/2002
MW-84	09/1998		06/2002
MW-85	09/1998		06/2002
MW-86	09/1998		06/2002

Table 1. Monitoring Well History
Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue, Seattle, Washington

Well ID	Installation Date	Compliance Parameters	Compliance/Removal Date
Offsite Area			
MW-8	01/1989	**LNAPL - TPH - BTEX - PAHs (MW-70R)**	10/2005
MW-9	*no data*		07/2005
MW-10	01/1989		10/2005
MW-20	01/1989		10/2005
MW-25	01/1989		10/2005
MW-26	01/1989		10/2005
MW-27	01/1989		damaged 2006
MW-27R	12/2006		ABANDONED 12/07
MW-34	10/1989		*no data*
MW-35	10/1989		*no data*
MW-36	10/1989		07/2005
MW-41	10/1990		12/2002
MW-42	10/1990		12/1991
MW-43	10/1990		12/1991
MW-44	*no data*		*no data*
MW-52	06/1998		10/2005
MW-67	03/1998		10/2005
MW-68	03/1998		07/2005
MW-69	03/1998		*no data*
MW-70	03/1998		10/2005
MW-70R	**09/2016**		**sampled**
MW-71	03/1998		10/2005
MW-72	03/1998		07/2005
MW-76	03/1998		10/2005
Offsite Area- Amendment No. 4 Point of Compliance monitoring wells			
MW-200	**10/2006**	**LNAPL - TPH - BTEX - PAHs (MW-200 to MW-207, MW-209 to MW-11)**	**sampled**
MW-201	**10/2006**		**sampled**
MW-202	**10/2006**		**sampled**
MW-203	**10/2006**		**sampled**
MW-204	**10/2006**		**sampled**
MW-205	**10/2006**		**sampled**
MW-206	**10/2006**		**sampled**
MW-207	**10/2006**		**sampled**
MW-209	**09/2016**		**sampled**
MW-210	**09/2016**		**sampled**
MW-211	**09/2016**		**sampled**

Notes:

LNAPL = Light non-aqueous phase liquid
TPH = Total petroleum hydrocarbons
BTEX = Benzene, Toluene, Ethylbenzene and Xylenes (Total)
PAHs = Polycyclic Aromatic Hydrocarbons
Items in bold represent compliance wells sampled in the most recent sampling event.

Table 2. Summary of Groundwater Elevation Data
Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue, Seattle, Washington

Well Number	Date	Time (hh:min)	Depth to Groundwater (feet btoc)	Depth to LNAPL (feet btoc)	LNAPL Thickness (feet)	Top of Casing Elevation (feet amsl)	Groundwater Elevation[1] (feet[2])	Top of Screen Elevation[3] (feet[2])	Comments[4]
MW-30	09/20/21	12:32	13.33	--	--	20.85	7.52	15.85	Non-measurable sheen/LNAPL observed on bailer tip. Oil absorbent sock in well removed and replaced.
MW-30	12/03/21	10:30	11.96	--	--	20.85	8.89	15.85	Non-measurable sheen/LNAPL observed on bailer tip. Oil absorbent sock in well removed and replaced.
MW-61A-R	09/20/21	12:45	14.95	--	--	22.44	7.49	--	No evidence of LNAPL. Oil absorbent sock in well removed.
MW-61A-R	12/03/21	10:23	12.17	--	--	22.44	10.27	--	No evidence of LNAPL. Well not sampled due to new permit requirements by the City of Seattle for the Right of Way.
MW-200	09/20/21	11:47	9.51	--	--	14.36	4.85	9.36	
MW-200	12/03/21	9:46	8.49	--	--	14.36	5.87	9.36	
MW-201	09/20/21	11:51	10.30	--	--	14.86	4.56	9.86	Non-measurable sheen/LNAPL observed on the probe tip and side of a bailer on 9/23. Oil absorbent sock added in well on 9/23.
MW-201	12/03/21	9:50	9.28	--	--	14.86	5.58	9.86	Non-measurable sheen/LNAPL observed on the probe tip and side of a bailer. Sock removed before sampling, replaced on 12/03.
MW-202	09/20/21	11:43	10.54	--	--	14.58	4.04	6.78	
MW-202	12/03/21	9:42	8.99	--	--	14.58	5.59	6.78	
MW-203	09/20/21	11:56	13.53	--	--	17.55	4.02	7.05	
MW-203	12/03/21	9:56	11.96	--	--	17.55	5.59	7.05	
MW-204	09/20/21	12:02	19.42	--	--	23.93	4.51	6.58	
MW-204	12/03/21	10:03	17.85	--	--	23.93	6.08	6.58	
MW-205	09/20/21	12:11	23.36	--	--	27.89	4.53	9.89	Non-measurable sheen/LNAPL observed on probe tip. Oil absorbent sock added in well on 9/23.
MW-205	12/03/21	10:12	21.82	--	--	27.89	6.07	9.89	Non-measurable sheen/LNAPL observed on the probe tip and side of a bailer. Sock removed before sampling, replaced on 12/03.
MW-206	09/20/21	11:39	12.97	--	--	15.15	2.18	4.15	
MW-206	12/03/21	9:38	10.05	--	--	15.15	5.10	4.15	
MW-207	09/20/21	11:22	13.00	--	--	15.40	2.40	5.90	
MW-207	12/03/21	9:37	10.05	--	--	15.40	5.35	5.90	
MW-209	09/20/21	13:08	10.33	--	--	15.53	5.20	12.53	
MW-209	12/03/21	11:05	8.88	--	--	15.53	6.65	12.53	
MW-210	09/20/21	13:04	9.47	--	--	15.13	5.66	12.13	
MW-210	12/03/21	11:02	6.21	--	--	15.13	8.92	12.13	
MW-211	09/20/21	13:00	9.82	--	--	15.02	5.20	12.02	
MW-211	12/03/21	10:59	8.45	--	--	15.02	6.57	12.02	
MW-70R	09/20/21	11:12	12.50	--	--	15.61	3.11	11.61	
MW-70R	12/03/21	9:32	10.15	--	--	15.61	5.46	11.61	

Notes:

btoc = below top of casing.

LNAPL = light non-aqueous phase liquid

"--" = not measured or not obtainable, no LNAPL signal produced by the electronic interface probe. Further details provided in the comments column as needed per note 4.

[1]If LNAPL is present, groundwater elevation is corrected per the formula: (Top of casing elevation - Depth to Groundwater) + (0.8 x LNAPL thickness)

[2]Elevation referenced to city of Seattle datum.

[3]Top of well screen elevation data from historic records.

[4]LNAPL is assessed using an NAPL-water interface probe. The electronic interface probe is placed at the depth where the instrument produces a signal indicating a fluid interface (LNAPL and groundwater interfaces produce distinct signals). The interface probe is then brought back to the surface of the well and the tip of the interface probe is inspected for any indication of LNAPL. If a LNAPL signal is produced or LNAPL is observed on the tip of the probe, a bailer is used to confirm the absence/presence of LNAPL.

Table 3. Summary of Groundwater Analytical Data
Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue, Seattle, Washington

		Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Indeno(1,2,3-cd) Pyrene	Gasoline (C7-C12)	Diesel (C12-C24 w/Si Gel)	Heavy Oil (C24-C40 w/Si Gel)	Benzene	Ethylbenzene	Toluene	Xylene (total)
Remedial Action Levels		**0.03 [1]**	**0.03 [1]**	**0.03 [1]**	**0.03 [1]**	**0.03 [1]**	**0.03 [1]**	**0.03 [1]**	**1**	**10**	**15**	**40**	**1,400**	**14,300**	**4,400**
Location	**Date**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**
MW-200	12/1/2021	<0.0203	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	0.159	0.115	<0.0833	<0.0941	<0.137	<0.278	0.406 J
MW-201	12/2/2021	0.0216 J	0.0203 J	0.0243 J	<0.0202	<0.0179	<0.0160	**0.0320 J**	0.251	0.0745 J	<0.0833	<0.0941	<0.137	<0.278	0.292 J
MW-202	12/1/2021	0.0266 J	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	0.0463 J	0.0357 J	<0.0833	<0.0941	<0.137	<0.278	<0.174
MW-203	12/1/2021	<0.0203	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	<0.0316	0.0815 J	<0.0833	<0.0941	<0.137	<0.278	<0.174
MW-204	12/2/2021	<0.0203	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	0.531	0.302	<0.0833	<0.0941	<0.137	<0.278	0.478 J
MW-205	12/2/2021	<0.0203	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	<0.0316	0.0935 J	<0.0833	<0.0941	<0.137	<0.278	<0.174
MW-206	12/3/2021	<0.0203	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	<0.0316	<0.0333	<0.0833	<0.0941	<0.137	<0.278	<0.174
MW-207	12/1/2021	<0.0203	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	<0.0316	<0.0333	<0.0833	<0.0941	<0.137	<0.278	<0.174
MW-209	9/20/2021	<0.012	<0.012	<0.012	<0.012	<0.012	<0.024	<0.024	0.28	0.055 J	<0.11	<0.30	<0.40	<0.30	<1.4
MW-209	12/3/2021	<0.0203	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	0.394	0.162	<0.0833	0.112 J	<0.137	<0.278	0.577 J
MW-210	9/20/2021	<0.012	<0.012	<0.012	<0.012	<0.012	<0.024	<0.024	0.038 J	<0.054	<0.12	<0.30	<0.40	<0.30	<1.4
MW-210	12/3/2021	<0.0203	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	<0.0316	<0.0333	<0.0833	<0.0941	<0.137	<0.278	<0.174
MW-211	9/20/2021	<0.011	<0.011	<0.011	<0.011	0.015 J	0.027 J	<0.023	0.035 J	<0.052	<0.12	<0.30	<0.40	<0.30	<1.4
MW-211	12/3/2021	<0.0203	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	<0.0316	0.0509 J	<0.0833	<0.0941	<0.137	<0.278	<0.174
MW-70R	9/21/2021	<0.011	<0.011	<0.011	<0.011	<0.011	<0.023	<0.023	<0.019	<0.051	<0.11	<0.30	<0.40	<0.30	<1.4
MW-70R (Dup)	9/21/2021	<0.010	<0.010	<0.010	<0.010	<0.010	<0.021	<0.021	<0.019	<0.051	<0.11	<0.30	<0.40	<0.30	<1.4
MW-70R	12/1/2021	<0.0203	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	<0.0316	<0.0333	<0.0833	<0.0941	<0.137	<0.278	<0.174
MW-70R (Dup)	12/1/2021	<0.0203	<0.0184	<0.0168	<0.0202	<0.0179	<0.0160	<0.0158	<0.0316	<0.0333	<0.0833	<0.0941	<0.137	<0.278	<0.174

Notes:
-- = Not analyzed/ Not Sampled
<0.51 = Not detected at or above the laboratory Method Detection Limit (MDL)
µg/L = Micrograms per liter
mg/L = Miligrams per liter
Dup = duplicate
NE = Not Established
J = Result is less than the reporting limit (equal to the practicable quantitaion limit [PQL]) but greater than or equal to the MDL and the concentration is an approximate value.
* = LCS or LCSD is outside acceptance limits.
*1 = LCS/LCSD RPD exceeds control limits.
H = Sample was prepped or analyzed beyond the specified holding time
Highlighted = value exceeds Remedial Action Levels
1. The Remedial Action Level (RAL) of 0.03 µg/L, is above the laboratory PQL of 0.05 µg/L; thus, any detection results in concentration above the RAL. The PQL is the lowest constituent concentration at which a numerical concentration can be assigned with reasonable certainty that its value represents the constituent's actual concentration in the sample.

Table 4. Summary of Groundwater Compliance
Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue, Seattle, Washington

Monitoring Well	Petroleum Constituents and Sheen (BTEX, Gasoline-range, Diesel-range)		cPAHs		Lead	
	Current Sampling Interval	Consecutive Sampling Events in Compliance[1]	Current Sampling Interval	Consecutive Sampling Events in Compliance[1]	Current Sampling Interval	Consecutive Sampling Events in Compliance[1]
Upper Yard						
MW-61A-R	semi-annually	0	none	N/A [11]	none	N/A
Elliott Avenue						
MW-30	semi-annually	0	none	N/A [12]	none	N/A
Offsite Area- Amendment No. 4 Point of Compliance monitoring wells						
MW-70R	quarterly	23	quarterly	23	none	N/A
MW-200	semi-annually	23 [7]	semi-annually[2]	8 [4,5,8]	none	13
MW-201	semi-annually	0	semi-annually[2]	0	none	13
MW-202	semi-annually	35	semi-annually[2]	31 [3, 4, 10]	none	13
MW-203	semi-annually	35	semi-annually[2]	35 [4,8]	none	13
MW-204	semi-annually	2	semi-annually[2]	36 [4,8,10]	none	13
MW-205	semi-annually	0	semi-annually[2]	21 [4,8]	none	13
MW-206	semi-annually	35	semi-annually[2]	36 [4,6,8]	none	13
MW-207	semi-annually	35	semi-annually[2]	11	none	13
MW-209	quarterly	8	quarterly	14	none	N/A
MW-210	quarterly	9	quarterly	5	none	N/A
MW-211	quarterly	14	quarterly	14	none	N/A

Notes:

[1] "Consecutive events" are number of consecutive sampling events prior to and including the current reporting period that are in compliance with the groundwater remediation action levels. Events prior to 3/97 are not counted. Refer to progress reports for results.

[2]Quarterly sampling beginning June 2007. Semi-annual sampling beginning 2010.

[3]Field-Filtered sample below RAL.

[4]Field-Filtered and Un-Filtered samples below RAL

[5]9/3/08 laboratory reporting limit above RAL

[6]Confirmation samples indicate erroneous 9/4/08 field-filtered data

[7]Sheen noted on groundwater during well redevelopment in August 2010

[8]First Semi-Annual 2011 laboratory reporting limit above RAL

[9]First Semi-Annual 2012 laboratory reporting limit above RAL

[10]Second Semi-Annual 2012 laboratory reporting limit above RAL

[11] MW-61A-R analyzed for cPAHs during the second semi-annual 2018 sampling event

[12] MW-30 analyzed for cPAHs during three sampling events (first semi annual 2013, second semi annual 2018, first semi annual 2019)

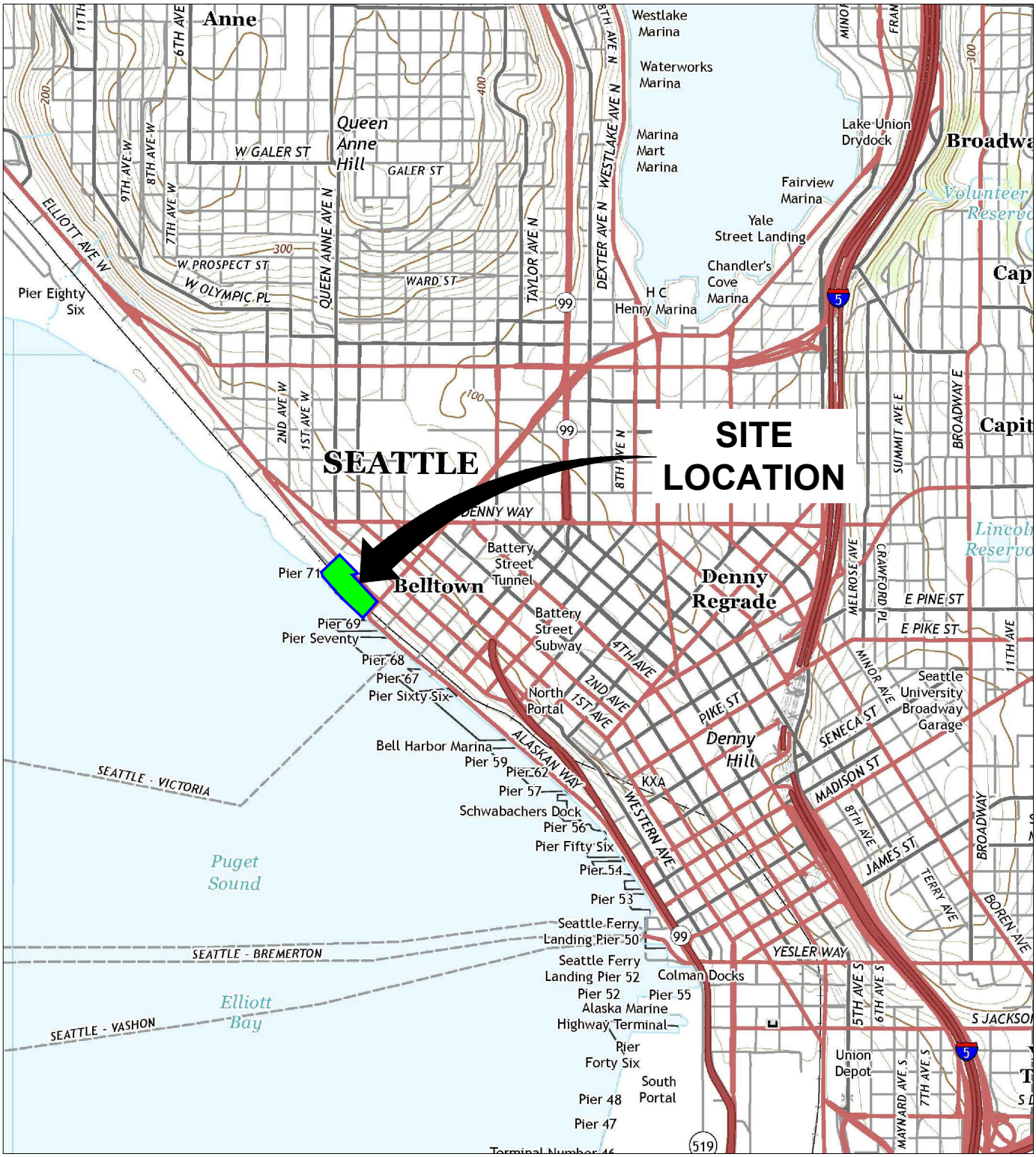
BTEX = benzene, toluene, ethylbenzene, xylenes

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

N/A = not applicable

RAL = Remedial Action Level

FIGURES



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., SEATTLE SOUTH AND SEATTLE NORTH, WASHINGTON, 2014.

N

0 2,000' 4,000'

Approximate Scale: 1 in. = 2,000 ft.

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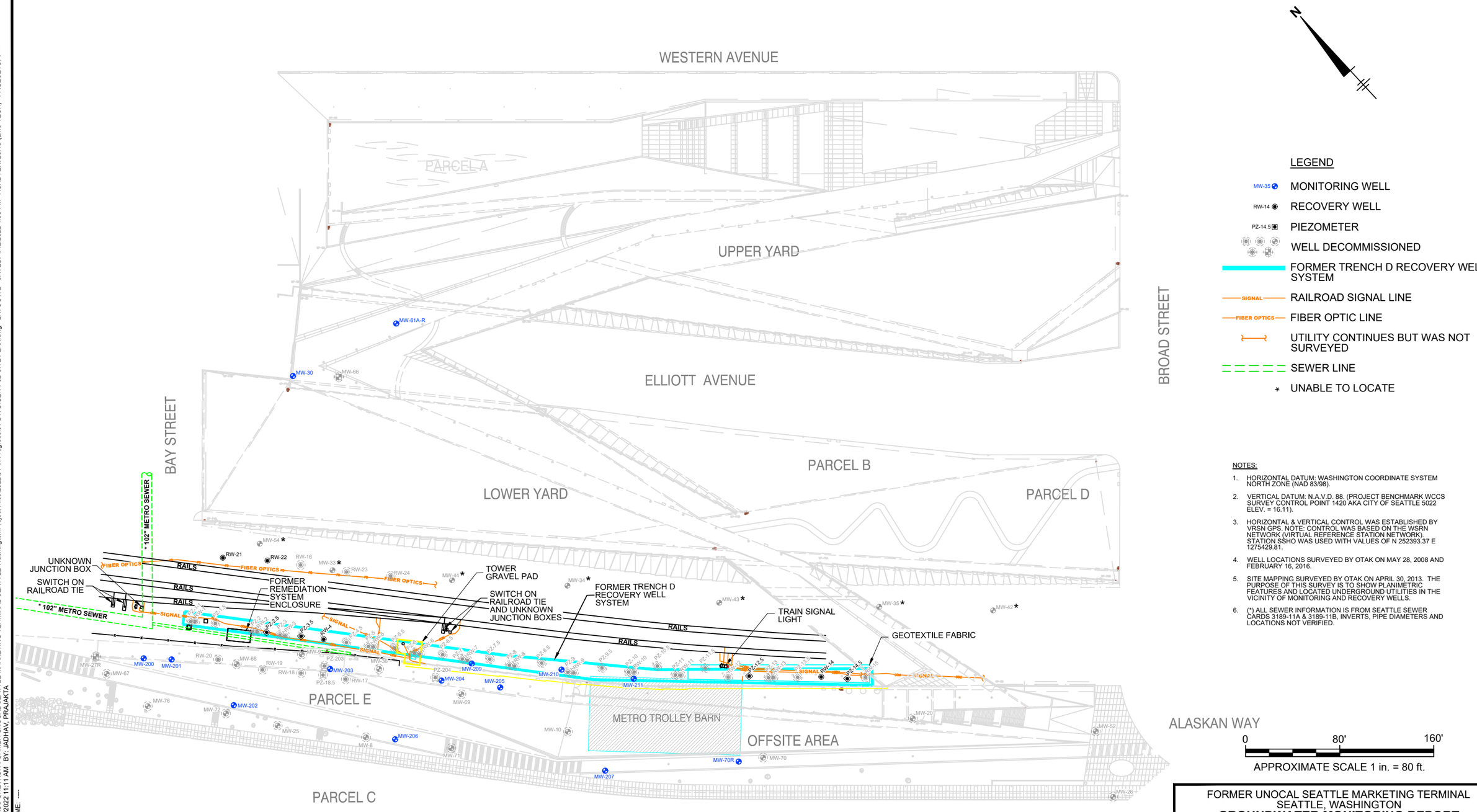
SITE LOCATION MAP

ARCADIS

FIGURE
1



N

LEGEND

- MW-35 — MONITORING WELL
- RW-14 — RECOVERY WELL
- PZ-14.5 — PIEZOMETER
- WELL DECOMMISSIONED
- FORMER TRENCH D RECOVERY WELL SYSTEM
- SIGNAL — RAILROAD SIGNAL LINE
- FIBER OPTICS — FIBER OPTIC LINE
- UTILITY CONTINUES BUT WAS NOT SURVEYED
- SEWER LINE
- * UNABLE TO LOCATE

NOTES:

1. HORIZONTAL DATUM: WASHINGTON COORDINATE SYSTEM NORTH ZONE (NAD 83/98).
2. VERTICAL DATUM: N.A.V.D. 88. (PROJECT BENCHMARK WCCS SURVEY CONTROL POINT 1420 AKA CITY OF SEATTLE 5022 ELEV. = 16.11).
3. HORIZONTAL & VERTICAL CONTROL WAS ESTABLISHED BY VRSN GPS. NOTE: CONTROL WAS BASED ON THE WSRN NETWORK (VIRTUAL REFERENCE STATION NETWORK). STATION SSHO WAS USED WITH VALUES OF N 252393.37 E 1275429.81.
4. WELL LOCATIONS SURVEYED BY OTAK ON MAY 28, 2008 AND FEBRUARY 16, 2016.
5. SITE MAPPING SURVEYED BY OTAK ON APRIL 30, 2013. THE PURPOSE OF THIS SURVEY IS TO SHOW PLANIMETRIC FEATURES AND LOCATED UNDERGROUND UTILITIES IN THE VICINITY OF MONITORING AND RECOVERY WELLS.
6. (*) ALL SEWER INFORMATION IS FROM SEATTLE SEWER CARDS 3189-11A & 3189-11B, INVERTS, PIPE DIAMETERS AND LOCATIONS NOT VERIFIED.

0 80' 160'

APPROXIMATE SCALE 1 in. = 80 ft.

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SITE MAP

ARCADIS

FIGURE
2

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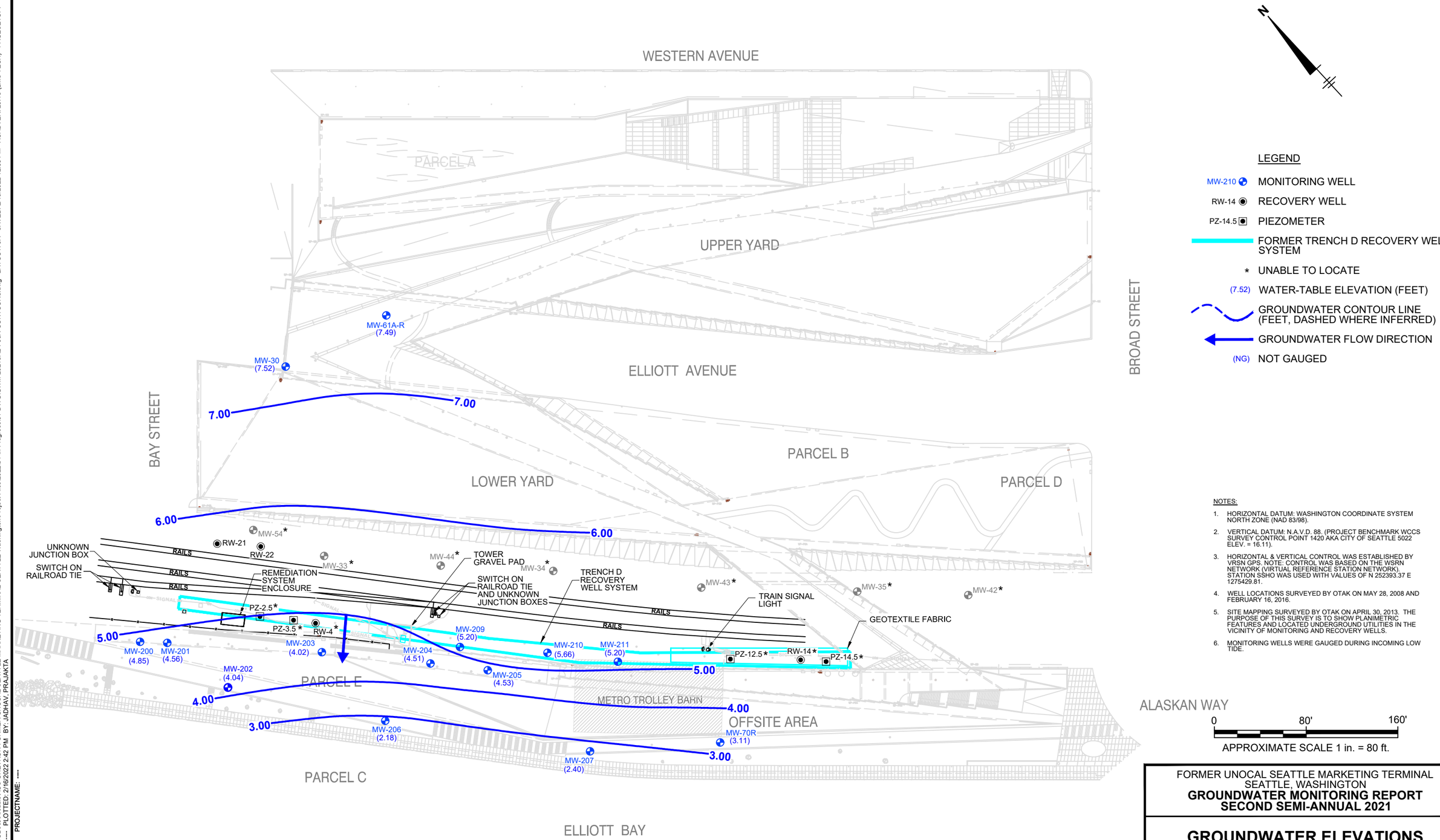
GEN-X-D-TITLE



LEGEND

- MW-210 — MONITORING WELL
- RW-14 — RECOVERY WELL
- PZ-14.5 — PIEZOMETER
- FORMER TRENCH D RECOVERY WELL SYSTEM
- * — UNABLE TO LOCATE
- (7.52) — WATER-TABLE ELEVATION (FEET)
- GROUNDWATER CONTOUR LINE (FEET, DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- (NG) — NOT GAUGED

NOTES:

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6. MONITORING WELLS WERE GAUGED DURING INCOMING LOW TIDE.

APPROXIMATE SCALE 1 in. = 80 ft.

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GROUNDWATER ELEVATIONS SEPTEMBER 20, 2021

ARCADIS

FIGURE
3a

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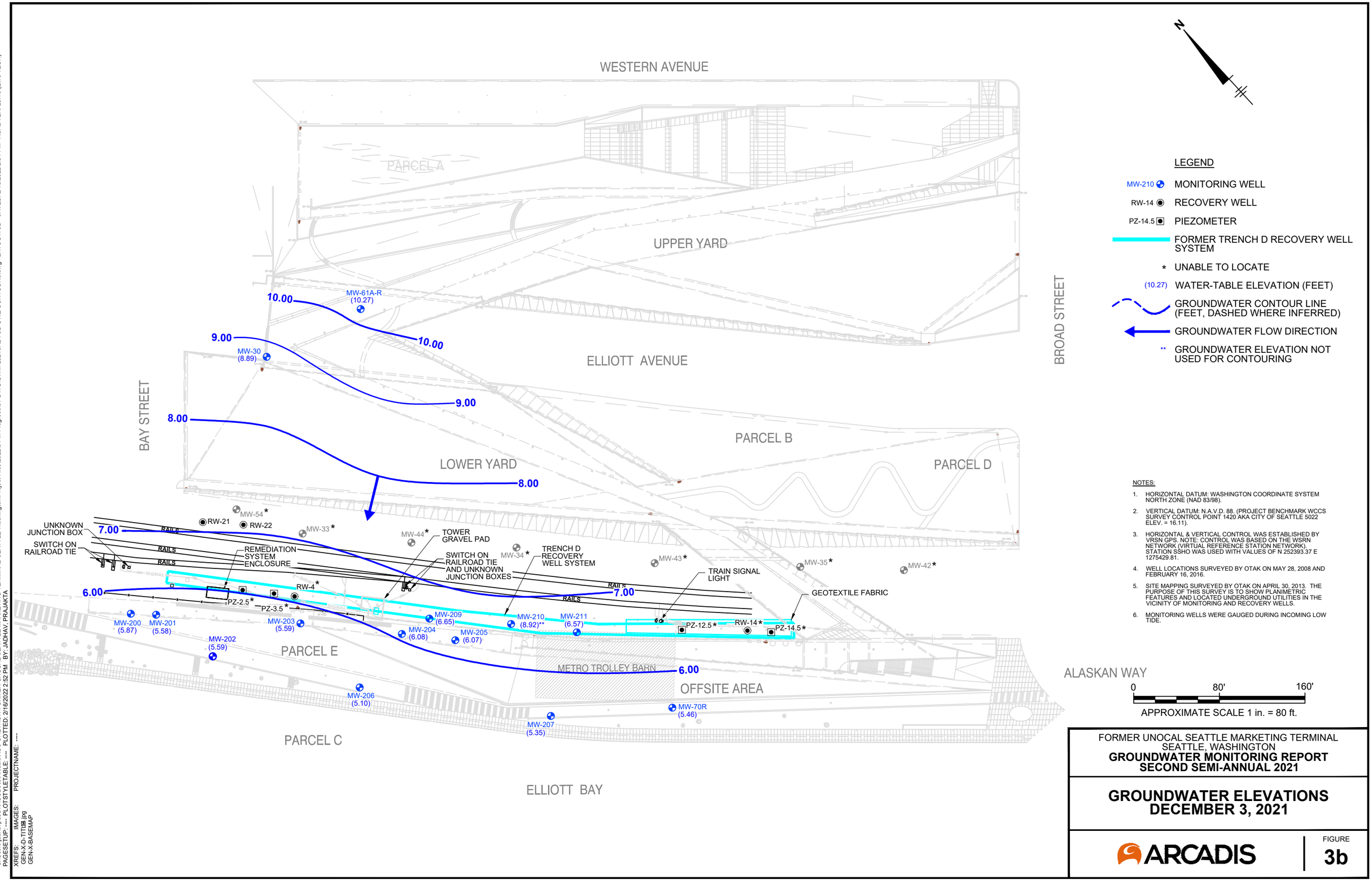
GEN-X-BASEMAP



LEGEND

- MW-210 — MONITORING WELL
- RW-14 — RECOVERY WELL
- PZ-14.5 — PIEZOMETER
- FORMER TRENCH D RECOVERY WELL SYSTEM
- * UNABLE TO LOCATE
- (10.27) WATER-TABLE ELEVATION (FEET)
- GROUNDWATER CONTOUR LINE (FEET, DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- ** GROUNDWATER ELEVATION NOT USED FOR CONTOURING

NOTES:

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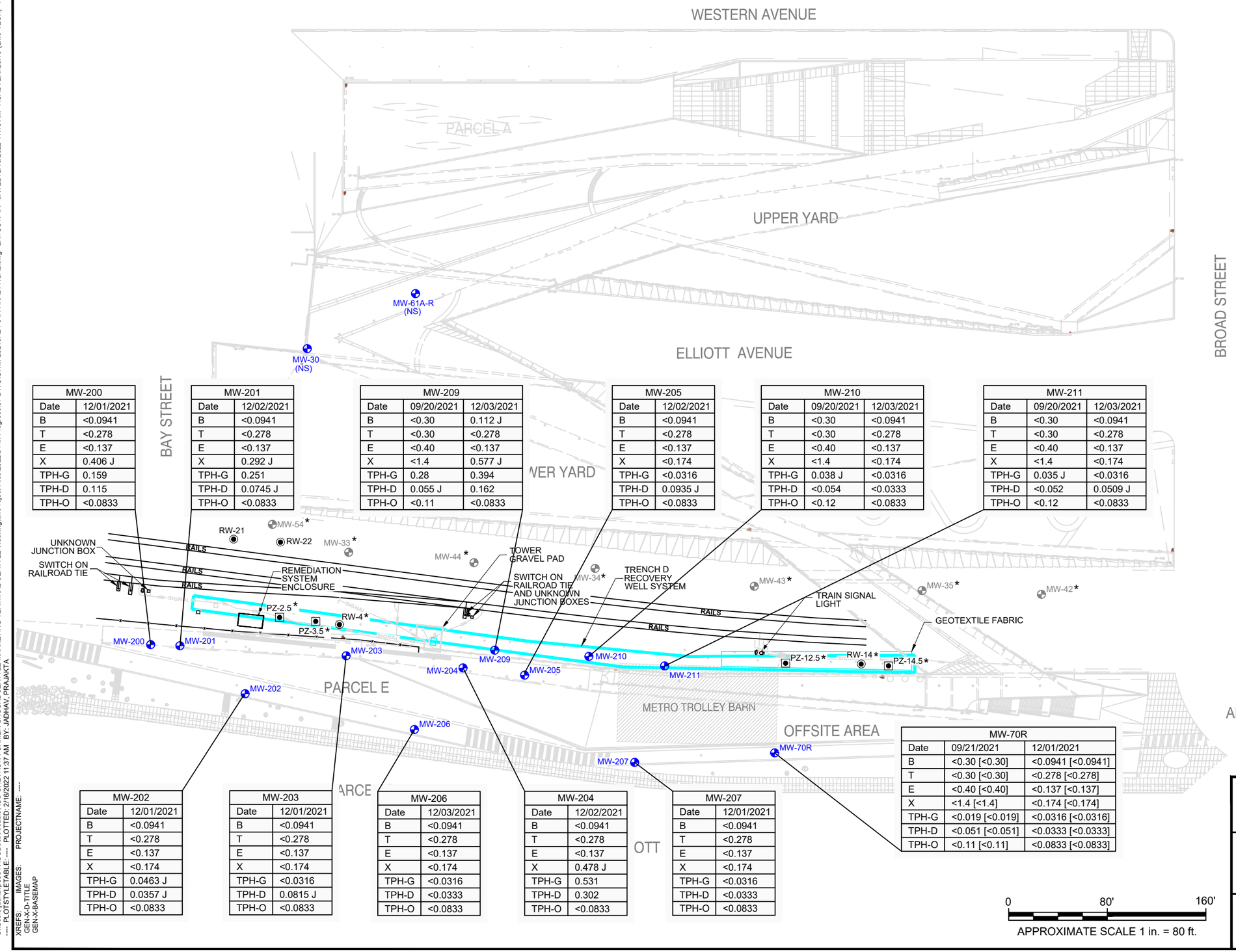
GROUNDWATER ELEVATIONS DECEMBER 3, 2021

ARCADIS

FIGURE
3b



MW-200	
Date	12/01/2021
B	<0.0941
T	<0.278
E	<0.137
X	0.406 J
TPH-G	0.159
TPH-D	0.115
TPH-O	<0.0833

MW-201	
Date	12/02/2021
B	<0.0941
T	<0.278
E	<0.137
X	0.292 J
TPH-G	0.251
TPH-D	0.0745 J
TPH-O	<0.0833

MW-209		
Date	09/20/2021	12/03/2021
B	<0.30	0.112 J
T	<0.30	<0.278
E	<0.40	<0.137
X	<1.4	0.577 J
TPH-G	0.28	0.394
TPH-D	0.055 J	0.162
TPH-O	<0.11	<0.0833

MW-205	
Date	12/02/2021
B	<0.0941
T	<0.278
E	<0.137
X	<0.174
TPH-G	<0.0316
TPH-D	0.0935 J
TPH-O	<0.0833

MW-210		
Date	09/20/2021	12/03/2021
B	<0.30	<0.0941
T	<0.30	<0.278
E	<0.40	<0.137
X	<1.4	<0.174
TPH-G	0.038 J	<0.0316
TPH-D	<0.054	<0.0333
TPH-O	<0.12	<0.0833

MW-211		
Date	09/20/2021	12/03/2021
B	<0.30	<0.0941
T	<0.30	<0.278
E	<0.40	<0.137
X	<1.4	<0.174
TPH-G	0.035 J	<0.0316
TPH-D	<0.052	0.0509 J
TPH-O	<0.12	<0.0833

MW-202	
Date	12/01/2021
B	<0.0941
T	<0.278
E	<0.137
X	<0.174
TPH-G	0.0463 J
TPH-D	0.0357 J
TPH-O	<0.0833

MW-203	
Date	12/01/2021
B	<0.0941
T	<0.278
E	<0.137
X	<0.174
TPH-G	<0.0316
TPH-D	0.0815 J
TPH-O	<0.0833

MW-206	
Date	12/03/2021
B	<0.0941
T	<0.278
E	<0.137
X	<0.174
TPH-G	<0.0316
TPH-D	<0.0333
TPH-O	<0.0833

MW-204	
Date	12/02/2021
B	<0.0941
T	<0.278
E	<0.137
X	0.478 J
TPH-G	0.531
TPH-D	0.302
TPH-O	<0.0833

MW-207	
Date	12/01/2021
B	<0.0941
T	<0.278
E	<0.137
X	<0.174
TPH-G	<0.0316
TPH-D	<0.0333
TPH-O	<0.0833

MW-70R		
Date	09/21/2021	12/01/2021
B	<0.30 [<0.30]	<0.0941 [<0.0941]
T	<0.30 [<0.30]	<0.278 [<0.278]
E	<0.40 [<0.40]	<0.137 [<0.137]
X	<1.4 [<1.4]	<0.174 [<0.174]
TPH-G	<0.019 [<0.019]	<0.0316 [<0.0316]
TPH-D	<0.051 [<0.051]	<0.0333 [<0.0333]
TPH-O	<0.11 [<0.11]	<0.0833 [<0.0833]

LEGEND

- MW-210 MONITORING WELL
- RW-14 RECOVERY WELL
- PZ-14.5 PIEZOMETER
- FORMER TRENCH D RECOVERY WELL SYSTEM
- * UNABLE TO LOCATE
- (NS) NOT SAMPLED, NO ACCESS

SAMPLE LOCATION	
DATE	SAMPLE DATE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
TPH-G	TPH GASOLINE
TPH-D	TPH DIESEL
TPH-O	TPH HEAVY OIL

BTEX RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L). TPH-G, TPH-D, AND TPH-O RESULTS REPORTED IN MILLIGRAMS PER LITER (mg/L).

TPH = TOTAL PETROLEUM HYDROCARBON

<1.4 [<1.4] = DUPLICATE SAMPLE

J = RESULT IS LESS THAN THE REPORTING LIMIT (RL) BUT GREATER THAN OR EQUAL TO THE METHOD DETECTION LIMIT (MDL) AND THE CONCENTRATION IS AN APPROXIMATE VALUE.

<0.30 = NOT DETECTED AT OR ABOVE THE MDL

NOTES:

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SEATTLE, WASHINGTON
GROUNDWATER MONITORING REPORT
SECOND SEMI-ANNUAL 2021

GROUNDWATER ANALYTICAL SUMMARY MAP SEPTEMBER AND DECEMBER, 2021

ARCADIS

FIGURE
4a

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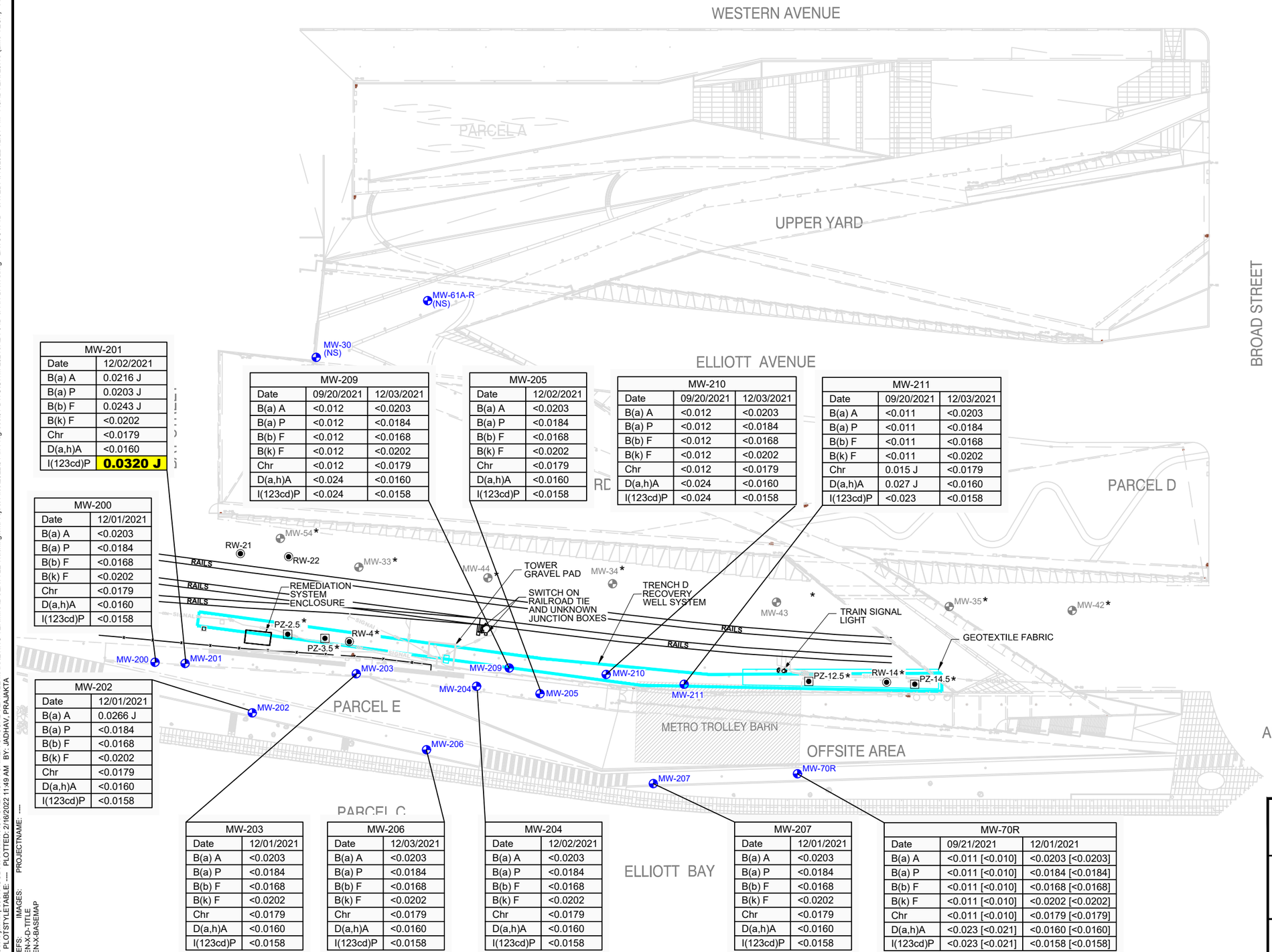

MW-201	
Date	12/02/2021
B(a) A	0.0216 J
B(a) P	0.0203 J
B(b) F	0.0243 J
B(k) F	<0.0202
Chr	<0.0179
D(a,h)A	<0.0160
I(123cd)P	**0.0320 J**

MW-200	
Date	12/01/2021
B(a) A	<0.0203
B(a) P	<0.0184
B(b) F	<0.0168
B(k) F	<0.0202
Chr	<0.0179
D(a,h)A	<0.0160
I(123cd)P	<0.0158

MW-202	
Date	12/01/2021
B(a) A	0.0266 J
B(a) P	<0.0184
B(b) F	<0.0168
B(k) F	<0.0202
Chr	<0.0179
D(a,h)A	<0.0160
I(123cd)P	<0.0158

MW-209		
Date	09/20/2021	12/03/2021
B(a) A	<0.012	<0.0203
B(a) P	<0.012	<0.0184
B(b) F	<0.012	<0.0168
B(k) F	<0.012	<0.0202
Chr	<0.012	<0.0179
D(a,h)A	<0.024	<0.0160
I(123cd)P	<0.024	<0.0158

MW-205	
Date	12/02/2021
B(a) A	<0.0203
B(a) P	<0.0184
B(b) F	<0.0168
B(k) F	<0.0202
Chr	<0.0179
D(a,h)A	<0.0160
I(123cd)P	<0.0158

MW-210		
Date	09/20/2021	12/03/2021
B(a) A	<0.012	<0.0203
B(a) P	<0.012	<0.0184
B(b) F	<0.012	<0.0168
B(k) F	<0.012	<0.0202
Chr	<0.012	<0.0179
D(a,h)A	<0.024	<0.0160
I(123cd)P	<0.024	<0.0158

MW-211		
Date	09/20/2021	12/03/2021
B(a) A	<0.011	<0.0203
B(a) P	<0.011	<0.0184
B(b) F	<0.011	<0.0168
B(k) F	<0.011	<0.0202
Chr	0.015 J	<0.0179
D(a,h)A	0.027 J	<0.0160
I(123cd)P	<0.023	<0.0158

MW-203	
Date	12/01/2021
B(a) A	<0.0203
B(a) P	<0.0184
B(b) F	<0.0168
B(k) F	<0.0202
Chr	<0.0179
D(a,h)A	<0.0160
I(123cd)P	<0.0158

MW-206	
Date	12/03/2021
B(a) A	<0.0203
B(a) P	<0.0184
B(b) F	<0.0168
B(k) F	<0.0202
Chr	<0.0179
D(a,h)A	<0.0160
I(123cd)P	<0.0158

MW-204	
Date	12/02/2021
B(a) A	<0.0203
B(a) P	<0.0184
B(b) F	<0.0168
B(k) F	<0.0202
Chr	<0.0179
D(a,h)A	<0.0160
I(123cd)P	<0.0158

MW-207	
Date	12/01/2021
B(a) A	<0.0203
B(a) P	<0.0184
B(b) F	<0.0168
B(k) F	<0.0202
Chr	<0.0179
D(a,h)A	<0.0160
I(123cd)P	<0.0158

MW-70R		
Date	09/21/2021	12/01/2021
B(a) A	<0.011 [<0.010]	<0.0203 [<0.0203]
B(a) P	<0.011 [<0.010]	<0.0184 [<0.0184]
B(b) F	<0.011 [<0.010]	<0.0168 [<0.0168]
B(k) F	<0.011 [<0.010]	<0.0202 [<0.0202]
Chr	<0.011 [<0.010]	<0.0179 [<0.0179]
D(a,h)A	<0.023 [<0.021]	<0.0160 [<0.0160]
I(123cd)P	<0.023 [<0.021]	<0.0158 [<0.0158]

LEGEND

- MW-210 — MONITORING WELL
- RW-14 — RECOVERY WELL
- PZ-14.5 — PIEZOMETER
- FORMER TRENCH D RECOVERY WELL SYSTEM
- * UNABLE TO LOCATE
- (NS) NOT SAMPLED, NO ACCESS

SAMPLE LOCATION	
DATE	SAMPLE DATE
B(a)A	Benzo(a)anthracene
B(a)P	Benzo(a)pyrene
B(b)F	Benzo(b)fluoranthene
B(k)F	Benzo(k)fluoranthene
Chr	Chrysene
D(a,h)A	Dibenzo(a,h)anthracene
I(123cd)P	Indeno(1,2,3-cd)pyrene

RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L)

<0.011 / [<0.010] = DUPLICATE SAMPLE

cPAH = CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBONS

<0.0202 = NOT DETECTED AT OR ABOVE THE MDL

HIGHLIGHTED = VALUE EXCEEDS REMEDIAL ACTION LEVELS

NOTES:

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0 80' 160'

APPROXIMATE SCALE 1 in. = 80 ft.

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SEATTLE, WASHINGTON
GROUNDWATER MONITORING REPORT
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GROUNDWATER CPAH DATA SEPTEMBER AND DECEMBER, 2021

ARCADIS

FIGURE **4b**

APPENDIX A

Site History

SITE HISTORY

The site was operated by the Union Oil Company of California (Unocal) as a bulk fuel distribution facility from the early 1900s to approximately 1975. Leaded and unleaded gasoline, diesel, lube oil, motor oils and petroleum-based solvents (non-chlorinated) were stored at the site. In the 1980s, the above-ground site structures were demolished.

Chevron, on behalf of Unocal, is conducting cleanup of the site as required by Order on Consent DE88-N223 and Amendments 1 through 5. The initial Order on Consent was signed by Unocal and the Washington State Department of Ecology (Ecology) in December 1988. In July 1995, Amendment No. 4 was signed and contains cleanup targets and remedial action levels (RALs) for groundwater in the Upper Yard, Elliott Avenue, Lower Yard, and Offsite Area. Cleanup activities conducted by Unocal at the site included: an excavation with onsite treatment and offsite disposal of approximately 50,000 tons of soil from the Upper Yard; light non-aqueous phase liquid (LNAPL) recovery; and groundwater remediation (pump and treat) and excavation and disposal of approximately 45,000 tons of soil from Elliott Avenue and the Offsite Area.

In addition, Unocal excavated approximately 60,000 tons of soil exceeding the total petroleum hydrocarbon (TPH) RAL and removed and treated petroleum-containing groundwater (GeoEngineers, 1998). Petroleum-containing soils were typically excavated to depths of 15 to 20 feet below ground surface. The Lower Yard excavation was backfilled with clean fill material and moderately impacted petroleum-containing soils from the Upper and Lower Yards. The upper 95 percent confidence level of the mean for TPH concentrations remaining in these impacted Lower Yard soils used for backfill was below the RAL of 7,500 milligrams per kilogram (mg/kg) (GeoEngineers, 1998). Several feet of imported rock were placed at the base of the excavation. According to Unocal, the average TPH concentration in these backfill soils was approximately 1,000 mg/kg (SAM, 1999).

The Upper Yard and Lower Yard properties of the site were sold by Unocal to the Trust for Public Land for the Seattle Art Museum (SAM) in 1999. In 2004, SAM began construction for redevelopment of the property, including the Offsite Area (which is owned by the City of Seattle Parks and Recreation), as the Olympic Sculpture Park (OSP). SAM entered a Pre-Purchaser Agreement with Ecology prior to their purchase of the property. As part of the agreement, SAM submitted remediation design reports to Ecology for the OSP. As provided in a January 17, 2008, letter, Ecology indicated that the terms of the Pre-Purchaser Agreement were satisfied. A Stipulation and Order of Dismissal (No. 99-2-50226-4SEA) was issued on October 31, 2008.

In conjunction with the OSP construction in the Offsite Area, Unocal conducted a “hot spot” excavation from July to October of 2005. The goal of this remedial action was to remove a source area of petroleum hydrocarbons and LNAPL in soil. Approximately 4,435 tons of petroleum-impacted soils were removed during the “hot spot” excavation (GeoEngineers, January 2006). Following the soil removal, the excavation was backfilled and the surface was restored with asphalt pavement.

On October 4, 2009, Arcadis submitted the *Work Plan for LNAPL Mobility Assessment, Natural Attenuation Monitoring and Surfactant Application Pilot Testing* to Ecology (October 2009 Work Plan). The October 2009 Work Plan was prepared in response to a letter from Ecology to Chevron dated June 8, 2009, requesting that Chevron assess the monitoring well network, address options for active remediation in the Offsite Area, conduct several short-term multiphase extraction (MPE) events on monitoring well MW-204

and on wells where LNAPL is observed in the Elliott Avenue Area and the Offsite Area and to further evaluate unfiltered/filtered samples of carcinogenic polycyclic aromatic hydrocarbons (cPAHs). This October 2009 Work Plan outlined proposed activities to evaluate the monitoring well network, evaluate remedial alternatives for the site, and discussed the potential risk of cPAHs concentrations remaining in groundwater in the Offsite Area. Specific areas addressed included LNAPL located in the Elliott Avenue Area, LNAPL along the railroad tracks and dissolved-phase concentrations in the Offsite Area.

Ecology approved the October 2009 Work Plan, with specific comments, on November 16, 2009. Following meetings with stakeholders and Ecology, Arcadis submitted the *Revised Work Plan for LNAPL Mobility Assessment, Natural Attenuation Monitoring and Surfactant Application Pilot Testing* (January 2010 Revised Work Plan) to Ecology on January 19, 2010.

On December 8, 2009, Ecology submitted a letter to Chevron approving the cancellation of fourth quarter 2009 groundwater compliance monitoring. In addition, Ecology recommended conducting semi-annual groundwater compliance monitoring for 2010 and quarterly monitoring for visual inspection, measurement and removal (if applicable) at monitoring wells MW-30 and MW-61A-R and recovery wells RW-1 through RW-3 and RW-21. Monitoring well MW-61A-R is a replacement for well MW-61A, which was originally an Upper Yard monitoring well. However, MW-61A-R is located in the Elliott Avenue right-of-way (ROW) and is currently referred to as an Elliott Avenue Area monitoring well.

On March 19, 2010, Ecology approved the January 2010 Revised Work Plan with additional specific comments. Following additional meetings, Arcadis submitted the *Addendum to the Revised Work Plan for LNAPL Mobility Assessment, Natural Attenuation Monitoring and Surfactant Application Pilot Testing* (May 2010 Addendum to the Revised Work Plan) on May 3, 2010, to address the additional stakeholder and Ecology comments on the January 2010 Revised Work Plan. On May 18, 2010, Ecology approved the May 2010 Addendum to the Revised Work Plan via electronic mail. Field work to implement the May 2010 Addendum to the Revised Work Plan began in the summer of 2010.

Arcadis submitted the *2010 Summary Report and Risk Evaluation* on February 1, 2011 with the following recommendations and responses from Ecology:

- Continue quarterly gauging and semi-annual groundwater monitoring of wells MW-30, MW-61A-R, RW-3 and RW-21. Ecology concurred; both gauging and groundwater monitoring are ongoing for monitoring wells MW-30 and MW-61A-R. Recovery wells RW-3 and RW-21 were decommissioned with Ecology approval in June 2014 (discussed below).
- Continue semi-annual groundwater monitoring of wells MW-200 through MW-207. Ecology concurred: semi-annual groundwater monitoring is ongoing.
- Remove dissolved lead from the list of site constituents of concern. Dissolved lead has not been detected at the site since November 2007 and monitoring wells in the Offsite Area have at least 12 consecutive monitoring events without a dissolved-lead concentration exceedance. The few concentrations that were detected remained more than two orders of magnitude below the site RAL. Ecology concurred: effective second semi-annual 2011 monitoring event, lead is no longer a constituent of concern.
- Abandon piezometers PZ-61A-R, PZ-203, and PZ-204 in place. Ecology recommended maintaining and gauging piezometers through quarterly gauging during next two semi-annual monitoring events,

then to re-evaluate. Piezometers PZ-61A-R, PZ-203, and PZ-204 were decommissioned in June 2014 with the approval of Ecology (discussed below).

- Abandon Trench D extraction wells RW-1, RW-2, RW-5 through RW-13 and RW-15 in place. Ecology recommended maintaining and quarterly gauging of Trench D extraction wells through the next two semi-annual monitoring events, then to re-evaluate. Quarterly gauging of extraction wells RW-1, RW-2, RW-5 through RW-13 and RW-15 for two additional semi-annual monitoring events was fulfilled. The Trench D extraction wells were decommissioned in June 2014, as discussed below.
- The LNAPL occasionally observed in wells RW-3, RW-21 or MW-30 is not mobile. Arcadis does not recommend further remedial operations on these wells unless quarterly gauging activities indicates a change in the volume or type of LNAPL present in the wells compared to historical observations. Ecology concurred and recommended continuing quarterly gauging through two semi-annual monitoring events and then to re-evaluate. Quarterly gauging of RW-3, RW-21 and MW-30 for two semi-annual monitoring events was fulfilled. Recovery wells RW-3 and RW-21 were decommissioned in June 2014 with the approval of Ecology (discussed below).
- Add monitoring well MW-205 to the quarterly gauging program. Ecology concurred: MW-205 was gauged quarterly as part of the quarterly gauging program ending in 2014.
- If LNAPL is observed and is recoverable, submit a sample for chemical testing and possible mobility parameter analysis. Ecology concurred. Recoverable thicknesses of LNAPL were observed in Trench D wells PZ-4.5, PZ-6, PZ-10.5, PZ-11.5, and PZ-13 in February 2014. Samples of the LNAPL were submitted for chemical analysis and in some cases, mobility parameter analysis. The results of these analyses were submitted in the Trench D Recovery System Decommissioning Summary and Recommendation for Replacement Well Installation" (Arcadis July, 2014).

In December 2012, Chevron submitted a revised Draft Amendment to the Order to Ecology. The proposed Amendment, which was prepared with the input of the City of Seattle and the SAM, recommended abandonment of the Trench D recovery wells and piezometers, installation of up to five replacement wells along the Trench D area, and additional groundwater monitoring. At the request of Ecology, Arcadis submitted the "Work Plan for Decommissioning Trench D Recovery System and Three Piezometers Installed in 2010" (Arcadis, May 2013). This work plan describes a scope of work to decommission remaining wells and equipment associated with Trench D, as well as the piezometers installed as part of the 2010 site assessment activities. This work plan was approved by Ecology in email correspondence dated July 29, 2013.

The decommissioning work was conducted in two phases. Phase I was conducted from February 21 to 25, 2014 and included the following activities:

- Prepared the site to allow access for equipment and vehicles.
- Removed the remediation system compound and equipment.
- Attempted to locate missing piezometers and recovery wells.
- Gauged recovery wells and piezometers.
- Received variance approval for well abandonment.

Separate LNAPL sampling events were completed between the two phases of decommissioning work on February 26 and May 5, 2014.

Phase II was conducted from June 9 to 13, 2014 and included the following activities:

- Gauged recovery wells and piezometers.
- Vacuum extraction of fluids from each recovery well and piezometer located along Trench D.
- Decommissioned recovery wells, piezometers, 2-inch lateral remediation system piping, and a 6-foot long by 4-foot wide recovery vault where the piping entered the former remediation system.
- Decommissioned of piezometers installed in 2010 (PZ-61A-R, PZ-203, and PZ-204).
- Disposed of waste materials generated by the above activities.

A report of the Trench D decommissioning activities, LNAPL summary and work plan for the installation of the replacement monitoring wells was submitted under separate cover “Trench D Recovery System Decommissioning Summary and Recommendation for Replacement Well Installation” (Arcadis July, 2014).

At the request of Ecology, Arcadis submitted a work plan for the installation of up to six additional monitoring wells in the Offsite Area. The work plan was approved by Ecology in correspondence dated May 29, 2015. The work plan was implemented in January 2016. A report documenting installation activities was submitted to Ecology on April 29, 2016.

REMEDIAL ACTIVITIES

Offsite Area Remediation System

A groundwater extraction system was installed in the offsite area in 1989. The system included 24 extraction wells located along the BNSF right-of-way. In November and December 2006, the underground piping was severely damaged during the construction of the OSP, rendering the system inoperable.

From 1989 to November 2006, approximately 29,244,966 gallons of water and 4,809 gallons of LNAPL were recovered and treated by the groundwater extraction system. The extraction system last recovered LNAPL in fourth quarter 2004; no LNAPL was recovered during the last two years of operation. The associated Trench D recovery wells were gauged semi-annually until they were decommissioned in June 2014. The oil water separator was rehabilitated in May 2010 for use in disposal of purge water generated from routine groundwater sampling events and for well redevelopment and hydraulic conductivity testing approved by Ecology. The oil water separator was decommissioned during the June 2014 Trench D decommissioning activities and the King County Major Discharge Authorization Number 529-04 was discontinued.

Throughout the third and fourth quarter of 2011, monitoring well MW-205 was gauged on a bi-weekly (every other week) basis. During these events, no LNAPL or sheen was observed. Gauging was reduced to quarterly as of the first semi-annual 2012 reporting period at this location and continued on a quarterly basis since.

Upper Yard and Elliott Avenue LNAPL Removal

Monitoring well MW-61A-R was re-developed on September 3, 2008 using a disposable bailer and a vacuum truck to remove sediment and LNAPL which may have accumulated in the well and/or sand pack. Approximately ten well volumes of groundwater and residual LNAPL were removed. The re-development water and recovered LNAPL were collected in the vacuum truck and transported to an approved facility for recycling. The amount of LNAPL recovered was not quantified. Mobile multi-phase extraction (MPE) was initiated in August 2009 in monitoring wells MW-30 and MW-61A-R. Observations made during MPE operations indicate that short term MPE does not influence the groundwater table and subsurface vapor flow. MPE was determined to be an ineffective method to address the remaining LNAPL and dissolved-phase impacts at the site due to the minimal remaining hydrocarbon impacts at the site and associated low MPE mass removal rate.

To assess persistent measurable LNAPL observed during groundwater monitoring, a surfactant-enhanced LNAPL recovery pilot test was performed on monitoring well MW-61A-R in July 2010. Approximately 200 gallons of surfactant were injected into MW-61A-R. The surfactant solution was allowed to remain in the formation for approximately 24 hours and then approximately 900 gallons of fluids were extracted. Monitoring was completed weekly for the first month after extraction. After weekly monitoring was completed, monthly monitoring was initiated and quarterly monitoring is ongoing. A complete summary of the surfactant-enhanced LNAPL recovery pilot test was submitted in the *2010 Summary Report and Risk Evaluation* on February 1, 2011.

Lower Yard LNAPL Recovery

LNAPL was observed in recovery well RW-21 during the September 2013 groundwater monitoring event (visually observed on oil/water interface probe, a measurable thickness was not present). This recovery well, as well as the downgradient Trench D recovery wells (RW-1 through RW-3), were included in the quarterly gauging program. Manual LNAPL recovery from RW-21 had been unsuccessful due to the highly-viscous nature of the LNAPL. LNAPL has not been observed in recovery wells RW-1 and RW-2 since the gauging program was implemented and has not been observed in RW-3 since the first semi-annual groundwater monitoring event of 2013. Wells RW-1, RW-2 and RW-21 were decommissioned in 2014 during the Trench D decommissioning activities.

REFERENCES

Arcadis. 2009. Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells. March 9.

Arcadis. 2013. Work Plan for Decommissioning Trench D Recovery System and Three Piezometers Installed in 2010. May 31.

Arcadis. 2014. Trench D Recovery System Decommissioning Summary and Recommendation for Replacement Well Installation. July.

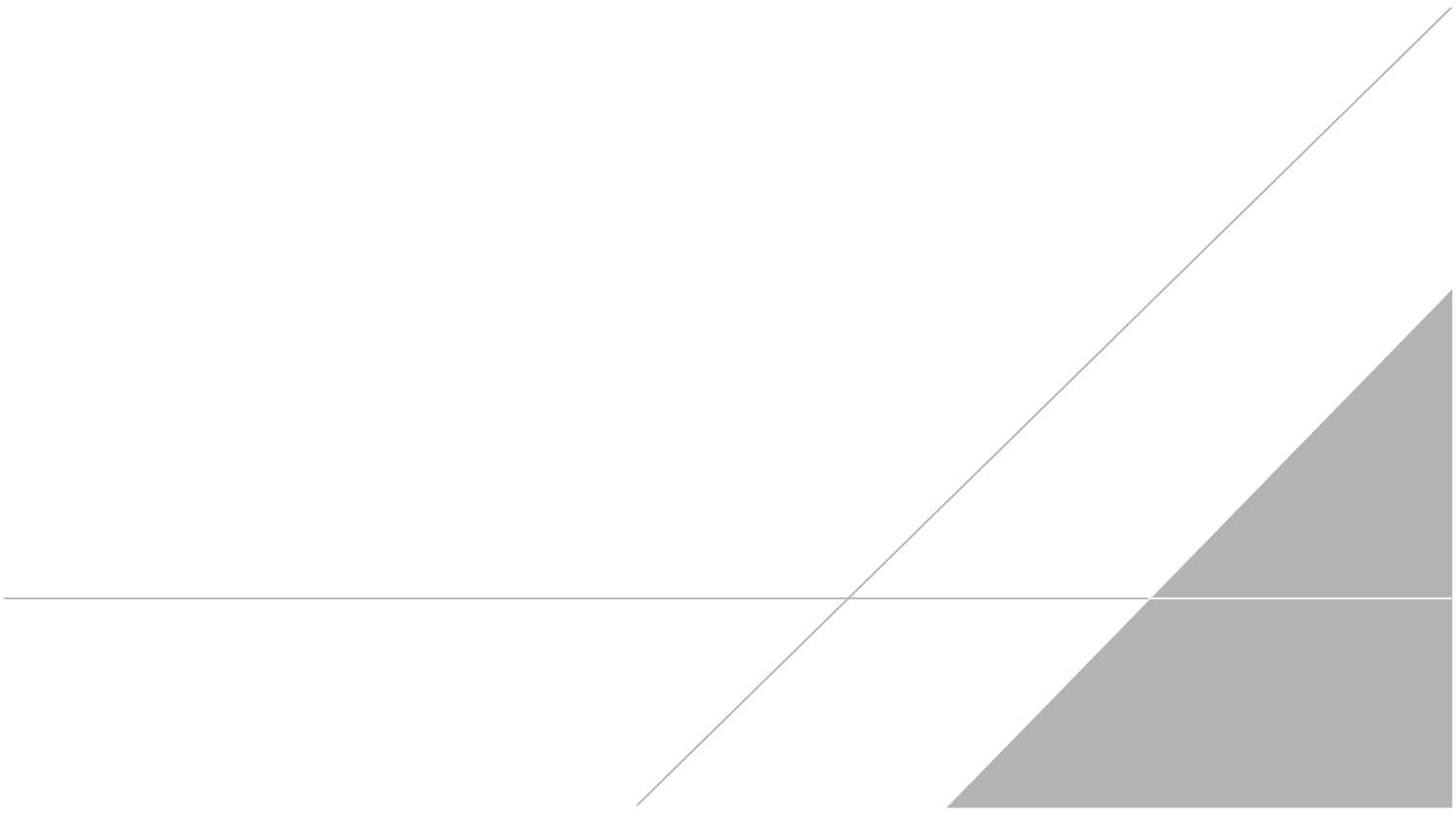
Arcadis. 2015. Work Plan for Additional Well Installation in Former Trench D Area and Offsite Area, Former Unocal Seattle Marketing Terminal. May.

GeoEngineers, 1998. Final Cleanup Report – Lower Yard, Unocal Former Seattle Marketing Terminal Property. September 23.

