

**Chevron Environmental
Management Company**

**Progress Report No. 112
First Semi-Annual 2012
Former Unocal Seattle Marketing Terminal 0724
3001 Elliott Avenue
Seattle, Washington**

July 11, 2012



ARCADIS



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Progress Report No. 112
First Semi-Annual 2012

Former Unocal Seattle Marketing
Terminal 0724
3001 Elliott Avenue
Seattle, Washington
Order on Consent No. DE88-
N223

Prepared for:
Chevron Environmental Management
Company

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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 first semi-annual 2012 groundwater sampling results for the former Seattle Marketing Terminal (Unocal 0724) located at 3001 Elliott Avenue in Seattle, Washington. The site and surrounding area are shown in **Figure 1**. This report summarizes the results of a groundwater sampling event conducted by ARCADIS on April 17th through April 18th, 2012 and covers the first semi-annual 2012 reporting period from January 1, 2012 to June 31, 2012.

2. Background

2.1 Site Description

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. 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**.

2.2 Site History

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 in 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. A total of approximately 4,435 tons of petroleum-impacted soil was 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 work plan outlined proposed activities to evaluate the monitoring well network, evaluate remedial alternatives for the site, and discussed the potential risk of cPAH 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.

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

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.

The January 2010 Revised Work Plan was approved by Ecology on March 19, 2010, with additional specific comments. Following additional meetings and to address the additional stakeholder and Ecology comments on the January 2010 Revised Work Plan, ARCADIS submitted the *Addendum to the Revised Work Plan for LNAPL Mobility Assessment, Natural Attenuation Monitoring and Surfactant Application Pilot Testing* on May 3, 2010 (May 2010 Addendum to the Revised Work Plan). The May 2010 Addendum to the Revised Work Plan was approved via electronic mail by Ecology on May 18, 2010. 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 corresponding comments:

- Continue quarterly gauging and semiannual groundwater monitoring of wells MW-30, MW-61A-R, RW-3 and RW-21. Ecology concurred; both gauging and groundwater monitoring are ongoing.
- Continue semiannual 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. Gauging of piezometers PZ-61A-R, PZ-203, and PZ-204 is ongoing.
- Abandon Trench D extraction wells RW-1, RW-2, RW-5 through RW-13 and RW-15 in place. Ecology recommended maintaining and gauging Trench D extraction wells through quarterly gauging during 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 is ongoing.
- 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 second semi-annual monitoring event and then to re-evaluate. Quarterly gauging of RW-3, RW-21 and MW-30 is ongoing.
- Add monitoring of well MW-205 to the quarterly gauging program. Ecology concurred: MW-205 is now part of the quarterly gauging program.
- If LNAPL is observed and is recoverable, submit a sample for chemical testing and possible mobility parameter analysis. Ecology concurred.

3. Groundwater Compliance Monitoring

3.1 Historical LNAPL Monitoring Program

During a comprehensive gauging event in September 2007, prior to well abandonment, LNAPL was observed in recovery well RW-21, located on the eastern side of the BNSF railroad tracks. Recovery well RW-21 was part of the Trench C remediation system and does not serve as a compliance well for the Lower Yard. Due to the presence of LNAPL, recovery well RW-21 was gauged on a bi-monthly basis between October 2007 and November 2009. Less than one-tenth of an inch of LNAPL was present in RW-21 in each of the gauging events prior to well redevelopment in December 2007. Due to the viscous nature of the LNAPL, the LNAPL thickness could not be accurately measured using an oil/water interface probe and a disposable bailer was used to confirm the presence of LNAPL. Observations of the interior casing of recovery well RW-21 indicated that a tar-like substance was present inside the well casing. Recovery well RW-21 was re-developed in January 2008 with a surge block and vacuum truck and in October 2008, the polyvinyl chloride (PVC) casing of recovery well RW-21 was cleaned with absorbent pads and re-developed using a vacuum truck.

Recovery wells RW-1 through RW-3 and RW-21 were added to a bi-monthly gauging program in 2007 as discussed with Ecology (November 2, 2007 phone conversation) to monitor for the presence of LNAPL from recovery well RW-21. Following Ecology's approval in November 2009, recovery wells RW-1 through RW-3 and RW-21 were reduced to quarterly gauging. Recovery wells RW-5 through RW-13 and RW-15 are gauged quarterly during compliance monitoring events. First quarter 2012 LNAPL gauging was completed on February 20, 2012. Field crews have been unable to locate recovery wells RW-4, RW-6, RW-12, RW-14 and RW-15; therefore, these wells were not included during semi-annual compliance monitoring events. Monitoring well history is summarized in **Table 1**.

3.2 First Semi-Annual 2012 Groundwater Monitoring

3.2.1 Groundwater Monitoring

On April 17th through 18th, ARCADIS conducted a comprehensive groundwater sampling event at the site. Monitoring wells MW-30, MW-61A-R, MW-200 through MW-207, recovery wells RW-1 through RW-3, RW-5, RW-7 through RW-11, RW-13 and RW-21 were gauged with an oil/water interface probe to determine depth to water and LNAPL thickness. Recovery wells RW-4, RW-6, RW-12, RW-14, and RW-15 were

unable to be located likely due to recent railroad signal construction and communications facilities construction.

LNAPL was observed in monitoring well MW-30 during the April 2012 groundwater monitoring event (visually observed on oil/water interface probe, a measureable thickness was not present). No LNAPL was observed in monitoring well MW-30 during the February 2012 gauging event.

LNAPL was measured in monitoring well MW-61A-R during the February 2012 gauging event at a thickness of 0.40 foot and again during the April 2012 groundwater monitoring event at a thickness of 0.39 foot.

After gauging, monitoring wells MW-200 through MW-207 were purged and sampled with a peristaltic pump following the procedures outlined in *Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells* (ARCADIS, 2009). This standard operating procedure is included in **Appendix A**. Monitoring wells MW-30 and MW-61A-R were not sampled due to the presence of LNAPL. New, disposable Teflon-lined polyethylene tubing was used for sampling and was placed at the mid-point of the saturated screen of each well. Water quality parameters including temperature, pH, electrical conductivity, dissolved oxygen and oxidation/reduction potential were measured approximately every three minutes using an In-Situ[®] Troll 9500 low-flow groundwater sampling system and were recorded on the field data sheets included in **Appendix B**.

Samples were collected in clean, laboratory-supplied containers with appropriate preservatives and were stored in iced coolers. Samples were then delivered via courier under chain-of-custody procedures to TestAmerica in Tacoma, Washington. Groundwater samples from the April 2012 event were analyzed for the following:

- Total petroleum hydrocarbons as gasoline (TPH-G) by Northwest Method NWTPH-Gx extended range;
- Total petroleum hydrocarbons as diesel and heavy oil (TPH-D and TPH-O) by Northwest Method NWTPH-Dx extended range; and
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency (USEPA) Method 8021B.

The groundwater samples collected from monitoring wells MW-200 through MW-207 were also analyzed for polynuclear aromatic hydrocarbons (PAH) including carcinogenic polynuclear aromatic hydrocarbons (cPAHs) by USEPA Method 8270C SIM. At the recommendation of Ecology, additional samples for analysis of dissolved cPAHs from monitoring wells MW-200 through MW-207 were collected and filtered in the field to determine whether the cPAHs detected in previous sampling events were due to suspended solids or were dissolved.

At the request of Ecology, additional “near-surface” groundwater samples (0.5-1.0 foot below groundwater surface) were collected from monitoring wells MW-204 and MW-205. “Near-surface” samples were also planned for MW-30 and MW-61A-R, but were not collected due to presence of LNAPL. These samples were collected for comparison with standard mid-point of saturated screen samples, and were collected at wells where LNAPL or elevated dissolved phase hydrocarbon concentrations had historically been present.

3.2.2 Groundwater Monitoring Results

Depths to groundwater measured during the April 2012 groundwater monitoring event on April 18, 2012 ranged from 7.56 feet below top of casing (btoc) in recovery well RW-8 to 23.03 feet btoc in monitoring well MW-205. Groundwater elevations ranged from 2.70 feet above mean sea level in monitoring well MW-206 to 6.65 feet above mean sea level in recovery well RW-21. These measurements indicate a westerly groundwater flow direction towards Elliott Bay and are consistent with historical data. Note that groundwater levels were collected over a time period approximately spanning low to high tide. Monitoring wells MW-200, MW-203, and MW-204 were gauged approximately four hours later due to access issues. Historical and current groundwater elevations are included in **Table 2**. Groundwater elevations and contours from the April 2012 sampling event are shown on **Figure 3**.

Analytical results indicate that no exceedances of the applicable BTEX, TPH-G, TPH-D, or TPH-O RALs were detected during the April 2012 sampling event. The unfiltered and field filtered samples collected from monitoring wells MW-200, 201, and 203 through MW-207 did not contain concentrations of the analyzed cPAHs above the applicable RALs. The unfiltered chrysene concentration in the sample from MW-202 (0.031 µg/L) exceeds the applicable RAL of 0.03 µg/L. Additionally, both the “near surface” and standard mid-point of saturated screen samples collected from wells MW-204 and MW-205 did not contain concentrations above the applicable RALs. The standard and “near surface” TPH-O results from monitoring well MW-204 indicated

higher concentrations in the “near surface” sample. The standard and “near surface” TPH-D and TPH-O results from monitoring well MW-205 indicated higher concentrations in the “near surface” sample. Other standard and “near surface” analytes from monitoring wells MW-204 and MW-205 were generally comparable and did not suggest the presence of elevated concentrations of dissolved constituents near the surface of the water table. Analytical results are summarized in **Table 3 through Table 5** and **Figure 4 through Figure 6**.

As of the April 2012 event, six monitoring wells (MW-200, MW-201, MW-202, MW-203, MW-206, and MW-207) have met a minimum of four consecutive sampling events in compliance with the RALs established for the site (compliance with PAH RALs have been met with the field-filtered sample results). A summary of groundwater compliance as of the April 2012 event is included in **Table 6**.

3.2.3 Laboratory Data Verification Results

One trip blank sample was submitted with the groundwater samples from the April 2012 sampling event for analysis of TPH-G and BTEX compounds. Analyte concentrations did not exceed their respective method detection limits (MDLs) in the trip blank.

Three duplicate samples were collected from the April 2012 sampling event in the field. The duplicates were submitted to the laboratory for quality assurance purposes. The duplicate samples were collected from monitoring wells MW-204 and MW-205. They were labeled as DUP-1, DUP-2, and DUP-2 NEAR respectively. The samples were submitted for the same analyses as the parent sample from monitoring wells MW-204 and MW-205. The duplicate analytical results were comparable to the primary samples.

Laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were analyzed to assess laboratory method accuracy. The percent recoveries of the LCS and LCSD were within the acceptable laboratory control limits. Likewise, the relative percent differences (RPDs) between the LCS and LCSD, a measure of method precision, were within the analysis thresholds.

The laboratory report case narrative indicates the coolers were received in good condition within temperature requirements. The laboratory report and chain of custodies are provided in **Appendix C**.

4. Remedial Activities

4.1 Upper Yard and Elliott Avenue LNAPL Removal

Monitoring wells MW-30 and MW-61A-R and piezometer PZ-61A-R were gauged quarterly with an oil/water interface probe to determine if LNAPL was present during the first and second quarter of 2012. LNAPL was observed in monitoring well MW-30 during the April 2012 groundwater monitoring event (visually observed on oil/water interface probe, a measureable thickness was not present). LNAPL was measured in monitoring well MW-61A-R during the February 2012 gauging event at a thickness of 0.40 foot and again during the April 2012 groundwater monitoring event at a thickness of 0.39 foot. LNAPL was measured in piezometer PZ-61A-R during the February 2012 gauging event at a thickness of 0.10 foot.

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 measureable 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.

4.2 Lower Yard LNAPL Recovery

LNAPL was observed in monitoring well RW-21 during the February 2012 gauging event (visually observed on oil/water interface probe, a measureable thickness was not present). No LNAPL was observed in recovery well RW-21 during the April 2012 groundwater monitoring event. This recovery well, as well as the downgradient Trench D recovery wells (RW-1 through RW-3), are included in the quarterly gauging program. LNAPL has been observed in recovery well RW-3 during previous monthly gauging activities but was not observed during the February 2012 gauging event or the April 2012 groundwater monitoring event. Manual LNAPL recovery has been unsuccessful due to the viscous nature of the LNAPL. LNAPL has not been observed in recovery wells RW-1 and RW-2 since the gauging program was implemented.

4.3 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 are gauged semi-annually. 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. Discharges from the oil-water separator from these activities are reported under separate cover in the monthly discharge monitoring report under King County Major Discharge Authorization Number 529-04 which expires December 9, 2015.

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. No LNAPL was observed in MW-205 during the February 2012 gauging event or the April 2012 groundwater monitoring event.

5. Conclusions

There were no exceedances of BTEX, TPH-G, TPH-D, or TPH-O RALs in the samples from the April 2012 groundwater sampling event. The un-filtered and field filtered samples collected from monitoring wells MW-200, 201, and 203 through MW-207 did not contain concentrations of the analyzed cPAHs above the applicable RALs. The chrysene concentration detected in the unfiltered sample collected from MW-202 exceeded the RAL.

Both the “near surface” and standard mid-point of saturated screen samples collected from wells MW-204 and MW-205 did not contain concentrations above the applicable RALs. Analytical results are summarized in **Table 3 through Table 5** and **Figure 4 through Figure 6**.

During the February 2012 gauging event, LNAPL was measured in monitoring well MW-61A, piezometer PZ-61AR and recovery well RW-21 (visually observed on oil/water interface probe, a measureable thickness was not present). During the April 2012 groundwater monitoring event, LNAPL was measured in monitoring well MW-30 (visually observed on oil/water interface probe, a measureable thickness was not present), and MW-61A-R.

As of the April 2012 event, six monitoring wells (MW-200, MW-201, MW-202, MW-203, MW-206, and MW-207) have met a minimum of four consecutive sampling events in compliance with the RALs established for the site (compliance with PAH RALs have been met with the field-filtered samples). A summary of groundwater compliance as of the April 2012 event is included in **Table 6**.

ARCADIS recommends continuation of the semi-annual groundwater monitoring program and quarterly gauging program. In accordance with the August 16, 2011 email request from Ecology, two near-surface groundwater sampling events have been conducted on monitoring wells MW-204 and MW-205. Although originally planned, near-surface sampling could not be collected from monitoring wells in MW-30 and MW-61A-R due to the presence of LNAPL. Some variability between the near-surface and mid-screen results for DRO was noted from the sample collected from MW-205 during the first semi-annual 2012 event. With this exception, significant variability in the data sets was not noted. Furthermore, the results from both events (second semi-annual 2011 and first semi-annual 2012) and both wells (MW-204 and MW-205) are below the applicable RALs. Accordingly, additional near-surface groundwater sampling is not proposed; on-going groundwater monitoring will be conducted from samples collected

in accordance with the ARCADIS SOP for low-flow groundwater sampling (Appendix A).

6. References

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

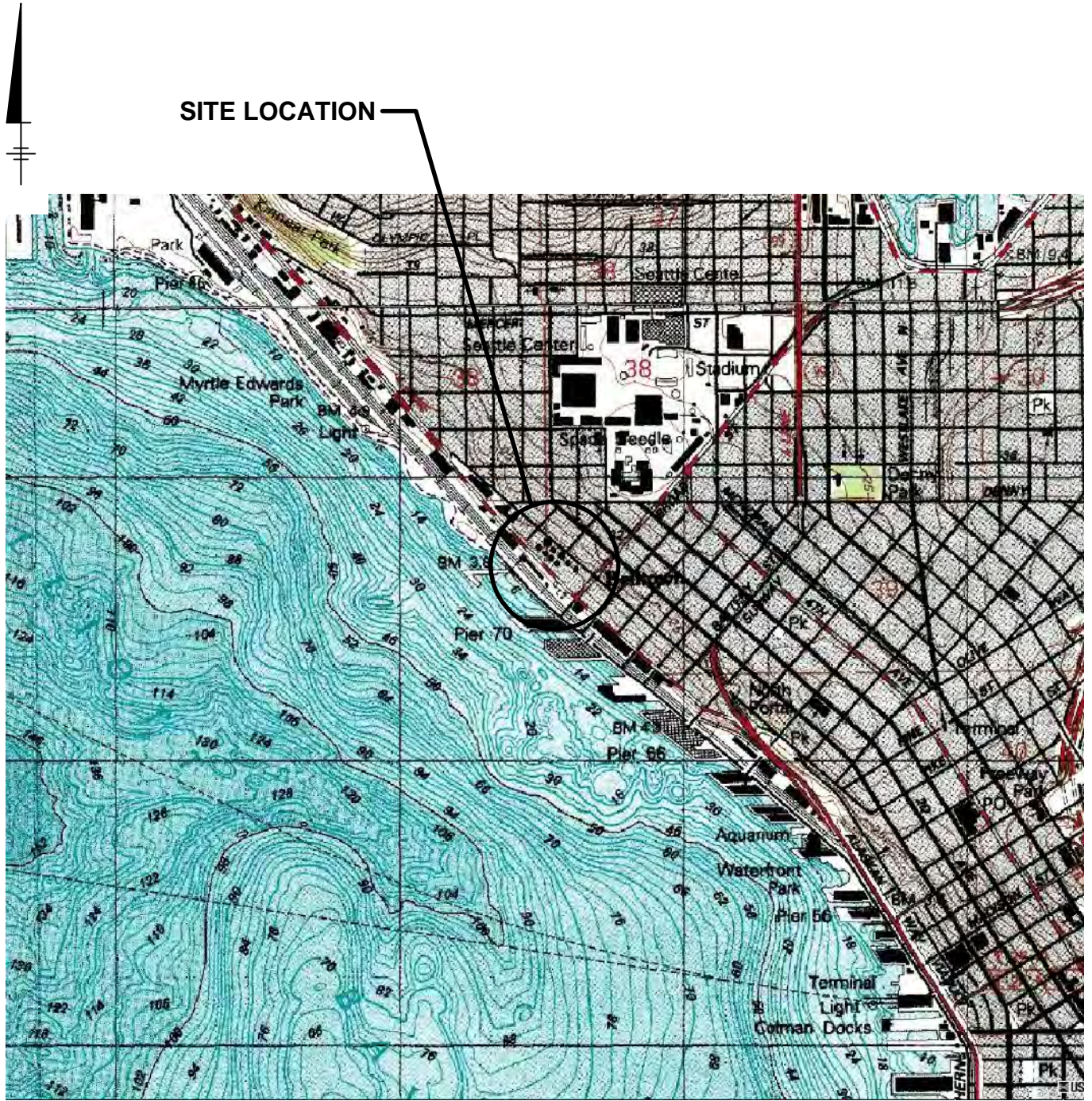
GeoEngineers, 1998. Final Cleanup Report – Lower Yard, Unocal Former Seattle Marketing Terminal Property. September 23.

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

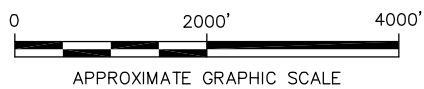
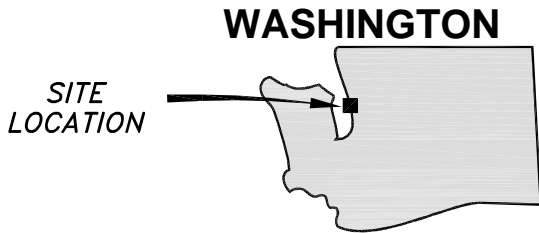
ARCADIS

Figures

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SOURCE: TOPOGRAPHIC IMAGE DOWNLOADED FROM MICROSOFT TERRASERVER, MAP DATE 7/1/83, (www.terraserver-usa.com)



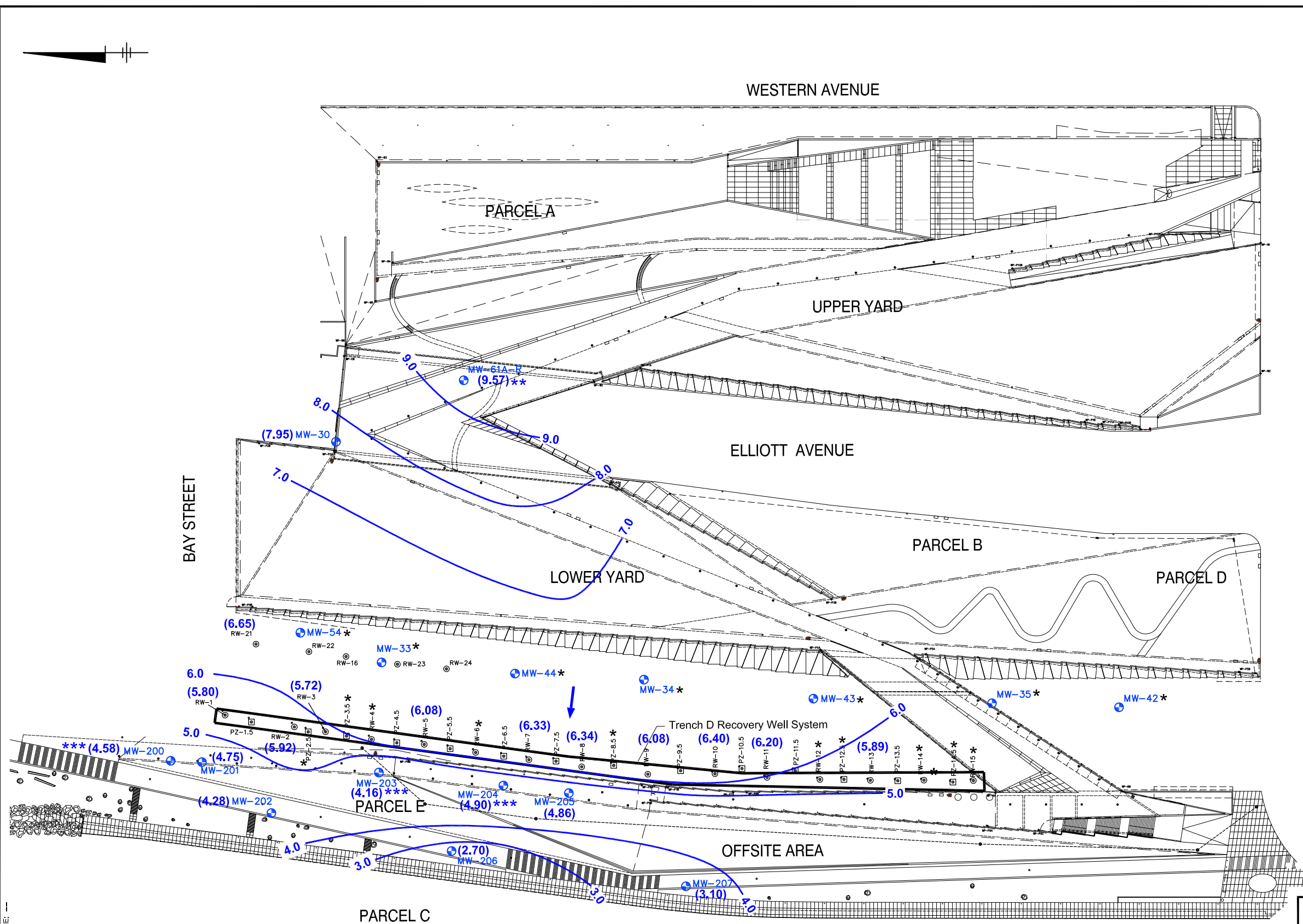
FORMER UNOCAL SEATTLE MARKETING TERMINAL
 SEATTLE, WASHINGTON
GROUNDWATER MONITORING REPORT
FIRST SEMI-ANNUAL 2012

SITE LOCATION MAP



FIGURE
1

CITY: SYRACUSE DIV/GROUP: 141 DB: IAR GWS LD(OH) PIC: J. VOGELY PM: R. ANDRESEN TM: R. ANDRESEN LVR: ONE OFF-REF
 G:\ENVCAD\TAMPACT\B0045363 Seattle Terminal\0003\0012\ISA GMR 2012\B0045363\W01.dwg LAYOUT: 3_SAVED: 6/12/2012 2:42 PM ACADVER: 18.15 (LMS TECH) PAGES: 18 PLOT: PLT\FULL.CTB PLOTTED: 6/29/2012 9:31 AM BY: RICHARDS, JIM
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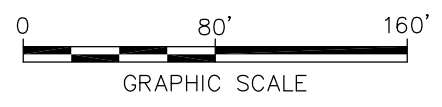


BROAD STREET

BAY STREET

ALASKAN WAY

- Legend**
- MONITORING WELL
 - RECOVERY WELL
 - PIEZOMETER
 - UNABLE TO LOCATE
 - (5.71)** WATER-TABLE ELEVATION (FEET)
 - GROUNDWATER CONTOUR LINE (FT) (INTERVAL 1.0 FT) (DASHED WHERE INFERRED)
 - GROUNDWATER FLOW DIRECTION
 - **** CORRECTED FOR THE PRESENCE OF LNAPL
 - ***** GAUGED 4 HOURS LATER DUE TO WELL ACCESS ISSUES



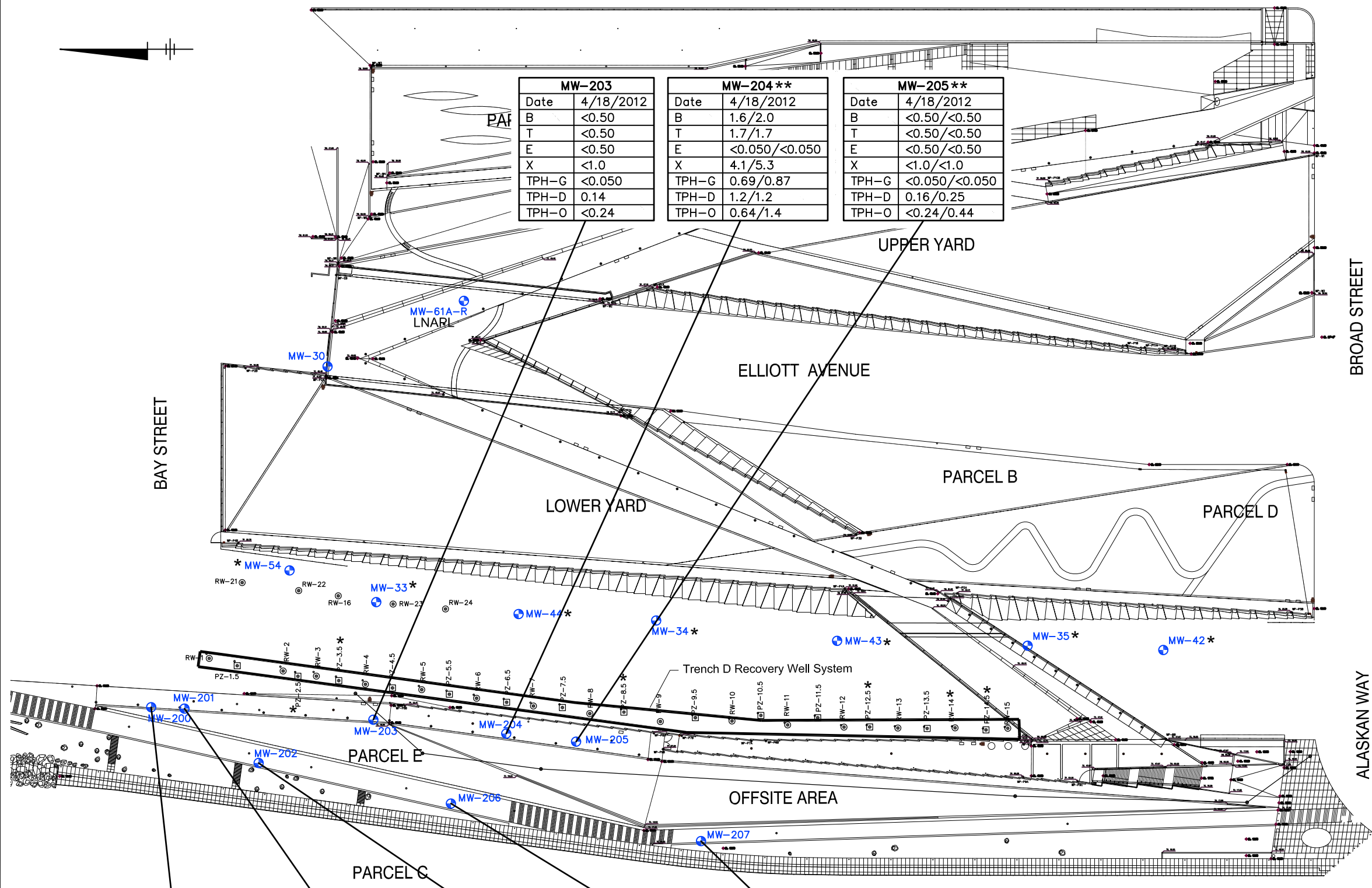
FORMER UNOCAL SEATTLE MARKETING TERMINAL
 SEATTLE, WASHINGTON
GROUNDWATER MONITORING REPORT
FIRST SEMI-ANNUAL 2012

GROUNDWATER ELEVATIONS
APRIL 17, 2012

ARCADIS

SOURCE: Base map provided by 'ASPECT CONSULTING', 179 Madrone Lane North, Bainbridge Island, WA (206) 780-9370. Map date February 2007, drawn full scale. Base map updated 5/27/08 OTAK Survey.