Seattle Art Museum (SAM). 1999. Draft Cleanup Action Plan, Former Unocal Seattle Marketing Property. October 6. Numbered Heading Level 2

APPENDIX B

Standard Operating Procedure



ARCADIS
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Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells

Rev. #: 3

Rev Date: March 9, 2009

Approval Signatures

Prepared by:  Date: 3/9/2009

Reviewed by:  Date: 3/9/2009

(Technical Expert)

I. Scope and Application

Groundwater samples will be collected from monitoring wells to evaluate groundwater quality. The protocol presented in this standard operating procedure (SOP) describes the procedures to be used to purge monitoring wells and collect groundwater samples. This protocol has been developed in accordance with the United States Environmental Protection Agency (USEPA) Region I Low Stress (Low Flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells (USEPA SOP No. GW0001; July 30, 1996). Both filtered and unfiltered groundwater samples may be collected using this low-flow sampling method. Filtered samples will be obtained using a 0.45-micron disposable filter. No wells will be sampled until well development has been performed in accordance with the procedures presented in the SOP titled Monitoring Well Development, unless that well has been sampled or developed within the prior 1-year time period. Groundwater samples will not be collected within 1 week following well development.

II. Personnel Qualifications

ARCADIS personnel directing, supervising, or leading groundwater sample collection activities should have a minimum of 2 years of previous groundwater sampling experience. ARCADIS personnel providing assistance to groundwater sample collection and associated activities should have a minimum of 6 months of related experience or an advanced degree in environmental sciences, engineering, hydrogeology, or geology.

The supervisor of the groundwater sampling team will have at least 1 year of previous supervised groundwater sampling experience.

Prior to mobilizing to the field, the groundwater sampling team should review and be thoroughly familiar with relevant site-specific documents including but not limited to the site work plan, field sampling plan, QAPP, HASP, and historical information. Additionally, the groundwater sampling team should review and be thoroughly familiar with documentation provided by equipment manufacturers for all equipment that will be used in the field prior to mobilization.

III. Equipment List

Specific to this activity, the following materials (or equivalent) will be available:

- Health and safety equipment (as required in the site Health and Safety Plan [HASP]).

- Site Plan, well construction records, prior groundwater sampling records (if available).
- Sampling pump, which may consist of one or more of the following:
  - submersible pump (e.g., Grundfos Redi-Flo 2);
  - peristaltic pump (e.g., ISCO Model 150); and/or
  - bladder pump (e.g., Marschalk System 1, QED Well Wizard, etc.).
- Appropriate controller and power source for pump:
  - Submersible and peristaltic pumps require electric power from either a generator or a deep cell battery.
  - Submersible pumps such as Grundfos require a pump controller to run the pump
  - Bladder pumps require a pump controller and a gas source (e.g., air compressor or compressed N_2 or CO_2 gas cylinders).
- Teflon® tubing or Teflon®-lined polyethylene tubing of an appropriate size for the pump being used. For peristaltic pumps, dedicated Tygon® tubing (or other type as specified by the manufacturer) will also be used through the pump apparatus.
- Water-level probe (e.g., Solinist Model 101).
- Water-quality (temperature/pH/specific conductivity/ORP/turbidity/dissolved oxygen) meter and flow-through measurement cell. Several brands may be used, including:
  - YSI 6-Series Multi-Parameter Instrument;
  - Hydrolab Series 3 or Series 4a Multiprobe and Display; and/or
  - Horiba U-10 or U-22 Water Quality Monitoring System.
- Supplemental turbidity meter (e.g., Horiba U-10, Hach 2100P, LaMotte 2020). Turbidity measurements collected with multi-parameter meters have been shown to sometimes be unreliable due to fouling of the optic lens of the

turbidity meter within the flow-through cell. A supplemental turbidity meter will be used to verify turbidity data during purging if such fouling is suspected. Note that industry improvements may eliminate the need for these supplemental measurements in the future.

- Appropriate water sample containers (supplied by the laboratory).
- Appropriate blanks (trip blank supplied by the laboratory).
- 0.45-micron disposable filters (if field filtering is required).
- Large glass mixing container (if sampling with a bailer).
- Teflon® stirring rod (if sampling with a bailer).
- Cleaning equipment.
- Groundwater sampling log (attached) or bound field logbook.

Note that in the future, the client may acquire different makes/models of some of this equipment if the listed makes/models are no longer available, or as a result of general upgrades or additional equipment acquisitions. In the event that the client uses a different make/model of the equipment listed, the client will use an equivalent type of equipment (e.g., pumps, flow-through analytical cells) and note the specific make/model of the equipment used during a sampling event on the groundwater sampling log. In addition, should the client desire to change to a markedly different sampling methodology (e.g., discrete interval samplers, passive diffusion bags, or a yet to be developed technique), the client will submit a proposed SOP for the new methodology for USEPA approval prior to implementing such a change.

The maintenance requirements for the above equipment generally involve decontamination or periodic cleaning, battery charging, and proper storage, as specified by the manufacturer. For operational difficulties, the equipment will be serviced by a qualified technician.

IV. Cautions

If heavy precipitation occurs and no cover over the sampling area and monitoring well can be erected, sampling must be discontinued until adequate cover is provided. Rain water could contaminate groundwater samples.

Do not use permanent marker or felt-tip pens for labels on sample container or sample coolers – use indelible ink. The permanent markers could introduce volatile constituents into the samples.

It may be necessary to field filter some parameters (e.g., metals) prior to collection, depending on preservation, analytical method, and project quality objectives.

Store and/or stage empty and full sample containers and coolers out of direct sunlight.

To mitigate potential cross-contamination, groundwater samples are to be collected in a pre-determined order from least impacted to impacted based on previous analytical data. If no analytical data are available, samples are collected in order of upgradient, then furthest downgradient to source area locations.

Be careful not to over-tighten lids with Teflon liners or septa (e.g., 40 mL vials). Over-tightening can cause the glass to shatter or impair the integrity of the Teflon seal.

V. Health and Safety Considerations

Use caution and appropriate cut resistant gloves when tightening lids to 40 mL vials. These vials can break while tightening and can lacerate hand. Amber vials (thinner glass) are more prone to breakage.

If thunder or lighting is present, discontinue sampling and take cover until 30 minutes have passed after the last occurrence of thunder or lighting.

Use caution when removing well caps as well may be under pressure, cap can dislodge forcefully and cause injury.

Use caution when opening protective casing on stickup wells as wasps frequently nest inside the tops of the covers. Also watch for fire ant mounds near well pads when sampling in the south or western U.S.

VI. Procedure

Groundwater will be purged from the wells using an appropriate pump. Peristaltic pumps will initially be used to purge and sample all wells when applicable. If the depth to water is below the sampling range of a peristaltic pump (approximately 25 feet), submersible pumps or bladder pumps will be used provided the well is constructed with a casing diameter greater than or equal to 2 inches (the minimum well diameter capable of accommodating such pumps). Bladder pumps are preferred over peristaltic and submersible pumps if sampling of VOCs is required to prevent volatilization. For

smaller diameter wells where the depth to water is below the sampling range of a peristaltic pump, alternative sampling methods (i.e., bailing or small diameter bladder pumps) will be used to purge and sample the groundwater. Purge water will be collected and containerized.

1. Calibrate field instruments according to manufacturer procedures for calibration.

2. Measure initial depth to groundwater prior to placement of pumps.

3. Prepare and install pump in well: For submersible and non-dedicated bladder pumps, decontaminate pump according to site decontamination procedures. Non-dedicated bladder pumps will require a new Teflon® bladder and attachment of an air line, sample discharge line, and safety cable prior to placement in the well. Attach the air line tubing to the air port on the top of the bladder pump. Attach the sample discharge tubing to the water port on the top of the bladder pump. Care should be taken not to reverse the air and discharge tubing lines during bladder pump set-up as this could result in bladder failure or rupture. Attach and secure a safety cable to the eyebolt on the top of bladder pump (if present, depending on pump model used). Slowly lower pump, safety cable, tubing, and electrical lines into the well to a depth corresponding to the approximate center of the saturated screen section of the well. Take care to avoid twisting and tangling of safety cable, tubing, and electrical lines while lowering pump into well; twisted and tangled lines could result in the pump becoming stuck in the well casing. Also, make sure to keep tubing and lines from touching the ground or other surfaces while introducing them into the well as this could lead to well contamination. If a peristaltic pump is being used, slowly lower the sampling tubing into the well to a depth corresponding to the approximate center of the saturated screen section of the well. The pump intake or sampling tube must be kept at least 2 feet above the bottom of the well to prevent mobilization of any sediment present in the bottom of the well.

4. Connect the pump to other equipment. If using a bladder pump, the discharge water line should be connected to the bottom inlet port on the flow-through cell connected to the water quality meter. Connect the air line to the pump controller output port. The pump controller should then be connected to a supply line from an air compressor or compressed gas cylinder using an appropriate regulator and air hose. Take care to tighten the regulator connector onto the gas cylinder (if used) to prevent leaks. Teflon tape may be used on the threads of the cylinder to provide a tighter seal. Once the air compressor or gas cylinder is connected to the pump controller, turn on the compressor or open the valve on the cylinder to begin the gas flow. Turn on the pump controller if an on/off switch

is present and verify that all batteries are charged and fully operating before beginning to pump.

5. Measure the water level again with the pump in the well before starting the pump. Start pumping the well at 200 to 500 milliliters (mL) per minute (or at lower site-specific rate if specified). The pump rate should be adjusted to cause little or no water level drawdown in the well (less than 0.3 feet below the initial static depth to water measurement) and the water level should stabilize. The water level should be monitored every 3 to 5 minutes (or as appropriate, lower flow rates may require longer time between readings) during pumping if the well diameter is of sufficient size to allow such monitoring. Care should be taken not to break pump suction or cause entrainment of air in the sample. Record pumping rate adjustments and depths to water. If necessary, pumping rates should be reduced to the minimum capabilities of the pump to avoid pumping the well dry and/or to stabilize indicator parameters. A steady flow rate should be maintained to the extent practicable. Groundwater sampling records from previous sampling events (if available) should be reviewed prior to mobilization to estimate the optimum pumping rate and anticipated drawdown for the well in order to more efficiently reach a stabilized pumping condition.

   If the recharge rate of the well is very low, alternative purging techniques should be used, which will vary based on the well construction and screen position. For wells screened across the water table, the well should be pumped dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should be pumped until a stabilized level (which may be below the maximum displacement goal of 0.3 feet) can be maintained and monitoring for stabilization of field indicator parameters can commence. If a lower stabilization level cannot be maintained, the well should be pumped until the drawdown is at a level slightly higher than the bentonite seal above the well screen. Sampling should commence after one well volume has been removed and the well has recovered sufficiently to permit collection of samples.

   During purging, monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, pH, etc.) every 3 to 5 minutes (or as appropriate). Field indicator parameters will be measured using a flow-through analytical cell or a clean container such as a glass beaker. Record field indicator parameters on the groundwater sampling log. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain within 3%, and pH remains within 0.1 units for three consecutive readings collected at 3- to 5-minute intervals (or

other appropriate interval, alternate stabilization goals may exist in different geographic regions, consult the site-specific Work Plan for stabilization criteria). If the field indicator parameters do not stabilize within 1 hour of the start of purging, but the groundwater turbidity is below the goal of 50 NTU and the values for all other parameters are within 10%, the well can be sampled. If the parameters have stabilized but the turbidity is not in the range of the 50 NTU goal, the pump flow rate should be decreased to a minimum rate of 100 mL/min to reduce turbidity levels as low as possible. If dissolved oxygen values are not within acceptable range for the temperature of groundwater (Attachment 1), then check for and remove air bubbles on probe or in tubing. If the dissolved oxygen value is 0.00 or less, then the meter should be serviced and re-calibrated.

During extreme weather conditions, stabilization of field indicator parameters may be difficult to obtain. Modifications to the sampling procedures to alleviate these conditions (e.g., measuring the water temperature in the well adjacent to the pump intake) will be documented in the field notes. If other field conditions exist that preclude stabilization of certain parameters, an explanation of why the parameters did not stabilize will also be documented in the field logbook.

6. Complete the sample label and cover the label with clear packing tape to secure the label onto the container.

7. After the indicator parameters have stabilized, collect groundwater samples by diverting flow out of the unfiltered discharge tubing into the appropriate labeled sample container. If a flow-through analytical cell is being used to measure field parameters, the flow-through cell should be disconnected after stabilization of the field indicator parameters and prior to groundwater sample collection. Under no circumstances should analytical samples be collected from the discharge of the flow-through cell. When the container is full, tightly screw on the cap. Samples should be collected in the following order: VOCs, TOC, SVOCs, metals and cyanide, and others (or other order as defined in the site-specific Work Plan).

8. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Install an in-line, disposable 0.45-micron particle filter on the discharge tubing after the appropriate unfiltered groundwater sample has been collected. Continue to run the pump until an initial volume of “flush” water has been run through the filter in accordance with the manufacturer’s directions (generally 100 to 300 mL). Collect filtered groundwater sample by diverting flow out of the filter into the appropriately labeled sample container. When the container is full, tightly screw on the cap.

9. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.

10. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the stabilized field indicator parameters as measured during the final reading during purging (Attachment 2 – Example Sampling Log).

11. Turn off the pump and air compressor or close the gas cylinder valve if using a bladder pump set-up. Slowly remove the pump, tubing, lines, and safety cable from the well. Do not allow the tubing or lines to touch the ground or any other surfaces which could contaminate them. .

12. If tubing is to be dedicated to a well, it should be folded to a length that will allow the well to be capped and also facilitate retrieval of the tubing during later sampling events. A length of rope or string should be used to tie the tubing to the well cap. Alternatively, if tubing and safety line are to be saved and reused for sampling the well at a later date they may be coiled neatly and placed in a clean plastic bag that is clearly labeled with the well ID. Make sure the bag is tightly sealed before placing it in storage.

13. Secure the well and properly dispose of personal protective equipment (PPE) and disposable equipment.

14. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.

15. Complete decontamination procedures for flow-through analytical cell and submersible or bladder pump, as appropriate.

16. At the end of the day, perform calibration check of field instruments.

If it is not technically feasible to use the low-flow sampling method, purging and sampling of monitoring wells may be conducted using the bailer method as outlined below:

1. Don appropriate PPE (as required by the HASP).

2. Place plastic sheeting around the well.

3. Clean sampling equipment.

4. Open the well cover while standing upwind of the well. Remove well cap and place on the plastic sheeting. Insert PID probe approximately 4 to 6 inches into the casing or the well headspace and cover with gloved hand. Record the PID reading in the field log. If the well headspace reading is less than 5 PID units, proceed; if the headspace reading is greater than 5 PID units, screen the air within the breathing zone. If the breathing zone reading is less than 5 PID units, proceed. If the PID reading in the breathing zone is above 5 PID units, move upwind from well for 5 minutes to allow the volatiles to dissipate. Repeat the breathing zone test. If the reading is still above 5 PID units, don appropriate respiratory protection in accordance with the requirements of the HASP. Record all PID readings. For wells that are part of the regular weekly monitoring program and prior PID measurements have not resulted in a breathing zone reading above 5 PID units, PID measurements will be taken monthly.

5. Measure the depth to water and determine depth of well by examining drilling log data or by direct measurement. Calculate the volume of water in the well (in gallons) by using the length of the water column (in feet), multiplying by 0.163 for a 2-inch well or by 0.653 for a 4-inch well. For other well diameters, use the formula:

   Volume (in gallons) = • TIMES well radius (in feet) squared TIMES length of water column (in feet) TIMES 7.481 (gallons per cubic foot)

6. Measure a length of rope or twine at least 10 feet greater than the total depth of the well. Secure one end of the rope to the well casing and secure the other end to the bailer. Test the knots and make sure the rope will not loosen. Check bailers so that all parts are intact and will not be lost in the well.

7. Lower bailer into well and remove one well volume of water. Contain all water in appropriate containers.

8. Monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, and pH). Measure field indicator parameters using a clean container such as a glass beaker or sampling cups provided with the instrument. Record field indicator parameters on the groundwater sampling log.

9. Repeat Steps 7 and 8 until three or four well volumes have been removed. Examine the field indicator parameter data to determine if the parameters have stabilized. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain

within 3%, and pH remains within ±0.1 units for three consecutive readings collected once per well volume removed.

10. If the field indicator parameters have not stabilized, remove a maximum of five well volumes prior to sample collection. Alternatively, five well volumes may be removed without measuring the field indicator parameters.

11. If the recharge rate of the well is very low, wells screened across the water table may be bailed dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should only be bailed down to a level slightly higher than the bentonite seal above the well screen. The well should not be bailed completely dry, to maintain the integrity of the seal. Sampling should commence as soon as the well volume has recovered sufficiently to permit sample collection.

12. Following purging, allow water level in well to recharge to a sufficient level to permit sample collection.

13. Complete the sample label and cover the label with clear packing tape to secure the label onto the container.

14. Slowly lower the bailer into the screened portion of the well and carefully retrieve a filled bailer from the well causing minimal disturbance to the water and any sediment in the well.

15. The sample collection order (as appropriate) will be as follows:

    a. VOCs;

    b TOC;

    c. SVOCs;

    d. metals and cyanide; and

    e. others.

16. When sampling for volatiles, collect water samples directly from the bailer into 40-mL vials with Teflon®-lined septa.

17. For other analytical samples, remove the cap from the large glass mixing container and slowly empty the bailer into the large glass mixing container. The sample for dissolved metals and/or filtered PCBs should either be placed directly from the bailer into a pressure filter apparatus or pumped directly from the bailer with a peristaltic pump, through an in-line filter, into the pre-preserved sample bottle.

18. Continue collecting samples until the mixing container contains a sufficient volume for all laboratory samples.

19. Mix the entire sample volume with the Teflon® stirring rod and transfer the appropriate volume into the laboratory jar(s). Secure the sample jar cap(s) tightly.

20. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Sample filtration for the filtered sample will be performed in the field using a peristaltic pump prior to preservation. Install new medical-grade silicone tubing in the pump head. Place new Teflon® tubing into the sample mixing container and attach to the intake side of pump tubing. Attach (clamp) a new 0.45-micron filter (note the filter flow direction). Turn the pump on and dispense the filtered liquid directly into the laboratory sample bottles.

21. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.

22. After sample containers have been filled, remove one additional volume of groundwater. Measure the pH, temperature, turbidity, and conductivity. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the field indicator parameters.

23. Remove bailer from well, secure well, and properly dispose of PPE and disposable equipment.

24. If a bailer is to be dedicated to a well, it should be secured inside the well above the water table, if possible. Dedicated bailers should be tied to the well cap so that inadvertent loss of the bailer will not occur when the well is opened.

25. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.

VII. Waste Management

Materials generated during groundwater sampling activities, including disposable equipment, will be placed in appropriate containers. Containerized waste will be disposed of by the client consistent with the procedures identified in the HASP.

VIII. Data Recording and Management

Initial field logs and chain-of-custody records will be transmitted to the ARCADIS PM at the end of each day unless otherwise directed by the PM. The groundwater team leader retains copies of the groundwater sampling logs.

IX. Quality Assurance

In addition to the quality control samples to be collected in accordance with this SOP, the following quality control procedures should be observed in the field:

- Collect samples from monitoring wells in order of increasing concentration, to the extent known based on review of historical site information if available.
- Equipment blanks should include the pump and tubing (if using disposable tubing) or the pump only (if using tubing dedicated to each well).
- Collect equipment blanks after wells with higher concentrations (if known) have been sampled.
- Operate all monitoring instrumentation in accordance with manufacturer's instructions and calibration procedures. Calibrate instruments at the beginning of each day and verify the calibration at the end of each day. Record all calibration activities in the field notebook.
- Clean all groundwater sampling equipment prior to use in the first well and after each subsequent well using procedures for equipment decontamination.

X. References

United States Environmental Protection Agency (USEPA). 1986. RCRA Groundwater Monitoring Technical Enforcement Guidance Document (September 1986).

USEPA Region II. 1998. *Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling*.

USEPA. 1991. Handbook Groundwater, Volume II Methodology, Office of Research and Development, Washington, DC. USEPN62S, /6-90/016b (July, 1991).

U.S. Geological Survey (USGS). 1977. National Handbook of Recommended Methods for Water-Data Acquisition: USGS Office of Water Data Coordination. Reston, Virginia.

Attachment 1

Groundwater Sampling Log

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project _____

Project Number _____ **Site Location** _____ **Well ID** _____

Date _____ **Sampled By** _____

Sampling Time _____ **Recorded By** _____

Weather _____ **Coded Replicate No.** _____

Instrument Identification

Water Quality Meter(s) _____ **Serial #** _____

Casing Material _____ **Purge Method** _____

Casing Diameter _____ **Screen Interval (ft bmp)** **Top** _____ **Bottom** _____

Sounded Depth (ft bmp) _____ **Pump Intake Depth (ft bmp)** _____ _____

Depth to Water (ft bmp) _____ **Purge Time** **Start** _____ **Finish** _____

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)

Collected Sample Condition **Color**_____ **Odor**_____ **Appearance**_____

Parameter	Container	No.	Preservative

PID Reading _____

Comments _____

1) Circle one unit type

Attachment 2

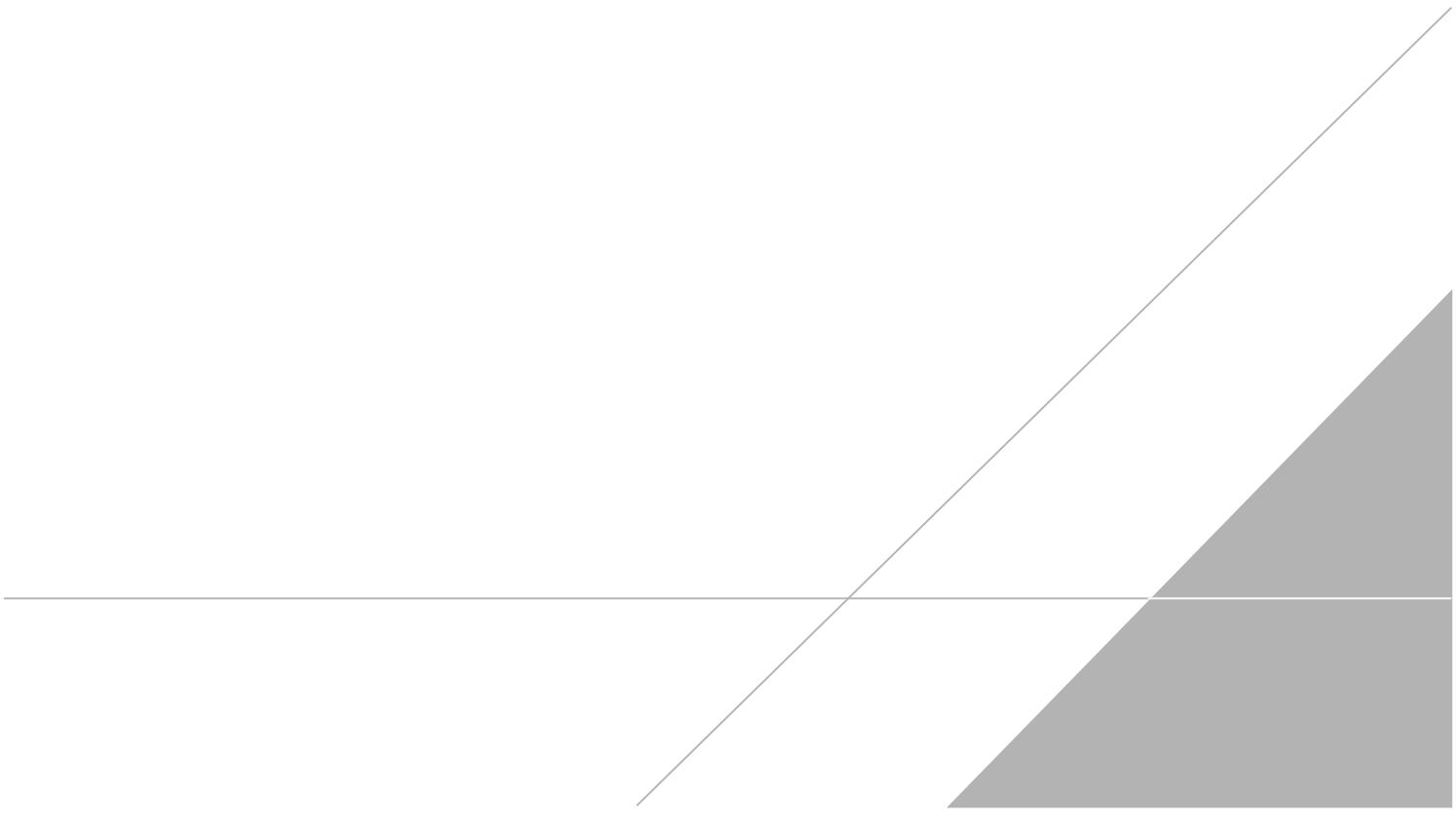
Oxygen Solubility in Fresh Water

Temperature (degrees C)	**Dissolved Oxygen** (mg/L)
0	14.6
1	14.19
2	13.81
3	13.44
4	13.09
5	12.75
6	12.43
7	12.12
8	11.83
9	11.55
10	11.27
11	11.01
12	10.76
13	10.52
14	10.29
15	10.07
16	9.85
17	9.65
18	9.45
19	9.26
20	9.07
21	8.9
22	8.72
23	8.56
24	8.4
25	8.24
26	8.09
27	7.95
28	7.81
29	7.67
30	7.54
31	7.41
32	7.28
33	7.16
34	7.05
35	6.93

Reference: Vesilind, P.A., *Introduction to Environmental Engineering*, PWS Publishing Company, Boston, 468 pages (1996).

APPENDIX C

Field Data Sheets



ARCADIS

Groundwater Gauging Log

Project Number	30062780
Client:	Chevron
Site ID:	PMG00140
Site Location:	Seattle, Washington
Measuring Point:	Top of Casing
Date(s):	09/20/2021
Sampler(s):	Trevor Bryant, Daniel Gilbert
Gauging Equipment:	Interface Probe

Well ID	Date	Gauging Time	Static Water Level (ft bmp)	Depth to Product (ft	Total Depth (ft bmp)	PID Reading (ppm)	LNAPL Removed (gal)	Comments
MW-200	09/20/2021	11:47	9.51	ND	--	0	--	--
MW-201	09/20/2021	11:51	10.30	ND	--	0	--	Non-measurable sheen/LNAPL observed on the probe tip and side of a bailer on 9/23. Oil absorbent sock added in well on 9/23.
MW-202	09/20/2021	11:43	10.54	ND	--	0	--	--
MW-203	09/20/2021	11:56	13.53	ND	--	0	--	--
MW-204	09/20/2021	12:02	19.42	ND	--	0	--	--
MW-205	09/20/2021	12:11	23.36	ND	--	0	--	Non-measurable sheen/LNAPL observed on probe tip. Oil absorbent sock added in well on 9/23.
MW-206	09/20/2021	11:39	12.97	ND	--	0	--	--
MW-207	09/20/2021	11:22	13.00	ND	--	0	--	--
MW-209	09/20/2021	13:08	10.33	ND	--	0	--	--
MW-210	09/20/2021	13:04	9.47	ND	--	0	--	--
MW-211	09/20/2021	13:00	9.82	ND	--	0	--	--
MW-30	09/20/2021	12:32	13.33	ND	--	0	--	Non-measurable sheen/LNAPL observed on bailer tip. Oil absorbent sock in well removed and replaced.
MW-61A-R	09/20/2021	12:45	14.95	ND	--	144	--	No evidence of LNAPL. Oil absorbent sock in well removed.
MW-70R	09/20/2021	11:12	12.50	ND	--	0	--	--

ft-bmp = feet below measuring point ND = Not Detected PID = Photoionization Detector Reading

ppm = parts per million -- = Not Recorded

Low-Flow Test Report:

Test Date / Time: 9/20/2021 1:52:49 PM
Project: Seattle Terminal 3Q21
Operator Name: Daniel Sly Gilbert

Location Name: MW-209 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 3 ft** **Total Depth: 18 ft** **Initial Depth to Water: 10.33 ft**	**Pump Type: Geotechnical Geopump Series 2** **Tubing Type: Polyethylene** **Pump Intake From TOC: 10.75 ft** **Estimated Total Volume Pumped: 5400 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 457166**

Test Notes:

Weather Conditions:
Sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 5 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
9/20/2021 1:52 PM	00:00	6.79 pH	16.47 °C	508.70 µS/cm	0.39 mg/L	0.00 NTU	-56.6 mV	10.33 ft	200.00 ml/min
9/20/2021 1:55 PM	03:00	6.76 pH	16.44 °C	494.56 µS/cm	0.35 mg/L	0.00 NTU	-64.0 mV	10.33 ft	200.00 ml/min
9/20/2021 1:58 PM	06:00	6.76 pH	16.48 °C	507.04 µS/cm	0.32 mg/L	0.27 NTU	-61.0 mV	10.33 ft	200.00 ml/min
9/20/2021 2:01 PM	09:00	6.75 pH	16.53 °C	503.06 µS/cm	0.27 mg/L	0.00 NTU	-64.8 mV	10.33 ft	200.00 ml/min
9/20/2021 2:04 PM	12:00	6.72 pH	16.48 °C	493.38 µS/cm	0.22 mg/L	1.95 NTU	-66.4 mV	10.33 ft	200.00 ml/min
9/20/2021 2:07 PM	15:00	6.71 pH	16.46 °C	488.81 µS/cm	0.20 mg/L	0.00 NTU	-66.0 mV	10.33 ft	200.00 ml/min
9/20/2021 2:10 PM	18:00	6.71 pH	16.45 °C	480.91 µS/cm	0.19 mg/L	0.00 NTU	-67.7 mV	10.33 ft	200.00 ml/min
9/20/2021 2:13 PM	21:00	6.69 pH	16.42 °C	479.88 µS/cm	0.17 mg/L	0.00 NTU	-68.8 mV	10.33 ft	200.00 ml/min
9/20/2021 2:16 PM	24:00	6.70 pH	16.41 °C	478.06 µS/cm	0.17 mg/L	0.00 NTU	-65.7 mV	10.33 ft	200.00 ml/min
9/20/2021 2:19 PM	27:00	6.69 pH	16.42 °C	471.60 µS/cm	0.16 mg/L	0.00 NTU	-70.1 mV	10.33 ft	200.00 ml/min

Samples

Sample ID:	Description:

Low-Flow Test Report:

Test Date / Time: 9/20/2021 1:50:57 PM
Project: Seattle Terminal 3Q21
Operator Name: TB

Location Name: MW-210 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 3 ft** **Total Depth: 18 ft** **Initial Depth to Water: 9.48 ft**	**Pump Type: Geotech Geopump Series 2** **Tubing Type: Polyethylene 0.170 x 0.25** **Pump Intake From TOC: 9.9 ft** **Estimated Total Volume Pumped: 6750 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 3.04 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 466619**

Test Notes:

Weather Conditions:
Sunny, 67 F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
9/20/2021 1:50 PM	00:00	6.16 pH	18.13 °C	426.82 µS/cm	1.03 mg/L	10.44 NTU	48.0 mV	9.48 ft	150.00 ml/min
9/20/2021 1:53 PM	03:00	6.16 pH	17.37 °C	404.82 µS/cm	0.32 mg/L	3.95 NTU	11.6 mV	9.48 ft	150.00 ml/min
9/20/2021 1:56 PM	06:00	6.20 pH	17.27 °C	421.15 µS/cm	0.31 mg/L	0.44 NTU	-20.3 mV	9.48 ft	150.00 ml/min
9/20/2021 1:59 PM	09:00	6.24 pH	16.98 °C	427.63 µS/cm	0.15 mg/L	2.90 NTU	-53.0 mV	9.48 ft	150.00 ml/min
9/20/2021 2:02 PM	12:00	6.24 pH	16.75 °C	433.77 µS/cm	0.14 mg/L	0.60 NTU	-65.9 mV	9.48 ft	150.00 ml/min
9/20/2021 2:05 PM	15:00	6.26 pH	16.68 °C	433.00 µS/cm	0.13 mg/L	0.16 NTU	-75.3 mV	9.48 ft	150.00 ml/min
9/20/2021 2:08 PM	18:00	6.21 pH	16.77 °C	437.07 µS/cm	1.16 mg/L	0.00 NTU	-55.3 mV	9.48 ft	150.00 ml/min
9/20/2021 2:11 PM	21:00	6.22 pH	16.56 °C	439.29 µS/cm	0.19 mg/L	0.00 NTU	-90.3 mV	9.48 ft	150.00 ml/min
9/20/2021 2:14 PM	24:00	6.23 pH	16.75 °C	439.69 µS/cm	0.20 mg/L	0.00 NTU	-94.6 mV	9.48 ft	150.00 ml/min
9/20/2021 2:17 PM	27:00	6.23 pH	16.46 °C	437.94 µS/cm	0.11 mg/L	0.00 NTU	-99.3 mV	9.48 ft	150.00 ml/min
9/20/2021 2:20 PM	30:00	6.23 pH	16.34 °C	438.91 µS/cm	0.10 mg/L	4.11 NTU	-98.7 mV	9.48 ft	150.00 ml/min
9/20/2021 2:23 PM	33:00	6.16 pH	16.62 °C	408.27 µS/cm	2.29 mg/L	45.78 NTU	-38.3 mV	9.48 ft	150.00 ml/min

9/20/2021 2:26 PM	36:00	6.13 pH	16.93 °C	409.20 µS/cm	3.13 mg/L	3.76 NTU	-17.0 mV	9.48 ft	150.00 ml/min
9/20/2021 2:29 PM	39:00	6.12 pH	17.07 °C	117.84 µS/cm	3.41 mg/L	42.19 NTU	-9.6 mV	9.48 ft	150.00 ml/min
9/20/2021 2:32 PM	42:00	6.11 pH	17.14 °C	123.91 µS/cm	3.59 mg/L	0.44 NTU	-6.3 mV	9.48 ft	150.00 ml/min
9/20/2021 2:35 PM	45:00	6.11 pH	17.25 °C	443.88 µS/cm	3.71 mg/L	1.33 NTU	-2.1 mV	9.48 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-210	Methodology: see MW-209 Sample Time: 14:35

Low-Flow Test Report:

Test Date / Time: 9/20/2021 2:56:55 PM
Project: Seattle Terminal 3Q21 (2)
Operator Name: Daniel Sly Gilbert

Location Name: MW-211 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 3 ft** **Total Depth: 18 ft** **Initial Depth to Water: 10 ft**	**Pump Type: Geotechnical Geopump Series 2** **Tubing Type: Polyethylene** **Pump Intake From TOC: 10.5 ft** **Estimated Total Volume Pumped: 9000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.04 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 457166**

Test Notes:

Weather Conditions:
Sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 5 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
9/20/2021 2:56 PM	00:00	7.33 pH	16.66 °C	550.93 µS/cm	4.39 mg/L	0.38 NTU	41.5 mV	10.00 ft	200.00 ml/min
9/20/2021 2:59 PM	03:00	7.47 pH	15.98 °C	553.31 µS/cm	1.31 mg/L	0.00 NTU	-24.4 mV	10.00 ft	200.00 ml/min
9/20/2021 3:02 PM	06:00	7.48 pH	15.86 °C	553.02 µS/cm	0.73 mg/L	0.00 NTU	-65.1 mV	10.00 ft	200.00 ml/min
9/20/2021 3:05 PM	09:00	7.49 pH	15.77 °C	552.75 µS/cm	0.66 mg/L	0.00 NTU	-82.4 mV	10.00 ft	200.00 ml/min
9/20/2021 3:08 PM	12:00	7.51 pH	15.81 °C	552.95 µS/cm	0.47 mg/L	0.00 NTU	-98.5 mV	10.00 ft	200.00 ml/min
9/20/2021 3:11 PM	15:00	7.51 pH	15.98 °C	553.34 µS/cm	0.45 mg/L	0.00 NTU	-111.0 mV	10.00 ft	200.00 ml/min
9/20/2021 3:14 PM	18:00	7.51 pH	15.87 °C	554.08 µS/cm	0.40 mg/L	0.00 NTU	-128.1 mV	10.00 ft	200.00 ml/min
9/20/2021 3:17 PM	21:00	7.51 pH	15.73 °C	554.39 µS/cm	0.38 mg/L	0.00 NTU	-140.3 mV	10.00 ft	200.00 ml/min
9/20/2021 3:20 PM	24:00	7.51 pH	15.73 °C	554.02 µS/cm	0.38 mg/L	0.00 NTU	-146.9 mV	10.00 ft	200.00 ml/min
9/20/2021 3:23 PM	27:00	7.51 pH	15.73 °C	554.20 µS/cm	0.41 mg/L	0.00 NTU	-154.0 mV	10.00 ft	200.00 ml/min
9/20/2021 3:26 PM	30:00	7.51 pH	15.73 °C	554.10 µS/cm	0.38 mg/L	0.00 NTU	-161.1 mV	10.00 ft	200.00 ml/min
9/20/2021 3:29 PM	33:00	7.51 pH	15.68 °C	552.78 µS/cm	0.37 mg/L	0.00 NTU	-169.6 mV	10.00 ft	200.00 ml/min
9/20/2021 3:32 PM	36:00	7.51 pH	15.64 °C	552.70 µS/cm	0.29 mg/L	0.00 NTU	-177.2 mV	10.00 ft	200.00 ml/min

9/20/2021 3:35 PM	39:00	7.51 pH	15.62 °C	547.28 µS/cm	0.28 mg/L	0.00 NTU	-183.2 mV	10.00 ft	200.00 ml/min
9/20/2021 3:38 PM	42:00	7.51 pH	15.62 °C	545.96 µS/cm	0.32 mg/L	0.00 NTU	-187.4 mV	10.00 ft	200.00 ml/min
9/20/2021 3:41 PM	45:00	7.51 pH	15.59 °C	546.75 µS/cm	0.34 mg/L	0.00 NTU	-190.6 mV	10.00 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-211	Sample Time: 1550 RDO did not stabilize after 45 minutes Final DTW 10.04 Final depth of tubing 10.50 ft btoc

MW-209	Sample Time: 1430 Final depth of tubing 11.00 ft btoc Unable to verify final depth of water. Probe malfunctioning

Low-Flow Test Report:

Test Date / Time: 9/21/2021 10:35:26 AM
Project: Seattle Terminal 3Q21
Operator Name: TB

Location Name: MW-70R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 12 ft** **Top of Screen: 4 ft** **Total Depth: 16 ft** **Initial Depth to Water: 11.48 ft**	**Pump Type: Geotech Geopump Series 2** **Tubing Type: Polyethylene 0.170 x 0.25** **Pump Intake From TOC: 9.9 ft** **Estimated Total Volume Pumped: 3150 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 0.44 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 466619**

Test Notes:

Weather Conditions:
Sunny, 65 F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
9/21/2021 10:35 AM	00:00	7.02 pH	19.63 °C	16,517 µS/cm	1.90 mg/L	0.00 NTU	254.9 mV	11.48 ft	150.00 ml/min
9/21/2021 10:38 AM	03:00	7.02 pH	18.64 °C	16,781 µS/cm	0.70 mg/L	0.00 NTU	180.3 mV	11.48 ft	150.00 ml/min
9/21/2021 10:41 AM	06:00	7.02 pH	18.61 °C	16,783 µS/cm	0.68 mg/L	0.00 NTU	156.8 mV	11.48 ft	150.00 ml/min
9/21/2021 10:44 AM	09:00	7.02 pH	18.56 °C	16,752 µS/cm	0.71 mg/L	0.00 NTU	140.7 mV	11.48 ft	150.00 ml/min
9/21/2021 10:47 AM	12:00	7.01 pH	18.68 °C	16,730 µS/cm	0.78 mg/L	0.00 NTU	134.3 mV	11.48 ft	150.00 ml/min
9/21/2021 10:50 AM	15:00	7.01 pH	18.76 °C	16,686 µS/cm	0.91 mg/L	0.00 NTU	130.8 mV	11.48 ft	150.00 ml/min
9/21/2021 10:53 AM	18:00	7.01 pH	18.84 °C	16,697 µS/cm	0.89 mg/L	0.00 NTU	130.1 mV	11.48 ft	150.00 ml/min
9/21/2021 10:56 AM	21:00	7.00 pH	18.87 °C	16,639 µS/cm	0.97 mg/L	0.00 NTU	127.0 mV	11.48 ft	150.00 ml/min

Samples

Sample ID:	Description:

MW-70R	Methodology: See sample MW-209 Sample Time: 1100 DUP-1 collected

ARCADIS

Groundwater Gauging Log

Project Number	30062780
Client:	Chevron
Site ID:	PMG00140
Site Location:	Seattle, Washington
Measuring Point:	Top of Casing
Date(s):	12/3/2021
Sampler(s):	Joseph Sepiol, Daniel Gilbert, Michael Andrews
Gauging Equipment:	Interface Probe

Well ID	Date	Gauging Time	Static Water Level (ft bmp)	Depth to Product (ft	Total Depth (ft bmp)	PID Reading (ppm)	LNAPL Removed (gal)	Comments
MW-200	12/3/2021	9:46	8.49	ND	--	0	--	--
MW-201	12/3/2021	9:50	9.28	ND	--	0	--	Non-measurable sheen/LNAPL observed on the probe tip and side of a bailer. Sock removed before sampling, replaced on 12/03.
MW-202	12/3/2021	9:42	8.99	ND	--	0	--	--
MW-203	12/3/2021	9:56	11.96	ND	--	0	--	--
MW-204	12/3/2021	10:03	17.85	ND	--	0	--	--
MW-205	12/3/2021	10:12	21.82	ND	--	0	--	Non-measurable sheen/LNAPL observed on the probe tip and side of a bailer. Sock removed before sampling, replaced on 12/03.
MW-206	12/3/2021	9:38	10.05	ND	--	0	--	--
MW-207	12/3/2021	9:37	10.05	ND	--	0	--	--
MW-209	12/3/2021	11:05	8.88	ND	--	0	--	--
MW-210	12/3/2021	11:02	6.21	ND	--	0	--	--
MW-211	12/3/2021	10:59	8.45	ND	--	0	--	--
MW-30	12/3/2021	10:30	10.15	ND	--	0.8	--	Non-measurable sheen/LNAPL observed on bailer tip. Oil absorbent sock in well removed and replaced.
MW-61A-R	12/3/2021	10:23	12.17	ND	--	102.2	--	No evidence of LNAPL. Well not sampled due to new permit requirements by the City of Seattle for the Right of Way.
MW-70R	12/3/2021	9:32	10.15	ND	--	0	--	--

ft-bmp = feet below measuring point ND = Not Detected PID = Photoionization Detector Reading

ppm = parts per million -- = Not Recorded

Low-Flow Test Report:

Test Date / Time: 12/1/2021 12:58:29 PM
Project: Seattle Terminal
Operator Name: Michael Andrews

Location Name: MW-202 **Well Diameter: 2 in** **Casing Type: PVC** **Top of Screen: 7.8 ft** **Total Depth: 27.35 ft** **Initial Depth to Water: 8.78 ft**	**Pump Type: Aqua Troll 600** **Tubing Type: Polyethylene** **Pump Intake From TOC: 8.2 m** **Estimated Total Volume Pumped: 6750 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: -0.3 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 697401**

Test Notes:

Weather Conditions:
Cloudy, 50 F, Windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
12/1/2021 12:58 PM	00:00	7.43 pH	15.04 °C	4,777.2 µS/cm	2.21 mg/L	4.47 NTU	-150.1 mV	8.78 ft	150.00 ml/min
12/1/2021 1:01 PM	03:00	7.40 pH	14.95 °C	4,843.3 µS/cm	0.65 mg/L	0.00 NTU	-161.3 mV	8.75 ft	150.00 ml/min
12/1/2021 1:04 PM	06:00	7.39 pH	14.93 °C	5,136.0 µS/cm	0.44 mg/L	0.00 NTU	-168.0 mV	8.73 ft	150.00 ml/min
12/1/2021 1:07 PM	09:00	7.38 pH	14.95 °C	5,388.3 µS/cm	0.29 mg/L	0.00 NTU	-172.3 mV	8.69 ft	150.00 ml/min
12/1/2021 1:10 PM	12:00	7.38 pH	14.95 °C	5,649.5 µS/cm	0.25 mg/L	0.04 NTU	-177.8 mV	8.66 ft	150.00 ml/min
12/1/2021 1:13 PM	15:00	7.37 pH	14.93 °C	5,884.3 µS/cm	0.22 mg/L	4.48 NTU	-183.1 mV	8.64 ft	150.00 ml/min
12/1/2021 1:16 PM	18:00	7.37 pH	14.97 °C	6,063.8 µS/cm	0.21 mg/L	2.36 NTU	-186.8 mV	8.62 ft	150.00 ml/min
12/1/2021 1:19 PM	21:00	7.37 pH	14.96 °C	6,387.9 µS/cm	0.25 mg/L	0.11 NTU	-193.3 mV	8.60 ft	150.00 ml/min
12/1/2021 1:22 PM	24:00	7.37 pH	14.95 °C	6,509.3 µS/cm	0.20 mg/L	1.21 NTU	-201.2 mV	8.58 ft	150.00 ml/min
12/1/2021 1:25 PM	27:00	7.36 pH	14.94 °C	6,820.5 µS/cm	0.20 mg/L	1.30 NTU	-206.4 mV	8.56 ft	150.00 ml/min
12/1/2021 1:28 PM	30:00	7.36 pH	14.93 °C	7,016.4 µS/cm	0.22 mg/L	3.39 NTU	-211.8 mV	8.54 ft	150.00 ml/min
12/1/2021 1:31 PM	33:00	7.36 pH	14.96 °C	7,272.6 µS/cm	0.17 mg/L	0.41 NTU	-221.2 mV	8.52 ft	150.00 ml/min
12/1/2021 1:34 PM	36:00	7.35 pH	14.95 °C	7,534.3 µS/cm	0.23 mg/L	0.00 NTU	-226.2 mV	8.51 ft	150.00 ml/min

12/1/2021 1:37 PM	39:00	7.35 pH	14.96 °C	7,671.7 µS/cm	0.23 mg/L	0.00 NTU	-232.8 mV	8.50 ft	150.00 ml/min
12/1/2021 1:40 PM	42:00	7.35 pH	14.96 °C	7,846.1 µS/cm	0.17 mg/L	0.20 NTU	-243.0 mV	8.51 ft	150.00 ml/min
12/1/2021 1:43 PM	45:00	7.35 pH	14.94 °C	8,091.8 µS/cm	0.16 mg/L	0.26 NTU	-247.8 mV	8.48 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-202	Sample Time: 13:45 Methodology: Groundwater samples where collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice to be sampled for BTEX, DTP, HO and CPAHs.

Low-Flow Test Report:

Test Date / Time: 12/1/2021 2:40:07 PM
Project: Seattle Terminal
Operator Name: Michael Andrews

Location Name: MW-203 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 10.5 ft** **Total Depth: 25.5 ft** **Initial Depth to Water: 11.12 ft**	**Pump Type: Aqua Troll 600** **Tubing Type: Polyethylene** **Pump Intake From TOC: 11.5 ft** **Estimated Total Volume Pumped: 4950 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: -0.11 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 697401**

Test Notes:

Weather Conditions:
Cloudy, Windy, 50 F

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
12/1/2021 2:40 PM	00:00	7.43 pH	15.67 °C	5,844.9 µS/cm	2.75 mg/L	13.98 NTU	-233.7 mV	11.12 ft	150.00 ml/min
12/1/2021 2:43 PM	03:00	7.46 pH	16.11 °C	1,241.7 µS/cm	0.85 mg/L	5.85 NTU	-238.0 mV	11.15 ft	150.00 ml/min
12/1/2021 2:46 PM	06:00	7.45 pH	16.18 °C	1,050.0 µS/cm	0.34 mg/L	0.79 NTU	-234.8 mV	11.14 ft	150.00 ml/min
12/1/2021 2:49 PM	09:00	7.44 pH	16.22 °C	953.26 µS/cm	0.19 mg/L	0.00 NTU	-236.3 mV	11.13 ft	150.00 ml/min
12/1/2021 2:52 PM	12:00	7.45 pH	16.21 °C	967.64 µS/cm	0.17 mg/L	0.00 NTU	-236.3 mV	11.11 ft	150.00 ml/min
12/1/2021 2:55 PM	15:00	7.42 pH	16.21 °C	987.51 µS/cm	0.16 mg/L	0.66 NTU	-239.8 mV	11.09 ft	150.00 ml/min
12/1/2021 2:58 PM	18:00	7.42 pH	16.21 °C	970.44 µS/cm	0.16 mg/L	0.00 NTU	-236.6 mV	11.07 ft	150.00 ml/min
12/1/2021 3:01 PM	21:00	7.43 pH	16.14 °C	992.06 µS/cm	0.17 mg/L	0.01 NTU	-239.0 mV	11.05 ft	150.00 ml/min
12/1/2021 3:04 PM	24:00	7.42 pH	16.14 °C	1,026.0 µS/cm	0.17 mg/L	0.95 NTU	-235.8 mV	11.03 ft	150.00 ml/min
12/1/2021 3:07 PM	27:00	7.41 pH	16.19 °C	1,062.0 µS/cm	0.16 mg/L	0.00 NTU	-235.0 mV	11.03 ft	150.00 ml/min
12/1/2021 3:10 PM	30:00	7.40 pH	16.17 °C	1,074.0 µS/cm	0.17 mg/L	1.00 NTU	-236.0 mV	11.01 ft	150.00 ml/min
12/1/2021 3:13 PM	33:00	7.41 pH	16.17 °C	1,073.0 µS/cm	0.16 mg/L	0.41 NTU	-230.8 mV	11.01 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-203	Sample Time: 15:14 Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within the screen interval. Samples immediately stored on ice to be sampled for BTEX, DTP, HO and CPAHs.

Low-Flow Test Report:

Test Date / Time: 12/2/2021 11:11:57 AM
Project: Seattle Terminal
Operator Name: Michael Andrews

Location Name: MW-204 **Well Diameter: 2 in** **Casing Type: PVC** **Top of Screen: 17.35 ft** **Total Depth: 30.9 ft** **Initial Depth to Water: 18.94 ft**	**Pump Type: Aqua Troll 600** **Tubing Type: Polyethylene** **Pump Intake From TOC: 11.5 ft** **Estimated Total Volume Pumped: 6750 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: -1.06 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 697401**

Test Notes:

Weather Conditions:
Rainy, 50 F, very light wind

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
12/2/2021 11:11 AM	00:00	6.92 pH	14.84 °C	471.09 µS/cm	0.52 mg/L	191.51 NTU	-58.1 mV	17.94 ft	150.00 ml/min
12/2/2021 11:14 AM	03:00	6.96 pH	14.73 °C	473.96 µS/cm	0.34 mg/L	95.01 NTU	-76.2 mV	17.96 ft	150.00 ml/min
12/2/2021 11:17 AM	06:00	6.95 pH	14.82 °C	472.57 µS/cm	0.39 mg/L	107.76 NTU	-79.2 mV	17.97 ft	150.00 ml/min
12/2/2021 11:20 AM	09:00	6.97 pH	14.78 °C	472.90 µS/cm	0.41 mg/L	92.82 NTU	-81.1 mV	17.98 ft	150.00 ml/min
12/2/2021 11:23 AM	12:00	6.96 pH	14.98 °C	473.78 µS/cm	0.27 mg/L	75.43 NTU	-86.7 mV	17.95 ft	150.00 ml/min
12/2/2021 11:26 AM	15:00	6.97 pH	14.79 °C	472.75 µS/cm	0.26 mg/L	56.42 NTU	-87.7 mV	17.95 ft	150.00 ml/min
12/2/2021 11:29 AM	18:00	6.98 pH	14.80 °C	474.82 µS/cm	0.23 mg/L	43.61 NTU	-92.0 mV	17.95 ft	150.00 ml/min
12/2/2021 11:32 AM	21:00	6.99 pH	14.69 °C	477.27 µS/cm	0.22 mg/L	20.23 NTU	-97.4 mV	17.95 ft	150.00 ml/min
12/2/2021 11:35 AM	24:00	6.99 pH	14.77 °C	478.20 µS/cm	0.20 mg/L	23.22 NTU	-97.2 mV	17.94 ft	150.00 ml/min
12/2/2021 11:38 AM	27:00	6.99 pH	14.86 °C	478.07 µS/cm	0.19 mg/L	17.77 NTU	-98.6 mV	17.93 ft	150.00 ml/min
12/2/2021 11:41 AM	30:00	6.98 pH	14.74 °C	477.79 µS/cm	0.19 mg/L	16.86 NTU	-99.3 mV	17.92 ft	150.00 ml/min
12/2/2021 11:44 AM	33:00	7.00 pH	14.75 °C	477.98 µS/cm	0.17 mg/L	14.73 NTU	-103.8 mV	17.91 ft	150.00 ml/min
12/2/2021 11:47 AM	36:00	6.99 pH	14.72 °C	479.04 µS/cm	0.19 mg/L	11.46 NTU	-104.0 mV	17.89 ft	150.00 ml/min

12/2/2021 11:50 AM	39:00	6.99 pH	14.76 °C	480.62 µS/cm	0.17 mg/L	7.31 NTU	-104.3 mV	17.89 ft	150.00 ml/min
12/2/2021 11:53 AM	42:00	7.00 pH	14.83 °C	478.85 µS/cm	0.17 mg/L	7.52 NTU	-107.8 mV	17.88 ft	150.00 ml/min
12/2/2021 11:56 AM	45:00	6.99 pH	14.74 °C	478.23 µS/cm	0.17 mg/L	6.61 NTU	-106.8 mV	17.88 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-204	Sample Time: 11:58 Methodology: Methodology: Groundwater samples where collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice to be sampled for BTEX, DTP,HO and CPAHs.

Low-Flow Test Report:

Test Date / Time: 12/2/2021 1:24:23 PM
Project: Seattle Terminal
Operator Name: Michael Andrews

Location Name: MW-205 **Well Diameter: 2 in** **Casing Type: PVC** **Top of Screen: 18 ft** **Total Depth: 38.5 ft** **Initial Depth to Water: 21.39 ft**	**Pump Type: Aqua Troll 600** **Tubing Type: Polyethylene** **Pump Intake From TOC: 21 ft** **Estimated Total Volume Pumped: 6750 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: -0.09 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 697401**

Test Notes:

Weather Conditions:
Rainy, 50 F light wind

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
12/2/2021 1:24 PM	00:00	7.14 pH	12.33 °C	651.18 µS/cm	3.83 mg/L	36.73 NTU	-42.7 mV	21.39 ft	150.00 ml/min
12/2/2021 1:27 PM	03:00	7.35 pH	13.82 °C	662.25 µS/cm	0.39 mg/L	3.85 NTU	-109.3 mV	21.45 ft	150.00 ml/min
12/2/2021 1:30 PM	06:00	7.42 pH	14.13 °C	653.05 µS/cm	0.35 mg/L	8.41 NTU	-136.1 mV	21.52 ft	150.00 ml/min
12/2/2021 1:33 PM	09:00	7.47 pH	14.22 °C	639.08 µS/cm	0.70 mg/L	10.29 NTU	-149.6 mV	21.52 ft	150.00 ml/min
12/2/2021 1:36 PM	12:00	7.48 pH	14.26 °C	631.07 µS/cm	0.22 mg/L	15.16 NTU	-159.5 mV	21.50 ft	150.00 ml/min
12/2/2021 1:39 PM	15:00	7.45 pH	14.43 °C	612.28 µS/cm	0.19 mg/L	6.11 NTU	-164.1 mV	21.48 ft	150.00 ml/min
12/2/2021 1:42 PM	18:00	7.48 pH	14.27 °C	608.97 µS/cm	0.68 mg/L	5.13 NTU	-167.8 mV	21.40 ft	150.00 ml/min
12/2/2021 1:45 PM	21:00	7.48 pH	14.23 °C	629.80 µS/cm	0.26 mg/L	15.30 NTU	-169.9 mV	21.43 ft	150.00 ml/min
12/2/2021 1:48 PM	24:00	7.46 pH	14.01 °C	611.46 µS/cm	0.20 mg/L	30.50 NTU	-169.0 mV	21.42 ft	150.00 ml/min
12/2/2021 1:51 PM	27:00	7.47 pH	14.07 °C	597.02 µS/cm	0.21 mg/L	22.10 NTU	-166.6 mV	21.40 ft	150.00 ml/min
12/2/2021 1:54 PM	30:00	7.45 pH	14.06 °C	621.99 µS/cm	0.23 mg/L	30.14 NTU	-166.3 mV	21.39 ft	150.00 ml/min
12/2/2021 1:57 PM	33:00	7.48 pH	14.22 °C	629.66 µS/cm	0.19 mg/L	16.72 NTU	-169.8 mV	21.36 ft	150.00 ml/min
12/2/2021 2:00 PM	36:00	7.47 pH	14.30 °C	599.64 µS/cm	0.22 mg/L	28.48 NTU	-170.0 mV	21.35 ft	150.00 ml/min

12/2/2021 2:03 PM	39:00	7.48 pH	14.29 °C	578.16 µS/cm	0.22 mg/L	22.93 NTU	-171.2 mV	21.34 ft	150.00 ml/min
12/2/2021 2:06 PM	42:00	7.48 pH	14.38 °C	621.50 µS/cm	0.19 mg/L	28.83 NTU	-172.8 mV	21.32 ft	150.00 ml/min
12/2/2021 2:09 PM	45:00	7.46 pH	14.39 °C	590.67 µS/cm	0.17 mg/L	9.05 NTU	-169.6 mV	21.30 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-205	Sample Time: 14:12 Methodology: Groundwater samples where collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice to be sampled for BTEX, DTP, HO and CPAHs.

Low-Flow Test Report:

Test Date / Time: 12/3/2021 10:01:13 AM
Project: Seattle Terminal 4Q21
Operator Name: Joseph Sepiol

Location Name: MW-206 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 25.8 ft** **Top of Screen: 11 ft** **Total Depth: 25.8 ft** **Initial Depth to Water: 10.05 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Pump Intake From TOC: 10.55 ft** **Estimated Total Volume Pumped: 900 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 20 ml/min** **Final Draw Down: 0.07 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 697401**

Test Notes:

Weather Conditions:
34F overcast

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
12/3/2021 10:01 AM	00:00	7.02 pH	11.99 °C	2,556.4 µS/cm	10.17 mg/L	40.29 NTU	119.9 mV	10.05 ft	20.00 ml/min
12/3/2021 10:04 AM	03:00	7.16 pH	11.94 °C	27,969 µS/cm	5.89 mg/L	5.38 NTU	137.6 mV	10.05 ft	20.00 ml/min
12/3/2021 10:07 AM	06:00	7.16 pH	12.36 °C	28,322 µS/cm	3.91 mg/L	0.09 NTU	100.5 mV	10.05 ft	20.00 ml/min
12/3/2021 10:10 AM	09:00	7.17 pH	12.42 °C	28,224 µS/cm	3.47 mg/L	0.65 NTU	82.4 mV	10.05 ft	20.00 ml/min
12/3/2021 10:13 AM	12:00	7.18 pH	12.45 °C	28,285 µS/cm	3.13 mg/L	0.14 NTU	77.2 mV	10.05 ft	20.00 ml/min
12/3/2021 10:16 AM	15:00	7.18 pH	12.52 °C	28,263 µS/cm	3.03 mg/L	0.77 NTU	74.6 mV	10.05 ft	20.00 ml/min
12/3/2021 10:19 AM	18:00	7.19 pH	12.37 °C	28,411 µS/cm	2.65 mg/L	0.00 NTU	72.6 mV	10.05 ft	20.00 ml/min
12/3/2021 10:22 AM	21:00	7.19 pH	12.56 °C	28,644 µS/cm	2.18 mg/L	0.00 NTU	68.0 mV	10.05 ft	20.00 ml/min
12/3/2021 10:25 AM	24:00	7.19 pH	12.63 °C	28,737 µS/cm	1.55 mg/L	0.00 NTU	71.9 mV	10.05 ft	20.00 ml/min
12/3/2021 10:28 AM	27:00	7.18 pH	12.63 °C	28,617 µS/cm	1.21 mg/L	0.00 NTU	63.9 mV	10.05 ft	20.00 ml/min
12/3/2021 10:31 AM	30:00	7.19 pH	12.66 °C	28,459 µS/cm	1.07 mg/L	18.92 NTU	57.1 mV	10.05 ft	20.00 ml/min
12/3/2021 10:34 AM	33:00	7.20 pH	12.59 °C	28,234 µS/cm	0.89 mg/L	0.00 NTU	63.6 mV	10.05 ft	20.00 ml/min
12/3/2021 10:37 AM	36:00	7.20 pH	12.67 °C	28,099 µS/cm	1.01 mg/L	0.00 NTU	58.9 mV	10.05 ft	20.00 ml/min

12/3/2021 10:40 AM	39:00	7.20 pH	12.73 °C	27,963 µS/cm	0.86 mg/L	0.00 NTU	54.5 mV	10.05 ft	20.00 ml/min
12/3/2021 10:43 AM	42:00	7.21 pH	12.70 °C	27,748 µS/cm	0.69 mg/L	0.00 NTU	52.4 mV	10.05 ft	20.00 ml/min
12/3/2021 10:46 AM	45:00	7.21 pH	12.74 °C	27,668 µS/cm	0.70 mg/L	0.00 NTU	48.7 mV	10.05 ft	20.00 ml/min

Samples

Sample ID:	Description:
MW-206	Sample time: 1046 Final DTW: 9.98 ft Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll600 multimeter. The polyethylene tubing was in each well such that the intake was within 6 inches of the water level. Samples were immediately stored on ice to be sampled for BTEX, DTP, HO and CPAHs.

Low-Flow Test Report:

Test Date / Time: 12/1/2021 11:33:09 AM
Project: Seattle Terminal
Operator Name: Michael Andrews

Location Name: MW-207 **Well Diameter: 2 in** **Casing Type: PVC** **Top of Screen: 9.5 ft** **Total Depth: 23.27 ft** **Initial Depth to Water: 9.94 m**	**Pump Type: Aqua Troll 600** **Tubing Type: Polyethylene** **Pump Intake From TOC: 10.5 m** **Estimated Total Volume Pumped: 3150 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: -9.844 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 697401**

Test Notes:

Weather Conditions:
Cloudy, 55 F, windy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 20	
12/1/2021 11:33 AM	00:00	7.12 pH	15.78 °C	9,801.6 µS/cm	6.25 mg/L	6.84 NTU	-40.3 mV	9.70 cm	150.00 ml/min
12/1/2021 11:36 AM	03:00	7.28 pH	15.79 °C	9,746.2 µS/cm	0.49 mg/L	0.00 NTU	-101.3 mV	9.69 cm	150.00 ml/min
12/1/2021 11:39 AM	06:00	7.30 pH	15.69 °C	9,784.5 µS/cm	0.48 mg/L	0.00 NTU	-110.9 mV	9.65 cm	150.00 ml/min
12/1/2021 11:42 AM	09:00	7.31 pH	15.70 °C	9,800.5 µS/cm	0.40 mg/L	0.00 NTU	-117.4 mV	9.62 cm	150.00 ml/min
12/1/2021 11:45 AM	12:00	7.31 pH	15.71 °C	9,815.3 µS/cm	0.31 mg/L	0.00 NTU	-123.6 mV	9.60 cm	150.00 ml/min
12/1/2021 11:48 AM	15:00	7.31 pH	15.70 °C	9,839.7 µS/cm	0.26 mg/L	0.00 NTU	-126.0 mV	9.58 cm	150.00 ml/min
12/1/2021 11:51 AM	18:00	7.32 pH	15.70 °C	9,852.9 µS/cm	0.26 mg/L	0.00 NTU	-129.1 mV	9.56 cm	150.00 ml/min
12/1/2021 11:54 AM	21:00	7.32 pH	15.74 °C	9,872.1 µS/cm	0.26 mg/L	0.00 NTU	-131.9 mV	9.56 cm	150.00 ml/min

Samples

Sample ID:	Description:

MW-207	Sample Time: 11:55 Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. All wells were sampled within their screened interval. Samples immediately stored on ice to be sampled for BTEX, DTP, HO and CPAHs.

Low-Flow Test Report:

Test Date / Time: 12/3/2021 11:28:42 AM
Project: Seattle Terminal
Operator Name: Michael Andrews

Location Name: MW-209 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 m** **Top of Screen: 3 m** **Total Depth: 18 m** **Initial Depth to Water: 8.88 ft**	**Pump Type: Aqua Troll 600** **Tubing Type: Polyethylene** **Pump Intake From TOC: 9.2 ft** **Estimated Total Volume Pumped: 4500 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 0.01 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 697401**

Test Notes:

Weather Conditions:
Cloudy, 45 F, Light wind

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
12/3/2021 11:28 AM	00:00	8.00 pH	11.53 °C	636.39 µS/cm	6.41 mg/L	15.20 NTU	-38.6 mV	8.88 ft	150.00 ml/min
12/3/2021 11:31 AM	03:00	7.37 pH	12.43 °C	505.96 µS/cm	0.56 mg/L	5.78 NTU	-63.7 mV	8.90 ft	150.00 ml/min
12/3/2021 11:34 AM	06:00	7.33 pH	12.81 °C	495.35 µS/cm	0.41 mg/L	1.04 NTU	-74.9 mV	8.90 ft	150.00 ml/min
12/3/2021 11:37 AM	09:00	7.30 pH	13.01 °C	493.31 µS/cm	0.36 mg/L	0.17 NTU	-78.0 mV	8.90 ft	150.00 ml/min
12/3/2021 11:40 AM	12:00	7.27 pH	13.09 °C	487.00 µS/cm	0.28 mg/L	1.16 NTU	-79.4 mV	8.90 ft	150.00 ml/min
12/3/2021 11:43 AM	15:00	7.27 pH	13.09 °C	490.36 µS/cm	0.24 mg/L	0.29 NTU	-78.1 mV	8.90 ft	150.00 ml/min
12/3/2021 11:46 AM	18:00	7.26 pH	13.27 °C	487.45 µS/cm	0.26 mg/L	0.75 NTU	-89.2 mV	8.90 ft	150.00 ml/min
12/3/2021 11:49 AM	21:00	7.24 pH	13.36 °C	485.93 µS/cm	0.25 mg/L	0.00 NTU	-93.9 mV	8.89 ft	150.00 ml/min
12/3/2021 11:52 AM	24:00	7.23 pH	13.44 °C	484.29 µS/cm	0.22 mg/L	0.00 NTU	-95.7 mV	8.89 ft	150.00 ml/min
12/3/2021 11:55 AM	27:00	7.23 pH	13.31 °C	484.59 µS/cm	0.21 mg/L	0.00 NTU	-100.9 mV	8.89 ft	150.00 ml/min
12/3/2021 11:58 AM	30:00	7.21 pH	13.53 °C	488.45 µS/cm	0.21 mg/L	0.46 NTU	-102.7 mV	8.89 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-209	Sample Time: 12:01 Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice to be sampled for BTEX, DTP,HO and CPAHs.

Low-Flow Test Report:

Test Date / Time: 12/3/2021 11:49:42 AM
Project: Seattle Terminal 4Q21 (5)
Operator Name: Daniel Sly Gilbert

Location Name: MW-210 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 3 ft** **Total Depth: 18 ft** **Initial Depth to Water: 6.3 ft**	**Pump Type: Geotechnical Geopump Series 2** **Tubing Type: Polyethylene** **Pump Intake From TOC: 6.5 ft** **Estimated Total Volume Pumped: 2586.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.3 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 457166**

Test Notes:

Weather Conditions:
Cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
12/3/2021 11:49 AM	00:00	6.99 pH	12.78 °C	248.22 µS/cm	1.73 mg/L	0.00 NTU	129.4 mV	6.30 ft	200.00 ml/min
12/3/2021 11:50 AM	00:56	6.88 pH	12.54 °C	232.13 µS/cm	1.64 mg/L	0.00 NTU	133.2 mV	6.30 ft	200.00 ml/min
12/3/2021 11:53 AM	03:56	6.78 pH	12.25 °C	224.12 µS/cm	1.61 mg/L	0.00 NTU	135.9 mV	6.30 ft	200.00 ml/min
12/3/2021 11:56 AM	06:56	6.74 pH	12.29 °C	217.41 µS/cm	1.53 mg/L	0.00 NTU	135.7 mV	6.30 ft	200.00 ml/min
12/3/2021 11:59 AM	09:56	6.70 pH	12.47 °C	213.37 µS/cm	1.51 mg/L	0.00 NTU	135.9 mV	6.30 ft	200.00 ml/min
12/3/2021 12:02 PM	12:56	6.66 pH	12.52 °C	212.23 µS/cm	1.51 mg/L	0.00 NTU	138.3 mV	6.30 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-210	Sample Time: 12:05 Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of water level. All wells were sampled their screened interval. Samples were immediately stored on ice to be sampled for BTEX, GRO, DRO, and cPAHs.

Low-Flow Test Report:

Test Date / Time: 12/3/2021 12:31:32 PM
Project: Seattle Terminal
Operator Name: Michael Andrews

Location Name: MW-211 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 3 ft** **Total Depth: 18 ft** **Initial Depth to Water: 8.41 ft**	**Pump Type: Aqua Troll 600** **Tubing Type: Polyethylene** **Pump Intake From TOC: 9.2 ft** **Estimated Total Volume Pumped: 6750 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 697401**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
12/3/2021 12:31 PM	00:00	7.39 pH	11.22 °C	561.42 µS/cm	6.85 mg/L	11.72 NTU	-66.5 mV	8.41 ft	150.00 ml/min
12/3/2021 12:34 PM	03:00	7.77 pH	12.09 °C	556.14 µS/cm	0.48 mg/L	0.00 NTU	-176.5 mV	8.41 ft	150.00 ml/min
12/3/2021 12:37 PM	06:00	7.78 pH	12.27 °C	550.54 µS/cm	0.40 mg/L	0.00 NTU	-189.8 mV	8.41 ft	150.00 ml/min
12/3/2021 12:40 PM	09:00	7.79 pH	12.52 °C	550.67 µS/cm	0.27 mg/L	0.00 NTU	-194.5 mV	8.41 ft	150.00 ml/min
12/3/2021 12:43 PM	12:00	7.78 pH	12.49 °C	548.50 µS/cm	0.25 mg/L	0.00 NTU	-198.9 mV	8.41 ft	150.00 ml/min
12/3/2021 12:46 PM	15:00	7.75 pH	12.44 °C	548.38 µS/cm	0.23 mg/L	0.00 NTU	-200.1 mV	8.41 ft	150.00 ml/min
12/3/2021 12:49 PM	18:00	7.77 pH	12.25 °C	547.58 µS/cm	0.22 mg/L	0.00 NTU	-204.2 mV	8.41 ft	150.00 ml/min
12/3/2021 12:52 PM	21:00	7.78 pH	12.24 °C	546.95 µS/cm	0.26 mg/L	0.00 NTU	-207.9 mV	8.41 ft	150.00 ml/min
12/3/2021 12:55 PM	24:00	7.77 pH	12.41 °C	549.78 µS/cm	0.18 mg/L	0.00 NTU	-210.5 mV	8.41 ft	150.00 ml/min
12/3/2021 12:58 PM	27:00	7.77 pH	12.44 °C	548.80 µS/cm	0.19 mg/L	0.00 NTU	-216.8 mV	8.41 ft	150.00 ml/min
12/3/2021 1:01 PM	30:00	7.75 pH	12.18 °C	547.10 µS/cm	0.20 mg/L	0.00 NTU	-220.5 mV	8.41 ft	150.00 ml/min
12/3/2021 1:04 PM	33:00	7.76 pH	12.26 °C	547.32 µS/cm	0.18 mg/L	0.00 NTU	-227.1 mV	8.41 ft	150.00 ml/min
12/3/2021 1:07 PM	36:00	7.75 pH	12.27 °C	549.82 µS/cm	0.20 mg/L	0.00 NTU	-232.2 mV	8.41 ft	150.00 ml/min
12/3/2021 1:10 PM	39:00	7.75 pH	12.39 °C	553.43 µS/cm	0.18 mg/L	0.00 NTU	-236.5 mV	8.41 ft	150.00 ml/min
12/3/2021 1:13 PM	42:00	7.73 pH	12.78 °C	552.57 µS/cm	0.16 mg/L	0.00 NTU	-239.5 mV	8.41 ft	150.00 ml/min

12/3/2021 1:16 PM	45:00	7.72 pH	12.56 °C	546.73 µS/cm	0.15 mg/L	0.00 NTU	-238.7 mV	8.41 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-211	Sample Time: 13:17 Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice to be sampled for BTEX, DTP, HO and CPAHs.

Low-Flow Test Report:

Test Date / Time: 12/1/2021 11:14:53 AM
Project: Seattle Terminal 4Q21
Operator Name: Daniel Sly Gilbert

Location Name: MW-70R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 12 ft** **Top of Screen: 4 ft** **Total Depth: 16 ft** **Initial Depth to Water: 10.4 ft**	**Pump Type: Geotechnical Geopump Series 2** **Tubing Type: Polyethylene** **Pump Intake From TOC: 10.75 ft** **Estimated Total Volume Pumped: 9000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: -0.6 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 457166**

Test Notes:

Weather Conditions:
Cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
12/1/2021 11:14 AM	00:00	7.32 pH	15.83 °C	4,422.9 µS/cm	0.39 mg/L	12,264 NTU	-99.5 mV	10.40 ft	200.00 ml/min
12/1/2021 11:17 AM	03:00	7.35 pH	15.78 °C	4,449.5 µS/cm	0.29 mg/L	0.00 NTU	-115.2 mV	10.40 ft	200.00 ml/min
12/1/2021 11:20 AM	06:00	7.37 pH	15.91 °C	4,231.0 µS/cm	0.19 mg/L	0.00 NTU	-134.2 mV	10.40 ft	200.00 ml/min
12/1/2021 11:23 AM	09:00	7.37 pH	15.90 °C	4,220.8 µS/cm	0.17 mg/L	0.00 NTU	-141.1 mV	10.40 ft	200.00 ml/min
12/1/2021 11:26 AM	12:00	7.38 pH	15.90 °C	4,013.8 µS/cm	0.15 mg/L	0.00 NTU	-147.1 mV	10.40 ft	200.00 ml/min
12/1/2021 11:29 AM	15:00	7.39 pH	15.92 °C	3,965.7 µS/cm	0.14 mg/L	69.12 NTU	-152.2 mV	10.40 ft	200.00 ml/min
12/1/2021 11:32 AM	18:00	7.39 pH	15.92 °C	3,914.4 µS/cm	0.13 mg/L	163.34 NTU	-157.4 mV	10.40 ft	200.00 ml/min
12/1/2021 11:35 AM	21:00	7.40 pH	15.91 °C	4,241.5 µS/cm	0.15 mg/L	0.00 NTU	-161.5 mV	10.40 ft	200.00 ml/min
12/1/2021 11:38 AM	24:00	7.40 pH	16.01 °C	4,199.6 µS/cm	0.11 mg/L	166.51 NTU	-165.0 mV	10.40 ft	200.00 ml/min
12/1/2021 11:41 AM	27:00	7.40 pH	16.04 °C	4,159.5 µS/cm	0.11 mg/L	402.42 NTU	-168.3 mV	10.40 ft	200.00 ml/min
12/1/2021 11:44 AM	30:00	7.41 pH	16.01 °C	4,213.2 µS/cm	0.41 mg/L	0.00 NTU	-167.9 mV	10.40 ft	200.00 ml/min
12/1/2021 11:47 AM	33:00	7.40 pH	16.07 °C	4,180.9 µS/cm	0.10 mg/L	208.71 NTU	-175.5 mV	10.40 ft	200.00 ml/min
12/1/2021 11:50 AM	36:00	7.40 pH	16.11 °C	4,149.0 µS/cm	0.09 mg/L	3,255.1 NTU	-179.9 mV	10.40 ft	200.00 ml/min

12/1/2021 11:53 AM	39:00	7.40 pH	16.13 °C	4,143.4 µS/cm	0.09 mg/L	3,463.3 NTU	-183.4 mV	10.40 ft	200.00 ml/min
12/1/2021 11:56 AM	42:00	7.40 pH	16.13 °C	4,101.3 µS/cm	0.08 mg/L	671.57 NTU	-187.3 mV	10.40 ft	200.00 ml/min
12/1/2021 11:59 AM	45:00	7.40 pH	16.11 °C	4,097.7 µS/cm	0.08 mg/L	1,098.1 NTU	-191.1 mV	10.40 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-70R	Sample Time 12:00 Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing and a peristaltic pump and a Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice to be sampled for BTEX, Gx, Dx, and cPAHs.
Dup-1	

APPENDIX D

Laboratory Reports and Chain of Custody Forms

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-56137-1
Client Project/Site: Seattle Terminal

For:
ARCADIS U.S., Inc.
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Mr. Samuel Miles

Authorized for release by:
10/7/2021 7:37:49 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Amek Carter
Project Manager
10/7/2021 7:37:49 AM

Table of Contents

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-56137-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-56137-1

Receipt
The samples were received on 9/22/2021 12:06 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.3°C

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

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

GC VOA
Method NWTPH_Gx: The method requirement for no headspace was not met. The following volatile samples were analyzed with headspace in the sample container(s): MW-209 (410-56137-2) and MW-210 (410-56137-3). The sample container was received with headspace.

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

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

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-56137-1

Client Sample ID: MW-70R — Lab Sample ID: 410-56137-1

No Detections.

Client Sample ID: MW-209 — Lab Sample ID: 410-56137-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	280		250	19	ug/L	1		NWTPH-Gx	Total/NA
C12-C24	55	J	110	47	ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-210 — Lab Sample ID: 410-56137-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	38	J	250	19	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-211 — Lab Sample ID: 410-56137-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chrysene	0.015	J	0.056	0.011	ug/L	1		8270D SIM	Total/NA
Dibenz(a,h)anthracene	0.027	J	0.056	0.023	ug/L	1		8270D SIM	Total/NA
C7-C12 (1C)	35	J	250	19	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: DUP-1 — Lab Sample ID: 410-56137-5

No Detections.

Client Sample ID: Trip Blank — Lab Sample ID: 410-56137-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-70R

Lab Sample ID: 410-56137-1

Date Collected: 09/21/21 11:00

Matrix: Water

Date Received: 09/22/21 12:06

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			09/24/21 17:15	1
Ethylbenzene	ND		1.0	0.40	ug/L			09/24/21 17:15	1
Toluene	ND		1.0	0.30	ug/L			09/24/21 17:15	1
Xylenes, Total	ND		6.0	1.4	ug/L			09/24/21 17:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*09/24/21 17:15*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*09/24/21 17:15*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*09/24/21 17:15*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*09/24/21 17:15*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.057	0.011	ug/L		09/28/21 09:41	10/02/21 13:02	1
Benzo[a]pyrene	ND		0.057	0.011	ug/L		09/28/21 09:41	10/02/21 13:02	1
Benzo[b]fluoranthene	ND		0.057	0.011	ug/L		09/28/21 09:41	10/02/21 13:02	1
Benzo[k]fluoranthene	ND		0.057	0.011	ug/L		09/28/21 09:41	10/02/21 13:02	1
Chrysene	ND		0.057	0.011	ug/L		09/28/21 09:41	10/02/21 13:02	1
Dibenz(a,h)anthracene	ND		0.057	0.023	ug/L		09/28/21 09:41	10/02/21 13:02	1
Indeno[1,2,3-cd]pyrene	ND		0.057	0.023	ug/L		09/28/21 09:41	10/02/21 13:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*80*		*10 - 110*	*09/28/21 09:41*	*10/02/21 13:02*	*1*
1-Methylnaphthalene-d10 (Surr)	*93*		*36 - 111*	*09/28/21 09:41*	*10/02/21 13:02*	*1*
Fluoranthene-d10 (Surr)	*90*		*47 - 128*	*09/28/21 09:41*	*10/02/21 13:02*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			09/27/21 17:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*96*		*50 - 150*		*09/27/21 17:24*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		110	51	ug/L		09/27/21 09:04	09/30/21 16:19	1
C24-C40	ND		280	110	ug/L		09/27/21 09:04	09/30/21 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*68*		*50 - 150*	*09/27/21 09:04*	*09/30/21 16:19*	*1*

Client Sample ID: MW-209

Lab Sample ID: 410-56137-2

Date Collected: 09/20/21 14:30

Matrix: Water

Date Received: 09/22/21 12:06

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			09/24/21 17:39	1
Ethylbenzene	ND		1.0	0.40	ug/L			09/24/21 17:39	1
Toluene	ND		1.0	0.30	ug/L			09/24/21 17:39	1
Xylenes, Total	ND		6.0	1.4	ug/L			09/24/21 17:39	1

Client Sample ID: MW-209

Date Collected: 09/20/21 14:30
Date Received: 09/22/21 12:06

Lab Sample ID: 410-56137-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*09/24/21 17:39*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*09/24/21 17:39*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*09/24/21 17:39*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*09/24/21 17:39*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.059	0.012	ug/L		09/27/21 17:25	10/06/21 19:20	1
Benzo[a]pyrene	ND		0.059	0.012	ug/L		09/27/21 17:25	10/06/21 19:20	1
Benzo[b]fluoranthene	ND		0.059	0.012	ug/L		09/27/21 17:25	10/06/21 19:20	1
Benzo[k]fluoranthene	ND		0.059	0.012	ug/L		09/27/21 17:25	10/06/21 19:20	1
Chrysene	ND		0.059	0.012	ug/L		09/27/21 17:25	10/06/21 19:20	1
Dibenz(a,h)anthracene	ND		0.059	0.024	ug/L		09/27/21 17:25	10/06/21 19:20	1
Indeno[1,2,3-cd]pyrene	ND		0.059	0.024	ug/L		09/27/21 17:25	10/06/21 19:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*57*		*10 - 110*	*09/27/21 17:25*	*10/06/21 19:20*	*1*
1-Methylnaphthalene-d10 (Surr)	*78*		*36 - 111*	*09/27/21 17:25*	*10/06/21 19:20*	*1*
Fluoranthene-d10 (Surr)	*90*		*47 - 128*	*09/27/21 17:25*	*10/06/21 19:20*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	**280**		250	19	ug/L			09/27/21 17:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*95*		*50 - 150*		*09/27/21 17:47*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	**55**	**J**	110	47	ug/L		09/27/21 09:04	09/30/21 16:42	1
C24-C40	ND		260	110	ug/L		09/27/21 09:04	09/30/21 16:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*68*		*50 - 150*	*09/27/21 09:04*	*09/30/21 16:42*	*1*

Client Sample ID: MW-210

Date Collected: 09/20/21 14:35
Date Received: 09/22/21 12:06

Lab Sample ID: 410-56137-3

Matrix: Water

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			09/24/21 18:03	1
Ethylbenzene	ND		1.0	0.40	ug/L			09/24/21 18:03	1
Toluene	ND		1.0	0.30	ug/L			09/24/21 18:03	1
Xylenes, Total	ND		6.0	1.4	ug/L			09/24/21 18:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*09/24/21 18:03*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*09/24/21 18:03*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*09/24/21 18:03*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*09/24/21 18:03*	*1*

Client Sample ID: MW-210

Lab Sample ID: 410-56137-3

Date Collected: 09/20/21 14:35

Matrix: Water

Date Received: 09/22/21 12:06

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.060	0.012	ug/L		09/27/21 17:25	10/06/21 19:50	1
Benzo[a]pyrene	ND		0.060	0.012	ug/L		09/27/21 17:25	10/06/21 19:50	1
Benzo[b]fluoranthene	ND		0.060	0.012	ug/L		09/27/21 17:25	10/06/21 19:50	1
Benzo[k]fluoranthene	ND		0.060	0.012	ug/L		09/27/21 17:25	10/06/21 19:50	1
Chrysene	ND		0.060	0.012	ug/L		09/27/21 17:25	10/06/21 19:50	1
Dibenz(a,h)anthracene	ND		0.060	0.024	ug/L		09/27/21 17:25	10/06/21 19:50	1
Indeno[1,2,3-cd]pyrene	ND		0.060	0.024	ug/L		09/27/21 17:25	10/06/21 19:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*81*		*10 - 110*	*09/27/21 17:25*	*10/06/21 19:50*	*1*
1-Methylnaphthalene-d10 (Surr)	*71*		*36 - 111*	*09/27/21 17:25*	*10/06/21 19:50*	*1*
Fluoranthene-d10 (Surr)	*72*		*47 - 128*	*09/27/21 17:25*	*10/06/21 19:50*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	**38**	**J**	250	19	ug/L			09/27/21 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*94*		*50 - 150*		*09/27/21 18:10*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		120	54	ug/L		09/27/21 09:04	09/30/21 17:27	1
C24-C40	ND		300	120	ug/L		09/27/21 09:04	09/30/21 17:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*51*		*50 - 150*	*09/27/21 09:04*	*09/30/21 17:27*	*1*

Client Sample ID: MW-211

Lab Sample ID: 410-56137-4

Date Collected: 09/20/21 15:50

Matrix: Water

Date Received: 09/22/21 12:06

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			09/24/21 18:26	1
Ethylbenzene	ND		1.0	0.40	ug/L			09/24/21 18:26	1
Toluene	ND		1.0	0.30	ug/L			09/24/21 18:26	1
Xylenes, Total	ND		6.0	1.4	ug/L			09/24/21 18:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*09/24/21 18:26*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*09/24/21 18:26*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*09/24/21 18:26*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*09/24/21 18:26*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.056	0.011	ug/L		09/27/21 17:25	10/06/21 20:20	1
Benzo[a]pyrene	ND		0.056	0.011	ug/L		09/27/21 17:25	10/06/21 20:20	1
Benzo[b]fluoranthene	ND		0.056	0.011	ug/L		09/27/21 17:25	10/06/21 20:20	1
Benzo[k]fluoranthene	ND		0.056	0.011	ug/L		09/27/21 17:25	10/06/21 20:20	1
Chrysene	**0.015**	**J**	0.056	0.011	ug/L		09/27/21 17:25	10/06/21 20:20	1

Client Sample ID: MW-211

Lab Sample ID: 410-56137-4

Date Collected: 09/20/21 15:50

Matrix: Water

Date Received: 09/22/21 12:06

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	0.027	J	0.056	0.023	ug/L		09/27/21 17:25	10/06/21 20:20	1
Indeno[1,2,3-cd]pyrene	ND		0.056	0.023	ug/L		09/27/21 17:25	10/06/21 20:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*57*		*10 - 110*	*09/27/21 17:25*	*10/06/21 20:20*	*1*
1-Methylnaphthalene-d10 (Surr)	*63*		*36 - 111*	*09/27/21 17:25*	*10/06/21 20:20*	*1*
Fluoranthene-d10 (Surr)	*77*		*47 - 128*	*09/27/21 17:25*	*10/06/21 20:20*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	35	J	250	19	ug/L			09/27/21 18:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*94*		*50 - 150*		*09/27/21 18:34*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		120	52	ug/L		09/27/21 09:04	09/30/21 17:49	1
C24-C40	ND		290	120	ug/L		09/27/21 09:04	09/30/21 17:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*68*		*50 - 150*	*09/27/21 09:04*	*09/30/21 17:49*	*1*

Client Sample ID: DUP-1

Lab Sample ID: 410-56137-5

Date Collected: 09/21/21 00:00

Matrix: Water

Date Received: 09/22/21 12:06

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			09/24/21 18:50	1
Ethylbenzene	ND		1.0	0.40	ug/L			09/24/21 18:50	1
Toluene	ND		1.0	0.30	ug/L			09/24/21 18:50	1
Xylenes, Total	ND		6.0	1.4	ug/L			09/24/21 18:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*09/24/21 18:50*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*09/24/21 18:50*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 120*		*09/24/21 18:50*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*09/24/21 18:50*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.052	0.010	ug/L		09/28/21 09:41	10/02/21 13:32	1
Benzo[a]pyrene	ND		0.052	0.010	ug/L		09/28/21 09:41	10/02/21 13:32	1
Benzo[b]fluoranthene	ND		0.052	0.010	ug/L		09/28/21 09:41	10/02/21 13:32	1
Benzo[k]fluoranthene	ND		0.052	0.010	ug/L		09/28/21 09:41	10/02/21 13:32	1
Chrysene	ND		0.052	0.010	ug/L		09/28/21 09:41	10/02/21 13:32	1
Dibenz(a,h)anthracene	ND		0.052	0.021	ug/L		09/28/21 09:41	10/02/21 13:32	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.021	ug/L		09/28/21 09:41	10/02/21 13:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*86*		*10 - 110*	*09/28/21 09:41*	*10/02/21 13:32*	*1*

Client Sample ID: DUP-1

Lab Sample ID: 410-56137-5

Date Collected: 09/21/21 00:00

Matrix: Water

Date Received: 09/22/21 12:06

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Methylnaphthalene-d10 (Surr)	*91*		*36 - 111*	*09/28/21 09:41*	*10/02/21 13:32*	*1*
Fluoranthene-d10 (Surr)	*105*		*47 - 128*	*09/28/21 09:41*	*10/02/21 13:32*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			09/27/21 18:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*95*		*50 - 150*		*09/27/21 18:57*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		110	51	ug/L		09/27/21 09:04	09/30/21 18:12	1
C24-C40	ND		290	110	ug/L		09/27/21 09:04	09/30/21 18:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*75*		*50 - 150*	*09/27/21 09:04*	*09/30/21 18:12*	*1*

Client Sample ID: Trip Blank

Lab Sample ID: 410-56137-6

Date Collected: 09/20/21 00:00

Matrix: Water

Date Received: 09/22/21 12:06

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			09/24/21 14:05	1
Ethylbenzene	ND		1.0	0.40	ug/L			09/24/21 14:05	1
Toluene	ND		1.0	0.30	ug/L			09/24/21 14:05	1
Xylenes, Total	ND		6.0	1.4	ug/L			09/24/21 14:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*09/24/21 14:05*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*09/24/21 14:05*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*09/24/21 14:05*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*09/24/21 14:05*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			09/27/21 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*96*		*50 - 150*		*09/27/21 15:25*	*1*

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-56137-1

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-56137-1	MW-70R	100	100	96	103
410-56137-2	MW-209	100	100	95	103
410-56137-3	MW-210	100	99	96	102
410-56137-4	MW-211	100	100	96	102
410-56137-5	DUP-1	100	98	96	102
410-56137-6	Trip Blank	101	99	97	102
LCS 410-175069/4	Lab Control Sample	102	102	94	103
LCSD 410-175069/5	Lab Control Sample Dup	101	102	95	103
MB 410-175069/6	Method Blank	101	100	95	103

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		BAPd12	MNPd10	FLN10
Lab Sample ID	Client Sample ID	(10-110)	(36-111)	(47-128)
410-56137-1	MW-70R	80	93	90
410-56137-2	MW-209	57	78	90
410-56137-3	MW-210	81	71	72
410-56137-4	MW-211	57	63	77
410-56137-5	DUP-1	86	91	105
LCS 410-176033/2-A	Lab Control Sample	101	85	105
MB 410-176033/1-A	Method Blank	80	73	82

Surrogate Legend

BAPd12 = Benzo(a)pyrene-d12 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)
FLN10 = Fluoranthene-d10 (Surr)

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

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		TFT-F1
Lab Sample ID	Client Sample ID	(50-150)
410-56137-1	MW-70R	96
410-56137-2	MW-209	95
410-56137-3	MW-210	94
410-56137-4	MW-211	94
410-56137-5	DUP-1	95
410-56137-6	Trip Blank	96
LCS 410-175736/5	Lab Control Sample	92
LCSD 410-175736/6	Lab Control Sample Dup	90
MB 410-175736/4	Method Blank	97

Surrogate Legend

Surrogate Summary

Client: ARCADIS U.S., Inc.
Job ID: 410-56137-1
Project/Site: Seattle Terminal

TFT-F = a,a,a-Trifluorotoluene (fid)

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	OTP (50-150)							
410-56137-1	MW-70R	68							
410-56137-2	MW-209	68							
410-56137-2 DU	MW-209	67							
410-56137-3	MW-210	51							
410-56137-4	MW-211	68							
410-56137-5	DUP-1	75							
LCS 410-175567/2-B	Lab Control Sample	66							
LCSD 410-175567/3-B	Lab Control Sample Dup	69							
MB 410-175567/1-B	Method Blank	66							

Surrogate Legend

OTP = o- terphenyl (Surr)

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-175069/6
Matrix: Water
Analysis Batch: 175069

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			09/24/21 12:56	1
Ethylbenzene	ND		1.0	0.40	ug/L			09/24/21 12:56	1
Toluene	ND		1.0	0.30	ug/L			09/24/21 12:56	1
Xylenes, Total	ND		6.0	1.4	ug/L			09/24/21 12:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*09/24/21 12:56*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*09/24/21 12:56*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*09/24/21 12:56*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*09/24/21 12:56*	*1*

Lab Sample ID: LCS 410-175069/4
Matrix: Water
Analysis Batch: 175069

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			20.0	19.6		ug/L		98	80 - 120		
Ethylbenzene			20.0	21.3		ug/L		106	80 - 120		
Toluene			20.0	18.8		ug/L		94	80 - 120		
Xylenes, Total			60.0	57.2		ug/L		95	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Lab Sample ID: LCSD 410-175069/5
Matrix: Water
Analysis Batch: 175069

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			20.0	19.7		ug/L		98	80 - 120	0	30
Ethylbenzene			20.0	21.6		ug/L		108	80 - 120	1	30
Toluene			20.0	19.2		ug/L		96	80 - 120	2	30
Xylenes, Total			60.0	57.4		ug/L		96	80 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 410-176033/1-A
Matrix: Water
Analysis Batch: 178047

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 176033

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.050	0.010	ug/L		09/28/21 09:41	10/02/21 10:34	1
Benzo[a]pyrene	ND		0.050	0.010	ug/L		09/28/21 09:41	10/02/21 10:34	1
Benzo[b]fluoranthene	ND		0.050	0.010	ug/L		09/28/21 09:41	10/02/21 10:34	1
Benzo[k]fluoranthene	ND		0.050	0.010	ug/L		09/28/21 09:41	10/02/21 10:34	1
Chrysene	ND		0.050	0.010	ug/L		09/28/21 09:41	10/02/21 10:34	1
Dibenz(a,h)anthracene	ND		0.050	0.020	ug/L		09/28/21 09:41	10/02/21 10:34	1
Indeno[1,2,3-cd]pyrene	ND		0.050	0.020	ug/L		09/28/21 09:41	10/02/21 10:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*80*		*10 - 110*	*09/28/21 09:41*	*10/02/21 10:34*	*1*
1-Methylnaphthalene-d10 (Surr)	*73*		*36 - 111*	*09/28/21 09:41*	*10/02/21 10:34*	*1*
Fluoranthene-d10 (Surr)	*82*		*47 - 128*	*09/28/21 09:41*	*10/02/21 10:34*	*1*

Lab Sample ID: LCS 410-176033/2-A
Matrix: Water
Analysis Batch: 178047

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 176033

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1.00	0.978		ug/L		98	61 - 122
Benzo[a]pyrene	1.00	1.01		ug/L		101	60 - 120
Benzo[b]fluoranthene	1.00	0.920		ug/L		92	58 - 122
Benzo[k]fluoranthene	1.00	0.948		ug/L		95	57 - 128
Chrysene	1.00	0.891		ug/L		89	55 - 123
Dibenz(a,h)anthracene	1.00	1.02		ug/L		102	50 - 121
Indeno[1,2,3-cd]pyrene	1.00	1.06		ug/L		106	47 - 143

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*101*		*10 - 110*
1-Methylnaphthalene-d10 (Surr)	*85*		*36 - 111*
Fluoranthene-d10 (Surr)	*105*		*47 - 128*

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

Lab Sample ID: MB 410-175736/4
Matrix: Water
Analysis Batch: 175736

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			09/27/21 13:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*97*		*50 - 150*		*09/27/21 13:04*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 410-175736/5
Matrix: Water
Analysis Batch: 175736

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C7-C12 (1C)			1100	1070		ug/L		97	64 - 131		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid) (1C)	*92*		*50 - 150*

Lab Sample ID: LCSD 410-175736/6
Matrix: Water
Analysis Batch: 175736

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C7-C12 (1C)			1100	1090		ug/L		99	64 - 131	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid) (1C)	*90*		*50 - 150*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Lab Sample ID: MB 410-175567/1-B
Matrix: Water
Analysis Batch: 177300

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 175567

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		100	45	ug/L		09/27/21 09:04	09/30/21 15:11	1
C24-C40	ND		250	100	ug/L		09/27/21 09:04	09/30/21 15:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*66*		*50 - 150*	*09/27/21 09:04*	*09/30/21 15:11*	*1*

Lab Sample ID: LCS 410-175567/2-B
Matrix: Water
Analysis Batch: 177300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 175567

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C12-C24			600	193		ug/L		32	14 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o- terphenyl (Surr)	*66*		*50 - 150*

Lab Sample ID: LCSD 410-175567/3-B
Matrix: Water
Analysis Batch: 177300

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 175567

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C12-C24			600	200		ug/L		33	14 - 115	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o- terphenyl (Surr)	*69*		*50 - 150*

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-56137-1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH (Continued)

Lab Sample ID: 410-56137-2 DU
Matrix: Water
Analysis Batch: 177300

Client Sample ID: MW-209
Prep Type: Total/NA
Prep Batch: 175567

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
C12-C24	55	J		86.6	J F5	ug/L				45	20
C24-C40	ND			ND		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o- terphenyl (Surr)	*67*		*50 - 150*

GC/MS VOA

Analysis Batch: 175069

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-56137-1	MW-70R	Total/NA	Water	8260D/UST	
410-56137-2	MW-209	Total/NA	Water	8260D/UST	
410-56137-3	MW-210	Total/NA	Water	8260D/UST	
410-56137-4	MW-211	Total/NA	Water	8260D/UST	
410-56137-5	DUP-1	Total/NA	Water	8260D/UST	
410-56137-6	Trip Blank	Total/NA	Water	8260D/UST	
MB 410-175069/6	Method Blank	Total/NA	Water	8260D/UST	
LCS 410-175069/4	Lab Control Sample	Total/NA	Water	8260D/UST	
LCSD 410-175069/5	Lab Control Sample Dup	Total/NA	Water	8260D/UST	

GC/MS Semi VOA

Prep Batch: 175854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-56137-2	MW-209	Total/NA	Water	3510C	
410-56137-3	MW-210	Total/NA	Water	3510C	
410-56137-4	MW-211	Total/NA	Water	3510C	

Prep Batch: 176033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-56137-1	MW-70R	Total/NA	Water	3510C	
410-56137-5	DUP-1	Total/NA	Water	3510C	
MB 410-176033/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-176033/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 178047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-56137-1	MW-70R	Total/NA	Water	8270D SIM	176033
410-56137-5	DUP-1	Total/NA	Water	8270D SIM	176033
MB 410-176033/1-A	Method Blank	Total/NA	Water	8270D SIM	176033
LCS 410-176033/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	176033

Analysis Batch: 179267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-56137-2	MW-209	Total/NA	Water	8270D SIM	175854
410-56137-3	MW-210	Total/NA	Water	8270D SIM	175854
410-56137-4	MW-211	Total/NA	Water	8270D SIM	175854

GC VOA

Analysis Batch: 175736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-56137-1	MW-70R	Total/NA	Water	NWTPH-Gx	
410-56137-2	MW-209	Total/NA	Water	NWTPH-Gx	
410-56137-3	MW-210	Total/NA	Water	NWTPH-Gx	
410-56137-4	MW-211	Total/NA	Water	NWTPH-Gx	
410-56137-5	DUP-1	Total/NA	Water	NWTPH-Gx	
410-56137-6	Trip Blank	Total/NA	Water	NWTPH-Gx	
MB 410-175736/4	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 410-175736/5	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 410-175736/6	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

Client: ARCADIS U.S., Inc.
Job ID: 410-56137-1
Project/Site: Seattle Terminal

GC Semi VOA

Prep Batch: 175567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-56137-1	MW-70R	Total/NA	Water	3510C	
410-56137-2	MW-209	Total/NA	Water	3510C	
410-56137-3	MW-210	Total/NA	Water	3510C	
410-56137-4	MW-211	Total/NA	Water	3510C	
410-56137-5	DUP-1	Total/NA	Water	3510C	
MB 410-175567/1-B	Method Blank	Total/NA	Water	3510C	
LCS 410-175567/2-B	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-175567/3-B	Lab Control Sample Dup	Total/NA	Water	3510C	
410-56137-2 DU	MW-209	Total/NA	Water	3510C	

Cleanup Batch: 177014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-56137-1	MW-70R	Total/NA	Water	3630C	175567
410-56137-2	MW-209	Total/NA	Water	3630C	175567
410-56137-3	MW-210	Total/NA	Water	3630C	175567
410-56137-4	MW-211	Total/NA	Water	3630C	175567
410-56137-5	DUP-1	Total/NA	Water	3630C	175567
MB 410-175567/1-B	Method Blank	Total/NA	Water	3630C	175567
LCS 410-175567/2-B	Lab Control Sample	Total/NA	Water	3630C	175567
LCSD 410-175567/3-B	Lab Control Sample Dup	Total/NA	Water	3630C	175567
410-56137-2 DU	MW-209	Total/NA	Water	3630C	175567

Analysis Batch: 177300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-56137-1	MW-70R	Total/NA	Water	NWTPH-Dx	177014
410-56137-2	MW-209	Total/NA	Water	NWTPH-Dx	177014
410-56137-3	MW-210	Total/NA	Water	NWTPH-Dx	177014
410-56137-4	MW-211	Total/NA	Water	NWTPH-Dx	177014
410-56137-5	DUP-1	Total/NA	Water	NWTPH-Dx	177014
MB 410-175567/1-B	Method Blank	Total/NA	Water	NWTPH-Dx	177014
LCS 410-175567/2-B	Lab Control Sample	Total/NA	Water	NWTPH-Dx	177014
LCSD 410-175567/3-B	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	177014
410-56137-2 DU	MW-209	Total/NA	Water	NWTPH-Dx	177014

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-56137-1

Client Sample ID: MW-70R

Lab Sample ID: 410-56137-1

Date Collected: 09/21/21 11:00

Matrix: Water

Date Received: 09/22/21 12:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	175069	09/24/21 17:15	LCW8	ELLE
Total/NA	Prep	3510C			176033	09/28/21 09:41	BLX5	ELLE
Total/NA	Analysis	8270D SIM		1	178047	10/02/21 13:02	UJM0	ELLE
Total/NA	Analysis	NWTPH-Gx		1	175736	09/27/21 17:24	JJT8	ELLE
Total/NA	Prep	3510C			175567	09/27/21 09:04	BLX5	ELLE
Total/NA	Cleanup	3630C			177014	09/29/21 23:57	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	177300	09/30/21 16:19	IUSB	ELLE

Client Sample ID: MW-209

Lab Sample ID: 410-56137-2

Date Collected: 09/20/21 14:30

Matrix: Water

Date Received: 09/22/21 12:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	175069	09/24/21 17:39	LCW8	ELLE
Total/NA	Prep	3510C			175854	09/27/21 17:25	DFX4	ELLE
Total/NA	Analysis	8270D SIM		1	179267	10/06/21 19:20	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	175736	09/27/21 17:47	JJT8	ELLE
Total/NA	Prep	3510C			175567	09/27/21 09:04	BLX5	ELLE
Total/NA	Cleanup	3630C			177014	09/29/21 23:57	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	177300	09/30/21 16:42	IUSB	ELLE

Client Sample ID: MW-210

Lab Sample ID: 410-56137-3

Date Collected: 09/20/21 14:35

Matrix: Water

Date Received: 09/22/21 12:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	175069	09/24/21 18:03	LCW8	ELLE
Total/NA	Prep	3510C			175854	09/27/21 17:25	DFX4	ELLE
Total/NA	Analysis	8270D SIM		1	179267	10/06/21 19:50	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	175736	09/27/21 18:10	JJT8	ELLE
Total/NA	Prep	3510C			175567	09/27/21 09:04	BLX5	ELLE
Total/NA	Cleanup	3630C			177014	09/29/21 23:57	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	177300	09/30/21 17:27	IUSB	ELLE

Client Sample ID: MW-211

Lab Sample ID: 410-56137-4

Date Collected: 09/20/21 15:50

Matrix: Water

Date Received: 09/22/21 12:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	175069	09/24/21 18:26	LCW8	ELLE
Total/NA	Prep	3510C			175854	09/27/21 17:25	DFX4	ELLE
Total/NA	Analysis	8270D SIM		1	179267	10/06/21 20:20	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	175736	09/27/21 18:34	JJT8	ELLE

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 410-56137-1
Project/Site: Seattle Terminal

Client Sample ID: MW-211
Lab Sample ID: 410-56137-4
Date Collected: 09/20/21 15:50
Matrix: Water
Date Received: 09/22/21 12:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			175567	09/27/21 09:04	BLX5	ELLE
Total/NA	Cleanup	3630C			177014	09/29/21 23:57	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	177300	09/30/21 17:49	IUSB	ELLE

Client Sample ID: DUP-1
Lab Sample ID: 410-56137-5
Date Collected: 09/21/21 00:00
Matrix: Water
Date Received: 09/22/21 12:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	175069	09/24/21 18:50	LCW8	ELLE
Total/NA	Prep	3510C			176033	09/28/21 09:41	BLX5	ELLE
Total/NA	Analysis	8270D SIM		1	178047	10/02/21 13:32	UJM0	ELLE
Total/NA	Analysis	NWTPH-Gx		1	175736	09/27/21 18:57	JJT8	ELLE
Total/NA	Prep	3510C			175567	09/27/21 09:04	BLX5	ELLE
Total/NA	Cleanup	3630C			177014	09/29/21 23:57	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	177300	09/30/21 18:12	IUSB	ELLE

Client Sample ID: Trip Blank
Lab Sample ID: 410-56137-6
Date Collected: 09/20/21 00:00
Matrix: Water
Date Received: 09/22/21 12:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	175069	09/24/21 14:05	LCW8	ELLE
Total/NA	Analysis	NWTPH-Gx		1	175736	09/27/21 15:25	JJT8	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Job ID: 410-56137-1
Project/Site: Seattle Terminal

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-12-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8270D SIM	3510C	Water	Benzo[a]anthracene
8270D SIM	3510C	Water	Benzo[a]pyrene
8270D SIM	3510C	Water	Benzo[b]fluoranthene
8270D SIM	3510C	Water	Benzo[k]fluoranthene
8270D SIM	3510C	Water	Chrysene
8270D SIM	3510C	Water	Dibenz(a,h)anthracene
8270D SIM	3510C	Water	Indeno[1,2,3-cd]pyrene
NWTPH-Dx	3510C	Water	C12-C24
NWTPH-Gx		Water	C7-C12 (1C)

Method Summary

Client: ARCADIS U.S., Inc.
Job ID: 410-56137-1
Project/Site: Seattle Terminal

Method	Method Description	Protocol	Laboratory
8260D/UST	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	ELLE
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	ELLE
NWTPH-Dx	Semi-Volatile Petroleum Products by NWTPH	NWTPH	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3630C	Silica Gel Cleanup	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

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

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-56137-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-56137-1	MW-70R	Water	09/21/21 11:00	09/22/21 12:06
410-56137-2	MW-209	Water	09/20/21 14:30	09/22/21 12:06
410-56137-3	MW-210	Water	09/20/21 14:35	09/22/21 12:06
410-56137-4	MW-211	Water	09/20/21 15:50	09/22/21 12:06
410-56137-5	DUP-1	Water	09/21/21 00:00	09/22/21 12:06
410-56137-6	Trip Blank	Water	09/20/21 00:00	09/22/21 12:06

Chevron Northw sis Request/Chain of Custody

eurofins | Lancaster Laboratories

Acc

410-56137 Chain of Custody

Laboratories use only
_____ Sample # _____
e correspond with circled numbers.

1 Client Information

Facility # seattle Terminal WBS

Site Address 3001 Elliott AVE, Seattle, WA, 98121

Chevron PM: Kim Jolitz

Lead Consultant: Arcadis

Consultant/Office: Arcadis / 1100 olive way, Suite 800, Seattle, WA 98101

Consultant Project Mgr.: Sam Miles

Consultant Phone #

Sampler: D. Gilbert, T Bryant

2 Sample Identification

Sample Identification	Collected Date	Collected Time	3 Grab	Composite
MW-70R	9-21-21	1100	X	
MW-209	9-20-21	1430	X	
MW-210	9-20-21	1435	X	
MW-211	9-20-21	1550	X	
[illegible] Dup-1	9-21-21	—	X	
Trip Blank	—	—		

4 Matrix

Soil	Sediment	Potable Water	Ground Water	NPDES	Surface Water	Air	Oil
			X				
			X				
			X				
			X				
			X				

Total Number of Containers: 10, 10, 10, 10, 10, 4

5 Analyses Requested

Sample	BTEX + MTBE 8021	8260	Naphth	8260 full scan	Oxygenates	NWTPH GX	NWTPH DX	Silica Gel Cleanup	Lead	Total	Diss.	Method	WAVPH	WAEPH	BTEX 8260	cPAHs 8270 SIM
MW-70R						X	+	X							X	+
MW-209						X	X								X	X
MW-210						X	X								X	X
MW-211						X	X								X	X
[illegible] Dup-1						X	X								X	X
Trip Blank						X									X	

SCR #: _____

- ☐ Results in Dry Weight
- ☐ J value reporting needed
- ☐ Must meet lowest detection limits possible for 8260 compounds
- ☐ 8021 MTBE Confirmation
- ☐ Confirm MTBE + Naphthalene
- ☐ Confirm highest hit by 8260
- ☐ Confirm all hits by 8260
- ☐ Run _____ oxy's on highest hit
- ☐ Run _____ oxy's on all hits

6 Remarks

7 Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

8 Data Package Options (please circle if required)

Type I - Full | Type VI (Raw Data)

Relinquished by	Date	Time	Received by	Date	Time
[signature]	9-21-2021	1400			
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Commerical Carrier: UPS ____ FedEx ✓ Other ____			Received by [signature]	9/22/21	1206

Temperature Upon Receipt 0.3 °C

Custody Seals Intact? (Yes) No

9

Lancaster Laboratories, Inc. • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300

The white copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the client.

Issued by Dept. 40 Management 7051.01

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 410-56137-1

Login Number: 56137

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Hess, Anna

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	

ANALYTICAL REPORT

December 16, 2021

Arcadis - Chevron - WA

Sample Delivery Group:	L1439051
Samples Received:	12/07/2021
Project Number:	30062780.19.45
Description:	PMG00140-Seattle Terminal

Report To:

Joe Gatel
1100 Olive Way
Suite 800
Seattle, WA 98101

Entire Report Reviewed By:

Brian Ford
Project Manager

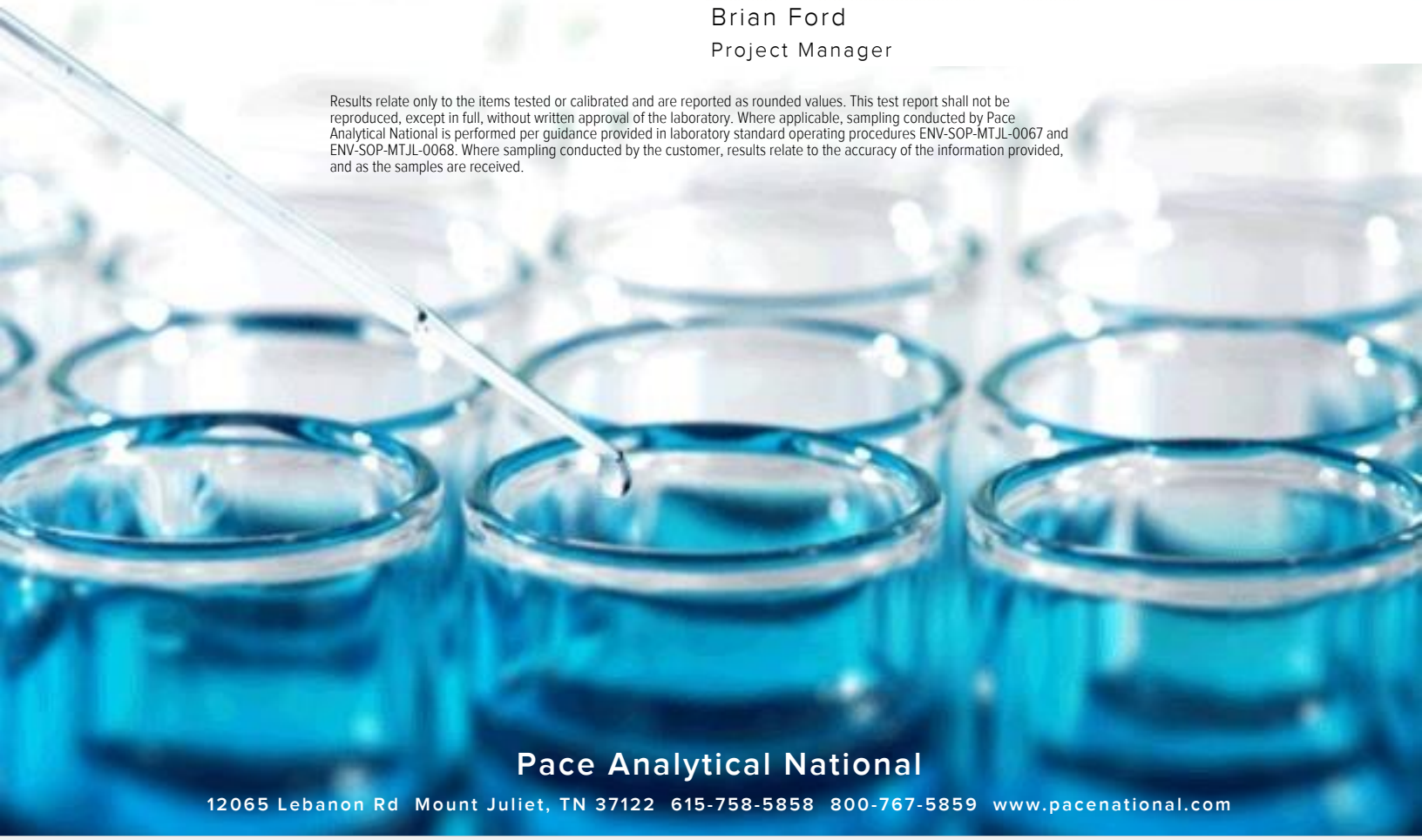


TABLE OF CONTENTS

MW-70R_211201 L1439051-01 GW

Collected by: DG/MA/JS | Collected date/time: 12/01/21 12:00 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/08/21 22:00	12/08/21 22:00	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/11/21 21:20	12/11/21 21:20	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 12:23	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1785883	1	12/08/21 12:30	12/08/21 20:53	LEA	Mt. Juliet, TN

MW-201_211202 L1439051-02 GW

Collected by: DG/MA/JS | Collected date/time: 12/02/21 12:45 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/08/21 22:24	12/08/21 22:24	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/11/21 21:41	12/11/21 21:41	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 12:43	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1785883	1	12/08/21 12:30	12/09/21 03:55	LEA	Mt. Juliet, TN

MW-202_211201 L1439051-03 GW

Collected by: DG/MA/JS | Collected date/time: 12/01/21 13:45 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/08/21 22:47	12/08/21 22:47	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/11/21 22:02	12/11/21 22:02	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 13:03	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1785883	1	12/08/21 12:30	12/08/21 21:13	LEA	Mt. Juliet, TN

MW-203_211201 L1439051-04 GW

Collected by: DG/MA/JS | Collected date/time: 12/01/21 15:14 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/08/21 23:10	12/08/21 23:10	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/11/21 22:23	12/11/21 22:23	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 13:23	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1785883	1	12/08/21 12:30	12/08/21 21:33	LEA	Mt. Juliet, TN

MW-204_211202 L1439051-05 GW

Collected by: DG/MA/JS | Collected date/time: 12/02/21 11:58 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/08/21 23:34	12/08/21 23:34	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/11/21 22:43	12/11/21 22:43	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 13:43	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1785883	1	12/08/21 12:30	12/08/21 21:53	LEA	Mt. Juliet, TN

MW-205_211202 L1439051-06 GW

Collected by: DG/MA/JS | Collected date/time: 12/02/21 14:12 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/08/21 23:57	12/08/21 23:57	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/11/21 23:04	12/11/21 23:04	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 14:04	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1785883	1	12/08/21 12:30	12/08/21 22:14	LEA	Mt. Juliet, TN

MW-206_211203 L1439051-07 GW

Collected by: DG/MA/JS | Collected date/time: 12/03/21 10:46 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/09/21 00:20	12/09/21 00:20	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/11/21 23:25	12/11/21 23:25	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 14:24	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1786108	1	12/08/21 17:12	12/09/21 00:46	AMG	Mt. Juliet, TN

MW-207_211201 L1439051-08 GW

Collected by: DG/MA/JS | Collected date/time: 12/01/21 11:55 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/09/21 01:00	12/09/21 01:00	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/11/21 23:49	12/11/21 23:49	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 14:44	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1785883	1	12/08/21 12:30	12/08/21 22:34	LEA	Mt. Juliet, TN

MW-209_211203 L1439051-09 GW

Collected by: DG/MA/JS | Collected date/time: 12/03/21 12:01 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/09/21 01:24	12/09/21 01:24	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/12/21 00:10	12/12/21 00:10	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 15:04	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1786108	1	12/08/21 17:12	12/09/21 01:06	AMG	Mt. Juliet, TN

MW-210_211203 L1439051-10 GW

Collected by: DG/MA/JS | Collected date/time: 12/03/21 12:05 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/09/21 01:47	12/09/21 01:47	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/12/21 00:30	12/12/21 00:30	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 15:24	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1786108	1	12/08/21 17:12	12/09/21 01:26	AMG	Mt. Juliet, TN

MW-211_211203 L1439051-11 GW

Collected by: DG/MA/JS | Collected date/time: 12/03/21 13:17 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/09/21 02:11	12/09/21 02:11	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/12/21 00:51	12/12/21 00:51	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 15:44	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1786108	1	12/08/21 17:12	12/09/21 01:45	AMG	Mt. Juliet, TN

DUP-1_211201 L1439051-12 GW

Collected by: DG/MA/JS | Collected date/time: 12/01/21 00:00 | Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/09/21 02:34	12/09/21 02:34	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/12/21 01:12	12/12/21 01:12	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 16:04	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1785883	1	12/08/21 12:30	12/08/21 22:54	LEA	Mt. Juliet, TN

TRIP BLANK_211201 L1439051-13 GW

Collected by: DG/MA/JS
Collected date/time: 12/01/21 00:00
Received date/time: 12/07/21 14:00

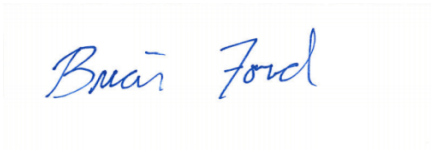
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786235	1	12/08/21 19:41	12/08/21 19:41	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/12/21 01:33	12/12/21 01:33	BMB	Mt. Juliet, TN

MW-200_211201 L1439051-14 GW

Collected by: DG/MA/JS
Collected date/time: 12/01/21 14:00
Received date/time: 12/07/21 14:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1786857	1	12/10/21 17:38	12/10/21 17:38	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1787800	1	12/12/21 01:53	12/12/21 01:53	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1788549	1	12/14/21 02:41	12/14/21 16:24	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1785883	1	12/08/21 12:30	12/08/21 23:14	LEA	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Sample Delivery Group (SDG) Narrative

An aliquot for analysis was taken from the original container received due to volume requirements of the laboratory's procedure. Rinsing of the original sample container for inclusion in the sample extraction was not performed.

Lab Sample ID	Project Sample ID	Method
L1439051-01	MW-70R_211201	NWTPHDX-SGT
L1439051-02	MW-201_211202	NWTPHDX-SGT
L1439051-03	MW-202_211201	NWTPHDX-SGT
L1439051-04	MW-203_211201	NWTPHDX-SGT
L1439051-05	MW-204_211202	NWTPHDX-SGT
L1439051-06	MW-205_211202	NWTPHDX-SGT
L1439051-07	MW-206_211203	NWTPHDX-SGT
L1439051-08	MW-207_211201	NWTPHDX-SGT
L1439051-09	MW-209_211203	NWTPHDX-SGT
L1439051-10	MW-210_211203	NWTPHDX-SGT
L1439051-11	MW-211_211203	NWTPHDX-SGT
L1439051-12	DUP-1_211201	NWTPHDX-SGT
L1439051-14	MW-200_211201	NWTPHDX-SGT

pH outside of method requirement.

Lab Sample ID	Project Sample ID	Method
L1439051-02	MW-201_211202	NWTPHDX-SGT
L1439051-06	MW-205_211202	NWTPHDX-SGT
L1439051-07	MW-206_211203	NWTPHDX-SGT
L1439051-08	MW-207_211201	NWTPHDX-SGT
L1439051-10	MW-210_211203	NWTPHDX-SGT
L1439051-14	MW-200_211201	NWTPHDX-SGT

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/08/2021 22:00	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*108*			*78.0-120*		*12/08/2021 22:00*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/11/2021 21:20	WG1787800
Toluene	U		0.278	1.00	1	12/11/2021 21:20	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/11/2021 21:20	WG1787800
Total Xylenes	U		0.174	3.00	1	12/11/2021 21:20	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/11/2021 21:20	WG1787800
(S) Toluene-d8	*107*			*80.0-120*		*12/11/2021 21:20*	WG1787800
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*12/11/2021 21:20*	WG1787800
(S) 1,2-Dichloroethane-d4	*96.9*			*70.0-130*		*12/11/2021 21:20*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		33.3	100	1	12/14/2021 12:23	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 12:23	WG1788549
(S) o-Terphenyl	*88.5*			*31.0-160*		*12/14/2021 12:23*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	12/08/2021 20:53	WG1785883
Benzo(a)pyrene	U		0.0184	0.0500	1	12/08/2021 20:53	WG1785883
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/08/2021 20:53	WG1785883
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/08/2021 20:53	WG1785883
Chrysene	U		0.0179	0.0500	1	12/08/2021 20:53	WG1785883
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/08/2021 20:53	WG1785883
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/08/2021 20:53	WG1785883
Naphthalene	U		0.0917	0.250	1	12/08/2021 20:53	WG1785883
1-Methylnaphthalene	U		0.0687	0.250	1	12/08/2021 20:53	WG1785883
2-Methylnaphthalene	U		0.0674	0.250	1	12/08/2021 20:53	WG1785883
(S) Nitrobenzene-d5	*104*			*31.0-160*		*12/08/2021 20:53*	WG1785883
(S) 2-Fluorobiphenyl	*106*			*48.0-148*		*12/08/2021 20:53*	WG1785883
(S) p-Terphenyl-d14	*108*			*37.0-146*		*12/08/2021 20:53*	WG1785883

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	251		31.6	100	1	12/08/2021 22:24	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*107*			*78.0-120*		*12/08/2021 22:24*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/11/2021 21:41	WG1787800
Toluene	U		0.278	1.00	1	12/11/2021 21:41	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/11/2021 21:41	WG1787800
Total Xylenes	0.292	J	0.174	3.00	1	12/11/2021 21:41	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/11/2021 21:41	WG1787800
(S) Toluene-d8	*103*			*80.0-120*		*12/11/2021 21:41*	WG1787800
(S) 4-Bromofluorobenzene	*98.1*			*77.0-126*		*12/11/2021 21:41*	WG1787800
(S) 1,2-Dichloroethane-d4	*97.9*			*70.0-130*		*12/11/2021 21:41*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	74.5	J	33.3	100	1	12/14/2021 12:43	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 12:43	WG1788549
(S) o-Terphenyl	*90.0*			*31.0-160*		*12/14/2021 12:43*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	0.0216	J	0.0203	0.0500	1	12/09/2021 03:55	WG1785883
Benzo(a)pyrene	0.0203	J	0.0184	0.0500	1	12/09/2021 03:55	WG1785883
Benzo(b)fluoranthene	0.0243	J	0.0168	0.0500	1	12/09/2021 03:55	WG1785883
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/09/2021 03:55	WG1785883
Chrysene	U		0.0179	0.0500	1	12/09/2021 03:55	WG1785883
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/09/2021 03:55	WG1785883
Indeno(1,2,3-cd)pyrene	0.0320	J	0.0158	0.0500	1	12/09/2021 03:55	WG1785883
Naphthalene	0.248	J	0.0917	0.250	1	12/09/2021 03:55	WG1785883
1-Methylnaphthalene	0.271		0.0687	0.250	1	12/09/2021 03:55	WG1785883
2-Methylnaphthalene	0.0902	J	0.0674	0.250	1	12/09/2021 03:55	WG1785883
(S) Nitrobenzene-d5	*112*			*31.0-160*		*12/09/2021 03:55*	WG1785883
(S) 2-Fluorobiphenyl	*101*			*48.0-148*		*12/09/2021 03:55*	WG1785883
(S) p-Terphenyl-d14	*97.9*			*37.0-146*		*12/09/2021 03:55*	WG1785883

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	46.3	J	31.6	100	1	12/08/2021 22:47	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*		*12/08/2021 22:47*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/11/2021 22:02	WG1787800
Toluene	U		0.278	1.00	1	12/11/2021 22:02	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/11/2021 22:02	WG1787800
Total Xylenes	U		0.174	3.00	1	12/11/2021 22:02	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/11/2021 22:02	WG1787800
(S) Toluene-d8	*107*			*80.0-120*		*12/11/2021 22:02*	WG1787800
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*12/11/2021 22:02*	WG1787800
(S) 1,2-Dichloroethane-d4	*99.6*			*70.0-130*		*12/11/2021 22:02*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	35.7	J	33.3	100	1	12/14/2021 13:03	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 13:03	WG1788549
(S) o-Terphenyl	*83.0*			*31.0-160*		*12/14/2021 13:03*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	0.0266	J	0.0203	0.0500	1	12/08/2021 21:13	WG1785883
Benzo(a)pyrene	U		0.0184	0.0500	1	12/08/2021 21:13	WG1785883
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/08/2021 21:13	WG1785883
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/08/2021 21:13	WG1785883
Chrysene	U		0.0179	0.0500	1	12/08/2021 21:13	WG1785883
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/08/2021 21:13	WG1785883
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/08/2021 21:13	WG1785883
Naphthalene	U		0.0917	0.250	1	12/08/2021 21:13	WG1785883
1-Methylnaphthalene	0.0699	J	0.0687	0.250	1	12/08/2021 21:13	WG1785883
2-Methylnaphthalene	U		0.0674	0.250	1	12/08/2021 21:13	WG1785883
(S) Nitrobenzene-d5	*108*			*31.0-160*		*12/08/2021 21:13*	WG1785883
(S) 2-Fluorobiphenyl	*106*			*48.0-148*		*12/08/2021 21:13*	WG1785883
(S) p-Terphenyl-d14	*108*			*37.0-146*		*12/08/2021 21:13*	WG1785883

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/08/2021 23:10	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*108*			*78.0-120*		*12/08/2021 23:10*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/11/2021 22:23	WG1787800
Toluene	U		0.278	1.00	1	12/11/2021 22:23	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/11/2021 22:23	WG1787800
Total Xylenes	U		0.174	3.00	1	12/11/2021 22:23	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/11/2021 22:23	WG1787800
(S) Toluene-d8	*104*			*80.0-120*		*12/11/2021 22:23*	WG1787800
(S) 4-Bromofluorobenzene	*99.4*			*77.0-126*		*12/11/2021 22:23*	WG1787800
(S) 1,2-Dichloroethane-d4	*98.7*			*70.0-130*		*12/11/2021 22:23*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	81.5	J	33.3	100	1	12/14/2021 13:23	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 13:23	WG1788549
(S) o-Terphenyl	*94.5*			*31.0-160*		*12/14/2021 13:23*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	12/08/2021 21:33	WG1785883
Benzo(a)pyrene	U		0.0184	0.0500	1	12/08/2021 21:33	WG1785883
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/08/2021 21:33	WG1785883
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/08/2021 21:33	WG1785883
Chrysene	U		0.0179	0.0500	1	12/08/2021 21:33	WG1785883
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/08/2021 21:33	WG1785883
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/08/2021 21:33	WG1785883
Naphthalene	0.111	J	0.0917	0.250	1	12/08/2021 21:33	WG1785883
1-Methylnaphthalene	U		0.0687	0.250	1	12/08/2021 21:33	WG1785883
2-Methylnaphthalene	U		0.0674	0.250	1	12/08/2021 21:33	WG1785883
(S) Nitrobenzene-d5	*103*			*31.0-160*		*12/08/2021 21:33*	WG1785883
(S) 2-Fluorobiphenyl	*102*			*48.0-148*		*12/08/2021 21:33*	WG1785883
(S) p-Terphenyl-d14	*103*			*37.0-146*		*12/08/2021 21:33*	WG1785883

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	531		31.6	100	1	12/08/2021 23:34	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*99.6*			*78.0-120*		*12/08/2021 23:34*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/11/2021 22:43	WG1787800
Toluene	U		0.278	1.00	1	12/11/2021 22:43	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/11/2021 22:43	WG1787800
Total Xylenes	0.478	J	0.174	3.00	1	12/11/2021 22:43	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/11/2021 22:43	WG1787800
(S) Toluene-d8	*95.9*			*80.0-120*		*12/11/2021 22:43*	WG1787800
(S) 4-Bromofluorobenzene	*93.6*			*77.0-126*		*12/11/2021 22:43*	WG1787800
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*12/11/2021 22:43*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	302		33.3	100	1	12/14/2021 13:43	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 13:43	WG1788549
(S) o-Terphenyl	*76.0*			*31.0-160*		*12/14/2021 13:43*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	12/08/2021 21:53	WG1785883
Benzo(a)pyrene	U		0.0184	0.0500	1	12/08/2021 21:53	WG1785883
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/08/2021 21:53	WG1785883
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/08/2021 21:53	WG1785883
Chrysene	U		0.0179	0.0500	1	12/08/2021 21:53	WG1785883
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/08/2021 21:53	WG1785883
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/08/2021 21:53	WG1785883
Naphthalene	0.974		0.0917	0.250	1	12/08/2021 21:53	WG1785883
1-Methylnaphthalene	0.195	J	0.0687	0.250	1	12/08/2021 21:53	WG1785883
2-Methylnaphthalene	0.0878	J	0.0674	0.250	1	12/08/2021 21:53	WG1785883
(S) Nitrobenzene-d5	*96.3*			*31.0-160*		*12/08/2021 21:53*	WG1785883
(S) 2-Fluorobiphenyl	*96.3*			*48.0-148*		*12/08/2021 21:53*	WG1785883
(S) p-Terphenyl-d14	*102*			*37.0-146*		*12/08/2021 21:53*	WG1785883

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/08/2021 23:57	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*107*			*78.0-120*		*12/08/2021 23:57*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/11/2021 23:04	WG1787800
Toluene	U		0.278	1.00	1	12/11/2021 23:04	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/11/2021 23:04	WG1787800
Total Xylenes	U		0.174	3.00	1	12/11/2021 23:04	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/11/2021 23:04	WG1787800
(S) Toluene-d8	*106*			*80.0-120*		*12/11/2021 23:04*	WG1787800
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*12/11/2021 23:04*	WG1787800
(S) 1,2-Dichloroethane-d4	*98.3*			*70.0-130*		*12/11/2021 23:04*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	93.5	J	33.3	100	1	12/14/2021 14:04	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 14:04	WG1788549
(S) o-Terphenyl	*89.5*			*31.0-160*		*12/14/2021 14:04*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	12/08/2021 22:14	WG1785883
Benzo(a)pyrene	U		0.0184	0.0500	1	12/08/2021 22:14	WG1785883
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/08/2021 22:14	WG1785883
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/08/2021 22:14	WG1785883
Chrysene	U		0.0179	0.0500	1	12/08/2021 22:14	WG1785883
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/08/2021 22:14	WG1785883
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/08/2021 22:14	WG1785883
Naphthalene	U		0.0917	0.250	1	12/08/2021 22:14	WG1785883
1-Methylnaphthalene	U		0.0687	0.250	1	12/08/2021 22:14	WG1785883
2-Methylnaphthalene	U		0.0674	0.250	1	12/08/2021 22:14	WG1785883
(S) Nitrobenzene-d5	*106*			*31.0-160*		*12/08/2021 22:14*	WG1785883
(S) 2-Fluorobiphenyl	*101*			*48.0-148*		*12/08/2021 22:14*	WG1785883
(S) p-Terphenyl-d14	*103*			*37.0-146*		*12/08/2021 22:14*	WG1785883

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/09/2021 00:20	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*109*			*78.0-120*		*12/09/2021 00:20*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/11/2021 23:25	WG1787800
Toluene	U		0.278	1.00	1	12/11/2021 23:25	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/11/2021 23:25	WG1787800
Total Xylenes	U		0.174	3.00	1	12/11/2021 23:25	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/11/2021 23:25	WG1787800
(S) Toluene-d8	*108*			*80.0-120*		*12/11/2021 23:25*	WG1787800
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*12/11/2021 23:25*	WG1787800
(S) 1,2-Dichloroethane-d4	*96.8*			*70.0-130*		*12/11/2021 23:25*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		33.3	100	1	12/14/2021 14:24	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 14:24	WG1788549
(S) o-Terphenyl	*82.5*			*31.0-160*		*12/14/2021 14:24*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	12/09/2021 00:46	WG1786108
Benzo(a)pyrene	U		0.0184	0.0500	1	12/09/2021 00:46	WG1786108
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/09/2021 00:46	WG1786108
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/09/2021 00:46	WG1786108
Chrysene	U		0.0179	0.0500	1	12/09/2021 00:46	WG1786108
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/09/2021 00:46	WG1786108
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/09/2021 00:46	WG1786108
Naphthalene	U		0.0917	0.250	1	12/09/2021 00:46	WG1786108
1-Methylnaphthalene	U		0.0687	0.250	1	12/09/2021 00:46	WG1786108
2-Methylnaphthalene	U		0.0674	0.250	1	12/09/2021 00:46	WG1786108
(S) Nitrobenzene-d5	*107*			*31.0-160*		*12/09/2021 00:46*	WG1786108
(S) 2-Fluorobiphenyl	*102*			*48.0-148*		*12/09/2021 00:46*	WG1786108
(S) p-Terphenyl-d14	*106*			*37.0-146*		*12/09/2021 00:46*	WG1786108

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/09/2021 01:00	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*109*			*78.0-120*		*12/09/2021 01:00*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/11/2021 23:49	WG1787800
Toluene	U		0.278	1.00	1	12/11/2021 23:49	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/11/2021 23:49	WG1787800
Total Xylenes	U		0.174	3.00	1	12/11/2021 23:49	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/11/2021 23:49	WG1787800
(S) Toluene-d8	*112*			*80.0-120*		*12/11/2021 23:49*	WG1787800
(S) 4-Bromofluorobenzene	*107*			*77.0-126*		*12/11/2021 23:49*	WG1787800
(S) 1,2-Dichloroethane-d4	*99.2*			*70.0-130*		*12/11/2021 23:49*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		33.3	100	1	12/14/2021 14:44	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 14:44	WG1788549
(S) o-Terphenyl	*93.5*			*31.0-160*		*12/14/2021 14:44*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	12/08/2021 22:34	WG1785883
Benzo(a)pyrene	U		0.0184	0.0500	1	12/08/2021 22:34	WG1785883
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/08/2021 22:34	WG1785883
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/08/2021 22:34	WG1785883
Chrysene	U		0.0179	0.0500	1	12/08/2021 22:34	WG1785883
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/08/2021 22:34	WG1785883
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/08/2021 22:34	WG1785883
Naphthalene	0.102	J	0.0917	0.250	1	12/08/2021 22:34	WG1785883
1-Methylnaphthalene	U		0.0687	0.250	1	12/08/2021 22:34	WG1785883
2-Methylnaphthalene	U		0.0674	0.250	1	12/08/2021 22:34	WG1785883
(S) Nitrobenzene-d5	*107*			*31.0-160*		*12/08/2021 22:34*	WG1785883
(S) 2-Fluorobiphenyl	*103*			*48.0-148*		*12/08/2021 22:34*	WG1785883
(S) p-Terphenyl-d14	*105*			*37.0-146*		*12/08/2021 22:34*	WG1785883