CITY: SYRACUSE DIV/GROUP: 141 DB: JAR GMS LD(OH) PIC: J. VOGELY PM: R. ANDRESEN TM: R. ANDRESEN LVR: ONE OFF-REF
 G:\ENVCAD\TAMPAACT\B0045863 Seattle Terminal\003\0012\1\SA GMR 2012\B0045863\01.dwg LAYOUT: 4 SAVED: 6/29/2012 8:32 AM ACADVER: 18.1 (S LMS TECH) PAGES: 18 PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 6/29/2012 9:33 AM BY: RICHARDS, JIM
 XREFS: IMAGES: PROJECTNAME: -



MW-203		MW-204 **		MW-205 **	
Date	4/18/2012	Date	4/18/2012	Date	4/18/2012
B	<0.50	B	1.6/2.0	B	<0.50/<0.50
T	<0.50	T	1.7/1.7	T	<0.50/<0.50
E	<0.50	E	<0.050/<0.050	E	<0.50/<0.50
X	<1.0	X	4.1/5.3	X	<1.0/<1.0
TPH-G	<0.050	TPH-G	0.69/0.87	TPH-G	<0.050/<0.050
TPH-D	0.14	TPH-D	1.2/1.2	TPH-D	0.16/0.25
TPH-O	<0.24	TPH-O	0.64/1.4	TPH-O	<0.24/0.44

- Legend**
- MONITORING WELL
 - ⊙ RECOVERY WELL
 - ▣ PIEZOMETER
 - * UNABLE TO LOCATE

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 & TPH-O RESULTS REPORTED IN MILLIGRAMS PER LITER (mg/L)

TPH = TOTAL PETROLEUM HYDROCARBON

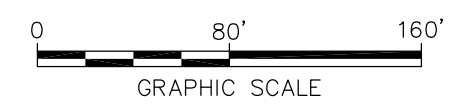
BOLDDED RESULTS ARE GREATER THAN SITE REMEDIAL ACTION LEVELS (RALs)

<0.5/<0.5 = DUPLICATE SAMPLE

NA = NOT ANALYZED

LNAPL = LIGHT NONAQUEOUS PHASE LIQUID

** RESULTS FROM STANDARD "MID-SCREEN" SAMPLE



MW-200		MW-201		MW-202		MW-206		MW-207	
Date	4/18/2012	Date	4/18/2012	Date	4/18/2012	Date	4/18/2012	Date	4/18/2012
B	3.7	B	1.8	B	<0.50	B	<0.50	B	<0.50
T	<0.50	T	<0.50	T	<0.50	T	<0.50	T	<0.50
E	0.73	E	<0.50	E	<0.50	E	<0.50	E	<0.50
X	1.4	X	<1.0	X	<1.0	X	<1.0	X	<1.0
TPH-G	0.20	TPH-G	0.14	TPH-G	0.074	TPH-G	<0.050	TPH-G	<0.050
TPH-D	0.27	TPH-D	0.29	TPH-D	0.24	TPH-D	<0.12	TPH-D	<0.12
TPH-O	<0.24	TPH-O	<0.24	TPH-O	<0.24	TPH-O	<0.24	TPH-O	<0.24

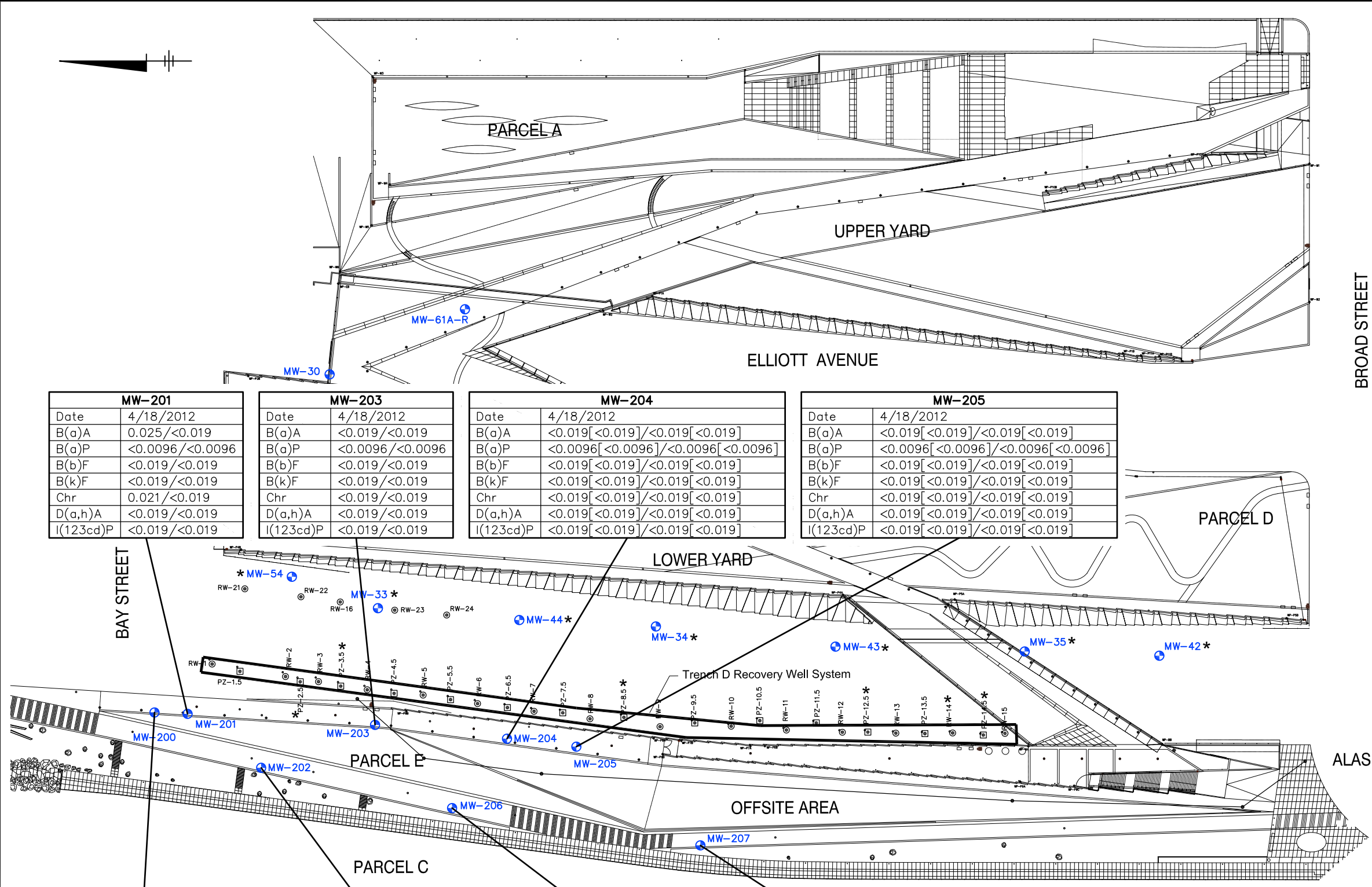
ELLIOTT BAY

SOURCE: Base map provided by 'ASPECT CONSULTING', 179 Madrone Lane North, Bainbridge Island, WA (206) 780-9370. Map date February 2007, drawn full scale. Base map updated 5/27/08 OTAK Survey.

FORMER UNOCAL SEATTLE MARKETING TERMINAL
 SEATTLE, WASHINGTON
GROUNDWATER MONITORING REPORT
 FIRST SEMI-ANNUAL 2012
GROUNDWATER TPH ANALYTICAL
 SUMMARY MAP -
 FIRST SEMI-ANNUAL 2012



CITY: SYRACUSE DIV/PROJECT: 141 DB: JAR GMS LD(OH) PIC: J. VOGELY PM: R. ANDRESEN TM: R. ANDRESEN LVR: ONF OFF-REF
 G:\ENVCAD1\TAMPACT\B0045863 Seattle Terminal\0003\000121\USA GMR 2012\B0045863\02.dwg LAYOUT: 5. SAVED: 7/2/2012 10:57 AM ACADVER: 18.1 S (LMS TECH) PAGES: 5 PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/2/2012 10:57 AM BY: RICHARDS, JIM
 XREFS: IMAGES: PROJECTNAME:



MW-201	
Date	4/18/2012
B(a)A	0.025/<0.019
B(a)P	<0.0096/<0.0096
B(b)F	<0.019/<0.019
B(k)F	<0.019/<0.019
Chr	0.021/<0.019
D(a,h)A	<0.019/<0.019
I(123cd)P	<0.019/<0.019

MW-203	
Date	4/18/2012
B(a)A	<0.019/<0.019
B(a)P	<0.0096/<0.0096
B(b)F	<0.019/<0.019
B(k)F	<0.019/<0.019
Chr	<0.019/<0.019
D(a,h)A	<0.019/<0.019
I(123cd)P	<0.019/<0.019

MW-204	
Date	4/18/2012
B(a)A	<0.019[<0.019]/<0.019[<0.019]
B(a)P	<0.0096[<0.0096]/<0.0096[<0.0096]
B(b)F	<0.019[<0.019]/<0.019[<0.019]
B(k)F	<0.019[<0.019]/<0.019[<0.019]
Chr	<0.019[<0.019]/<0.019[<0.019]
D(a,h)A	<0.019[<0.019]/<0.019[<0.019]
I(123cd)P	<0.019[<0.019]/<0.019[<0.019]

MW-205	
Date	4/18/2012
B(a)A	<0.019[<0.019]/<0.019[<0.019]
B(a)P	<0.0096[<0.0096]/<0.0096[<0.0096]
B(b)F	<0.019[<0.019]/<0.019[<0.019]
B(k)F	<0.019[<0.019]/<0.019[<0.019]
Chr	<0.019[<0.019]/<0.019[<0.019]
D(a,h)A	<0.019[<0.019]/<0.019[<0.019]
I(123cd)P	<0.019[<0.019]/<0.019[<0.019]

MW-200	
Date	4/18/2012
B(a)A	<0.019/<0.019
B(a)P	<0.0096/<0.0096
B(b)F	<0.019/<0.019
B(k)F	<0.019/<0.019
Chr	<0.019/<0.019
D(a,h)A	<0.019/<0.019
I(123cd)P	<0.019/<0.019

MW-202	
Date	4/18/2012
B(a)A	0.029/<0.019
B(a)P	<0.0096/<0.0096
B(b)F	<0.019/<0.019
B(k)F	<0.019/<0.019
Chr	0.031/<0.019
D(a,h)A	<0.019/<0.019
I(123cd)P	<0.019/<0.019

MW-206	
Date	4/18/2012
B(a)A	<0.019/<0.019
B(a)P	<0.0096/<0.0096
B(b)F	<0.019/<0.019
B(k)F	<0.019/<0.019
Chr	<0.019/<0.019
D(a,h)A	<0.019/<0.019
I(123cd)P	<0.019/<0.019

MW-207	
Date	4/18/2012
B(a)A	<0.019/<0.019
B(a)P	<0.0096/<0.0096
B(b)F	<0.019/<0.019
B(k)F	<0.019/<0.019
Chr	<0.019/<0.019
D(a,h)A	<0.019/<0.019
I(123cd)P	<0.019/<0.019

Legend

- ⊕ MONITORING WELL
- ⊙ RECOVERY WELL
- ⊠ PIEZOMETER
- * UNABLE TO LOCATE

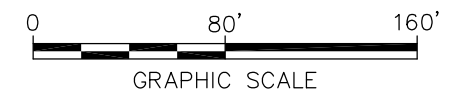
SAMPLE LOCATION	
DATE	SAMPLE DATE
B(a)A	Benzo(a)anthracene
B(a)P	Benzo(a)pyrene
B(b)F	Benzo(b)fluoranthene
B(k)F	Benzo(k)fluoranthene
Chr	Chrysene
D(a,h)A	Dibenzo(a,h)anthracene
I(123cd)P	Indeno(1,2,3-cd)pyrene

RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L)

<0.0100/<0.0101 = UNFILTERED/FILTERED SAMPLE

<0.0100[0.0100] = DUPLICATE SAMPLE

cPAH = CARCINOGENIC PAHS



FORMER UNOCAL SEATTLE MARKETING TERMINAL
 SEATTLE, WASHINGTON
GROUNDWATER MONITORING REPORT
FIRST SEMI-ANNUAL 2012

GROUNDWATER cPAH DATA -
FIRST SEMI-ANNUAL 2012

FIGURE
5

SOURCE: Base map provided by 'ASPECT CONSULTING', 179 Madrone Lane North, Bainbridge Island, WA (206) 780-9370. Map date February 2007, drawn full scale. Base map updated 5/27/08 OTAK Survey.

CITY: SYRACUSE DIV/GROUP: 141 DB: JAR GMS LD(OH) PIC: J. VOGELY PM: R. ANDRESEN TM: R. ANDRESEN LYR: ONE-OFF-REF
 G:\ENVCAD\TAMPACT\B0045963 Seattle Terminal\0003\00012\1\SA GMR 2012\B0045963\03.dwg LAYOUT: 6 SAVED: 7/2/2012 11:00 AM ACADVER: 18.1 (LMS TECH) PAGESETUP: PDF-BL PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/2/2012 11:01 AM BY: RICHARDS, JIM

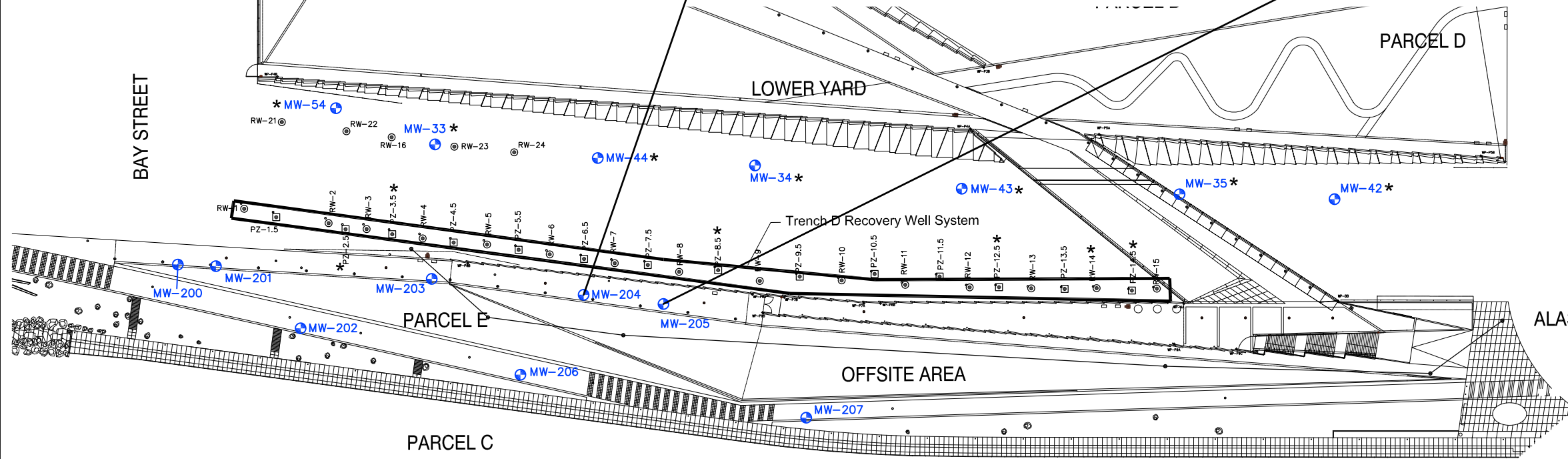


MW-204		
Date	4/18/2012	4/18/2012
Depth	Near Surface	Mid Screen
TPH-G	0.90[0.90]	0.69[0.87]
TPH-D	1.2[1.3]	1.2[1.2]
TPH-O	1.6[2.8]	0.64[1.4]
B(a)A	<0.019[<0.019]/<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
B(a)P	<0.0096[<0.0096]/<0.0096[<0.0096]	<0.0096[<0.0096]/<0.0096[<0.0096]
B(b)F	<0.019[<0.019]/<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
B(k)F	<0.019[<0.019]/<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
Chr	<0.019[<0.019]/<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
D(a,h)A	<0.019[<0.019]/<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
I(123cd)P	<0.019[<0.019]/<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
TCPAH	<0.038[<0.038]/<0.038[<0.038]	<0.038[<0.038]/<0.038[<0.038]
Ace	3.3[3.2]/3.2[0.91]	3.3[3.8]/2.8[0.82]
Anap	0.36[0.35]/0.30[0.053]	0.37[0.41]/0.19[0.032]
Ant	0.19[0.18]/0.085[0.084]	0.21[0.19]/0.10[0.071]
B(g,h,i)P	<0.019[<0.019]/<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
Flo	0.048[0.045]/0.019[<0.019]	0.05[<0.019]/[0.047]/[<0.019]
Flu	3.0[2.9]/1.7[0.14]	3.2[3.6]/<0.019[0.019]
Naph	0.33[0.31]/0.76[0.21]	0.34[0.37]/0.28[0.16]
Phe	1.1[1.2]/0.023[<0.019]	1.1[1.2]/<0.019[<0.019]
Pyr	0.03[0.037]/<0.019[<0.019]	0.032[0.037]/<0.019[<0.019]
B	2.0[2.0]	1.6[2.0]
T	1.8[1.8]	1.7[1.7]
E	<0.50[<0.50]	<0.50[0.50]
X	5.3[5.3]	4.1[5.3]

MW-205		
Date	4/18/2012	4/18/2012
Depth	Near Surface	Mid Screen
TPH-G	<0.050	<0.050[<0.050]
TPH-D	7.4	0.16[0.25]
TPH-O	4.8	<0.24[0.44]
B(a)A	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
B(a)P	<0.0096[<0.0096]	<0.0096[<0.0096]/<0.0096[<0.0096]
B(b)F	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
B(k)F	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
Chr	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
D(a,h)A	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
I(123cd)P	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
TCPAH	<0.038[<0.038]	<0.038[<0.038]/<0.038[<0.038]
Ace	1.6/0.8	1.6[1.9]/0.16[0.32]
Anap	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
Ant	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
B(g,h,i)P	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
Flo	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
Flu	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
Naph	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
Phe	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
Pyr	<0.019[<0.019]	<0.019[<0.019]/<0.019[<0.019]
B	<0.050[<0.050]	<0.050
T	<0.050[<0.050]	<0.050
E	<0.050[<0.050]	<0.050
X	<1.0[<1.0]	<1.0

- Legend**
- MONITORING WELL
 - ⊙ RECOVERY WELL
 - ▣ PIEZOMETER
 - * UNABLE TO LOCATE

SAMPLE LOCATION	
DATE	SAMPLE DATE
DEPTH	SAMPLE DEPTH
TPH-G	TPH Gasoline
TPH-D	TPH Diesel
TPH-O	TPH Heavy Oil
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
TCPAH	Total CPAHs
Ace	Acenaphthalene
Anap	Acenaphthylene
Ant	Anthracene
B(g,h,i)P	Benzo(g,h,i)perylene
Flo	Fluoranthene
Flu	Fluorene
Naph	Naphthalene
Phe	Phenanthrene
Pyr	Pyrene
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total Xylenes



RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L)

NM = NOT MEASURED

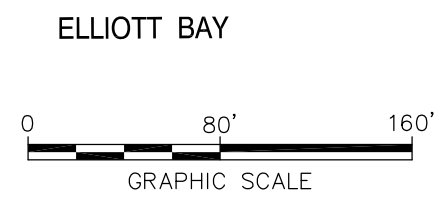
-- = NOT ANALYZED

<0.0100/<0.0101 = UNFILTERED/FILTERED SAMPLE

<0.0100[0.0100] = DUPLICATE SAMPLE

LNAPL = LIGHT NONAQUEOUS PHASE LIQUID

cPAH = CARCINOGENIC PAHS



SOURCE: Base map provided by 'ASPECT CONSULTING', 179 Madrone Lane North, Bainbridge Island, WA (206) 780-9370. Map date February 2007, drawn full scale. Base map updated 5/27/08 OTAK Survey.

FORMER UNOCAL SEATTLE MARKETING TERMINAL
 SEATTLE, WASHINGTON
GROUNDWATER MONITORING REPORT
FIRST SEMI-ANNUAL 2012

STANDARD AND NEAR-SURFACE
GROUNDWATER ANALYTICAL
COMPARISON



ARCADIS

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-61AR)	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-61AR	03/2006		LNAPL
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)	Sheen
MW-31	1989		12/2003
MW-32	1989		04/1991
MW-59	03/1998		<i>no data</i>
MW-65	03/1998		ABANDONED 12/07
MW-66	03/1998		ABANDONED 12/07
MW-69	<i>no data</i>		<i>no data</i>
Lower Yard			
MW-1	<i>no data</i>	No wells in Lower Yard currently sampled for compliance parameters	1998
MW-2	<i>no data</i>		1998
MW-18	<i>no data</i>		1998
MW-22	<i>no data</i>		1998
MW-23	<i>no data</i>		1998
MW-33	<i>no data</i>		1998
MW-34	<i>no data</i>		1998
MW-35	<i>no data</i>		1998
MW-49	<i>no data</i>		1998
MW-50	<i>no data</i>		1998
MW-51	<i>no data</i>		1998
MW-53	<i>no data</i>		1998
MW-54	<i>no data</i>		1998
MW-55	<i>no data</i>		1998
MW-56	<i>no data</i>		1998
MW-57	<i>no data</i>		1998
MW-60	<i>no data</i>		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 Dissolved Lead PAHs	10/2005
MW-9	<i>no data</i>		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		<i>no data</i>
MW-35	10/1989		<i>no data</i>
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	<i>no data</i>		<i>no data</i>
MW-52	06/1998		10/2005
MW-67	03/1998		10/2005
MW-68	03/1998		07/2005
MW-69	03/1998		<i>no data</i>
MW-70	03/1998		10/2005
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)	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

Notes:

LNAPL = Light non-aqueous phase liquid

TPH = Total petroleum hydrocarbons

BTEX = Benzene, Toluene, Ethylbenzene and Xylenes (Total)

PAHs = Polynuclear 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 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)	
MW-27 (6.18)	12/11/02	13:20	9.38	NR	NR	-3.20	--	
	03/20/03	10:31	11.09	NR	NR	-4.91	--	
	07/03/03	9:02	12.10	NR	NR	-5.92	--	
	09/18/03	11:27	10.58	NR	NR	-4.40	--	
	12/02/03	10:56	9.50	NR	NR	-3.32	--	
	03/09/04	10:37	11.83	NR	NR	-5.65	--	
	06/03/04	10:09	12.32	NR	NR	-6.14	--	
	09/03/04	10:35	10.63	NR	NR	-4.45	--	
	12/06/04	10:30	9.41	NR	NR	-3.23	--	
	03/04/05	10:33	9.05	NR	NR	-2.87	--	
	06/03/05	--	13.05	NR	NR	-6.87	--	
	09/01/05	8:00	10.29	NR	NR	-4.11	--	
	12/01/05	9:45	9.28	NR	NR	-3.10	--	
	03/02/06	9:00	9.29	NR	NR	-3.11	--	
	06/06/06				Well Damaged During Construction Activities			
	MW-27R ³ (4.37)	03/07/07	9:35	8.25	--	--	-3.88	--
09/26/07		7:59	9.19	--	--	-4.82	--	
11/26/07		14:55	7.56	--	--	-3.19	--	
12/03/07				Well Abandoned				
MW-30 (11.29)	12/11/02	14:10	15.23	NR	NR	-3.94	--	
	03/20/03	13:00	12.59	NR	NR	-1.30	--	
	07/03/03	11:18	14.30	NR	NR	-3.01	--	
	09/18/03	10:36	14.70	NR	NR	-3.41	--	
	12/02/03	11:23	12.20	NR	NR	-0.91	--	
	03/09/04	10:58	13.81	NR	NR	-2.52	--	
	06/03/04	11:44	14.60	NR	NR	-3.31	--	
	09/03/04	13:42	9.85	NR	NR	1.44	--	
	12/06/04	9:37	15.27	NR	NR	-3.98	--	
	03/04/05	14:08	14.33	NR	NR	-3.04	--	
	06/03/05	--	14.47	NR	NR	-3.18	--	
	09/01/05	10:05	15.05	NR	NR	-3.76	--	
	12/01/05	11:23	11.98	NR	NR	-0.69	--	
	03/02/06	11:28	14.53	NR	NR	-3.24	--	
	06/06/06	8:20	14.16	NR	NR	-2.87	--	
	09/15/06	--	14.10	NR	NR	-2.81	--	
	03/07/07	8:55	13.74	Sheen	--	--	-2.45	--
	06/07/07	8:43	13.87	--	--	--	-2.58	--
	07/10/07	9:45	14.21	--	--	--	-2.92	--
	07/25/07	11:35	13.94	--	--	--	-2.65	--
	08/22/07	9:35	14.15	--	--	--	-2.86	--
	09/06/07	9:50	14.25	--	--	--	-2.96	--
	09/26/07	9:30	14.52	--	--	--	-3.23	--
	10/11/07	7:55	14.22	--	--	--	-2.93	--
	11/01/07	9:50	14.29	--	--	--	-3.00	--
	11/16/07	15:25	13.85	--	--	--	-2.56	--
	11/26/07	13:40	13.80	--	--	--	-2.51	--
	12/19/07	9:30	12.59	--	--	--	-1.30	--
	01/03/08	8:30	12.60	--	--	--	-1.31	--
	01/17/08	8:48	12.53	--	--	--	-1.24	--
	01/30/08	9:30	13.10	Sheen	--	--	-1.81	--
	02/12/08	9:28	13.27	Sheen	--	--	-1.98	--
	03/03/08	9:31	13.80	--	--	--	-2.51	--
	03/17/08	9:29	13.99	--	--	--	-2.70	--
	04/01/08	9:13	13.78	--	--	--	-2.49	--
	04/14/08	9:14	13.97	--	--	--	-2.68	--
	04/28/08	9:56	14.18	--	--	--	-2.89	--
	05/13/08	9:24	14.31	--	--	--	6.54	--
	05/27/08	13:40	14.33	--	--	--	6.52	--
	06/10/08	10:25	14.08	--	--	--	6.77	--
	06/24/08	9:46	14.35	--	--	--	6.50	--
	07/07/08	9:50	14.13	--	--	--	6.72	--
	07/22/08	9:29	14.19	Sheen	--	--	6.66	--
	08/12/08	9:58	14.05	--	--	--	6.80	--
	09/03/08	--	14.03	--	--	--	6.82	--
	09/26/08	--	14.16	--	--	--	6.69	--
	10/17/08	9:15	14.35	--	--	--	6.50	--
	10/29/08	8:43	14.49	--	--	--	6.36	--
	11/12/08	10:46	13.03	--	--	--	7.82	--
	12/03/08	12:46	13.75	--	--	--	7.10	--
	01/06/09	9:36	12.68	--	--	--	8.17	--
	01/20/09	12:46	12.98	--	--	--	7.87	--
02/03/09	9:39	13.79	--	--	--	7.06	--	
02/17/09	11:15	13.75	--	--	--	7.10	--	
03/12/09	12:09	13.79	--	--	--	7.06	--	
03/25/09	8:46	13.70	--	--	--	7.15	--	
04/08/09	10:16	13.30	--	--	--	7.55	--	
04/30/09	10:09	12.98	--	--	--	7.87	--	
05/12/09	10:10	12.72	12.70	0.02		8.15	--	
05/26/09	14:27	13.20	--	--	--	7.65	--	
06/09/09	9:41	13.91	--	--	--	6.94	--	
06/25/09	9:43	13.49	--	--	--	7.36	--	
07/07/09	9:35	13.75	Sheen	--	--	7.10	--	
07/13/09	8:09	14.23	--	--	--	6.62	--	
08/05/09	6:45	13.96	Sheen	--	--	6.89	--	
08/06/09	9:26	13.99	--	--	--	6.86	--	
08/20/09	8:41	14.18	--	--	--	6.67	--	
09/10/09	10:11	14.15	--	--	--	6.70	--	
09/23/09	9:33	14.07	Sheen	--	--	6.78	--	
10/08/09	9:49	14.21	--	--	--	6.64	--	
10/19/09	9:20	14.13	--	--	--	6.72	--	
11/12/09	9:33	12.43	--	--	--	8.42	--	
03/24/10	9:48	12.98	Sheen	--	--	7.87	--	
04/13/10	10:31	12.98	Sheen	--	--	7.87	--	
05/26/10	9:15	13.36	Sheen	--	--	7.49	--	

**Table 2
Summary of 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)	
MW-30 (20.85) ⁶	07/28/10	14:40	14.11	--	--	6.74	--	
	08/05/10	11:49	14.10	--	--	6.75	--	
	08/13/10	10:10	13.90	--	--	6.95	--	
	08/18/10	8:36	13.92	--	--	6.93	--	
	09/21/10	10:29	13.30	--	--	7.55	--	
	10/11/10	11:01	13.40	--	--	7.45	--	
	11/19/10	14:54	12.41	--	--	8.44	--	
	03/04/11	9:44	12.54	Sheen	--	8.31	--	
	04/25/11	10:50	12.80	Sheen	--	8.05	--	
	09/21/11	9:32	13.55	--	--	7.30	--	
	11/21/11	11:00	13.74	--	--	7.11	--	
	02/20/12	8:59	13.16	--	--	7.69	--	
	04/17/12	11:55	12.90	Sheen	--	7.95	--	
	MW-34 (5.33)	12/11/02	13:45	9.45	NR	NR	-4.12	--
03/20/03		11:43	6.99	NR	NR	-1.66	--	
07/03/03		8:29	9.02	NR	NR	-3.69	--	
09/18/03		9:55	9.57	NR	NR	-4.24	--	
12/02/03		11:45	7.00	NR	NR	-1.67	--	
03/09/04		12:15	8.42	NR	NR	-3.09	--	
06/03/04		11:25	8.95	NR	NR	-3.62	--	
09/03/04		13:53	8.63	NR	NR	-3.30	--	
12/06/04		9:45	9.48	NR	NR	-4.15	--	
03/04/05		13:55	8.87	NR	NR	-3.54	--	
06/03/05		--	9.08	NR	NR	-3.75	--	
09/01/05		9:08	9.38	NR	NR	-4.05	--	
12/01/05		10:49	6.72	NR	NR	-1.39	--	
03/02/06		10:50	9.25	NR	NR	-3.92	--	
06/06/06		9:20	8.82	NR	NR	-3.49	--	
09/15/06		--	8.66	NR	NR	-3.33	--	
03/07/07		--	--	NR	NR	--	--	
02/13/08		--	--	Well Possibly Removed During Previous Excavation Activities				--
MW-35 (5.11)		12/11/02	13:35	9.29	NR	NR	-4.18	--
	03/20/03	11:42	7.65	NR	NR	-2.54	--	
	07/03/03	--	--	NR	NR	--	--	
	09/18/03	--	--	NR	NR	--	--	
	12/02/03	--	--	NR	NR	--	--	
	03/09/04	--	--	NR	NR	--	--	
	06/03/04	--	--	NR	NR	--	--	
	09/03/04	--	--	NR	NR	--	--	
	12/06/04	--	--	NR	NR	--	--	
	03/04/05	--	--	NR	NR	--	--	
	06/03/05	--	--	NR	NR	--	--	
	09/01/05	--	--	NR	NR	--	--	
	12/01/05	--	--	NR	NR	--	--	
	03/02/06	--	--	NR	NR	--	--	
06/06/06	--	--	NR	NR	--	--		
09/15/06	--	--	NR	NR	--	--		
03/07/07	--	--	NR	NR	--	--		
02/13/08	--	--	Well Possibly Removed During Previous Excavation Activities				--	
MW-42 (5.20)	12/11/02	13:30	9.38	NR	NR	-4.18	--	
	03/20/03	11:50	7.86	NR	NR	-2.66	--	
	07/03/03	8:11	9.44	NR	NR	-4.24	--	
	09/18/03	10:21	10.92	NR	NR	-5.72	--	
	12/02/03	11:36	9.14	NR	NR	-3.94	--	
	03/09/04	10:09	8.58	NR	NR	-3.38	--	
	06/03/04	11:10	9.19	NR	NR	-3.99	--	
	09/03/04	14:01	9.02	NR	NR	-3.82	--	
	12/06/04	9:48	9.43	NR	NR	-4.23	--	
	03/04/05	13:56	8.99	NR	NR	-3.79	--	
	06/03/05	--	9.24	NR	NR	-4.04	--	
	09/01/05	9:00	9.55	NR	NR	-4.35	--	
	12/01/05	10:54	8.91	NR	NR	-3.71	--	
	03/02/06	10:45	9.25	NR	NR	-4.05	--	
06/06/06	9:28	8.93	NR	NR	-3.73	--		
09/15/06	--	8.87	NR	NR	-3.67	--		
03/07/07	--	--	NR	NR	--	--		
02/13/08	--	--	Well Possibly Removed During Previous Excavation Activities				--	
MW-43 (4.94)	12/11/02	13:40	9.06	NR	NR	-4.12	--	
	03/20/03	11:30	7.10	NR	NR	-2.16	--	
	07/03/03	8:15	8.86	NR	NR	-3.92	--	
	09/18/03	--	--	NR	NR	--	--	
	12/02/03	--	--	NR	NR	--	--	
	03/09/04	--	--	NR	NR	--	--	
	06/03/04	--	--	NR	NR	--	--	
	09/03/04	--	--	NR	NR	--	--	
	12/06/04	--	--	NR	NR	--	--	
	03/04/05	--	--	NR	NR	--	--	
	06/03/05	--	--	NR	NR	--	--	
	09/01/05	--	--	NR	NR	--	--	
	12/01/05	--	--	NR	NR	--	--	
	03/02/06	--	--	NR	NR	--	--	
06/06/06	--	--	NR	NR	--	--		
09/15/06	--	--	NR	NR	--	--		
03/07/07	--	--	NR	NR	--	--		
02/13/08	--	--	Well Possibly Removed During Previous Excavation Activities				--	

**Table 2
Summary of 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)
MW-44 (5.46)	12/11/02	--	--	NR	NR	--	--
	03/20/03	--	--	NR	NR	--	--
	07/03/03	--	--	NR	NR	--	--
	09/18/03	--	--	NR	NR	--	--
	12/02/03	--	--	NR	NR	--	--
	03/09/04	--	--	NR	NR	--	--
	06/03/04	--	--	NR	NR	--	--
	09/03/04	--	--	NR	NR	--	--
	12/06/04	--	--	NR	NR	--	--
	03/04/05	--	--	NR	NR	--	--
	06/03/05	--	--	NR	NR	--	--
	09/01/05	--	--	NR	NR	--	--
	12/01/05	--	--	NR	NR	--	--
	03/02/06	--	--	NR	NR	--	--
	06/06/06	--	--	NR	NR	--	--
	09/15/06	--	--	NR	NR	--	--
03/07/07	--	--	NR	NR	--	--	
MW-61A-R ⁶ (13.35)	03/02/06	--	15.15 ⁸	NR	NR	-2.25	1.91
	06/06/06	8:00	14.96	NR	NR	-2.05	--
(22.44) ⁹	09/15/06	--	14.26	NR	NR	-1.35	--
	03/07/07	8:44	14.04	--	NR	-0.69	--
	06/07/07	9:15	14.36	--	NR	-1.01	--
	07/10/07	9:50	14.84	--	NR	-1.49	--
	07/25/07	11:40	14.55	--	NR	-1.20	--
	08/22/07	9:40	14.72	--	NR	-1.37	--
	09/06/07	9:55	14.90	--	NR	-1.55	--
	09/26/07	9:16	15.09	--	NR	-1.74	--
	10/11/07	8:00	14.82	--	NR	-1.47	--
	11/01/07	9:55	14.81	--	NR	-1.46	--
	11/16/07	15:30	14.59	--	NR	-1.24	--
	11/26/07	13:48	14.31	--	NR	-0.96	--
	12/19/07	9:35	13.83	--	NR	-0.48	--
	01/03/08	8:41	12.93	--	NR	0.42	--
	01/17/08	9:00	12.76	--	NR	0.59	--
	02/12/08	9:24	13.54	--	NR	-0.19	--
	03/03/08	9:24	14.14	--	NR	-0.79	--
	03/17/08	9:23	14.49	--	NR	-1.14	--
	04/01/08	9:10	14.22	14.21	0.01	-0.86	--
	04/14/08	9:06	14.41	14.39	0.02	-1.04	--
	04/28/08	9:36	14.70	14.64	0.06	-1.30	--
	05/13/08	9:29	14.88	--	--	7.56	11.00
	05/27/08	13:53	14.93	Sheen	--	7.51	--
	06/10/08	10:20	14.73	--	--	7.71	--
	06/24/08	9:41	14.92	--	--	7.52	--
	07/07/08	9:56	14.70	--	--	7.74	--
	07/22/08	9:34	14.72	14.70	0.02	7.74	--
	08/12/08	9:50	14.75	14.68	0.07	7.75	--
	09/03/08	--	15.58	15.56	0.02	6.88	--
	09/26/08	--	14.89	14.79	0.10	7.63	--
	10/17/08	9:03	15.12	14.92	0.20	7.48	--
	10/29/08	8:50	15.21	15.00	0.21	7.40	--
	11/12/08	10:51	13.95	13.81	0.14	8.60	--
	12/03/08	12:52	14.25	14.19	0.06	8.24	--
	01/06/09	9:40	13.12	12.99	0.13	9.42	--
	01/20/09	12:50	13.06	13.01	0.05	9.42	--
	02/03/09	9:43	14.40	13.88	0.52	8.46	--
	02/17/09	11:20	14.30	13.80	0.50	8.54	--
	03/12/09	12:16	14.20	14.05	0.15	8.36	--
	03/25/09	8:50	14.01	13.91	0.10	8.51	--
	04/08/09	10:21	13.81	13.71	0.10	8.71	--
	04/30/09	10:12	14.14	13.95	0.19	8.45	--
	05/12/09	10:51	13.66	13.64	0.02	8.80	--
	05/26/09	14:15	13.74	--	--	8.70	--
	06/09/09	9:46	13.40	--	--	9.04	--
	06/25/09	9:47	14.14	13.94	0.20	8.46	--
	07/07/09	9:40	14.18	14.15	0.03	8.28	--
	07/13/09	8:14	14.88	14.87	0.01	7.57	--
08/05/09	6:45	14.68	14.39	0.29	7.99	--	
08/06/09	9:29	14.64	14.62	0.02	7.82	--	
08/20/09	8:51	14.85	14.84	0.01	7.60	--	
09/10/09	10:15	14.84	14.78	0.06	7.65	--	
09/23/09	9:37	14.89	14.81	0.08	7.61	--	
10/08/09	9:39	15.01	14.94	0.07	7.49	--	
10/19/09	9:05	14.98	14.91	0.07	7.52	--	
11/12/09	9:36	12.85	12.80	0.05	9.63	--	
03/24/10	9:54	13.20	12.95	0.25	9.44	--	
04/13/10	10:37	13.06	12.95	0.11	9.47	--	
05/26/10	9:06	13.91	13.76	0.15	8.65	--	
07/28/10	14:56	14.78	--	--	7.66	--	
08/05/10	11:28	14.79	--	--	7.65	--	
08/13/10	9:38	13.62	--	--	8.82	--	
08/13/10	10:37	13.61	--	--	8.83	--	
08/13/10	10:42	13.61	--	--	8.83	--	
08/13/10	15:42	13.64	--	--	8.80	--	
08/18/10	8:55	14.70	--	--	7.74	--	
09/21/10	10:42	15.35	--	--	7.09	--	
10/11/10	11:20	14.35	14.31	0.04	8.12	--	
11/19/10	15:25	13.30	13.19	0.11	9.23	--	
03/04/11	10:04	12.80	12.63	0.17	9.78	--	
04/25/11	11:20	12.70	Sheen ¹⁰	--	9.74	--	
09/21/11	9:45	14.65	14.10	0.55	8.23	--	
11/21/11	11:05	14.82	14.26	0.56	8.07	--	
02/20/12	9:15	13.55	13.15	0.40	9.21	--	
04/17/12	12:10	13.18	12.79	0.39	9.57	--	

**Table 2
Summary of 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)
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	--
	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	--	
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	--	
MW-65 (10.83)	12/11/02	14:03	14.69	NR	NR	-3.86	--
	03/20/03	10:44	10.09	NR	NR	0.74	--
	07/03/03	11:12	13.85	NR	NR	-3.02	--
	09/18/03	10:40	14.15	NR	NR	-3.32	--
	12/02/03	11:14	12.38	NR	NR	-1.55	--
	03/09/04	10:50	13.63	NR	NR	-2.80	--
	06/03/04	11:42	14.24	NR	NR	-3.41	--
	09/03/04	14:08	13.77	NR	NR	-2.94	--
	12/06/04	9:32	14.59	NR	NR	-3.76	--
	03/04/05	14:04	14.06	NR	NR	-3.23	--
	06/03/05	--	14.14	NR	NR	-3.31	--
	09/01/05	9:55	14.67	NR	NR	-3.84	--
	12/01/05	11:19	12.05	NR	NR	-1.22	--
	03/02/06	11:12	14.28	NR	NR	-3.45	--
	06/06/06	8:26	13.83	NR	NR	-3.00	--
	09/15/06	--	13.90	NR	NR	-3.07	--
	03/07/07	8:51	13.63	--	--	-2.80	--
	06/07/07	8:30	13.69	--	--	-2.86	--
	09/26/07	9:27	14.29	--	--	-3.46	--
	11/26/07	10:00	13.62	--	--	-2.79	--
12/03/07			Well Decommissioned				
MW-66 (11.62)	12/11/02	14:15	15.36	NR	NR	-3.74	--
	03/20/03	13:04	12.21	NR	NR	-0.59	--
	07/03/03	11:22	14.73	NR	NR	-3.11	--
	09/18/03	10:34	15.25	NR	NR	-3.63	--
	12/02/03	11:27	11.99	NR	NR	-0.37	--
	03/09/04	11:02	13.67	NR	NR	-2.05	--
	06/03/04	11:45	14.78	NR	NR	-3.16	--
	09/03/04	14:12	14.16	NR	NR	-2.54	--
	12/06/04	9:39	15.22	NR	NR	-3.60	--
	03/04/05	14:01	14.54	NR	NR	-2.92	--
	06/03/05	--	14.69	NR	NR	-3.07	--
	09/01/05	10:10	15.31	NR	NR	-3.69	--
	12/01/05	11:26	11.78	NR	NR	-0.16	--
	03/02/06	11:20	14.77	NR	NR	-3.15	--
	06/06/06	8:15	14.35	NR	NR	-2.73	--
	09/15/06	--	14.39	NR	NR	-2.77	--
	03/07/07	9:00	14.11	--	--	-2.49	--
	09/26/07	9:36	14.97	--	--	-3.35	--
	11/26/07	13:42	14.23	--	--	-2.61	--
	12/03/07			Well Decommissioned			
MW-200 ⁵ (4.78)	03/07/07	9:45	8.88	--	--	-4.10	-0.22
	06/07/07	15:53	9.26	--	--	-4.48	--
(14.36) ⁵	07/06/07	10:00	9.76	--	--	-4.98	--
	09/26/07	8:08	9.43	--	--	-4.65	--
	11/26/07	14:48	8.54	--	--	-3.76	--
	02/13/08	11:15	8.59	--	--	-3.82	--
	05/13/08	10:16	10.02	--	--	4.34	9.36
	09/03/08	--	9.56	--	--	4.80	--
	12/03/08	12:10	9.11	--	--	5.25	--
	02/17/09	10:43	8.28	--	--	6.08	--
	05/12/09	12:02	8.95	--	--	5.41	--
	05/26/09	13:54	9.40	--	--	4.96	--
	09/10/09	10:39	9.74	--	--	4.62	--
	04/13/10	11:21	9.23	--	--	5.13	--
	06/16/10	10:05	9.10	--	--	5.26	--
	08/12/10	9:45	8.92	Sheen	--	5.44	--
	09/14/10	1:48	9.31	--	--	5.05	--
	09/14/10	1:53	9.31	--	--	5.05	--
	09/15/10	15:03	9.34	--	--	5.02	--
	09/15/10	15:05	9.33	--	--	5.03	--
	09/15/10	15:10	9.31	--	--	5.05	--
	09/15/10	15:15	9.29	--	--	5.07	--
09/15/10	15:20	9.28	--	--	5.08	--	
09/15/10	15:25	9.26	--	--	5.10	--	
09/15/10	15:35	9.38	--	--	4.98	--	
09/15/10	15:39	9.49	--	--	4.87	--	
09/15/10	15:45	9.58	--	--	4.78	--	
09/15/10	15:50	9.66	--	--	4.70	--	
09/15/10	15:55	9.70	--	--	4.66	--	
09/15/10	16:00	9.74	--	--	4.62	--	
09/15/10	16:05	9.76	--	--	4.60	--	
09/15/10	16:10	9.79	--	--	4.57	--	
09/15/10	16:16	9.82	--	--	4.54	--	
09/15/10	16:28	9.80	--	--	4.56	--	
09/15/10		9.69	--	--	4.67	--	

Table 2
Summary of 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)
MW-200 ⁵ (14.36) ⁵	09/15/10	16:36	9.56	--	--	4.80	--
	09/15/10	16:40	9.50	--	--	4.86	--
	09/15/10	16:46	9.43	--	--	4.93	--
	09/15/10	16:55	9.35	--	--	5.01	--
	09/15/10	17:05	9.27	--	--	5.09	--
	09/15/10	17:20	9.21	--	--	5.15	--
	09/15/10	17:29	9.20	--	--	5.16	--
	09/21/10	11:14	9.50	--	--	4.86	--
	09/22/10	11:00	9.40	--	--	4.96	--
	04/26/11	10:45	9.30	--	--	5.06	--
	09/21/11	10:45	10.15	--	--	4.21	--
	11/21/11						
	02/20/12						
	04/17/12	14:00	9.78	--	--	4.58	--
	MW-201 ⁵ (5.28) (14.86) ⁵	03/07/07	9:55	9.41	Sheen	--	-4.13
06/07/07		16:35	9.79	--	--	-4.51	--
07/06/07		11:00	10.27	--	--	-4.99	--
09/26/07		8:20	9.97	--	--	-4.69	--
01/09/08		14:38	9.09	--	--	-3.81	--
02/12/08		10:24	9.46	--	--	-4.19	--
05/13/08		10:24	10.56	--	--	4.30	9.86
09/03/08		--	10.08	--	--	4.78	--
12/03/08		12:17	9.66	--	--	5.20	--
02/17/09		10:37	8.82	--	--	6.04	--
05/12/09		12:13	9.52	--	--	5.34	--
05/26/09		13:50	9.90	--	--	4.96	--
08/11/09		9:02	10.31	--	--	4.55	--
08/28/09		14:50	10.21	--	--	4.65	--
09/10/09		10:42	10.29	--	--	4.57	--
04/13/10		11:17	9.75	--	--	5.11	--
08/11/10		14:45	10.68	Sheen	--	4.18	--
09/14/10		13:55	9.89	--	--	4.97	--
09/14/10		14:00	9.89	--	--	4.97	--
09/14/10		15:05	10.04	--	--	4.82	--
09/14/10		15:07	10.02	--	--	4.84	--
09/14/10		15:19	9.92	--	--	4.94	--
09/14/10		15:26	9.89	--	--	4.97	--
09/14/10		15:36	9.86	--	--	5.00	--
09/17/10		18:14	9.59	--	--	5.27	--
09/17/10		20:07	9.36	--	--	5.50	--
09/21/10		11:18	10.06	--	--	4.80	--
04/25/11		13:15	9.22	--	--	5.64	--
09/21/11		10:40	10.81	--	--	4.05	--
11/21/11		10:15	10.17	--	--	4.69	--
02/20/12		11:20	9.68	--	--	5.18	--
04/17/12		11:20	10.11	--	--	4.75	--
MW-202 ⁵ (5.01) (14.58) ⁵		03/07/07	9:25	8.79	--	--	-3.78
	06/07/07	14:53	9.52	--	--	-4.51	--
	07/06/07	10:05	10.16	--	--	-5.15	--
	09/26/07	7:48	9.59	--	--	-4.58	--
	11/26/07	15:16	8.43	--	--	-3.42	--
	02/12/08	10:26	8.59	--	--	-3.59	--
	05/13/08	10:06	10.61	--	--	3.97	6.83
	09/03/08	--	9.61	--	--	4.97	--
	12/03/08	11:55	8.86	--	--	5.72	--
	02/17/09	10:32	8.15	--	--	6.43	--
	05/12/09	11:58	9.77	--	--	4.81	--
	05/26/09	13:56	10.84	--	--	3.74	--
	08/11/09	9:25	9.96	--	--	4.62	--
	08/28/09	14:29	9.85	--	--	4.73	--
	09/10/09	10:58	9.90	--	--	4.68	--
	04/13/10	11:23	10.17	--	--	4.41	--
	06/16/10	9:58	8.95	--	--	5.63	--
	08/11/10	11:45	10.00	--	--	4.58	--
	08/16/10	14:40	8.46	--	--	6.12	--
	08/16/10	14:43	8.46	--	--	6.12	--
	08/16/10	14:45	9.01	--	--	5.57	--
	08/16/10	14:57	9.02	--	--	5.56	--
	08/16/10	14:48	9.06	--	--	5.52	--
	08/16/10	14:49	9.13	--	--	5.45	--
	08/16/10	14:50	9.14	--	--	5.44	--
	08/16/10	14:51	9.13	--	--	5.45	--
	08/16/10	14:56	9.19	--	--	5.39	--
	08/16/10	14:56	8.75	--	--	5.83	--
	08/16/10	14:57	8.60	--	--	5.98	--
	08/16/10	14:57	8.59	--	--	5.99	--
	08/16/10	14:58	8.53	--	--	6.05	--
	08/18/10	9:12	11.12	--	--	3.46	--
	09/17/10	14:32	18.86	--	--	-4.28	--
09/17/10	16:18	9.18	--	--	5.40	--	
09/17/10	17:52	8.83	--	--	5.75	--	
09/21/10	11:10	10.55	--	--	4.03	--	
09/22/10	9:30	9.66	--	--	4.92	--	
04/25/11	14:40	9.32	--	--	5.26	--	
09/21/11	10:47	10.90	--	--	3.68	--	
11/21/11	9:56	10.03	--	--	4.55	--	
02/20/12	11:29	9.61	--	--	4.97	--	
04/17/12	11:00	10.30	--	--	4.28	--	