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	394		31.6	100	1	12/09/2021 01:24	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*94.0*			*78.0-120*		*12/09/2021 01:24*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	0.112	J	0.0941	1.00	1	12/12/2021 00:10	WG1787800
Toluene	U		0.278	1.00	1	12/12/2021 00:10	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/12/2021 00:10	WG1787800
Total Xylenes	0.577	J	0.174	3.00	1	12/12/2021 00:10	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/12/2021 00:10	WG1787800
(S) Toluene-d8	*98.2*			*80.0-120*		*12/12/2021 00:10*	WG1787800
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*12/12/2021 00:10*	WG1787800
(S) 1,2-Dichloroethane-d4	*93.7*			*70.0-130*		*12/12/2021 00:10*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	162		33.3	100	1	12/14/2021 15:04	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 15:04	WG1788549
(S) o-Terphenyl	*91.5*			*31.0-160*		*12/14/2021 15:04*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	12/09/2021 01:06	WG1786108
Benzo(a)pyrene	U		0.0184	0.0500	1	12/09/2021 01:06	WG1786108
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/09/2021 01:06	WG1786108
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/09/2021 01:06	WG1786108
Chrysene	U		0.0179	0.0500	1	12/09/2021 01:06	WG1786108
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/09/2021 01:06	WG1786108
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/09/2021 01:06	WG1786108
Naphthalene	0.725		0.0917	0.250	1	12/09/2021 01:06	WG1786108
1-Methylnaphthalene	0.0846	J	0.0687	0.250	1	12/09/2021 01:06	WG1786108
2-Methylnaphthalene	U		0.0674	0.250	1	12/09/2021 01:06	WG1786108
(S) Nitrobenzene-d5	*108*			*31.0-160*		*12/09/2021 01:06*	WG1786108
(S) 2-Fluorobiphenyl	*102*			*48.0-148*		*12/09/2021 01:06*	WG1786108
(S) p-Terphenyl-d14	*110*			*37.0-146*		*12/09/2021 01:06*	WG1786108

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/09/2021 01:47	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*108*			*78.0-120*		*12/09/2021 01:47*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/12/2021 00:30	WG1787800
Toluene	U		0.278	1.00	1	12/12/2021 00:30	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/12/2021 00:30	WG1787800
Total Xylenes	U		0.174	3.00	1	12/12/2021 00:30	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/12/2021 00:30	WG1787800
(S) Toluene-d8	*111*			*80.0-120*		*12/12/2021 00:30*	WG1787800
(S) 4-Bromofluorobenzene	*106*			*77.0-126*		*12/12/2021 00:30*	WG1787800
(S) 1,2-Dichloroethane-d4	*97.9*			*70.0-130*		*12/12/2021 00:30*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		33.3	100	1	12/14/2021 15:24	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 15:24	WG1788549
(S) o-Terphenyl	*83.0*			*31.0-160*		*12/14/2021 15:24*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	12/09/2021 01:26	WG1786108
Benzo(a)pyrene	U		0.0184	0.0500	1	12/09/2021 01:26	WG1786108
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/09/2021 01:26	WG1786108
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/09/2021 01:26	WG1786108
Chrysene	U		0.0179	0.0500	1	12/09/2021 01:26	WG1786108
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/09/2021 01:26	WG1786108
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/09/2021 01:26	WG1786108
Naphthalene	U		0.0917	0.250	1	12/09/2021 01:26	WG1786108
1-Methylnaphthalene	U		0.0687	0.250	1	12/09/2021 01:26	WG1786108
2-Methylnaphthalene	U		0.0674	0.250	1	12/09/2021 01:26	WG1786108
(S) Nitrobenzene-d5	*110*			*31.0-160*		*12/09/2021 01:26*	WG1786108
(S) 2-Fluorobiphenyl	*102*			*48.0-148*		*12/09/2021 01:26*	WG1786108
(S) p-Terphenyl-d14	*105*			*37.0-146*		*12/09/2021 01:26*	WG1786108

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/09/2021 02:11	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*109*			*78.0-120*		*12/09/2021 02:11*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/12/2021 00:51	WG1787800
Toluene	U		0.278	1.00	1	12/12/2021 00:51	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/12/2021 00:51	WG1787800
Total Xylenes	U		0.174	3.00	1	12/12/2021 00:51	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/12/2021 00:51	WG1787800
(S) Toluene-d8	*110*			*80.0-120*		*12/12/2021 00:51*	WG1787800
(S) 4-Bromofluorobenzene	*107*			*77.0-126*		*12/12/2021 00:51*	WG1787800
(S) 1,2-Dichloroethane-d4	*95.8*			*70.0-130*		*12/12/2021 00:51*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	50.9	J	33.3	100	1	12/14/2021 15:44	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 15:44	WG1788549
(S) o-Terphenyl	*86.5*			*31.0-160*		*12/14/2021 15:44*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	12/09/2021 01:45	WG1786108
Benzo(a)pyrene	U		0.0184	0.0500	1	12/09/2021 01:45	WG1786108
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/09/2021 01:45	WG1786108
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/09/2021 01:45	WG1786108
Chrysene	U		0.0179	0.0500	1	12/09/2021 01:45	WG1786108
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/09/2021 01:45	WG1786108
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/09/2021 01:45	WG1786108
Naphthalene	U		0.0917	0.250	1	12/09/2021 01:45	WG1786108
1-Methylnaphthalene	U		0.0687	0.250	1	12/09/2021 01:45	WG1786108
2-Methylnaphthalene	U		0.0674	0.250	1	12/09/2021 01:45	WG1786108
(S) Nitrobenzene-d5	*120*			*31.0-160*		*12/09/2021 01:45*	WG1786108
(S) 2-Fluorobiphenyl	*113*			*48.0-148*		*12/09/2021 01:45*	WG1786108
(S) p-Terphenyl-d14	*119*			*37.0-146*		*12/09/2021 01:45*	WG1786108

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/09/2021 02:34	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*108*			*78.0-120*		*12/09/2021 02:34*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/12/2021 01:12	WG1787800
Toluene	U		0.278	1.00	1	12/12/2021 01:12	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/12/2021 01:12	WG1787800
Total Xylenes	U		0.174	3.00	1	12/12/2021 01:12	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/12/2021 01:12	WG1787800
(S) Toluene-d8	*106*			*80.0-120*		*12/12/2021 01:12*	WG1787800
(S) 4-Bromofluorobenzene	*109*			*77.0-126*		*12/12/2021 01:12*	WG1787800
(S) 1,2-Dichloroethane-d4	*99.1*			*70.0-130*		*12/12/2021 01:12*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	U		33.3	100	1	12/14/2021 16:04	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 16:04	WG1788549
(S) o-Terphenyl	*90.0*			*31.0-160*		*12/14/2021 16:04*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	12/08/2021 22:54	WG1785883
Benzo(a)pyrene	U		0.0184	0.0500	1	12/08/2021 22:54	WG1785883
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/08/2021 22:54	WG1785883
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/08/2021 22:54	WG1785883
Chrysene	U		0.0179	0.0500	1	12/08/2021 22:54	WG1785883
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/08/2021 22:54	WG1785883
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/08/2021 22:54	WG1785883
Naphthalene	U		0.0917	0.250	1	12/08/2021 22:54	WG1785883
1-Methylnaphthalene	U		0.0687	0.250	1	12/08/2021 22:54	WG1785883
2-Methylnaphthalene	U		0.0674	0.250	1	12/08/2021 22:54	WG1785883
(S) Nitrobenzene-d5	*111*			*31.0-160*		*12/08/2021 22:54*	WG1785883
(S) 2-Fluorobiphenyl	*106*			*48.0-148*		*12/08/2021 22:54*	WG1785883
(S) p-Terphenyl-d14	*108*			*37.0-146*		*12/08/2021 22:54*	WG1785883

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	12/08/2021 19:41	WG1786235
(S) a,a,a-Trifluorotoluene(FID)	*108*			*78.0-120*		*12/08/2021 19:41*	WG1786235

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.0941	1.00	1	12/12/2021 01:33	WG1787800
Toluene	U		0.278	1.00	1	12/12/2021 01:33	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/12/2021 01:33	WG1787800
Total Xylenes	U		0.174	3.00	1	12/12/2021 01:33	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/12/2021 01:33	WG1787800
(S) Toluene-d8	*108*			*80.0-120*		*12/12/2021 01:33*	WG1787800
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*12/12/2021 01:33*	WG1787800
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*		*12/12/2021 01:33*	WG1787800

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	159		31.6	100	1	12/10/2021 17:38	WG1786857
(S) a,a,a-Trifluorotoluene(FID)	*108*			*78.0-120*		*12/10/2021 17:38*	WG1786857

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	12/12/2021 01:53	WG1787800
Toluene	U		0.278	1.00	1	12/12/2021 01:53	WG1787800
Ethylbenzene	U		0.137	1.00	1	12/12/2021 01:53	WG1787800
Total Xylenes	0.406	J	0.174	3.00	1	12/12/2021 01:53	WG1787800
Methyl tert-butyl ether	U		0.101	1.00	1	12/12/2021 01:53	WG1787800
(S) Toluene-d8	*105*			*80.0-120*		*12/12/2021 01:53*	WG1787800
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*12/12/2021 01:53*	WG1787800
(S) 1,2-Dichloroethane-d4	*97.3*			*70.0-130*		*12/12/2021 01:53*	WG1787800

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	115		33.3	100	1	12/14/2021 16:24	WG1788549
Residual Range Organics (RRO)	U		83.3	250	1	12/14/2021 16:24	WG1788549
(S) o-Terphenyl	*85.0*			*31.0-160*		*12/14/2021 16:24*	WG1788549

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.0203	0.0500	1	12/08/2021 23:14	WG1785883
Benzo(a)pyrene	U		0.0184	0.0500	1	12/08/2021 23:14	WG1785883
Benzo(b)fluoranthene	U		0.0168	0.0500	1	12/08/2021 23:14	WG1785883
Benzo(k)fluoranthene	U		0.0202	0.0500	1	12/08/2021 23:14	WG1785883
Chrysene	U		0.0179	0.0500	1	12/08/2021 23:14	WG1785883
Dibenz(a,h)anthracene	U		0.0160	0.0500	1	12/08/2021 23:14	WG1785883
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500	1	12/08/2021 23:14	WG1785883
Naphthalene	6.10		0.0917	0.250	1	12/08/2021 23:14	WG1785883
1-Methylnaphthalene	1.92		0.0687	0.250	1	12/08/2021 23:14	WG1785883
2-Methylnaphthalene	0.977		0.0674	0.250	1	12/08/2021 23:14	WG1785883
(S) Nitrobenzene-d5	*105*			*31.0-160*		*12/08/2021 23:14*	WG1785883
(S) 2-Fluorobiphenyl	*102*			*48.0-148*		*12/08/2021 23:14*	WG1785883
(S) p-Terphenyl-d14	*103*			*37.0-146*		*12/08/2021 23:14*	WG1785883

Method Blank (MB)

(MB) R3740454-2 12/08/21 17:14

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*108*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3740454-1 12/08/21 15:04

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4950	90.0	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*98.1*	*78.0-120*	

L1438817-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1438817-04 12/08/21 21:14 • (MS) R3740454-3 12/09/21 02:57 • (MSD) R3740454-4 12/09/21 03:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	U	4550	4730	82.7	86.0	1	10.0-155			3.88	21
(S) a,a,a-Trifluorotoluene(FID)					*95.0*	*94.9*		*78.0-120*				

Method Blank (MB)

(MB) R3740363-2 12/10/21 16:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*108*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3740363-1 12/10/21 15:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4780	86.9	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*98.4*	*78.0-120*	

Method Blank (MB)

(MB) R3740254-3 12/11/21 20:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Methyl tert-butyl ether	U		0.101	1.00
Toluene	U		0.278	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*112*			*80.0-120*
(S) 4-Bromofluorobenzene	*105*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*96.1*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3740254-1 12/11/21 19:37 • (LCSD) R3740254-2 12/11/21 19:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.38	4.50	87.6	90.0	70.0-123			2.70	20
Ethylbenzene	5.00	4.72	4.70	94.4	94.0	79.0-123			0.425	20
Methyl tert-butyl ether	5.00	4.52	4.40	90.4	88.0	68.0-125			2.69	20
Toluene	5.00	4.66	4.44	93.2	88.8	79.0-120			4.84	20
Xylenes, Total	15.0	14.2	14.2	94.7	94.7	79.0-123			0.000	20
(S) Toluene-d8				*112*	*108*	*80.0-120*				
(S) 4-Bromofluorobenzene				*104*	*100*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*101*	*98.8*	*70.0-130*				

Method Blank (MB)

(MB) R3740677-1 12/14/21 11:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		33.3	100
Residual Range Organics (RRO)	U		83.3	250
(S) o-Terphenyl	*93.0*			*31.0-160*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3740677-2 12/14/21 11:43 • (LCSD) R3740677-3 12/14/21 12:03

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	1500	1200	1240	80.0	82.7	50.0-150			3.28	20
(S) o-Terphenyl				*79.0*	*81.5*	*31.0-160*				

Method Blank (MB)

(MB) R3739086-2 12/08/21 20:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzo(a)anthracene	U		0.0203	0.0500
Benzo(a)pyrene	U		0.0184	0.0500
Benzo(b)fluoranthene	U		0.0168	0.0500
Benzo(k)fluoranthene	U		0.0202	0.0500
Chrysene	U		0.0179	0.0500
Dibenz(a,h)anthracene	U		0.0160	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500
Naphthalene	U		0.0917	0.250
1-Methylnaphthalene	U		0.0687	0.250
2-Methylnaphthalene	U		0.0674	0.250
(S) Nitrobenzene-d5	*96.0*			*31.0-160*
(S) 2-Fluorobiphenyl	*98.5*			*48.0-148*
(S) p-Terphenyl-d14	*105*			*37.0-146*

Laboratory Control Sample (LCS)

(LCS) R3739086-1 12/08/21 20:13

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzo(a)anthracene	2.00	1.97	98.5	61.0-140	
Benzo(a)pyrene	2.00	2.14	107	60.0-143	
Benzo(b)fluoranthene	2.00	2.07	103	58.0-141	
Benzo(k)fluoranthene	2.00	2.03	102	58.0-148	
Chrysene	2.00	2.02	101	64.0-144	
Dibenz(a,h)anthracene	2.00	1.88	94.0	52.0-155	
Indeno(1,2,3-cd)pyrene	2.00	1.94	97.0	54.0-153	
Naphthalene	2.00	2.00	100	61.0-137	
1-Methylnaphthalene	2.00	1.97	98.5	66.0-142	
2-Methylnaphthalene	2.00	2.09	105	62.0-136	
(S) Nitrobenzene-d5			*106*	*31.0-160*	
(S) 2-Fluorobiphenyl			*104*	*48.0-148*	
(S) p-Terphenyl-d14			*103*	*37.0-146*	

L1439086-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1439086-03 12/09/21 00:14 • (MS) R3739086-3 12/09/21 00:34 • (MSD) R3739086-4 12/09/21 00:54

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzo(a)anthracene	1.90	U	2.03	2.00	107	105	1	47.0-151			1.49	20
Benzo(a)pyrene	1.90	U	1.93	1.89	102	99.5	1	45.0-146			2.09	20
Benzo(b)fluoranthene	1.90	U	1.84	1.77	96.8	93.2	1	43.0-142			3.88	20
Benzo(k)fluoranthene	1.90	U	1.77	1.73	93.2	91.1	1	43.0-148			2.29	21
Chrysene	1.90	U	1.88	1.84	98.9	96.8	1	50.0-148			2.15	20
Dibenz(a,h)anthracene	1.90	U	1.68	1.64	88.4	86.3	1	37.0-151			2.41	20
Indeno(1,2,3-cd)pyrene	1.90	U	1.72	1.68	90.5	88.4	1	41.0-148			2.35	20
Naphthalene	1.90	200	202	190	105	0.000	1	10.0-160	E	E V	6.12	20
1-Methylnaphthalene	1.90	28.1	29.9	28.2	94.7	5.26	1	21.0-160		V	5.85	20
2-Methylnaphthalene	1.90	47.4	49.1	46.4	89.5	0.000	1	31.0-160		V	5.65	20
(S) Nitrobenzene-d5					*188*	*185*		*31.0-160*	J1	J1		
(S) 2-Fluorobiphenyl					*96.8*	*94.7*		*48.0-148*				
(S) p-Terphenyl-d14					*95.8*	*93.2*		*37.0-146*				

Method Blank (MB)

(MB) R3739057-3 12/08/21 22:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzo(a)anthracene	U		0.0203	0.0500
Benzo(a)pyrene	U		0.0184	0.0500
Benzo(b)fluoranthene	U		0.0168	0.0500
Benzo(k)fluoranthene	U		0.0202	0.0500
Chrysene	U		0.0179	0.0500
Dibenz(a,h)anthracene	U		0.0160	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0158	0.0500
Naphthalene	U		0.0917	0.250
1-Methylnaphthalene	U		0.0687	0.250
2-Methylnaphthalene	U		0.0674	0.250
(S) Nitrobenzene-d5	*108*			*31.0-160*
(S) 2-Fluorobiphenyl	*109*			*48.0-148*
(S) p-Terphenyl-d14	*116*			*37.0-146*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3739057-1 12/08/21 21:47 • (LCSD) R3739057-2 12/08/21 22:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzo(a)anthracene	2.00	2.10	2.23	105	111	61.0-140			6.00	20
Benzo(a)pyrene	2.00	2.27	2.42	114	121	60.0-143			6.40	20
Benzo(b)fluoranthene	2.00	2.12	2.22	106	111	58.0-141			4.61	20
Benzo(k)fluoranthene	2.00	2.15	2.30	108	115	58.0-148			6.74	20
Chrysene	2.00	2.27	2.37	114	118	64.0-144			4.31	20
Dibenz(a,h)anthracene	2.00	1.90	2.03	95.0	102	52.0-155			6.62	20
Indeno(1,2,3-cd)pyrene	2.00	2.10	2.25	105	112	54.0-153			6.90	20
Naphthalene	2.00	2.05	2.15	102	108	61.0-137			4.76	20
1-Methylnaphthalene	2.00	2.07	2.17	103	108	66.0-142			4.72	20
2-Methylnaphthalene	2.00	2.13	2.20	106	110	62.0-136			3.23	20
(S) Nitrobenzene-d5				*109*	*112*	*31.0-160*				
(S) 2-Fluorobiphenyl				*106*	*111*	*48.0-148*				
(S) p-Terphenyl-d14				*106*	*112*	*37.0-146*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Chevron Northwest Region Analysis Request/Chain of Custody

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For Lancaster Laboratories use only
Acct. # _____ Group # _____ Sample # _____
Instructions on reverse side correspond with circled numbers.

J240

SCR #: L1439051

1 Client Information

Facility # / WBS: FORMER UNOCAL SEATTLE TERMINAL
Site Address: OLYMPIC SCULPTURE PARK, SEATTLE, WA
Chevron PM: KIM JOLITZ
Lead Consultant: ARCADIS U.S.
Consultant/Office: 11000 OLIVE WAY, SUITE 800, SEATTLE, WA
Consultant Project Mgr.: SAMUEL MILES
Consultant Phone #: 206.726.4720
Sampler: D. GILBERT / M. ANDREWS / J. SEPIOL

4 Matrix

Soil ☐ Sediment ☐ Water ☒ Ground ☐ Potable ☐ NPDES ☐ Surface ☐ Oil ☐ Air ☐

3 Grab / Composite

5 Analyses Requested

Total Number of Containers
BTEX + MTBE ☐ 8021 ☐ 8260 ☒ Naphth
8260 full scan
Oxygenates ____
NWTPH GX
NWTPH DX ☒ Silica Gel Cleanup ☒
Lead ☐ Total ☐ Diss. ☐ Method ____
WAVPH ☐ WAEPH ☐
cPAH by 8270D_SIM

2 Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Oil	Total Containers	BTEX+MTBE	8260 full scan	Oxygenates	NWTPH GX	NWTPH DX	Lead	WAVPH	cPAH by 8270D_SIM	
MW-70R	12/1/21	1200	G			X		10	X			X	X			X	01
MW-201	12/2/21	1245	G			X		10	X			X	X			X	02
MW-202	12/1/21	1345	G			X		10	X			X	X			X	03
MW-203	12/1/21	1514	G			X		10	X			X	X			X	04
MW-204	12/2/21	1158	G			X		10	X			X	X			X	05
MW-205	12/2/21	1412	G			X		10	X			X	X			X	06
MW-206	12/3/21	1016	G			X		10	X			X	X			X	07
MW-207	12/1/21	1155	G			X		10	X			X	X			X	08
MW-209	12/3/21	1201	G			X		10	X			X	X			X	09
MW-210	12/3/21	1205	G			X		10	X			X	X			X	10
MW-211	12/3/21	1317	G			X		10	X			X	X			X	11
DUP-1	12/1/21	—	G			X		10	X			X	X			X	12
TRIP BLANK	—	—	—					4	X			X					13

SCR #: L1439051

- ☐ Results in Dry Weight
- ☐ J value reporting needed
- ☐ Must meet lowest detection limits possible for 8260 compounds
- ☐ 8021 MTBE Confirmation
- ☐ Confirm MTBE + Naphthalene
- ☐ Confirm highest hit by 8260
- ☐ Confirm all hits by 8260
- ☐ Run _____ oxy's on highest hit
- ☐ Run _____ oxy's on all hits

6 Remarks

USE STANDARD SGC

1170 0214.7796

3.5 3.5 ARJ

7 Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

8 Data Package Options (please circle if required)

Type I - Full | Type VI (Raw Data)

Relinquished by	Date	Time	Received by	Date	Time
J. SEPIOL	12/06/21	1500		12/5/21	1400
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Commerical Carrier: UPS ____ FedEx X Other ____			Received by	Date	Time
Temperature Upon Receipt _____ °C			Custody Seals Intact? Yes / No		

9

Chevron Northwest Region Analysis Request/Chain of Custody

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For Lancaster Laboratories use only
Acct. # _____ Group # _____ Sample # _____
Instructions on reverse side correspond with circled numbers.

SCR #: L143905 1

1 Client Information

Facility # / WBS: Former Unocal Seattle Terminal
Site Address: Olympic Sculpture Park, Seattle, WA
Chevron PM: Kim Jolitz
Lead Consultant: Arcadis U.S.
Consultant/Office: 1100 Olive Way, Suite 800, Seattle WA
Consultant Project Mgr.: Samuel Miles
Consultant Phone #: 206.726.4720
Sampler: D. Gilbert/M. Andrews/J. Sepiol

4 Matrix

Soil ☐ Sediment ☐
Water ☒ Potable ☐ Ground ☒ NPDES ☐ Surface ☐
Oil ☐ Air ☐

3 Grab / Composite

2 Sample Identification / Collected

Sample Identification	Date	Time	Grab	Composite	Total Number of Containers	BTEX + MTBE 8021 ☐ 8260 ☒ Naphth	8260 full scan	Oxygenates ___	NWTPH GX	NWTPH DX ☐ Silica Gel Cleanup ☐	Lead Total ☐ Diss. ☐ Method ___	WAVPH ☐ WAEPH ☐	CPAH by 8270D-SIM				
MW-200	12/1/21	14:00	G		10	X			X	X			X			1	Y

5 Analyses Requested

- ☐ Results in Dry Weight
- ☐ J value reporting needed
- ☐ Must meet lowest detection limits possible for 8260 compounds
- ☐ 8021 MTBE Confirmation
- ☐ Confirm MTBE + Naphthalene
- ☐ Confirm highest hit by 8260
- ☐ Confirm all hits by 8260
- ☐ Run _____ oxy's on highest hit
- ☐ Run _____ oxy's on all hits

6 Remarks

Use standard SGC

107D 9204 7796

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

3.5 3.5 ATB

7 Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

8 Data Package Options (please circle if required)

Type I - Full | Type VI (Raw Data)

Relinquished by	Date	Time	Received by	Date	Time
J. SEPIOL	12/06/21	1500		12/7/21	1400
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Commerical Carrier: UPS ___ FedEx X Other ___			Received by	Date	Time
Temperature Upon Receipt _____ °C			Custody Seals Intact?	Yes	No

9

APPENDIX E

Historical Groundwater Analytical Results

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-27	12/11/02	13:20	9.38	NR	NR	-3.20	--	6.18
(6.18)	03/20/03	10:31	11.09	NR	NR	-4.91	--	6.18
	07/03/03	9:02	12.10	NR	NR	-5.92	--	6.18
	09/18/03	11:27	10.58	NR	NR	-4.40	--	6.18
	12/02/03	10:56	9.50	NR	NR	-3.32	--	6.18
	03/09/04	10:37	11.83	NR	NR	-5.65	--	6.18
	06/03/04	10:09	12.32	NR	NR	-6.14	--	6.18
	09/03/04	10:35	10.63	NR	NR	-4.45	--	6.18
	12/06/04	10:30	9.41	NR	NR	-3.23	--	6.18
	03/04/05	10:33	9.05	NR	NR	-2.87	--	6.18
	06/03/05	--	13.05	NR	NR	-6.87	--	6.18
	09/01/05	8:00	10.29	NR	NR	-4.11	--	6.18
	12/01/05	9:45	9.28	NR	NR	-3.10	--	6.18
	03/02/06	9:00	9.29	NR	NR	-3.11	--	6.18
	06/06/06	Well Damaged During Construction Activities						6.18
MW-27R[6]	03/07/07	9:35	8.25	--	--	-3.88	--	4.37
(4.37)	09/26/07	7:59	9.19	--	--	-4.82	--	4.37
	11/26/07	14:55	7.56	--	--	-3.19	--	4.37
	12/03/07	Well Abandoned						4.37
MW-30	12/11/02	14:10	15.23	NR	NR	-3.94	--	11.29
(11.29)	03/20/03	13:00	12.59	NR	NR	-1.30	--	11.29
	07/03/03	11:18	14.30	NR	NR	-3.01	--	11.29
	09/18/03	10:36	14.70	NR	NR	-3.41	--	11.29
	12/02/03	11:23	12.20	NR	NR	-0.91	--	11.29
	03/09/04	10:58	13.81	NR	NR	-2.52	--	11.29
	06/03/04	11:44	14.60	NR	NR	-3.31	--	11.29
	09/03/04	13:42	9.85	NR	NR	1.44	--	11.29
	12/06/04	9:37	15.27	NR	NR	-3.98	--	11.29
	03/04/05	14:08	14.33	NR	NR	-3.04	--	11.29
	06/03/05	--	14.47	NR	NR	-3.18	--	11.29
	09/01/05	10:05	15.05	NR	NR	-3.76	--	11.29
	12/01/05	11:23	11.98	NR	NR	-0.69	--	11.29
	03/02/06	11:28	14.53	NR	NR	-3.24	--	11.29
	06/06/06	8:20	14.16	NR	NR	-2.87	--	11.29
	09/15/06	--	14.10	NR	NR	-2.81	--	11.29
	03/07/07	8:55	13.74	Sheen	--	-2.45	--	11.29
	06/07/07	8:43	13.87	--	--	-2.58	--	11.29
	07/10/07	9:45	14.21	--	--	-2.92	--	11.29
	07/25/07	11:35	13.94	--	--	-2.65	--	11.29
	08/22/07	9:35	14.15	--	--	-2.86	--	11.29
	09/06/07	9:50	14.25	--	--	-2.96	--	11.29
	09/26/07	9:30	14.52	--	--	-3.23	--	11.29
	10/11/07	7:55	14.22	--	--	-2.93	--	11.29
	11/01/07	9:50	14.29	--	--	-3.00	--	11.29
	11/16/07	15:25	13.85	--	--	-2.56	--	11.29
	11/26/07	13:40	13.90	--	--	-2.61	--	11.29
	12/19/07	9:30	12.59	--	--	-1.30	--	11.29
	01/03/08	8:30	12.60	--	--	-1.31	--	11.29
	01/17/08	8:48	12.53	--	--	-1.24	--	11.29
	01/30/08	9:30	13.10	Sheen	--	-1.81	--	11.29
	02/12/08	9:28	13.39	Sheen	--	-2.10	--	11.29
	03/03/08	9:31	13.80	--	--	-2.51	--	11.29
	03/17/08	9:29	13.99	--	--	-2.70	--	11.29
	04/01/08	9:13	13.78	--	--	-2.49	--	11.29
	04/14/08	9:14	13.97	--	--	-2.68	--	11.29
	04/28/08	9:56	14.18	--	--	-2.89	--	11.29
(20.85)[8]	05/13/08	9:24	14.46	--	--	6.39	--	20.85
	05/27/08	13:40	14.33	--	--	6.52	--	20.85
	06/10/08	10:25	14.08	--	--	6.77	--	20.85
	06/24/08	9:46	14.35	--	--	6.50	--	20.85
	07/07/08	9:50	14.13	--	--	6.72	--	20.85
	07/22/08	9:29	14.19	Sheen	--	6.66	--	20.85
	08/12/08	9:58	14.05	--	--	6.80	--	20.85
	09/03/08	--	14.03	--	--	6.82	--	20.85
	09/26/08	--	14.16	--	--	6.69	--	20.85
	10/17/08	9:15	14.35	--	--	6.50	--	20.85
	10/29/08	8:43	14.49	--	--	6.36	--	20.85
	11/12/08	10:46	13.03	--	--	7.82	--	20.85
	12/03/08	12:46	13.75	--	--	7.10	--	20.85
	01/06/09	9:36	12.68	--	--	8.17	--	20.85
	01/20/09	12:46	12.98	--	--	7.87	--	20.85
	02/03/09	9:39	13.79	--	--	7.06	--	20.85
	02/17/09	11:15	13.75	--	--	7.10	--	20.85
	03/12/09	12:09	13.79	--	--	7.06	--	20.85
	03/25/09	8:46	13.70	--	--	7.15	--	20.85
	04/08/09	10:16	13.30	--	--	7.55	--	20.85
	04/30/09	10:09	12.98	--	--	7.87	--	20.85
	05/12/09	10:10	12.72	12.70	0.02	8.13	--	20.85
	05/26/09	14:27	13.20	--	--	7.65	--	20.85
	06/09/09	9:41	13.91	--	--	6.94	--	20.85
	06/25/09	9:43	13.49	--	--	7.36	--	20.85
	07/07/09	9:35	13.75	Sheen	--	7.10	--	20.85
	07/13/09	8:09	14.23	--	--	6.62	--	20.85
	08/05/09	6:45	13.96	Sheen	--	6.89	--	20.85
	08/06/09	9:26	13.99	--	--	6.86	--	20.85
	08/20/09	8:41	14.18	--	--	6.67	--	20.85
(20.85)[e]	09/10/09	10:11	14.15	--	--	6.70	--	20.85
	09/23/09	9:33	14.07	Sheen	--	6.78	--	20.85
	10/08/09	9:49	14.21	--	--	6.64	--	20.85
	10/19/09	9:20	14.13	--	--	6.72	--	20.85
	11/12/09	9:33	12.43	--	--	8.42	--	20.85
	03/24/10	9:48	12.98	Sheen	--	7.87	--	20.85
	04/13/10	10:31	12.98	Sheen	--	7.87	--	20.85
	05/26/10	9:15	13.36	Sheen	--	7.49	--	20.85
	07/28/10	14:40	14.11	--	--	6.74	--	20.85
	08/05/10	11:49	14.10	--	--	6.75	--	20.85
	08/13/10	10:10	13.90	--	--	6.95	--	20.85
	08/18/10	8:36	13.92	--	--	6.93	--	20.85
	09/21/10	10:29	13.30	--	--	7.55	--	20.85
	10/11/10	11:01	13.40	--	--	7.45	--	20.85
	11/19/10	14:54	12.41	--	--	8.44	--	20.85

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-30 (continued)	03/04/11	9:44	12.54	Sheen	--	8.31	--	20.85
	04/25/11	10:50	12.80	Sheen	--	8.05	--	20.85
	09/21/11	9:32	13.55	--	--	7.30	--	20.85
	11/21/11	11:00	13.74	--	--	7.11	--	20.85
	02/20/12	8:59	13.16	--	--	7.69	--	20.85
	04/17/12	11:55	12.90	Sheen	--	7.95	--	20.85
	10/10/12	12:10	14.41	--	--	6.44	--	20.85
	12/24/12	11:40	13.00	--	--	7.85	--	20.85
	01/08/13	14:20	11.88	--	--	8.97	--	20.85
	04/30/13	10:55	13.34	--	--	7.51	--	20.85
	09/19/13	9:54	13.74	--	--	7.11	--	20.85
	11/22/13	9:15	14.61	--	--	6.24	--	20.85
	06/23/14	10:27	14.04	--	--	6.81	--	20.85
	09/10/14	9:10	14.82	--	--	6.03	--	20.85
	12/15/14	13:27	11.38	--	--	9.47	--	20.85
	06/17/15	11:25	13.90	--	--	6.95	--	20.85
	12/09/15	10:39	10.00	--	--	10.85	--	20.85
	02/16/16	9:20	10.89	--	--	9.96	--	20.85
	06/13/16	8:40	13.79	LNAPL	--	7.06	--	20.85
	09/22/16	13:13	14.35	--	--	6.50	--	20.85
	01/12/17	12:44	--	LNAPL	--	--	--	20.85
	03/27/17	13:13	10.71	LNAPL	--	10.14	15.85	20.85
	06/16/17	9:46	13.39	13.38	--	7.46	15.85	20.85
	11/07/17	13:18	13.97	--	--	6.88	15.85	20.85
	03/26/18	8:46	13.48	--	--	7.37	15.85	20.85
	06/19/18	16:05	13.90	LNAPL	--	6.95	15.85	20.85
	09/27/18	12:49	14.01	--	--	6.84	15.85	20.85
	12/12/18	15:28	12.87	--	--	7.98	15.85	20.85
	03/25/19	15:40	13.05	LNAPL	--	7.80	15.85	20.85
	06/24/19	17:21	13.50	LNAPL	--	7.35	15.85	20.85
	09/25/19	9:26	13.69	--	--	7.16	15.85	20.85
	12/16/19	13:57	13.66	--	--	7.19	15.85	20.85
	03/25/20	14:19	13.19	--	--	7.66	15.85	20.85
	06/17/20	9:51	13.80	13.79	0.01	7.06	15.85	20.85
	09/11/20	10:02	14.39	--	--	6.46	15.85	20.85
	11/17/20	11:21	13.33	--	--	7.53	15.85	20.85
	03/15/21	13:15	--*	--	--	--	15.85	20.85
	06/09/21	12:06	14.00	LNAPL	--	6.85	15.85	20.85
	09/20/21	**12:32**	**13.33**	**Sheen**	**--**	**7.52**	**15.85**	**20.85**
	12/03/21	**10:30**	**11.96**	**Sheen**	**--**	**8.89**	**15.85**	**20.85**
MW-34	12/11/02	13:45	9.45	NR	NR	-4.12	--	5.33
(5.33)	03/20/03	11:43	6.99	NR	NR	-1.66	--	5.33
	07/03/03	8:29	9.02	NR	NR	-3.69	--	5.33
	09/18/03	9:55	9.57	NR	NR	-4.24	--	5.33
	12/02/03	11:45	7.00	NR	NR	-1.67	--	5.33
	03/09/04	12:15	8.42	NR	NR	-3.09	--	5.33
	06/03/04	11:25	8.95	NR	NR	-3.62	--	5.33
	09/03/04	13:53	8.63	NR	NR	-3.30	--	5.33
	12/06/04	9:45	9.48	NR	NR	-4.15	--	5.33
	03/04/05	13:55	8.87	NR	NR	-3.54	--	5.33
	06/03/05	--	9.08	NR	NR	-3.75	--	5.33
	09/01/05	9:08	9.38	NR	NR	-4.05	--	5.33
	12/01/05	10:49	6.72	NR	NR	-1.39	--	5.33
	03/02/06	10:50	9.25	NR	NR	-3.92	--	5.33
	06/06/06	9:20	8.82	NR	NR	-3.49	--	5.33
	09/15/06	--	8.66	NR	NR	-3.33	--	5.33
	03/07/07	--	--	NR	NR	--	--	5.33
	02/13/08	Well Possibly Removed During Previous Excavation Activities						5.33
MW-35	12/11/02	13:35	9.29	NR	NR	-4.18	--	5.11
(5.11)	03/20/03	11:42	7.65	NR	NR	-2.54	--	5.11
	07/03/03	--	--	NR	NR	--	--	5.11
	09/18/03	--	--	NR	NR	--	--	5.11
	12/02/03	--	--	NR	NR	--	--	5.11
	03/09/04	--	--	NR	NR	--	--	5.11
	06/03/04	--	--	NR	NR	--	--	5.11
	09/03/04	--	--	NR	NR	--	--	5.11
	12/06/04	--	--	NR	NR	--	--	5.11
	03/04/05	--	--	NR	NR	--	--	5.11
	06/03/05	--	--	NR	NR	--	--	5.11
	09/01/05	--	--	NR	NR	--	--	5.11
	12/01/05	--	--	NR	NR	--	--	5.11
	03/02/06	--	--	NR	NR	--	--	5.11
	06/06/06	--	--	NR	NR	--	--	5.11
	09/15/06	--	--	NR	NR	--	--	5.11
	03/07/07	--	--	NR	NR	--	--	5.11
	02/13/08	Well Possibly Removed During Previous Excavation Activities						5.11
MW-42	12/11/02	13:30	9.38	NR	NR	-4.18	--	5.20
(5.20)	03/20/03	11:50	7.86	NR	NR	-2.66	--	5.20
	07/03/03	8:11	9.44	NR	NR	-4.24	--	5.20
	09/18/03	10:21	10.92	NR	NR	-5.72	--	5.20
	12/02/03	11:36	9.14	NR	NR	-3.94	--	5.20
	03/09/04	10:09	8.58	NR	NR	-3.38	--	5.20
	06/03/04	11:10	9.19	NR	NR	-3.99	--	5.20
	09/03/04	14:01	9.02	NR	NR	-3.82	--	5.20
	12/06/04	9:48	9.43	NR	NR	-4.23	--	5.20
	03/04/05	13:56	8.99	NR	NR	-3.79	--	5.20
	06/03/05	--	9.24	NR	NR	-4.04	--	5.20
(5.20)	09/01/05	9:00	9.55	NR	NR	-4.35	--	5.20
	12/01/05	10:54	8.91	NR	NR	-3.71	--	5.20
	03/02/06	10:45	9.25	NR	NR	-4.05	--	5.20
	06/06/06	9:28	8.93	NR	NR	-3.73	--	5.20
	09/15/06	--	8.87	NR	NR	-3.67	--	5.20
	03/07/07	--	--	NR	NR	--	--	5.20
	02/13/08	Well Possibly Removed During Previous Excavation Activities						5.20
MW-43	12/11/02	13:40	9.06	NR	NR	-4.12	--	4.94
(4.94)	03/20/03	11:30	7.10	NR	NR	-2.16	--	4.94
	07/03/03	8:15	8.86	NR	NR	-3.92	--	4.94
	09/18/03	--	--	NR	NR	--	--	4.94
	12/02/03	--	--	NR	NR	--	--	4.94
	03/09/04	--	--	NR	NR	--	--	4.94
	06/03/04	--	--	NR	NR	--	--	4.94

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-43 (continued)	09/03/04	--	--	NR	NR	--	--	4.94
	12/06/04	--	--	NR	NR	--	--	4.94
	03/04/05	--	--	NR	NR	--	--	4.94
	06/03/05	--	--	NR	NR	--	--	4.94
	09/01/05	--	--	NR	NR	--	--	4.94
	12/01/05	--	--	NR	NR	--	--	4.94
	03/02/06	--	--	NR	NR	--	--	4.94
	06/06/06	--	--	NR	NR	--	--	4.94
	09/15/06	--	--	NR	NR	--	--	4.94
	03/07/07	--	--	NR	NR	--	--	4.94
	02/13/08	Well Possibly Removed During Previous Excavation Activities						4.94
MW-44	12/11/02	--	--	NR	NR	--	--	5.46
(5.46)	03/20/03	--	--	NR	NR	--	--	5.46
	07/03/03	--	--	NR	NR	--	--	5.46
	09/18/03	--	--	NR	NR	--	--	5.46
	12/02/03	--	--	NR	NR	--	--	5.46
	03/09/04	--	--	NR	NR	--	--	5.46
	06/03/04	--	--	NR	NR	--	--	5.46
	09/03/04	--	--	NR	NR	--	--	5.46
	12/06/04	--	--	NR	NR	--	--	5.46
	03/04/05	--	--	NR	NR	--	--	5.46
	06/03/05	--	--	NR	NR	--	--	5.46
	09/01/05	--	--	NR	NR	--	--	5.46
	12/01/05	--	--	NR	NR	--	--	5.46
	03/02/06	--	--	NR	NR	--	--	5.46
	06/06/06	--	--	NR	NR	--	--	5.46
	09/15/06	--	--	NR	NR	--	--	5.46
	03/07/07	--	--	NR	NR	--	--	5.46
MW-61A-R[6]	03/02/06	--	15.15[6]	NR	NR	-1.81	1.91	13.35
(13.35)	06/06/06	8:00	14.96	NR	NR	-1.61	--	13.35
	09/15/06	--	14.26	NR	NR	-0.91	--	13.35
	03/07/07	8:44	14.04	--	NR	-0.69	--	13.35
	06/07/07	9:15	14.36	--	NR	-1.01	--	13.35
	07/10/07	9:50	14.84	--	NR	-1.49	--	13.35
	07/25/07	11:40	14.55	--	NR	-1.20	--	13.35
	08/22/07	9:40	14.72	--	NR	-1.37	--	13.35
	09/06/07	9:55	14.90	--	NR	-1.55	--	13.35
	09/26/07	9:16	15.09	--	NR	-1.74	--	13.35
	10/11/07	8:00	14.82	--	NR	-1.47	--	13.35
	11/01/07	9:55	14.81	--	NR	-1.46	--	13.35
	11/16/07	15:30	14.59	--	NR	-1.24	--	13.35
	11/26/07	13:48	14.40	--	NR	-1.05	--	13.35
	12/19/07	9:35	13.83	--	NR	-0.48	--	13.35
	01/03/08	8:41	12.93	--	NR	0.42	--	13.35
	01/17/08	9:00	12.76	--	NR	0.59	--	13.35
	02/12/08	9:24	13.65	--	NR	-0.30	--	13.35
	03/03/08	9:24	14.14	--	NR	-0.79	--	13.35
	03/17/08	9:23	14.49	--	NR	-1.14	--	13.35
	04/01/08	9:10	14.22	14.21	0.01	-0.87	--	13.35
	04/14/08	9:06	14.41	14.39	0.02	-1.06	--	13.35
	04/28/08	9:36	14.70	14.64	0.06	-1.35	--	13.35
(22.44)[8]	05/13/08	9:29	14.88	--	--	7.56	11.00	22.44
	05/27/08	13:53	14.93	Sheen	--	7.51	--	22.44
	06/10/08	10:20	14.73	--	--	7.71	--	22.44
	06/24/08	9:41	14.92	--	--	7.52	--	22.44
	07/07/08	9:56	14.70	--	--	7.74	--	22.44
	07/22/08	9:34	14.72	14.70	0.02	7.72	--	22.44
	08/12/08	9:50	14.75	14.68	0.07	7.69	--	22.44
	09/03/08	--	15.58	15.56	0.02	6.86	--	22.44
	09/26/08	--	14.89	14.79	0.10	7.55	--	22.44
	10/17/08	9:03	15.12	14.92	0.20	7.32	--	22.44
	10/29/08	8:50	15.21	15.00	0.21	7.23	--	22.44
	11/12/08	10:51	13.95	13.81	0.14	8.49	--	22.44
	12/03/08	12:52	14.25	14.19	0.06	8.19	--	22.44
	01/06/09	9:40	13.12	12.99	0.13	9.32	--	22.44
	01/20/09	12:50	13.06	13.01	0.05	9.38	--	22.44
	02/03/09	9:43	14.40	13.88	0.52	8.04	--	22.44
	02/17/09	11:20	14.30	13.80	0.50	8.14	--	22.44
	03/12/09	12:16	14.20	14.05	0.15	8.24	--	22.44
	03/25/09	8:50	14.01	13.91	0.10	8.43	--	22.44
	04/08/09	10:21	13.81	13.71	0.10	8.63	--	22.44
(22.44)[8]	04/30/09	10:12	14.14	13.95	0.19	8.30	--	22.44
	05/12/09	10:51	13.66	13.64	0.02	8.78	--	22.44
	05/26/09	14:15	13.74	--	--	8.70	--	22.44
	06/09/09	9:46	13.40	--	--	9.04	--	22.44

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-61A-R (continued)	06/25/09	9:47	14.14	13.94	0.20	8.30	--	22.44
	07/07/09	9:40	14.18	14.15	0.03	8.26	--	22.44
	07/13/09	8:14	14.88	14.87	0.01	7.56	--	22.44
	08/05/09	6:45	14.68	14.39	0.29	7.76	--	22.44
	08/06/09	9:29	14.64	14.62	0.02	7.80	--	22.44
	08/20/09	8:51	14.85	14.84	0.01	7.59	--	22.44
	09/10/09	10:15	14.84	14.78	0.06	7.60	--	22.44
	09/23/09	9:37	14.89	14.81	0.08	7.55	--	22.44
	10/08/09	9:39	15.01	14.94	0.07	7.43	--	22.44
	10/19/09	9:05	14.98	14.91	0.07	7.46	--	22.44
	11/12/09	9:36	12.85	12.80	0.05	9.59	--	22.44
	03/24/10	9:54	13.20	12.95	0.25	9.24	--	22.44
	04/13/10	10:37	13.06	12.95	0.11	9.38	--	22.44
	05/26/10	9:06	13.91	13.76	0.15	8.53	--	22.44
	07/28/10	14:56	14.78	--	--	7.66	--	22.44
	08/05/10	11:28	14.79	--	--	7.65	--	22.44
	08/13/10	9:38	13.62	--	--	8.82	--	22.44
	08/13/10	10:37	13.61	--	--	8.83	--	22.44
	08/13/10	10:42	13.61	--	--	8.83	--	22.44
	08/13/10	15:42	13.64	--	--	8.80	--	22.44
	08/18/10	8:55	14.70	--	--	7.74	--	22.44
	09/21/10	10:42	15.35	--	--	7.09	--	22.44
	10/11/10	11:20	14.35	14.31	0.04	8.09	--	22.44
	11/19/10	15:25	13.30	13.19	0.11	9.14	--	22.44
	03/04/11	10:04	12.80	12.63	0.17	9.64	--	22.44
	04/25/11	11:20	12.70	Sheen[10]	--	9.74	--	22.44
	09/21/11	9:45	14.65	14.10	0.55	7.79	--	22.44
	11/21/11	11:05	14.82	14.26	0.56	7.62	--	22.44
	02/20/12	9:15	13.55	13.15	0.40	8.89	--	22.44
	04/17/12	12:10	13.18	12.79	0.39	9.26	--	22.44
	10/10/12	12:25	14.80	14.39	0.41	7.64	--	22.44
	12/24/12	11:28	12.61	12.20	0.41	9.83	--	22.44
	01/08/13	14:30	11.84	11.74	0.10	10.60	--	22.44
	04/30/13	11:10	13.59	13.35	0.24	8.85	--	22.44
	09/19/13	9:48	14.45	14.40	0.05	7.99	--	22.44
	11/22/13	9:25	15.28	15.22	0.06	7.16	--	22.44
	06/23/14	10:36	14.60	--	--	7.84	--	22.44
	06/24/14	--	14.80	14.61	0.19	7.64	--	22.44
	09/10/14	9:30	14.92	--	--	7.52	--	22.44
	12/15/14	13:35	11.71	--	--	10.73	--	22.44
	12/16/14	15:25	11.90	11.81	0.01	10.54	--	22.44
	06/17/15	11:15	14.79	14.78	0.01	7.65	--	22.44
	12/09/15	10:45	10.99	10.98	0.01	11.45	--	22.44
	02/16/16	9:15	11.08	--	--	11.36	--	22.44
	06/13/16	8:30	14.40	--	--	8.04	--	22.44
	09/22/16	13:21	15.00	--	--	7.44	--	22.44
	01/12/17	13:09	12.26	--	--	10.18	--	22.44
	03/27/17	13:22	10.62	--	--	11.82	--	22.44
	06/16/17	9:41	14.73	13.84	0.89	7.71	--	22.44
	11/07/17	13:21	14.93	14.84	0.09	7.51	--	22.44
	03/26/18	8:41	13.68	--	--	8.76	--	22.44
	06/19/18	15:55	14.45	--	--	7.99	--	22.44
	09/27/18	12:36	15.21	15.10	0.11	7.31	--	22.44
	12/12/18	15:23	13.65	--	--	8.79	--	22.44
	03/25/19	15:33	13.49	--	--	8.95	--	22.44
	06/24/19	17:09	14.42	--	--	8.02	--	22.44
	09/25/19	9:01	14.59	--	--	7.85	--	22.44
	12/16/19	13:50	14.55	--	--	7.89	--	22.44
	03/25/20	14:04	13.59	--	--	8.85	--	22.44
	06/17/20	21:33	14.48	14.46	0.02	8.03	--	22.44
	09/11/20	9:58	15.13	--	--	7.31	--	22.44
	11/17/20	11:09	14.18	--	--	8.33	--	22.44
	03/15/21	14:32	12.88	--	--	9.56	--	22.44
	06/09/21	12:02	14.70	14.70	0.00	7.74	--	22.44
	09/20/21	**12:45**	**14.95**	**--**	**--**	**7.49**	**--**	**22.44**
	12/03/21	**10:23**	**12.17**	**--**	**--**	**10.27**	**--**	**22.44**
PZ-7.5	04/30/13	9:45	7.18	--	--	UK	--	
	09/15/13	8:46	7.19	--	--	UK	--	
	11/22/13	9:27	8.03	--	--	UK	--	
	06/11/14			Well Decommissioned				
PZ-9.5	04/30/13	9:53	9.00	--	--	UK	--	
	09/15/13	8:52	9.86	--	--	UK	--	
	11/22/13	9:37	9.86	--	--	UK	--	
	06/10/14			Well Decommissioned				
PZ-61A-R[11]	09/21/10	10:36	14.05	--	--	UK	--	
	09/28/09	8:50	14.04	--	--	UK	--	
	10/11/10	11:12	14.18	--	--	UK	--	
	03/04/11	9:55	12.46	--	--	UK	--	
	04/25/11	11:30	13.05	0.27	12.78	UK	--	
	09/21/11	9:40	14.18	14.17	0.01	UK	--	
	11/21/11	11:10	14.34	--	--	UK	--	
	02/20/12	9:10	13.28	13.18	0.10	UK	--	
	04/17/12	12:05	12.84	--	--	UK	--	
	10/10/12	12:30	14.89	--	--	UK	--	
	12/24/12	11:31	12.66	--	--	UK	--	
	01/08/13	14:31	11.73	--	--	UK	--	
	04/30/13	11:05	13.38	--	--	UK	--	
	09/19/13	9:51	14.10	--	--	UK	--	
	11/22/13	9:30	15.01	--	--	UK	--	
	06/12/14			Well Decommissioned				
PZ-203[11]	09/21/10	11:24	13.29	--	--	UK	--	
	04/25/11	13:50	11.80	--	--	UK	--	
	09/21/11	10:29	13.67	--	--	UK	--	
	11/21/11	10:24	12.60	--	--	UK	--	
	02/20/12			UNABLE TO LOCATE				
	04/17/12	12:25	13.00	--	--	UK	--	
	10/10/12			UNABLE TO LOCATE				
	12/24/12	10:39	14.52	--	--	UK	--	
	01/08/13	15:25	10.13	--	--	UK	--	
	04/30/13	10:26	11.53	--	--	UK	--	

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
PZ-203[11] (continued)	09/19/13	9:27	12.30	--	--	UK	--	
	11/22/13	10:10	12.03	--	--	UK	--	
	06/12/14			Well Decommissioned				
PZ-204[11]	09/21/10	11:32	19.02	--	--	UK	--	
	04/25/11	14:05	17.67	--	--	UK	--	
	09/21/11	10:18	19.34	--	--	UK	--	
	11/21/11	10:30	18.71	--	--	UK	--	
	02/20/12			UNABLE TO LOCATE				
	04/17/12	11:35	18.23	--	--	UK	--	
	10/10/12			UNABLE TO LOCATE				
	12/24/12	10:21	16.65	--	--	UK	--	
	01/08/13	15:15	16.82	--	--	UK	--	
	04/30/13	10:34	17.75	--	--	UK	--	
	09/19/13	9:21	18.40	--	--	UK	--	
	11/22/13	9:55	18.80	--	--	UK	--	
	06/12/14			Well Decommissioned				
MW-65	12/11/02	14:03	14.69	NR	NR	-3.86	--	10.83
(10.83)	03/20/03	10:44	10.09	NR	NR	0.74	--	10.83
	07/03/03	11:12	13.85	NR	NR	-3.02	--	10.83
	09/18/03	10:40	14.15	NR	NR	-3.32	--	10.83
	12/02/03	11:14	12.38	NR	NR	-1.55	--	10.83
	03/09/04	10:50	13.63	NR	NR	-2.80	--	10.83
	06/03/04	11:42	14.24	NR	NR	-3.41	--	10.83
	09/03/04	14:08	13.77	NR	NR	-2.94	--	10.83
	12/06/04	9:32	14.59	NR	NR	-3.76	--	10.83
	03/04/05	14:04	14.06	NR	NR	-3.23	--	10.83
	06/03/05	--	14.14	NR	NR	-3.31	--	10.83
	09/01/05	9:55	14.67	NR	NR	-3.84	--	10.83
	12/01/05	11:19	12.05	NR	NR	-1.22	--	10.83
	03/02/06	11:12	14.28	NR	NR	-3.45	--	10.83
	06/06/06	8:26	13.83	NR	NR	-3.00	--	10.83
	09/15/06	--	13.90	NR	NR	-3.07	--	10.83
	03/07/07	8:51	13.63	--	--	-2.80	--	10.83
	06/07/07	8:30	13.69	--	--	-2.86	--	10.83
	09/26/07	9:27	14.29	--	--	-3.46	--	10.83
	11/26/07	10:00	13.62	--	--	-2.79	--	10.83
	12/03/07			Well Decommissioned				10.83
MW-66	12/11/02	14:15	15.36	NR	NR	-3.74	--	11.62
(11.62)	03/20/03	13:04	12.21	NR	NR	-0.59	--	11.62
	07/03/03	11:22	14.73	NR	NR	-3.11	--	11.62
	09/18/03	10:34	15.25	NR	NR	-3.63	--	11.62
	12/02/03	11:27	11.99	NR	NR	-0.37	--	11.62
	03/09/04	11:02	13.67	NR	NR	-2.05	--	11.62
	06/03/04	11:45	14.78	NR	NR	-3.16	--	11.62
	09/03/04	14:12	14.16	NR	NR	-2.54	--	11.62
	12/06/04	9:39	15.22	NR	NR	-3.60	--	11.62
	03/04/05	14:01	14.54	NR	NR	-2.92	--	11.62
	06/03/05	--	14.69	NR	NR	-3.07	--	11.62
	09/01/05	10:10	15.31	NR	NR	-3.69	--	11.62
	12/01/05	11:26	11.78	NR	NR	-0.16	--	11.62
	03/02/06	11:20	14.77	NR	NR	-3.15	--	11.62
	06/06/06	8:15	14.35	NR	NR	-2.73	--	11.62
	09/15/06	--	14.39	NR	NR	-2.77	--	11.62
	03/07/07	9:00	14.11	--	--	-2.49	--	11.62
	09/26/07	9:36	14.97	--	--	-3.35	--	11.62
	11/26/07	13:42	14.23	--	--	-2.61	--	11.62
	12/03/07			Well Decommissioned				11.62
MW-200[6]	03/07/07	9:45	8.88	--	--	-4.10	-0.22	4.78
(4.78)	06/07/07	15:53	9.26	--	--	-4.48	--	4.78
	07/06/07	10:00	9.76	--	--	-4.98	--	4.78
	09/26/07	8:08	9.43	--	--	-4.65	--	4.78
	11/26/07	14:48	8.54	--	--	-3.76	--	4.78
	02/13/08	11:15	8.57	--	--	-3.79	--	4.78
(14.36)[8]	05/13/08	10:16	10.02	--	--	4.34	9.36	14.36
	09/03/08	--	9.56	--	--	4.80	--	14.36
	12/03/08	12:10	9.11	--	--	5.25	--	14.36
	02/17/09	10:43	8.28	--	--	6.08	--	14.36
	05/12/09	12:02	8.95	--	--	5.41	--	14.36
	05/26/09	13:54	9.40	--	--	4.96	--	14.36
	09/10/09	10:39	9.74	--	--	4.62	--	14.36
	04/13/10	11:21	9.23	--	--	5.13	--	14.36
	06/16/10	10:05	9.10	--	--	5.26	--	14.36
	08/12/10	9:45	8.92	Sheen	--	5.44	--	14.36
	09/14/10	1:48	9.31	--	--	5.05	--	14.36
	09/14/10	1:53	9.31	--	--	5.05	--	14.36
	09/15/10	15:03	9.34	--	--	5.02	--	14.36
	09/15/10	15:05	9.33	--	--	5.03	--	14.36
	09/15/10	15:10	9.31	--	--	5.05	--	14.36
	09/15/10	15:15	9.29	--	--	5.07	--	14.36
	09/15/10	15:20	9.28	--	--	5.08	--	14.36
	09/15/10	15:25	9.26	--	--	5.10	--	14.36
	09/15/10	15:35	9.38	--	--	4.98	--	14.36
	09/15/10	15:39	9.49	--	--	4.87	--	14.36
(14.36)[8]	09/15/10	15:45	9.58	--	--	4.78	--	14.36
	09/15/10	15:50	9.66	--	--	4.70	--	14.36
	09/15/10	15:55	9.70	--	--	4.66	--	14.36
	09/15/10	16:00	9.74	--	--	4.62	--	14.36
	09/15/10	16:05	9.76	--	--	4.60	--	14.36
	09/15/10	16:10	9.79	--	--	4.57	--	14.36
	09/15/10	16:16	9.82	--	--	4.54	--	14.36
	09/15/10	16:28	9.80	--	--	4.56	--	14.36
	09/15/10		9.69	--	--	4.67	--	14.36

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-200 (continued)	09/15/10	16:36	9.56	--	--	4.80	--	14.36
	09/15/10	16:40	9.50	--	--	4.86	--	14.36
	09/15/10	16:46	9.43	--	--	4.93	--	14.36
	09/15/10	16:55	9.35	--	--	5.01	--	14.36
	09/15/10	17:05	9.27	--	--	5.09	--	14.36
	09/15/10	17:20	9.21	--	--	5.15	--	14.36
	09/15/10	17:29	9.20	--	--	5.16	--	14.36
	09/21/10	11:14	9.50	--	--	4.86	--	14.36
	09/22/10	11:00	9.40	--	--	4.96	--	14.36
	04/26/11	10:45	9.30	--	--	5.06	--	14.36
	09/21/11	10:45	10.15	--	--	4.21	--	14.36
	11/21/11			Unable to Gauge due to rain fillup of well				14.36
	02/20/12			UNABLE TO LOCATE				14.36
	04/17/12	14:00	9.78	--	--	4.58	--	14.36
	10/10/12	11:35	10.35	--	--	4.01	--	14.36
	12/24/12	10:54	7.94	--	--	6.42	--	14.36
	01/08/13	15:40	7.83	--	--	6.53	--	14.36
	04/30/13	10:21	8.62	--	--	5.74	--	14.36
	09/19/13	9:33	9.40	--	--	4.96	--	14.36
	11/22/13	10:30	9.82	--	--	4.54	--	14.36
	06/23/14	9:52	9.61	--	--	4.75	--	14.36
	12/15/14	12:59	8.00	--	--	6.36	--	14.36
	06/17/15	10:25	8.51	--	--	5.85	--	14.36
	12/09/15	10:08	5.89	--	--	8.47	--	14.36
	01/15/16	16:47	8.16	--	--	6.20	--	14.36
	02/16/16	8:40	8.25	--	--	6.11	--	14.36
	06/13/16	9:10	9.75	--	--	4.61	--	14.36
	09/22/16	12:42	9.20	--	--	5.16	--	14.36
	01/12/17	11:15	8.06	--	--	6.30	--	14.36
	03/27/17	12:55	8.58	--	--	5.78	9.36	14.36
	06/16/17	8:44	8.90	--	--	5.46	9.36	14.36
	11/07/17	12:51	8.69	--	--	5.67	9.36	14.36
	03/26/18	8:20	8.68	--	--	5.68	9.36	14.36
	06/19/18	15:20	9.42	--	--	4.94	9.36	14.36
	09/27/18	11:27	9.41	--	--	4.95	9.36	14.36
	12/12/18	14:50	8.15	--	--	6.21	9.36	14.36
	03/25/19	14:40	8.84	--	--	5.52	9.36	14.36
	06/24/19	16:33	9.92	--	--	4.44	9.36	14.36
	09/25/19	8:28	9.58	--	--	4.78	9.36	14.36
	12/16/19	14:48	8.32	--	--	6.04	9.36	14.36
	12/16/19	14:48	8.32	--	--	6.04	9.36	14.36
	03/25/20	13:01	9.22	--	--	5.64	9.36	14.36
	06/16/20	8:59	9.31	--	--	5.05	9.36	14.36
	09/11/20	8:23	9.84	--	--	4.52	9.36	14.36
	11/17/20	9:53	7.82	--	--	6.54	9.36	14.36
	03/15/21	13:33	9.06	--	--	5.30	9.36	14.36
	06/09/21	11:31	9.40	--	--	4.96	9.36	14.36
	09/20/21	**11:47**	**9.51**	**--**	**--**	**4.85**	**9.36**	**14.36**
	12/03/21	**9:46**	**8.49**	**--**	**--**	**5.87**	**9.36**	**14.36**
MW-201[6]	03/07/07	9:55	9.41	Sheen	--	-4.13	0.28	5.28
(5.28)	06/07/07	16:35	9.79	--	--	-4.51	--	5.28
	07/06/07	11:00	10.27	--	--	-4.99	--	5.28
	09/26/07	8:20	9.97	--	--	-4.69	--	5.28
	11/27/07	14:38	9.04	--	--	-3.76	--	5.28
	02/12/08	10:24	9.65	--	--	-4.37	--	5.28
(14.86)[8]	05/13/08	10:24	10.34	--	--	4.52	9.86	14.86
	09/03/08	--	10.08	--	--	4.78	--	14.86
	12/03/08	12:17	9.66	--	--	5.20	--	14.86
	02/17/09	10:37	8.82	--	--	6.04	--	14.86
	05/12/09	12:13	9.52	--	--	5.34	--	14.86
	05/26/09	13:50	9.90	--	--	4.96	--	14.86
	08/11/09	9:02	10.31	--	--	4.55	--	14.86
	08/28/09	14:50	10.21	--	--	4.65	--	14.86
	09/10/09	10:42	10.29	--	--	4.57	--	14.86
	04/13/10	11:17	9.75	--	--	5.11	--	14.86
	08/11/10	14:45	10.68	Sheen	--	4.18	--	14.86
	09/14/10	13:55	9.89	--	--	4.97	--	14.86
	09/14/10	14:00	9.89	--	--	4.97	--	14.86
	09/14/10	15:05	10.04	--	--	4.82	--	14.86
	09/14/10	15:07	10.02	--	--	4.84	--	14.86
	09/14/10	15:19	9.92	--	--	4.94	--	14.86
	09/14/10	15:26	9.89	--	--	4.97	--	14.86
	09/14/10	15:36	9.86	--	--	5.00	--	14.86
	09/17/10	18:14	9.59	--	--	5.27	--	14.86
	09/17/10	20:07	9.36	--	--	5.50	--	14.86
	09/21/10	11:18	10.06	--	--	4.80	--	14.86
	04/25/11	13:15	9.22	--	--	5.64	--	14.86
	09/21/11	10:40	10.81	--	--	4.05	--	14.86
	11/21/11	10:15	10.17	--	--	4.69	--	14.86
	02/20/12	11:20	9.68	--	--	5.18	--	14.86
	04/17/12	11:20	10.11	--	--	4.75	--	14.86
	10/10/12	11:45	10.91	--	--	3.95	--	14.86
	12/24/12	10:47	8.35	--	--	6.51	--	14.86
	01/08/13	15:35	8.35	--	--	6.51	--	14.86
	04/30/13	10:23	9.14	--	--	5.72	--	14.86
	09/19/13	9:30	9.90	--	--	4.96	--	14.86
	11/22/13	10:20	10.27	--	--	4.59	--	14.86
	06/23/14	9:56	10.14	--	--	4.72	--	14.86
	12/15/14	12:51	8.60	--	--	6.26	--	14.86
	06/17/15	10:20	8.99	--	--	5.87	--	14.86
	12/09/15	10:14	6.59	--	--	8.27	--	14.86
	01/15/16	16:56	8.85	--	--	6.01	--	14.86
	02/16/16	8:35	8.91	--	--	5.95	--	14.86
	06/13/16	9:15	10.39	--	--	4.47	--	14.86
(14.86)[8]	09/22/16	12:45	9.86	--	--	5.00	--	14.86
	01/12/17	11:37	9.72	--	--	5.14	--	14.86
	03/27/17	12:52	9.25	--	--	5.61	9.86	14.86
	06/16/17	8:42	9.55	--	--	5.31	9.86	14.86
	11/07/17	12:46	9.32	--	--	5.54	9.86	14.86
	03/26/18	8:25	9.29	--	--	5.57	9.86	14.86

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-201 (continued)	06/19/18	15:27	10.06	--	--	4.80	9.86	14.86
	09/27/18	11:36	10.00	--	--	4.86	9.86	14.86
	12/12/18	14:55	8.77	--	--	6.09	9.86	14.86
	03/25/19	14:29	9.39	--	--	5.47	9.86	14.86
	06/24/19	16:38	9.73	--	--	5.13	9.86	14.86
	09/25/19	8:23	10.22	--	--	4.64	9.86	14.86
	12/16/19	14:51	9.00	--	--	5.86	9.86	14.86
	03/25/20	13:10	9.94	--	--	4.92	9.86	14.86
	06/17/20	9:03	9.94	--	--	4.92	9.86	14.86
	09/11/20	8:34	10.62	--	--	4.24	9.86	14.86
	11/17/20	9:57	8.41	--	--	6.45	9.86	14.86
	03/15/21	13:37	9.81	--	--	5.05	9.86	14.86
	06/09/21	11:26	9.05	--	--	5.81	9.86	14.86
	09/20/21	**11:51**	**10.30**	**--**	**--**	**4.56**	**9.86**	**14.86**
	12/03/21	**9:50**	**9.28**	**Sheen**	**--**	**5.58**	**9.86**	**14.86**
MW-202[6]	03/07/07	9:25	8.79	--	--	-3.78	-2.74	5.01
(5.01)	06/07/07	14:53	9.52	--	--	-4.51	--	5.01
	07/06/07	10:05	10.16	--	--	-5.15	--	5.01
	09/26/07	7:48	9.59	--	--	-4.58	--	5.01
	11/26/07	15:16	8.43	--	--	-3.42	--	5.01
	02/12/08	10:26	8.59	--	--	-3.58	--	5.01
(14.58)[8]	05/13/08	10:06	10.20	--	--	4.38	6.83	14.58
	09/03/08	--	9.61	--	--	4.97	--	14.58
	12/03/08	11:55	8.86	--	--	5.72	--	14.58
	02/17/09	10:32	8.15	--	--	6.43	--	14.58
	05/12/09	11:58	9.77	--	--	4.81	--	14.58
	05/26/09	13:56	10.84	--	--	3.74	--	14.58
	08/11/09	9:25	9.96	--	--	4.62	--	14.58
	08/28/09	14:29	9.85	--	--	4.73	--	14.58
	09/10/09	10:58	9.90	--	--	4.68	--	14.58
	04/13/10	11:23	10.17	--	--	4.41	--	14.58
	06/16/10	9:58	8.95	--	--	5.63	--	14.58
	08/11/10	11:45	10.00	--	--	4.58	--	14.58
	08/16/10	14:40	8.46	--	--	6.12	--	14.58
	08/16/10	14:43	8.46	--	--	6.12	--	14.58
	08/16/10	14:45	9.01	--	--	5.57	--	14.58
	08/16/10	14:57	9.02	--	--	5.56	--	14.58
	08/16/10	14:48	9.06	--	--	5.52	--	14.58
	08/16/10	14:49	9.13	--	--	5.45	--	14.58
	08/16/10	14:50	9.14	--	--	5.44	--	14.58
	08/16/10	14:51	9.13	--	--	5.45	--	14.58
	08/16/10	14:56	9.19	--	--	5.39	--	14.58
	08/16/10	14:56	8.75	--	--	5.83	--	14.58
	08/16/10	14:57	8.60	--	--	5.98	--	14.58
	08/16/10	14:57	8.59	--	--	5.99	--	14.58
	08/16/10	14:58	8.53	--	--	6.05	--	14.58
	08/18/10	9:12	11.12	--	--	3.46	--	14.58
	09/17/10	14:32	18.86	--	--	-4.28	--	14.58
	09/17/10	16:18	9.18	--	--	5.40	--	14.58
	09/17/10	17:52	8.83	--	--	5.75	--	14.58
	09/21/10	11:10	10.55	--	--	4.03	--	14.58
	09/22/10	9:30	9.66	--	--	4.92	--	14.58
	04/25/11	14:40	9.32	--	--	5.26	--	14.58
	09/21/11	10:47	10.90	--	--	3.68	--	14.58
	11/21/11	9:56	10.03	--	--	4.55	--	14.58
	02/20/12	11:29	9.61	--	--	4.97	--	14.58
	04/17/12	11:00	10.30	--	--	4.28	--	14.58
	10/10/12	11:50	11.00	--	--	3.58	--	14.58
	12/24/12	11:00	7.85	--	--	6.73	--	14.58
	01/08/13	15:45	7.59	--	--	6.99	--	14.58
	04/30/13	10:18	8.75	--	--	5.83	--	14.58
	09/19/13	9:36	10.12	--	--	4.46	--	14.58
	11/22/13	10:40	7.00	--	--	7.58	--	14.58
	06/23/14	9:45	10.65	--	--	3.93	--	14.58
	12/15/14	13:06	7.41	--	--	7.17	--	14.58
	06/17/15	10:35	8.84	--	--	5.74	--	14.58
	12/09/15	10:00	6.61	--	--	7.97	--	14.58
	01/15/16	16:32	9.06	--	--	5.52	--	14.58
	02/16/16	8:45	8.37	--	--	6.21	--	14.58
	06/13/16	9:05	10.65	--	--	3.93	--	14.58
	09/22/16	12:38	9.21	--	--	5.37	--	14.58
	01/12/17	10:32	8.32	--	--	6.26	--	14.58
	03/27/17	12:56	9.44	--	--	5.14	6.78	14.58
	06/16/17	8:47	9.43	--	--	5.15	6.78	14.58
	11/07/17	12:55	9.00	--	--	5.58	6.78	14.58
	03/26/18	8:15	8.95	--	--	5.63	6.78	14.58
	06/19/18	15:33	10.55	--	--	4.03	6.78	14.58
	09/27/18	12:05	10.00	--	--	4.58	6.78	14.58
	12/12/18	14:57	8.54	--	--	6.04	6.78	14.58
	03/25/19	14:52	9.42	--	--	5.16	6.78	14.58
	06/24/19	16:26	10.85	--	--	3.73	6.78	14.58
	09/25/19	8:31	10.63	--	--	3.95	6.78	14.58
	12/16/19	14:41	8.68	--	--	5.90	6.78	14.58
	03/25/20	12:47	8.89	--	--	5.69	6.78	14.58
	06/17/20	8:57	10.37	--	--	4.21	6.78	14.58
	09/11/20	8:18	10.98	--	--	3.60	6.78	14.58
	11/17/20	9:44	7.53	--	--	7.05	6.78	14.58
	03/15/21	13:29	9.81	--	--	4.77	6.78	14.58
	06/09/21	11:21	10.41	--	--	4.17	6.78	14.58
	09/20/21	**11:43**	**10.54**	**--**	**--**	**4.04**	**6.78**	**14.58**
	12/03/21	**9:42**	**8.99**	**--**	**--**	**5.59**	**6.78**	**14.58**
MW-203[6]	03/07/07	--	11.86	--	--	-3.88	-2.52	7.98
(7.98)	06/07/07	13:54	12.45	--	--	-4.47	--	7.98
	07/06/07	11:01	13.07	--	--	-5.09	--	7.98
	09/26/07	8:30	12.69	--	--	-4.71	--	7.98
	11/26/07	14:33	11.56	--	--	-3.58	--	7.98
	02/12/08	10:05	12.29	--	--	-4.31	--	7.98
	05/13/08	10:32	13.56	--	--	3.99	7.05	17.55
(17.55)[8]	09/03/08	--	13.40	--	--	4.15	--	17.55
	12/03/08	12:26	11.76	--	--	5.79	--	17.55
	02/17/09	10:47	11.00	--	--	6.55	--	17.55

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-203[c] (continued)	05/12/09	12:21	12.81	--	--	4.74	--	17.55
	05/26/09	13:45	13.51	--	--	4.04	--	17.55
	08/28/09	15:14	12.67	--	--	4.88	--	17.55
	09/10/09	10:45	12.99	--	--	4.56	--	17.55
	04/13/10	11:12	12.92	--	--	4.63	--	17.55
	07/21/10	16:30	12.59	--	--	4.96	--	17.55
	08/11/10	11:12	11.68	--	--	5.87	--	17.55
	08/11/10	11:28	11.89	--	--	5.66	--	17.55
	08/11/10	11:29	11.84	--	--	5.71	--	17.55
	08/13/10	16:15	13.10	--	--	4.45	--	17.55
	08/16/10	7:12	13.96	--	--	3.59	--	17.55
	08/16/10	7:13	13.96	--	--	3.59	--	17.55
(17.55)[c]	09/02/10	14:45	12.76	--	--	4.79	--	17.55
	09/02/10	14:55	12.71	--	--	4.84	--	17.55
	09/02/10	15:10	12.31	--	--	5.24	--	17.55
	09/02/10	15:33	12.56	--	--	4.99	--	17.55
	09/15/10	6:47	14.20	--	--	3.35	--	17.55
	09/16/10	15:55	12.02	--	--	5.53	--	17.55
	09/16/10	16:00	12.01	--	--	5.54	--	17.55
	09/16/10	16:11	11.95	--	--	5.60	--	17.55
	09/16/10	16:20	11.90	--	--	5.65	--	17.55
	09/21/10	11:28	13.54	--	--	4.01	--	17.55
	04/25/11	13:45	12.06	--	--	5.49	--	17.55
	09/21/11	14:26	12.68	--	--	4.87	--	17.55
	11/21/11	10:21	11.69	--	--	5.86	--	17.55
	02/20/12	11:14	12.25	--	--	5.30	--	17.55
	04/17/12	13:45	13.39	--	--	4.16	--	17.55
	10/10/12	11:20	14.18	--	--	3.37	--	17.55
	12/24/12	10:35	9.67	--	--	7.88	--	17.55
	01/08/13	15:30	10.34	--	--	7.21	--	17.55
	04/30/13	10:28	11.76	--	--	5.79	--	17.55
	09/19/13	9:39	12.81	--	--	4.74	--	17.55
	11/22/13	10:05	12.48	--	--	5.07	--	17.55
	06/23/14	10:04	13.68	--	--	3.87	--	17.55
	12/15/14	12:46	10.46	--	--	7.09	--	17.55
	06/17/15	10:15	11.94	--	--	5.61	--	17.55
	12/09/15	10:19	9.63	--	--	7.92	--	17.55
	01/15/16	16:16	11.89	--	--	5.66	--	17.55
	02/16/16	8:30	11.48	--	--	6.07	--	17.55
	06/13/16	9:20	13.62	--	--	3.93	--	17.55
	09/22/16	12:50	12.01	--	--	5.54	--	17.55
	01/12/17	11:50	11.40	--	--	6.15	--	17.55
	03/27/17	12:50	12.41	--	--	5.14	7.05	17.55
	06/16/17	8:38	12.31	--	--	5.24	7.05	17.55
	11/07/17	12:40	11.86	--	--	5.69	7.05	17.55
	03/26/18	8:30	11.89	--	--	5.66	7.05	17.55
	06/19/18	15:10	13.15	--	--	4.40	7.05	17.55
	09/27/18	11:43	12.79	--	--	4.76	7.05	17.55
	12/12/18	14:39	11.37	--	--	6.18	7.05	17.55
	03/25/19	14:22	12.25	--	--	5.30	7.05	17.55
	06/24/19	16:51	13.87	--	--	3.68	7.05	17.55
	09/25/19	8:19	13.45	--	--	4.10	7.05	17.55
	12/16/19	14:57	11.61	--	--	5.94	7.05	17.55
	03/25/20	13:15	12.95			4.60	7.05	17.55
	06/17/20	9:10	13.05	--	--	4.50	7.05	17.55
	09/11/20	8:44	13.94	--	--	3.61	7.05	17.55
	11/17/20	10:03	10.46	--	--	7.09	7.05	17.55
	03/15/21	13:42	12.83	--	--	4.72	7.05	17.55
	06/09/21	11:36	13.41	--	--	4.14	7.05	17.55
	09/20/21	**11:56**	**13.53**	**--**	**--**	**4.02**	**7.05**	**17.55**
	12/03/21	**9:56**	**11.96**	**--**	**--**	**5.59**	**7.05**	**17.55**
MW-204[c]	03/07/07	10:15	18.12	--	--	-3.74	-2.87	14.38
(14.38)	06/07/07	14:50	18.52	--	--	-4.14	--	14.38
	07/06/07	11:40	19.03	--	--	-4.65	--	14.38
	09/26/07	8:37	18.85	--	--	-4.47	--	14.38
	11/26/07	14:29	17.78	--	--	-3.40	--	14.38
	02/12/08	10:03	18.00	--	--	-3.62	--	14.38
(23.93)[c]	05/13/08	10:38	19.43	--	--	4.50	6.68	23.93
	09/03/08	--	18.76	--	--	5.17	--	23.93
	10/01/08	10:25	18.40	--	--	5.53	--	23.93
	10/17/08	9:29	18.72	--	--	5.21	--	23.93
	12/03/08	12:31	18.06	--	--	5.87	--	23.93
	02/17/09	10:54	17.42	--	--	6.51	--	23.93
	05/12/09	12:41	19.81	--	--	4.12	--	23.93
	05/26/09	13:41	19.20	--	--	4.73	--	23.93
	07/13/09	8:18	19.82	--	--	4.11	--	23.93
	08/04/09	--	18.88	--	--	5.05	--	23.93
	08/06/09	9:36	18.33	--	--	5.60	--	23.93
	08/20/09	9:02	18.21	--	--	5.72	--	23.93
	09/10/09	10:47	19.02	--	--	4.91	--	23.93
	04/13/10	10:59	18.71	--	--	5.22	--	23.93
	06/16/10	10:15	18.06	--	--	5.87	--	23.93
	08/11/10	16:16	18.65	--	--	5.28	--	23.93
	08/12/10	12:31	18.11	--	--	5.82	--	23.93
	08/12/10	12:34	18.12	--	--	5.81	--	23.93
	08/12/10	16:13	18.95	--	--	4.98	--	23.93
	08/12/10	16:15	18.94	--	--	4.99	--	23.93
	08/12/10	16:17	18.90	--	--	5.03	--	23.93
	08/13/10	16:25	18.79	--	--	5.14	--	23.93
	08/14/10	7:17	19.70	--	--	4.23	--	23.93
	08/14/10	7:18	19.70	--	--	4.23	--	23.93
	09/02/10	14:33	18.93	--	--	5.00	--	23.93
	09/02/10	14:35	18.93	--	--	5.00	--	23.93
	09/02/10	14:39	18.93	--	--	5.00	--	23.93
	09/02/10	15:37	18.73	--	--	5.20	--	23.93
	09/02/10	17:35	18.57	--	--	5.36	--	23.93
	09/14/10	11:58	18.91	--	--	5.02	--	23.93
	09/14/10	12:37	18.70	--	--	5.23	--	23.93
	09/14/10	12:46	18.65	--	--	5.28	--	23.93
	09/16/10	7:10	19.67	--	--	4.26	--	23.93
	09/16/10	7:12	19.67	--	--	4.26	--	23.93

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-204 Continued	09/16/10	7:13	19.67	--	--	4.26	--	23.93
	09/16/10	7:14	19.68	--	--	4.25	--	23.93
	09/16/10	7:15	19.68	--	--	4.25	--	23.93
	09/16/10	7:17	19.69	--	--	4.24	--	23.93
	09/16/10	7:19	19.69	--	--	4.24	--	23.93
	09/16/10	7:21	19.70	--	--	4.23	--	23.93
	09/16/10	7:23	19.70	--	--	4.23	--	23.93
	09/16/10	7:25	19.71	--	--	4.22	--	23.93
	09/16/10	7:27	19.72	--	--	4.21	--	23.93
	09/16/10	7:29	19.72	--	--	4.21	--	23.93
	09/16/10	7:30	19.75	--	--	4.18	--	23.93
	09/17/10	14:30	18.93	--	--	5.00	--	23.93
	09/17/10	16:20	18.47	--	--	5.46	--	23.93
(23.93)[s]	09/17/10	19:57	18.26	--	--	5.67	--	23.93
	09/21/10	11:35	19.18	--	--	4.75	--	23.93
	04/25/11	14:15	18.07	--	--	5.86	--	23.93
	09/21/11	10:22	19.62	--	--	4.31	--	23.93
	11/21/11	10:30	18.71	--	--	5.22	--	23.93
	02/20/12	10:53	17.99	--	--	5.94	--	23.93
	04/17/12	13:25	19.03	--	--	4.90	--	23.93
	10/10/12	11:10	19.87	--	--	4.06	--	23.93
	12/24/12	10:16	16.73	--	--	7.20	--	23.93
	01/08/13	15:20	16.69	--	--	7.24	--	23.93
	04/30/13	10:40	17.97	--	--	5.96	--	23.93
	09/19/13	9:18	18.63	--	--	5.30	--	23.93
	11/22/13	9:50	18.95	--	--	4.98	--	23.93
	06/23/14	10:13	19.51	--	--	4.42	--	23.93
	12/15/14	12:37	16.71	--	--	7.22	--	23.93
	06/17/15	10:10	18.20	--	--	5.73	--	23.93
	12/09/15	10:24	15.49	--	--	8.44	--	23.93
	01/15/16	15:44	17.59	--	--	6.34	--	23.93
	02/16/16	8:20	17.31	--	--	6.62	--	23.93
	06/13/16	9:25	19.42	--	--	4.51	--	23.93
	09/22/16	12:53	18.41	--	--	5.52	--	23.93
	01/12/17	12:09	17.43	--	--	6.50	--	23.93
	03/27/17	12:45	17.99	--	--	5.94	6.58	23.93
	06/16/17	8:27	18.39	--	--	5.54	6.58	23.93
	11/07/17	12:04	17.98	--	--	5.95	6.58	23.93
	03/26/18	8:34	18.00	--	--	5.93	6.58	23.93
	06/19/18	15:06	19.00	--	--	4.93	6.58	23.93
	09/27/18	11:51	18.99	--	--	4.94	6.58	23.93
	12/12/18	14:17	17.46	--	--	6.47	6.58	23.93
	03/25/19	14:16	18.22	--	--	5.71	6.58	23.93
	06/24/19	16:55	19.66	--	--	4.27	6.58	23.93
	09/25/19	8:11	19.23	--	--	4.70	6.58	23.93
	12/16/19	15:03	17.82	--	--	6.11	6.58	23.93
	03/25/20	13:25	18.85	--	--	9.04	6.58	23.93
	06/17/20	9:13	19.00	--	--	4.93	6.58	23.93
	09/11/20	8:52	19.75	--	--	4.18	6.58	23.93
	11/17/20	10:16	16.91	--	--	7.02	6.58	23.93
	03/15/21	13:49	18.70	--	--	5.23	6.58	23.93
	06/09/21	11:41	19.26	--	--	4.67	6.58	23.93
	09/20/21	**12:02**	**19.42**	**--**	**--**	**4.51**	**6.58**	**23.93**
	12/03/21	**10:03**	**17.85**	**--**	**--**	**6.08**	**6.58**	**23.93**
MW-205[6]	03/07/07	10:30	22.20	Sheen	--	-3.77	0.43	18.43
(18.43)	06/07/07	15:45	22.45	--	--	-4.02	--	18.43
	07/06/07	11:47	22.93	--	--	-4.50	--	18.43
	09/26/07	8:46	22.83	--	--	-4.40	--	18.43
	11/26/07	14:23	21.76	--	--	-3.33	--	18.43
	02/12/08	10:01	21.78	--	--	-3.35	--	18.43
(27.89)[s]	05/13/08	10:43	23.38	--	--	4.51	9.89	27.89
	09/03/08	--	22.68	--	--	5.21	--	27.89
	12/03/08	12:36	22.01	--	--	5.88	--	27.89
	02/17/09	10:59	21.40	--	--	6.49	--	27.89
	05/12/09	12:47	22.73	--	--	5.16	--	27.89
	05/26/09	13:36	23.06	--	--	4.83	--	27.89
	08/04/09	--	22.84	--	--	5.05	--	27.89
	08/28/09	15:34	22.71	--	--	5.18	--	27.89
	09/10/09	10:46	23.01	--	--	4.88	--	27.89
	04/13/10	11:07	22.62	--	--	5.27	--	27.89
	08/13/10	8:45	22.31	--	--	5.58	--	27.89
	08/16/10	14:18	21.50	--	--	6.39	--	27.89
	08/16/10	12:22	21.75	--	--	6.14	--	27.89
	09/14/10	11:59	22.66	--	--	5.23	--	27.89
	09/16/10	9:24	24.00	--	--	3.89	--	27.89
	09/16/10	9:25	24.00	--	--	3.89	--	27.89
	09/16/10	9:28	24.00	--	--	3.89	--	27.89
	09/16/10	15:05	22.42	--	--	5.47	--	27.89
	09/17/10	13:43	23.12	--	--	4.77	--	27.89
	09/17/10	13:48	23.11	--	--	4.78	--	27.89
	09/17/10	13:55	23.05	--	--	4.84	--	27.89
	09/17/10	14:00	23.05	--	--	4.84	--	27.89
	09/17/10	14:04	23.02	--	--	4.87	--	27.89
	09/17/10	14:09	23.03	--	--	4.86	--	27.89
	09/17/10	14:19	22.96	--	--	4.93	--	27.89
	09/17/10	14:26	22.92	--	--	4.97	--	27.89
	09/21/10	11:40	23.15	--	--	4.74	--	27.89
	09/28/10	8:15	23.05	Sheen[9]	--	4.84	--	27.89
	10/11/10	10:48	21.89	--	--	6.00	--	27.89
	11/19/10	16:51	22.81	--	--	5.08	--	27.89
	03/04/11	10:32	21.98	--	--	5.91	--	27.89
	04/25/11	14:20	22.04	--	--	5.85	--	27.89
	04/26/11	13:40	--	LNAPL	--	--	--	27.89
	05/12/11	7:49	22.68	--	--	5.21	--	27.89
	06/03/11	11:33	22.70	--	--	5.19	--	27.89
	06/09/11	14:48	22.66	Sheen	--	5.23	--	27.89
	09/21/11	10:13	23.60	--	--	4.29	--	27.89
	09/30/11	13:50	22.26	--	--	5.63	--	27.89
	10/06/11	14:35	22.31	--	--	5.58	--	27.89
	10/14/11	6:15	22.61	--	--	5.28	--	27.89
	10/21/11	6:30	22.40	--	--	5.49	--	27.89

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-205 (continued)	10/28/11	13:40	22.53	--	--	5.36	--	27.89
	11/04/11	13:05	22.42	--	--	5.47	--	27.89
	11/10/11	14:35	22.18	--	--	5.71	--	27.89
	11/21/11	10:43	22.76	--	--	5.13	--	27.89
	02/20/12	11:10	22.32	--	--	5.57	--	27.89
	04/17/12	11:45	23.03	--	--	4.86	--	27.89
	10/10/12	11:00	23.80	--	--	4.09	--	27.89
	12/24/12	10:10	20.73	--	--	7.16	--	27.89
	01/08/13	15:00	20.73	--	--	7.16	--	27.89
	04/30/13	10:45	21.91	--	--	5.98	--	27.89
	09/19/13	9:15	22.33	--	--	5.56	--	27.89
	11/22/13	9:40	22.69	--	--	5.20	--	27.89
	06/23/14	10:17	23.50	--	--	4.39	--	27.89
	12/15/14	12:30	20.78	--	--	7.11	--	27.89
(27.89)[s]	06/17/15	10:05	22.22	--	--	5.67	--	27.89
	12/09/15	10:27	19.51	--	--	8.38	--	27.89
	01/15/16	16:10	21.56	--	--	6.33	--	27.89
	02/16/16	8:10	21.28	--	--	6.61	--	27.89
	06/13/16	9:30	23.37	--	--	4.52	--	27.89
	09/22/16	12:58	22.31	--	--	5.58	--	27.89
	01/12/17	12:29	21.34	--	--	6.55	--	27.89
	03/27/17	12:40	19.89	--	--	8.00	9.89	27.89
	06/16/17	8:22	22.33	--	--	5.56	9.89	27.89
	11/07/17	11:59	21.89	--	--	6.00	9.89	27.89
	03/26/18	8:36	21.91	--	--	5.98	9.89	27.89
	06/19/18	15:02	22.80	--	--	5.09	9.89	27.89
	09/27/18	12:00	22.88	--	--	5.01	9.89	27.89
	12/12/18	14:15	21.38	--	--	6.51	9.89	27.89
	03/25/19	14:12	22.11	--	--	5.78	9.89	27.89
	06/24/19	16:58	23.66	--	--	4.23	9.89	27.89
	09/25/19	8:03	23.12	--	--	4.77	9.89	27.89
	12/16/19	15:14	21.75	--	--	6.14	9.89	27.89
	03/25/20	13:31	22.84			5.05	9.89	27.89
	06/17/20	9:17	22.94	--	--	4.95	9.89	27.89
	09/11/20	8:59	23.75	--	--	4.14	9.89	27.89
	11/17/20	10:20	20.78	--	--	7.11	9.89	27.89
	03/15/21	13:57	22.67	--	--	5.22	9.89	27.89
	06/09/21	11:49	23.23	--	--	4.66	9.89	27.89
	09/20/21	**12:11**	**23.36**	**Sheen**	**--**	**4.53**	**9.89**	**27.89**
	12/03/21	**10:12**	**21.82**	**Sheen**	**--**	**6.07**	**9.89**	**27.89**
MW-206[6]	03/07/07	9:15	9.15	--	--	-3.56	-5.41	5.59
(5.59)	06/07/07	13:26	10.24	--	--	-4.65	--	5.59
	07/06/07	9:22	10.84	--	--	-5.25	--	5.59
	09/26/07	7:35	10.21	--	--	-4.62	--	5.59
	11/26/07	15:08	8.47	--	--	-2.88	--	5.59
	02/12/08	10:28	8.69	--	--	-3.10	--	5.59
(15.15)[s]	05/13/08	9:59	11.80	--	--	3.35	4.15	15.15
	09/03/08	--	9.91	--	--	5.24	--	15.15
	10/01/08	9:30	9.21	--	--	5.94	--	15.15
	12/03/08	11:51	8.78	--	--	6.37	--	15.15
	02/17/09	10:29	8.28	--	--	6.87	--	15.15
	05/12/09	11:47	11.83	--	--	3.32	--	15.15
	05/26/09	13:59	13.30	--	--	1.85	--	15.15
	08/11/09	9:38	10.02	--	--	5.13	--	15.15
	08/28/09	14:07	9.78	--	--	5.37	--	15.15
	09/10/09	11:14	9.81	--	--	5.34	--	15.15
	04/13/10	11:27	12.60	--	--	2.55	--	15.15
	08/11/10	17:30	13.10	--	--	2.05	--	15.15
	08/16/10	11:52	9.70	--	--	5.45	--	15.15
	08/16/10	12:26	8.60	--	--	6.55	--	15.15
	08/18/10	9:07	13.10	--	--	2.05	--	15.15
	09/17/10	16:12	8.69	--	--	6.46	--	15.15
	09/17/10	17:55	10.03	--	--	5.12	--	15.15
	09/21/10	11:07	12.65	--	--	2.50	--	15.15
	09/22/10	9:20	11.09	--	--	4.06	--	15.15
	04/25/11	14:50	10.84	--	--	4.31	--	15.15
	09/21/11	10:52	11.00	--	--	4.15	--	15.15
	11/21/11	9:50	10.20	--	--	4.95	--	15.15
	02/20/12	11:32	11.31	--	--	3.84	--	15.15
	04/17/12	10:55	12.45	--	--	2.70	--	15.15
	10/10/12	12:00	10.65	--	--	4.50	--	15.15
	12/24/12	11:10	8.45	--	--	6.70	--	15.15
	01/08/13	15:48	8.47	--	--	6.68	--	15.15
	04/30/13	10:15	9.64	--	--	5.51	--	15.15
	09/19/13	9:42	12.46	--	--	2.69	--	15.15
	11/22/13	10:50	9.22	--	--	5.93	--	15.15
	06/23/14	9:41	13.04	--	--	2.11	--	15.15
	12/15/14	13:13	7.09	--	--	8.06	--	15.15
	06/17/15	10:45	10.67	--	--	4.48	--	15.15
	12/09/15	9:54	7.86	--	--	7.29	--	15.15
	02/16/16	8:50	8.51	--	--	6.64	--	15.15
	06/13/16	9:00	12.46	--	--	2.69	--	15.15
	09/22/16	12:34	8.90	--	--	6.25	--	15.15
	01/12/17	10:24	9.45	--	--	5.70	--	15.15
	03/27/17	12:58	11.59	--	--	3.56	4.15	15.15
	06/16/17	8:50	11.59	--	--	3.56	4.15	15.15
	11/07/17	12:59	10.18	--	--	4.97	4.15	15.15
	03/26/18	8:08	10.00	--	--	5.15	4.15	15.15
	06/19/18	15:38	12.92	--	--	2.23	4.15	15.15
	09/27/18	12:20	11.99	--	--	3.16	4.15	15.15
	12/12/18	15:06	9.79	--	--	5.36	4.15	15.15
	03/25/19	15:00	12.00	--	--	3.15	4.15	15.15
	06/24/19	16:20	12.80	--	--	2.35	4.15	15.15
	09/25/19	8:36	13.07	--	--	2.08	4.15	15.15
	12/16/19	14:38	9.65	--	--	5.50	4.15	15.15
	03/25/20	12:44	12:10	--	--	3.05	4.15	15.15
	06/17/20	8:55	12.39	--	--	2.76	4.15	15.15
	09/11/20	8:15	13.06	--	--	2.09	4.15	15.15
	11/17/20	9:42	7.13	--	--	8.02	4.15	15.15
	03/15/21	13:26	12.06	--	--	3.09	4.15	15.15
	06/09/21	11:15	12.94	--	--	2.21	4.15	15.15

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-206[6] (continued)	**09/20/21**	**11:39**	**12.97**	**--**	**--**	**2.18**	**4.15**	**15.15**
	12/03/21	**9:38**	**10.05**	**--**	**--**	**5.10**	**4.15**	**15.15**
MW-207[5]	03/07/07	10:40	10.64	--	--	-4.82	-3.68	5.82
(5.82)	06/07/07	17:10	10.53	--	--	-4.71	--	5.82
	07/06/07	9:10	11.20	--	--	-5.38	--	5.82
	09/26/07	7:25	10.30	--	--	-4.48	--	5.82
	11/26/07	15:03	8.84	--	--	-3.02	--	5.82
	02/12/08	10:31	8.90	--	--	-3.08	--	5.82
(15.40)[s]	05/13/08	9:53	12.07	--	--	3.33	5.90	15.40
	09/03/08	--	10.14	--	--	5.26	--	15.40
	10/01/08	8:10	9.51	--	--	5.89	--	15.40
	12/03/08	11:46	9.05	--	--	6.35	--	15.40
	02/17/09	10:25	8.40	--	--	7.00	--	15.40
	05/12/09	11:43	11.70	--	--	3.70	--	15.40
	05/26/09	14:03	13.52	--	--	1.88	--	15.40
	08/11/09	9:46	10.41	--	--	4.99	--	15.40
	08/28/09	13:45	10.35	--	--	5.05	--	15.40
	09/10/09	11:25	10.20	--	--	5.20	--	15.40
	04/13/10	11:30	12.43	--	--	2.97	--	15.40
	06/16/10	9:54	9.70	--	--	5.70	--	15.40
	08/13/10	13:30	12.52	--	--	2.88	--	15.40
	08/16/10	11:22	10.35	--	--	5.05	--	15.40
	08/16/10	11:25	10.32	--	--	5.08	--	15.40
	08/16/10	11:28	10.32	--	--	5.08	--	15.40
	08/16/10	11:31	10.29	--	--	5.11	--	15.40
	08/16/10	11:33	10.26	--	--	5.14	--	15.40
	08/16/10	11:37	10.25	--	--	5.15	--	15.40
	08/16/10	11:50	9.70	--	--	5.70	--	15.40
	09/21/10	11:02	12.55	--	--	2.85	--	15.40
	04/25/11	14:55	10.83	--	--	4.57	--	15.40
	09/21/11	10:55	11.45	--	--	3.95	--	15.40
	11/21/11	9:45	10.08	--	--	5.32	--	15.40
(15.40)[s]	02/20/12	11:36	11.25	--	--	4.15	--	15.40
	04/17/12	10:45	12.30	--	--	3.10	--	15.40
	10/10/12	12:05	11.19	--	--	4.21	--	15.40
	12/24/12	11:15	8.73	--	--	6.67	--	15.40
	01/08/13	15:52	8.42	--	--	6.98	--	15.40
	04/30/13	10:10	9.59	--	--	5.81	--	15.40
	09/19/13	9:45	12.23	--	--	3.17	--	15.40
	11/22/13	11:00	8.98	--	--	6.42	--	15.40
	06/23/14	9:01	12.88	--	--	2.52	--	15.40
	12/15/14	13:18	7.45	--	--	7.95	--	15.40
	06/17/15	10:55	10.24	--	--	5.16	--	15.40
	12/09/15	9:45	7.82	--	--	7.58	--	15.40
	01/15/16	15:38	10.63	--	--	4.77	--	15.40
	02/16/16	8:55	8.94	--	--	6.46	--	15.40
	06/13/16	8:55	12.48	--	--	2.92	--	15.40
	09/22/16	12:27	9.36	--	--	6.04	--	15.40
	01/12/17	10:11	9.24	--	--	6.16	--	15.40
	03/27/17	13:00	11.49	--	--	3.91	5.90	15.40
	06/16/17	8:53	10.25	--	--	5.15	5.90	15.40
	11/07/17	13:04	10.21	--	--	5.19	5.90	15.40
	03/26/18	8:00	10.01	--	--	5.39	5.90	15.40
	06/19/18	15:42	13.06	--	--	2.34	5.90	15.40
	09/27/18	12:13	11.70	--	--	3.70	5.90	15.40
	12/12/18	15:08	9.79	--	--	5.61	5.90	15.40
	03/25/19	15:09	11.69	--	--	3.71	5.90	15.40
	06/24/19	16:16	12.90	--	--	2.50	5.90	15.40
	09/25/19	8:43	13.27	--	--	2.13	5.90	15.40
	12/16/19	14:31	9.66	--	--	5.74	5.90	15.40
	03/25/20	12:38	11.82			3.58	5.90	15.40
	06/17/20	8:53	12.25	--	--	3.15	5.90	15.40
	09/11/20	8:12	13.36	--	--	2.04	5.90	15.40
	11/17/20	9:37	7.59	--	--	7.81	5.90	15.40
	03/15/21	13:18	11.82	--	--	3.58	5.90	15.40
	06/09/21	11:10	13.03	--	--	2.37	5.90	15.40
	09/20/21	**11:22**	**13.00**	**--**	**--**	**2.40**	**5.90**	**15.40**
	12/03/21	**9:37**	**10.05**	**--**	**--**	**5.35**	**5.90**	**15.40**
MW-209	02/16/16	9:45	8.26	--	--	7.27	--	15.53
(15.53)	06/13/16	9:50	10.31	--	--	5.22	--	15.53
	09/22/16	12:12	10.21	--	--	5.32	--	15.53
	01/12/17	11:51	8.01	--	--	7.52	--	15.53
	03/27/17	12:35	8.46	--	--	7.07	12.53	15.53
	06/16/17	9:26	9.59	--	--	5.94	12.53	15.53
	12/16/19	14:07	8.84	--	--	6.69	12.53	15.53
	03/25/20	13:54	9.80			5.73	12.53	15.53
	06/17/20	10:20	10.09	--	--	5.04	12.53	15.53
	09/11/20	9:28	10.51	--	--	5.02	12.53	15.53
	11/17/20	10:50	8.58	--	--	6.95	12.53	15.53
	03/15/21	14:20	9.53	--	--	6.00	12.53	15.53
	06/09/21	12:43	10.14	--	--	5.39	12.53	15.53
	09/20/21	**13:08**	**10.33**	**--**	**--**	**5.20**	**12.53**	**15.53**
	12/03/21	**11:05**	**8.88**	**--**	**--**	**6.65**	**12.53**	**15.53**
MW-210	02/16/16	9:50	7.52	--	--	7.61	--	15.13
(15.13)	06/13/16	9:45	9.59	--	--	5.54	--	15.13
	09/22/16	12:08	9.71	--	--	5.42	--	15.13
	01/12/17	11:56	8.31	--	--	6.82	--	15.13
	03/27/17	12:30	8.61	--	--	6.52	12.13	15.13
	06/16/17	9:24	8.94	--	--	6.19	12.13	15.13
	12/16/19	14:12	9.73	--	--	5.40	12.13	15.13
	03/25/20	9:23	8.93	--	--	6.09	12.13	15.13
	06/17/20	10:18	9.24	--	--	5.78	12.13	15.13
	09/11/20	9:24	9.68	--	--	5.45	12.13	15.13
	11/17/20	12:31	8.02	--	--	7.11	12.13	15.13
	03/15/21	14:16	8.81	--	--	6.32	12.13	15.13
	06/09/21	12:49	9.29	--	--	5.84	12.13	15.13
	09/20/21	**13:04**	**9.47**	**--**	**--**	**5.66**	**12.13**	**15.13**
	12/03/21	**11:02**	**6.21**	**--**	**--**	**8.92**	**12.13**	**15.13**
MW-211	02/16/16	9:55	7.91	--	--	7.11	--	15.02
(15.02)	06/13/16	9:40	9.79	--	--	5.23	--	15.02
	09/22/16	12:05	9.77	--	--	5.25	--	15.02

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-211 (continued)	01/12/17	11:59	8.18	--	--	6.84	--	15.02
	03/27/17	12:25	8.04	--	--	6.98	12.02	15.02
	06/16/17	9:20	9.55	--	--	5.47	12.02	15.02
	12/16/19	14:18	9.28	--	--	5.74	12.02	15.02
	03/25/20	13:46	9.28	--	--	6.33	12.02	15.02
	06/17/20	10:16	9.58	--	--	6.03	12.02	15.02
	09/11/20	9:20	10.02	--	--	5.00	12.02	15.02
	11/17/20	10:44	8.22	--	--	6.80	12.02	15.02
	03/15/21	14:14	9.02	--	--	6.00	12.02	15.02
	06/09/21	12:54	9.66	--	--	5.36	12.02	15.02
	09/20/21	**13:00**	**9.82**	**--**	**--**	**5.20**	**12.02**	**15.02**
	12/03/21	**10:59**	**8.45**	**--**	**--**	**6.57**	**12.02**	**15.02**
MW-70R	02/16/16	9:05	9.14	--	--	6.47	--	15.61
(15.61)	06/13/16	8:50	12.41	--	--	3.20	--	15.61
	09/22/16	12:30	9.69	--	--	5.92	--	15.61
	01/12/17	9:48	9.25	--	--	6.36	--	15.61
	03/27/17	13:05	11.41	--	--	4.20	11.61	15.61
	06/16/17	8:59	10.42	--	--	5.19	11.61	15.61
	11/07/17	13:09	10.32	--	--	5.29	11.61	15.61
	03/26/18	7:51	10.09	--	--	5.52	11.61	15.61
	06/19/18	15:45	12.64	--	--	2.97	11.61	15.61
	09/27/18	12:16	11.66	--	--	3.95	11.61	15.61
	12/12/18	15:15	9.88	--	--	5.73	11.61	15.61
	03/25/19	15:15	11.54	--	--	4.07	11.61	15.61
	06/24/19	16:12	12.63	--	--	2.98	11.61	15.61
	09/25/19	8:47	12.88	--	--	2.73	11.61	15.61
	12/16/19	14:26	9.76	--	--	5.85	11.61	15.61
	03/25/20	12:33	11.58	--	--	4.03	11.61	15.61
	06/17/20	8:51	11.93	--	--	3.68	11.61	15.61
	09/11/20	8:07	13.01	--	--	2.60	11.61	15.61
	11/17/20	9:34	7.82	--	--	7.79	11.61	15.61
	03/15/21	13:15	11.56	--	--	4.05	11.61	15.61
	06/09/21	12:49	12.49	--	--	3.12	11.61	15.61
	09/20/21	**11:12**	**12.50**	**--**	**--**	**3.11**	**11.61**	**15.61**
	12/03/21	**9:32**	**10.15**	**--**	**--**	**5.46**	**11.61**	**15.61**
RW-1	09/13/07	--	9.12	--	--	-4.47	--	4.65
(4.65)	11/01/07	10:45	9.60	--	--	-4.95	--	4.65
	11/26/07	11:57	8.43	--	--	-3.78	--	4.65
	12/07/07	11:55	7.00	--	--	-2.35	--	4.65
	12/19/07	9:25	7.75	--	--	-3.10	--	4.65
	01/03/08	9:05	7.78	--	--	-3.13	--	4.65
	01/30/07	8:34	8.22	--	--	-3.57	--	4.65
	02/12/08	9:00	8.55	--	--	-3.90	--	4.65
	03/03/08	8:58	8.88	--	--	-4.23	--	4.65
	03/17/08	8:52	8.80	--	--	-4.15	--	4.65
	04/01/08	8:49	8.79	--	--	-4.14	--	4.65
	04/14/08	8:51	8.85	--	--	-4.20	--	4.65
	04/28/08	9:01	8.90	--	--	-4.25	--	4.65
	05/13/08	9:10	9.25	--	--	-4.60	--	4.65
(14.20)[s]	05/27/08	10:25	9.05	--	--	5.15	--	14.20
	06/10/08	10:36	8.88	--	--	5.32	--	14.20
	06/24/08	9:15	8.98	--	--	5.22	--	14.20
	07/07/08	9:26	8.65	--	--	5.55	--	14.20
	07/22/08	9:15	8.88	--	--	5.32	--	14.20
	08/12/08	9:23	8.86	--	--	5.34	--	14.20
	09/03/08	--	9.13	--	--	5.07	--	14.20
	10/17/08	8:29	6.33	--	--	7.87	--	14.20
	10/29/08	8:17	9.23	--	--	4.97	--	14.20
	11/12/08	9:09	7.63	--	--	6.57	--	14.20
	12/03/08	11:25	9.82	--	--	4.38	--	14.20
	01/06/09	9:15	7.86	--	--	6.34	--	14.20
	01/20/09	12:20	8.34	--	--	5.86	--	14.20
	02/03/09	9:08	8.89	--	--	5.31	--	14.20
	02/17/09	9:06	8.41	--	--	5.79	--	14.20
	03/12/09	11:18	8.75	--	--	5.45	--	14.20
	03/25/09	9:05	8.62	--	--	5.58	--	14.20
	04/08/09	9:14	8.58	--	--	5.62	--	14.20
	04/30/09	9:20	8.55	--	--	5.65	--	14.20
	05/12/09	9:21	7.98	--	--	6.22	--	14.20
	05/26/09	13:19	8.24	--	--	5.96	--	14.20
	06/09/09	9:09	8.00	--	--	6.20	--	14.20
	06/25/09	9:19	8.08	--	--	6.12	--	14.20
	07/07/09	9:13	8.34	--	--	5.86	--	14.20
	09/10/09	9:52	8.98	--	--	5.22	--	14.20
	09/23/09	9:09	8.98	--	--	5.22	--	14.20
	10/08/09	9:24	9.01	--	--	5.19	--	14.20
	10/19/09	9:36	8.60	--	--	5.60	--	14.20
(14.20)[s]	11/12/09	9:10	7.75	--	--	6.45	--	14.20
	03/24/10	9:24	8.39	--	--	5.81	--	14.20
	04/13/10	10:15	8.29	--	--	5.91	--	14.20
	05/24/10	10:14	8.38	--	--	5.82	--	14.20
	09/21/10	9:59	8.00	--	--	6.20	--	14.20
	11/19/10	16:25	7.98	--	--	6.22	--	14.20
	03/04/11	9:12	7.96	--	--	6.24	--	14.20
	04/25/11	9:10	8.25	--	--	5.95	--	14.20
	09/21/11	8:30	8.94	--	--	5.26	--	14.20
	11/21/11	8:30	8.67	--	--	5.53	--	14.20
	02/20/12	9:55	8.41	--	--	5.79	--	14.20
	04/17/12	9:22	8.40	--	--	5.80	--	14.20
	10/10/12	9:40	9.41	--	--	4.79	--	14.20
	12/24/12	UNABLE TO ACCESS						14.20
	01/08/13	13:40	7.54	--	--	6.66	--	14.20
	04/30/13	9:20	8.31	--	--	5.89	--	14.20
	09/15/13	8:25	6.30	--	--	7.90	--	14.20
	11/22/13	8:00	9.04	--	--	5.16	--	14.20
	02/25/14	12:00	7.80	--	--	6.40	--	14.20
	05/05/14	8:45	7.30	--	--	6.90	--	14.20
	06/12/14	Well Decommissioned						14.20
RW-2	04/28/08	9:10	9.98	--	--	-5.51	--	4.47
(4.47)	05/13/08	9:08	8.29	--	--	-3.82	--	4.47
(14.3)[s]	05/27/08	10:23	9.12	--	--	5.18	--	14.30

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
RW-2 (continued)	06/10/08	10:38	9.00	--	--	5.30	--	14.30
	06/24/08	9:19	9.12	--	--	5.18	--	14.30
	07/07/08	9:30	8.86	--	--	5.44	--	14.30
	07/22/08	9:19	9.03	--	--	5.27	--	14.30
	08/12/08	9:27	8.78	--	--	5.52	--	14.30
	09/03/08	--	9.23	--	--	5.07	--	14.30
	10/17/08	8:35	6.34	--	--	7.96	--	14.30
	10/29/08	8:21	9.37	--	--	4.93	--	14.30
	11/12/08	9:13	6.32	--	--	7.98	--	14.30
	12/03/08	11:23	8.92	--	--	5.38	--	14.30
	01/06/09	9:18	6.84	--	--	7.46	--	14.30
	01/20/09	12:23	8.40	--	--	5.90	--	14.30
	02/03/09	9:13	9.08	--	--	5.22	--	14.30
	02/17/09	9:09	8.55	--	--	5.75	--	14.30
	03/12/09	11:21	8.91	--	--	5.39	--	14.30
	03/25/09	9:07	8.50	--	--	5.80	--	14.30
	04/08/09	9:18	8.68	--	--	5.62	--	14.30
	04/30/09	9:24	8.70	--	--	5.60	--	14.30
	05/12/09	9:15	8.15	--	--	6.15	--	14.30
	05/26/09	13:17	8.31	--	--	5.99	--	14.30
	06/09/09	9:13	8.21	--	--	6.09	--	14.30
	06/25/09	9:22	8.28	--	--	6.02	--	14.30
	07/07/09	9:17	8.49	--	--	5.81	--	14.30
	09/10/09	9:50	9.11	--	--	5.19	--	14.30
	09/23/09	9:12	9.10	--	--	5.20	--	14.30
	10/08/09	9:27	9.24	--	--	5.06	--	14.30
	10/19/09	9:40	8.72	--	--	5.58	--	14.30
	11/12/09	9:12	7.16	--	--	7.14	--	14.30
	03/24/10	9:28	8.42	--	--	5.88	--	14.30
	04/13/10	10:12	8.35	--	--	5.95	--	14.30
	05/24/10	10:16	8.46	--	--	5.84	--	14.30
	08/16/10	7:40	7.87	--	--	6.43	--	14.30
	08/16/10	7:42	7.87	--	--	6.43	--	14.30
	09/02/10	10:14	9.24	--	--	5.06	--	14.30
	09/02/10	10:42	9.25	--	--	5.05	--	14.30
	09/02/10	11:45	9.32	--	--	4.98	--	14.30
	09/02/10	11:46	9.32	--	--	4.98	--	14.30
	09/02/10	11:47	9.32	--	--	4.98	--	14.30
	09/02/10	11:48	9.32	--	--	4.98	--	14.30
	09/02/10	11:49	9.32	--	--	4.98	--	14.30
	09/02/10	11:55	9.33	--	--	4.97	--	14.30
	09/02/10	12:00	9.33	--	--	4.97	--	14.30
	09/02/10	12:05	9.33	--	--	4.97	--	14.30
	09/02/10	12:10	9.33	--	--	4.97	--	14.30
	09/02/10	12:15	9.34	--	--	4.96	--	14.30
	09/02/10	12:20	9.34	--	--	4.96	--	14.30
	09/02/10	12:25	9.34	--	--	4.96	--	14.30
	09/02/10	12:42	9.35	--	--	4.95	--	14.30
	09/02/10	13:00	9.36	--	--	4.94	--	14.30
	09/02/10	13:32	9.36	--	--	4.94	--	14.30
	09/03/10	9:12	9.52	--	--	4.78	--	14.30
	09/03/10	10:26	9.48	--	--	4.82	--	14.30
	09/03/10	10:54	9.55	--	--	4.75	--	14.30
	09/03/10	11:08	9.54	--	--	4.76	--	14.30
	09/21/10	9:57	8.10	--	--	6.20	--	14.30
	11/19/10	16:24	7.62	--	--	6.68	--	14.30
	03/04/11	9:16	7.80	--	--	6.50	--	14.30
	04/25/11	9:15	8.20	--	--	6.10	--	14.30
	09/21/11	8:33	8.39	--	--	5.91	--	14.30
	11/21/11	8:36	8.82	--	--	5.48	--	14.30
	02/20/12	9:57	8.53	--	--	5.77	--	14.30
(14.3)[u]	04/17/12	9:25	8.38	--	--	5.92	--	14.30
	10/10/12	9:50	9.26	--	--	5.04	--	14.30
	12/24/12			UNABLE TO ACCESS				14.30
	01/08/13	13:42	7.40	--	--	6.90	--	14.30
	04/30/13	9:25	8.35	--	--	5.95	--	14.30
	09/15/13	8:28	8.32	--	--	5.98	--	14.30
	11/22/13	8:05	9.22	--	--	5.08	--	14.30
	02/25/14	11:52	7.54	--	--	6.76		14.30
	05/05/14	08:55	7.00	--	--	7.30		14.30
	06/12/14			Well Decommissioned				14.30
RW-3	09/13/07	--	9.45	--	--	-4.75	--	4.70
(4.70)	11/01/07	10:52	10.00	--	--	-5.30	--	4.70
	11/26/07	12:00	8.60	--	--	-3.90	--	4.70
	12/07/07	11:50	7.10	--	--	-2.40	--	4.70
	12/19/07	9:20	7.63	--	--	-2.93	--	4.70
	01/03/08	9:07	7.49	--	--	-2.79	--	4.70
	01/30/08	8:38	8.44	--	--	-3.74	--	4.70
	02/12/08	9:30	8.84	--	--	-4.14	--	4.70
	03/03/08	9:02	9.11	--	--	-4.41	--	4.70
	03/17/08	8:58	8.91	--	--	-4.21	--	4.70
	04/01/08	8:43	9.01	--	--	-4.31	--	4.70
	04/14/08	8:44	9.16	--	--	-4.46	--	4.70
	04/28/08	9:16	9.10	--	--	-4.40	--	4.70
(14.3)[u]	05/13/08	9:03	9.53	--	--	4.77	--	14.30
	05/27/08	10:20	9.36	--	--	4.94	--	14.30
	06/10/08	10:41	9.34	Sheen	--	4.96	--	14.30
	06/24/08	9:23	9.34	--	--	4.96	--	14.30
	07/07/08	9:34	9.04	--	--	5.26	--	14.30
	07/22/08	9:22	9.21	--	--	5.09	--	14.30
	08/12/08	9:30	9.21	--	--	5.09	--	14.30
	09/03/08	--	9.51	--	--	4.79	--	14.30
	10/17/08	8:39	9.60	--	--	4.70	--	14.30
	10/29/08	8:26	9.53	--	--	4.77	--	14.30
	11/12/08	9:17	7.10	--	--	7.20	--	14.30
	12/03/08	11:19	8.04	--	--	6.26	--	14.30
	01/06/09	9:21	7.69	--	--	6.61	--	14.30
	01/20/09	12:26	8.58	--	--	5.72	--	14.30
	02/03/09	9:17	9.22	Sheen	--	5.08	--	14.30
	02/17/09	9:11	8.69	--	--	5.61	--	14.30
	03/12/09	11:24	9.08	--	--	5.22	--	14.30

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
RW-3 (continued)	03/25/09	9:09	8.91	8.90	0.01	5.39	--	14.30
	04/08/09	9:20	8.83	8.82	0.01	5.47	--	14.30
	04/30/09	9:25	8.90	Sheen	--	5.40	--	14.30
	05/12/09	9:26	8.45	Sheen	--	5.85	--	14.30
	05/26/09	14:38	9.09	--	--	5.21	--	14.30
	06/09/09	9:16	8.40	--	--	5.90	--	14.30
	06/25/09	9:23	8.35	--	--	5.95	--	14.30
	07/07/09	9:21	8.62	--	--	5.68	--	14.30
	08/20/09	8:26	8.60	Sheen	--	5.70	--	14.30
	08/28/09	16:00	9.76	--	--	4.54	--	14.30
	09/10/09	9:47	9.54	--	--	4.76	--	14.30
	09/23/09	9:16	9.41	Sheen	--	4.89	--	14.30
	10/08/09	9:30	9.46	--	--	4.84	--	14.30
	10/19/09	9:45	9.13	--	--	5.17	--	14.30
	11/12/09	9:15	8.36	--	--	5.94	--	14.30
	03/24/10	9:31	8.60	Sheen	--	5.70	--	14.30
	04/13/10	10:09	8.58	--	--	5.72	--	14.30
	05/24/10	10:18	8.82	--	--	5.48	--	14.30
	08/16/10	7:40	8.40	--	--	5.90	--	14.30
	08/16/10	7:50	8.36	--	--	5.94	--	14.30
	09/02/10	10:13	9.81	--	--	4.49	--	14.30
	09/02/10	10:40	9.79	--	--	4.51	--	14.30
	09/21/10	9:55	8.58	--	--	5.72	--	14.30
	11/19/10	16:32	7.73	--	--	6.57	--	14.30
	03/04/11	9:19	7.92	--	--	6.38	--	14.30
	04/25/11	9:30	8.43	--	--	5.87	--	14.30
	09/21/11	8:37	8.39	--	--	5.91	--	14.30
	11/21/11	8:43	9.00	--	--	5.30	--	14.30
	02/20/12	10:00	8.60	--	--	5.70	--	14.30
	04/17/12	9:30	8.58	--	--	5.72	--	14.30
	10/10/12	9:55	9.67	--	--	4.63	--	14.30
	12/24/12			UNABLE TO ACCESS				14.30
	01/08/13	13:43	7.46	--	--	6.84	--	14.30
	04/30/13	9:28	8.49	LNAPL on probe	--	5.81	--	14.30
	09/15/13	8:31	8.65	--	--	5.65	--	14.30
	11/22/13	8:10	9.55	--	--	4.75	--	14.30
	02/25/14	11:15	7.67			6.63		14.30
	05/05/14	8:04	7.50			6.80		14.30
	06/12/14			Well Decommissioned				14.30
RW-4				UNABLE TO LOCATE				
RW-5	09/13/07	--	8.6	--	--	5.30	--	13.90
(13.9)[e]	11/01/07	11:00	9.4	--	--	4.50	--	13.90
	11/26/07	12:05	7.89	--	--	6.01	--	13.90
	12/07/07	11:45	6.4	--	--	7.50	--	13.90
	12/19/07	9:15	2.2	--	--	11.70	--	13.90
(13.9)[e]	05/13/08	9:01	8.72	--	--	5.18	--	13.90
	09/03/08	--	8.74	--	--	5.16	--	13.90
	12/03/08	11:16	8.45	--	--	5.45	--	13.90
	02/17/09	9:14	7.77	Sheen	--	6.13	--	13.90
	05/12/09	9:12	7.48	--	--	6.42	--	13.90
	05/26/09	13:15	7.94	--	--	5.96	--	13.90
	09/10/09	9:44	8.95	--	--	4.95	--	13.90
	04/13/10	10:07	7.75	--	--	6.15	--	13.90
	09/21/10	9:52	7.82	--	--	6.08	--	13.90
	04/25/11			UNABLE TO LOCATE				13.90
	09/21/11	8:48	8.52	--	--	5.38	--	13.90
	11/21/11	8:49	8.52	--	--	5.38	--	13.90
	02/20/12	10:02	7.85	--	--	6.05	--	13.90
	04/17/12	9:35	7.82	--	--	6.08	--	13.90
	10/10/12	10:02	9.00	--	--	4.90		13.90
	12/24/12			UNABLE TO ACCESS				13.90
	01/08/13	13:44	6.90	--	--	7.00	--	13.90
	04/30/13	9:35	7.75	--	--	6.15	--	13.90
	09/15/13	8:34	8.00	--	--	5.90	--	13.90
	11/22/13	8:15	9.20	--	--	4.70	--	13.90
	02/25/14	11:35	7.43	--	--	6.47	--	13.90
	05/05/14	09:27	7.23	--	--	6.67	--	13.90
	06/11/14			Well Decommissioned				13.90
RW-6	05/13/08[7]	8:58	8.35	--	--	5.55	--	13.90
(13.9)[e]	09/03/08	--	8.14	--	--	5.76	--	13.90
	12/03/08	11:13	7.95	--	--	5.95	--	13.90
	02/17/09	9:17	7.80	--	--	6.10	--	13.90
	05/12/09	9:10	7.57	--	--	6.33	--	13.90
	05/26/09	13:12	7.65	--	--	6.25	--	13.90
	09/10/09	9:43	7.90	--	--	6.00	--	13.90
	04/13/10	10:05	7.42	--	--	6.48	--	13.90
	09/21/10	9:50	6.74	--	--	7.16	--	13.90
	04/25/11			UNABLE TO LOCATE				13.90
	09/21/11			UNABLE TO LOCATE				13.90
	11/21/11			UNABLE TO LOCATE				13.90
	02/20/12			UNABLE TO LOCATE				13.90
	04/17/12			UNABLE TO LOCATE				13.90
	10/10/12			UNABLE TO LOCATE				13.90
	12/24/12			UNABLE TO ACCESS				13.90
	01/08/13	13:45	6.87	--	--	7.03	--	13.90
	04/30/13	9:40	7.60	--	--	6.30	--	13.90
	09/15/13	8:40	7.73	--	--	6.17	--	13.90
	11/22/13	8:20	8.02	--	--	5.88	--	13.90
	02/25/14	11:25	6.98	--	--	6.92	--	13.90
	05/05/14	09:36	7.02	--	--	6.88	--	13.90
	06/11/14			Well Decommissioned				13.90
RW-7	09/13/07	--	8.75	--	--	5.45	--	14.20
(14.2)[e]	11/01/07	11:20	9.3	--	--	4.90	--	14.20
	11/26/07	12:07	8.1	--	--	6.10	--	14.20
	12/07/07	11:40	6.45	--	--	7.75	--	14.20
	12/07/07	9:10	6.4	--	--	7.80	--	14.20
	05/13/08	8:43	8.80	--	--	5.40	--	14.20
	09/03/08	--	8.84	--	--	5.36	--	14.20
	12/03/08	11:11	8.60	--	--	5.60	--	14.20
	02/17/09	9:20	8.95	--	--	5.25	--	14.20
	05/12/09	9:08	7.41	--	--	6.79	--	14.20

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
RW-7 (continued)	05/26/09	13:10	7.81	--	--	6.39	--	14.20
	08/04/09	--	8.18	--	--	6.02	--	14.20
	09/10/09	9:40	8.83	--	--	5.37	--	14.20
	04/13/10	10:03	7.78	--	--	6.42	--	14.20
	09/21/10	9:47	7.88	--	--	6.32	--	14.20
	04/25/11	9:40	7.62	--	--	6.58	--	14.20
	09/21/11	8:51	8.49	--	--	5.71	--	14.20
	11/21/11	8:56	4.62	--	--	9.58	--	14.20
	02/20/12	10:04	7.92	--	--	6.28	--	14.20
	04/17/12	9:40	7.87	--	--	6.33	--	14.20
	10/10/12	10:07	8.99	--	--	5.21	--	14.20
	12/24/12			UNABLE TO ACCESS				14.20
	01/08/13	13:46	6.24	--	--	7.96	--	14.20
	04/30/13	9:43	7.92	--	--	6.28	--	14.20
	09/15/13	8:40	8.08	--	--	6.12	--	14.20
	11/22/13	8:25	8.95	--	--	5.25	--	14.20
	02/25/14	11:15	7.40	--	--	6.80	--	14.20
	05/05/14	09:46	7.40	--	--	6.80	--	14.20
	06/11/14			Well Decommissioned				14.20
RW-8	09/13/07	--	8.75	--	--	5.15	--	13.90
(13.9)[e]	11/01/07	11:25	8.9	--	--	5.00	--	13.90
	11/26/07	12:09	7.9	--	--	6.00	--	13.90
	12/07/07	11:35	6.07	--	--	7.83	--	13.90
	12/19/07	9:05	7.18	--	--	6.72	--	13.90
	05/13/08	8:39	8.59	--	--	5.31	--	13.90
	09/03/08	--	8.53	--	--	5.37	--	13.90
	12/03/08	11:09	8.20	--	--	5.70	--	13.90
	02/17/09	9:24	7.70	--	--	6.20	--	13.90
	05/12/09	9:05	7.41	--	--	6.49	--	13.90
(13.9)[e]	05/26/09	13:07	7.59	--	--	6.31	--	13.90
	09/10/09	9:38	8.61	--	--	5.29	--	13.90
	04/13/10	10:00	7.39	--	--	6.51	--	13.90
	09/21/10	9:43	7.58	--	--	6.32	--	13.90
	04/25/11	9:45	7.21	--	--	6.69	--	13.90
	09/21/11	8:53	8.15	--	--	5.75	--	13.90
	11/21/11	9:03	8.24	--	--	5.66	--	13.90
	02/20/12	10:05	7.55	--	--	6.35	--	13.90
	04/17/12	9:45	7.56	--	--	6.34	--	13.90
	10/10/12	10:10	8.61	--	--	5.29	--	13.90
	12/24/12			UNABLE TO ACCESS				13.90
	01/08/13	13:54	6.65	--	--	7.25	--	13.90
	04/30/13	9:48	7.52	--	--	6.38	--	13.90
	09/15/13	8:43	7.71	--	--	6.19	--	13.90
	11/22/13	8:30	8.55	--	--	5.35	--	13.90
	02/25/14	11:00	7.00	--	--	6.90	--	13.90
	05/05/14	10:04	7.11	--	--	6.79	--	13.90
	06/11/14			Well Decommissioned				13.90
RW-9	09/13/07	--	8.45	--	--	5.65	--	14.10
(14.1)[e]	11/01/07	11:30	7.4	--	--	6.70	--	14.10
	11/26/07	12:11	7.44	--	--	6.66	--	14.10
	12/07/07	11:32	5.55	--	--	8.55	--	14.10
	12/19/07	9:00	6.15	--	--	7.95	--	14.10
	05/13/08	8:33	8.61	--	--	5.49	--	14.10
	09/03/08	--	7.38	--	--	6.72	--	14.10
	12/03/08	11:06	6.95	--	--	7.15	--	14.10
	02/17/09	9:27	6.80	--	--	7.30	--	14.10
	05/12/09	9:03	7.22	--	--	6.88	--	14.10
	05/26/09	13:04	10.06	--	--	4.04	--	14.10
	09/10/09	9:34	7.47	--	--	6.63	--	14.10
	04/13/10	9:57	8.28	--	--	5.82	--	14.10
	09/21/10	9:40	8.47	--	--	5.63	--	14.10
	04/25/11	9:50	7.29	--	--	6.81	--	14.10
	09/21/11	8:54	8.20	--	--	5.90	--	14.10
	11/21/11	9:08	7.68	--	--	6.42	--	14.10
	02/20/12	10:07	7.78	--	--	6.32	--	14.10
	04/17/12	9:50	8.02	--	--	6.08	--	14.10
	10/10/12	10:15	8.35	--	--	5.75	--	14.10
	12/24/12			UNABLE TO ACCESS				14.10
	01/08/13	13:55	5.55	--	--	8.55	--	14.10
	04/30/13	9:51	7.02	--	--	7.08	--	14.10
	09/15/13	8:49	8.88	--	--	5.22	--	14.10
	11/22/13	8:35	7.06	--	--	7.04	--	14.10
	02/25/14	10:50	6.28	--	--	7.82	--	14.10
	05/05/14	10:18	6.70	--	--	7.40	--	14.10
	06/10/14			Well Decommissioned				14.10
RW-10	09/13/07	--	8.9	--	--	5.40	--	14.30
(14.3)[e]	11/01/07	11:40	8.7	--	--	5.60	--	14.30
	11/26/07	12:12	7.89	--	--	6.41	--	14.30
	12/07/07	11:29	6.26	--	--	8.04	--	14.30
	12/19/07	8:55	7.25	--	--	7.05	--	14.30
	05/13/08	8:31	8.86	--	--	5.44	--	14.30
	09/03/08	--	8.41	--	--	5.89	--	14.30
	12/03/08	11:03	7.87	--	--	6.43	--	14.30
	02/17/09	9:28	7.90	--	--	6.40	--	14.30
	05/12/09	9:01	7.47	--	--	6.83	--	14.30
	05/26/09	13:02	8.95	--	--	5.35	--	14.30
	09/10/09	9:32	8.58	--	--	5.72	--	14.30
	04/13/10	9:55	7.80	--	--	6.50	--	14.30
	09/21/10	9:38	8.12	--	--	6.18	--	14.30
	04/25/11	9:51	6.70	--	--	7.60	--	14.30
	09/21/11	8:56	8.76	--	--	5.54	--	14.30
	11/21/11	9:14	8.42	--	--	5.88	--	14.30
	02/20/12	10:10	7.75	--	--	6.55	--	14.30
	04/17/12	9:53	7.90	--	--	6.40	--	14.30
	10/10/12	10:18	9.09	--	--	5.21	--	14.30
	12/24/12			UNABLE TO ACCESS				14.30
	01/08/13	13:59	6.32	--	--	7.98		14.30
	04/30/13	9:51	7.46	--	--	6.84	--	14.30
	09/15/13	8:55	8.66	--	--	5.64	--	14.30
	11/22/13	8:40	8.22	--	--	6.08	--	14.30

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
RW-10 (continued)	02/25/14	10:38	7.07	--	--	7.23	--	14.30
	05/05/14	10:33	7.22	--	--	7.08	--	14.30
	06/10/14			Well Decommissioned				14.30
RW-11	12/07/07	11:14	6.5	--	--	7.60	--	14.10
(14.1)[g]	12/19/07	8:50	7.6	--	--	6.50	--	14.10
	05/13/08	8:28	8.86	--	--	5.24	--	14.10
	09/03/08	--	8.79	--	--	5.31	--	14.10
	12/03/08	11:01	8.26	--	--	5.84	--	14.10
	02/17/09	9:31	7.80	--	--	6.30	--	14.10
RW-11 (continued)	05/12/09	8:59	7.64	--	--	6.46	--	14.10
	05/26/09	12:59	8.33	--	--	5.77	--	14.10
	09/10/09	9:29	8.61	--	--	5.49	--	14.10
	04/13/10	9:53	7.85	--	--	6.25	--	14.10
	09/21/10	9:35	7.98	--	--	6.12	--	14.10
(14.1)[g]	04/25/11	9:55	7.46	--	--	6.64	--	14.10
	09/21/11	8:57	8.77	--	--	5.33	--	14.10
	11/21/11	9:20	8.52	--	--	5.58	--	14.10
	02/20/12	10:11	7.92	--	--	6.18	--	14.10
	04/17/12	10:00	7.90	--	--	6.20	--	14.10
	10/10/12	10:21	9.12	--	--	4.98	--	14.10
	12/24/12			UNABLE TO ACCESS				14.10
	01/08/13	14:00	6.74	--	--	7.36	--	14.10
	04/30/13	9:54	7.73	--	--	6.37	--	14.10
	09/15/13	8:58	8.50	--	--	5.60	--	14.10
	11/22/13	8:45	8.90	--	--	5.20	--	14.10
	02/25/14	10:30	7.40	--	--	6.70	--	14.10
	05/05/14	10:45	7.51	--	--	6.59	--	14.10
	06/10/14			Well Decommissioned				14.10
RW-12	12/07/07	11:08	6.78	--	--	7.22	--	14.00
(14.0)[g]	12/19/07	8:40	7.88	--	--	6.12	--	14.00
	05/13/08	8:25	8.97	--	--	5.03	--	14.00
	09/03/08	--	9.02	--	--	4.98	--	14.00
	12/03/08	10:48	8.56	--	--	5.44	--	14.00
	02/17/09	9:33	7.85	--	--	6.15	--	14.00
	05/12/09	8:56	7.76	--	--	6.24	--	14.00
	05/26/09	12:55	8.37	--	--	5.63	--	14.00
	09/10/09	9:27	9.22	--	--	4.78	--	14.00
	04/13/10	9:50	7.93	--	--	6.07	--	14.00
	09/21/10			UNABLE TO LOCATE				14.00
	04/25/11			UNABLE TO LOCATE				14.00
	09/21/11			UNABLE TO LOCATE				14.00
	11/21/11			UNABLE TO LOCATE				14.00
	02/20/12			UNABLE TO LOCATE				14.00
	04/17/12			UNABLE TO LOCATE				14.00
	10/10/12			UNABLE TO LOCATE				14.00
	12/24/12			UNABLE TO ACCESS				14.00
	01/08/13			UNABLE TO LOCATE				14.00
	04/30/13			UNABLE TO LOCATE				14.00
	09/15/13			UNABLE TO LOCATE				14.00
	11/22/13			UNABLE TO LOCATE				14.00
	06/09/14			UNABLE TO LOCATE DURING FINAL DECOMMISSIONING ACTIVITIES				14.00
RW-13	12/07/07	11:05	6.83	--	--	7.27	--	14.10
(14.1)[g]	12/19/07	8:35	7.5	--	--	6.60	--	14.10
	05/13/08	8:22	9.01	--	--	5.09	--	14.10
	09/03/08	--	9.05	--	--	5.05	--	14.10
	12/03/08	10:45	8.64	--	--	5.46	--	14.10
	02/17/09	9:36	8.22	--	--	5.88	--	14.10
	05/12/09	8:53	7.85	--	--	6.25	--	14.10
	05/26/09	12:53	8.48	--	--	5.62	--	14.10
	09/10/09	9:22	8.89	--	--	5.21	--	14.10
	04/13/10	9:47	8.01	--	--	6.09	--	14.10
	09/21/10	9:30	8.15	--	--	5.95	--	14.10
	04/25/11	10:00	7.51	--	--	6.59	--	14.10
	09/21/11	9:00	8.99	--	--	5.11	--	14.10
	11/21/11	9:27	8.56	--	--	5.54	--	14.10
	02/20/12	10:13	8.24	--	--	5.86	--	14.10
	04/17/12	10:04	8.21	--	--	5.89	--	14.10
	10/10/12	10:25	9.47	--	--	4.63	--	14.10
	12/24/12			UNABLE TO ACCESS				14.10
	01/08/13	14:02	7.07	--	--	7.03	--	14.10
	04/30/13	9:56	7.96	--	--	6.14	--	14.10
	09/15/13	9:01	8.68	--	--	5.42	--	14.10
	11/22/13	8:50	9.25	--	--	4.85	--	14.10
	02/25/14	10:00	8.16	--	--	5.94	--	14.10
	05/05/14	11:00	7.65	--	--	6.45	--	14.10
	06/10/14			Well Decommissioned				14.10
RW-14				UNABLE TO LOCATE				
RW-15	09/13/07	--	8.83	--	--	5.07	--	13.90
(13.9)[g]	11/01/07	11:50	9	--	--	4.90	--	13.90
	11/26/07	12:18	8.4	--	--	5.50	--	13.90
	12/07/07	10:56	6.55	--	--	7.35	--	13.90
	12/19/07	8:25	6.31	--	--	7.59	--	13.90
	05/13/08	8:17	8.97	--	--	4.93	--	13.90
	09/03/08	--	8.52	--	--	5.38	--	13.90
	12/03/08	10:40	8.31	--	--	5.59	--	13.90
	02/17/09	9:44	8.24	--	--	5.66	--	13.90
	05/12/09	8:50	8.19	--	--	5.71	--	13.90
	05/26/09	12:48	8.25	--	--	5.65	--	13.90
	09/10/09	9:20	5.52	--	--	8.38	--	13.90
	04/13/10	9:45	7.88	--	--	6.02	--	13.90
	09/21/10			UNABLE TO LOCATE				13.90
	04/25/11			UNABLE TO LOCATE				13.90
	09/21/11			UNABLE TO LOCATE				13.90
	11/21/11			UNABLE TO LOCATE				13.90
	2/20/12			UNABLE TO LOCATE				13.90
	04/17/12			UNABLE TO LOCATE				13.90

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
RW-15 (continued)	10/10/12	UNABLE TO LOCATE						13.90
	12/24/12	UNABLE TO LOCATE						13.90
	01/08/13	UNABLE TO LOCATE						13.90
(13.9)[8]	04/30/13	UNABLE TO LOCATE						13.90
	09/15/13	UNABLE TO LOCATE						13.90
	11/22/13	UNABLE TO LOCATE						13.90
	06/09/14	UNABLE TO LOCATE DURING FINAL DECOMMISSIONING ACTIVITIES						13.90
RW-21	09/13/07	--	9.85	Sheen	--	5.45	--	15.30
(5.87)	11/01/07	10:35	9.90	7.90	2.00	7.00	--	15.30
	11/26/07	12:23	--	Sheen	--	--	--	15.30
	12/07/07	9:40	6.90	Sheen	--	8.40	--	15.30
	12/19/07	--	7.79	--	--	7.51	--	15.30
	01/03/07	9:25	7.88	--	--	7.42	--	15.30
	01/30/07	8:44	8.67	--	--	6.63	--	15.30
	02/12/08	9:11	8.80	--	--	6.50	--	15.30
	03/03/08	9:10	9.25	--	--	6.05	--	15.30
	03/17/08	9:07	9.21	--	--	6.09	--	15.30
	04/01/08	9:05	9.09	--	--	6.21	--	15.30
	04/14/08	8:55	9.32	--	--	5.98	--	15.30
	04/28/08	9:24	9.33	--	--	5.97	--	15.30
	05/13/08	UNABLE TO ACCESS						15.30
(15.3)[8]	05/27/08	11:20	9.45	--	--	5.85	--	15.30
	06/10/08	10:45	9.21	--	--	6.09	--	15.30
	06/24/08	9:29	9.49	--	--	5.81	--	15.30
	07/07/08	9:39	9.19	--	--	6.11	--	15.30
	07/22/08	9:00	9.38	--	--	5.92	--	15.30
	08/12/08	9:36	9.35	--	--	5.95	--	15.30
	09/03/08	--	9.36	Sheen	--	5.94	--	15.30
	10/08/08	8:30	9.72	Sheen	--	5.58	--	15.30
	10/17/08	8:41	9.50	--	--	5.80	--	15.30
	10/29/08	8:31	9.58	--	--	5.72	--	15.30
	11/12/08	9:27	7.83	--	--	7.47	--	15.30
	12/03/08	10:10	9.22	9.20	0.02	6.10	--	15.30
	01/06/09	9:26	7.89	Sheen	--	7.41	--	15.30
	01/20/09	12:29	8.56	8.55	0.01	6.75	--	15.30
	02/03/09	9:24	9.20	Sheen	--	6.10	--	15.30
	02/17/09	9:50	9.05	Sheen	--	6.25	--	15.30
	03/12/09	11:31	9.16	Sheen	--	6.14	--	15.30
	03/25/09	9:24	9.01	Sheen	--	6.29	--	15.30
	04/08/09	9:57	8.91	8.90	0.01	6.40	--	15.30
	04/30/09	9:49	8.88	Sheen	--	6.42	--	15.30
	05/12/09	9:43	8.45	8.44	0.01	6.86	--	15.30
	05/26/09	14:48	8.82	--	--	6.48	--	15.30
	06/09/09	9:26	8.64	--	--	6.66	--	15.30
	06/25/09	9:29	8.68	--	--	6.62	--	15.30
	07/07/09	9:26	8.95	Sheen	--	6.35	--	15.30
	07/13/09	8:05	9.45	--	--	5.85	--	15.30
	08/05/09	6:45	8.96	Sheen	--	6.34	--	15.30
	08/06/09	9:18	9.06	--	--	6.24	--	15.30
	08/20/09	8:34	9.15	--	--	6.15	--	15.30
	09/10/09	9:57	9.28	--	--	6.02	--	15.30
	09/23/09	9:21	9.25	Sheen	--	6.05	--	15.30
	10/08/09	9:16	9.31	Sheen	--	5.99	--	15.30
	10/19/09	9:50	9.23	Sheen	--	6.07	--	15.30
	11/12/09	9:19	7.82	Sheen	--	7.48	--	15.30
	03/24/10	9:37	8.62	Sheen	--	6.68	--	15.30
	04/13/10	10:19	8.61	Sheen	--	6.69	--	15.30
	05/26/10	9:32	8.73	Sheen	--	6.57	--	15.30
	09/21/10	10:05	8.46	Sheen	--	6.84	--	15.30
	11/19/10	16:01	9.21	Sheen	--	6.09	--	15.30
	03/04/11	9:31	8.18	Sheen	--	7.12	--	15.30
	04/25/11	8:50	8.50	8.49	0.01	6.81	--	15.30
	09/21/11	9:18	9.20	LNAPL on probe	--	6.10	--	15.30
	11/21/11	9:34	9.03	--	--	6.27	--	15.30
	02/20/12	10:23	8.76	LNAPL on probe	--	6.54	--	15.30
	04/17/12	10:10	8.65	--	--	6.65	--	15.30
	10/10/12	9:20	9.70	LNAPL on probe	--	5.60	--	15.30
	12/24/12	UNABLE TO ACCESS						15.30
	01/08/13	UNABLE TO ACCESS						15.30
	04/30/13	10:00	8.74	Tar on probe	--	6.56		15.30
	09/19/13	10:10	9.43	Tar on probe	--	5.87	--	15.30
	11/22/13	8:55	10.23	--	--	5.07	--	15.30
	06/12/14	Well Decommissioned						15.30

Notes:

[1]Well casing elevations listed in feet above mean sea level. Approximate monitoring well locations are shown in Figure 2.