**Table 2
Summary of 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)	
MW-203 ⁶ (7.98)	03/07/07	--	11.86	--	--	-3.88	-2.52	
	06/07/07	13:54	12.45	--	--	-4.47	--	
	07/06/07	11:01	13.07	--	--	-5.09	--	
	09/26/07	8:30	12.69	--	--	-4.71	--	
	11/26/07	14:33	11.56	--	--	-3.58	--	
	02/12/08	10:05	11.59	--	--	-3.62	--	
	(17.55) ⁷	05/13/08	10:32	13.56	--	--	3.99	7.05
	09/03/08	--	13.40	--	--	4.15	--	
	12/03/08	12:26	11.76	--	--	5.79	--	
	02/17/09	10:47	11.00	--	--	6.55	--	
	05/12/09	12:21	12.81	--	--	4.74	--	
	05/26/09	13:45	13.51	--	--	4.04	--	
	08/28/09	15:14	12.67	--	--	4.88	--	
	09/10/09	10:45	12.99	--	--	4.56	--	
	04/13/10	11:12	12.92	--	--	4.63	--	
	07/21/10	16:30	12.59	--	--	4.96	--	
	08/11/10	11:12	11.68	--	--	5.87	--	
	08/11/10	11:28	11.89	--	--	5.66	--	
	08/11/10	11:29	11.84	--	--	5.71	--	
	08/13/10	16:15	13.10	--	--	4.45	--	
	08/16/10	7:12	13.96	--	--	3.59	--	
	08/16/10	7:13	13.96	--	--	3.59	--	
	09/02/10	14:45	12.76	--	--	4.79	--	
	09/02/10	14:55	12.71	--	--	4.84	--	
	09/02/10	15:10	12.31	--	--	5.24	--	
	09/02/10	15:33	12.56	--	--	4.99	--	
	09/15/10	6:47	14.20	--	--	3.35	--	
	09/16/10	15:55	12.02	--	--	5.53	--	
	09/16/10	16:00	12.01	--	--	5.54	--	
	09/16/10	16:11	11.95	--	--	5.60	--	
	09/16/10	16:20	11.90	--	--	5.65	--	
	09/21/10	11:28	13.54	--	--	4.01	--	
	04/25/11	13:45	12.06	--	--	5.49	--	
09/21/11	14:26	12.68	--	--	4.87	--		
11/21/11	10:21	11.69	--	--	5.86	--		
02/20/12	11:14	12.25	--	--	5.30	--		
04/17/12	13:45	13.39	--	--	4.16	--		
MW-204 ⁸ (14.38)	03/07/07	10:15	18.12	--	--	-3.74	-2.87	
	06/07/07	14:50	18.52	--	--	-4.14	--	
	07/06/07	11:40	19.03	--	--	-4.65	--	
	09/26/07	8:37	18.85	--	--	-4.47	--	
	11/26/07	14:29	17.78	--	--	-3.40	--	
	02/12/08	10:03	17.85	--	--	-3.48	--	
	(23.93) ⁹	05/13/08	10:38	19.43	--	--	4.50	6.68
	09/03/08	--	18.76	--	--	5.17	--	
	10/01/08	10:25	18.40	--	--	5.53	--	
	10/17/08	9:29	18.72	--	--	5.21	--	
	12/03/08	12:31	18.06	--	--	5.87	--	
	02/17/09	10:54	17.42	--	--	6.51	--	
	05/12/09	12:41	19.81	--	--	4.12	--	
	05/26/09	13:41	19.20	--	--	4.73	--	
	07/13/09	8:18	19.82	--	--	4.11	--	
	08/04/09	--	18.88	--	--	5.05	--	
	08/06/09	9:36	18.33	--	--	5.60	--	
	08/20/09	9:02	18.21	--	--	5.72	--	
	09/10/09	10:47	19.02	--	--	4.91	--	
	04/13/10	10:59	18.71	--	--	5.22	--	
	06/16/10	10:15	18.06	--	--	5.87	--	
	08/11/10	16:16	18.65	--	--	5.28	--	
	08/12/10	12:31	18.11	--	--	5.82	--	
	08/12/10	12:34	18.12	--	--	5.81	--	
	08/12/10	16:13	18.95	--	--	4.98	--	
	08/12/10	16:15	18.94	--	--	4.99	--	
	08/12/10	16:17	18.90	--	--	5.03	--	
	08/13/10	16:25	18.79	--	--	5.14	--	
	08/14/10	7:17	19.70	--	--	4.23	--	
	08/14/10	7:18	19.70	--	--	4.23	--	
	09/02/10	14:33	18.93	--	--	5.00	--	
	09/02/10	14:35	18.93	--	--	5.00	--	
	09/02/10	14:39	18.93	--	--	5.00	--	
09/02/10	15:37	18.73	--	--	5.20	--		
09/02/10	17:35	18.57	--	--	5.36	--		
09/14/10	11:58	18.91	--	--	5.02	--		
09/14/10	12:37	18.70	--	--	5.23	--		
09/14/10	12:46	18.65	--	--	5.28	--		
09/16/10	7:10	19.67	--	--	4.26	--		
09/16/10	7:12	19.67	--	--	4.26	--		
09/16/10	7:13	19.67	--	--	4.26	--		
09/16/10	7:14	19.68	--	--	4.25	--		
09/16/10	7:15	19.68	--	--	4.25	--		
09/16/10	7:17	19.69	--	--	4.24	--		
09/16/10	7:19	19.69	--	--	4.24	--		
09/16/10	7:21	19.70	--	--	4.23	--		
09/16/10	7:23	19.70	--	--	4.23	--		
09/16/10	7:25	19.71	--	--	4.22	--		
09/16/10	7:27	19.72	--	--	4.21	--		

**Table 2
Summary of 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)	
MW-204 ⁵ (23.93) ⁵	09/16/10	7:29	19.72	--	--	4.21	--	
	09/16/10	7:30	19.75	--	--	4.18	--	
	09/17/10	14:30	18.93	--	--	5.00	--	
	09/17/10	16:20	18.47	--	--	5.46	--	
	09/17/10	19:57	18.26	--	--	5.67	--	
	09/21/10	11:35	19.18	--	--	4.75	--	
	04/25/11	14:15	18.07	--	--	5.86	--	
	09/21/11	10:22	19.62	--	--	4.31	--	
	11/21/11	10:30	18.71	--	--	5.22	--	
	02/20/12	10:53	17.99	--	--	5.94	--	
	04/17/12	13:25	19.03	--	--	4.90	--	
MW-205 ⁵ (18.43)	03/07/07	10:30	22.20	Sheen	--	-3.77	0.43	
	06/07/07	15:45	22.45	--	--	-4.02	--	
	07/06/07	11:47	22.93	--	--	-4.50	--	
	09/26/07	8:46	22.83	--	--	-4.40	--	
	11/26/07	14:23	21.76	--	--	-3.33	--	
	02/12/08	10:01	21.78	--	--	-3.36	--	
	(27.89) ⁵	05/13/08	10:43	23.38	--	--	4.51	9.89
		09/03/08	--	22.68	--	--	5.21	--
		12/03/08	12:36	22.01	--	--	5.88	--
		02/17/09	10:59	21.40	--	--	6.49	--
		05/12/09	12:47	22.73	--	--	5.16	--
		05/26/09	13:36	23.06	--	--	4.83	--
		08/04/09	--	22.84	--	--	5.05	--
		08/28/09	15:34	22.71	--	--	5.18	--
		09/10/09	10:46	23.01	--	--	4.88	--
		04/13/10	11:07	22.62	--	--	5.27	--
		08/13/10	8:45	22.31	--	--	5.58	--
		08/16/10	14:18	21.50	--	--	6.39	--
		08/16/10	12:22	21.75	--	--	6.14	--
		09/14/10	11:59	22.66	--	--	5.23	--
		09/16/10	9:24	24.00	--	--	3.89	--
		09/16/10	9:25	24.00	--	--	3.89	--
		09/16/10	9:28	24.00	--	--	3.89	--
		09/16/10	15:05	22.42	--	--	5.47	--
		09/17/10	13:43	23.12	--	--	4.77	--
		09/17/10	13:48	23.11	--	--	4.78	--
		09/17/10	13:55	23.05	--	--	4.84	--
		09/17/10	14:00	23.05	--	--	4.84	--
		09/17/10	14:04	23.02	--	--	4.87	--
		09/17/10	14:09	23.03	--	--	4.86	--
		09/17/10	14:19	22.96	--	--	4.93	--
		09/17/10	14:26	22.92	--	--	4.97	--
		09/21/10	11:40	23.15	--	--	4.74	--
		09/28/10	8:15	23.05	Sheen ⁵	--	4.84	--
		10/11/10	10:48	21.89	--	--	6.00	--
		11/19/10	16:51	22.81	--	--	5.08	--
		03/04/11	10:32	21.98	--	--	5.91	--
		04/25/11	14:20	22.04	--	--	5.85	--
		04/26/11	13:40	--	LNAPL	--	--	--
		05/12/11	7:49	22.68	--	--	5.21	--
		06/03/11	11:33	22.70	--	--	5.19	--
		06/09/11	14:48	22.66	Sheen	--	5.23	--
		09/21/11	10:13	23.60	--	--	4.29	--
		09/30/11	13:50	22.26	--	--	5.63	--
		10/06/11	14:35	22.31	--	--	5.58	--
		10/14/11	6:15	22.61	--	--	5.28	--
		10/21/11	6:30	22.40	--	--	5.49	--
10/28/11		13:40	22.53	--	--	5.36	--	
11/04/11		13:05	22.42	--	--	5.47	--	
11/10/11		14:35	22.18	--	--	5.71	--	
11/21/11		10:43	22.76	--	--	5.13	--	
02/20/12	11:10	22.32	--	--	5.57	--		
04/17/12	11:45	23.03	--	--	4.86	--		

**Table 2
Summary of 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)
MW-206 ² (5.59) (15.15) ³	03/07/07	9:15	9.15	--	--	-3.56	-5.41
	06/07/07	13:26	10.24	--	--	-4.65	--
	07/06/07	9:22	10.84	--	--	-5.25	--
	09/26/07	7:35	10.21	--	--	-4.62	--
	11/26/07	15:08	8.47	--	--	-2.88	--
	02/12/08	10:28	8.69	--	--	-3.11	--
	05/13/08	9:59	11.80	--	--	3.35	4.15
	09/03/08	--	9.91	--	--	5.24	--
	10/01/08	9:30	9.21	--	--	5.94	--
	12/03/08	11:51	8.78	--	--	6.37	--
	02/17/09	10:29	8.28	--	--	6.87	--
	05/12/09	11:47	11.83	--	--	3.32	--
	05/26/09	13:59	13.30	--	--	1.85	--
	08/11/09	9:38	10.02	--	--	5.13	--
	08/28/09	14:07	9.78	--	--	5.37	--
	09/10/09	11:14	9.81	--	--	5.34	--
	04/13/10	11:27	12.60	--	--	2.55	--
	08/11/10	17:30	13.10	--	--	2.05	--
	08/16/10	11:52	9.70	--	--	5.45	--
	08/16/10	12:26	8.60	--	--	6.55	--
	08/18/10	9:07	13.10	--	--	2.05	--
	09/17/10	16:12	8.69	--	--	6.46	--
	09/17/10	17:55	10.03	--	--	5.12	--
	09/21/10	11:07	12.65	--	--	2.50	--
	09/22/10	9:20	11.09	--	--	4.06	--
	04/25/11	14:50	10.84	--	--	4.31	--
	09/21/11	10:52	11.00	--	--	4.15	--
11/21/11	9:50	10.20	--	--	4.95	--	
02/20/12	11:32	11.31	--	--	3.84	--	
04/17/12	10:55	12.45	--	--	2.70	--	
MW-207 ² (5.82) (15.40) ³	03/07/07	10:40	10.64	--	--	-4.82	-3.68
	06/07/07	17:10	10.53	--	--	-4.71	--
	07/06/07	9:10	11.20	--	--	-5.38	--
	09/26/07	7:25	10.30	--	--	-4.48	--
	11/26/07	15:03	8.84	--	--	-3.02	--
	02/12/08	10:31	8.90	--	--	-3.08	--
	05/13/08	9:53	12.07	--	--	3.33	5.90
	09/03/08	--	10.14	--	--	5.26	--
	10/01/08	8:10	9.51	--	--	5.89	--
	12/03/08	11:46	9.05	--	--	6.35	--
	02/17/09	10:25	8.40	--	--	7.00	--
	05/12/09	11:43	11.70	--	--	3.70	--
	05/26/09	14:03	13.52	--	--	1.88	--
	08/11/09	9:46	10.41	--	--	4.99	--
	08/28/09	13:45	10.35	--	--	5.05	--
	09/10/09	11:25	10.20	--	--	5.20	--
	04/13/10	11:30	12.43	--	--	2.97	--
	06/16/10	9:54	9.70	--	--	5.70	--
	08/13/10	13:30	12.52	--	--	2.88	--
	08/16/10	11:22	10.35	--	--	5.05	--
	08/16/10	11:25	10.32	--	--	5.08	--
	08/16/10	11:28	10.32	--	--	5.08	--
	08/16/10	11:31	10.29	--	--	5.11	--
	08/16/10	11:33	10.26	--	--	5.14	--
	08/16/10	11:37	10.25	--	--	5.15	--
	08/16/10	11:50	9.70	--	--	5.70	--
	09/21/10	11:02	12.55	--	--	2.85	--
04/25/11	14:55	10.83	--	--	4.57	--	
09/21/11	10:55	11.45	--	--	3.95	--	
11/21/11	9:45	10.08	--	--	5.32	--	
02/20/12	11:36	11.25	--	--	4.15	--	
04/17/12	10:45	12.30	--	--	3.10	--	

**Table 2
Summary of 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)
RW-1 (4.65)	09/13/07	--	9.12	--	--	-4.47	--
	11/01/07	10:45	9.60	--	--	-4.95	--
(14.2) ⁸	11/26/07	11:57	8.43	--	--	-3.78	--
	12/07/07	11:55	7.00	--	--	-2.35	--
	12/19/07	9:25	7.75	--	--	-3.10	--
	01/03/08	9:05	7.78	--	--	-3.13	--
	01/30/07	8:34	8.22	--	--	-3.57	--
	02/12/08	9:00	8.55	--	--	-3.90	--
	03/03/08	8:58	8.88	--	--	-4.23	--
	03/17/08	8:52	8.80	--	--	-4.15	--
	04/01/08	8:49	8.79	--	--	-4.14	--
	04/14/08	8:51	8.85	--	--	-4.20	--
	04/28/08	9:01	8.90	--	--	-4.25	--
	05/13/08	9:10	9.25	--	--	4.95	--
	05/27/08	10:25	9.05	--	--	5.15	--
	06/10/08	10:36	8.88	--	--	5.32	--
	06/24/08	9:15	8.98	--	--	5.22	--
	07/07/08	9:26	8.65	--	--	5.55	--
	07/22/08	9:15	8.88	--	--	5.32	--
	08/12/08	9:23	8.86	--	--	5.34	--
	09/03/08	--	9.13	--	--	5.07	--
	10/17/08	8:29	6.33	--	--	7.87	--
	10/29/08	8:17	9.23	--	--	4.97	--
	11/12/08	9:09	7.63	--	--	6.57	--
	12/03/08	11:25	9.82	--	--	4.38	--
	01/06/09	9:15	7.86	--	--	6.34	--
	01/20/09	12:20	8.34	--	--	5.86	--
	02/03/09	9:08	8.89	--	--	5.31	--
	02/17/09	9:06	8.41	--	--	5.79	--
	03/12/09	11:18	8.75	--	--	5.45	--
	03/25/09	9:05	8.62	--	--	5.58	--
	04/08/09	9:14	8.58	--	--	5.62	--
	04/30/09	9:20	8.55	--	--	5.65	--
	05/12/09	9:21	7.98	--	--	6.22	--
	05/26/09	13:19	8.24	--	--	5.96	--
	06/09/09	9:09	8.00	--	--	6.20	--
	06/25/09	9:19	8.08	--	--	6.12	--
	07/07/09	9:13	8.34	--	--	5.86	--
09/10/09	9:52	8.98	--	--	5.22	--	
09/23/09	9:09	8.98	--	--	5.22	--	
10/08/09	9:24	9.01	--	--	5.19	--	
10/19/09	9:36	8.60	--	--	5.60	--	
11/12/09	9:10	7.75	--	--	6.45	--	
03/24/10	9:24	8.39	--	--	5.81	--	
04/13/10	10:15	8.29	--	--	5.91	--	
05/24/10	10:14	8.38	--	--	5.82	--	
09/21/10	9:59	8.00	--	--	6.20	--	
11/19/10	16:25	7.98	--	--	6.22	--	
03/04/11	9:12	7.96	--	--	6.24	--	
04/25/11	9:10	8.25	--	--	5.95	--	
09/21/11	8:30	8.94	--	--	5.26	--	
11/21/11	8:30	8.67	--	--	5.53	--	
02/20/12	9:55	8.41	8.41	--	--	5.79	--
04/17/12	9:22	8.40	8.40	--	--	5.80	--

**Table 2
Summary of 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)
RW-2 (4.47) (14.3) ⁸	04/28/08	9:10	9.98	--	--	-5.51	--
	05/13/08	9:08	8.29	--	--	6.01	--
	05/27/08	10:23	9.12	--	--	5.18	--
	06/10/08	10:38	9.00	--	--	5.30	--
	06/24/08	9:19	9.12	--	--	5.18	--
	07/07/08	9:30	8.86	--	--	5.44	--
	07/22/08	9:19	9.03	--	--	5.27	--
	08/12/08	9:27	8.78	--	--	5.52	--
	09/03/08	--	9.23	--	--	5.07	--
	10/17/08	8:35	6.34	--	--	7.96	--
	10/29/08	8:21	9.37	--	--	4.93	--
	11/12/08	9:13	6.32	--	--	7.98	--
	12/03/08	11:23	8.92	--	--	5.38	--
	01/06/09	9:18	6.84	--	--	7.46	--
	01/20/09	12:23	8.40	--	--	5.90	--
	02/03/09	9:13	9.08	--	--	5.22	--
	02/17/09	9:09	8.55	--	--	5.75	--
	03/12/09	11:21	8.91	--	--	5.39	--
	03/25/09	9:07	8.50	--	--	5.80	--
	04/08/09	9:18	8.68	--	--	5.62	--
	04/30/09	9:24	8.70	--	--	5.60	--
	05/12/09	9:15	8.15	--	--	6.15	--
	05/26/09	13:17	8.31	--	--	5.99	--
	06/09/09	9:13	8.21	--	--	6.09	--
	06/25/09	9:22	8.28	--	--	6.02	--
	07/07/09	9:17	8.49	--	--	5.81	--
	09/10/09	9:50	9.11	--	--	5.19	--
	09/23/09	9:12	9.10	--	--	5.20	--
	10/08/09	9:27	9.24	--	--	5.06	--
	10/19/09	9:40	8.72	--	--	5.58	--
	11/12/09	9:12	7.16	--	--	7.14	--
	03/24/10	9:28	8.42	--	--	5.88	--
	04/13/10	10:12	8.35	--	--	5.95	--
	05/24/10	10:16	8.46	--	--	5.84	--
	08/16/10	7:40	7.87	--	--	6.43	--
	08/16/10	7:42	7.87	--	--	6.43	--
	09/02/10	10:14	9.24	--	--	5.06	--
	09/02/10	10:42	9.25	--	--	5.05	--
	09/02/10	11:45	9.32	--	--	4.98	--
	09/02/10	11:46	9.32	--	--	4.98	--
	09/02/10	11:47	9.32	--	--	4.98	--
	09/02/10	11:48	9.32	--	--	4.98	--
	09/02/10	11:49	9.32	--	--	4.98	--
	09/02/10	11:55	9.33	--	--	4.97	--
	09/02/10	12:00	9.33	--	--	4.97	--
	09/02/10	12:05	9.33	--	--	4.97	--
	09/02/10	12:10	9.33	--	--	4.97	--
09/02/10	12:15	9.34	--	--	4.96	--	
09/02/10	12:20	9.34	--	--	4.96	--	
09/02/10	12:25	9.34	--	--	4.96	--	
09/02/10	12:42	9.35	--	--	4.95	--	
09/02/10	13:00	9.36	--	--	4.94	--	
09/02/10	13:32	9.36	--	--	4.94	--	
09/03/10	9:12	9.52	--	--	4.78	--	
09/03/10	10:26	9.48	--	--	4.82	--	
09/03/10	10:54	9.55	--	--	4.75	--	
09/03/10	11:08	9.54	--	--	4.76	--	
09/21/10	9:57	8.10	--	--	6.20	--	
11/19/10	16:24	7.62	--	--	6.68	--	
03/04/11	9:16	7.80	--	--	6.50	--	
04/25/11	9:15	8.20	--	--	6.10	--	
09/21/11	8:33	8.39	--	--	5.91	--	
11/21/11	8:36	8.82	--	--	5.48	--	
02/20/12	9:57	8.53	--	--	5.77	--	
04/17/12	9:25	8.38	--	--	5.92	--	

**Table 2
Summary of 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)	
RW-3 (4.70)	09/13/07	--	9.45	--	--	-4.75	--	
	11/01/07	10:52	10.00	--	--	-5.30	--	
	11/26/07	12:00	8.60	--	--	-3.90	--	
	12/07/07	11:50	7.10	--	--	-2.40	--	
	12/19/07	9:20	7.63	--	--	-2.93	--	
	01/03/08	9:07	7.49	--	--	-2.79	--	
	01/30/08	8:38	8.44	--	--	-3.74	--	
	02/12/08	9:30	8.84	--	--	-4.14	--	
	03/03/08	9:02	9.11	--	--	-4.41	--	
	03/17/08	8:58	8.91	--	--	-4.21	--	
	04/01/08	8:43	9.01	--	--	-4.31	--	
	04/14/08	8:44	9.16	--	--	-4.46	--	
	04/28/08	9:16	9.10	--	--	-4.40	--	
	(14.3) ⁶	05/13/08	9:03	9.53	--	--	4.77	--
		05/27/08	10:20	9.36	--	--	4.94	--
		06/10/08	10:41	9.34	Sheen	--	4.96	--
		06/24/08	9:23	9.34	--	--	4.96	--
		07/07/08	9:34	9.04	--	--	5.26	--
		07/22/08	9:22	9.21	--	--	5.09	--
		08/12/08	9:30	9.21	--	--	5.09	--
		09/03/08	--	9.51	--	--	4.79	--
		10/17/08	8:39	9.60	--	--	4.70	--
		10/29/08	8:26	9.53	--	--	4.77	--
		11/12/08	9:17	7.10	--	--	7.20	--
		12/03/08	11:19	8.04	--	--	6.26	--
		01/06/09	9:21	7.69	--	--	6.61	--
		01/20/09	12:26	8.58	--	--	5.72	--
		02/03/09	9:17	9.22	Sheen	--	5.08	--
		02/17/09	9:11	8.69	--	--	5.61	--
		03/12/09	11:24	9.08	--	--	5.22	--
		03/25/09	9:09	8.91	8.90	0.01	5.40	--
		04/08/09	9:20	8.83	8.82	0.01	5.48	--
		04/30/09	9:25	8.90	Sheen	--	5.40	--
		05/12/09	9:26	8.45	Sheen	--	5.85	--
		05/26/09	14:38	9.09	--	--	5.21	--
		06/09/09	9:16	8.40	--	--	5.90	--
		06/25/09	9:23	8.35	--	--	5.95	--
		07/07/09	9:21	8.62	--	--	5.68	--
		08/20/09	8:26	8.60	Sheen	--	5.70	--
		08/28/09	16:00	9.76	--	--	4.54	--
		09/10/09	9:47	9.54	--	--	4.76	--
		09/23/09	9:16	9.41	Sheen	--	4.89	--
		10/08/09	9:30	9.46	--	--	4.84	--
		10/19/09	9:45	9.13	--	--	5.17	--
		11/12/09	9:15	8.36	--	--	5.94	--
		03/24/10	9:31	8.60	Sheen	--	5.70	--
		04/13/10	10:09	8.58	--	--	5.72	--
	05/24/10	10:18	8.82	--	--	5.48	--	
	08/16/10	7:40	8.40	--	--	5.90	--	
	08/16/10	7:50	8.36	--	--	5.94	--	
	09/02/10	10:13	9.81	--	--	4.49	--	
	09/02/10	10:40	9.79	--	--	4.51	--	
	09/21/10	9:55	8.58	--	--	5.72	--	
	11/19/10	16:32	7.73	--	--	6.57	--	
	03/04/11	9:19	7.92	--	--	6.38	--	
	04/25/11	9:30	8.43	--	--	5.87	--	
	09/21/11	8:37	8.39	--	--	5.91	--	
	11/21/11	8:43	9.00	--	--	5.30	--	
	02/20/12	10:00	8.60	--	--	5.70	--	
	04/17/12	9:30	8.58	--	--	5.72	--	
RW-4	UNABLE TO LOCATE							
RW-5	09/13/07	--	8.6	--	--	5.30	--	
	11/01/07	11:00	9.4	--	--	4.50	--	
	11/26/07	12:05	7.89	--	--	6.01	--	
	12/07/07	11:45	6.4	--	--	7.50	--	
	12/19/07	9:15	2.2	--	--	11.70	--	
	(13.9) ⁶	05/13/08	9:01	8.72	--	--	5.18	--
	09/03/08	--	8.74	--	--	5.16	--	
	12/03/08	11:16	8.45	--	--	5.45	--	
	02/17/09	9:14	7.77	Sheen	--	6.13	--	
	05/12/09	9:12	7.48	--	--	6.42	--	
	05/26/09	13:15	7.94	--	--	5.96	--	
	09/10/09	9:44	8.95	--	--	4.95	--	
	04/13/10	10:07	7.75	--	--	6.15	--	
	09/21/10	9:52	7.82	--	--	6.08	--	
	04/25/11	--	--	UNABLE TO LOCATE	--	--	--	--
	09/21/11	8:48	8.52	--	--	5.38	--	
	11/21/11	8:49	8.52	--	--	5.38	--	
02/20/12	10:02	7.85	--	--	6.05	--		
04/17/12	9:35	7.82	--	--	6.08	--		
RW-6 (13.9) ⁶	05/13/08	8:58	8.35	--	--	5.55	--	
	09/03/08	--	8.14	--	--	5.76	--	
	12/03/08	11:13	7.95	--	--	5.95	--	
	02/17/09	9:17	7.80	--	--	6.10	--	
	05/12/09	9:10	7.57	--	--	6.33	--	
	05/26/09	13:12	7.65	--	--	6.25	--	
	09/10/09	9:43	7.90	--	--	6.00	--	
	04/13/10	10:05	7.42	--	--	6.48	--	
	09/21/10	9:50	6.74	--	--	7.16	--	
	04/25/11	--	--	UNABLE TO LOCATE	--	--	--	
09/21/11	--	--	UNABLE TO LOCATE	--	--	--		