"--" = not measured or not obtainable

[2]Below top of casing.

[3]Light non-aqueous phase liquid

[4]Elevation referenced to city of Seattle datum.

[5]Top of well screen elevation data from historic records.

[6]TOC elevations for wells MW-200 to 207, MW-27R, and MW-61A-R were surveyed using an arbitrary datum point, 9.65 feet lower than the datum from the upper well survey.

[7]Depth to water was measured with pump in well.

[8]Survey by OTAK 5/27/08.

[9]Groundwater elevation recorded prior to pump testing at the site. Sheen observed on extracted groundwater during hydraulic conductivity testing on well MW-205.

[10]LNAPL indicated in field notes, measurement not taken

[11]TOC elevations for wells PZ-61A-R, PZ-203, and PZ-204 unknown.

NR = Not reported.

UK = TOC elevations unknown.

* MW-30 could not be gauged due to the presence of viscous substance, suspected to be LNAPL, interfering with the oil/water interface probe.

Bolded data are for the current reporting period.

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
Upper Yard RALs			***No visible sheen***	***40***	***14,300***	***1,400***	***4,400***	***--***	***1***	***10***	***15***	***50***
Upper Yard												
MW-37		06/01/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-37		10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-37		01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-37		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
MW-37		09/15/95	ND	<0.50	<0.50	<0.50	<1.0	--	<1.0	<1.0	<0.75	--
MW-37		12/14/95	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	<0.27	<0.75	--
MW-38		06/01/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-38		10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-38		01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-38		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
MW-39		01/17/91	--	<0.5	0.5	0.6	2.2	--	<1	<1	--	<5
MW-39		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	--
MW-40		06/01/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-40		10/16/90	--	<0.5	1.0	0.6	<0.5	<1	--	--	--	<5
MW-40		01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-40		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	--
MW-61A		03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.956	2.14	<0.750	--
MW-61A		06/18/98	ND	<2.50	<2.50	<2.50	<5.00	--	1.01	3.49	<0.750	
MW-61A		09/03/98	ND	<0.500	<0.500	<0.500	<0.500	--	0.396	1.85	<0.750	<1.00
MW-61A		12/15/98	Sheen	<2.50	<2.50	2.82	12.8	--	10.2	146/73.0	<30.8/<15.8	--
MW-61A	Duplicate	12/15/98	Sheen	<2.50	<2.50	<2.50	5.81	--	2.93	32.3/14.6	<3.75/<0.750	--
MW-61A		03/23/99	Sheen	<0.500	<0.500	2.56	13.8	--	4.34	39.7/32.7	<8.25/<3.75	--
MW-61A	Duplicate	03/23/99	Sheen	<2.50	<2.50	<2.50	<5.00	--	1.56	52.8/42.1	<8.25/<8.25	--
MW-61A		07/01/99	ND	<0.500	<0.500	<0.900	<3.70	--	1.38[4]	4.43/2.08	<0.750/<0.750	<1.00
MW-61A	Duplicate	07/01/99	ND	<1.00	<1.00	<1.40	<5.60	--	1.30[4]	4.45/3.08	<0.750/<0.750	--
MW-61A		09/29/99	Sheen	<0.500	<5.00	<5.00	<1.00	--	2.16[5]	7.57/4.04	<0.750/<0.750	--
MW-61A	Duplicate	09/29/99	Sheen	<0.500	<0.500	<5.00	<10.0	--	2.80[5]	19.7/21.1	0.758/<1.57	--
MW-61A		12/16/99	Sheen	<0.500	<5.00	<3.50	<17.00	--	7.61	33.4/30.1	<15.8/<8.25	--
MW-61A	Duplicate	01/04/00[6]	Sheen	<0.500	<5.00	<5.00	<4.15	--	1.40	12.1/8.29	<1.34/<1.34	--
MW-61A		03/21/00	ND	<0.500	<0.500	<0.550	<1.85	--	0.831	13.1[7]	<0.750[7]	--
MW-61A	Duplicate	03/21/00	ND	<0.500	<0.500	<0.720	<3.40	--	1.05	6.36[7]	<0.750[7]	--
MW-61A		06/22/00[8]	ND	0.779	<0.500	<0.500	2.32	--	1.00	4.23/3.38	<0.750/<0.750	<1.00
MW-61A	Duplicate	06/22/00	ND	0.880	<0.500	0.591	2.46	--	0.836	5.99/4.13	<0.750/<0.750	--
MW-61A		09/14/00	ND	<0.500	<0.500	<0.704	<3.11	--	1.36	2.49/1.50	<0.750/<0.750	--
MW-61A	Duplicate	09/14/00	ND	<0.500	<0.500	0.986	<3.21	--	1.00	5.00/3.13	<0.750/<0.750	--
MW-61A		12/21/00	ND	<0.500	<1.24	<0.500	<3.87	--	1.18	4.62/2.48	<0.750/<0.750	--
MW-61A	Duplicate	12/21/00[9]	ND	<0.500	<0.500	<0.500	<1.00	--	0.721	5.64/3.81	<0.750/<0.750	--
MW-61A		03/14/01	ND	<0.565	<0.500	<1.38	<4.31	--	0.962	2.55/1.28	<0.750/<0.750	--
MW-61A	Duplicate	03/14/01	ND	<0.500	<0.500	<0.500	<1.12	--	0.498	1.82/0.668	<0.750/<0.750	--
MW-61A		06/21/01	ND	<0.500	0.855	<0.500	1.14	--	0.773	2.45/1.55	<0.750/<0.750	<1.00
MW-61A	Duplicate	06/21/01	ND	<0.500	<0.500	<0.500	2.61	--	0.676	1.80/1.04	<0.750/<0.750	--
MW-61A		09/25/01	Sheen	<0.500	<0.500	<0.500	2.62	--	0.839	14.3/11.3	<8.25/<0.750	--
MW-61A	Duplicate	09/25/01	Sheen	<0.500	0.923	0.592	4.22	--	0.918	5.12/4.47	<0.750/<0.750	--
MW-61A		12/19/01	Sheen	0.825	<2.00	<1.00	<1.50	--	2.54	19.4/14.8[10]	<3.00/<3.00[10]	--
MW-61A		03/26/02	Sheen	<0.500	<0.500	<0.500	1.24	--	0.414	1.38/0.615	<0.750/<0.750	--
MW-61A	Duplicate	03/26/02	Sheen	<0.500	<0.500	<0.500	1.85	--	0.592	1.99/0.847	<0.750/<0.750	--
MW-61A	Duplicate	06/19/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.360	1.43	<0.750	--
MW-61A		09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.728	<0.750	--
MW-61A		12/03/03	Sheen	<0.500	<0.500	<0.500	1.22	--	0.604	2.46	<0.750	--
MW-61A	Duplicate	12/03/03	Sheen	<0.500	<0.500	<0.500	1.30	--	0.701	2.35	<0.750	--
MW-61A-R		03/02/06	Sheen/LNAPL	--	--	--	<1.00	--	--	--	--	--
MW-61A-R		06/06/06	Sheen	<2.50	<2.50	7.64	7.48	--	3.92	20.6	<3.75	--
MW-61A-R		09/15/06	Sheen	396	79.7	26.4	243	--	17.2	200	<142	--
MW-61A-R		03/07/07	ND	<0.5	<0.5	0.5	<1.5	--	0.18	0.29	<0.095	--
MW-61A-R		06/08/07	ND	<0.500	<2.0[16]	1.500	1.7	--	0.400	0.600	<0.095	<0.037
MW-61A-R		09/26/07	ND	<0.5	<0.5	1.4	<1.5	--	0.430	0.770	0.120	--
MW-61A-R		11/28/07	ND	<0.5	<0.5	0.9	<1.5	--	0.410	0.340	<0.100	--
MW-61A-R	Duplicate	11/28/07	ND	<0.5	<0.5	0.9	<1.5	--	0.400	0.670	0.370	--
MW-61A-R		02/13/08	ND	<0.500	<0.500	0.980	1.14	--	0.455	0.308	<0.485	--
MW-61A-R		05/14/08	ND	<0.500	<0.500	1.24	1.43	--	0.363	0.406	<0.472	--
MW-61A-R		09/04/08	Sheen	<0.500	1.16	3.58	1.13	--	0.933	0.380	<0.490	--
MW-61A-R		12/03/08	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		02/18/09	Sheen	<0.500	<0.500	<0.500	1.32	--	0.490	0.830	<0.481	--
MW-61A-R		09/10/09	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		04/14/10	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		09/23/10	ND	<0.50	<0.50	0.68	<2.0	--	0.76	1.5	<0.26	--
MW-61A-R		04/25/11	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		09/21/11	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		04/18/12	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		10/10/12	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		04/30/13	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		09/19/13	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		06/24/14	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		12/16/15	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		06/17/15	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		12/09/15	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		06/15/16	ND	<0.5	<0.5	<0.5	<1.5	--	0.220	0.120	<0.067	--
MW-61A-R		01/13/17	ND	<0.5	<0.5	0.5	2	--	1.000	0.490	<0.074	--
MW-61A-R		06/16/17	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		11/08/17	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		06/20/18	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		09/27/18	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		12/14/18	ND	<0.5	0.8	<0.5	<1.5	--	0.680	0.190	<0.100	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-61A-R		06/25/19	ND	<0.2	<0.2	<0.4	<1	--	0.250 J	<0.046	<0.100	--
MW-61A-R		12/17/19	ND	<0.2	<0.2	<0.4	<1	--	0.38	0.16	<0.100	--
MW-61A-R		06/16/20	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		11/19/20	ND	<0.2	<0.2	<0.4	<1	--	0.220 J	<0.046 * *1	<0.100	--
MW-61A-R		06/09/21	LNAPL	--	--	--	--	--	--	--	--	--
MW-61A-R		**12/03/21**	**ND**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
MW-62A		03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.288	<.0250	<.0750	--
MW-62A		06/18/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-62A		09/03/98	ND	<1.00	<0.500	0.901	2.79	--	0.134	<0.250	<0.750	<1.00
MW-62A		12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-62A		03/23/99	ND	10.8	<5.00	<5.00	<10.0	--	<0.500	0.371/<0.250	<0.750/<0.750	--
MW-62A		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.311/<0.250	<0.750/<0.750	1.09
MW-62A		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.709/<0.250	<0.750/<0.750	--
MW-62A		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-62A		03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-62A		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-62A		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.376/<0.250	<0.750/<0.750	--
MW-62A		12/21/00[9]	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-62A		03/14/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-62A		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-62A		09/25/01	ND	<0.500	<0.500	<0.500	1.57	--	<0.0500	0.373/<0.250	<0.750/<0.250	--
MW-62A		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
MW-62A		03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-62A		06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.320/<0.250	<0.750/<0.750	<1.00
MW-62A		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.863	<0.750	--
MW-62A		12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-63A		03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-63A		06/18/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-63A		09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-63A		12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-63A		03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-63A		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.389/<0.250	<0.750/<0.750	1.82
MW-63A		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.305/<0.539	<0.750/<1.62	--
MW-63A		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.380/<0.250	<0.750/<0.750	--
MW-63A		03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-63A		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.366/<0.462	<0.750/<1.39	<1.00
MW-63A		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.273/<0.250	<0.750/<0.750	--
MW-63A		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.575/<0.250	<0.750/<0.750	--
MW-63A		03/14/01	ND	<0.500	0.922	<0.500	1.92	--	<0.0500	<0.250	<0.750	--
MW-63A		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-63A		09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-63A		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.468/<0.250[10]	<0.750/<0.750[10]	--
MW-63A		03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.379/<0.250	<0.750/<0.750	--
MW-63A		06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.299/<0.250	<0.750/<0.750	<1.00
MW-63A		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.514	<0.750	--
MW-63A		12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-64		06/18/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-64		09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-64		12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.325/<0.250	<0.750/<0.750	--
MW-64		03/23/99	ND	<0.500	<0.500	<0.500	2.42	--	<0.0500	0.354/<0.250	<0.750/<0.750	--
MW-64		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.319/<0.250	<0.750/<0.750	1.09
MW-64		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.448/<0.564	<0.750/<0.169	--
MW-64		01/04/00[6]	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250/<0.250	<0.750/<0.750	--
MW-64		03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.255[7]	<0.750	--
MW-64		06/22/00[8]	ND	<0.500	1.39	0.654	5.39	--	0.0908	0.315/<0.487	<0.750/<1.46	<1.00
MW-64		07/25/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-64		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-64		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.298/<0.250	<0.750/<0.750	--
MW-64		03/14/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-64		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-64		09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.263/<0.250[11]	<0.750/<0.750[11]	--
MW-64		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.372/<0.250[10]	<0.750/<0.750[10]	--
MW-64		03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-64		06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.499/<0.250	<0.750/<0.750	<1.00
MW-64		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.0563	0.38	<0.750	--
MW-64		12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.379	<0.750	--
Elliott Avenue RALs			*No visible sheen*	*40*	*14,300*	*1,400*	*4,400*	--	*1*	*10*	*15*	*50*
Elliott Avenue												
MW-30	[12]	01/31/89	--	4.0	0.6	<0.5	<0.5	6	<5	--	--	--
MW-30		04/27/89	--	5.0	<0.5	0.6	<0.5	0.37	<5	--	--	--
MW-30		07/25/89	--	8.0	4.9	17.0	11.1	13	<5	--	--	--
MW-30		10/26/89	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		01/16/90	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		04/16/90	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		07/25/90	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		09/20/90		--	--	--	--	1	--	--	--	--
MW-30		10/16/90	--	<5.0	<5.0	<5.0	<5.0	10	--	--	--	28
MW-30		01/17/91	--	<0.5	<0.5	0.6	3.5	24	2	13	--	<5
MW-30		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
MW-30		09/17/91	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		12/10/91	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		01/29/92	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
MW-30		03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.341	<0.750	--
MW-30	Duplicate	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0522	<0.250	<0.750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-30		06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-30	Duplicate	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-30		09/04/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.575	<0.750	--
MW-30	Duplicate	09/04/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.416	<0.750	--
MW-30		12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.900/0.310	<0.750/<0.750	--
MW-30		03/24/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.47/0.580	1.38/<0.750	--
MW-30		07/01/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.526/<0.250	<0.750/<0.750	<1.00
MW-30		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.12/<0.454	1.19/<1.36	--
MW-30		12/15/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0657	2.72/0.679	<1.43/<1.43	--
MW-30		03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.68/0.753	1.35/<0.750	--
MW-30		06/21/00	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0545	0.345/<0.250	<0.750/<0.750	<1.00
MW-30		09/14/00	--	--	--	--	--	--	--	--	--	--
MW-30		12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0766	1.17/0.353	<0.750/<0.750	--
MW-30		03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.248	4.85/3.27	6.28/3.25	--
MW-30		06/22/01	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.448/<0.250	<0.750/<0.750	--
MW-30		09/25/01	Sheen	<0.500	<0.500	<0.500	1.12	--	<0.0500	2.73/1.60	2.20/1.22	--
MW-30		12/18/01	Sheen	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.09/<0.250[10]	<0.750/<0.750[10]	--
MW-30	Duplicate	12/18/01	Sheen	<0.500	<2.00	<1.00	<1.50	--	0.107	1.05/<0.250[10]	<0.750/<0.750[10]	--
MW-30		03/27/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0793	1.62/0.536	0.936/<0.750	--
MW-30		06/20/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.527/<0.250	<0.750/<0.750	--
MW-30		09/19/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-30		12/13/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.419	<0.750	--
MW-30		06/19/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-30		09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-30		12/03/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-30		03/09/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-30		06/03/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.544	<0.750	--
MW-30	Duplicate	06/03/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.913	0.765	--
MW-30		09/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.451	<0.750	--
MW-30	Duplicate	09/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.33	0.765	--
MW-30		12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.381	<0.750	--
MW-30	Duplicate	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.268	<0.750	--
MW-30		03/04/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.747	0.898	--
MW-30	Duplicate	03/04/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.835	0.976	--
MW-30		06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.278	<0.750	--
MW-30	Duplicate	06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-30		09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.416	<0.750	--
MW-30	Duplicate	09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.366	<0.750	--
MW-30		12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.359	<0.708	--
MW-30	Duplicate	12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.438	<0.714	--
MW-30		03/02/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.236	<0.708	--
MW-30	Duplicate	03/02/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.236	<0.708	--
MW-30		06/06/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-30	Duplicate	06/06/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-30		09/15/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.708	--
MW-30	Duplicate	09/15/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.708	--
MW-30		03/07/07	Sheen	<0.5	<0.5	<0.5	<1.5	--	<0.048	1.6	0.53	--
MW-30		06/08/07	ND	<0.500	<0.500	<0.500	<1.50	--	<0.050	0.800	<0.095	<0.037
MW-30		09/26/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.300	<0.095	--
MW-30		11/28/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.340	0.120	--
MW-30		02/13/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.278	<0.556	--
MW-30		05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	--
MW-30		09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.243	<0.485	--
MW-30		12/05/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.245	<0.490	--
MW-30		02/18/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	--
MW-30		05/12/09	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		09/10/09	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.500	--
MW-30		04/14/10	Sheen	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.13	<0.27	--
MW-30		09/23/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.13	<0.25	--
MW-30		04/27/11	Sheen	<0.50	<0.50	<0.50	<1.0	--	0.052	--	--	--
MW-30		09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--
MW-30		09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.17 [17]	<0.24	--
MW-30		04/18/12	Sheen	--	--	--	--	--	--	--	--	--
MW-30		10/12/12	ND	<0.50	<0.50	<0.50	<0.50	--	<0.025	0.19	<0.24	--
MW-30		04/26/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.069	--
MW-30		09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-30		06/24/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.029	<0.067	--
MW-30		12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-30		06/18/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.5	0.640	--
MW-30		12/07/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.120	0.310	--
MW-30		06/13/16	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		01/12/17	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		03/27/17	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		06/16/17	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.25	<0.100	--
MW-30		06/20/18	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		12/14/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.045	<0.100	
MW-30		06/24/19	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		12/17/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	0.23	0.220 J	
MW-30		06/16/20	LNAPL	--	--	--	--	--	--	--	--	
MW-30		11/19/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.045 * *1	<0.100	
MW-30		06/09/21	LNAPL	--	--	--	--	--	--	--	--	--
MW-30		**12/03/21**	**Sheen**	--	--	--	--	--	--	--	--	--
MW-31		08/10/89	--	<0.5	1.4	2.1	5.9	4.1	--	--	--	<5

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-31		10/26/89	--	7.1	<0.5	1.0	3.3	5.5	--	--	--	<5
MW-31		01/16/90	--	4.2	<0.5	<0.5	<0.5	2.2	--	--	--	<5
MW-31		04/16/90	--	5.2	1.5	1.9	4.5	<1	--	--	--	<5
MW-31		07/25/90	--	2.0	<0.5	2.2	1.8	6	--	--	--	<5
MW-31		10/16/90	--	0.7	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-31		01/17/90	--	1.6	0.6	1.6	4.4	--	2	<1	--	<5
MW-31		04/16/91	--	1.8	0.6	1.9	4.5	--	<1	<1	--	<2
MW-31		09/17/91	--	--	--	--	--	--	--	--	--	--
MW-31		12/10/91	--	--	--	--	--	--	--	--	--	--
MW-31		09/14/95	ND	<0.50	<0.50	<0.50	<0.50	--	<0.05	0.54	0.94	--
MW-31		12/15/95	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	0.36	0.78	--
MW-31		03/14/96	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	1.2	0.94	--
MW-31		09/11/96	ND	<0.500	<0.500	<0.500	<1.00	--	0.0519	0.864	2.16	--
MW-31		03/18/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	0.546	<0.750	--
MW-31		06/26/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.750	--
MW-31		06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-31		12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.320/<0.250	<0.750/<0.750	--
MW-31		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.269/<0.250	<0.750/<0.750	<1.00
MW-31		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.723/<0.250	<0.750/<0.750	--
MW-31		06/22/00[8]	ND	<0.500	5.05	1.39	15.0	--	0.167	<0.250	<0.750	<1.00
MW-31		12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-31		06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.0576	<0.250	<0.750	<1.00
MW-31		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.08/<0.250[10]	<0.750/<0.750[10]	<1.00
MW-31		06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.568/<0.250	<0.750/<0.750	<1.00
MW-31		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.436	1.27	--
MW-31		12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-32		08/10/89	--	2.7	2.9	0.8	2.3	1.7	--	--	--	<5
MW-32		10/26/89	--	<0.5	1.7	<0.5	0.7	2.1	--	--	--	<5
MW-32		01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.76	--	--	--	<5
MW-32		04/16/90	--	<0.5	1.0	<0.5	<0.5	<1	--	--	--	<5
MW-32		07/25/90	--	<0.5	<0.5	1.1	<0.5	1	--	--	--	<5
MW-32		10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-32		01/17/91	--	<0.5	<0.5	0.5	1.5	--	<1	<1	--	<5
MW-32		04/16/91	--	<0.5	0.6	0.6	1.6	--	<1	<1	--	<2
MW-32		09/17/91	--	--	--	--	--	--	--	--	--	--
MW-32		12/01/91	--	--	--	--	--	--	--	--	--	--
MW-58		09/15/95	ND	<0.50	<0.50	<0.50	<1.0	--	<1.0	<1.0	<0.75	--
MW-58		12/14/95	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	<0.25	<0.75	--
MW-58		03/14/96	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	<0.25	<0.75	--
MW-58		09/11/96	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	0.979	--
MW-58		12/11/96	ND	--	--	--	--	--	--	--	--	--
MW-58		03/18/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.372	<0.750	--
MW-58		06/25/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.750	--
MW-58		06/30/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-58		12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-58		06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-58		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-58		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-58		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-58		06/21/01	ND	<0.500	<0.500	<0.500	2.43	--	<0.0500	<0.250	<0.750	<1.00
MW-58		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
MW-58		06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-58		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-58		12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-65		03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-65		06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-65		09/04/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-65		12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.482/<0.250	<0.750/<0.750	--
MW-65		03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.975/<0.250	0.991/<0.750	--
MW-65		06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.750/<0.250	<0.750/<0.750	<1.00
MW-65		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.683/<0.250	<0.750/<0.750	--
MW-65		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.418/<0.250	<0.750/<0.750	--
MW-65		03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.816/<0.250	<0.750/<0.750	--
MW-65		06/23/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.689/<0.250	<0.750/<0.750	<1.00
MW-65		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.603/<0.250	<0.750/<0.750	--
MW-65		12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.408/<0.250	<0.750/<0.750	--
MW-65		03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.620/<0.250	<0.750/<0.750	--
MW-65		06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.262/<0.250	<0.750/<0.750	<1.00
MW-65		09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.584/0.225	<0.750/<0.750	<1.00
MW-65		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.675/<0.250[10]	0.779/<0.750[10]	<1.00
MW-65		03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.749/<0.250	<0.750/<0.750	--
MW-65		06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.675/<0.250	<0.750/<0.750	<1.00
MW-65		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-65		12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-65		03/07/07	ND	<0.500	<0.500	<0.500	<1.00	--	<0.048	0.730	0.170	--
MW-65		06/08/07	ND	<0.500	<0.500	<0.500	<1.50	--	<0.050	0.530	0.250	<0.037
MW-65		11/26/07	ND	<0.5	<0.5	0.7	<1.5	--	<0.050	0.470	0.190	--
MW-66		03/13/98	ND	<1.25	<1.25	<1.25	<5.00	--	1.20[5]	3.52	<0.750	--
MW-66		06/29/98	ND	<0.500	<0.500	<0.500	1.06	--	0.424	<0.250	<0.750	<1.00
MW-66		09/04/98	ND	<0.500	<0.500	<0.500	<2.00	--	0.257	1.27	<0.750	--
MW-66		12/15/98	ND	<0.500	<0.500	0.508	2.62	--	0.0387	0.906/<0.250	<0.750/<0.750	--
MW-66		03/24/99	ND	<0.500	<0.500	<0.900	<3.00	--	1.05	8.44/5.11	<0.750/<0.750	--
MW-66		07/01/99	Sheen	<0.500	<0.500	<0.500	<1.70	--	0.310[4]	1.37/0.596	<0.750/<0.750	<1.00
MW-66		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.216[4]	2.32/1.10	<0.750/<0.750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-66		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.332	0.659/<0.250	<0.750/<0.750	--
MW-66		03/22/00	ND	<0.500	<0.500	<0.500	<3.00	--	0.711	4.31/2.31	<0.750/<0.750	--
MW-66		03/15/01	ND	<0.570	<0.922	<0.500	<3.91	--	1.16	7.03/5.43	1.01/<0.750	--
MW-66		09/14/00	ND	<0.500	<0.500	<0.500	<2.16	--	0.416	1.601/1.43	<0.750/<0.750	--
MW-66		12/22/00	ND	<0.500	<0.500	<0.500	<2.35	--	0.475	1.87/0.819	<0.750/<0.750	--
MW-66		03/15/01	ND	<0.570	<0.922	<0.500	<3.91	--	1.16	7.03/5.43	1.01/<0.750	--
MW-66		06/22/01	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.130	0.409/<0.250	<0.750/<0.750	--
MW-66		09/25/01	Sheen	<0.500	<0.500	<0.500	1.06	--	0.142	4.06/3.14	0.811/<0.750	--
MW-66		12/18/01	Sheen	<0.500	<2.00	<1.00	<1.50	--	0.162	0.696/<0.250[10]	<0.750/<0.750[10]	--
MW-66		03/27/02	Sheen	<0.500	<0.500	<0.500	1.32	--	0.454	4.41/2.58	1.41/<0.750	--
MW-66		06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.052	0.650/<0.250	<0.750/<0.750	--
MW-66		09/19/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.128	<0.250[11]	<0.750[11]	--
MW-66		12/13/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0845	0.688	<0.750	--
MW-66		03/21/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.114	2.72	<0.750	--
MW-66		06/19/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.189[5]	0.707	<0.750	--
MW-66		09/18/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.171	3.73	<0.750	--
MW-66		12/03/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0509	1.45	<0.750	--
MW-66		03/09/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.131	0.446	<0.750	--
MW-66		06/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	0.121	0.504	<0.750	--
MW-66		09/03/04	ND	<0.500	<0.500	<0.500	1.25	--	0.330	1.03	<0.750	--
MW-66		12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	0.116	0.380	<0.750	--
MW-66		03/04/05	ND	<0.500	<0.500	<0.500	1.4	--	0.275	0.577	<0.750	--
MW-66		06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	0.149	0.860	<0.750	--
MW-66		09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	0.119	0.678	<0.750	--
MW-66		12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	0.115	0.885	<0.721	--
MW-66		03/02/06	ND	<0.500	<0.500	<0.500	<1.00	--	0.0651	0.381	<0.714	--
MW-66		06/06/06	ND	<0.500	<0.500	<0.500	<1.00	--	0.128	<0.250	<0.750	--
MW-66		09/15/06	ND	<0.500	<0.500	<0.500	<1.00	--	0.0778	0.370	<0.708	--
MW-66		03/07/07	--	--	--	--	--	--	--	--	--	--
Lower Yard RALs			***No visible sheen***	***40***	***14,300***	***1,400***	***4,400***	***--***	***1***	***10***	***15***	***50***
Lower Yard												
MW-81		10/06/98	Sheen	<0.700	<0.500	<0.500	<1.50	--	0.136[4]	27.6/14.8	26.5/10.0	--
MW-81		12/14/98	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.273	3.62/0.563	1.18/<0.750	--
MW-81		03/23/99	Sheen	<0.500	0.646	<0.500	2.28	--	0.0632	3.90/2.17	3.14/1.50	--
MW-81		06/29/99	Sheen	<0.500	<0.500	<0.500	<1.60	--	0.418	5.22/3.12	4.62/2.55	<1.00
MW-81		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.566[4]	1.69/0.390	<0.750/<0.750	--
MW-81		12/15/99	Sheen	<0.500	<0.500	<0.500	1.15	--	0.0762	2.46/0.366	0.764/<0.750	--
MW-81		03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0817	2.20/0.800	1.28/<0.750	--
MW-81		06/22/00[8]	ND	0.536	3.35	2.37	16.2	--	0.234	2.36/0.495	1.29/<0.750	--
MW-81		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.20/0.347	<0.750/<0.750	--
MW-81		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.585	1.5/0.374	<0.750/<0.750	--
MW-81		03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.16/0.324	<0.750/<0.750	--
MW-81		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.60/0.751	1.32/<0.750	--
MW-81		09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.59/1.11	0.832/<0.750	--
MW-81		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.62/0.323[10]	<0.750/<0.750[10]	--
MW-81		03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.0598	1.31/0.324	<0.750/<0.750	--
MW-81		06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.09/<0.250	<0.750/<0.750	--
MW-82		10/06/98	Sheen	<0.500	<0.500	<0.500	<3.50	--	0.311[4]	7.90/5.43	3.93/2.31	--
MW-82		12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0793	0.787/<0.250	<0.750/<0.750	--
MW-82		03/23/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.757/0.268	<0.750/<0.750	--
MW-82		06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.2750	3.92/2.51	2.19/1.29	1.25
MW-82		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.0566	1.48/0.784	<0.750/<0.750	--
MW-82		12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.561/<0.250	<0.750/<0.750	--
MW-82		03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.797/0.349	<0.750/<0.750	--
MW-82		06/22/00[8]	ND	<0.500	1.72	1.48	13.6	--	0.2580	1.01/0.494	<0.750/<0.750	--
MW-82		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.907/0.522	<0.750/<0.750	--
MW-82		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.911/0.386	<0.750/<0.750	--
MW-82		03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.839/0.451	<0.750/<0.750	--
MW-82		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.03/0.675	0.830/<0.750	--
MW-82		09/25/01	ND	<0.500	<0.500	<0.500	1.14	--	<0.0500	0.742/0.288	<0.750/<0.750	--
MW-82		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.278/<0.250[10]	<0.750/<0.750[10]	--
MW-82		03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.517/<0.250	<0.750/<0.750	--
MW-82		06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.513/<0.250	<0.750/<0.750	--
MW-83		10/06/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0923[4]	2.19/1.31	2.36/1.11	--
MW-83		12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.634/<0.250	<0.750/<0.750	--
MW-83		03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.413/<0.250	<0.750/<0.750	--
MW-83		06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.729/0.417	0.957/<0.750	<1.00
MW-83		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.390/<0.250[13]	<0.750/<0.750[13]	--
MW-83		12/15/99	ND	<0.500	<0.500	<0.500	1.07	--	<0.0500	0.271/<0.250	<0.750/<0.750	--
MW-83		03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-83		06/22/00[8]	ND	<0.500	<0.500	<0.500	3.76	--	0.205	0.302/<0.250	<0.750/<0.750	--
MW-83		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-83		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.316/<0.250	<0.750/<0.750	--
MW-83		03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-83		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.268/<0.250	<0.750/<0.750	--
MW-83		09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-83		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
MW-83		03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-83		06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.299/<0.250	<0.750/<0.750	--
MW-84		10/06/98	ND	<2.00	<1.00	<1.50	<8.00	--	1.09[4]	3.52/1.70	1.03/<0.750	--
MW-84		12/14/98	ND	<0.500	<0.500	<0.500	2.33	--	0.241	1.01/0.351	<0.750/<0.750	--
MW-84		03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	Note 14	Note 14	--
MW-84		04/01/99	ND	--	--	--	--	--	--	0.0259	<0.750	--
MW-84		06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.0833	2.17/1.12	1.61/<0.750	<1.00

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-84		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.0517	0.941/0.338	<0.750/<0.750	--
MW-84		12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.692/<0.250	<0.750/<0.750	--
MW-84		03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.859/<0.750	<0.750/<0.750	--
MW-84		06/22/00	ND	<0.500	<0.500	<0.500	1.37	--	0.0551	1.39/0.649	0.808/<0.750	--
MW-84		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.485/<0.250	<0.750/<0.750	--
MW-84		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.09/0.419	<0.750/<0.750	--
MW-84		03/15/01	ND	0.584	<0.500	<0.500	<1.00	--	<0.0500	0.559/<0.250	<0.750/<0.750	--
MW-84		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.407/<0.250	<0.750/<0.750	--
MW-84		09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.324/<0.250	<0.750/<0.750	--
MW-84		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.965/<0.250[10]	0.926/<0.750[10]	--
MW-84		03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.883/<0.250	<0.750/<0.750	--
MW-84		06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.792/<0.250	<0.750/<0.750	--
MW-85		10/06/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.434/<0.250	<0.750/<0.750	--
MW-85		12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.451/<0.250	<0.750/<0.750	--
MW-85		03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.404/<0.250	<0.750/<0.750	--
MW-85		06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.412/<0.250	<0.750/<0.750	<1.00
MW-85		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.365/<0.250	<0.750/<0.750	--
MW-85		12/16/99	ND	<0.500	0.628	<0.500	<1.00	--	<0.0500	0.350/<0.250	<0.750/<0.750	--
MW-85		03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.350/<0.250	<0.750/<0.750	--
MW-85		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.376/<0.250	<0.750/<0.750	--
MW-85		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-85		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.360/<0.250	<0.750/<0.750	--
MW-85		03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-85		06/21/01	ND	<0.500	<0.500	<0.500	1.57	--	<0.0500	<0.250	<0.750	--
MW-85		09/25/01	ND	<0.500	<0.500	<0.500	1.57	--	<0.0500	<0.250	<0.750	--
MW-85		12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.600/<0.250[10]	<0.750/<0.750[10]	--
MW-85		03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.271/<0.250	<0.750/<0.750	--
MW-85		06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.702/<0.250	<0.750/<0.750	--
MW-86		10/06/98	Sheen	<0.800	<0.500	<0.500	<1.00	--	<0.0500	2.28/2.99	2.57/2.92	--
MW-86		12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.65/<0.250	<0.750/<0.750	--
MW-86		03/23/99	Sheen	<0.500	<0.500	<0.500	2.54	--	<0.0500	1.39/<0.250	0.883/<0.750	--
MW-86		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.926/<0.250	<0.750/<0.750	<1.00
MW-86		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.481/<0.250	<0.750/<0.750	--
MW-86		12/16/99	ND	<0.500	0.574	<0.500	<1.00	--	<0.0500	1.71/<0.250	<0.750/<0.750	--
MW-86		03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.901[7]	<0.750[7]	--
MW-86		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.535/<0.250	<0.750/<0.750	--
MW-86		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.617/<0.250	<0.750/<0.750	--
MW-86		12/21/00[9]	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.374/<0.250	<0.750/<0.750	--
MW-86		03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.436/0.250	<0.750/<0.750	--
MW-86		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.606/0.310	<0.750/<0.750	--
MW-86		09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-86		12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.21/<0.250[10]	<0.750/<0.750[10]	--
MW-86		03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.464/<0.250	<0.750/<0.750	--
MW-86		06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.629/<0.250	<0.750/<0.750	--
Offsite Area RALs			***No visible sheen***	***40***	***14,300***	***1,400***	***4,400***	***--***	***1***	***10***	***15***	***50***
Offsite Area												
MW-8		01/31/89	--	0.6	<0.5	<0.5	<0.5	0.21	--	--	--	<25
MW-8		04/27/89	--	<0.5	<0.5	<0.5	<0.5	1.1	--	--	--	<5
MW-8		07/25/89	--	4.3	2.1	<0.5	<0.5	0.17	--	--	--	18
MW-8		10/26/89	--	<0.5	<0.5	<0.5	<0.5	0.94	--	--	--	<5
MW-8		01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.35	--	--	--	<5
MW-8		04/16/90	--	2.8	<0.5	<0.5	<0.5	<1	--	--	--	<50
MW-8		07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<50
MW-8		10/16/90	--	<0.5	<0.5	<0.5	<0.5	2	--	--	--	<100
MW-8		01/17/91	--	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	--	<5
MW-8		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<20
MW-8		09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	6
MW-8		12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
MW-8		06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-8		12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.523/<0.250	<0.750/<0.750	--
MW-8		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-8		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.501/<0.403	<1.21/<1.21	--
MW-8		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0558	0.273/<0.249	<0.750/<0.737	--
MW-8		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.441/<0.245	<0.750/<0.750	--
MW-8		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-8		12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.464/<0.250[10]	<0.750/<0.750[10]	--
MW-8		06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.271/<0.250	<0.750/<0.750	--
MW-8		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.439	0.762	--
MW-8		12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-10		01/31/89	--	<0.5	<0.5	<0.5	<0.5	0.36	--	--	--	<5
MW-10		04/27/89	--	<0.5	<0.5	<0.5	<0.5	2.2	--	--	--	<5
MW-10		07/25/89	--	<0.5	<0.5	<0.5	<0.5	0.45	--	--	--	<5
MW-10		10/26/89	--	<0.5	<0.5	<0.5	<0.5	3.4	--	--	--	<5
MW-10		01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.35	--	--	--	<5
MW-10		04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-10		07/25/90	--	<0.5	<0.5	<0.5	<0.5	6	--	--	--	<5
MW-10		10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-10		01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-10		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-10		09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
MW-10		12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3
MW-10		06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0593	<0.250	<0.750	1.24
MW-10		12/14/98	ND	<0.500	<0.500	<0.500	1.28	--	0.0715	0.953/<0.250	<0.750/<0.750	--
MW-10		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.652/<0.250	<0.750/<0.750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-10		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.076	0.706/<0.475	<1.43/<1.43	--
MW-10		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0846	<0.503[13]	<1.51[13]	--
MW-10		12/21/00	ND	<0.500	<0.500	<0.500	1.10	--	0.0657	0.555/<0.250	<0.750/<0.750	--
MW-10		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.301/<0.250	<0.750/<0.750	--
MW-10		12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.551/<0.250[10]	<0.750/<0.750[10]	--
MW-10		06/19/02	ND	<0.500	<0.500	<0.500	1.43	--	0.0545	0.656/<0.250	<0.750/<0.750	--
MW-10		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-10		12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-20		01/31/89	--	<0.5	<0.5	<0.5	<0.5	1.1	--	--	--	<5
MW-20		04/27/89	--	<0.5	<0.5	<0.5	<0.5	1.6	--	--	--	<5
MW-20		07/25/89	--	1.0	<0.5	<0.5	<0.5	0.31	--	--	--	<5
MW-20		10/26/89	--	0.7	<0.5	<0.5	<0.5	3.2	--	--	--	<5
MW-20		01/16/90	--	<0.5	<0.5	<0.5	<0.5	1.4	--	--	--	<5
MW-20		04/16/90	--	0.6	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-20		07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-20		10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-20		01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-20		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
MW-20		09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
MW-20		12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3.4
MW-20		06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-20		12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.287/<0.250	<0.750/<0.750	--
MW-20		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.291/<0.250	<0.750/<0.750	--
MW-20		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.452/<0.250	<0.750/<0.750	--
MW-20		06/22/00	ND	<0.500	<0.500	<0.500	1.67	--	<0.0500	<0.250	<0.750	--
MW-20		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.569/<0.250	<0.750/<0.750	--
MW-20		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.277/<0.250	<0.750/<0.750	--
MW-20		12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.05/<0.250[10]	<0.750/<0.750[10]	--
MW-20		06/20/02	ND	6.60	<0.500	<0.500	3.30	--	<0.0500	0.627/<0.250	<0.750/<0.750	--
MW-20		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-20		12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-25		01/31/89	--	<0.5	4.7	<0.5	2.3	3.7	--	--	--	<5
MW-25		04/27/89	--	7.2	1.2	1.6	<0.5	0.93	--	--	--	<5
MW-25		07/25/89	--	1.4	0.8	<0.5	1.2	3.4	--	--	--	<5
MW-25		10/26/89	--	<0.5	<0.5	<0.5	<0.5	7.8	--	--	--	<5
MW-25		01/16/90	--	1.3	<0.5	<0.5	<0.5	4.9	--	--	--	<5
MW-25		04/16/90	--	6.6	1.4	0.8	2.7	<1	--	--	--	<5
MW-25		07/25/90	--	2.5	0.6	0.6	0.8	<1	--	--	--	<5
MW-25		10/16/90	--	<0.5	<0.5	<0.5	0.8	<1	--	--	--	<5
MW-25		01/17/91	--	1.0	0.7	<0.5	1.4	<1	<1	<1	--	<5
MW-25		04/16/91	--	0.9	<0.5	<0.5	<0.5	--	<1	<1	--	<20
MW-25		09/19/91	--	<0.5	<0.5	<0.5	0.6	--	<1	<1	--	<20
MW-25		12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
MW-25		03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.160	<0.250	<0.750	--
MW-25		06/24/98	ND	<0.500	1.68	<0.500	<1.00	--	0.689	<0.250	<0.750	<1.00
MW-25		09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0716	<0.250	<0.750	--
MW-25		12/14/98	ND	<0.500	<0.500	0.795	1.31	--	0.0697	1.26/<0.250	<0.750/<0.750	--
MW-25		03/24/99	ND	<0.600	<0.700	<1.00	<2.50	--	0.118	0.969/<0.250	<0.750/<0.750	--
MW-25		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.719/<0.250	<0.750/<0.750	<20.0
MW-25		09/29/99	ND	<0.500	3.52	<0.500	<10.0	--	0.136	1.58/<0.476	<1.43/<1.43	--
MW-25		12/16/99	ND	<0.500	<0.500	0.632	1.81	--	0.166	1.31/<0.250	<0.750/<0.750	--
MW-25		03/22/00	ND	<0.500	1.94	<0.500	<1.00	--	0.148	1.36/<0.447	<1.34/<1.34	--
MW-25		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0876	0.674/<0.250	<0.750/<0.750	<10.0
MW-25		09/15/00	ND	<0.500	<0.607	<0.500	<1.28	--	0.716	1.26/<0.250	<0.750/<0.750	--
MW-25		12/21/00	ND	<0.500	<0.500	<0.500	1.18	--	0.0991	1.25/<0.250	<0.750/<0.750	--
MW-25		03/15/01	ND	<0.500	<0.500	<0.500	1.75	--	0.0664	1.19/<0.250	<0.750/<0.750	--
MW-25		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.538/<0.250	<0.750/<0.750	<1.00
MW-25		09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.0596	0.864/<0.250	<0.750/<0.750	--
MW-25		12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	0.175	2.22/<0.250[10]	0.852/<0.750[10]	--
MW-25		03/26/02	ND	<0.500	<0.500	<0.500	1.39	--	0.12	0.861/<0.250	<0.750/<0.750	--
MW-25		06/19/02	ND	<0.500	<0.500	<0.500	1.44	--	0.108	0.706/<0.250	<0.750/<0.750	<1.00
MW-25		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.0578	<0.250	<0.750	--
MW-25		12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	0.110	<0.250	<0.750	--
MW-26		01/31/89	--	<0.5	<0.5	<0.5	<0.5	0.64	--	--	--	25
MW-26		04/27/89	--	<0.5	<0.5	<0.5	<0.5	0.08	--	--	--	<5
MW-26		07/25/89	--	<0.5	<0.5	<0.5	<0.5	1.4	--	--	--	<5
MW-26		10/26/89	--	<0.5	<0.5	<0.5	<0.5	0.94	--	--	--	<5
MW-26		01/16/90	--	<0.5	<0.5	<0.5	<0.5	1.8	--	--	--	<5
MW-26		04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-26		07/25/90	--	<0.5	<0.5	<0.5	<0.5	2	--	--	--	<5
MW-26		10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<50
MW-26		01/17/91	--	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	--	<50
MW-26		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
MW-26		09/19/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
MW-26		12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
MW-26		06/30/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-26		12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-26		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-26		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250/<0.250	<0.750/<0.750	--
MW-26		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-26		12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-26		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-26		12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.445/<0.250[10]	<0.750/<0.750[10]	--
MW-26		06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-26		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-26		12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		01/31/89	--	<0.5	1.8	<0.5	<0.5	0.64	--	--	--	<5
MW-27		04/27/89	--	<0.5	<0.5	<0.5	<0.5	0.23	--	--	--	<5
MW-27		07/25/89	--	1.0	<0.5	<0.5	<0.5	0.68	--	--	--	<5
MW-27		10/26/89	--	1.3	0.7	<0.5	0.7	1.1	--	--	--	<5
MW-27		01/16/90	--	<0.5	<0.5	<0.5	<0.5	1.3	--	--	--	<5
MW-27		04/16/90	--	<0.5	<0.5	<0.5	0.6	<1	--	--	--	<5
MW-27		07/25/90	--	<0.5	<0.5	<0.5	<0.5	2	--	--	--	<5
MW-27		10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-27		01/17/91	--	0.6	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-27		04/16/91	--	<0.5	<0.5	<0.5	0.9	--	<1	<1	--	<2
MW-27		09/19/91	--	<0.5	<0.5	<0.5	1.1	--	<1	<1	--	4
MW-27		12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
MW-27		03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		06/24/98	ND	<0.500	2.85	<0.500	<1.00	--	0.188	<0.250	<0.750	<1.00
MW-27		09/03/98	ND	<0.800	<0.500	<0.500	<1.00	--	0.0961	0.316	<0.750	--
MW-27		12/14/98	ND	<4.00	<0.500	<0.500	1.33	--	0.119	0.485/<0.250	<0.750/<0.750	--
MW-27		03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.394/<0.250	<0.750/<0.750	--
MW-27		07/01/99	ND	<0.500	<2.20	<0.500	<1.00	--	0.0823	0.394/<0.250	<0.750/<0.750	--
MW-27		09/29/99	ND	<0.500	1.87	<0.500	<1.00	--	<0.0500	0.830/<0.323	<0.750/<0.750	--
MW-27		12/16/99	ND	<0.500	<0.500	<0.500	1.29	--	0.0925	0.544[15]	<0.750[15]	--
MW-27		03/22/00	ND	<0.500	0.874	<0.500	<1.00	--	<0.0500	0.468/<0.250	<0.750/<0.750	--
MW-27		06/22/00	ND	0.692	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		09/15/00	ND	<0.605	<0.500	<0.500	<1.00	--	<0.0500	0.420/<0.250	<0.750/<0.750	--
MW-27		12/21/00	ND	1.89	<0.500	<0.500	<1.00	--	0.0727	0.308/<0.250	<0.750/<0.750	--
MW-27		03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.537/<0.250	<0.750/<0.750	--
MW-27		06/21/01	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.259/<0.250	<0.750/<0.750	--
MW-27		09/25/01	ND	0.571	<0.500	<0.500	<1.00	--	<0.0500	1.38/0.547	<0.750/<0.750	--
MW-27		12/19/01	Sheen	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
MW-27		03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.257/<0.250	<0.750/<0.750	--
MW-27		06/19/02	ND	<0.500	<0.500	<0.500	1.05	--	<0.0500	<0.250	<0.750	--
MW-27		09/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		03/21/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		06/19/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.672	<0.750	--
MW-27		12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		03/09/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		06/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		09/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		03/04/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27		12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.236	<0.708	--
MW-27		03/02/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.236	<0.708	--
MW-27R		03/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.048	<0.076	<0.094	--
MW-27R		09/26/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.077	<0.096	<0.47
MW-27R		11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.080	<0.100	0.091
MW-34		10/26/89	--	1.7	3	<0.5	2.1	0.27	--	--	--	<5
MW-34		01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.08	--	--	--	<5
MW-34		04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-34		07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-34		10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-34		01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-34		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
MW-34		09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3
MW-34		12/01/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3.0
MW-35		10/26/89	--	33	1.1	<0.5	1.4	<0.5	--	--	--	<5
MW-35		01/16/90	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<5
MW-35		04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-35		07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-35		10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-35		01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-35		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-35		09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	2
MW-35		12/01/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3.3
MW-36		10/26/89	--	330	1.9	2.5	8.0	2	--	--	--	<5
MW-36		01/16/90	--	95	3.1	<0.5	9.4	0.39	--	--	--	<5
MW-36		04/16/90	--	140	7.8	<0.5	<5.0	3.2	--	--	--	<5
MW-36		07/25/90	--	<0.5	<0.5	3.4	17	4	--	--	--	<5
MW-36		10/16/90	--	8.0	<0.5	<0.5	4.8	8	--	--	--	<5
MW-36		01/17/91	--	1.2	5.6	12	58	6	11	20	--	<5
MW-36		04/16/91	--	1.7	6.4	<0.5	4.9	--	<1	<1	--	<2
MW-36		09/17/91	--	<0.5	<0.5	1.1	3.2	--	15	29	--	<2
MW-36		12/01/91	--	<0.5	<0.5	2.5	6.5	--	<1	<1	--	<3.0
MW-36		03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.609	12.5	2.69	--
MW-36		06/25/98	ND	<0.500	<0.500	<0.500	<2.50	--	0.345	<0.250	<0.750	<1.00
MW-36		09/03/98	ND	<0.800	<0.500	<0.750	<4.00	--	0.499	7.42	1.43	--
MW-36		12/14/98	ND	1.24	0.699	0.707	4.12	--	0.536	1.43/<0.250	<0.750/<0.750	--
MW-36		03/24/99	ND	1.96	<1.10	<1.40	<3.50	--	0.999	27.1/18.1	5.86/3.39	--
MW-36		07/01/99	ND	<0.500	<0.500	<0.500	<2.00	--	0.257[4]	1.28/<0.250	<0.750/<0.750	--
MW-36		09/29/99	ND	<0.500	<0.500	<5.00	<10.0	--	0.562[4]	4.63/2.01	0.849/<0.0750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-36		12/16/99	ND	0.813	<1.50	<5.00	<2.00	--	0.344	0.867/<0.250	<0.750/<0.750	--
MW-36		03/22/00	ND	<0.500	0.792	<0.500	<3.00	--	0.584	6.42/4.30	1.58/<0.750	--
MW-36		06/22/00[8]	ND	5.80	70.0	33.2	240	--	2.17	0.850/<0.250	<0.750/<0.750	--
MW-36		09/15/00	Sheen	<0.500	<2.39	<0.704	<5.46	--	0.923	9.25/6.10	1.70/0.927	--
MW-36		12/21/00	ND	0.636	<1.12	<0.500	<2.20	--	0.229	1.26/<0.250	<0.750/<0.750	--
MW-36		03/15/01	ND	2.00	<1.04	<0.500	<12.5	--	2.19	5.46/4.03	1.40/<0.750	--
MW-36		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.207	0.643/<0.250	<0.750/<0.750	--
MW-36		09/25/01	Sheen	1.03	<0.500	<0.500	2.54	--	0.514	8.88/6.64	1.92/<0.750	--
MW-36		12/19/01	ND	1.49	<2.00	<1.00	<1.50	--	0.415	1.15/<0.250[10]	<0.750/<0.750[10]	--
MW-36		03/26/02	ND	1.01	<0.500	<0.500	1.9	--	0.38	1.47/0.794	<0.750/<0.750	--
MW-36		06/20/02	ND	0.618	<0.500	<0.500	<1.00	--	0.106	1.01/<0.250	<0.750/<0.750	--
MW-36		09/19/02	Sheen	0.914	<0.500	<0.500	1.85	--	0.307	1.39[13]	<0.750[6]	--
MW-36		12/13/02	Sheen	<0.500	<0.500	<0.500	1.07	--	0.186	15.5	<0.750	--
MW-36		03/21/03	Sheen	0.846	<0.500	<0.500	2.4	--	0.398	3.25	<0.750	--
MW-36		06/19/03[14]	Sheen	0.691	0.508	0.503	2.93	--	0.623[7]	6.09	1.27	--
MW-36		09/18/03	Sheen	<0.500	<0.500	<0.500	1.29	--	0.219	4.87	0.943	--
MW-36		12/02/03	Sheen	0.538	<0.500	<0.500	1.37	--	0.242	1.97	<0.750	--
MW-41		09/18/90	--	--	--	--	--	2	--	--	--	<5
MW-41		10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-41		01/17/91	--	<0.5	<0.5	1.2	3.9	<1	1	<1	--	<5
MW-41		04/16/91	--	3.5	0.9	4.5	1.4	--	<1	<1	--	<2
MW-41		09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	4	--	<2
MW-41		12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
MW-41		06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-41		12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-41		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-41		12/16/99	ND	<0.500	<0.500	<5.00	<1.00	--	<0.0500	<0.250	<0.750	--
MW-41		06/22/00[8]	ND	<0.500	6.55	3.97	35.8	--	0.433	<0.250	<0.750	--
MW-41		12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-41		06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-41		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
MW-41		06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-41		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-42		10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
MW-42		01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-42		04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
MW-42		09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3
MW-42		12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
MW-43		10/16/90	--	2.9	<0.5	17	5.3	<1	--	--	--	<5
MW-43		01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
MW-43		04/16/91	--	<0.5	<0.5	0.7	0.6	--	<1	<1	--	<2
MW-43		09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	3	9	--	3
MW-43		12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
MW-52		06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-52		12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-52		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.522/<0.250	<0.750/<0.750	--
MW-52		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.250/<0.250	<0.750/<0.750	--
MW-52		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-52		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.257/<0.250	<0.750/<0.750	--
MW-52		06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-52		12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.325/<0.250[10]	<0.750/<0.750[10]	--
MW-52		06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.289/<0.250	<0.750/<0.750	--
MW-52		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-52		12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-67		03/13/98	ND	<0.500	0.658	1.57	3.37	--	0.237	<0.250	<0.750	--
MW-67		06/24/98	ND	<0.500	1.44	<0.500	<1.00	--	0.0597	<0.250	<0.750	<1.00
MW-67		09/03/98	ND	<1.00	<0.500	0.913	<1.00	--	0.0661	0.287	<0.750	--
MW-67		12/14/98	ND	<0.800	<2.00	2.44	4.87	--	0.432	0.813/0.328	<0.750/<0.750	--
MW-67		03/24/99	ND	4.84	<0.500	<0.500	<1.00	--	0.158	0.566/<0.250	<0.750/<0.750	--
MW-67		07/01/99	ND	<4.20	<1.00	2.68	4.66	--	0.341	0.833/0.275	<0.750/<0.750	<20.0
MW-67		09/29/99	ND	0.554	1.88	0.884	1.55	--	0.239	0.544/<0.250	<0.750/<0.750	--
MW-67		12/16/99	ND	<8.20	<1.25	1.9	8.65	--	0.561	0.807/<0.250	<0.750/<0.750	--
MW-67		03/22/00	ND	<0.500	1.71	0.533	1.46	--	0.156	0.651/0.292	<0.750/<0.750	--
MW-67		06/22/00	ND	4.74	1.02	1.65	4.53	--	0.395	0.951/<0.250	<0.750/<0.750	<10.0
MW-67		09/15/00	ND	<3.00	<0.500	<0.520	<1.81	--	0.157	0.607/<0.250	<0.750/<0.750	--
MW-67		12/21/00	ND	7.35	<1.38	<2.04	5.73	--	0.413	0.646/<0.250	<0.750/<0.750	--
MW-67		03/15/01	ND	<0.500	<0.500	<0.624	<1.77	--	0.165	0.524/<0.250	<0.750/<0.750	--
MW-67		06/21/01	ND	<0.500	1.21	2.47	2.61	--	0.403	0.479/<0.250	<0.750/<0.750	<1.00
MW-67		09/25/01	ND	3.45	<0.500	1.46	2.10	--	0.230	0.585/0.295	<0.750/<0.750	--
MW-67		12/19/01	ND	13.2	<2.00	1.46	2.97	--	1.01	0.760/<0.250[10]	<0.750/<0.750[10]	--
MW-67		03/26/02	ND	3.01	<0.500	0.671	1.09	--	0.178	0.672/<0.250	0.839/<0.750	--
MW-67		06/19/02	ND	<0.500	<0.500	<0.500	1.21	--	<0.0500	<0.250	<0.750	<1.00
MW-67		09/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250[13]	<0.750[13]	--
MW-67		12/13/02	ND	<0.500	<0.500	0.751	2.99	--	<0.0500	<0.250	<0.750	--
MW-67		03/21/03	ND	<0.500	<0.500	0.751	<1.00	--	<0.0500	0.352	1.44	--
MW-67		06/19/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-67		09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-67		12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-70		06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-70		12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.488/<0.250	<0.750/<0.750	--
MW-70		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<20.0
MW-70		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.392/<0.250	<0.750/<0.750	--
MW-70		06/22/00[8]	ND	<0.500	1.31	0.610	3.83	--	0.0632	<0.250[13]	<0.750[13]	<1.00
MW-70		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-70		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-70		12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.372/<0.250[10]	<0.750/<0.750[10]	--
MW-70		06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-70		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-70		12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-70		12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-70R		02/16/16	ND	<0.500	<0.500	<0.500	<1.50	--	<0.0500	<0.029	<0.067	--
MW-70R	Duplicate	02/16/16	ND	<0.500	<0.500	<0.500	<1.50	--	<0.0500	<0.029	<0.067	--
MW-70R		06/14/16	ND	<0.500	<0.500	<0.500	<1.50	--	<0.0500	<0.028	<0.066	--
MW-70R		09/22/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.070	--
MW-70R		01/12/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.046	<0.070	--
MW-70R	Duplicate	01/12/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.046	<0.070	--
MW-70R		03/27/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-70R		06/16/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
MW-70R		11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.047	<0.100	--
MW-70R		03/26/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-70R	Duplicate	03/26/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-70R		06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-70R	Duplicate	06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.066	--
MW-70R		09/27/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.030	<0.070	--
MW-70R	Duplicate	09/27/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.031	<0.072	--
MW-70R		12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.045	<0.100	--
MW-70R		03/25/19	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.046	<0.100	--
MW-70R	Duplicate	03/25/19	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.046	<0.100	--
MW-70R		06/25/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.046	<0.100	--
MW-70R		09/26/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.120	<0.280	--
MW-70R	Duplicate	09/26/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.044	<0.099	--
MW-70R		12/18/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.055	<0.120	--
MW-70R	Duplicate	12/18/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.048	<0.110	--
MW-70R		03/24/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.047	<0.10	--
MW-70R	Duplicate	03/24/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.048	<0.11	--
MW-70R		06/16/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.046	<0.10	--
MW-70R	Duplicate	06/16/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.047	<0.10	--
MW-70R		09/11/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.052 *1	<0.110	--
MW-70R	Duplicate	09/11/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.052 *1	<0.120	--
MW-70R		11/18/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.047 *	<0.110	--
MW-70R	Duplicate	11/18/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.049 *	<0.110	--
MW-70R		03/16/21	ND	<0.20	<0.20	<0.40	<1.4	--	<0.019	<0.048	<0.110	--
MW-70R	Duplicate	03/16/21	ND	<0.20	<0.20	<0.40	<1.4	--	<0.019	<0.048 *1	<0.110	--
MW-70R		06/07/21	ND	<0.30	<0.30	<0.40	<1.4	--	<0.019	<0.049 H	<0.110 H	--
MW-70R	Duplicate	06/09/21	ND	<0.30	<0.30	<0.40	<1.4	--	<0.019	<0.049	<0.110	--
MW-70R		**09/21/21**	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**<0.019**	**<0.051**	**<0.11**	**--**
MW-70R	**Duplicate**	**09/21/21**	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**<0.019**	**<0.051**	**<0.11**	**--**
MW-70R		**12/01/21**	**ND**	**<0.0941**	**<0.278**	**<0.137**	**<0.174**	**--**	**<0.0316**	**<0.0333**	**<0.0833**	**--**
MW-70R	**Duplicate**	**12/01/21**	**ND**	**<0.0941**	**<0.278**	**<0.137**	**<0.174**	**--**	**<0.0316**	**<0.0333**	**<0.0833**	**--**
MW-71		06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-71		12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	3.77/<0.250	<0.750/<0.750	--
MW-71		07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<20.0
MW-71		12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.430[15]	<0.904[15]	--
MW-71		06/22/00[8]	ND	<0.500	0.980	0.522	3.08	--	0.0746	<0.250	<0.750	<1.00
MW-71		12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-71		06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-71		12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.514/<0.0.250[1]	<0.750/<0.750[10]	--
MW-71		06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-71		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-71		12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-72		03/13/98	ND	<11.0	<3.00	<3.00	<11.0	--	1.30	0.369	<0.750	--
MW-72		06/24/98	ND	<1.00	<1.00	<0.500	<2.00	--	0.699	0.286	<0.750	<1.00
MW-72		09/03/98	ND	<9.38	<2.50	<2.50	<4.50	--	1.03	3.11	1.78	--
MW-72		12/14/98	Sheen	5.45	0.644	1.07	1.68	--	0.196	0.847/<0.250	<0.750/<0.750	--
MW-72		03/24/98	Sheen	4.69	<0.950	<0.950	<3.30	--	0.269	1.74/0.744	1.42/<0.750	--
MW-72		07/01/99	ND	<2.80	<0.900	<0.500	<2.26	--	0.248	1.05/<0.250	<0.750/<0.750	<1.00
MW-72		09/29/99	Sheen	5.71	2.71	0.68	5.01	--	0.481	1.86/0.424[13]	1.01/<0.750[13]	--
MW-72		12/16/99	Sheen	<7.40	<1.40	<0.500	6.87	--	0.421	0.905/<0.475	<1.43/<1.43	--
MW-72		03/22/00	ND	2.88	5.40	0.846	6.42	--	0.596	1.40/0.462	<0.750/<0.750	--
MW-72		06/22/00	ND	5.98	1.11	0.599	2.38	--	0.344	1.11/<0.250	<0.750/<0.750	<1.00
MW-72		09/15/00	ND	1.47	<1.20	<0.525	<5.42	--	0.547	1.35/0.427	<0.750/<0.750	--
MW-72		12/21/00	ND	5.71	<1.00	<0.500	4.46	--	0.422	0.698/<0.250	<0.750/<0.750	--
MW-72		03/15/01	ND	1.90	<1.06	<0.791	<3.29	--	0.454	1.47/<0.250	0.752/<0.750	--
MW-72		06/21/01	ND	1.08	1.29	<0.500	2.78	--	0.274	0.591/<0.250	<0.750/<0.750	--
MW-72		09/25/01	Sheen	7.98	0.679	1.07	3.24	--	0.695	3.37/1.35	1.90/0.942	--
MW-72		12/19/01	ND	12.2	<2.00	<1.00	3.21	--	0.835	1.59/0.261[10]	<0.750/<0.750[10]	--
MW-72		03/26/02	Sheen	6.4	0.753	<0.500	3.88	--	0.47	1.05/<0.250	<0.750/<0.750	--
MW-72		06/19/02	ND	10.3	0.722	1.48	4.60	--	0.697	3.19/<0.250	<0.750/<0.750	--
MW-72		09/19/02	Sheen	13.3	0.798	2.29	4.29	--	0.828	0.769[11]	<0.750[11]	--
MW-72		12/13/02	Sheen	8.35	0.747	2.27	6.10	--	0.594	4.15	2.94	--
MW-72		03/21/03	Sheen	3.2	<0.500	0.909	1.29	--	0.360	0.281	<0.750	--
MW-72		06/19/03	Sheen	8.28	0.509	1.79	3.82	--	0.476	1.61	1.25	--
MW-72		09/18/03	Sheen	4.54	<0.500	0.931	4.28	--	0.522	1.17	0.775	--
MW-72		12/02/03	Sheen	2.26	<0.500	<0.500	2.34	--	0.439	1.20	0.979	--
MW-72		03/09/04	Sheen	0.738	<0.500	<0.500	1.31	--	0.133	0.315	<0.750	--
MW-72		06/03/04	Sheen	0.656	<0.500	<0.500	<1.00	--	0.195	0.265	<0.750	--
MW-72		09/03/04	ND	1.41	<0.500	<0.500	1.72	--	0.294	0.275	<0.750	--
MW-72		12/06/04	ND	1.27	<0.500	<0.500	1.47	--	0.238	<0.250	<0.750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-72		03/04/05	ND	1.07	<0.500	<0.500	2.20	--	0.202	0.524	<0.750	--
MW-72		06/03/05	ND	1.10	<0.500	<0.500	<1.00	--	0.141	<0.250	<0.750	--
MW-73		03/12/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-73		06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-73		09/03/98	ND	<0.500	<0.500	<0.500	1.30	--	<0.0500	<0.250	<0.750	--
MW-73		12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.388/<0.250	<0.750/<0.750	--
MW-73		03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.665/<0.250	<0.750/<0.750	--
MW-73		06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.370/<0.250	<0.750/<0.750	<1.00
MW-73		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.430/<0.250	<0.750/<0.750	--
MW-73		12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.830/<0.250	<0.750/<0.750	--
MW-73		03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.559/<0.250	<0.750/<0.750	--
MW-73		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0737	0.407/<0.250	<0.750/<0.750	<10.0
MW-73		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.298/<0.250	<0.750/<0.750	--
MW-73		12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-73		03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-73		06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-73		09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-73		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.693/<0.250[10]	<0.750/<0.750[10]	--
MW-73		03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.618/<0.250	<0.750/<0.750	--
MW-73		06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.287/<0.250	<0.750/<0.750	<1.00
MW-74		03/12/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-74		06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	1.93
MW-74		09/03/98	ND	<0.500	<0.500	<0.500	1.02	--	<0.0500	0.29	1.07	--
MW-74		12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.517/<0.250	<0.750/<0.750	--
MW-74		03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.600/<0.250	0.993/<0.750	--
MW-74		06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.251/<0.250	<0.750/<0.750	<1.00
MW-74		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.462/<0.250	<0.750/<0.750	--
MW-74		12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.659/<0.250	<0.750/<0.750	--
MW-74		03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.500/<0.250	0.923/<0.750	--
MW-74		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.234	<0.748	<1.00
MW-74		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-74		12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-74		03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.273/<0.250	0.863/<0.750	--
MW-74		06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.505/<0.250	<0.750/<0.750	--
MW-74		09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-74		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.06/<0.250[10]	1.11/<0.750[10]	--
MW-74		03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.430/<0.250	<0.750/<0.750	--
MW-74		06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.305/<0.250	<0.750/<0.750	<1.00
MW-75		03/12/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-75		06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-75		09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-75		12/15/98	ND	<0.500	<0.500	<0.500	1.33	--	<0.0500	<0.250	<0.750	--
MW-75		03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-75		06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-75		09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250/<0.250	<0.750/<0.750	--
MW-75		12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-75		03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-75		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.239	<0.744	<1.00
MW-75		09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-75		12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-75		03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-75		06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-75		09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-75		12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
MW-75		03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-75		06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-76		06/24/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<5.00
MW-76		09/03/98	ND	0.962	0.774	0.609	<1.00	--	0.0593	0.361	<0.750	--
MW-76		12/14/98	ND	<1.00	<0.500	1.29	<1.00	--	0.0779	0.789/<0.250	<0.750/<0.750	--
MW-76		03/24/98	ND	<1.00	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-76		07/01/99	ND	<1.20	<0.500	1.64	1.31	--	0.0998	0.786/<0.250	<0.750/<0.750	<20.0
MW-76		09/29/99	ND	<0.500	0.538	0.583	<1.00	--	0.0577	0.632/<0.250	<0.750/<0.750	--
MW-76		12/16/99	ND	0.582	<0.500	0.631	<1.00	--	0.728	0.667/<0.250	<0.750/<0.750	--
MW-76		03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.640/<0.250	<0.750/<0.750	--
MW-76		06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.259/<0.250	<0.750/<0.750	<1.00
MW-76		09/15/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.605/<0.250	<0.750/<0.750	--
MW-76		12/21/00	ND	<0.600	<0.500	0.628	<1.00	--	0.784	0.606/<0.250	<0.750/<0.750	--
MW-76		03/15/01	ND	0.506	1.35	<0.500	1.22	--	<0.0500	0.278/<0.250	<0.750/<0.750	--
MW-76		06/21/01	ND	<0.500	<0.500	0.808	<1.00	--	<0.0500	<0.250	<0.750	--
MW-76		09/25/01	ND	0.508	<0.500	0.774	<1.00	--	<0.0500	0.461/0.316	<0.750/<0.750	--
MW-76		12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	0.114	0.549/<0.250	<0.750/<0.750	--
MW-76		03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.317/<0.250	<0.750/<0.750	--
MW-76		06/19/02	ND	<0.500	<0.500	<0.500	1.11	--	<0.0500	<0.250	<0.750	--
MW-76		12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-76		12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-76		12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-200		03/08/07	Sheen	2.80	0.5	3.7	4	--	0.39	0.46	<0.095	--
MW-200		06/07/07	ND	2.4	0.6	2.1	2.5	--	0.250	0.310	<0.095	<0.037
MW-200		09/26/07	ND	1.6	<0.5	0.9	<1.5	--	0.230	0.270	<0.100	<0.047
MW-200	Duplicate	09/26/07	ND	1.7	<0.5	0.8	<1.5	--	0.230	0.310	0.120	<0.047
MW-200		11/28/07	ND	2.0	<0.5	1.2	2.1	--	0.250	0.330	<0.100	0.064
MW-200		02/13/08	ND	3.44	<0.500	1.19	1.79	--	0.497	<0.236	<0.472	<1.00
MW-200		05/13/08	ND	2.70	<0.500	1.15	2.07	--	0.426	<0.240	<0.481	<1.00
MW-200		09/03/08	ND	<0.500	0.883	1.46	<1.00	--	0.337	<0.236	<0.472	<1.00

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-200		12/04/08	ND	3.19	<0.500	0.975	2.01	--	0.427	<0.238	<0.476	<1.00
MW-200		02/18/09	ND	2.54	<0.500	0.619	1.14	--	0.355	<0.250	<0.500	<1.00
MW-200		05/13/09	ND	3.43	<0.500	1.12	1.91	--	0.513	<0.278	<0.556	<1.00
MW-200		09/11/09	ND	<0.500	<0.500	0.52	<1.00	--	0.360	<0.248	<0.495	<2.0
MW-200		04/14/10	ND	<0.50	<0.50	0.54	<2.0	--	0.35	0.31	<0.25	<2.0
MW-200		08/12/10	Sheen	--	--	--	--	--	--	--	--	
MW-200		09/22/10	ND	<0.50	<0.50	0.56	1.2	--	0.43	0.56	<0.25	<2.0
MW-200		04/26/11	ND	6.2	<0.50	0.59	1.5	--	0.39	--	--	<2.0
MW-200		04/28/11	ND	--	--	--	--	--	--	0.33	<0.24	--
MW-200		09/22/11	ND	6.7 [18]	<0.50 [18]	0.83 [18]	1.9 [18]	--	0.27	0.39 [17]	<0.24	--
MW-200	Duplicate	09/22/11	ND	5.0	<0.50	0.65	1.4	--	0.24	0.37 [17]	<0.24	--
MW-200		04/18/12	ND	3.7	<0.50	0.73	1.4	--	0.20	0.27 [17]	<0.24	--
MW-200		10/11/12	ND	<0.50	0.75 [21]	<0.50	<0.50	--	0.39	0.30 [17,19,20]	<0.24	--
MW-200		04/25/13	ND	6.5	<0.5	1.1	2.1	--	0.35	0.120	<0.068	--
MW-200		09/19/13	ND	2.3	<0.5	<0.5	<1.5	--	0.11	0.160	<0.068	--
MW-200		06/24/14	ND	2.4	<0.5	<0.5	<1.5	--	0.120 J	0.083	<0.067	--
MW-200		12/16/14	ND	<6.0	<0.7	1.1	<2.4	--	0.460	0.130	<0.066	--
MW-200		06/18/15	ND	<3.0	<0.5	<0.5	<1.5	--	0.092	0.074	<0.066	--
MW-200		12/08/15	ND	<0.5	0.5	0.8	<1.5	--	0.460	0.092	<0.067	--
MW-200		06/14/16	ND	<0.5	<0.5	0.6	<1.5	--	0.290	0.150	<0.067	--
MW-200		01/13/17	ND	4.2	0.5	0.9	2.2	--	0.490	0.140	<0.067	--
MW-200		06/13/17	ND	2.0	<0.5	0.6	<1.5	--	0.340	0.080	<0.067	--
MW-200		11/08/17	ND	<4.0	<0.5	<0.5	<1.5	--	0.530	0.076	<0.110	--
MW-200		06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	0.370	0.110	<0.073	--
MW-200		12/13/18	ND	<0.5	0.6	<0.5	<1.5	--	0.230	0.130	0.130	--
MW-200		06/25/19	ND	<0.2	<0.2	<0.4	<1	--	0.240 J	0.057 J	<0.110	--
MW-200		12/18/19	ND	<0.2	<0.2	<0.4	<1	--	0.190 J	0.130	<0.110	--
MW-200		06/16/20	ND	<0.2	<0.2	<0.4	<1	--	0.21 J	0.072 J	<0.110	--
MW-200		11/19/20	ND	<0.2	<0.2	<0.4	<1	--	0.31	<0.045 * *1	<0.100	--
MW-200		06/07/21	ND	<0.30	<0.30	<0.40	<1.4	--	0.210 J	<0.047	<0.110	--
MW-200		**12/01/21**	**ND**	**<0.0941**	**<0.278**	**<0.137**	**0.406 J**	**--**	**0.159**	**0.115**	**<0.0833**	**--**
MW-201		03/08/07	Sheen	0.50	<0.5	<0.5	<1.5	--	0.076	0.51	0.18	--
MW-201		06/07/07	ND	0.50	<0.5	<0.5	<1.5	--	0.08	0.53	0.17	0.1
MW-201	Duplicate	06/07/07	ND	0.60	<0.5	<0.5	<1.5	--	0.069	0.39	0.13	--
MW-201		09/27/07	Sheen	<0.5	<0.5	<0.5	<1.5	--	0.076	0.810	0.470	0.080
MW-201		11/27/07	ND	0.6	<0.5	<0.5	<1.5	--	0.065	0.390	0.150	0.098
MW-201		02/12/08	ND	0.813	<0.500	<0.500	<1.00	--	0.111	<0.243	<0.485	<1.00
MW-201		05/14/08	Sheen	0.616	<0.500	<0.500	<1.00	--	0.110	<0.236	<0.472	<1.00
MW-201		09/05/08	ND	<0.500	0.517	<0.500	<1.00	--	0.153	<0.238	<0.476	<1.00
MW-201		12/05/08	ND	2.24	0.511	<0.500	1.87	--	0.323	<0.248	<0.495	<1.00
MW-201		02/17/09	ND	0.552	<0.500	<0.500	<1.00	--	0.0887	<0.263	<0.526	<1.00
MW-201		05/13/09	ND	2.42	<0.500	<0.500	1.76	--	0.372	<0.250	<0.500	<1.00
MW-201		09/11/09	ND	<0.500	<0.500	<0.500	1.4	--	0.43	<0.248	<0.495	<2.0
MW-201		04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.15	0.17	<0.25	<2.0
MW-201		08/11/10	Sheen	--	--	--	--	--	--	--	--	
MW-201		09/22/10	ND	<0.50	<0.50	<0.50	1.1	--	0.27	0.47	<0.25	<2.0
MW-201		04/26/11	ND	1.6	<0.50	<0.50	<1.0	--	0.18	--	--	<2.0
MW-201		09/22/11	ND	3.6	<0.50	<0.50	1.4	--	0.22	0.33 [17]	<0.24	--
MW-201		04/18/12	ND	1.8	<0.50	<0.50	<1.0	--	0.14	0.29 [17]	<0.24	--
MW-201		10/11/12	ND	<0.50	0.61 [21]	<0.50	0.81	--	0.37	0.28 [17,19,20]	<0.24	--
MW-201		04/25/13	ND	1.7	0.9	<0.5	<1.5	--	0.14	0.049	<0.067	--
MW-201		09/19/13	ND	1.8	<0.5	<0.5	<1.5	--	0.13	0.075	<0.067	--
MW-201		06/23/14	ND	2.2	<0.5	<0.5	<1.5	--	0.210 J	0.068	<0.067	--
MW-201		12/16/14	ND	2.4	<0.7	0.6	2.3	--	0.450	0.063	<0.067	--
MW-201		06/18/15	ND	<2.0	<0.5	<0.5	<1.5	--	0.130	0.32	0.46	--
MW-201		12/08/15	ND	<0.5	<0.5	0.6	1.6	--	0.580	0.062	<0.066	--
MW-201	Duplicate	12/08/15	ND	<0.5	<0.5	<0.5	<1.5	--	0.500	0.19	0.27	--
MW-201		06/14/16	ND	<0.5	<0.5	<0.5	<1.5	--	0.160	0.072	<0.068	--
MW-201		01/13/17	ND	2.6	<0.5	0.6	<1.5	--	0.400	0.062	<0.067	--
MW-201		06/13/17	ND	1.3	0.9	<0.5	<1.5	--	0.350	0.260	0.350	--
MW-201		11/08/17	ND	<3.0	0.5	<0.5	<1.5	--	0.370	0.053	<0.110	--
MW-201		06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	0.340	0.063	<0.067	--
MW-201		12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	0.220	0.054	<0.100	--
MW-201		06/25/19	ND	<0.2	<0.2	<0.4	<1	--	0.300	<0.047	<0.110	--
MW-201		12/18/19	ND	<0.2	<0.2	<0.4	<1	--	0.200 J	<0.048	<0.110	--
MW-201		06/16/20	ND	<0.2	<0.2	<0.4	<1	--	**0.25**	**0.052 J**	<0.110	--
MW-201		11/18/20	ND	<0.2	<0.2	<0.4	<1	--	0.26	0.084 J *	0.240 J	--
MW-201		06/08/21	ND	<0.30	<0.30	<0.40	<1.4	--	0.170 J	<0.047	<0.100	--
MW-201		**12/02/21**	**Sheen**	**<0.0941**	**<0.278**	**<0.137**	**0.292 J**	**--**	**0.251**	**0.0745 J**	**<0.0833**	**--**
MW-202		03/08/07	ND	0.60	<0.5	<0.5	<1.5	--	0.16	0.18	<0.095	--
MW-202		06/07/07	ND	<0.5	<2.0 [16]	0.9	<1.5	--	0.072	0.150	<0.095	0.19
MW-202		09/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	0.110	0.380	0.360	<0.24
MW-202		11/26/07	ND	<0.5	<0.5	0.8	<1.5	--	0.100	0.290	0.120	0.37
MW-202		02/12/08	ND	<0.500	<0.500	0.751	<1.00	--	0.249	<0.240	<0.481	<1.00
MW-202		05/13/08	ND	<0.500	<0.500	0.620	<1.00	--	0.188	<0.236	<0.472	<1.00
MW-202		09/04/08	ND	<0.500	<0.500	1.55	<1.00	--	0.135	<0.238	<0.476	<1.00
MW-202		12/04/08	ND	<0.500	<0.500	<0.500	1.34	--	0.132	<0.245	<0.490	<1.00
MW-202		02/18/09	ND	<0.500	<0.500	0.583	<1.00	--	0.314	<0.245	<0.490	<1.00
MW-202		05/13/09	ND	<0.500	<0.500	<0.500	<1.00	--	0.233	<0.243	<0.485	<1.00
MW-202		09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	0.120	<0.245	<0.490	<2.0
MW-202		04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.10	<0.12	<0.25	<2.0
MW-202		09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.090	<0.12	<0.25	<2.0
MW-202		04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	0.072	--	--	<2.0
MW-202		04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-202		09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.18 [17]	<0.24	--
MW-202		04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	0.074	0.24 [17]	<0.24	--
MW-202		10/11/12	ND	<0.50	<0.50	<0.50	<0.50	--	0.100	0.19 [17,19,20]	<0.24	--
MW-202		04/25/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.031	<0.073	--
MW-202		09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.069	--
MW-202		06/23/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.029	<0.067	--
MW-202		12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	0.052	<0.028	<0.066	--
MW-202		06/18/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-202		12/08/15	ND	<0.5	<0.5	<0.5	<1.5	--	0.064	<0.029	<0.068	--
MW-202		06/14/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
MW-202		01/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.070	--
MW-202		06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-202		11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.046	<0.100	--
MW-202		06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.031	<0.072	--
MW-202		12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.046	<0.100	--
MW-202	Duplicate	12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.045	<0.100	--
MW-202		06/25/19	ND	<0.2	<0.2	<0.4	<1	--	0.047 J	<0.047	<0.110	--
MW-202		12/17/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	0.055 J	<0.110	--
MW-202		06/16/20	ND	<0.2	<0.2	<0.4	<1	--	0.0047 J	<0.47	<0.110	--
MW-202		11/18/20	ND	<0.2	<0.2	<0.4	<1	--	0.039 J	<0.048 *	<0.110	--
MW-202		06/08/21	ND	<0.30	<0.30	<0.40	<1.4	--	0.039 J	<0.048	<0.110	--
MW-202		**12/01/21**	**ND**	**<0.0941**	**<0.278**	**<0.137**	**<0.174**	**--**	**0.0463 J**	**0.0357 J**	**<0.0833**	**--**
MW-203		03/08/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.048	0.32	<0.095	--
MW-203		06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.0500	0.150	<0.097	0.045
MW-203		09/28/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.500	0.400	0.270	<0.047
MW-203		11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.290	<0.100	0.058
MW-203		02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00
MW-203	Duplicate	02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
MW-203		05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.243	<0.485	<1.00
MW-203	Duplicate	05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	--	--	--
MW-203		09/03/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
MW-203		12/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00
MW-203		02/17/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
MW-203		05/13/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.243	<0.485	<1.00
MW-203		09/11/09	ND	<0.500	<0.500	<1.00	<1.00	--	0.082	<0.248	<0.495	<2.0
MW-203		04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.25	<2.0
MW-203		09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.058	<0.12	<0.24	<2.0
MW-203		04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	--	--	<2.0
MW-203		04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--
MW-203		09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.25	--
MW-203		04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.14 [17]	<0.24	--
MW-203		10/11/12	ND	<0.50	<0.50	<0.50	<0.50	--	<0.025	0.22 [17,19,20]	<0.24	--
MW-203		04/25/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.031	<0.072	--
MW-203		09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
MW-203		06/24/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.029	<0.067	--
MW-203	Duplicate	06/24/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.029	<0.067	--
MW-203		12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	0.110	0.032	<0.067	--
MW-203		06/18/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.069	--
MW-203		12/07/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.069	--
MW-203		06/15/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.047	<0.067	--
MW-203	Duplicate	06/15/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.035	<0.067	--
MW-203		01/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.069	--
MW-203		06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-203		11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.046	<0.100	--
MW-203		06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.037	<0.068	--
MW-203		12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	0.032	0.054	<0.100	--
MW-203		06/25/19	ND	<0.2	<0.2	<0.4	<1	--	0.051 J	<0.046	<0.100	--
MW-203		12/17/19	ND	<0.2	<0.2	<0.4	<1	--	0.021 J	<0.046	<0.100	--
MW-203		06/16/20	ND	<0.2	<0.4	<0.2	<1	--	0.065 J	<0.46	<0.100	--
MW-203		11/19/20	ND	<0.2	<0.2	<0.4	<1	--	0.040 J	<0.045 * *1	<0.100	--
MW-203		06/08/21	ND	<0.30	<0.30	<0.40	<1.4	--	0.063 J	<0.046	<0.100	--
MW-203		**12/01/21**	**ND**	**<0.0941**	**<0.278**	**<0.137**	**<0.174**	**--**	**<0.0316**	**0.0815 J**	**<0.0833**	**--**
MW-204		03/08/07	Sheen	1.00	0.9	<0.5	<1.5	--	0.47	0.89	0.14	--
MW-204		06/07/07	ND	1.40	1.8	<0.5	2.6	--	0.670	1.400	0.170	<0.037
MW-204		09/28/07	ND	0.70	0.9	<0.5	1.6	--	0.640	1.000	0.260	<0.24
MW-204		11/27/07	ND	0.9	0.8	0.9	<5.0 [16]	--	0.670	0.700	0.160	<0.047
MW-204		02/12/08	ND	1.76	1.09	<0.500	2.12	--	0.713	<0.240	<0.481	<1.00
MW-204		05/14/08	ND	1.32	1.71	<0.500	4.17	--	0.782	0.310	0.784	<1.00
MW-204		09/03/08	ND	4.42	1.06	3.07	1.47	--	1.070	0.384	<0.476	<1.00
MW-204		10/01/08	ND	--	--	--	--	--	0.796	--	--	--
MW-204		12/04/08	ND	1.45	1.20	1.05	4.22	--	0.869	0.291	<0.495	<1.00
MW-204		02/17/09	ND	1.48	1.32	1.82	7.50	--	1.060	0.341	<0.500	<1.00
MW-204	Duplicate	02/17/09	ND	1.54	1.30	1.81	7.45	--	1.120	0.332	<0.556	<1.00
MW-204		05/13/09	ND	1.93	1.55	1.86	4.79	--	1.190	0.593	<0.500	<1.00
MW-204	Duplicate	05/13/09	ND	1.82	1.58	1.88	7.70	--	1.230	0.553	<0.556	<1.00
MW-204		09/11/09	ND	<0.500	1.10	<0.500	1.8	--	1.200	0.396	<0.495	<2.0
MW-204	Duplicate	09/11/09	ND	<0.500	1.10	<0.500	1.8	--	1.100	0.393	<0.495	<2.0
MW-204		04/14/10	ND	1.1	2.1	<0.50	3.6	--	1.5	1.2	0.84	<2.0
MW-204	Duplicate	04/14/10	ND	1.1	2.1	<0.50	3.7	--	1.5	1.1	<0.25	<2.0
MW-204		09/22/10	ND	<0.50	1.5	<0.50	3.2	--	1.3	1.5	<0.25	<2.0
MW-204		04/26/11	ND	1.6	1.5	<0.50	3.9	--	0.71	--	--	<2.0
MW-204	Duplicate	04/26/11	ND	1.9	1.7	<0.50	5.0	--	1.0	--	--	<2.0
MW-204		04/28/11	ND	--	--	--	--	--	--	0.69	<0.24	--
MW-204	Duplicate	04/28/11	ND	--	--	--	--	--	--	0.58	<0.24	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-204		09/22/11	ND	1.7	1.6	<0.50	6.1	--	0.92	0.88 [17]	<0.25	--
MW-204	Duplicate	09/22/11	ND	1.7	1.8	<0.50	6.5	--	0.92	0.65 [17]	<0.24	--
MW-204	MW-204-NEAR	09/22/11	ND	1.7	1.7	<0.50	6.3	--	0.94	0.91 [17]	<0.25	--
MW-204		04/18/12	ND	1.6	1.7	<0.50	4.1	--	0.69	1.2 [17]	0.64 [17]	--
MW-204	Duplicate	04/18/12	ND	2.0	1.7	<0.50	5.3	--	0.87	1.2 [17]	1.4 [17]	--
MW-204	MW-204-NEAR	04/18/12	ND	2.0	1.8	<0.50	5.3	--	0.90	1.2 [17]	1.6 [17]	--
MW-204	Duplicate	04/18/12	ND	2.0	1.8	<0.50	5.3	--	0.90	1.3 [17]	2.8 [17]	--
MW-204		10/12/12	ND	<0.50	1.3	<0.50	2.3	--	0.95	0.6 [17,19,20]	<0.24	--
MW-204	Duplicate	10/12/12	ND	<0.50	1.2	<0.50	2.3	--	0.62	0.62 [17,19,20]	<0.24	--
MW-204	MW-204-NEAR	10/12/12	ND	<0.50	1.3	<0.50	2.4	--	0.71	0.51 [17,19,20]	<0.24	--
MW-204		04/26/13	ND	0.7	2.2	1.6	4.6	--	0.89	0.24	<0.067	--
MW-204	Duplicate	04/26/13	ND	0.7	2.2	1.7	4.9	--	0.88	0.32	0.077	--
MW-204		09/19/13	ND	1.1	1.5	1.1	3.5	--	0.58	0.31	<0.067	--
MW-204		06/24/14	ND	1.0	1.4	<0.5	2.6	--	0.600 J	0.24	<0.066	--
MW-204		07/25/14	ND	--	--	--	--	--	0.880	--	--	--
MW-204	Duplicate	07/25/14	ND	--	--	--	--	--	0.90	--	--	--
MW-204		12/16/14	ND	0.9	1.5	1.3	<6.0	--	0.990	0.240	<0.066	--
MW-204	Duplicate	12/16/14	ND	0.9	1.5	1.2	<6.0	--	1.000	0.200	<0.066	--
MW-204		06/18/15	ND	<0.5	0.9	0.6	<3.0	--	0.430	0.250	<0.069	--
MW-204		12/09/15	ND	1.0	1.6	1.4	3.8	--	1.400	0.190	<0.069	--
MW-204		01/15/16	ND	0.9	1.4	<1.2	3.5	--	1.400	0.840	0.4	--
MW-204	Duplicate	01/15/16	ND	0.9	1.4	<1.1	3.5	--	1.400	0.210	<0.070	--
MW-204		06/13/16	ND	<0.5	1.6	1.4	2.9	--	0.890	0.210	<0.067	--
MW-204		01/13/17	ND	<0.5	1.4	1.3	3.3	--	1.400	0.260	<0.068	--
MW-204		06/13/17	ND	0.7	1.1	<0.5	2.3	--	1.200	0.170	<0.067	--
MW-204		11/08/17	ND	<0.9	1.2	1.2	2.3	--	1.000	0.160	<0.100	--
MW-204		06/20/18	ND	<0.5	1.2	1.2	2.4	--	1.200	0.230	<0.066	--
MW-204		12/13/18	ND	<0.5	1.1	0.9	2.0	--	0.830	0.075	<0.100	--
MW-204		06/24/19	ND	<0.2	0.5 J	<0.4	<1	--	0.890	0.130	<0.110	--
MW-204	Duplicate	06/24/19	ND	<0.2	0.4 J	<0.4	<1	--	0.900	1.000	<0.110	--
MW-204		12/17/19	ND	<0.2	0.3 J	<0.4	<1	--	0.590	<0.047	<0.100	--
MW-204		06/16/20	ND	<0.2	0.4 J	<0.4	<1	--	0.950	0.19	<0.100	--
MW-204		11/19/20	ND	<0.2	0.26 J	<0.4	<1	--	1.100	0.130 * *1	<0.100	--
MW-204		06/08/21	ND	<0.30	0.31 J	<0.30	<1.4	--	0.9	0.067 J	<0.100	--
MW-204		**12/02/21**	**ND**	**<0.0941**	**<0.278**	**<0.137**	**0.478 J**	**--**	**0.531**	**0.302**	**<0.0833**	**--**
MW-205		03/08/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.048	0.18	<0.095	--
MW-205		06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.098	<0.100	<0.037
MW-205		09/28/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.081	<0.100	<0.047
MW-205		11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.120	0.560	<0.047
MW-205		02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	0.529	<1.00
MW-205		05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.238	<0.476	<1.00
MW-205		09/03/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00
MW-205		12/05/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
MW-205		02/17/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<1.00
MW-205		05/13/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.245	<0.490	<1.00
MW-205		09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	0.1	<0.248	<0.495	<2.0
MW-205		04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.051	<0.12	<0.25	<2.0
MW-205		09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.082	0.15	<0.25	<2.0
MW-205		04/26/11	LNAPL	--	--	--	--	--	--	--	--	--
MW-205		09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	0.07	<0.12	<0.25	--
MW-205	MW-205-NEAR	09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.25	--
MW-205		04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.16 [17]	<0.24	--
MW-205	Duplicate	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.25 [17]	0.44 [17]	--
MW-205	MW-205-NEAR	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	7.4 [17]	4.8 [17]	--
MW-205		10/12/12	ND	<0.50	<0.50	<0.50	<0.50	--	0.027	0.23 [17,19,20]	<0.24	--
MW-205	Duplicate	10/12/12	ND	<0.50	<0.50	<0.50	<0.50	--	0.035	0.54 [17,19,20]	0.34 [17]	--
MW-205	MW-205-NEAR	10/12/12	ND	<0.50	<0.50	<0.50	<0.50	--	0.036	0.30 [17,19,20]	<0.24	--
MW-205		04/26/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.069	--
MW-205		09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-205	Duplicate	09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-205		06/24/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.028	<0.066	--
MW-205		12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-205		06/18/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-205	Duplicate	06/18/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-205		12/09/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.031	<0.072	--
MW-205		06/13/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.05	<0.068	--
MW-205		01/13/17	MD	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.089	<0.071	--
MW-205		06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.28	<0.029	<0.067	--
MW-205		11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.071	<0.046	<0.100	--
MW-205		06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.035	<0.070	--
MW-205		12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.045	<0.100	--
MW-205		06/24/19	ND	<0.2	<0.2	<0.4	<1	--	0.130 J	0.068 J	<0.100	--
MW-205		12/17/19	ND	<0.2	<0.2	<0.4	<1	--	0.040 J	<0.047	<0.100	--
MW-205		06/16/20	ND	<0.2	<0.2	<0.4	<1	--	0.082 J	**0.053 J**	<0.100	--
MW-205		11/19/20	ND	<0.2	<0.2	<0.4	<1	--	0.056 J	<0.045 * *1	<0.100	--
MW-205		06/08/21	ND	<0.30	<0.30	<0.40	<1.4	--	0.093 J	<0.051	<0.110	--
MW-205		**12/02/21**	**Sheen**	**<0.0941**	**<0.278**	**<0.137**	**<0.174**	**--**	**<0.0316**	**0.0935 J**	**<0.0833**	**--**
MW-206		03/08/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.048	<0.075	<0.094	--
MW-206		06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.076	<0.095	0.078
MW-206		09/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.076	<0.095	<0.047
MW-206		11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.077	<0.096	<0.24
MW-206		02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
MW-206		05/13/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.505	<1.00
MW-206		09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-206	Duplicate	09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00
MW-206		12/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
MW-206	Duplicate	12/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
MW-206		02/18/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.278	<0.556	<1.00
MW-206		05/12/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.278	<0.556	<1.00
MW-206		09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<2.0
MW-206		04/13/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	--	--	--
MW-206		04/14/10	ND	--	--	--	--	--	--	<0.12	<0.24	<2.0
MW-206		09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.25	<2.0
MW-206		04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	--	--	<2.0
MW-206		04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--
MW-206		09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--
MW-206		04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--
MW-206		10/11/12	ND	<0.50	<0.50	<0.50	<0.50	--	<0.025	0.16 [17,19,20]	<0.24	--
MW-206		04/25/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-206		09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.069	--
MW-206		06/23/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.029	<0.067	--
MW-206		12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-206		06/17/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
MW-206		12/08/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-206		06/14/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-206		01/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-206		06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-206	Duplicate	06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.069	--
MW-206		11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.048	<0.110	--
MW-206		06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-206		12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	0.050	<0.100	--
MW-206		06/25/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.049	<0.110	--
MW-206		12/17/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.046	<0.100	--
MW-206		06/16/20	ND	<0.2	<0.2	<0.2	<1	--	<0.019	<0.047	<0.10	--
MW-206		11/19/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.045 * *1	<0.100	--
MW-206		06/08/21	ND	<0.30	<0.30	<0.40	<1.4	--	<0.019	<0.045	<0.100	--
MW-206		**12/03/21**	**ND**	**<0.0941**	**<0.278**	**<0.137**	**<0.174**	**--**	**<0.0316**	**<0.0333**	**<0.0833**	**--**
MW-207		03/08/07	ND	<0.5	<0.5	0.9	<1.5	--	<0.048	0.12	<0.095	--
MW-207	Duplicate	03/08/07	ND	<0.5	<0.5	1.1	<1.5	--	<0.048	0.15	<0.095	--
MW-207		06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.05	<0.077	<0.096	0.11
MW-207		09/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.081	<0.10	<0.47
MW-207		11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.076	<0.095	<0.047
MW-207		02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<1.00
MW-207		05/13/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.500	<1.00
MW-207		09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.238	<0.476	<1.00
MW-207		12/03/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.238	<0.476	<1.00
MW-207		02/18/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<1.00
MW-207		05/12/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.500	<1.00
MW-207		09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<2.0
MW-207		04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.24	<2.0
MW-207		09/21/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.24	<2.0
MW-207	Duplicate	09/21/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.092	<0.12	<0.25	<2.0
MW-207		04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	--	--	<2.0
MW-207		04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--
MW-207		09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--
MW-207		04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--
MW-207		10/11/12	ND	<0.50	<0.50	<0.50	<0.50		<0.025	0.15 [17,19,20]	<0.24	--
MW-207		04/25/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
MW-207		09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-207		06/23/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.028	<0.066	--
MW-207		12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-207		06/17/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-207		12/08/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-207		06/14/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
MW-207		01/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
MW-207	Duplicate	01/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.130	1.700	--
MW-207		06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.071	0.031	<0.067	--
MW-207		11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.046	<0.110	--
MW-207	Duplicate	11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.046	<0.110	--
MW-207		06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
MW-207		12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.046	<0.100	--
MW-207		06/25/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.048	<0.110	--
MW-207		12/17/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.046	<0.100	--
MW-207		06/16/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.048	<0.100	--
MW-207		11/18/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.049 *	<0.110	--
MW-207		06/07/21	ND	<0.30	<0.30	<0.40	<1.4	--	<0.019	<0.048	<0.110	--
MW-207		**12/01/21**	**ND**	**<0.0941**	**<0.278**	**<0.137**	**<0.174**	**--**	**<0.0316**	**<0.0333**	**<0.0833**	**--**
MW-209		02/16/16	ND	1.4	1.2	1.3	4.2	--	1.600	0.150	<0.067	--
MW-209		06/13/16	ND	1.5	1.3	1.6	3.7	--	0.930	0.200	<0.066	--
MW-209		09/22/16	ND	0.9	0.9	<1.1	2.9	--	0.990	0.140	<0.072	--
MW-209		01/12/17	ND	1.3	1.3	1.4	3.6	--	1.400	0.140	<0.072	--
MW-209		03/27/17	ND	1.5	1.4	1.5	3.3	--	0.920	0.190	<0.068	--
MW-209		06/16/17	ND	1.1	0.8	<0.5	2.4	--	1.300	0.730	0.230	--
MW-209		12/16/19	ND	<0.2	0.3 J	<0.4	<1	--	0.590	<0.048	<0.110	--
MW-209		03/25/20	ND	<0.2	<0.2	<0.4	<1	--	0.690	<0.10	0.05 J	--
MW-209		06/16/20	ND	<0.2	0.3 J	<0.4	<1	--	0.590	0.580	0.18 J	--
MW-209		11/17/20	ND	<0.2	0.22 J	<0.4	<1	--	0.66	0.063 J *	<0.110	--
MW-209		03/15/21	ND	<0.20	0.47 J	<0.40	<1.4	--	0.69	0.083 J *1	<0.110	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Note	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
				B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-209		06/09/21	ND	<0.30	0.32 J	<0.40	<1.4	--	0.51	<0.048	<0.110	--
MW-209		**09/20/21**	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**0.28**	**0.055 J**	**<0.11**	**--**
MW-209		**12/03/21**	**ND**	**0.112 J**	**<0.278**	**<0.137**	**0.577 J**	**--**	**0.394**	**0.162**	**<0.0833**	**--**
MW-210		02/16/16	ND	<0.5	1.1	1.4	4.7	--	2.500	8.600	1.600	--
MW-210		06/13/16	ND	<0.5	1.6	<0.5	5.1	--	2.100	3.200	0.510	--
MW-210		09/22/16	ND	1.3	1.1	1.3	4.7	--	2.100	2.300	0.390	--
MW-210		01/12/17	ND	<0.5	1.1	<0.5	<1.5	--	0.130	0.037	<0.070	--
MW-210		03/27/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.220	1.500	0.320	--
MW-210	Duplicate	03/27/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.160	0.200	<0.066	--
MW-210		06/16/17	ND	<0.5	0.5	0.6	2.6	--	1.200	2.800	0.550	--
MW-210		12/16/19	ND	<0.2	<0.2	<0.4	<1	--	0.072 J	<0.047	<0.100	--
MW-210		03/25/20	ND	<0.2	<0.2	<0.4	<1	--	0.04 J	<0.10	<0.05	--
MW-210		06/17/20	ND	<0.2	<0.2	<0.4	<1	--	0.019 J	<0.46	<0.100	--
MW-210		09/11/20	ND	<0.2	<0.2	<0.4	<1	--	0.071 J	<0.048 *1	<0.110	--
MW-210		11/17/20	ND	<0.2	0.22 J	<0.4	<1	--	0.150 J	<0.049 *	<0.110	--
MW-210		03/15/21	ND	<0.20	<0.20	<0.40	<1.4	--	0.038 J	<0.051 *1	<0.110	--
MW-210		06/09/21	ND	<0.30	<0.30	<0.40	<1.4	--	0.045 J	<0.049	<0.110	--
MW-210		**09/20/21**	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**0.038 J**	**<0.054**	**<0.12**	**--**
MW-210		**12/03/21**	**ND**	**<0.0941**	**<0.278**	**<0.137**	**<0.174**	**--**	**<0.0316**	**<0.0333**	**<0.0833**	**--**
MW-211		02/16/16	ND	<0.5	<0.5	<0.5	<1.5	--	0.210	0.069	<0.067	--
MW-211		06/13/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.084	<0.068	--
MW-211		09/22/16	ND	<0.5	<0.5	<0.5	<1.5	--	0.100	0.062	<0.069	--
MW-211		01/12/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.065	0.049	<0.070	--
MW-211		03/27/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.061	<0.067	--
MW-211		06/16/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.130	0.081	<0.066	--
MW-211	Duplicate	06/16/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.130	0.072	<0.067	--
MW-211		12/16/19	ND	<0.2	<0.2	<0.4	<1	--	0.031 J	<0.049	<0.110	--
MW-211		03/25/20	ND	<0.2	<0.2	<0.4	<1	--	0.031 J	<0.049	<0.110	--
MW-211		06/17/20	ND	<0.2	<0.2	<0.4	<1	--	0.044 J	<0.047	<0.100	--
MW-211		11/17/20	ND	<0.2	<0.2	<0.4	<1	--	0.053 J	<0.052 *	<0.120	--
MW-211		03/15/21	ND	<0.20	<0.20	<0.40	<1.4	--	0.055 J	<0.051 *1	<0.110	--
MW-211		06/09/21	ND	<0.30	<0.30	<0.40	<1.4	--	0.052 J	<0.048	<0.110	--
MW-211		**09/20/21**	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**0.035 J**	**<0.052**	**<0.12**	**--**
MW-211		**12/03/21**	**ND**	**<0.0941**	**<0.278**	**<0.137**	**<0.174**	**--**	**<0.0316**	**0.0509 J**	**<0.0833**	**--**

Notes:

[1]Monitoring well locations are shown in Figure 2.

[2]LNAPL = light nonaqueous phase liquid.

[3]For December 2000 through June 2002, samples were first analyzed without the sulfuric acid/silica gel cleanup procedure (first or only result). If analytes were detected, the sulfuric acid/silica gel cleanup procedure was performed (second result). For September 2002 and after, samples obtained from Upper Yard wells were analyzed without the sulfruric acid/silica gel cleanup procedure, and

[4]According to the laboratory, the sample chromatogram does not resemble the gasoline standard.

[5]According to the laboratory, sample contains diesel-range hydrocarbons that extend into the hydrocarbon range quantified as gasoline.

[6]Due to an error in the identification of two sets of samples, (MW-64 and Dup 121699), the results from the sampling date of 01/04/00 were not considered reliable. The 12/26/99 results were not reported

[7]Due to an extraction anomaly during the silica gel cleanup procedure, a second analytical result is not available for this sample.

[8]After review of field procedures and historic analytical results, the sample appears to have been cross-contaminated in the field or in the laboratory.

[9]BTEX and gasoline-range hydrocarbon analyses were completed outside of the recommended holding time. Results should be qualified as estimated.

[10]Samples were extracted 3 or 4 days after expiration of the recommended holding time.

[11]Results should be considered bias low or estimated due to laboratory QA/QC exception.

[12]MW-30 was not sampled between July 1989 and September 1990 because of the presence of free product.

[13]Due to an extraction anomaly, the surrogate recoveries in the WTPH-D extended analyses were outside the established control limits and the results should be considered a low estimated value,

[14]The 03/23/99 data for diesel-range hydrocarbons (20.8/14.6 mg/L) for MW-84 appeared anomalous due to field sample handling or laboratory analytical error. The well was resampled on 04/01/99.

[15]Due to a lab error, the sample extract evaporated before testing and was not analyzed with the silica gel cleanup.

[16]Due to the presence of an interferent near its retention time, the normal reporting limit was not attained for this compound. The presence of or concentration cannot be determined.

[17]The chromatographic response resembles a typical fuel pattern.

[18] Sample was reanalyzed due to a surrogate failure. The surrogates were within QC limits in the reanalysis.

[19] Instrument related QC exceeds the control limits.

[20] Compound was found in the blank and sample.

[21] The %RDP between the primary and confirmation column/detector is 40%. The lower value has been reported.

µg/L = micrograms per liter
mg/L = milligrams per liter
ND = not detected
RAL = remedial action level
-- = not tested
Shaded concentrations are greater than corresponding Remedial Action Levels. Bolded data are for the current reporting period.
NEAR = The sample was collected from the top 12 inches of the water column within the respective monitoring well.
UJ = Non-detect value was analyzed outside of hold time, but lest than two times hold time, concentration is an estimated value.
J = Concnetration is an estimated value and was analyzed outside of hold time, but lest than two times hold time.
* = LCS or LCSD is outside acceptance limits.
*1 = LCS/LCSD RPD exceeds control limits.
H = Sample was prepped or analyzed beyond the specified holding time

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
Remedial Action Levels		**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-27	12/13/02	0.0282	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.0282	0.398	<0.100	<0.100	<0.100	0.149	<0.100	<0.100	<0.100	<0.100
	06/19/03	0.0639	<0.0100	<0.0100	<0.0100	<0.0100	0.0288	0.0232	0.1159	3.46	<0.100	0.226	<0.100	0.963	0.296	0.188	0.357	0.952
	12/03/03	0.0266	<0.0100	<0.0100	<0.0100	0.0195	<0.0100	<0.0100	0.0461	--	--	--	--	--	--	<0.100	--	--
	06/03/04	0.0357	<0.0100	<0.0100	<0.0100	0.0276	<0.0100	<0.0100	0.0633	2.66	<0.100	0.178	<0.100	0.962	0.348	0.821	0.299	0.826
	12/06/04	0.0286	<0.0100	<0.0100	<0.0100	0.0190	<0.0100	<0.0100	0.0476	1.57	<0.100	<0.100	<0.100	0.269	<0.100	<0.100	<0.100	0.488
	06/03/05	0.0709	0.0127	0.0157	0.0166	0.0440	<0.0100	<0.0100	0.1499	2.01	<0.100	<0.100	<0.100	0.995	<0.100	<0.100	<0.100	1.21
	12/01/05	0.0921	0.0576	0.0649	0.0393	0.0698	<0.0100	0.0444	0.3681	--	--	--	--	--	--	--	--	--
	03/08/07	<0.02	<0.02	<0.02	<0.009	<0.02	<0.02	<0.02	<0.129	--	--	--	--	--	--	--	--	--
MW-27R	09/26/07	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	--	--	--	--	--	--	0.079 [5]	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.19	--	--
MW-30	04/26/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/14/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
MW-61A-R	12/14/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
MW-67	06/19/03	0.0769	0.0195	<0.0100	<0.0100	0.0278	0.0849	0.0730	0.2821	1.99	<0.100	0.242	<0.100	0.602	0.106	<0.100	0.229	0.549
	12/03/03	0.0284	0.0101	<0.0100	0.0106	0.0337	<0.0100	<0.0100	0.0828	--	--	--	--	--	--	0.133	--	--
	06/03/04	0.0362	<0.0100	<0.0100	0.0132	0.0389	<0.0100	<0.0100	0.0883	1.25	<0.100	0.152	<0.100	0.839	<0.100	<0.100	<0.100	0.763
	12/06/04	0.0273	<0.0100	<0.0100	<0.0100	0.0258	<0.0100	<0.0100	0.0531	0.930	<0.100	<0.100	<0.100	0.342	<0.100	<0.100	<0.100	0.519
	03/04/05	0.0293	0.01	0.01	0.01	0.0221	0.01	0.01	0.0514	0.793	<0.100	0.148	<0.100	0.518	<0.100	<0.100	<0.100	0.511
	06/03/05	0.0323	<0.0100	<0.0100	<0.0100	0.0262	<0.0100	<0.0100	0.0585	0.714	<0.100	<0.100	<0.100	0.816	<0.100	<0.100	<0.100	0.843
MW-70R	02/16/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	02/16/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/14/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.030	--	--
	09/22/16	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	<0.033	--	--
	01/12/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
Duplicate	01/12/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	03/27/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	0.018	0.015	0.026	0.018	0.019	0.019	0.015	0.13	--	--	--	--	--	--	--	--	--
	03/26/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	--	--	--	--	--	--	--	--	--
Duplicate	03/26/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	--	--	--	--	--	--	--	--	--
Duplicate	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	--	--	--	--	--	--	--	--	--
	09/27/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
Duplicate	09/27/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	03/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
Duplicate	03/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	09/26/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	<0.03	--	--
Duplicate	09/26/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	<0.03	--	--
	12/18/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
Duplicate	12/18/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	03/24/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
Duplicate	03/24/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
Duplicate	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	09/11/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
Duplicate	09/11/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	11/18/20	<0.01	<0.01	<0.010	<0.010	<0.010	<0.02 *	<0.01	<0.008	--	--	--	--	--	--	--	--	--
Duplicate	11/18/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02 *	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	03/16/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.021	<0.021	<0.009	--	--	--	--	--	--	--	--	--
Duplicate	03/16/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	<0.020	<0.008	--	--	--	--	--	--	--	--	--
	06/07/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.022	<0.022	<0.009	--	--	--	--	--	--	--	--	--
Duplicate	06/07/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.023	<0.023	<0.009	--	--	--	--	--	--	--	--	--
	09/21/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.023**	**<0.023**	**0.010**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Duplicate	**09/21/21**	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.021**	**<0.021**	**0.009**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
	12/01/21	**<0.0203**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**<0.0137**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Duplicate	**12/01/21**	**<0.0203**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**<0.0137**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
MW-76	12/13/02	0.0247	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.0247	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
	06/19/03	0.0824	0.0262	<0.0100	<0.0100	0.0258	0.0718	0.0589	0.2651	0.484	<0.100	<0.100	<0.100	0.628	<0.100	<0.100	<0.100	0.342
	12/03/03	0.0194	<0.0100	0.0107	<0.0100	0.0172	<0.0100	<0.0100	0.0473	--	--	--	--	--	--	<0.100	--	--
	06/03/04	<0.0100	<0.0100	0.0104	<0.0100	0.0253	<0.0100	<0.0100	0.0357	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
	12/06/04	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
	06/03/05	0.0725	0.0528	0.0448	0.0452	0.0797	0.0142	0.0267	0.3359	<0.100	<0.100	<0.100	<0.100	0.482	<0.100	<0.100	<0.100	0.369
MW-200	06/07/07	<1	<1	<1	<1	<1	<1	<1	<7	22	<1	<1	<1	<1	6	31	1	<1
	07/06/07	0.01	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.01	20	<0.30	0.51	<0.0095	0.7	5	24	0.93	0.46
	09/26/07	0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.011	--	--	--	--	--	--	24 [5]	--	--
Duplicate	9/26/07[D]	0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.011	--	--	--	--	--	--	22 [5]	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
Remedial Action Levels		**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-200 (continued)	11/28/07	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	--	--	--	--	--	--	31	--	--
	02/13/08	0.0126	<0.00990	<0.00990	<0.00990	0.0137	<0.00990	<0.00990	0.0263	--	--	--	--	--	--	--	--	--
	05/13/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	05/13/08	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	--	--	--	--	--	--	--	--	--
	09/03/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	09/03/08	<0.0476	<0.0476	<0.0476	<0.0476	<0.0476	<0.0476	<0.0476	<0.0476	--	--	--	--	--	--	--	--	--
	12/04/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
	02/18/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	02/18/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	05/13/09	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0111	<0.0220	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0220	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	--	--	--	--	--	--	--	--	--
	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	09/22/10	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	17	0.26	0.77	<0.094	1.3	5.5	13	4.7	0.88
	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	13	0.22	0.24	<0.094	<0.094	3.1	11	1.5	<0.094
Original	9/22/11[9]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.19	2.5	0.26	0.16	<0.0094	0.043	2.5	0.70	1.1	0.039
Original Duplicate	9/22/11[D]	0.010	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	0.010	19	0.19	1.1	<0.0099	1.4	6.6	8.50	4.7	1.0
Re-Analysis	9/22/11[7]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	2.6	0.25	0.16	<0.0094	0.045	2.6	0.80	1.3	0.042
Filtered	9/22/11[9]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	12	0.12	0.57	<0.0094	0.69	2.8	6.60	2.5	0.52
Duplicate Filtered	9/22/11[D]	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	14	0.15	0.57	<0.0098	0.74	3.6	7.00	3.0	0.56
Re-Analysis Filtered	9/22/11[7]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	15	0.16	0.61	<0.0094	0.76	4.0	6.80	3.5	0.57
	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	24[DL]	0.28	0.94	<0.019	1.4	7.8	18[DL]	5.4	1.0
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	5.5	0.054	0.046	<0.019	<0.019	0.085	10[DL]	0.036	<0.019
	10/11/12	0.01	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.01	23	0.23	0.92	<0.0095	1.00	4.4	8.6	4.4	0.73
Filtered	10/11/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	14	0.093	0.07	<0.0095	<0.0095	0.73	5.5	0.0099	<0.0095
	04/25/13	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	--	--	--	--	--	--	--	--	--
	09/19/13	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	--	--	--	--	--	--	--	--	--
	06/24/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/14	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	--	--	--	--	--	--	--	--	--
	06/18/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/08/15	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	--	--	--	--	--	--	--	--	--
	06/14/15	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	--	--	--	--	--	--	8.36	--	--
	01/13/17	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.008	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	0.064	0.037	0.11	0.096	0.072	0.081	0.088	0.548	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.010	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/18/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	11/19/20	0.011 J	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/07/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.021	<0.021	<0.009	--	--	--	--	--	--	--	--	--
	12/01/21	**<0.0203**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**<0.0137**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
MW-201	06/07/07	<1	<1	<1	<1	<1	<1	<1	<1	6	<1	<1	<1	<1	2	1	<1	<1
	07/06/07	0.027	0.014	0.017	<0.0096	0.02	<0.0096	<0.0096	0.078	6.7	<0.10	0.52	<0.0096	0.83	2	2.6	0.3	0.72
	09/27/07	0.018	<0.011	<0.011	<0.011	0.027	<0.011	<0.011	0.045	--	--	--	--	--	--	2.3[5]	--	--
	11/27/07	0.016	<0.0095	<0.0095	<0.0095	0.023	<0.0095	<0.0095	0.039	--	--	--	--	--	--	0.99	--	--
	02/12/08	0.0179	0.0584	<0.0490	<0.0490	0.0210	<0.00980	<0.00980	0.0973	--	--	--	--	--	--	--	--	--
	05/14/08	0.051	<0.0472	<0.0472	<0.0472	0.0756	<0.0472	<0.0472	0.1266	--	--	--	--	--	--	--	--	--
Filtered	05/14/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
	09/05/08	0.0243	<0.00962	<0.00962	<0.00962	0.0175	<0.00962	<0.00962	0.0418	--	--	--	--	--	--	--	--	--
Filtered	09/05/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
	12/05/08	0.0247	<0.00980	<0.00980	<0.00980	0.0268	<0.00980	<0.00980	0.0515	--	--	--	--	--	--	--	--	--
Filtered	12/05/08	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	--	--	--	--	--	--	--	--	--
	02/17/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Filtered	02/17/09	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	--	--	--	--	--	--	--	--	--
	05/13/09	0.0129	<0.0100	<0.0100	<0.0100	0.0191	<0.0100	<0.0100	0.0320	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	--	--	--	--	--	--	--	--	--
	09/11/09	0.021	<0.0200	<0.0100	<0.0100	0.025	<0.0100	<0.0100	0.0460	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0100	<0.0220	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0220	--	--	--	--	--	--	--	--	--
	04/14/10	0.014	<0.020	<0.0099	<0.0099	0.019	<0.0099	<0.0099	0.033	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	09/22/10	0.026	<0.020	<0.0099	<0.0099	0.030	<0.0099	<0.0099	0.056	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	--	--	--	--	--	--	--	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
Remedial Action Levels		**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-201 (continued)	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	7.3	0.10	0.41	<0.094	1.2	1.2	0.25	0.50	0.97
Filtered	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	5.5	0.12	<0.094	<0.094	<0.094	0.59	0.22	<0.094	<0.094
Original	9/22/11 [8,9]	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	8.3	0.10	0.80	<0.094	1.5	1.8	0.40	0.94	1.3
Original Filtered	9/22/11 [9]	0.014	<0.019	<0.0094	<0.0094	0.014	<0.0094	<0.0094	0.028	6.3	0.077	0.37	<0.0094	0.63	1.1	0.33	0.55	0.52
Re-Analysis Filtered	9/22/11[7]	0.017	<0.019	<0.0094	<0.0094	0.017	<0.0094	<0.0094	0.032	7.9	0.072	0.47	<0.0094	0.82	1.3	0.48	0.74	0.66
	04/18/12	0.025	<0.0096	<0.019	<0.019	0.021	<0.019	<0.019	0.046	8.2	0.11	0.44	<0.019	1.1	1.3	0.2	0.51	0.85
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	1.4	0.022	0.054	<0.019	<0.019	<0.019	0.098	<0.019	<0.019
	10/11/12	0.029	<0.019	<0.0095	<0.0095	0.027	<0.0095	<0.0095	0.056	9.7	0.11	0.6	<0.0095	1.1	0.92	0.27	0.53	1.0
Filtered	10/11/12	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.9	0.043	0.12	<0.019	<0.019	0.12	0.19	<0.019	<.019
	04/25/13	0.022	<0.010	<0.010	<0.010	0.026	<0.010	<0.010	0.048	--	--	--	--	--	--	--	--	--
	09/19/13	0.02	<0.010	<0.010	<0.010	0.027	<0.010	<0.010	0.047	--	--	--	--	--	--	--	--	--
	06/23/14	0.032	<0.010	<0.010	<0.010	0.034	<0.010	<0.010	0.066	--	--	--	--	--	--	--	--	--
	12/16/14	0.016	<0.010	<0.010	<0.010	0.021	<0.010	<0.010	0.037	--	--	--	--	--	--	--	--	--
	06/18/15	0.034	0.025	0.029	<0.010	0.029	<0.010	0.023	0.140	--	--	--	--	--	--	--	--	--
	12/08/15	0.029	0.011	0.013	<0.010	0.030	<0.010	0.011	0.094	--	--	--	--	--	--	--	--	--
Duplicate	12/08/15	0.022	<0.010	<0.010	<0.010	0.022	<0.010	<0.010	0.044	--	--	--	--	--	--	--	--	--
	06/14/16	0.030	<0.010	0.014	<0.010	0.032	<0.010	<0.010	0.076	--	--	--	--	--	--	0.863	--	--
	01/13/17	0.017	<0.010	<0.010	<0.010	0.017	<0.010	<0.010	0.009	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	0.018	<0.010	<0.010	<0.010	0.019	<0.010	<0.010	0.027	--	--	--	--	--	--	--	--	--
	06/20/18	0.010	<0.01	<0.01	<0.01	0.010	<0.02	<0.01	0.020	--	--	--	--	--	--	--	--	--
	12/13/18	0.020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.020	--	--	--	--	--	--	--	--	--
	06/25/19	0.01 J	<0.01	<0.01	<0.01	0.02 J	<0.02	<0.01	0.02 J	--	--	--	--	--	--	--	--	--
	12/18/19	<0.01	0.02 J	0.02 J	<0.01	<0.01	<0.02	0.03 J	0.07 J	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.080	--	--	--	--	--	--	--	--	--
	11/18/20	<0.01	<0.01	<0.01	<0.01	0.012 J	<0.02 *	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/08/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.021	<0.009	--	--	--	--	--	--	--	--	--
	12/02/21	**0.0216 J**	**0.0203 J**	**0.0243 J**	**<0.0202**	**<0.0179**	**<0.0160**	**0.0320 J**	**0.0300**	--	--	--	--	--	--	--	--	--
MW-202	06/07/07	<1	<1	<1	<1	<1	<1	<1	<7	2	<1	<1	<1	1	<1	<1	2	1
	07/06/07	0.05	0.014	0.016	<0.0097	0.049	<0.0097	<0.0097	0.129	0.27	<0.025	0.22	<0.0097	0.66	0.073	0.27	0.15	0.53
	09/27/07	0.042	<0.010	<0.010	<0.010	0.040	<0.010	<0.010	0.082	--	--	--	--	--	--	0.18 [5]	--	--
	11/26/07	0.043	<0.010	<0.010	<0.010	0.036	<0.010	<0.010	0.079	--	--	--	--	--	--	<0.010	--	--
Filtered	11/26/07	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	0.057	--	--
	02/12/08	0.0457	<0.00990	<0.00990	0.0184	0.0444	<0.00990	<0.00990	0.1085	--	--	--	--	--	--	--	--	--
Filtered	02/12/08	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	--	--	--	--	--	--	--	--	--
	05/13/08	0.0406	<0.00943	0.0116	0.0149	0.0432	<0.00943	<0.00943	0.1103	--	--	--	--	--	--	--	--	--
Filtered	05/13/08	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	--	--	--	--	--	--	--	--	--
	09/04/08	0.0502	<0.00962	<0.00962	<0.00962	0.0482	<0.00962	<0.00962	0.0984	--	--	--	--	--	--	--	--	--
Filtered	09/04/08	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	--	--	--	--	--	--	--	--	--
	12/04/08	0.0286	<0.0100	<0.0100	<0.0100	0.0308	<0.0100	<0.0100	0.0594	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	02/18/09	0.0181	<0.00980	<0.00980	<0.00980	0.0222	<0.00980	<0.00980	0.0403	--	--	--	--	--	--	--	--	--
Filtered	02/18/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	05/13/09	0.0146	<0.00943	<0.00943	<0.00943	0.0160	<0.00943	<0.00943	0.0306	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
	09/11/09	0.0490	<0.0200	0.0110	<0.0100	0.0470	<0.0100	<0.0100	0.1070	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0100	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0200	--	--	--	--	--	--	--	--	--
	04/14/10	0.013	<0.020	<0.0099	<0.0099	0.013	<0.0099	<0.0099	0.026	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	09/22/10	0.041	<0.020	0.012	<0.010	0.043	<0.010	<0.010	0.096	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	--	--	--	--	--	--	--	--	--
	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	4.8	<0.094	<0.094	<0.094	0.55	0.36	2.9	<0.094	0.42
Filtered	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	3.6	<0.094	<0.094	<0.094	<0.094	0.19	2.6	<0.094	<0.094
	9/21/11 [8,9]	0.015	<0.019	<0.0094	<0.0094	0.013	<0.0094	<0.0094	0.028	0.35	<0.0094	0.021	<0.0094	0.17	0.019	0.16	0.013	0.19
	9/21/11 [9]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	0.28	<0.0094	0.0094	<0.0094	0.059	0.016	0.13	<0.0094	0.065
Re-Analysis Filtered	9/21/11[7]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	0.35	<0.0094	0.031	<0.0094	0.13	0.026	0.12	0.016	0.14
	04/18/12	0.029	<0.0096	<0.019	<0.019	0.031	<0.019	<0.019	0.06	6.5	0.058	0.051	<0.019	0.54	0.24	1.8	0.11	0.43
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.40	<0.019	<0.019	<0.019	<0.019	<0.019	0.76	<0.019	<0.019
	10/11/12	0.027	<0.019	<0.0095	<0.0095	0.02	<0.0095	<0.0095	0.02	0.82	0.011	0.068	<0.0095	0.23	0.032	0.075	0.016	0.26
Filtered	10/11/12	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.039	0.07	<0.019	<0.019	<0.019	<0.019	<0.019	0.03	<0.019	<0.019
Filtered	10/11/12	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.039	0.07	<0.019	<0.019	<0.019	<0.019	<0.019	0.03	<0.019	<0.019
	04/25/13	0.019	<0.010	<0.010	<0.010	0.017	<0.010	<0.010	0.036	--	--	--	--	--	--	--	--	--
	09/19/13	0.025	<0.010	<0.010	<0.010	0.026	<0.010	<0.010	0.051	--	--	--	--	--	--	--	--	--
	12/16/14	0.018	<0.010	<0.010	<0.010	0.014	<0.010	<0.010	0.032	--	--	--	--	--	--	--	--	--
	06/18/15	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	--	--	--	--	--	--	--	--	--
	12/08/15	0.025	<0.011	<0.011	<0.011	0.023	<0.011	<0.011	0.048	--	--	--	--	--	--	--	--	--
	06/14/16	0.014	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.014	--	--	--	--	--	--	0.98	--	--
	01/13/17	0.023	<0.011	<0.011	<0.011	0.017	<0.011	<0.011	0.023	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
Remedial Action Levels		**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-202 (continued)	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	0.021	<0.010	0.021	--	--	--	--	--	--	--	--	--
	06/20/18	0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.01	--	--	--	--	--	--	--	--	--
	12/13/18	0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.01	--	--	--	--	--	--	--	--	--
Duplicate	12/13/18	0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	0.03 J	<0.01	<0.01	<0.01	0.02 J	<0.02	<0.01	0.02 J	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	0.021 J	<0.01	<0.01	<0.01	0.015 J	<0.02	<0.01	<0.231	--	--	--	--	--	--	--	--	--
	11/18/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02 *	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/08/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.021	<0.021	<0.009	--	--	--	--	--	--	--	--	--
	12/01/21	**0.0266 J**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**0.0154**	--	--	--	--	--	--	--	--	--
MW-203	06/07/07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	07/06/07	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	0.62	<0.0096	0.12	<0.0096	0.16	0.047	0.052	0.013	0.11
	09/28/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.07	--	--	--	--	--	--	0.13	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.010	--	--
	02/12/08	0.0127	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	0.0127	--	--	--	--	--	--	--	--	--
Duplicate	02/12/08	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	--	--	--	--	--	--	--	--	--
	05/14/08	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	--	--	--	--	--	--	--	--	--
Filtered	05/14/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
	09/03/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
Filtered	09/03/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
	12/04/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
	02/17/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Filtered	02/17/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	05/13/09	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
	04/14/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0097	<0.019	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.019	--	--	--	--	--	--	--	--	--
	09/22/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	0.44	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
Filtered	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	0.45	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
	9/21/11[9]	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	0.34	<0.0098	0.012	<0.0098	0.039	0.0098	0.011	<0.0098	0.079
Re-Analysis	9/21/11[7]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	0.51	<0.010	0.022	<0.010	0.047	0.017	0.02	<0.010	0.10
Filtered	9/21/11[9]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	0.34	<0.010	0.011	<0.010	0.023	0.011	0.016	<0.010	0.043
Re-Analysis Filtered	9/21/11[7]	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.31	<0.0095	0.017	<0.0095	0.020	0.013	0.0095	<0.0095	0.039
	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.42	<0.019	0.028	<0.019	0.042	<0.019	<0.019	<0.019	0.076
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
	10/11/12	<0.0095	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	0.23	<0.0098	0.035	<0.0098	0.041	0.011	0.013	0.01	0.10
Filtered	10/11/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.056	<0.0095	0.019	<0.0095	<0.0095	<0.0095	0.028	<0.0095	<0.0095
	04/25/13	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/24/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	06/24/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/18/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/07/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/15/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.128	--	--
Duplicate	06/15/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.099	--	--
	01/13/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/19/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/08/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	<0.020	<0.008	--	--	--	--	--	--	--	--	--
	12/01/21	**<0.0203**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**<0.0137**	--	--	--	--	--	--	--	--	--
MW-204	06/07/07	<1	<1	<1	<1	<1	<1	<1	<7	5	<1	<1	<1	<1	3	<1	<1	<1
	07/06/07	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	3.3	<0.30	0.19	<0.0095	0.06	2.7	0.45	1.1	0.061
Duplicate	07/06/07	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	3.3	<0.30	0.18	<0.0096	0.058	2.7	0.44	1	0.064
	09/28/07	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	--	--	--	--	--	--	0.84	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.010	--	--
	02/12/08	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	--	--	--	--	--	--	--	--	--
	05/14/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
Remedial Action Levels		0.03 *	0.03 *	0.03 *	0.03 *	0.03 *	0.03 *	0.03 *	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MW-204 (continued) Filtered	05/14/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	09/03/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
Filtered	09/03/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
	12/04/08	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	02/17/09	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	--	--	--	--	--	--	--	--	--
Duplicate	02/17/09	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	--	--	--	--	--	--	--	--	--
Filtered	02/17/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Duplicate	02/17/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	0.0193	<0.0100	<0.0100	0.0193	--	--	--	--	--	--	--	--	--
Duplicate	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Duplicate	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0100	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0200	--	--	--	--	--	--	--	--	--
Duplicate	09/11/09	<0.0100	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0200	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
Duplicate	09/11/09	<0.0096	<0.0190	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0190	--	--	--	--	--	--	--	--	--
	04/14/10	<0.0097	<0.019	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.019	--	--	--	--	--	--	--	--	--
Duplicate	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	0.0099	<0.0099	<0.0099	0.0099	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
Duplicate	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	09/22/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	2.6	0.33	0.13	<0.094	<0.094	2.7	1.2	1.1	<0.094
Duplicate	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	2.5	0.30	0.14	<0.094	<0.094	2.6	1.3	1.0	<0.094
Filtered	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	2.6	0.28	<0.094	<0.094	<0.094	2.0	1.1	0.43	<0.094
Duplicate	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	2.1	0.23	0.094	<0.094	<0.094	1.7	1.1	0.53	<0.094
Original	09/22/11 [9]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	1.7	0.14	0.16	<0.010	0.039	1.6	0.63	1.0	0.034
Duplicate	09/22/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	2.3	0.15	0.13	<0.010	0.058	2.2	0.68	0.59	0.054
Re-Analysis	09/22/11 [7]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	2.4	0.19	0.13	<0.010	0.041	2.1	0.61	0.83	0.042
Filtered	09/22/11 [9]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	1.8	0.14	0.067	<0.010	0.018	1.4	0.52	0.72	0.014
Duplicate Filtered	09/22/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	2.1	0.17	0.079	<0.010	<0.010	1.6	0.65	0.75	<0.010
Re-Analysis Filtered	09/22/11 [7]	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	1.6	0.13	0.073	<0.0098	0.015	1.4	0.36	0.54	0.012
NEAR	09/22/11 [9]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	21	0.21	0.98	<0.010	1.3	4.7	9.6	4.1	0.94
NEAR Re-Analysis	09/22/11 [7]	<0.0096	<0.019	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.019	18	0.21	0.83	<0.0096	1.2	6.0	5.7	4.6	0.89
NEAR Filtered	09/22/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	1.7	0.14	0.076	<0.010	0.018	1.3	0.53	0.68	0.013
	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.3	0.37	0.21	<0.019	0.05	3.2	0.34	1.1	0.032
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	2.8	0.19	0.10	<0.019	1.2	<0.019	0.28	<0.019	<0.019
Duplicate	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.8	0.41	0.19	<0.019	0.047	3.6	0.37	1.2	0.037
Duplicate Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.82	0.032	0.071	<0.019	<0.019	0.019	0.16	<0.019	<0.019
NEAR	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.3	0.36	0.19	<0.019	0.048	3.0	0.33	1.1	0.03
NEAR Duplicate	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.2	0.35	0.18	<0.019	0.045	2.9	0.31	1.2	0.037
NEAR Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.2	0.30	0.085	<0.019	<0.019	1.7	0.76	0.023	<0.019
NEAR Duplicate Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.91	0.053	0.084	<0.019	<0.019	0.14	0.21	<0.019	<0.019
	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	2.5	0.29	0.23	<0.095	<0.095	2.4	0.94	1.1	<0.095
Filtered	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	0.98	0.11	<0.095	<0.095	<0.095	0.34	0.57	<0.095	<0.095
Duplicate	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	2.5	0.29	0.21	<0.095	<0.095	2.2	0.89	1.0	<0.095
Duplicate Filtered	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	2.2	0.24	<0.095	<0.095	<0.095	1.7	1.0	0.17	<0.095
NEAR	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	2.0	0.23	0.21	<0.095	<0.095	1.9	0.76	1.0	<0.095
NEAR Filtered	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	0.98	0.1	0.097	<0.095	<0.095	0.33	0.63	<0.095	<0.095
	04/26/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	04/26/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/24/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/18/15	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	12/09/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	01/15/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	01/15/16	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	--	--	--	--	--	--	--	--	--
	06/13/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.15	--	--
	01/13/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/24/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
Duplicate	06/24/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
Remedial Action Levels		**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-204 (continued)	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/19/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/08/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.021	<0.021	<0.009	--	--	--	--	--	--	--	--	--
	12/02/21	**<0.0203**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**<0.0137**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
MW-205	06/07/07	<1	<1	<1	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1
	07/06/07	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	3.4	0.022	<0.0096	<0.0096	<0.0096	<0.0096	0.041	<0.0096	0.01
	09/28/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.050	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.022	--	--
	02/12/08	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	--	--	--	--	--	--	--	--	--
	05/14/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
Filtered	05/14/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
	09/03/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	09/03/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
	12/05/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	12/05/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
	02/17/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Filtered	02/17/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
	04/14/10	<0.013	<0.026	<0.013	<0.013	<0.013	<0.013	<0.013	<0.026	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	--	--	--	--	--	--	--	--	--
	09/22/10	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	04/26/11									LNAPL								
Filtered	04/26/11									LNAPL								
	09/22/11	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	1.6	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	0.016	<0.0099	0.015
Filtered	09/22/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	1.1	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010
NEAR	09/22/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	1.5	<0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	0.011
NEAR Filtered	09/22/11	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	1.4	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	0.015	<0.0098	<0.0098
	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	1.6	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.16	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
Duplicate	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	1.9	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
Duplicate Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.32	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
NEAR	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	1.6	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
NEAR Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.8	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
	10/12/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	1.6	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.015	0.0095	<0.0095
Filtered	10/12/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.22	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.013	0.0095	<0.0095
Duplicate	10/12/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	1.5	0.015	0.011	<0.0095	<0.0095	0.014	0.017	<0.0095	0.0099
Duplicate Filtered	10/12/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.12	<0.0095	<0.0095	<00.095	<0.0095	<0.0095	0.016	<0.0095	<0.0095
NEAR	10/12/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	1.6	0.017	0.012	<0.0095	<0.0095	0.017	0.016	0.018	0.012
NEAR Filtered	10/12/12	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.12	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
	04/26/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/24/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/18/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	06/18/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/09/15	<0.010	0.012	0.011	<0.010	<0.010	<0.010	0.022	0.045	--	--	--	--	--	--	--	--	--
	06/13/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.031	--	--
	01/13/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/24/19	<0.01	<0.01	<0.01	<0.01	0.02 J	<0.02	<0.01	0.02 J	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/19/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/08/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.022	<0.009	--	--	--	--	--	--	--	--	--
	12/02/21	**<0.0203**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**<0.0137**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
MW-206	06/07/07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	07/06/07	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	1.9	<0.0096	0.069	<0.0096	0.087	0.14	0.19	0.51	0.036
	09/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.063[5]	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.031	--	--
	02/12/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
Remedial Action Levels		**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-206 (continued)	05/13/08	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Filtered	05/13/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
	09/04/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Duplicate[6]	09/04/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	09/04/08	0.0132	<0.00952	<0.00952	0.0107	0.0134	0.0638	0.0125	0.1136	--	--	--	--	--	--	--	--	--
Duplicate	09/04/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
	10/01/08	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	--	--	--	--	--	--	--	--	--
Filtered	10/01/08	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	--	--	--	--	--	--	--	--	--
	12/04/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Duplicate	12/04/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	--	--	--	--	--	--	--	--	--
	02/18/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	02/18/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	05/12/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	05/12/09	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0100	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0200	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
	04/14/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	--	--	--	--	--	--	--	--	--
	09/22/10	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	0.14	<0.094	<0.094	<0.094	0.21	<0.094	<0.094	<0.094	0.15
Filtered	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	0.12	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
	09/21/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	0.014	<0.010	<0.010	<0.010	0.063	<0.010	0.049	<0.010	0.046
Filtered	09/21/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	0.047	<0.010	<0.010	<0.010	0.011	<0.010	0.054	<0.010	0.01
	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.18	<0.019	0.042	<0.019	0.31	<0.019	0.022	<0.019	0.19
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
	10/11/12	0.011	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.011	0.21	<0.0095	0.066	<0.0095	0.37	0.018	0.0098	0.014	0.29
Filtered	10/11/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.018	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.011	<0.0095	<0.0095
	04/25/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/23/14	<0.010	<0.010	0.014	<0.010	<0.010	<0.010	0.013	0.027	--	--	--	--	--	--	--	--	--
	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/17/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/08/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/14/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.031	--	--
	01/13/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/19/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.008	--	--	--	--	--	--	--	--	--
	06/08/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.022	<0.022	<0.009	--	--	--	--	--	--	--	--	--
	12/03/21	**<0.0203**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**<0.0137**	--	--	--	--	--	--	--	--	--
MW-207	06/07/07	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1
	07/06/07	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	0.31	<1	0.01	<0.0096	0.017	0.033	0.014	0.064	<0.0096
	09/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.010	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.010	--	--
	02/12/08	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	05/13/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	05/13/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	09/04/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	09/04/08	<0.00952	<0.00952	0.0303	0.0256	<0.00952	<0.00952	<0.00952	0.0559	--	--	--	--	--	--	--	--	--
	10/01/08	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Duplicate	10/01/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	10/01/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Duplicate	10/01/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	12/03/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
Filtered	12/03/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
	02/18/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Filtered	02/18/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	05/12/09	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	--	--	--	--	--	--	--	--	--
Filtered	05/12/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0100	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0200	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
Remedial Action Levels		**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-207 (continued)	04/14/10	<0.0097	<0.019	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.019	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	--	--	--	--	--	--	--	--	--
	09/21/10	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	--	--	--	--	--	--	--	--	--
Duplicate	09/21/10	<0.0096	<0.019	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.019	--	--	--	--	--	--	--	--	--
Filtered	09/21/10	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	--	--	--	--	--	--	--	--	--
Duplicate	09/21/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	3.2	<0.094	0.10	<0.094	0.44	1.1	0.17	0.32	0.31
Filtered	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	2.6	<0.094	<0.094	<0.094	<0.094	0.53	0.22	<0.094	<0.094
	09/21/11	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	0.57	<0.0099	0.031	<0.0099	0.22	0.085	0.035	0.016	0.23
Filtered	09/21/11	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	0.35	<0.0098	0.012	<0.0098	0.047	0.045	0.019	<0.0098	0.042
	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.84	0.019	0.040	<0.019	0.19	0.074	0.23	0.021	0.17
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.93	0.021	0.047	<0.019	0.21	0.080	0.23	0.025	0.19
	10/11/12	0.017	<0.019	<0.0095	<0.0095	0.0097	<0.0095	<0.0095	0.0267	0.74	0.013	0.094	<0.0095	0.23	0.12	0.068	0.031	0.34
Filtered	10/11/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.18	<0.0095	0.029	<0.0095	<0.0095	<0.0095	0.033	0.017	<0.0095
	04/25/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/23/14	0.019	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	0.03	--	--	--	--	--	--	--	--	--
	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/17/15	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.030	--	--	--	--	--	--	--	--	--
	12/08/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/14/16	1.0	0.98	1.0	0.84	0.85	0.95	0.93	6.55	--	--	--	--	--	--	3.49	--	--
	01/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	01/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/13/17	0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/18/20	<0.01	<0.01	0.013 J	<0.01	0.012 J	<0.02 *	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/07/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.021	<0.021	<0.009	--	--	--	--	--	--	--	--	--
	12/01/21	**<0.0203**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**<0.0137**	--	--	--	--	--	--	--	--	--
MW-209	02/16/16	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/13/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.21	--	--
	09/22/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.030	--	--
	01/12/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	03/27/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	03/25/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	06/17/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/17/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.008	--	--	--	--	--	--	--	--	--
	03/15/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.023	<0.023	<0.009	--	--	--	--	--	--	--	--	--
	06/09/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.021	<0.009	--	--	--	--	--	--	--	--	--
	09/20/21	**<0.012**	**<0.012**	**<0.012**	**<0.012**	**<0.012**	**<0.024**	**<0.024**	**<0.010**	--	--	--	--	--	--	--	--	--
	12/03/21	**<0.0203**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**<0.0137**	--	--	--	--	--	--	--	--	--
MW-210	02/16/16	0.100	0.042	0.050	0.016	0.170	0.012	0.021	0.411	--	--	--	--	--	--	--	--	--
	06/13/16	0.110	0.056	0.073	0.027	0.210	0.015	0.024	0.515	--	--	--	--	--	--	<0.031	--	--
	09/22/16	0.016	0.014	0.016	<0.012	0.029	<0.012	<0.012	0.019	--	--	--	--	--	--	<0.037	--	--
	01/12/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	03/27/17	0.016	<0.010	0.011	<0.010	0.020	<0.010	<0.010	0.009	--	--	--	--	--	--	--	--	--
Duplicate	03/27/17	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	0.008	--	--	--	--	--	--	--	--	--
	06/16/17	0.075	0.042	0.044	0.020	0.130	0.017	0.034	0.060	--	--	--	--	--	--	--	--	--
	12/16/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	03/25/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	06/17/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	09/11/20	0.020 J	0.040 J	0.039 J	0.038 J	0.020 J	0.062 J	0.077	0.064	--	--	--	--	--	--	--	--	--
	11/17/20	<0.011	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	03/15/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.023	<0.023	<0.009	--	--	--	--	--	--	--	--	--
	06/09/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.021	<0.021	<0.009	--	--	--	--	--	--	--	--	--
	09/20/21	**<0.012**	**<0.012**	**<0.012**	**<0.012**	**<0.012**	**<0.024**	**<0.024**	**<0.010**	--	--	--	--	--	--	--	--	--
	12/03/21	**<0.0203**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**<0.0137**	--	--	--	--	--	--	--	--	--
MW-211	02/16/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/13/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.031	--	--
	09/22/16	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	<0.033	--	--
	01/12/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	03/27/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene
Remedial Action Levels		**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**0.03 ***	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-211 (continued)	06/16/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	03/25/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	06/17/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/17/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.010	--	--	--	--	--	--	--	--	--
	03/15/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.022	<0.022	<0.009	--	--	--	--	--	--	--	--	--
	06/09/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.021	<0.021	<0.009	--	--	--	--	--	--	--	--	--
	09/20/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**0.015 J**	**0.027 J**	**<0.023**	**0.011**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
	12/03/21	**<0.0203**	**<0.0184**	**<0.0168**	**<0.0202**	**<0.0179**	**<0.0160**	**<0.0158**	**<0.0137**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**