**Table 2
Summary of 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)	
RW-7 (14.2) ⁸	09/13/07	--	8.75	--	--	5.45	--	
	11/01/07	11:20	9.3	--	--	4.90	--	
	11/26/07	12:07	8.1	--	--	6.10	--	
	12/07/07	11:40	6.45	--	--	7.75	--	
	12/07/07	9:10	6.4	--	--	7.80	--	
	05/13/08	8:43	8.80	--	--	5.40	--	
	09/03/08	--	8.84	--	--	5.36	--	
	12/03/08	11:11	8.60	--	--	5.60	--	
	02/17/09	9:20	8.95	--	--	5.25	--	
	05/12/09	9:08	7.41	--	--	6.79	--	
	05/26/09	13:10	7.81	--	--	6.39	--	
	08/04/09	--	8.18	--	--	6.02	--	
	09/10/09	9:40	8.83	--	--	5.37	--	
	04/13/10	10:03	7.78	--	--	6.42	--	
	09/21/10	9:47	7.88	--	--	6.32	--	
	04/25/11	9:40	7.62	--	--	6.58	--	
	09/21/11	8:51	8.49	--	--	5.71	--	
	11/21/11	8:56	4.62	--	--	9.58	--	
	02/20/12	10:04	7.92	7.92	--	--	6.28	--
	04/17/12	9:40	7.87	7.87	--	--	6.33	--
RW-8 (13.9) ⁸	09/13/07	--	8.75	--	--	5.15	--	
	11/01/07	11:25	8.9	--	--	5.00	--	
	11/26/07	12:09	7.9	--	--	6.00	--	
	12/07/07	11:35	6.07	--	--	7.83	--	
	12/19/07	9:05	7.18	--	--	6.72	--	
	05/13/08	8:39	8.59	--	--	5.31	--	
	09/03/08	--	8.53	--	--	5.37	--	
	12/03/08	11:09	8.20	--	--	5.70	--	
	02/17/09	9:24	7.70	--	--	6.20	--	
	05/12/09	9:05	7.41	--	--	6.49	--	
	05/26/09	13:07	7.59	--	--	6.31	--	
	09/10/09	9:38	8.61	--	--	5.29	--	
	04/13/10	10:00	7.39	--	--	6.51	--	
	09/21/10	9:43	7.58	--	--	6.32	--	
	04/25/11	9:45	7.21	--	--	6.69	--	
	09/21/11	8:53	8.15	--	--	5.75	--	
	11/21/11	9:03	8.24	--	--	5.66	--	
	02/20/12	10:05	7.55	7.55	--	--	6.35	--
	04/17/12	9:45	7.56	7.56	--	--	6.34	--
	RW-9 (14.1) ⁸	09/13/07	--	8.45	--	--	5.65	--
11/01/07		11:30	7.4	--	--	6.70	--	
11/26/07		12:11	7.44	--	--	6.66	--	
12/07/07		11:32	5.55	--	--	8.55	--	
12/19/07		9:00	6.15	--	--	7.95	--	
05/13/08		8:33	8.61	--	--	5.49	--	
09/03/08		--	7.38	--	--	6.72	--	
12/03/08		11:06	6.95	--	--	7.15	--	
02/17/09		9:27	6.80	--	--	7.30	--	
05/12/09		9:03	7.22	--	--	6.88	--	
05/26/09		13:04	10.06	--	--	4.04	--	
09/10/09		9:34	7.47	--	--	6.63	--	
04/13/10		9:57	8.28	--	--	5.82	--	
09/21/10		9:40	8.47	--	--	5.63	--	
04/25/11		9:50	7.29	--	--	6.81	--	
09/21/11		8:54	8.20	--	--	5.90	--	
11/21/11		9:08	7.68	--	--	6.42	--	
02/20/12		10:07	7.78	7.78	--	--	6.32	--
04/17/12		9:50	8.02	8.02	--	--	6.08	--
RW-10 (14.3) ⁸		09/13/07	--	8.9	--	--	5.40	--
	11/01/07	11:40	8.7	--	--	5.60	--	
	11/26/07	12:12	7.89	--	--	6.41	--	
	12/07/07	11:29	6.26	--	--	8.04	--	
	12/19/07	8:55	7.25	--	--	7.05	--	
	05/13/08	8:31	8.86	--	--	5.44	--	
	09/03/08	--	8.41	--	--	5.89	--	
	12/03/08	11:03	7.87	--	--	6.43	--	
	02/17/09	9:28	7.90	--	--	6.40	--	
	05/12/09	9:01	7.47	--	--	6.83	--	
	05/26/09	13:02	8.95	--	--	5.35	--	
	09/10/09	9:32	8.58	--	--	5.72	--	
	04/13/10	9:55	7.80	--	--	6.50	--	
	09/21/10	9:38	8.12	--	--	6.18	--	
	04/25/11	9:51	6.70	--	--	7.60	--	
	09/21/11	8:56	8.76	--	--	5.54	--	
	11/21/11	9:14	8.42	--	--	5.88	--	
	02/20/12	10:10	7.75	7.75	--	--	6.55	--
	04/17/12	9:53	7.90	7.90	--	--	6.40	--
	RW-11 (14.1) ⁸	12/07/07	11:14	6.5	--	--	7.60	--
12/19/07		8:50	7.6	--	--	6.50	--	
05/13/08		8:28	8.86	--	--	5.24	--	
09/03/08		--	8.79	--	--	5.31	--	
12/03/08		11:01	8.26	--	--	5.84	--	
02/17/09		9:31	7.80	--	--	6.30	--	
05/12/09		8:59	7.64	--	--	6.46	--	
05/26/09		12:59	8.33	--	--	5.77	--	
09/10/09		9:29	8.61	--	--	5.49	--	
04/13/10		9:53	7.85	--	--	6.25	--	
09/21/10		9:35	7.98	--	--	6.12	--	
04/25/11		9:55	7.46	--	--	6.64	--	
09/21/11		8:57	8.77	--	--	5.33	--	
11/21/11		9:20	8.52	--	--	5.58	--	
02/20/12	10:11	7.92	7.92	--	--	6.18	--	
04/17/12	10:00	7.90	7.90	--	--	6.20	--	

**Table 2
Summary of 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)	
RW-12 (14.0) ⁸	12/07/07	11:08	6.78	--	--	7.22	--	
	12/19/07	8:40	7.88	--	--	6.12	--	
	05/13/08	8:25	8.97	--	--	5.03	--	
	09/03/08	--	9.02	--	--	4.98	--	
	12/03/08	10:48	8.56	--	--	5.44	--	
	02/17/09	9:33	7.85	--	--	6.15	--	
	05/12/09	8:56	7.76	--	--	6.24	--	
	05/26/09	12:55	8.37	--	--	5.63	--	
	09/10/09	9:27	9.22	--	--	4.78	--	
	04/13/10	9:50	7.93	--	--	6.07	--	
	09/21/10				UNABLE TO LOCATE			
	04/25/11				UNABLE TO LOCATE			
	09/21/11				UNABLE TO LOCATE			
	11/21/11				UNABLE TO LOCATE			
	02/20/12				UNABLE TO LOCATE			
	04/17/12				UNABLE TO LOCATE			
	RW-13 (14.1) ⁸	11/26/07	12:15	8.17	--	--	5.93	--
12/07/07		11:05	6.83	--	--	7.27	--	
12/19/07		8:35	7.5	--	--	6.60	--	
05/13/08		8:22	9.01	--	--	5.09	--	
09/03/08		--	9.05	--	--	5.05	--	
12/03/08		10:45	8.64	--	--	5.46	--	
02/17/09		9:36	8.22	--	--	5.88	--	
05/12/09		8:53	7.85	--	--	6.25	--	
05/26/09		12:53	8.48	--	--	5.62	--	
09/10/09		9:22	8.89	--	--	5.21	--	
04/13/10		9:47	8.01	--	--	6.09	--	
09/21/10		9:30	8.15	--	--	5.95	--	
04/25/11		10:00	7.51	--	--	6.59	--	
09/21/11		9:00	8.99	--	--	5.11	--	
11/21/11		9:27	8.56	--	--	5.54	--	
02/20/12		10:13	8:24	8.24	--	--	5.86	--
04/17/12		10:04	8:21	8.21	--	--	5.89	--
RW-14	UNABLE TO LOCATE							
RW-15 (13.9) ⁸	09/13/07	--	8.83	--	--	5.07	--	
	11/01/07	11:50	9	--	--	4.90	--	
	11/26/07	12:18	8.4	--	--	5.50	--	
	12/07/07	10:56	6.55	--	--	7.35	--	
	12/19/07	8:25	6.31	--	--	7.59	--	
	05/13/08	8:17	8.97	--	--	4.93	--	
	09/03/08	--	8.52	--	--	5.38	--	
	12/03/08	10:40	8.31	--	--	5.59	--	
	02/17/09	9:44	8.24	--	--	5.66	--	
	05/12/09	8:50	8.19	--	--	5.71	--	
	05/26/09	12:48	8.25	--	--	5.65	--	
	09/10/09	9:20	5.52	--	--	8.38	--	
	04/13/10	9:45	7.88	--	--	6.02	--	
	09/21/10				UNABLE TO LOCATE			
	04/25/11				UNABLE TO LOCATE			
	09/21/11				UNABLE TO LOCATE			
	11/21/11				UNABLE TO LOCATE			
2/20/12				UNABLE TO LOCATE				
04/17/12				UNABLE TO LOCATE				

**Table 2
Summary of 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)	
RW-21 (5.87)	09/13/07	--	9.85	Sheen	--	-3.98	--	
	11/01/07	10:35	9.90	7.90	2.00	-2.43	--	
	11/26/07	12:23	--	Sheen	--	--	--	
	12/07/07	9:40	6.90	Sheen	--	-1.03	--	
	12/19/07	--	7.79	--	--	-1.92	--	
	01/03/07	9:25	7.88	--	--	-2.01	--	
	01/30/07	8:44	8.67	--	--	-2.80	--	
	02/12/08	9:11	8.80	--	--	-2.93	--	
	03/03/08	9:10	9.25	--	--	-3.38	--	
	03/17/08	9:07	9.21	--	--	-3.34	--	
	04/01/08	9:05	9.09	--	--	-3.22	--	
	04/14/08	8:55	9.32	--	--	-3.45	--	
	04/28/08	9:24	9.33	--	--	-3.46	--	
	05/13/08	--	--	--	Unable to Access	--	--	--
	(15.3) ⁸	05/27/08	11:20	9.45	--	--	5.85	--
		06/10/08	10:45	9.21	--	--	6.09	--
		06/24/08	9:29	9.49	--	--	5.81	--
		07/07/08	9:39	9.19	--	--	6.11	--
		07/22/08	9:00	9.38	--	--	5.92	--
		08/12/08	9:36	9.35	--	--	5.95	--
		09/03/08	--	9:36	Sheen	--	5.94	--
		10/08/08	8:30	9.72	Sheen	--	5.58	--
		10/17/08	8:41	9.50	--	--	5.80	--
		10/29/08	8:31	9.58	--	--	5.72	--
11/12/08		9:27	7.83	--	--	7.47	--	
12/03/08		10:10	9.22	9.20	0.02	6.10	--	
01/06/09		9:26	7.89	Sheen	--	7.41	--	
01/20/09		12:29	8.56	8.55	0.01	6.75	--	
02/03/09		9:24	9.20	Sheen	--	6.10	--	
02/17/09		9:50	9.05	Sheen	--	6.25	--	
03/12/09		11:31	9.16	Sheen	--	6.14	--	
03/25/09		9:24	9.01	Sheen	--	6.29	--	
04/08/09		9:57	8.91	8.90	0.01	6.40	--	
04/30/09		9:49	8.88	Sheen	--	6.42	--	
05/12/09		9:43	8.45	8.44	0.01	6.86	--	
05/26/09		14:48	8.82	--	--	6.48	--	
06/09/09		9:26	8.64	--	--	6.66	--	
06/25/09		9:29	8.68	--	--	6.62	--	
07/07/09		9:26	8.95	Sheen	--	6.35	--	
07/13/09		8:05	9.45	--	--	5.85	--	
08/05/09		6:45	8.96	Sheen	--	6.34	--	
08/06/09		9:18	9.06	--	--	6.24	--	
08/20/09		8:34	9.15	--	--	6.15	--	
09/10/09		9:57	9.28	--	--	6.02	--	
09/23/09		9:21	9.25	Sheen	--	6.05	--	
10/08/09		9:16	9.31	Sheen	--	5.99	--	
10/19/09		9:50	9.23	Sheen	--	6.07	--	
11/12/09		9:19	7.82	Sheen	--	7.48	--	
03/24/10		9:37	8.62	Sheen	--	6.68	--	
04/13/10		10:19	8.61	Sheen	--	6.69	--	
05/26/10	9:32	8.73	Sheen	--	6.57	--		
09/21/10	10:05	8.46	Sheen	--	6.84	--		
11/19/10	16:01	9.21	Sheen	--	6.09	--		
03/04/11	9:31	8.18	Sheen	--	7.12	--		
04/25/11	8:50	8.50	8.49	0.01	6.81	--		
09/21/11	9:18	9.20	LNAPL on probe	--	6.10	--		
11/21/11	9:34	9.03	--	--	6.27	--		
02/20/12	10:23	8.76	LNAPL on probe	--	6.54	--		
04/17/12	10:10	8.65	--	--	6.65	--		

Notes:

- ¹Well casing elevations listed in feet above mean sea level. Approximate monitoring well locations are shown in Figure 2.
- ²Below top of casing.
- ³Light non-aqueous phase liquid
- ⁴Elevation referenced to city of Seattle datum.
- ⁵Top of well screen elevation data from historic records.
- ⁶TOC 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.
- ⁷Depth to water was measured with pump in well.
- ⁸Survey by OTAK 5/27/08.
- ⁹Groundwater elevation recorded prior to pump testing at the site. Sheen observed on extracted groundwater during hydraulic conductivity testing on well MW-205.
- ¹⁰LNAPL indicated in field notes, measurement not taken
- ¹¹TOC elevations for wells PZ-61A-R, PZ-203, and PZ-204 unknown.
- NR = Not reported.
- UK = TOC elevations unknown.
- Bolded data are for the current reporting period.
- = not measured or not obtainable

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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	
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5	
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2	
	09/15/95	ND	<0.50	<0.50	<0.50	<1.0	--	<1.0	<1.0	<0.75	--	
	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	
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5	
	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	
	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	
	10/16/90	--	<0.5	1.0	0.6	<0.5	<1	--	--	--	<5	
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5	
	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	--	
	06/18/98	ND	<2.50	<2.50	<2.50	<5.00	--	1.01	3.49	<0.750	--	
	09/03/98	ND	<0.500	<0.500	<0.500	<0.500	--	0.396	1.85	<0.750	<1.00	
	12/15/98	Sheen	<2.50	<2.50	2.82	12.8	--	10.2	146/73.0	<30.8/<15.8	--	
Duplicate	12/15/98	Sheen	<2.50	<2.50	2.50	5.81	--	2.93	32.3/14.6	<3.75/<0.750	--	
	03/23/99	Sheen	<0.500	<0.500	2.56	13.8	--	4.34	39.7/32.7	<8.25/<3.75	--	
Duplicate	03/23/99	Sheen	<2.50	<2.50	<2.50	<5.00	--	1.56	52.8/42.1	<8.25/<8.25	--	
	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	
Duplicate	07/01/99	ND	<1.00	<1.00	<1.40	<5.60	--	1.30 ⁴	4.45/3.08	<0.750/<0.750	--	
	09/29/99	Sheen	<0.500	<5.00	<5.00	<1.00	--	2.16 ⁵	7.57/4.04	<0.750/<0.750	--	
Duplicate	09/29/99	Sheen	<0.500	<0.500	<5.00	<10.0	--	2.80 ⁵	19.7/21.1	0.758/<1.57	--	
	12/16/99	Sheen	<0.500	<5.00	<3.50	<17.00	--	7.61	33.4/30.1	<15.8/<8.25	--	
Duplicate	01/04/00 ⁶	Sheen	<0.500	<5.00	<5.00	<4.15	--	1.40	12.1/8.29	<1.34/<1.34	--	
	03/21/00	ND	<0.500	<0.500	<0.550	<1.85	--	0.831	13.1 ⁷	<0.750 ⁷	--	
Duplicate	03/21/00	ND	<0.500	<0.500	<0.720	<3.40	--	1.05	6.36 ⁷	<0.750 ⁷	--	
	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	
Duplicate	06/22/00	ND	0.880	<0.500	0.591	2.46	--	0.836	5.99/4.13	<0.750/<0.750	--	
	09/14/00	ND	<0.500	<0.500	<0.704	<3.11	--	1.36	2.49/1.50	<0.750/<0.750	--	
Duplicate	09/14/00	ND	<0.500	<0.500	0.986	<3.21	--	1.00	5.00/3.13	<0.750/<0.750	--	
	12/21/00	ND	<0.500	<1.24	<0.500	<3.87	--	1.18	4.62/2.48	<0.750/<0.750	--	
Duplicate	12/21/00 ⁹	ND	<0.500	<0.500	<0.500	<1.00	--	0.721	5.64/3.81	<0.750/<0.750	--	
	03/14/01	ND	<0.565	<0.500	<1.38	<4.31	--	0.962	2.55/1.28	<0.750/<0.750	--	
Duplicate	03/14/01	ND	<0.500	<0.500	<0.500	<1.12	--	0.498	1.82/0.668	<0.750/<0.750	--	
	06/21/01	ND	<0.500	0.855	<0.500	1.14	--	0.773	2.45/1.55	<0.750/<0.750	<1.00	
Duplicate	06/21/01	ND	<0.500	<0.500	<0.500	2.61	--	0.676	1.80/1.04	<0.750/<0.750	--	
	09/25/01	Sheen	<0.500	<0.500	<0.500	2.62	--	0.839	14.3/11.3	<8.25/<0.750	--	
Duplicate	09/25/01	Sheen	<0.500	0.923	0.592	4.22	--	0.918	5.12/4.47	<0.750/<0.750	--	
	12/19/01	Sheen	0.825	<1.00	<1.00	<1.50	--	2.54	19.4/14.8 ¹⁰	<3.00/<3.00 ¹⁰	--	
	03/26/02	Sheen	<0.500	<0.500	<0.500	1.24	--	0.414	1.38/0.615	<0.750/<0.750	--	
Duplicate	03/26/02	Sheen	<0.500	<0.500	<0.500	1.85	--	0.592	1.99/0.847	<0.750/<0.750	--	
Duplicate	06/19/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.360	1.43	<0.750	--	
	09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.728	<0.750	--	
	12/03/03	Sheen	<0.500	<0.500	<0.500	1.22	--	0.604	2.46	<0.750	--	
Duplicate	12/03/03	Sheen	<0.500	<0.500	<0.500	1.30	--	0.701	2.35	<0.750	--	

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Upper Yard RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Upper Yard (continued)												
MW-61A-R	03/02/06	Sheen/LNAPL	--	--	--	<1.00	--	--	--	--	--	
	06/06/06	Sheen	<2.50	<2.50	7.64	7.48	--	3.92	20.6	<3.75	--	
	09/15/06	Sheen	396	79.7	26.4	243	--	17.2	200	<142	--	
	03/07/07	ND	<0.5	<0.5	0.5	<1.5	--	0.18	0.29	<0.095	--	
	06/08/07	ND	<0.500	<2.0 ¹⁶	1.500	1.7	--	0.400	0.600	<0.095	<0.037	
	09/26/07	ND	<0.5	<0.5	1.4	<1.5	--	0.430	0.770	0.120	--	
Duplicate	11/28/07	ND	<0.5	<0.5	0.9	<1.5	--	0.410	0.340	<0.100	--	
	11/28/07	ND	<0.5	<0.5	0.9	<1.5	--	0.400	0.670	0.370	--	
	02/13/08	ND	<0.500	<0.500	0.980	1.14	--	0.455	0.308	<0.485	--	
	05/14/08	ND	<0.500	<0.500	1.24	1.43	--	0.363	0.406	<0.472	--	
	09/04/08	Sheen	<0.500	1.16	3.58	1.13	--	0.933	0.380	<0.490	--	
	12/03/08	LNAPL	--	--	--	--	--	--	--	--	--	
	02/18/09	Sheen	<0.500	<0.500	<0.500	1.32	--	0.490	0.830	<0.481	--	
	09/10/09	LNAPL	--	--	--	--	--	--	--	--	--	
	04/14/10	LNAPL	--	--	--	--	--	--	--	--	--	
	09/23/10	ND	<0.50	<0.50	0.68	<2.0	--	0.76	1.5	<0.26	--	
	04/25/11	LNAPL	--	--	--	--	--	--	--	--	--	
	09/21/11	LNAPL	--	--	--	--	--	--	--	--	--	
	04/18/12	LNAPL	--	--	--	--	--	--	--	--	--	
MW-62A	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.288	<0.250	<0.750	--	
	06/18/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	09/03/98	ND	<1.00	<0.500	0.901	2.79	--	0.134	<0.250	<0.750	<1.00	
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	03/23/99	ND	10.8	<5.00	<5.00	<10.0	--	<0.500	0.371/<0.250	<0.750/<0.750	--	
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.311/<0.250	<0.750/<0.750	1.09	
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.709/<0.250	<0.750/<0.750	--	
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.376/<0.250	<0.750/<0.750	--	
	12/21/00 ⁹	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	03/14/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	09/25/01	ND	<0.500	<0.500	<0.500	1.57	--	<0.0500	0.373/<0.250	<0.750/<0.250	--	
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250 ¹⁰	<0.750 ¹⁰	--	
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.320/<0.250	<0.750/<0.750	<1.00	
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.863	<0.750	--	
	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	--	
	06/18/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.389/<0.250	<0.750/<0.750	1.82	
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.305/<0.539	<0.750/<1.62	--	
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.380/<0.250	<0.750/<0.750	--	
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.366/<0.462	<0.750/<1.39	<1.00	
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.273/<0.250	<0.750/<0.750	--	
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.575/<0.250	<0.750/<0.750	--	
	03/14/01	ND	<0.500	0.922	<0.500	1.92	--	<0.0500	<0.250	<0.750	--	
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.468/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--	
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.379/<0.250	<0.750/<0.750	--	
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.299/<0.250	<0.750/<0.750	<1.00	
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.514	<0.750	--	
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Upper Yard RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Upper Yard (continued)												
MW-64	06/18/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.325/<0.250	<0.750/<0.750	--	
	03/23/99	ND	<0.500	<0.500	<0.500	2.42	--	<0.0500	0.354/<0.250	<0.750/<0.750	--	
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.319/<0.250	<0.750/<0.750	1.09	
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.448/<0.564	<0.750/<0.169	--	
	01/04/00 ⁵	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250/<0.250	<0.750/<0.750	--	
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.255 ⁷	<0.750	--	
	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	
	07/25/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.298/<0.250	<0.750/<0.750	--	
	03/14/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.263/<0.250 ¹¹	<0.750/<0.750 ¹¹	--	
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.372/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--	
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.499/<0.250	<0.750/<0.750	<1.00	
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.0563	0.38	<0.750	--	
	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	--	--	--	
	04/27/89	--	5.0	<0.5	0.6	<0.5	0.37	<5	--	--	--	
	07/25/89	--	8.0	4.9	17.0	11.1	13	<5	--	--	--	
	10/26/89	Product	--	--	--	--	--	--	--	--	--	
	01/16/90	Product	--	--	--	--	--	--	--	--	--	
	04/16/90	Product	--	--	--	--	--	--	--	--	--	
	07/25/90	Product	--	--	--	--	--	--	--	--	--	
	09/20/90	--	--	--	--	--	1	--	--	--	--	
	10/16/90	--	<5.0	<5.0	<5.0	<5.0	10	--	--	--	28	
	01/17/91	--	<0.5	<0.5	0.6	3.5	24	2	13	--	<5	
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2	
	09/17/91	Product	--	--	--	--	--	--	--	--	--	
	12/10/91	Product	--	--	--	--	--	--	--	--	--	
	01/29/92	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	
	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.341	<0.750	--	
Duplicate	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0522	<0.250	<0.750	--	
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
Duplicate	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	09/04/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.575	<0.750	--	
Duplicate	09/04/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.416	<0.750	--	
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.900/0.310	<0.750/<0.750	--	
	03/24/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.47/0.580	1.38/<0.750	--	
	07/01/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.526/<0.250	<0.750/<0.750	<1.00	
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.12/<0.454	1.19/<1.36	--	
	12/15/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0657	2.72/0.679	<1.43/<1.43	--	
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.68/0.753	1.35/<0.750	--	
	06/21/00	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0545	0.345/<0.250	<0.750/<0.750	<1.00	
	09/14/00	--	--	--	--	--	--	--	--	--	--	
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0766	1.17/0.353	<0.750/<0.750	--	
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.248	4.85/3.27	6.28/3.25	--	
	06/22/01	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.448/<0.250	<0.750/<0.750	--	
	09/25/01	Sheen	<0.500	<0.500	<0.500	1.12	--	<0.0500	2.73/1.60	2.20/1.22	--	
	12/18/01	Sheen	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.09/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--	
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	--	
	03/27/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0793	1.62/0.536	0.936/<0.750	--	
	06/20/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.527/<0.250	<0.750/<0.750	--	
	09/19/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/13/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.419	<0.750	--	
	06/19/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/03/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	

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Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Elliott Avenue RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Elliott Avenue (continued)												
MW-30 ¹² (continued)	03/09/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
Duplicate	06/03/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.544	<0.750	--	
Duplicate	06/03/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.913	0.765	--	
Duplicate	09/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.451	<0.750	--	
Duplicate	09/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.33	0.765	--	
Duplicate	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.381	<0.750	--	
Duplicate	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.268	<0.750	--	
Duplicate	03/04/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.747	0.898	--	
Duplicate	03/04/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.835	0.976	--	
Duplicate	06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.278	<0.750	--	
Duplicate	06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
Duplicate	09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.416	<0.750	--	
Duplicate	09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.366	<0.750	--	
Duplicate	12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.359	<0.708	--	
Duplicate	12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.438	<0.714	--	
Duplicate	03/02/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.236	<0.708	--	
Duplicate	03/02/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.236	<0.708	--	
Duplicate	06/06/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
Duplicate	06/06/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
Duplicate	09/15/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.708	--	
Duplicate	09/15/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.708	--	
Duplicate	03/07/07	Sheen	<0.5	<0.5	<0.5	<1.5	--	<0.048	1.6	0.53	--	
Duplicate	06/08/07	ND	<0.500/07	<0.500	<0.500	<1.50	--	<0.050	0.800	<0.095	<0.037	
Duplicate	09/26/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.300	<0.095	--	
Duplicate	11/28/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.340	0.120	--	
Duplicate	02/13/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.278	<0.556	--	
Duplicate	05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	--	
Duplicate	09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.243	<0.485	--	
Duplicate	12/05/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.245	<0.490	--	
Duplicate	02/18/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	--	
Duplicate	05/12/09	LNAPL	--	--	--	--	--	--	--	--	--	
Duplicate	09/10/09	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.500	--	
Duplicate	04/14/10	Sheen	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.13	<0.27	--	
Duplicate	09/23/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.13	<0.25	--	
Duplicate	04/27/11	Sheen	<0.50	<0.50	<0.50	<1.0	--	0.052	--	--	--	
Duplicate	09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--	
Duplicate	09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.17 ¹⁷	<0.24	--	
Duplicate	04/18/12	Sheen	--	--	--	--	--	--	--	--	--	
MW-31	08/10/89	--	<0.5	1.4	2.1	5.9	4.1	--	--	--	<5	
	10/26/89	--	7.1	<0.5	1.0	3.3	5.5	--	--	--	<5	
	01/16/90	--	4.2	<0.5	<0.5	<0.5	2.2	--	--	--	<5	
	04/16/90	--	5.2	1.5	1.9	4.5	<1	--	--	--	<5	
	07/25/90	--	2.0	<0.5	2.2	1.8	6	--	--	--	<5	
	10/16/90	--	0.7	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	01/17/90	--	1.6	0.6	1.6	4.4	--	2	<1	--	<5	
	04/16/91	--	1.8	0.6	1.9	4.5	--	<1	<1	--	<2	
	09/17/91	--	--	--	--	--	--	--	--	--	--	
	12/10/91	--	--	--	--	--	--	--	--	--	--	
	09/14/95	ND	<0.50	<0.50	<0.50	<0.50	--	<0.05	0.54	0.94	--	
	12/15/95	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	0.36	0.78	--	
	03/14/96	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	1.2	0.94	--	
	09/11/96	ND	<0.500	<0.500	<0.500	<1.00	--	0.0519	0.864	2.16	--	
	03/18/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	0.546	<0.750	--	