Notes:

[1]Monitoring well locations are shown on Figure 2.

[2]Analyses by EPA Method 8310 or 8270 (SIM).

[3]WAC 173-340-200 (MTCA).

[4]Numeric sum of detected concentrations. cPAHs adjusted for toxicity according to WAC 173-340-708(8). If one or more adjusted cPAH constituents were reported as Non-Detect, half of the reporting limit was used in calculations.

[5]Napthalene detected in the method blank, these data are from the initial extraction of the sample.

[6]Sample was extracted past the holding time.

[7]Sample was re-prepared outside of preparation holding time. Results have been flaged as "H" in the laboratory report.

[8] There was insufficient sample to perform a re-extraction or re-analysis, therefore, the data have been reported.

[9]LCS or LCSD exceeds the control limits/RPD of the LCS exceeds the control limits.

[D]Duplicate of the preceding sample.

Remedial Action Level per Amendments No. 4 and No. 5 to Order on Consent; applicable for Offsite Area only. There is no cPAH RAL for groundwater in the Upper Yard, Lower Yard or Elliott Avenue.

*The Remedial Action Level (RAL) of 0.03 µg/L, is above the laboratory PQL of 0.05 µg/L; thus, any detection results in concentration above the RAL. The PQL is the lowest constituent concentration at which a numerical concentration can be assigned with reasonable certainty that its value represents the constituent's actual concentration in the sample.

<0.011 = Not detected at or above the laboratory Method Detection Limit (MDL)

µg/L = micrograms per liter

NE = not established

"--" not sampled

cPAHs = carcinogenic polycyclic aromatic hydrocarbons.

PAHs = polynuclear aromatic hydrocarbons.

LNAPL = light nonaqueous phase liquid

Laboratory analyses by TestAmerica of Tacoma, Washington and Lancaster Laboratories of Lancaster, Pennsylvania.

Bolded data are for the current reporting period.

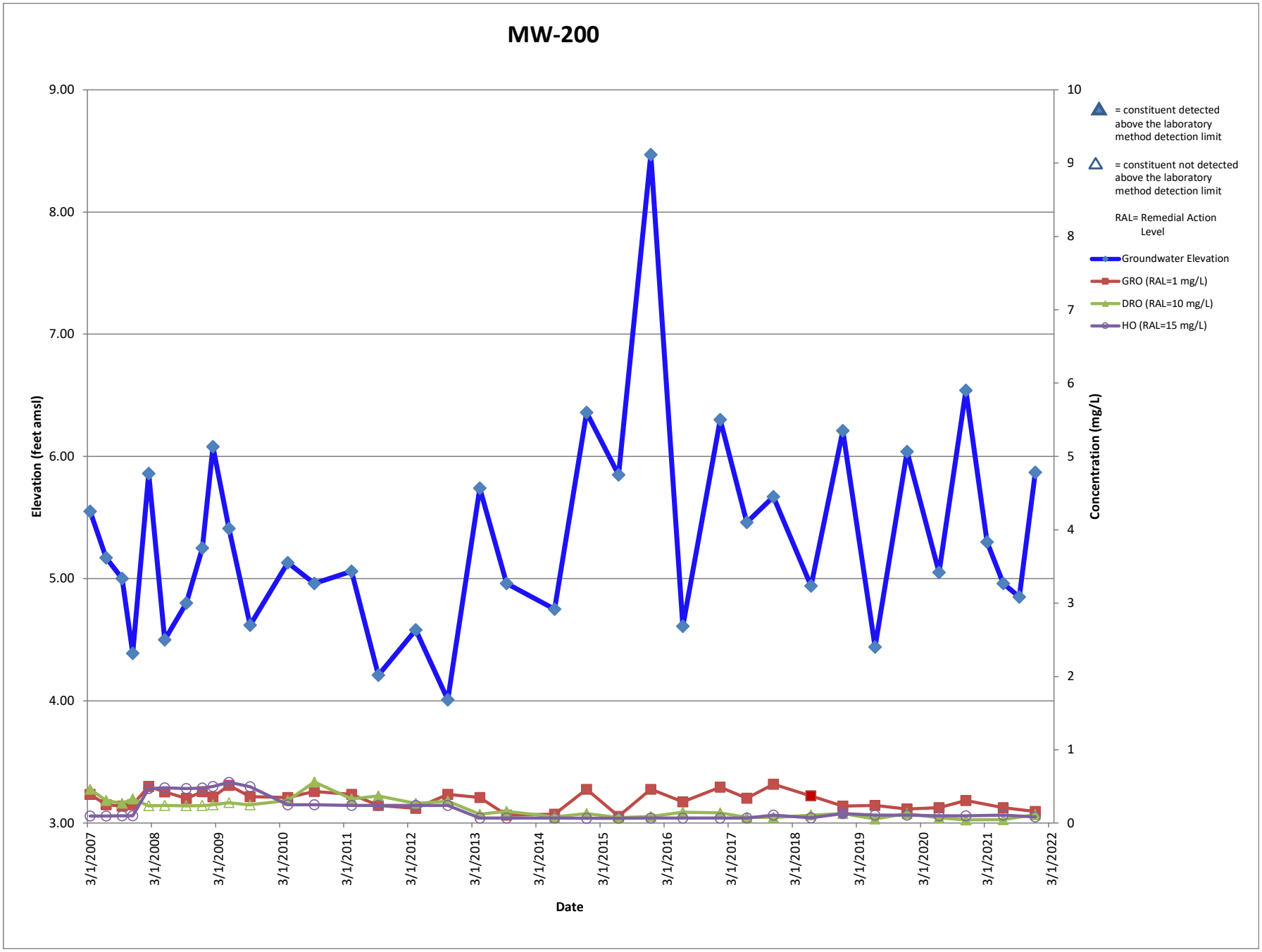
Shading indicates concentration greater than the RAL.

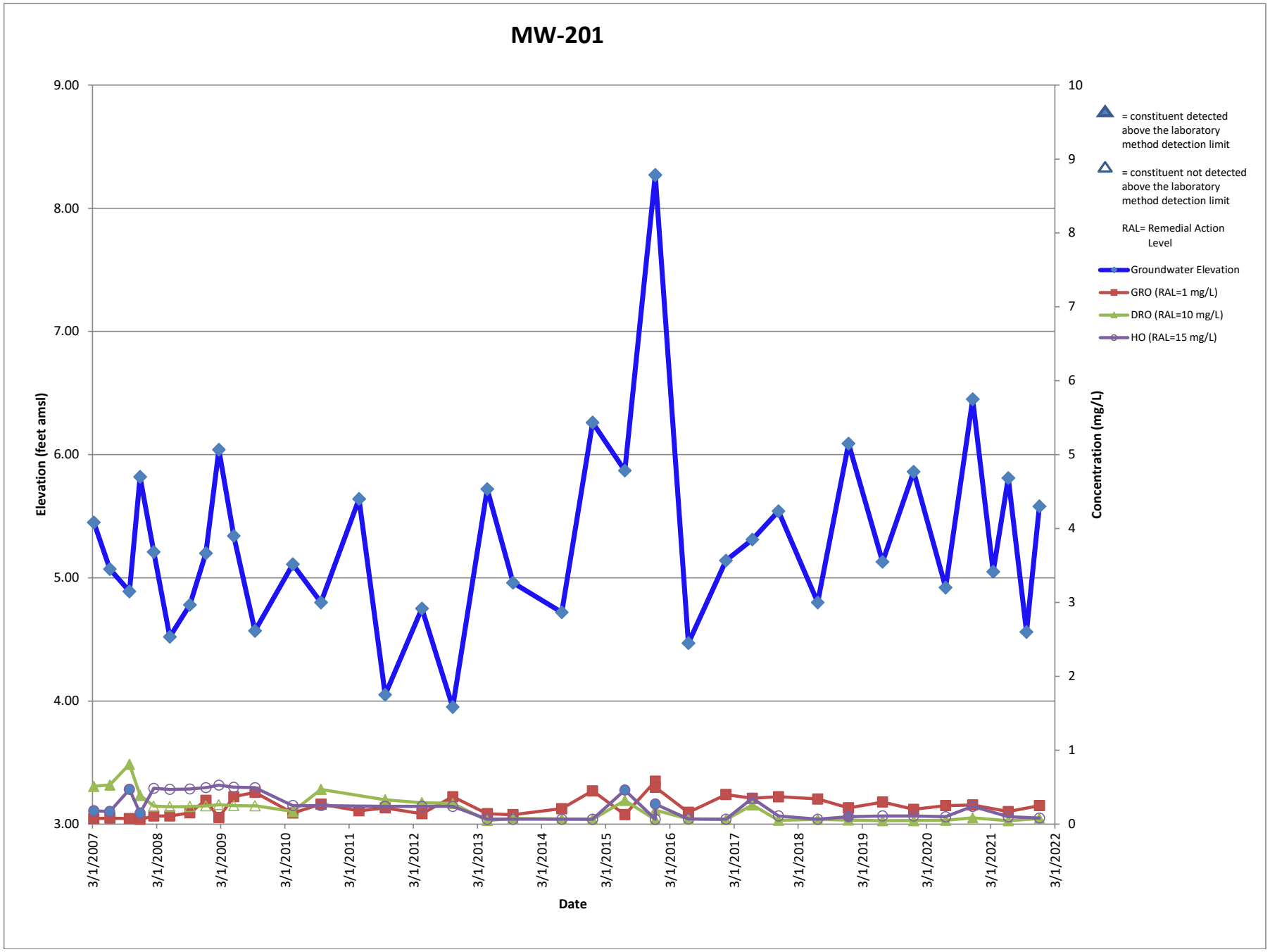
NEAR = The sample was collected from the top of the water column within the respective monitoring well.

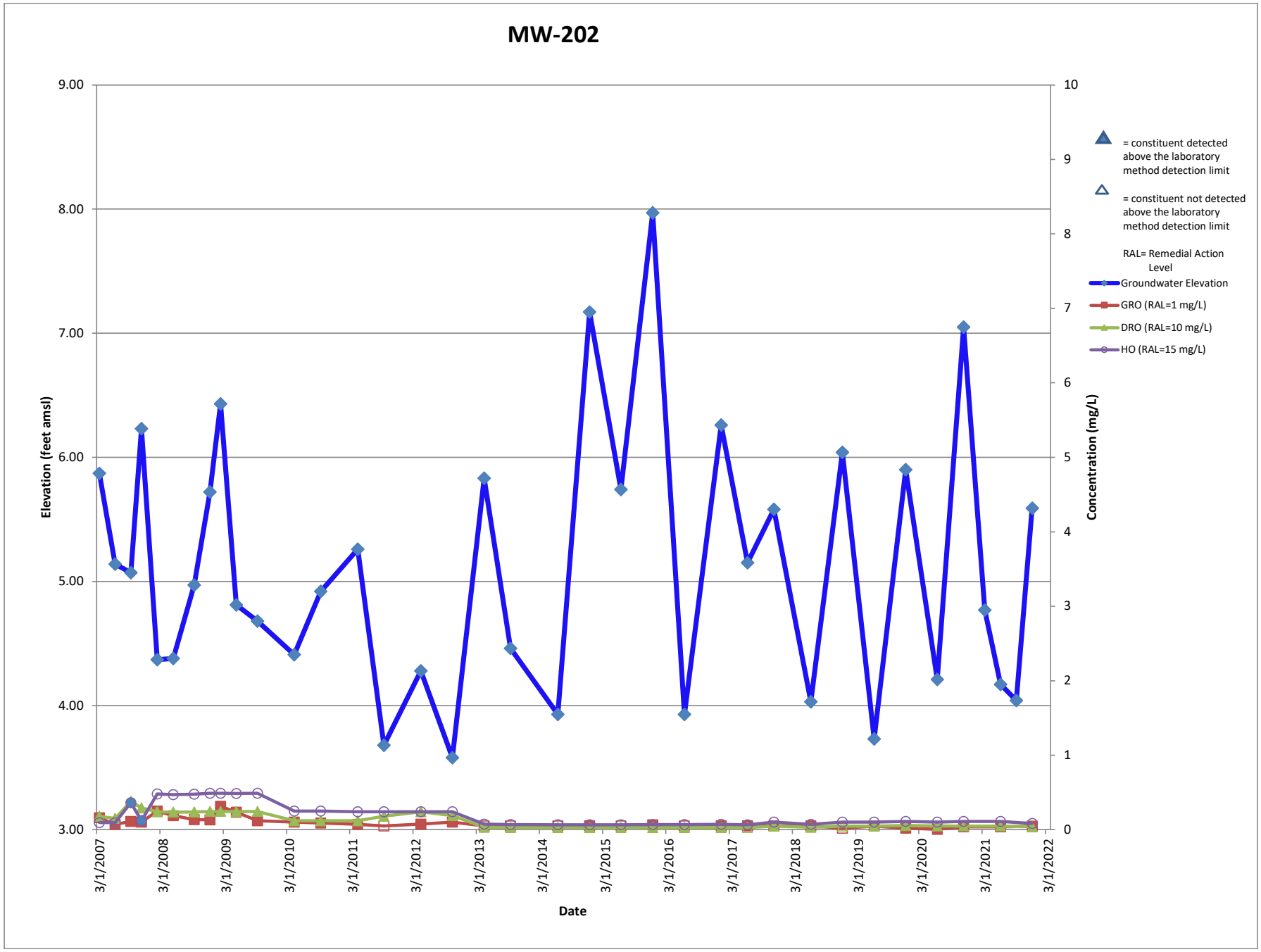
DL, RA, RE, IN = Indicates a Dilution, Reanalysis, Re-extraction, or additional Intial metals/anion analysis of the sample.

APPENDIX F

Historical Trend Graphs


MW-200
9.00
8.00
7.00
6.00
5.00
4.00
3.00
Elevation (feet amsl)
10
9
8
7
6
5
4
3
2
1
0
Concentration (mg/L)
3/1/2007
3/1/2008
3/1/2009
3/1/2010
3/1/2011
3/1/2012
3/1/2013
3/1/2014
3/1/2015
3/1/2016
3/1/2017
3/1/2018
3/1/2019
3/1/2020
3/1/2021
3/1/2022
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)


MW-201
9.00
8.00
7.00
6.00
5.00
4.00
3.00
Elevation (feet amsl)
10
9
8
7
6
5
4
3
2
1
0
Concentration (mg/L)
3/1/2007
3/1/2008
3/1/2009
3/1/2010
3/1/2011
3/1/2012
3/1/2013
3/1/2014
3/1/2015
3/1/2016
3/1/2017
3/1/2018
3/1/2019
3/1/2020
3/1/2021
3/1/2022
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)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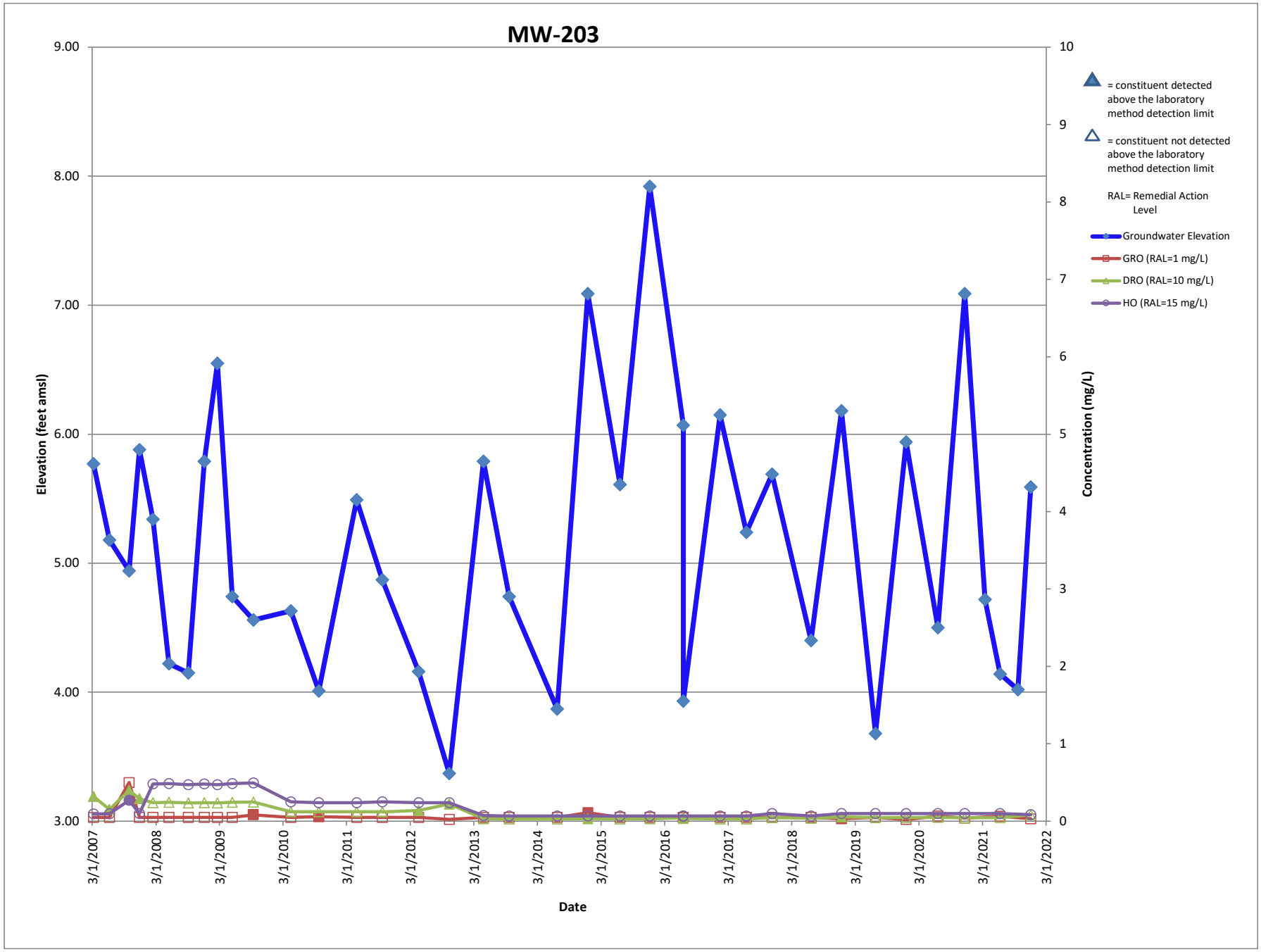
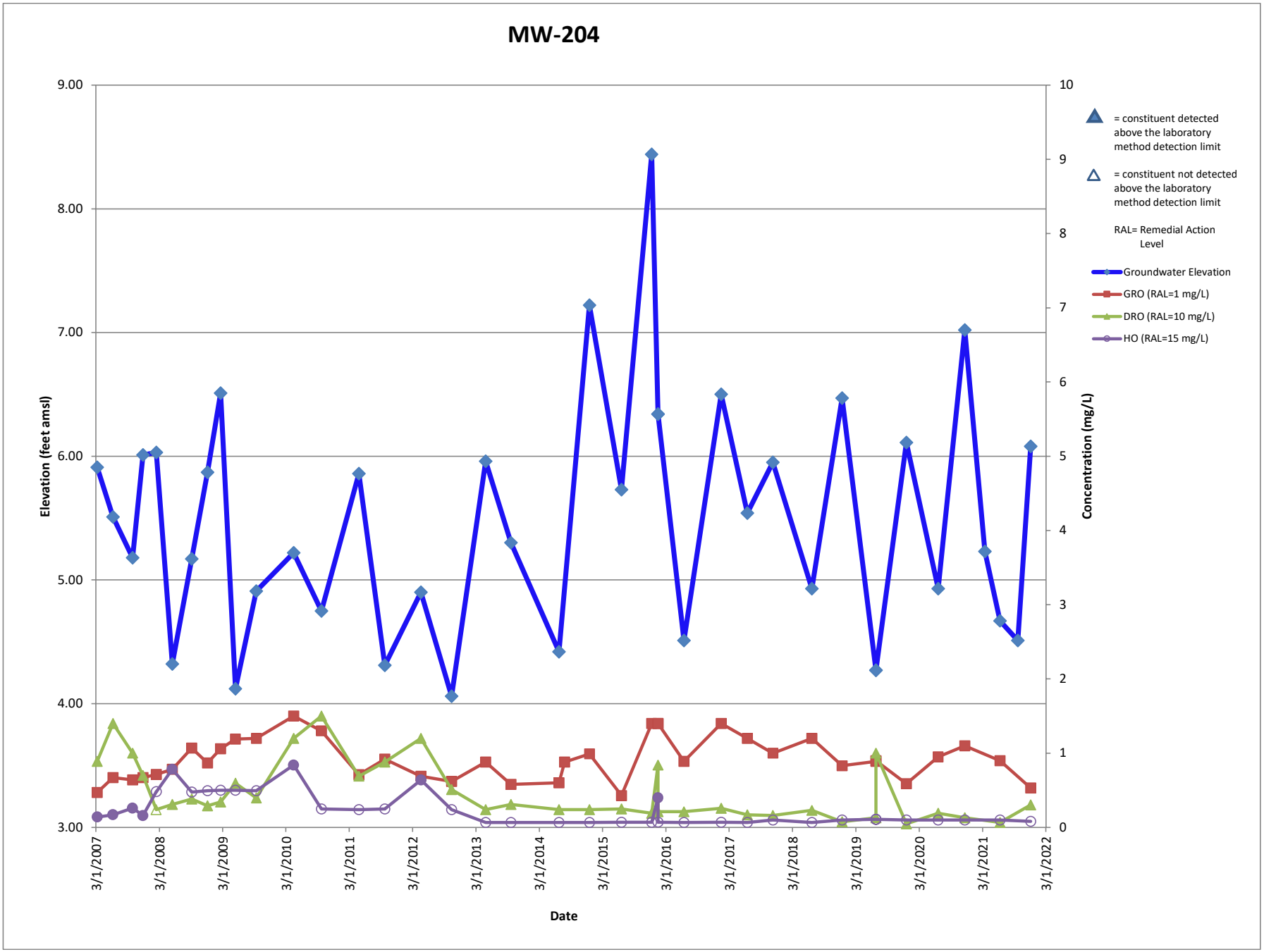
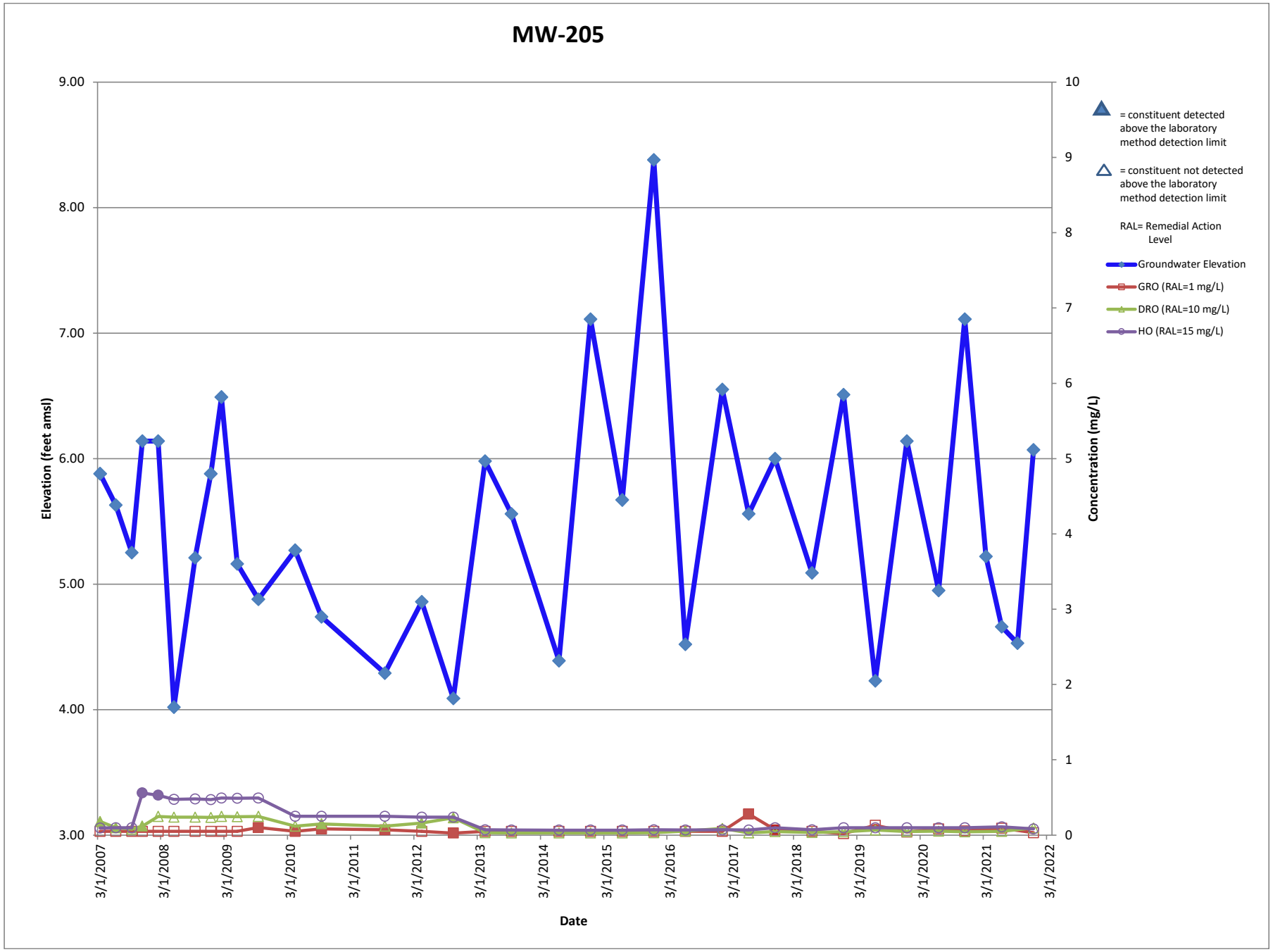
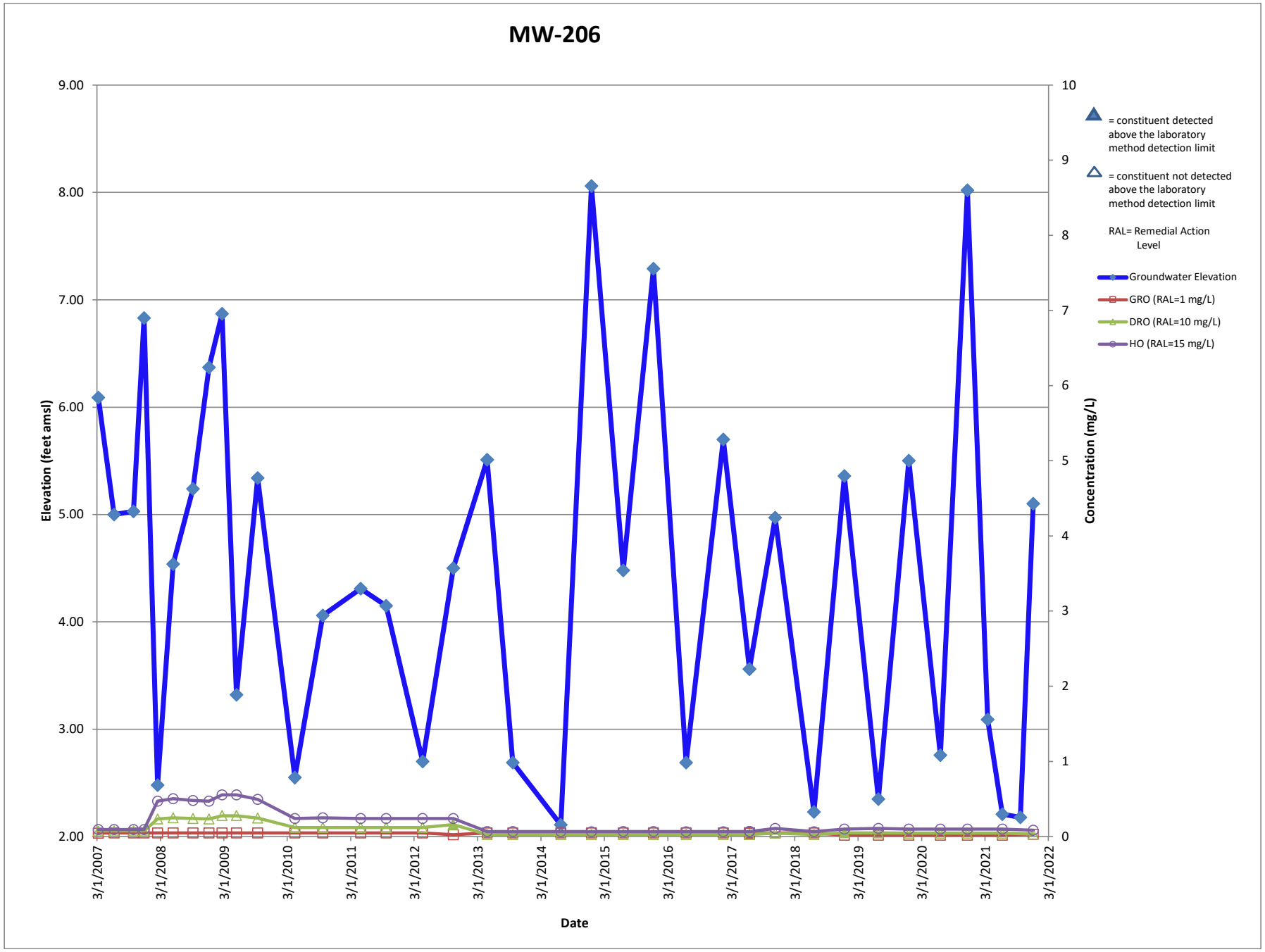
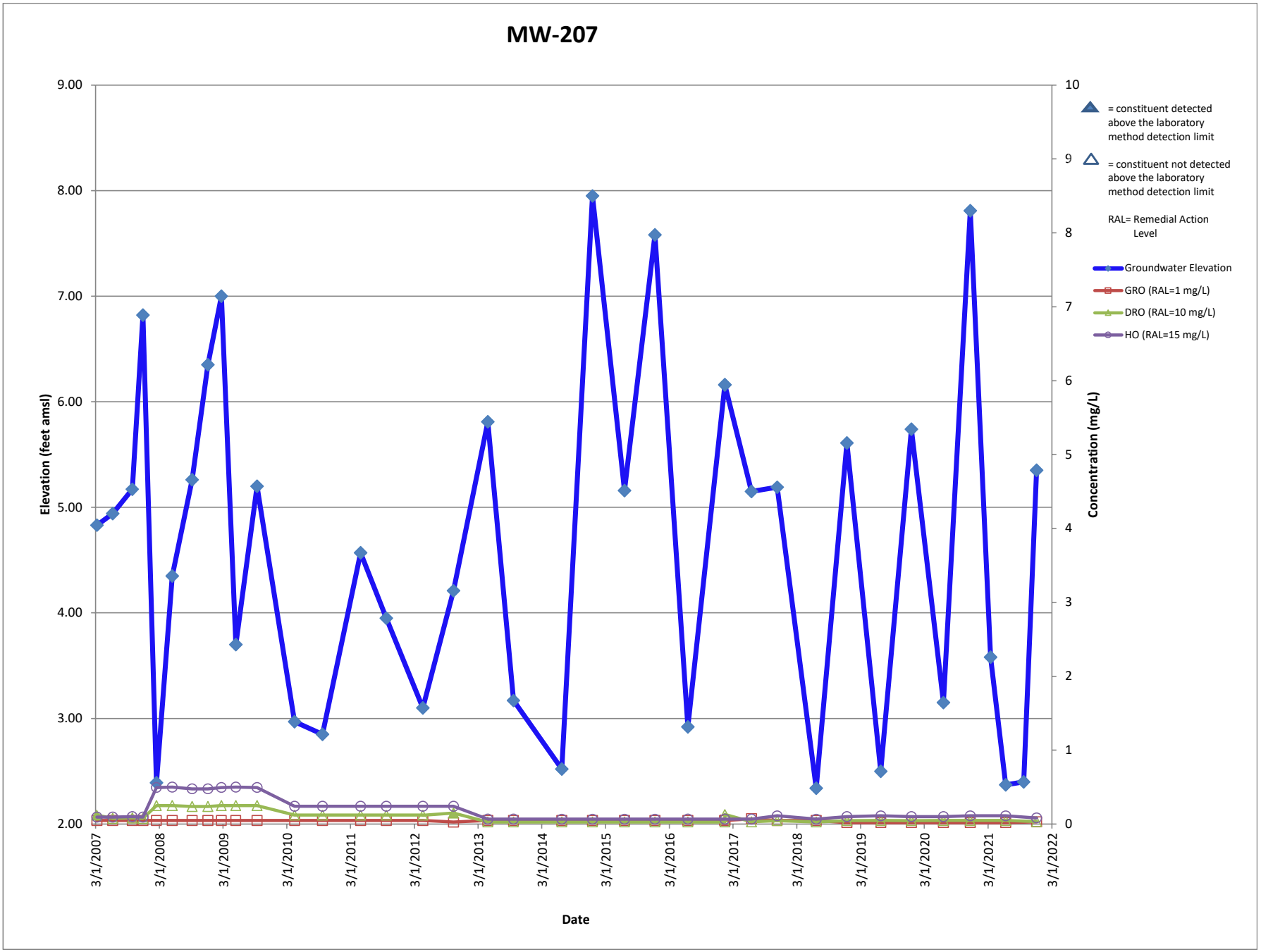
9.00
8.00
7.00
6.00
5.00
4.00
3.00
10
9
8
7
6
5
4
3
2
1
0
Elevation (feet amsl)
Concentration (mg/L)
3/1/2007
3/1/2008
3/1/2009
3/1/2010
3/1/2011
3/1/2012
3/1/2013
3/1/2014
3/1/2015
3/1/2016
3/1/2017
3/1/2018
3/1/2019
3/1/2020
3/1/2021
3/1/2022
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

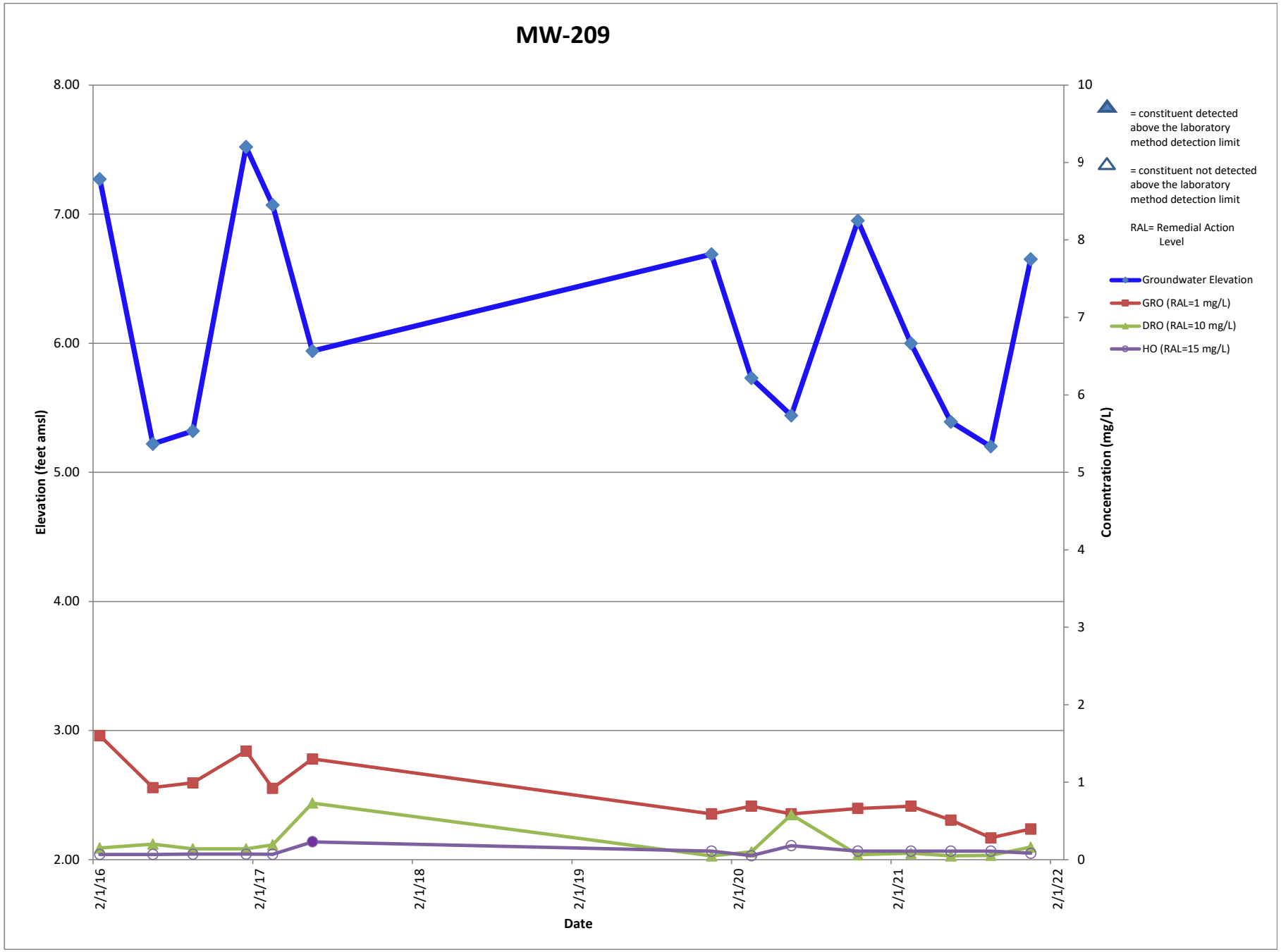

MW-203
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
10
9
8
7
6
5
4
3
2
1
0
3/1/2007
3/1/2008
3/1/2009
3/1/2010
3/1/2011
3/1/2012
3/1/2013
3/1/2014
3/1/2015
3/1/2016
3/1/2017
3/1/2018
3/1/2019
3/1/2020
3/1/2021
3/1/2022
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

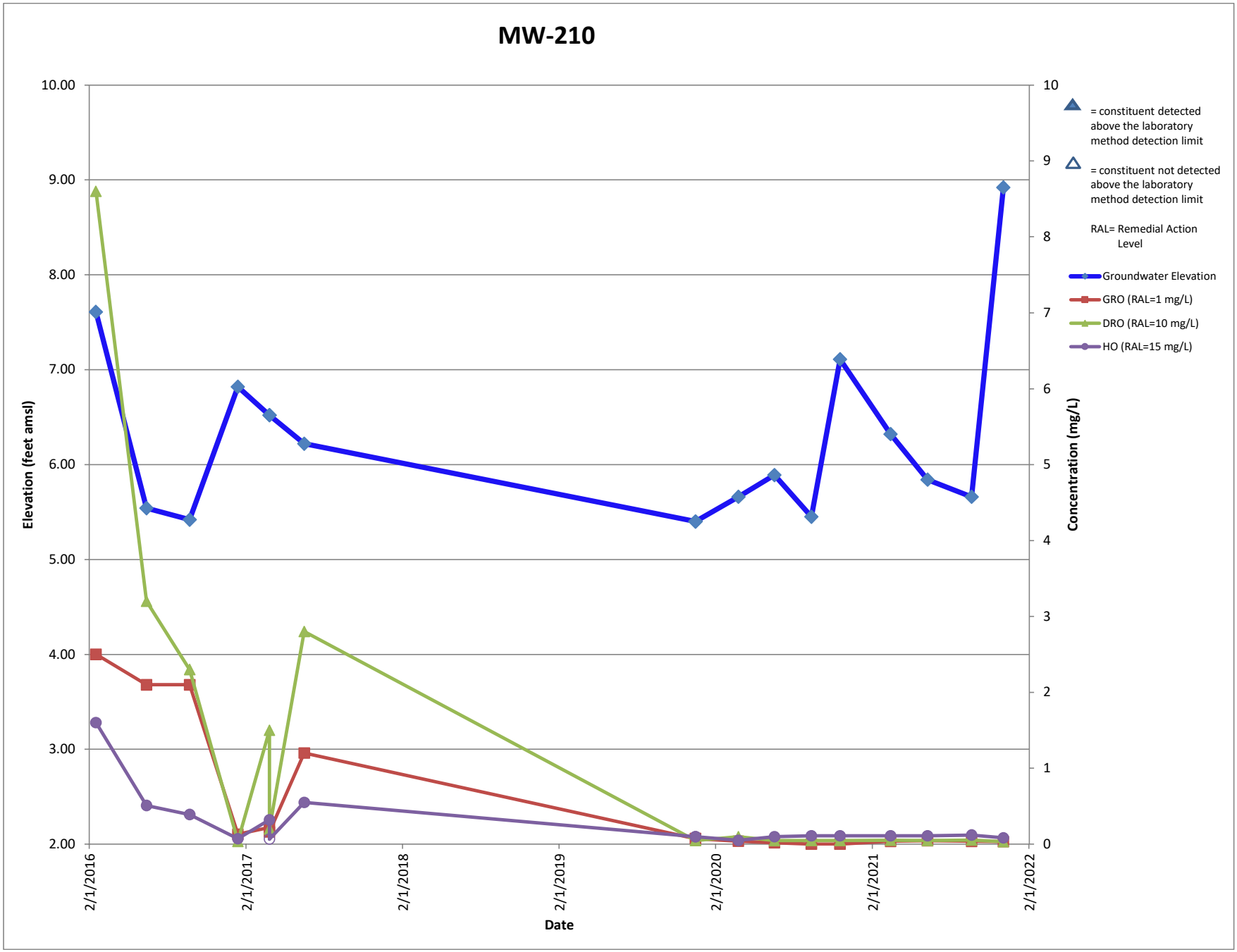

MW-204
9.00
8.00
7.00
6.00
5.00
4.00
3.00
Elevation (feet amsl)
10
9
8
7
6
5
4
3
2
1
0
Concentration (mg/L)
3/1/2007
3/1/2008
3/1/2009
3/1/2010
3/1/2011
3/1/2012
3/1/2013
3/1/2014
3/1/2015
3/1/2016
3/1/2017
3/1/2018
3/1/2019
3/1/2020
3/1/2021
3/1/2022
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

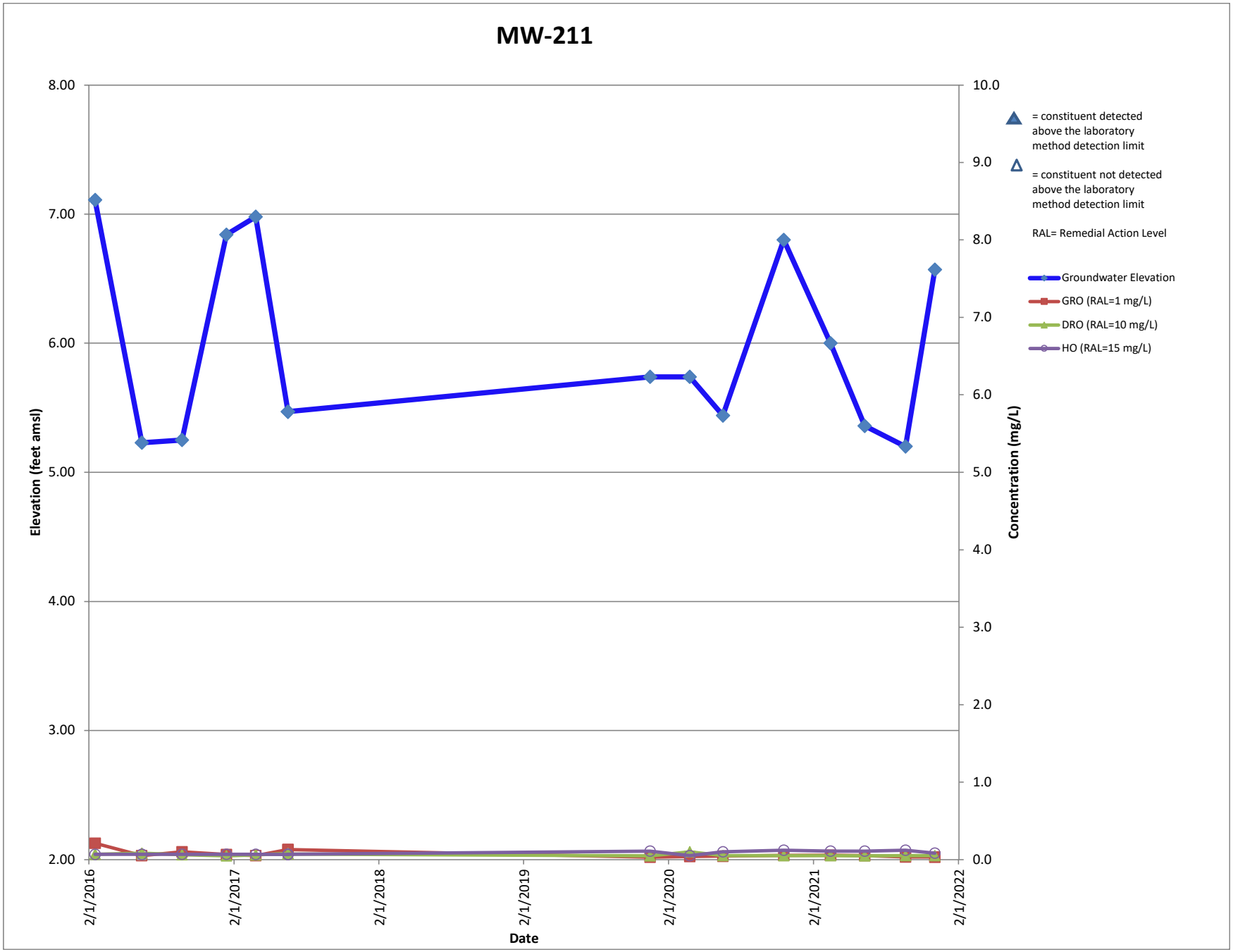

MW-205
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
10
9
8
7
6
5
4
3
2
1
0
3/1/2007
3/1/2008
3/1/2009
3/1/2010
3/1/2011
3/1/2012
3/1/2013
3/1/2014
3/1/2015
3/1/2016
3/1/2017
3/1/2018
3/1/2019
3/1/2020
3/1/2021
3/1/2022
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

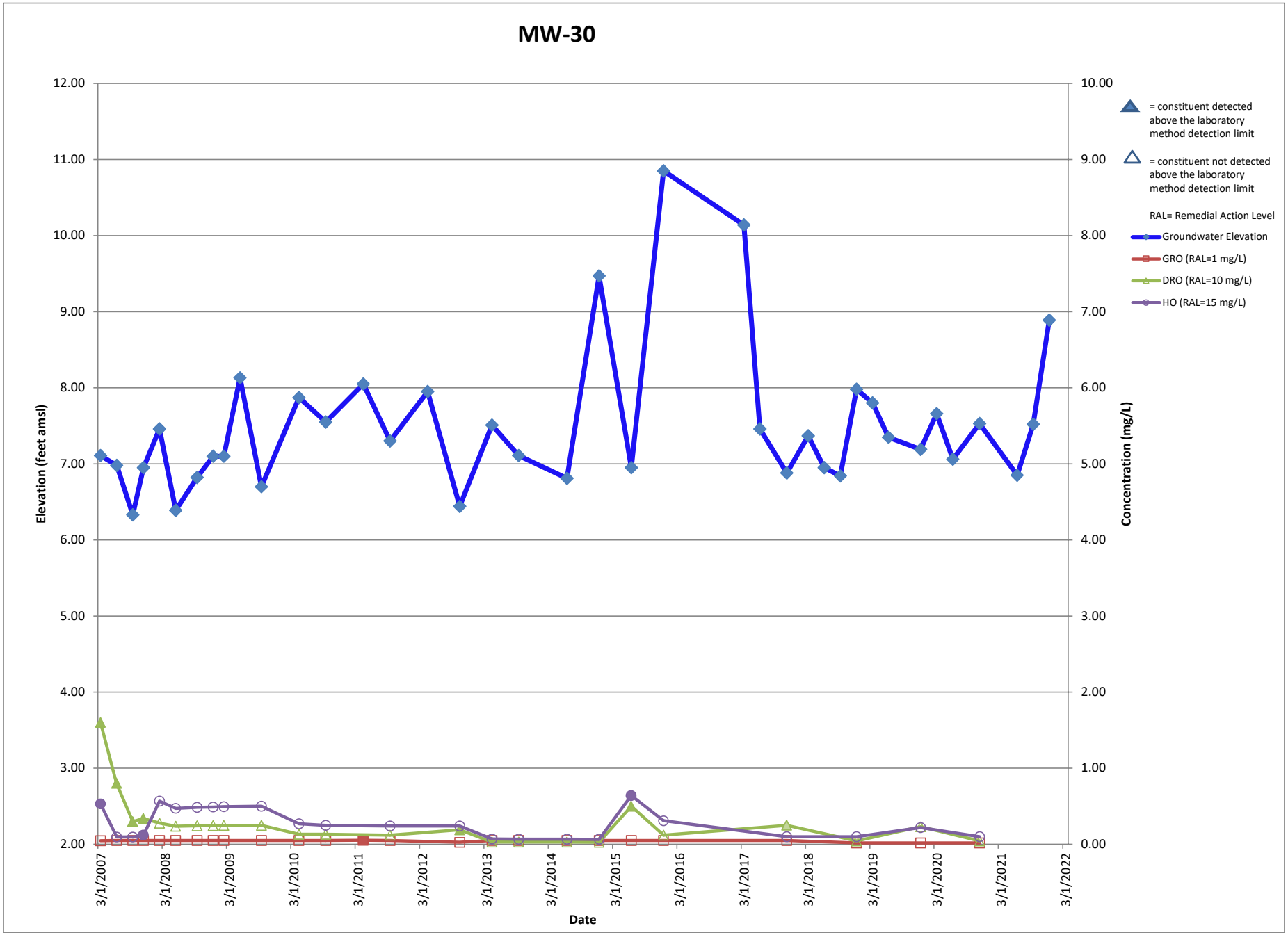

MW-206
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
10
9
8
7
6
5
4
3
2
1
0
3/1/2007
3/1/2008
3/1/2009
3/1/2010
3/1/2011
3/1/2012
3/1/2013
3/1/2014
3/1/2015
3/1/2016
3/1/2017
3/1/2018
3/1/2019
3/1/2020
3/1/2021
3/1/2022
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

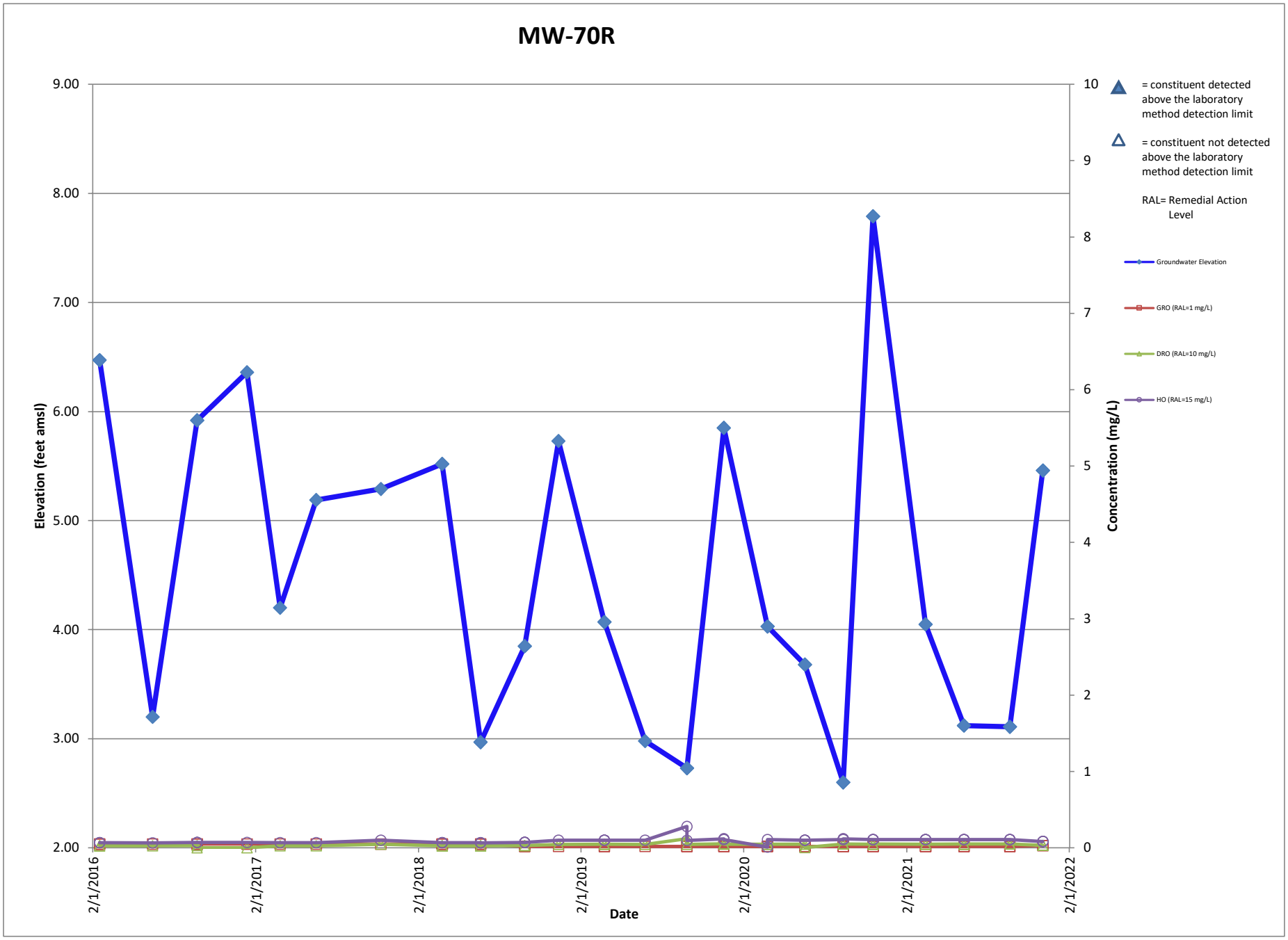

MW-207
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
10
9
8
7
6
5
4
3
2
1
0
3/1/2007
3/1/2008
3/1/2009
3/1/2010
3/1/2011
3/1/2012
3/1/2013
3/1/2014
3/1/2015
3/1/2016
3/1/2017
3/1/2018
3/1/2019
3/1/2020
3/1/2021
3/1/2022
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)


MW-209
8.00
7.00
6.00
5.00
4.00
3.00
2.00
Elevation (feet amsl)
10
9
8
7
6
5
4
3
2
1
0
Concentration (mg/L)
2/1/16
2/1/17
2/1/18
2/1/19
2/1/20
2/1/21
2/1/22
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)


MW-210
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
Elevation (feet amsl)
10
9
8
7
6
5
4
3
2
1
0
Concentration (mg/L)
2/1/2016
2/1/2017
2/1/2018
2/1/2019
2/1/2020
2/1/2021
2/1/2022
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)


MW-211
8.00
7.00
6.00
5.00
4.00
3.00
2.00
Elevation (feet amsl)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Concentration (mg/L)
2/1/2016
2/1/2017
2/1/2018
2/1/2019
2/1/2020
2/1/2021
2/1/2022
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)


MW-30
Elevation (feet amsl)
Concentration (mg/L)
Date
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
3/1/2007
3/1/2008
3/1/2009
3/1/2010
3/1/2011
3/1/2012
3/1/2013
3/1/2014
3/1/2015
3/1/2016
3/1/2017
3/1/2018
3/1/2019
3/1/2020
3/1/2021
3/1/2022
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)


MW-70R
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
Elevation (feet amsl)
10
9
8
7
6
5
4
3
2
1
0
Concentration (mg/L)
2/1/2016
2/1/2017
2/1/2018
2/1/2019
2/1/2020
2/1/2021
2/1/2022
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

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