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Elliott Avenue RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Elliott Avenue (continued)												
MW-31 (continued)	06/26/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.750	--	
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.320/<0.250	<0.750/<0.750	--	
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.269/<0.250	<0.750/<0.750	<1.00	
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.723/<0.250	<0.750/<0.750	--	
	06/22/00 ⁹	ND	<0.500	5.05	1.39	15.0	--	0.167	<0.250	<0.750	<1.00	
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.0576	<0.250	<0.750	<1.00	
	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	
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.568/<0.250	<0.750/<0.750	<1.00	
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.436	1.27	--	
	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	
	10/26/89	--	<0.5	1.7	<0.5	0.7	2.1	--	--	--	<5	
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.76	--	--	--	<5	
	04/16/90	--	<0.5	1.0	<0.5	<0.5	<1	--	--	--	<5	
	07/25/90	--	<0.5	<0.5	1.1	<0.5	1	--	--	--	<5	
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	01/17/91	--	<0.5	<0.5	0.5	1.5	--	<1	<1	--	<5	
	04/16/91	--	<0.5	0.6	0.6	1.6	--	<1	<1	--	<2	
	09/17/91	--	--	--	--	--	--	--	--	--	--	
	12/01/91	--	--	--	--	--	--	--	--	--	--	
MW-58	09/15/95	ND	<0.50	<0.50	<0.50	<1.0	--	<1.0	<1.0	<0.75	--	
	12/14/95	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	<0.25	<0.75	--	
	03/14/96	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	<0.25	<0.75	--	
	09/11/96	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	0.979	--	
	12/11/96	ND	--	--	--	--	--	--	--	--	--	
	03/18/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.372	<0.750	--	
	06/25/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.750	--	
	06/30/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/21/01	ND	<0.500	<0.500	<0.500	2.43	--	<0.0500	<0.250	<0.750	<1.00	
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250 ¹⁰	<0.750 ¹⁰	--	
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Elliott Avenue RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Elliott Avenue (continued)												
MW-65	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	09/04/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.482/<0.250	<0.750/<0.750	--	
	03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.975/<0.250	0.991/<0.750	--	
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.750/<0.250	<0.750/<0.750	<1.00	
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.683/<0.250	<0.750/<0.750	--	
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.418/<0.250	<0.750/<0.750	--	
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.816/<0.250	<0.750/<0.750	--	
	06/23/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.689/<0.250	<0.750/<0.750	<1.00	
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.603/<0.250	<0.750/<0.750	--	
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.408/<0.250	<0.750/<0.750	--	
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.620/<0.250	<0.750/<0.750	--	
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.262/<0.250	<0.750/<0.750	<1.00	
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.584/0.225	<0.750/<0.750	<1.00	
	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	
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.749/<0.250	<0.750/<0.750	--	
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.675/<0.250	<0.750/<0.750	<1.00	
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	03/07/07	ND	<0.500	<0.500	<0.500	<1.00	--	<0.048	0.730	0.170	--	
	06/08/07	ND	<0.500	<0.500	<0.500	<1.50	--	<0.050	0.530	0.250	<0.037	
	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	--	
	06/29/98	ND	<0.500	<0.500	<0.500	1.06	--	0.424	<0.250	<0.750	<1.00	
	09/04/98	ND	<0.500	<0.500	<0.500	<2.00	--	0.257	1.27	<0.750	--	
	12/15/98	ND	<0.500	<0.500	0.508	2.62	--	0.0387	0.906/<0.250	<0.750/<0.750	--	
	03/24/99	ND	<0.500	<0.500	<0.900	<3.00	--	1.05	8.44/5.11	<0.750/<0.750	--	
	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	
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.216 ⁴	2.32/1.10	<0.750/<0.750	--	
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.332	0.659/<0.250	<0.750/<0.750	--	
	03/22/00	ND	<0.500	<0.500	<0.500	<3.00	--	0.711	4.31/2.31	<0.750/<0.750	--	
	06/23/00 ³	Trace	<0.500	<0.500	<0.500	<1.00	--	0.109	0.439/<0.250	<0.750/<0.750	<1.00	
	09/14/00	ND	<0.500	<0.500	<0.500	<2.16	--	0.416	1.601/1.43	<0.750/<0.750	--	
	12/22/00	ND	<0.500	<0.500	<0.500	<2.35	--	0.475	1.87/0.819	<0.750/<0.750	--	
	03/15/01	ND	<0.570	<0.922	<0.500	<3.91	--	1.16	7.03/5.43	1.01/<0.750	--	
	06/22/01	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.130	0.409/<0.250	<0.750/<0.750	--	
	09/25/01	Sheen	<0.500	<0.500	<0.500	1.06	--	0.142	4.06/3.14	0.811/<0.750	--	
	12/18/01	Sheen	<0.500	<2.00	<1.00	<1.50	--	0.162	0.696/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--	
	03/27/02	Sheen	<0.500	<0.500	<0.500	1.32	--	0.454	4.41/2.58	1.41/<0.750	--	
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.052	0.650/<0.250	<0.750/<0.750	--	
	09/19/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.128	<0.250 ¹¹	<0.750 ¹¹	--	
	12/13/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0845	0.688	<0.750	--	

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			B	T	E	X		Gasoline C ₇ - C ₁₂	Diesel C ₁₂ - C ₂₄	Heavy Oil >C ₂₄		
Elliott Avenue RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Elliott Avenue (continued)												
MW-66 (continued)	03/21/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.114	2.72	<0.750	--	
	06/19/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.189 ⁵	0.707	<0.750	--	
	09/18/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.171	3.73	<0.750	--	
	12/03/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0509	1.45	<0.750	--	
	03/09/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.131	0.446	<0.750	--	
	06/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	0.121	0.504	<0.750	--	
	09/03/04	ND	<0.500	<0.500	<0.500	1.25	--	0.330	1.03	<0.750	--	
	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	0.116	0.380	<0.750	--	
	03/04/05	ND	<0.500	<0.500	<0.500	1.4	--	0.275	0.577	<0.750	--	
	06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	0.149	0.860	<0.750	--	
	09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	0.119	0.678	<0.750	--	
	12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	0.115	0.885	<0.721	--	
	03/02/06	ND	<0.500	<0.500	<0.500	<1.00	--	0.0651	0.381	<0.714	--	
	06/06/06	ND	<0.500	<0.500	<0.500	<1.00	--	0.128	<0.250	<0.750	--	
	09/15/06	ND	<0.500	<0.500	<0.500	<1.00	--	0.0778	0.370	<0.708	--	
	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	--	
	12/14/98	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.273	3.62/0.563	1.18/<0.750	--	
	03/23/99	Sheen	<0.500	0.646	<0.500	2.28	--	0.0632	3.90/2.17	3.14/1.50	--	
	06/29/99	Sheen	<0.500	<0.500	<0.500	<1.60	--	0.418	5.22/3.12	4.62/2.55	<1.00	
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.566 ⁴	1.69/0.390	<0.750/<0.750	--	
	12/15/99	Sheen	<0.500	<0.500	<0.500	1.15	--	0.0762	2.46/0.366	0.764/<0.750	--	
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0817	2.20/0.800	1.28/<0.750	--	
	06/22/00 ⁸	ND	0.536	3.35	2.37	16.2	--	0.234	2.36/0.495	1.29/<0.750	--	
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.200/0.347	<0.750/<0.750	--	
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.585	1.5/0.374	<0.750/<0.750	--	
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.16/0.324	<0.750/<0.750	--	
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.60/0.751	1.32/<0.750	--	
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.59/1.11	0.832/<0.750	--	
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.62/0.323 ¹⁰	<0.750/<0.750 ¹⁰	--	
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.0598	1.31/0.324	<0.750/<0.750	--	
	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	--	
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0793	0.787/<0.250	<0.750/<0.750	--	
	03/23/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.757/0.268	<0.750/<0.750	--	
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.2750	3.92/2.51	2.19/1.29	1.25	
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.0566	1.48/0.784	<0.750/<0.750	--	
	12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.561/<0.250	<0.750/<0.750	--	
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.797/0.349	<0.750/<0.750	--	
	06/22/00 ⁹	ND	<0.500	1.72	1.48	13.6	--	0.2580	1.01/0.494	<0.750/<0.750	--	
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.907/0.522	<0.750/<0.750	--	
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.911/0.386	<0.750/<0.750	--	
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.839/0.451	<0.750/<0.750	--	
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.03/0.675	0.830/<0.750	--	
	09/25/01	ND	<0.500	<0.500	<0.500	1.14	--	<0.0500	0.742/0.288	<0.750/<0.750	--	
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.278/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--	
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.517/<0.250	<0.750/<0.750	--	
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.513/<0.250	<0.750/<0.750	--	

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil	
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄	
Lower Yard RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50
Lower Yard											
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	--
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.634/<0.250	<0.750/<0.750	--
	03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.413/<0.250	<0.750/<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.729/0.417	0.957/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.390/<0.250 ¹³	<0.750/<0.750 ¹³	--
	12/15/99	ND	<0.500	<0.500	<0.500	1.07	--	<0.0500	0.271/<0.250	<0.750/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/00 ⁵	ND	<0.500	<0.500	<0.500	3.76	--	0.205	0.302/<0.250	<0.750/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.316/<0.250	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.268/<0.250	<0.750/<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250 ¹⁰	<0.750 ¹⁰	--
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	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	--
	12/14/98	ND	<0.500	<0.500	<0.500	2.33	--	0.241	1.01/0.351	<0.750/<0.750	--
	03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	Note 14	Note 14	--
	04/01/99	ND	--	--	--	--	--	--	0.0259	<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.0833	2.17/1.12	1.61/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.0517	0.941/0.338	<0.750/<0.750	--
	12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.692/<0.250	<0.750/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.859/<0.750	<0.750/<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	1.37	--	0.0551	1.39/0.649	0.808/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.485/<0.250	<0.750/<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.09/0.419	<0.750/<0.750	--
	03/15/01	ND	0.584	<0.500	<0.500	<1.00	--	<0.0500	0.559/<0.250	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.407/<0.250	<0.750/<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.324/<0.250	<0.750/<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.965/<0.250 ¹⁰	0.926/<0.750 ¹⁰	--
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.883/<0.250	<0.750/<0.750	--
	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	--
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.451/<0.250	<0.750/<0.750	--
	03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.404/<0.250	<0.750/<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.412/<0.250	<0.750/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.365/<0.250	<0.750/<0.750	--
	12/16/99	ND	<0.500	0.628	<0.500	<1.00	--	<0.0500	0.350/<0.250	<0.750/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.350/<0.250	<0.750/<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.376/<0.250	<0.750/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.360/<0.250	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	1.57	--	<0.0500	<0.250	<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	1.57	--	<0.0500	<0.250	<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.600/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.271/<0.250	<0.750/<0.750	--
	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	--
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.65/<0.250	<0.750/<0.750	--
	03/23/99	Sheen	<0.500	<0.500	<0.500	2.54	--	<0.0500	1.39/<0.250	0.883/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.926/<0.250	<0.750/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.481/<0.250	<0.750/<0.750	--
	12/16/99	ND	<0.500	0.574	<0.500	<1.00	--	<0.0500	1.71/<0.250	<0.750/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.901 ⁷	<0.750 ⁷	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.535/<0.250	<0.750/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.617/<0.250	<0.750/<0.750	--
	12/21/00 ⁹	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.374/<0.250	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.436/0.250	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.606/0.310	<0.750/<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil	
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄	
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50
Offsite Area											
MW-86 (continued)	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.21/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.464/<0.250	<0.750/<0.750	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.629/<0.250	<0.750/<0.750	--
MW-8	01/31/89	--	0.6	<0.5	<0.5	<0.5	0.21	--	--	--	<25
	04/27/89	--	<0.5	<0.5	<0.5	<0.5	1.1	--	--	--	<5
	07/25/89	--	4.3	2.1	<0.5	<0.5	0.17	--	--	--	18
	10/26/89	--	<0.5	<0.5	<0.5	<0.5	0.94	--	--	--	<5
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.35	--	--	--	<5
	04/16/90	--	2.8	<0.5	<0.5	<0.5	<1	--	--	--	<50
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<50
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	2	--	--	--	<100
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<20
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	6
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
	06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.523/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.501/<0.403	<1.21/<1.21	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0558	0.273/<0.249	<0.750/<0.737	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.441/<0.245	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.464/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.271/<0.250	<0.750/<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.439	0.762	--
	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
	04/27/89	--	<0.5	<0.5	<0.5	<0.5	2.2	--	--	--	<5
	07/25/89	--	<0.5	<0.5	<0.5	<0.5	0.45	--	--	--	<5
	10/26/89	--	<0.5	<0.5	<0.5	<0.5	3.4	--	--	--	<5
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.35	--	--	--	<5
	04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	6	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3
	06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0593	<0.250	<0.750	1.24
	12/14/98	ND	<0.500	<0.500	<0.500	1.28	--	0.0715	0.953/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.652/<0.250	<0.750/<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.076	0.706/<0.475	<1.43/<1.43	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0846	<0.503 ¹³	<1.51 ¹³	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0657	0.555/<0.250	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.301/<0.250	<0.750/<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.551/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--
	06/19/02	ND	<0.500	<0.500	<0.500	1.43	--	0.0545	0.656/<0.250	<0.750/<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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		
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Offsite Area (continued)												
MW-20	01/31/89	--	<0.5	<0.5	<0.5	<0.5	1.1	--	--	--	<5	
	04/27/89	--	<0.5	<0.5	<0.5	<0.5	1.6	--	--	--	<5	
	07/25/89	--	1.0	<0.5	<0.5	<0.5	0.31	--	--	--	<5	
	10/26/89	--	0.7	<0.5	<0.5	<0.5	3.2	--	--	--	<5	
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	1.4	--	--	--	<5	
	04/16/90	--	0.6	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5	
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2	
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2	
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3.4	
	06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.287/<0.250	<0.750/<0.750	--	
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.291/<0.250	<0.750/<0.750	--	
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.452/<0.250	<0.750/<0.750	--	
	06/22/00	ND	<0.500	<0.500	<0.500	1.67	--	<0.0500	<0.250	<0.750	--	
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.569/<0.250	<0.750/<0.750	--	
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.277/<0.250	<0.750/<0.750	--	
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.05/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--	
	06/20/02	ND	6.60	<0.500	<0.500	3.30	--	<0.0500	0.627/<0.250	<0.750/<0.750	--	
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	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	
	04/27/89	--	7.2	1.2	1.6	<0.5	0.93	--	--	--	<5	
	07/25/89	--	1.4	0.8	<0.5	1.2	3.4	--	--	--	<5	
	10/26/89	--	<0.5	<0.5	<0.5	<0.5	7.8	--	--	--	<5	
	01/16/90	--	1.3	<0.5	<0.5	<0.5	4.9	--	--	--	<5	
	04/16/90	--	6.6	1.4	0.8	2.7	<1	--	--	--	<5	
	07/25/90	--	2.5	0.6	0.6	0.8	<1	--	--	--	<5	
	10/16/90	--	<0.5	<0.5	<0.5	0.8	<1	--	--	--	<5	
	01/17/91	--	1.0	0.7	<0.5	1.4	<1	<1	<1	--	<5	
	04/16/91	--	0.9	<0.5	<0.5	<0.5	--	<1	<1	--	<20	
	09/19/91	--	<0.5	<0.5	<0.5	0.6	--	<1	<1	--	<20	
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0	
	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.160	<0.250	<0.750	--	
	06/24/98	ND	<0.500	1.68	<0.500	<1.00	--	0.689	<0.250	<0.750	<1.00	
	09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0716	<0.250	<0.750	--	
	12/14/98	ND	<0.500	<0.500	0.795	1.31	--	0.0697	1.26/<0.250	<0.750/<0.750	--	
	03/24/99	ND	<0.600	<0.700	<1.00	<2.50	--	0.118	0.969/<0.250	<0.750/<0.750	--	
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.719/<0.250	<0.750/<0.750	<20.0	
	09/29/99	ND	<0.500	3.52	<0.500	<10.0	--	0.136	1.58/<0.476	<1.43/<1.43	--	
	12/16/99	ND	<0.500	<0.500	0.632	1.81	--	0.166	1.31/<0.250	<0.750/<0.750	--	
	03/22/00	ND	<0.500	1.94	<0.500	<1.00	--	0.148	1.36/<0.447	<1.34/<1.34	--	
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0876	0.674/<0.250	<0.750/<0.750	<10.0	
	09/15/00	ND	<0.500	<0.607	<0.500	<1.28	--	0.716	1.26/<0.250	<0.750/<0.750	--	

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Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
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 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Offsite Area (continued)												
MW-25 (continued)	12/21/00	ND	<0.500	<0.500	<0.500	1.18	--	0.0991	1.25/<0.250	<0.750/<0.750	--	
	03/15/01	ND	<0.500	<0.500	<0.500	1.75	--	0.0664	1.19/<0.250	<0.750/<0.750	--	
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.538/<0.250	<0.750/<0.750	<1.00	
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.0596	0.864/<0.250	<0.750/<0.750	--	
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	0.175	2.22/<0.250 ¹⁰	0.852/<0.750 ¹⁰	--	
	03/26/02	ND	<0.500	<0.500	<0.500	1.39	--	0.12	0.861/<0.250	<0.750/<0.750	--	
	06/19/02	ND	<0.500	<0.500	<0.500	1.44	--	0.108	0.706/<0.250	<0.750/<0.750	<1.00	
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.0578	<0.250	<0.750	--	
	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	
	04/27/89	--	<0.5	<0.5	<0.5	<0.5	0.08	--	--	--	<5	
	07/25/89	--	<0.5	<0.5	<0.5	<0.5	1.4	--	--	--	<5	
	10/26/89	--	<0.5	<0.5	<0.5	<0.5	0.94	--	--	--	<5	
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	1.8	--	--	--	<5	
	04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	2	--	--	--	<5	
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<50	
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	<1	--	<1	--	<50	
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2	
	09/19/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2	
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0	
	06/30/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250/<0.250	<0.750/<0.750	--	
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.445/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--	
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	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	
	04/27/89	--	<0.5	<0.5	<0.5	<0.5	0.23	--	--	--	<5	
	07/25/89	--	<0.5	<0.5	<0.5	<0.5	0.68	--	--	--	<5	
	10/26/89	--	1.3	0.7	<0.5	0.7	1.1	--	--	--	<5	
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	1.3	--	--	--	<5	
	04/16/90	--	<0.5	<0.5	<0.5	0.6	<1	--	--	--	<5	
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	2	--	--	--	<5	
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	01/17/91	--	0.6	<0.5	<0.5	<0.5	--	<1	<1	--	<5	
	04/16/91	--	<0.5	<0.5	<0.5	0.9	--	<1	<1	--	<2	
	09/19/91	--	<0.5	<0.5	<0.5	1.1	--	<1	<1	--	4	

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Total Petroleum Hydrocarbons

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 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Offsite Area (continued)												
MW-27 (continued)	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0	
	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/24/98	ND	<0.500	2.85	<0.500	<1.00	--	0.188	<0.250	<0.750	<1.00	
	09/03/98	ND	<0.800	<0.500	<0.500	<1.00	--	0.0961	0.316	<0.750	--	
	12/14/98	ND	<4.00	<0.500	<0.500	1.33	--	0.119	0.485/<0.250	<0.750/<0.750	--	
	03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.394/<0.250	<0.750/<0.750	--	
	07/01/99	ND	<0.500	<2.20	<0.500	<1.00	--	0.0823	0.394/<0.250	<0.750/<0.750	--	
	09/29/99	ND	<0.500	1.87	<0.500	<1.00	--	<0.0500	0.830/<0.323	<0.750/<0.750	--	
	12/16/99	ND	<0.500	<0.500	<0.500	1.29	--	0.0925	0.544 ¹⁵	<0.750 ¹⁵	--	
	03/22/00	ND	<0.500	0.874	<0.500	<1.00	--	<0.0500	0.468/<0.250	<0.750/<0.750	--	
	06/22/00	ND	0.692	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	09/15/00	ND	<0.605	<0.500	<0.500	<1.00	--	<0.0500	0.420/<0.250	<0.750/<0.750	--	
	12/21/00	ND	1.89	<0.500	<0.500	<1.00	--	0.0727	0.308/<0.250	<0.750/<0.750	--	
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.537/<0.250	<0.750/<0.750	--	
	06/21/01	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.259/<0.250	<0.750/<0.750	--	
	09/25/01	ND	0.571	<0.500	<0.500	<1.00	--	<0.0500	1.38/0.547	<0.750/<0.750	--	
	12/19/01	Sheen	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250 ¹⁰	<0.750 ¹⁰	--	
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.257/<0.250	<0.750/<0.750	--	
	06/19/02	ND	<0.500	<0.500	<0.500	1.05	--	<0.0500	<0.250	<0.750	--	
	09/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	03/21/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/19/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.672	<0.750	--	
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	03/09/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	09/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	03/04/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.236	<0.708	--	
	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	--	
	09/26/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.077	<0.096	<0.47	
	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	
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.08	--	--	--	<5	
	04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5	
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2	
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3	
	12/01/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3.0	

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Offsite Area (continued)												
MW-35	10/26/89	--	33	1.1	<0.5	1.4	<0.5	--	--	--	<5	
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<5	
	04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5	
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5	
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5	
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	2	
	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	
	01/16/90	--	95	3.1	<0.5	9.4	0.39	--	--	--	<5	
	04/16/90	--	140	7.8	<0.5	<5.0	3.2	--	--	--	<5	
	07/25/90	--	<0.5	<0.5	3.4	17	4	--	--	--	<5	
	10/16/90	--	8.0	<0.5	<0.5	4.8	8	--	--	--	<5	
	01/17/91	--	1.2	5.6	12	58	6	11	20	--	<5	
	04/16/91	--	1.7	6.4	<0.5	4.9	--	<1	<1	--	<2	
	09/17/91	--	<0.5	<0.5	1.1	3.2	--	15	29	--	<2	
	12/01/91	--	<0.5	2.5	2.5	6.5	--	<1	<1	--	<3.0	
	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.609	12.5	2.69	--	
	06/25/98	ND	<0.500	<0.500	<0.500	<2.50	--	0.345	<0.250	<0.750	<1.00	
	09/03/98	ND	<0.750	<0.500	<0.750	<4.00	--	0.499	7.42	1.43	--	
	12/14/98	ND	1.24	0.699	0.707	4.12	--	0.536	1.43/<0.250	<0.750/<0.750	--	
	03/24/99	ND	1.96	<1.10	<1.40	<3.50	--	0.999	27.1/18.1	5.86/3.39	--	
	07/01/99	ND	<0.500	<0.500	<0.500	<2.00	--	0.257 ⁴	1.28/<0.250	<0.750/<0.750	--	
	09/29/99	ND	<0.500	<0.500	<5.00	<10.0	--	0.562 ⁴	4.63/2.01	0.849/<0.0750	--	
	12/16/99	ND	0.813	<1.50	<5.00	<2.00	--	0.344	0.867/<0.250	<0.750/<0.750	--	
	03/22/00	ND	<0.500	0.792	<0.500	<3.00	--	0.584	6.42/4.30	1.58/<0.750	--	
	06/22/00 ⁵	ND	5.80	70.0	33.2	240	--	2.17	0.850/<0.250	<0.750/<0.750	--	
	09/15/00	Sheen	<0.500	<2.39	<0.704	<5.46	--	0.923	9.25/6.10	1.70/0.927	--	
	12/21/00	ND	0.636	<1.12	<0.500	<2.20	--	0.229	1.26/<0.250	<0.750/<0.750	--	
	03/15/01	ND	2.00	<1.04	<0.500	<12.5	--	2.19	5.46/4.03	1.40/<0.750	--	
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.207	0.643/<0.250	<0.750/<0.750	--	
	09/25/01	Sheen	1.03	<0.500	<0.500	2.54	--	0.514	8.88/6.64	1.92/<0.750	--	
	12/19/01	ND	1.49	<2.00	<1.00	<1.50	--	0.415	1.15/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--	
	03/26/02	ND	1.01	<0.500	<0.500	1.9	--	0.38	1.47/0.794	<0.750/<0.750	--	
	06/20/02	ND	0.618	<0.500	<0.500	<1.00	--	0.106	1.01/<0.250	<0.750/<0.750	--	
	09/19/02	Sheen	0.914	<0.500	<0.500	1.85	--	0.307	1.39 ¹³	<0.750 ⁶	--	
	12/13/02	Sheen	<0.500	<0.500	<0.500	1.07	--	0.186	15.5	<0.750	--	
	03/21/03	Sheen	0.846	<0.500	<0.500	2.4	--	0.398	3.25	<0.750	--	
	6/19/2003 ⁴	Sheen	0.691	0.508	0.503	2.93	--	0.623 ⁷	6.09	1.27	--	
	09/18/03	Sheen	<0.500	<0.500	<0.500	1.29	--	0.219	4.87	0.943	--	
	12/02/03	Sheen	0.538	<0.500	<0.500	1.37	--	0.242	1.97	<0.750	--	

Table 3
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Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
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 Seattle, Washington

Monitoring Well ¹	Date Sampled	LNAPL ²	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)			Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		NWTPH-D Extended ³ (mg/L)			
								Gasoline C ₇ - C ₁₂	Diesel C ₁₂ - C ₂₄	Heavy Oil >C ₂₄	
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50
Offsite Area (continued)											
MW-41	09/18/90	--	--	--	--	--	2	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	1.2	3.9	<1	1	<1	--	<5
	04/16/91	--	3.5	0.9	4.5	1.4	--	<1	<1	--	<2
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	4	--	<2
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/16/99	ND	<0.500	<0.500	<5.00	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/00 ⁹	ND	<0.500	6.55	3.97	35.8	--	0.433	<0.250	<0.750	--
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250 ¹⁰	<0.750 ¹⁰	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	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
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3
	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
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	0.7	0.6	--	<1	<1	--	<2
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	3	9	--	3
	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
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.522/<0.250	<0.750/<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.250/<0.250	<0.750/<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.257/<0.250	<0.750/<0.750	--
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.325/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.289/<0.250	<0.750/<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	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	--
	06/24/98	ND	<0.500	1.44	<0.500	<1.00	--	0.0597	<0.250	<0.750	<1.00
	09/03/98	ND	<1.00	<0.500	0.913	<1.00	--	0.0661	0.287	<0.750	--
	12/14/98	ND	<0.800	<2.00	2.44	4.87	--	0.432	0.813/0.328	<0.750/<0.750	--
	03/24/99	ND	4.84	<0.500	<0.500	<1.00	--	0.158	0.566/<0.250	<0.750/<0.750	--
	07/01/99	ND	<4.20	<1.00	2.68	4.66	--	0.341	0.833/0.275	<0.750/<0.750	<20.0
	09/29/99	ND	0.554	1.88	0.884	1.55	--	0.239	0.544/<0.250	<0.750/<0.750	--
	12/16/99	ND	<8.20	<1.25	1.9	8.65	--	0.561	0.807/<0.250	<0.750/<0.750	--
	03/22/00	ND	<0.500	1.71	0.533	1.46	--	0.156	0.651/0.292	<0.750/<0.750	--
	06/22/00	ND	4.74	1.02	1.65	4.53	--	0.395	0.951/<0.250	<0.750/<0.750	<10.0

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Total Petroleum Hydrocarbons

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 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil	
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄	
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50
Offsite Area (continued)											
MW-67 (continued)	09/15/00	ND	<3.00	<0.500	<0.520	<1.81	--	0.157	0.607/<0.250	<0.750/<0.750	--
	12/21/00	ND	7.35	<1.38	<2.04	5.73	--	0.413	0.646/<0.250	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.624	<1.77	--	0.165	0.524/<0.250	<0.750/<0.750	--
	06/21/01	ND	<0.500	1.21	2.47	2.61	--	0.403	0.479/<0.250	<0.750/<0.750	<1.00
	09/25/01	ND	3.45	<0.500	1.46	2.10	--	0.230	0.585/0.295	<0.750/<0.750	--
	12/19/01	ND	13.2	<2.00	1.46	2.97	--	1.01	0.760/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--
	03/26/02	ND	3.01	<0.500	0.671	1.09	--	0.178	0.672/<0.250	0.839/<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	1.21	--	<0.0500	<0.250	<0.750	<1.00
	09/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250 ¹³	<0.750 ¹³	--
	12/13/02	ND	<0.500	<0.500	0.751	2.99	--	<0.0500	<0.250	<0.750	--
	03/21/03	ND	<0.500	<0.500	0.751	<1.00	--	<0.0500	0.352	1.44	--
	06/19/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	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
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.488/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<20.0
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.392/<0.250	<0.750/<0.750	--
	06/22/00 ⁹	ND	<0.500	1.31	0.610	3.83	--	0.0632	<0.250 ¹³	<0.750 ¹³	<1.00
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.372/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-71	06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	3.77/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<20.0
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.430 ¹⁵	<0.904 ¹⁵	--
	06/22/00 ⁹	ND	<0.500	0.980	0.522	3.08	--	0.0746	<0.250	<0.750	<1.00
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.514/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
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	--
	06/24/98	ND	<1.00	<1.00	<0.500	<2.00	--	0.699	0.286	<0.750	<1.00
	09/03/98	ND	<9.38	<2.50	<2.50	<4.50	--	1.03	3.11	1.78	--
	12/14/98	Sheen	5.45	0.644	1.07	1.68	--	0.196	0.847/<0.250	<0.750/<0.750	--
	03/24/98	Sheen	4.69	<0.950	<0.950	<3.30	--	0.269	1.74/0.744	1.42/<0.750	--
	07/01/99	ND	<2.80	<0.900	<0.500	<2.26	--	0.248	1.05/<0.250	<0.750/<0.750	<1.00
	09/29/99	Sheen	5.71	2.71	0.68	5.01	--	0.481	1.86/0.424 ¹³	1.01/<0.750 ¹³	--
	12/16/99	Sheen	<7.40	<1.40	<0.500	6.87	--	0.421	0.905/<0.475	<1.43/<1.43	--
	03/22/00	ND	2.88	5.40	0.846	6.42	--	0.596	1.40/0.462	<0.750/<0.750	--
	06/22/00	ND	5.98	1.11	0.599	2.38	--	0.344	1.11/<0.250	<0.750/<0.750	<1.00
	09/15/00	ND	1.47	<1.20	<0.525	<5.42	--	0.547	1.35/0.427	<0.750/<0.750	--

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Monitoring Well ¹	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	Diesel	Heavy Oil	
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄	
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50
Offsite Area (continued)											
MW-72 (continued)	12/21/00	ND	5.71	<1.00	<0.500	4.46	--	0.422	0.698/<0.250	<0.750/<0.750	--
	03/15/01	ND	1.90	<1.06	<0.791	<3.29	--	0.454	1.47/<0.250	0.752/<0.750	--
	06/21/01	ND	1.08	1.29	<0.500	2.78	--	0.274	0.591/<0.250	<0.750/<0.750	--
	09/25/01	Sheen	7.98	0.679	1.07	3.24	--	0.695	3.37/1.35	1.90/0.942	--
	12/19/01	ND	12.2	<2.00	<1.00	3.21	--	0.835	1.59/0.261 ¹⁰	<0.750/<0.750 ¹⁰	--
	03/26/02	Sheen	6.4	0.753	<0.500	3.88	--	0.47	1.05/<0.250	<0.750/<0.750	--
	06/19/02	ND	10.3	0.722	1.48	4.60	--	0.697	3.19/<0.250	<0.750/<0.750	--
	09/19/02	Sheen	13.3	0.798	2.29	4.29	--	0.828	0.769 ¹¹	<0.750 ¹¹	--
	12/13/02	Sheen	8.35	0.747	2.27	6.10	--	0.594	4.15	2.94	--
	03/21/03	Sheen	3.2	<0.500	0.909	1.29	--	0.360	0.281	<0.750	--
	06/19/03	Sheen	8.28	0.509	1.79	3.82	--	0.476	1.61	1.25	--
	09/18/03	Sheen	4.54	<0.500	0.931	4.28	--	0.522	1.17	0.775	--
	12/02/03	Sheen	2.26	<0.500	<0.500	2.34	--	0.439	1.20	0.979	--
	03/09/04	Sheen	0.738	<0.500	<0.500	1.31	--	0.133	0.315	<0.750	--
	06/03/04	Sheen	0.656	<0.500	<0.500	<1.00	--	0.195	0.265	<0.750	--
	09/03/04	ND	1.41	<0.500	<0.500	1.72	--	0.294	0.275	<0.750	--
	12/06/04	ND	1.27	<0.500	<0.500	1.47	--	0.238	<0.250	<0.750	--
	03/04/05	ND	1.07	<0.500	<0.500	2.20	--	0.202	0.524	<0.750	--
	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	--
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	09/03/98	ND	<0.500	<0.500	<0.500	1.30	--	<0.0500	<0.250	<0.750	--
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.388/<0.250	<0.750/<0.750	--
	03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.665/<0.250	<0.750/<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.370/<0.250	<0.750/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.430/<0.250	<0.750/<0.750	--
	12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.830/<0.250	<0.750/<0.750	--
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.559/<0.250	<0.750/<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0737	0.407/<0.250	<0.750/<0.750	<10.0
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.298/<0.250	<0.750/<0.750	--
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.693/<0.250 ¹⁰	<0.750/<0.750 ¹⁰	--
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.618/<0.250	<0.750/<0.750	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.287/<0.250	<0.750/<0.750	<1.00

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Offsite Area (continued)												
MW-74	03/12/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	1.93	
	09/03/98	ND	<0.500	<0.500	<0.500	1.02	--	<0.0500	0.29	1.07	--	
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.517/<0.250	<0.750/<0.750	--	
	03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.600/<0.250	0.993/<0.750	--	
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.251/<0.250	<0.750/<0.750	<1.00	
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.462/<0.250	<0.750/<0.750	--	
	12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.659/<0.250	<0.750/<0.750	--	
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.500/<0.250	0.923/<0.750	--	
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.234	<0.748	<1.00	
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.273/<0.250	0.863/<0.750	--	
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.505/<0.250	<0.750/<0.750	--	
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.06/<0.250 ¹⁰	1.11/<0.750 ¹⁰	--	
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.430/<0.250	<0.750/<0.750	--	
	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	--	
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/15/98	ND	<0.500	<0.500	<0.500	1.33	--	<0.0500	<0.250	<0.750	--	
	03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250/<0.250	<0.750/<0.750	--	
	12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.239	<0.744	<1.00	
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00	
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250 ¹⁰	<0.750 ¹⁰	--	
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	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	
	09/03/98	ND	0.962	0.774	0.609	<1.00	--	0.0593	0.361	<0.750	--	
	12/14/98	ND	<1.00	<0.500	1.29	<1.00	--	0.0779	0.789/<0.250	<0.750/<0.750	--	
	03/24/99	ND	<1.00	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	07/01/99	ND	<1.20	<0.500	1.64	1.31	--	0.0998	0.786/<0.250	<0.750/<0.750	<20.0	
	09/29/99	ND	<0.500	0.538	0.583	<1.00	--	0.0577	0.632/<0.250	<0.750/<0.750	--	
	12/16/99	ND	0.582	<0.500	0.631	<1.00	--	0.728	0.667/<0.250	<0.750/<0.750	--	
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.640/<0.250	<0.750/<0.750	--	
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.259/<0.250	<0.750/<0.750	<1.00	
	09/15/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.605/<0.250	<0.750/<0.750	--	
	12/21/00	ND	<0.600	<0.500	0.628	<1.00	--	0.784	0.606/<0.250	<0.750/<0.750	--	
	03/15/01	ND	0.506	1.35	<0.500	1.22	--	<0.0500	0.278/<0.250	<0.750/<0.750	--	

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Former Unocal Seattle Marketing Terminal
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Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Offsite Area (continued)												
MW-76 (continued)	06/21/01	ND	<0.500	<0.500	0.808	<1.00	--	<0.0500	<0.250	<0.750	--	
	09/25/01	ND	0.508	<0.500	0.774	<1.00	--	<0.0500	0.461/0.316	<0.750/<0.750	--	
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	0.114	0.549/<0.250	<0.750/<0.750	--	
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.317/<0.250	<0.750/<0.750	--	
	06/19/02	ND	<0.500	<0.500	<0.500	1.11	--	<0.0500	<0.250	<0.750	--	
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--	
	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	--	
	06/07/07	ND	2.4	0.6	2.1	2.5	--	0.250	0.310	<0.095	<0.037	
Duplicate	09/26/07	ND	1.6	<0.5	0.9	<1.5	--	0.230	0.270	<0.100	<0.047	
	09/26/07	ND	1.7	<0.5	0.8	<1.5	--	0.230	0.310	0.120	<0.047	
	11/28/07	ND	2.0	<0.5	1.2	2.1	--	0.250	0.330	<0.100	0.064	
	02/13/08	ND	3.44	<0.500	1.19	1.79	--	0.497	<0.236	<0.472	<1.00	
	05/13/08	ND	2.70	<0.500	1.15	2.07	--	0.426	<0.240	<0.481	<1.00	
	09/03/08	ND	<0.500	0.883	1.46	<1.00	--	0.337	<0.236	<0.472	<1.00	
	12/04/08	ND	3.19	<0.500	0.975	2.01	--	0.427	<0.238	<0.476	<1.00	
	02/18/09	ND	2.54	<0.500	0.619	1.14	--	0.355	<0.250	<0.500	<1.00	
	05/13/09	ND	3.43	<0.500	1.12	1.91	--	0.513	<0.278	<0.556	<1.00	
	09/11/09	ND	<0.500	<0.500	0.52	<1.00	--	0.360	<0.248	<0.495	<2.0	
	04/14/10	ND	<0.50	<0.50	0.54	<2.0	--	0.35	0.31	<0.25	<2.0	
	09/22/10	ND	<0.50	<0.50	0.56	1.2	--	0.43	0.56	<0.25	<2.0	
	04/26/11	ND	6.2	<0.50	0.59	1.5	--	0.39	--	--	<2.0	
	04/28/11	ND	--	--	--	--	--	--	0.33	<0.24	--	
	09/22/11	ND	6.7 ¹⁸	<0.50 ¹⁸	0.83 ¹⁸	1.9 ¹⁸	--	0.27	0.39 ¹⁷	<0.24	--	
	9/22/11 ^D	ND	5.0	<0.50	0.65	1.4	--	0.24	0.37 ¹⁷	<0.24	--	
	04/18/12	ND	3.7	<0.50	0.73	1.4	--	0.20	0.27 ¹⁷	<0.24	--	
MW-201	03/08/07	Sheen	0.50	<0.5	<0.5	<1.5	--	0.076	0.51	0.18	--	
	06/07/07	ND	0.50	<0.5	<0.5	<1.5	--	0.08	0.53	0.17	0.1	
Duplicate	06/07/07	ND	0.60	<0.5	<0.5	<1.5	--	0.069	0.39	0.13	--	
	09/27/07	Sheen	<0.5	<0.5	<0.5	<1.5	--	0.076	0.810	0.470	0.080	
	11/27/07	ND	0.6	<0.5	<0.5	<1.5	--	0.065	0.390	0.150	0.098	
	02/12/08	ND	0.813	<0.500	<0.500	<1.00	--	0.111	<0.243	<0.485	<1.00	
	05/14/08	Sheen	0.616	<0.500	<0.500	<1.00	--	0.110	<0.236	<0.472	<1.00	
	09/05/08	ND	<0.500	0.517	<0.500	<1.00	--	0.153	<0.238	<0.476	<1.00	
	12/05/08	ND	2.24	0.511	<0.500	1.87	--	0.323	<0.248	<0.495	<1.00	
	02/17/09	ND	0.552	<0.500	<0.500	<1.00	--	0.0887	<0.263	<0.526	<1.00	
	05/13/09	ND	2.42	<0.500	<0.500	1.76	--	0.372	<0.250	<0.500	<1.00	
	09/11/09	ND	<0.500	<0.500	<0.500	1.4	--	0.43	<0.248	<0.495	<2.0	
	04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.15	0.17	<0.25	<2.0	
	09/22/10	ND	<0.50	<0.50	<0.50	1.1	--	0.27	0.47	<0.25	<2.0	
	04/26/11	ND	1.6	<0.50	<0.50	<1.0	--	0.18	--	--	<2.0	
	09/22/11	ND	3.6	<0.50	<0.50	1.4	--	0.22	0.33 ¹⁷	<0.24	--	
	04/18/12	ND	1.8	<0.50	<0.50	<1.0	--	0.14	0.29 ¹⁷	<0.24	--	

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Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Offsite Area (continued)												
MW-202	03/08/07	ND	0.60	<0.5	<0.5	<1.5	--	0.16	0.18	<0.095	--	
	06/07/07	ND	<0.5	<2.0 ¹⁶	0.9	<1.5	--	0.072	0.150	<0.095	0.19	
	09/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	0.110	0.380	0.360	<0.24	
	11/26/07	ND	<0.5	0.8	0.8	<1.5	--	0.100	0.290	0.120	0.37	
	02/12/08	ND	<0.500	<0.500	0.751	<1.00	--	0.249	<0.240	<0.481	<1.00	
	05/13/08	ND	<0.500	<0.500	0.620	<1.00	--	0.188	<0.236	<0.472	<1.00	
	09/04/08	ND	<0.500	<0.500	1.55	<1.00	--	0.135	<0.238	<0.476	<1.00	
	12/04/08	ND	<0.500	<0.500	<0.500	1.34	--	0.132	<0.245	<0.490	<1.00	
	02/18/09	ND	<0.500	<0.500	0.583	<1.00	--	0.314	<0.245	<0.490	<1.00	
	05/13/09	ND	<0.500	<0.500	<0.500	<1.00	--	0.233	<0.243	<0.485	<1.00	
	09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	0.120	<0.245	<0.490	<2.0	
	04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.10	<0.12	<0.25	<2.0	
	09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.090	<0.12	<0.25	<2.0	
	04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	0.072	--	--	<2.0	
	04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--	
	09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.18 ¹⁷	<0.24	--	
	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	0.074	0.24 ¹⁷	<0.24	--	
MW-203	03/08/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.048	0.32	<0.095	--	
	06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.0500	0.150	<0.097	0.045	
	09/28/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.500	0.400	0.270	<0.047	
	11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.290	<0.100	0.058	
	02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00	
	02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00	
	05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.243	<0.485	<1.00	
	05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	--	--	--	
	09/03/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00	
	12/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00	
	02/17/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00	
	05/13/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.243	<0.485	<1.00	
	09/11/09	ND	<0.500	<0.500	<1.00	<1.00	--	0.082	<0.248	<0.495	<2.0	
	04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.25	<2.0	
	09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.058	<0.12	<0.24	<2.0	
	04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	--	--	<2.0	
	04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--	
09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.25	--		
04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.14 ¹⁷	<0.24	--		

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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		
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Offsite Area (continued)												
MW-204	03/08/07	Sheen	1.00	0.9	<0.5	<1.5	--	0.47	0.89	0.14	--	
	06/07/07	ND	1.40	1.8	<0.5	2.6	--	0.670	1.400	0.170	<0.037	
	09/28/07	ND	0.70	0.9	<0.5	1.6	--	0.640	1.000	0.260	<0.24	
	11/27/07	ND	0.9	0.8	0.9	<5.0 ¹⁵	--	0.670	0.700	0.160	<0.047	
	02/12/08	ND	1.76	1.09	<0.500	2.12	--	0.713	<0.240	<0.481	<1.00	
	05/14/08	ND	1.32	1.71	<0.500	4.17	--	0.782	0.310	0.784	<1.00	
	09/03/08	ND	4.42	1.06	3.07	1.47	--	1.070	0.384	<0.476	<1.00	
	10/01/08	ND	--	--	--	--	--	0.796	--	--	--	
	12/04/08	ND	1.45	1.20	1.05	4.22	--	0.869	0.291	<0.495	<1.00	
	02/17/09	ND	1.48	1.32	1.82	7.50	--	1.060	0.341	<0.500	<1.00	
Duplicate	02/17/09	ND	1.54	1.30	1.81	7.45	--	1.120	0.332	<0.556	<1.00	
	05/13/09	ND	1.93	1.55	1.86	4.79	--	1.190	0.593	<0.500	<1.00	
Duplicate	05/13/09	ND	1.82	1.58	1.88	7.70	--	1.230	0.553	<0.556	<1.00	
	09/11/09	ND	<0.500	1.10	<0.500	1.8	--	1.200	0.396	<0.495	<2.0	
Duplicate	09/11/09	ND	<0.500	1.10	<0.500	1.8	--	1.100	0.393	<0.495	<2.0	
	04/14/10	ND	1.1	2.1	<0.50	3.6	--	1.5	1.2	0.84	<2.0	
Duplicate	04/14/10	ND	1.1	2.1	<0.50	3.7	--	1.5	1.1	<0.25	<2.0	
	09/22/10	ND	<0.50	1.5	<0.50	3.2	--	1.3	1.5	<0.25	<2.0	
	04/26/11	ND	1.6	1.5	<0.50	3.9	--	0.71	--	--	<2.0	
Duplicate	04/26/11	ND	1.9	1.7	<0.50	5.0	--	1.0	--	--	<2.0	
	04/28/11	ND	--	--	--	--	--	--	0.69	<0.24	--	
Duplicate	04/28/11	ND	--	--	--	--	--	--	0.58	<0.24	--	
	09/22/11	ND	1.7	1.6	<0.50	6.1	--	0.92	0.88 ¹⁷	<0.25	--	
Duplicate	09/22/11	ND	1.7	1.8	<0.50	6.5	--	0.92	0.65 ¹⁷	<0.24	--	
MW-204-NEAR	09/22/11	ND	1.7	1.7	<0.50	6.3	--	0.94	0.91 ¹⁷	<0.25	--	
	04/18/12	ND	1.6	1.7	<0.50	4.1	--	0.69	1.2 ¹⁷	0.64 ¹⁷	--	
Duplicate	04/18/12 ²	ND	2.0	1.7	<0.50	5.3	--	0.87	1.2 ¹⁷	1.4 ¹⁷	--	
MW-204-NEAR	04/18/12	ND	2.0	1.8	<0.50	5.3	--	0.90	1.2 ¹⁷	1.6 ¹⁷	--	
Duplicate	04/18/12 ²	ND	2.0	1.8	<0.50	5.3	--	0.90	1.3 ¹⁷	2.8 ¹⁷	--	
MW-205	03/08/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.048	0.18	<0.095	--	
	06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.098	<0.100	<0.037	
	09/28/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.081	<0.100	<0.047	
	11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.120	0.560	<0.047	
	02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	0.529	<1.00	
	05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.238	<0.476	<1.00	
	09/03/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00	
	12/05/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00	
	02/17/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<1.00	
	05/13/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.245	<0.490	<1.00	
	09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	0.1	<0.248	<0.495	<2.0	
	04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.051	<0.12	<0.25	<2.0	
	09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.082	0.15	<0.25	<2.0	
	04/26/11	LNAPL	--	--	--	--	--	--	--	--	--	
	09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	0.07	<0.12	<0.25	--	
MW-205-NEAR	09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.25	--	
	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.16 ¹⁷	<0.24	--	
Duplicate	04/18/12 ²	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.25 ¹⁷	0.44 ¹⁷	--	
MW-205-NEAR	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	7.4 ¹⁷	4.8 ¹⁷	--	

Table 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	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	Diesel	Heavy Oil		
								C ₇ - C ₁₂	C ₁₂ - C ₂₄	>C ₂₄		
Offsite Area RALs		No visible sheen	40	14,300	1,400	4,400	--	1	10	15	50	
Offsite Area (continued)												
MW-206	03/08/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.048	<0.075	<0.094	--	
	06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.076	<0.095	0.078	
	09/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.076	<0.095	<0.047	
	11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.077	<0.096	<0.24	
	02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00	
	05/13/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.505	<1.00	
	09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00	
	Duplicate	09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00
	Duplicate	12/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
	Duplicate	12/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
	Duplicate	02/18/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.278	<0.556	<1.00
	Duplicate	05/12/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.278	<0.556	<1.00
	Duplicate	09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<2.0
	Duplicate	04/13/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	--	--	--
	Duplicate	04/14/10	ND	--	--	--	--	--	--	<0.12	<0.24	<2.0
	Duplicate	09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.25	<2.0
	Duplicate	04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	--	--	<2.0
Duplicate	04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--	
Duplicate	09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--	
Duplicate	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--	
MW-207	03/08/07	ND	<0.5	<0.5	0.9	<1.5	--	<0.048	0.12	<0.095	--	
	Duplicate	03/08/07	ND	<0.5	<0.5	1.1	<1.5	--	<0.048	0.15	<0.095	--
	Duplicate	06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.05	<0.077	<0.096	0.11
	Duplicate	09/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.081	<0.10	<0.47
	Duplicate	11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.076	<0.095	<0.047
	Duplicate	02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<1.00
	Duplicate	05/13/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.500	<1.00
	Duplicate	09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.238	<0.476	<1.00
	Duplicate	12/03/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.238	<0.476	<1.00
	Duplicate	02/18/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<1.00
	Duplicate	09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<2.0
	Duplicate	04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.24	<2.0
	Duplicate	09/21/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.24	<2.0
	Duplicate	09/21/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.092	<0.12	<0.25	<2.0
	Duplicate	04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	--	--	<2.0
	Duplicate	04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--
	Duplicate	09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--
Duplicate	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--	

Notes:

- ¹Monitoring well locations are shown in Figure 2.
 - ²LNAPL = light nonaqueous phase liquid.
 - ³For 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 sulfuric acid/silica gel cleanup procedure, and samples obtained from Elliott Avenue and Offsite Area wells were analyzed with the sulfuric acid/silica gel cleanup procedure.
 - ⁴According to the laboratory, the sample chromatogram does not resemble the gasoline standard.
 - ⁵According to the laboratory, sample contains diesel-range hydrocarbons that extend into the hydrocarbon range quantified as gasoline.
 - ⁶Due 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 by the laboratory and a resampling took place.
 - ⁷Due to an extraction anomaly during the silica gel cleanup procedure, a second analytical result is not available for this sample.
 - ⁸After review of field procedures and historic analytical results, the sample appears to have been cross-contaminated in the field or in the laboratory.
 - ⁹BTEX and gasoline-range hydrocarbon analyses were completed outside of the recommended holding time. Results should be qualified as estimated.
 - ¹⁰Samples were extracted 3 or 4 days after expiration of the recommended holding time.
 - ¹¹Results should be considered bias low or estimated due to laboratory QA/QC exception.
 - ¹²MW-30 was not sampled between July 1989 and September 1990 because of the presence of free product.
 - ¹³Due 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, according to the laboratory.
 - ¹⁴The 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.
 - ¹⁵Due to a lab error, the sample extract evaporated before testing and was not analyzed with the silica gel cleanup.
 - ¹⁶Due 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.
 - ¹⁷The chromatographic response resembles a typical fuel pattern.
 - ¹⁸Sample was reanalyzed due to a surrogate failure. The surrogates were within QC limits in the reanalysis.
- 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.
- ^D = Duplicate of the preceding sample.

Table 4
Summary of Groundwater Analytical Data
Polynuclear 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
RAL		0.03	0.03	0.03	0.03	0.03	0.03	0.03	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-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-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

Table 4
Summary of Groundwater Analytical Data
Polynuclear 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
RAL		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	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
Duplicate	09/26/07	0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.011	-	-	-	-	-	24 ⁵	-	-	-
	9/26/07 ^D	0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.011	-	-	-	-	-	22 ⁵	-	-	-
	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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	<0.0111	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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
(Filtered)	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
Original (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
Original (Filtered) (Duplicate)	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
Original	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

Table 4
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Polynuclear Aromatic Hydrocarbons

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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
RAL		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	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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-Filtered)	09/22/10	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	-	-	-	-	-	-	-	-	-
	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
Original	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

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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
RAL		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	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	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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
Original	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
Original (Filtered)	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
Original	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

Table 4
Summary of Groundwater Analytical Data
Polynuclear 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
RAL		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-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	-	-	-	-	-	-	-	-	-
	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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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
Original	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
Original (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
Original	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

Table 4
Summary of Groundwater Analytical Data
Polynuclear 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
RAL		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	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	7/6/2007 ^D	<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	--	--	--	--	--	--	--	--	--
(Field-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	--	--	--	--	--	--	--	--	--
(Field-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	--	--	--	--	--	--	--	--	--
(Field-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	--	--	--	--	--	--	--	--	--
(Field-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	<0.0100	<0.0100	0.0193	<0.0100	0.0193	--	--	--	--	--	--	--	--
Duplicate	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
(Field-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	--	--	--	--	--	--	--	--	--
(Field-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	--	--	--	--	--	--	--	--	--
(Field-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	--	--	--	--	--	--	--	--	--
(Field-Filtered)	09/22/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--

Table 4
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Polynuclear Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
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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
RAL		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)	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	9/22/11 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
Original (Duplicate)	9/22/11 ^D	<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	9/22/11 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
Original (Filtered)	9/22/11 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
Original (Filtered) (Duplicate)	9/22/11 ^D	<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)	9/22/11 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
Original (NEAR)	9/22/11 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
Re-Analysis (NEAR)	9/22/11 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
Original (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
Original	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
Original (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
Original (Filtered) (Duplicate)	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
Original (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
Original (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
Original (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
Original (NEAR) (Filtered) (Duplicate)	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

**Table 4
Summary of Groundwater Analytical Data
Polynuclear 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
RAL		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-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	--	--	--	--	--	--	--	--	--
(Field-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	--	--	--	--	--	--	--	--	--
(Field-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	--	--	--	--	--	--	--	--	--
(Field-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	--	--	--	--	--	--	--	--	--
(Field-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	--	--	--	--	--	--	--	--	--
(Field-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	<0.0110	--	--	--	--	--	--	--	--	--
(Field-Filtered)	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	--	--	--	--	--	--	--	--	--
MW-205	04/14/10	<0.013	<0.026	<0.013	<0.013	<0.013	<0.013	<0.013	<0.026	--	--	--	--	--	--	--	--	--
	(Field-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	--	--	--	--	--	--	--	--	--
(Field-Filtered)	09/22/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	04/26/11	LNAPL																
(Field-Filtered)	04/26/11	LNAPL																
Original	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
Original (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
Original (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
Original	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
Original (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
Original (Filtered) (Duplicate)	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
Original (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
Original (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

Table 4
Summary of Groundwater Analytical Data
Polynuclear 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
RAL		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	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	-	-	-	-	-	-	-	-	-
	05/13/08	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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
Original	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
Original (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
Original	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

**Table 4
Summary of Groundwater Analytical Data
Polynuclear Aromatic Hydrocarbons**

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
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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
RAL		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)	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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-Filtered)	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	-	-	-	-	-	-	-	-	-
	04/14/10	<0.0097	<0.019	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.019	-	-	-	-	-	-	-	-	-
(Field-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	-	-	-	-	-	-	-	-	-
(Field-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
Original	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
Original (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
Original	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

**Table 4
Summary of Groundwater Analytical Data
Polynuclear 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
RAL		0.03	0.03	0.03	0.03	0.03	0.03	0.03	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Notes:

¹Monitoring well locations are shown on Figure 2.

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

³WAC 173-340-200 (MTCA).

⁴Numeric sum of detected concentrations of cPAHs. Where no cPAH compounds were detected, this figure is equal to the highest reporting limit for an individual compound.

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

⁶Sample was extracted past the holding time.

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

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

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

^DDuplicate of the preceding sample.

RAL = 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.

µg/L = micrograms per liter

NE = not established

"--" not sampled

cPAHs = carcinogenic polynuclear 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 Initial metals/anion analysis of the sample.

Table 5
Summary Comparison of Standard Samples and NEAR Samples
Petroleum Hydrocarbons and Polynuclear Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
 3001 Elliott Avenue
 Seattle, Washington

Monitoring Well ¹	Sample Date	Sample Depth	Depth to Water (Feet)	Depth to Bottom (Feet)	TPH-G as Gasoline	TPH-D as Diesel	TPH-D as Heavy Oil	Benzene	Ethylbenzene	Toluene	Total Xylenes	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	
					1	10	15	40	1,400	14,300	4,400	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	NE	NE	NE	NE	NE	NE	NE	NE
RAL																													
MW-30 NEAR	09/22/11	14.10	13.60	31.50	<0.050	0.17 ¹⁷	<0.24	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-30	09/22/11	22.35	13.70	--	<0.050	<0.12	<0.24	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-204 NEAR	9/22/11 ⁹	20.27	19.52	31.50	0.94	0.91 ¹⁷	<0.25	1.7	<0.50	1.7	6.3	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	0.21 ⁸	0.21	0.98	<0.010	1.3	4.7	9.6 ⁸	4.1	0.94	
MW-204	9/22/11 ⁹	25.38	19.76	--	0.92	0.88 ¹⁷	<0.25	1.7	<0.50	1.6	6.1	<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	
MW-204-NEAR	04/18/12	--	18.74	--	0.90	1.2¹⁷	1.6¹⁷	2.0	<0.50	1.8	5.3	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.3	3.60	0.19	<0.019	0.048	3.0	0.33	1.1	0.03	
MW-204	04/18/12	--	18.74	--	0.69	1.2¹⁷	0.64¹⁷	1.6	<0.50	1.7	4.1	<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	
MW-205-NEAR	09/22/11	23.83	23.08	10.00	<0.050	<0.12	<0.25	<0.50	<0.50	<0.50	<1.0	<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	
MW-205	09/22/11	29.90	22.79	--	0.07	<0.12	<0.25	<0.50	<0.50	<0.50	<1.0	<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	
MW-205-NEAR	04/18/12	--	22.55	--	<0.050	7.4¹⁷	4.8¹⁷	<0.50	<0.50	<0.50	<1.0	<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	
MW-205	04/18/12	--	22.55	--	<0.050	0.16¹⁷	<0.24	<0.50	<0.50	<0.50	<1.0	<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	

Notes:
⁸After review of field procedures and historic analytical results, the sample appears to have been cross-contaminated in the field or in the laboratory.
⁹BTEX and gasoline-range hydrocarbon analyses were completed outside of the recommended holding time. Results should be qualified as estimated.
¹⁷The chromatographic response resembles a typical fuel pattern.
 µg/L = micrograms per liter
 TPH-G by NWTPH-Gx and TPH-D and TPH-O by NWTPH-D Extended samples analyzed in milligrams per liter.
 BTEX by EPA Method 8021B.
 PAHs = polynuclear aromatic hydrocarbons by 8270C SIM.
 NEAR = The sample was collected from the top 12 inches of the water column within the respective monitoring well.
 RAL = Remedial Action Level per Amendments No. 4 and No. 5 to Order on Consent; applicable for Offsite Area only.
 NE = not established
 "--" not sampled or measured
 Laboratory analyses by TestAmerica of Tacoma.
 Bolded data are for the current reporting period.
 Shading indicates concentration greater than the RAL.

Table 6
Summary of Groundwater Compliance as of First Semi-annual 2012

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	none	N/A
Elliott Avenue						
MW-30	semi-annually	0	none	N/A	none	N/A
Offsite Area- Amendment No. 4 Point of Compliance monitoring wells						
MW-200	semi-annually	4 ⁷	semi-annually ²	16 ^{4,5,8,9}	none	13
MW-201	semi-annually	4 ⁷	semi-annually ²	11 ^{3,8,9}	none	13
MW-202	semi-annually	16	semi-annually ²	13 ^{3,8,9}	none	13
MW-203	semi-annually	16	semi-annually ²	16 ^{4,8,9}	none	13
MW-204	semi-annually	2	semi-annually ²	16 ^{4,8,9}	none	13
MW-205	semi-annually	2	semi-annually ²	16 ^{4,8,9}	none	13
MW-206	semi-annually	16	semi-annually ²	16 ^{4,6,8,9}	none	13
MW-207	semi-annually	16	semi-annually ²	16 ^{4,6,8,9}	none	13

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

BTEX = benzene, toluene, ethylbenzene, xylenes

cPAHs = carcinogenic polynuclear aromatic hydrocarbons

N/A = not applicable

Appendix A


Standard Operating Procedure

**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 N₂ or CO₂ 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., Solinst 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 lightning is present, discontinue sampling and take cover until 30 minutes have passed after the last occurrence of thunder or lightning.

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:

$$\text{Volume (in gallons)} = \bullet \text{ TIMES well radius (in feet) squared TIMES length of water column (in feet) TIMES 7.481 (gallons per cubic foot)}$$
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

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).

ARCADIS

Appendix B

Field Data Sheets



Troll 9000

4/18/2012

Low-Flow System

ISI Low-Flow Log

Project Information:

Operator Name SLM
 Company Name ARCADIS
 Project Name Seattle Marketing Terminal
 Site Name Former Unocal Seattle Marketing Terminal

Pump Information:

Pump Model/Type Geopump II
 Tubing Type Tygon 0.25" OD
 Tubing Diameter 0.17 [in]
 Tubing Length 18 [ft]
 Pump placement from TOC 0 [ft]

Well Information:

Well ID MW-200
 Well diameter 2 [in]
 Well total depth 24.11 [ft]
 Depth to top of screen 4.5 [ft]
 Screen length 240 [in]
 Depth to Water 9.45 [ft]

Pumping information:

Final pumping rate 200 [mL/min]
 Flowcell volume 680.34 [mL]
 Calculated Sample Rate 205 [sec]
 Sample rate 180 [sec]
 Stabilized drawdown 3.6 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm @25C]	Turb [NTU]	RDO [μ g/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-1	+/-1	+/-1	+/-10
				+/-3 %	+/-10 %	+/-10 %	
Last 5 Readings	12:08:01	14.36	7.10	1933.66	2396.13	-21.71	-105.90
	12:11:07	14.34	7.09	1927.47	1632.60	-31.78	-108.10
	12:14:14	14.36	7.09	1946.80	26.09	-39.33	-109.45
	12:17:20	14.34	7.09	1953.79	170.67	-42.69	-110.49
	12:20:26	14.28	7.09	1960.69	174.64	-43.53	-110.96
Variance in last 3 readings	12:14:14	0.02	0.00	19.33	-1606.51	-7.55	-1.34
	12:17:20	-0.03	0.00	6.98	144.59	-3.36	-1.04
	12:20:26	-0.06	0.00	6.90	3.96	-0.84	-0.48

Notes: DO=0.44
 After 45 minutes turbidity does not stabilize
 sample time:1205



Troll 9000
4/18/2012

Low-Flow System
ISI Low-Flow Log

Project Information:

Operator Name SWM
Company Name ARCADIS
Project Name Seattle Terminal Groundwater Monitoring
Site Name Former Unocal Seattle Marketing Terminal

Pump Information:

Pump Model/Type Geopump II
Tubing Type Tygon 0.25" OD
Tubing Diameter 0.17 [in]
Tubing Length 16 [ft]
Pump placement from TOC 1 [ft]

Well Information:

Well ID MW-201
Well diameter 2 [in]
Well total depth 20 [ft]
Depth to top of screen 5.2 [ft]
Screen length 180 [in]
Depth to Water 10.3 [ft]

Pumping information:

Final pumping rate 250 [mL/min]
Flowcell volume 671.42 [mL]
Calculated Sample Rate 162 [sec]
Sample rate 162 [sec]
Stabilized drawdown 3.65 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm @25C]	Turb [NTU]	RDO [μ g/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-1	+/-1	+/-1	+/-10
				+/-3 %	+/-10 %	+/-10 %	
Last 5 Readings	13:42:59	14.10	6.82	911.65	1.50	-38.49	-148.62
	13:45:49	14.04	6.82	906.90	1.29	-41.01	-149.90
	13:48:37	14.11	6.82	905.03	1.29	-43.53	-151.35
	13:51:24	14.09	6.82	904.83	1.61	-46.88	-152.28
	13:54:12	14.11	6.82	903.41	1.16	-49.40	-153.64
Variance in last 3 readings	13:48:37	0.07	0.00	-1.86	0.00	-2.52	-1.45
	13:51:24	-0.02	0.00	-0.20	0.32	-3.36	-0.93
	13:54:12	0.02	0.00	-1.42	-0.45	-2.52	-1.36

Notes: DRO STEADY AT -13%
TOOK SAMPLE



Troll 9000
4/18/2012

Low-Flow System
ISI Low-Flow Log

Project Information:

Operator Name SWM
 Company Name ARCADIS
 Project Name Seattle Terminal Groundwater Monitoring
 Site Name Former Unocal Seattle Marketing Terminal

Pump Information:

Pump Model/Type Geopump II
 Tubing Type Tygon 0.25" OD
 Tubing Diameter 0.17 [in]
 Tubing Length 19.5 [ft]
 Pump placement from TOC 0.75 [ft]

Well Information:

Well ID MW-202
 Well diameter 2 [in]
 Well total depth 27.37 [ft]
 Depth to top of screen 7 [ft]
 Screen length 240 [in]
 Depth to Water 10.21 [ft]

Pumping information:

Final pumping rate 200 [mL/min]
 Flowcell volume 687.04 [mL]
 Calculated Sample Rate 207 [sec]
 Sample rate 207 [sec]
 Stabilized drawdown 3.75 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm @25C]	Turb [NTU]	RDO [μ g/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-1	+/-1	+/-1	+/-10
				+/-3 %	+/-10 %	+/-10 %	
Last 5 Readings	12:03:43	12.82	7.22	3885.05	6.19	-71.22	-204.78
	12:07:18	12.82	7.22	3805.38	6.13	-76.26	-207.83
	12:10:52	12.88	7.22	3643.98	10.88	-79.61	-210.27
	12:14:27	12.93	7.22	3525.00	6.99	-82.13	-212.88
	12:18:02	12.96	7.23	3374.31	5.02	-86.33	-216.30
Variance in last 3 readings	12:10:52	0.06	0.00	-161.41	4.75	-3.36	-2.44
	12:14:27	0.05	0.00	-118.98	-3.89	-2.52	-2.61
	12:18:02	0.03	0.01	-150.69	-1.98	-4.20	-3.42

Notes: Unable to stabilize after 45 min.



Troll 9000
4/18/2012

Low-Flow System
ISI Low-Flow Log

Project Information:

Operator Name SLM
 Company Name ARCADIS
 Project Name Seattle Terminal Groundwater Monitoring
 Site Name Former Unocal Seattle Marketing Terminal

Pump Information:

Pump Model/Type Geopump II
 Tubing Type Tygon 0.25" OD
 Tubing Diameter 0.17 [in]
 Tubing Length 19 [ft]
 Pump placement from TOC 0 [ft]

Well Information:

Well ID MW-203
 Well diameter 2 [in]
 Well total depth 25 [ft]
 Depth to top of screen 9.5 [ft]
 Screen length 180 [in]
 Depth to Water 13.6 [ft]

Pumping information:

Final pumping rate 200 [mL/min]
 Flowcell volume 180 [mL]
 Calculated Sample Rate 54 [sec]
 Sample rate 54 [sec]
 Stabilized drawdown 3.6 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [µg/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-1	+/-1	+/-1	+/-10
				+/-3 %	+/-10 %	+/-10 %	
Last 5 Readings	14:37:27	14.24	7.10	16722.97	143.08	-39.33	-45.18
	14:38:22	14.26	7.09	16687.99	109.89	-35.97	-45.27
	14:39:18	14.31	7.10	16668.37	107.86	-33.46	-45.32
	14:40:13	14.36	7.10	16668.00	107.56	-30.94	-45.40
	14:41:43	14.43	7.09	16660.57	107.10	-26.74	-45.50
Variance in last 3 readings	14:39:18	0.05	0.00	-19.62	-2.03	2.52	-0.05
	14:40:13	0.05	0.00	-0.37	-0.31	2.52	-0.09
	14:41:43	0.06	0.00	-7.42	-0.45	4.20	-0.09

Notes: SAMPLE TIME 1455



Troll 9000
4/18/2012

Low-Flow System
ISI Low-Flow Log

Project Information:

Operator Name SWM
 Company Name ARCADIS
 Project Name Seattle Terminal Groundwater Monitoring
 Site Name Former Unocal Seattle Marketing Terminal

Pump Information:

Pump Model/Type Geopump II
 Tubing Type Tygon 0.25" OD
 Tubing Diameter 0.17 [in]
 Tubing Length 26 [ft]
 Pump placement from TOC 1 [ft]

Well Information:

Well ID MW-204
 Well diameter 2 [in]
 Well total depth 30.95 [ft]
 Depth to top of screen 16 [ft]
 Screen length 180 [in]
 Depth to Water 18.79 [ft]

Pumping information:

Final pumping rate 200 [mL/min]
 Flowcell volume 716.05 [mL]
 Calculated Sample Rate 215 [sec]
 Sample rate 215 [sec]
 Stabilized drawdown 3.6 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [µg/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-1	+/-1	+/-1	+/-10
				+/-3 %	+/-10 %	+/-10 %	
Last 5 Readings	15:56:39	12.98	6.69	452.23	0.94	-44.37	-124.52
	16:00:22	13.12	6.70	453.31	0.66	-42.69	-126.51
	16:04:05	13.19	6.71	449.08	1.25	-26.74	-127.55
	16:07:49	12.84	6.71	452.23	0.80	-46.88	-128.85
	16:11:30	12.93	6.69	452.72	1.40	-46.04	-128.52
Variance in last 3 readings	16:04:05	0.07	0.00	-4.24	0.59	15.95	-1.04
	16:07:49	-0.35	0.01	3.16	-0.45	-20.14	-1.30
	16:11:30	0.10	-0.02	0.48	0.60	0.84	0.33

Notes: RDO NOT STABLE AFTER 30MIN. READINGS IN - #s. TOOK SAMPLE



Troll 9000
4/18/2012

Low-Flow System
ISI Low-Flow Log

Project Information:

Operator Name SLM
 Company Name ARCADIS
 Project Name Seattle Terminal Groundwater Monitoring
 Site Name Former Unocal Seattle Marketing Terminal

Pump Information:

Pump Model/Type Geopump II
 Tubing Type Tygon 0.25" OD
 Tubing Diameter 0.17 [in]
 Tubing Length 30 [ft]
 Pump placement from TOC 0 [ft]

Well Information:

Well ID MW-205
 Well diameter 2 [in]
 Well total depth 37 [ft]
 Depth to top of screen 17 [ft]
 Screen length 240 [in]
 Depth to Water 22.55 [ft]

Pumping information:

Final pumping rate 200 [mL/min]
 Flowcell volume 733.9 [mL]
 Calculated Sample Rate 221 [sec]
 Sample rate 180 [sec]
 Stabilized drawdown 3.6 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [µg/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-1 +/-3 %	+/-1 +/-10 %	+/-1 +/-10 %	+/-10
Last 5 Readings	17:06:44	13.24	7.39	601.15	470.61	-41.85	-91.49
	17:09:51	13.28	7.39	600.47	534.43	-44.37	-94.45
	17:12:56	13.31	7.39	602.27	859.49	-46.88	-96.71
	17:16:04	13.30	7.37	601.00	886.20	-50.24	-98.04
	17:19:11	13.28	7.37	601.68	885.84	-51.92	-98.99
Variance in last 3 readings	17:12:56	0.03	0.00	1.80	325.06	-2.52	-2.27
	17:16:04	0.00	-0.02	-1.27	26.71	-3.36	-1.33
	17:19:11	-0.02	0.00	0.69	-0.36	-1.68	-0.95

Notes:
 RDO:-52
 SAMPLE TIME: 1725
 MW-205-NEAR: 1745
 DUP-2 ON MW-205



Troll 9000
4/18/2012

Low-Flow System
ISI Low-Flow Log

Project Information:

Operator Name SLM
 Company Name ARCADIS
 Project Name Seattle Terminal Groundwater Monitoring
 Site Name Former Unocal Seattle Marketing Terminal

Pump Information:

Pump Model/Type Geopump II
 Tubing Type Tygon 0.25" OD
 Tubing Diameter 0.17 [in]
 Tubing Length 18 [ft]
 Pump placement from TOC 0 [ft]

Well Information:

Well ID MW-206
 Well diameter 2 [in]
 Well total depth 24.5 [ft]
 Depth to top of screen 9.5 [ft]
 Screen length 180 [in]
 Depth to Water 11.95 [ft]

Pumping information:

Final pumping rate 200 [mL/min]
 Flowcell volume 680.34 [mL]
 Calculated Sample Rate 205 [sec]
 Sample rate 180 [sec]
 Stabilized drawdown 3.6 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [µg/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-1	+/-1	+/-1	+/-10
			+/-3 %	+/-10 %	+/-10 %		
Last 5 Readings	10:41:35	11.62	6.91	32411.61	200.84	-54.44	-135.19
	10:44:41	11.49	6.91	32521.72	197.31	-57.79	-140.64
	10:47:48	11.33	6.92	32652.27	196.09	-58.63	-144.75
	10:50:54	11.33	6.92	32654.17	177.67	-61.15	-148.95
	10:54:01	11.42	6.92	32576.11	149.88	-64.51	-151.78
Variance in last 3 readings	10:47:48	-0.16	0.00	130.55	-1.23	-0.84	-4.12
	10:50:54	0.00	0.00	1.90	-18.42	-2.52	-4.20
	10:54:01	0.09	0.00	-78.06	-27.79	-3.36	-2.83

Notes: RDO=-65
 SAMPLED AT 1035



Troll 9000
4/18/2012

Low-Flow System
ISI Low-Flow Log

Project Information:

Operator Name SWM
 Company Name ARCADIS
 Project Name Seattle Terminal Groundwater Monitoring
 Site Name Former Unocal Seattle Marketing Terminal

Pump Information:

Pump Model/Type Geopump II
 Tubing Type Tygon 0.25" OD
 Tubing Diameter 0.17 [in]
 Tubing Length 18 [ft]
 Pump placement from TOC 0.5 [ft]

Well Information:

Well ID MW-207
 Well diameter 2 [in]
 Well total depth 23 [ft]
 Depth to top of screen 8 [ft]
 Screen length 180 [in]
 Depth to Water 11.5 [ft]

Pumping information:

Final pumping rate 200 [mL/min]
 Flowcell volume 680.34 [mL]
 Calculated Sample Rate 205 [sec]
 Sample rate 205 [sec]
 Stabilized drawdown 3.6 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [μ S/cm @25C]	Turb [NTU]	RDO [μ g/L]	ORP [mV]
Stabilization Settings			+/-0.1	+/-1 +/-3 %	+/-1 +/-10 %	+/-1 +/-10 %	+/-10
Last 5 Readings	10:31:21	11.85	6.90	19900.56	0.47	63.06	-130.78
	10:34:54	11.95	6.90	19791.94	0.79	60.54	-132.74
	10:38:26	11.96	6.91	19734.21	0.55	61.38	-135.56
	10:41:59	11.95	6.91	19601.38	0.24	60.54	-139.79
	10:45:31	12.00	6.92	19511.69	1.34	58.86	-144.71
Variance in last 3 readings	10:38:26	0.00	0.00	-57.73	-0.24	0.84	-2.82
	10:41:59	0.00	0.01	-132.83	-0.31	-0.84	-4.23
	10:45:31	0.05	0.01	-89.69	1.10	-1.68	-4.92

Notes: Turbidity did not stabilize.

ARCADIS

Appendix C

Laboratory Report and Chain of
Custody Forms

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-32440-1

Client Project/Site: Chevron Seattle Terminal 2012
Revision: 1

For:

ARCADIS U.S., Inc.
2300 Eastlake Avenue East
Suite 200
Seattle, Washington 98102

Attn: Mr. Samuel Miles



Authorized for release by:
6/29/2012 1:19:45 PM

Pam Johnson
Project Manager I
pamr.johnson@testamericainc.com

Designee for
Kristine Allen
Project Manager I
kristine.allen@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



LINKS

Review your project
results through
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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Job ID: 580-32440-1

Laboratory: TestAmerica Seattle

Narrative

Receipt

The samples were received on 4/19/2012 4:00 PM; the samples arrived in good conditions, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.80 C, 3.80 C, 5.90 C and 6.00 C.

The Chain of Custody (COC) stated only 3 vials for the Trip Blank. Actually received a total of 18.

GC/MS VOA - Method 8021B

The following sample contained only the target analyte Benzene above the Reporting Limit: MW-201 (580-32440-3). The hit of Benzene was not confirmed due to the positive result for gasoline in the simultaneous NWTPH-GX analysis in analytical batch 109852.

No other analytical or quality issues were noted.

GC/MS Semi VOA

No analytical or quality issues were noted.

GC Semi VOA - Method NWTPH-Dx

The results in the #2 Diesel (C10-C24) range are due to what most closely resembles a gasoline/kerosene range product for sample MW-200 (580-32440-1).

The results in the #2 Diesel (C10-C24) range are due to what most closely resembles a mineral/transformer oil range product for samples MW-201 (580-32440-3), MW-202 (580-32440-5), MW-203 (580-32440-7), and MW-205 (580-32440-13).

The results in the #2 Diesel (C10-C24) and Motor Oil (>C24-C36) ranges are due to what closely resembles a mixture of a gasoline/kerosene range product, heavily weathered/degraded diesel fuel, and motor oil for samples MW-204 (580-32440-9), MW-204-NEAR (580-32440-11), DUP-1 (580-32440-21) and DUP-NEAR (580-32440-25).

The results in the #2 Diesel (C10-C24) and Motor Oil (>C24-C36) ranges are due to what closely resembles a mixture of weathered/degraded diesel fuel, a mineral/transformer oil range product, and motor oil for sample MW-205-NEAR (580-32440-15).

The results in the #2 Diesel (C10-C24) and Motor Oil (>C24-C36) ranges are due to what closely resembles a mixture of a mineral/transformer oil range product and motor oil for sample DUP-2 (580-32440-23).

The affected analyte range(s) have been Y qualified and reported.

No other analytical or quality issues were noted.

Organic Prep

No analytical or quality issues were noted.

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
Y	The chromatographic response resembles a typical fuel pattern.

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
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-200

Lab Sample ID: 580-32440-1

Date Collected: 04/18/12 12:05

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	3.7		0.025		ug/L		04/20/12 12:53	04/27/12 14:43	1
1-Methylnaphthalene	6.1		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Acenaphthylene	0.28		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Fluorene	7.8		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Phenanthrene	5.4		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Anthracene	0.94		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Fluoranthene	1.4		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Pyrene	1.0		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 14:43	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Dibenz[a,h]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 14:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	79		20 - 150				04/20/12 12:53	04/27/12 14:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	18		0.38		ug/L		04/20/12 12:53	04/27/12 22:31	20
Acenaphthene	24		0.38		ug/L		04/20/12 12:53	04/27/12 22:31	20

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3.7		0.50		ug/L			04/24/12 00:54	1
Toluene	ND		0.50		ug/L			04/24/12 00:54	1
Ethylbenzene	0.73		0.50		ug/L			04/24/12 00:54	1
m-Xylene & p-Xylene	ND		1.0		ug/L			04/24/12 00:54	1
o-Xylene	ND		1.0		ug/L			04/24/12 00:54	1
Xylenes, Total	1.4		1.0		ug/L			04/24/12 00:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	107		50 - 150					04/24/12 00:54	1
4-Bromofluorobenzene (Surr)	93		80 - 130					04/24/12 00:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.20		0.050		mg/L			04/24/12 00:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		50 - 150					04/24/12 00:54	1
Trifluorotoluene (Surr)	105		50 - 150					04/24/12 00:54	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.27	Y	0.12		mg/L		04/25/12 11:13	05/02/12 12:41	1
Motor Oil (>C24-C36)	ND		0.24		mg/L		04/25/12 11:13	05/02/12 12:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	82		50 - 150				04/25/12 11:13	05/02/12 12:41	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-200

Date Collected: 04/18/12 12:05

Date Received: 04/19/12 16:00

Lab Sample ID: 580-32440-1

Matrix: Water

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup (Continued)

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>n-Decanoic Acid (Surr)</i>	<i>0.1</i>		<i>0 - 1</i>	<i>04/25/12 11:13</i>	<i>05/02/12 12:41</i>	<i>1</i>



Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-200-Filtered

Lab Sample ID: 580-32440-2

Date Collected: 04/18/12 12:05

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	1.1		0.025		ug/L		04/20/12 12:53	04/27/12 15:05	1
1-Methylnaphthalene	2.6		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Acenaphthylene	0.054		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Acenaphthene	5.5		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Fluorene	0.085		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Phenanthrene	0.036		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Anthracene	0.046		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 15:05	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	72		20 - 150				04/20/12 12:53	04/27/12 15:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	10		0.19		ug/L		04/20/12 12:53	04/27/12 22:53	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-201

Lab Sample ID: 580-32440-3

Date Collected: 04/18/12 14:00

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.20		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
2-Methylnaphthalene	0.24		0.025		ug/L		04/20/12 12:53	04/27/12 15:27	1
1-Methylnaphthalene	0.59		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Acenaphthylene	0.11		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Acenaphthene	8.2		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Fluorene	1.3		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Phenanthrene	0.51		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Anthracene	0.44		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Fluoranthene	1.1		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Pyrene	0.85		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Benzo[a]anthracene	0.025		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Chrysene	0.021		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 15:27	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	77		20 - 150	04/20/12 12:53	04/27/12 15:27	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.8		0.50		ug/L			04/24/12 01:16	1
Toluene	ND		0.50		ug/L			04/24/12 01:16	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 01:16	1
m-Xylene & p-Xylene	ND		1.0		ug/L			04/24/12 01:16	1
o-Xylene	ND		1.0		ug/L			04/24/12 01:16	1
Xylenes, Total	ND		1.0		ug/L			04/24/12 01:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	108		50 - 150		04/24/12 01:16	1
4-Bromofluorobenzene (Surr)	95		80 - 130		04/24/12 01:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.14		0.050		mg/L			04/24/12 01:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		50 - 150		04/24/12 01:16	1
Trifluorotoluene (Surr)	104		50 - 150		04/24/12 01:16	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.29	Y	0.12		mg/L		04/25/12 11:13	05/02/12 13:04	1
Motor Oil (>C24-C36)	ND		0.24		mg/L		04/25/12 11:13	05/02/12 13:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150	04/25/12 11:13	05/02/12 13:04	1
n-Decanoic Acid (Surr)	0.1		0 - 1	04/25/12 11:13	05/02/12 13:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-201-Filtered

Lab Sample ID: 580-32440-4

Date Collected: 04/18/12 14:00

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.098		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
2-Methylnaphthalene	0.057		0.025		ug/L		04/20/12 12:53	04/27/12 15:50	1
1-Methylnaphthalene	0.20		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Acenaphthylene	0.022		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Acenaphthene	1.4		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Fluorene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Phenanthrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Anthracene	0.054		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 15:50	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 15:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	72		20 - 150	04/20/12 12:53	04/27/12 15:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-202

Lab Sample ID: 580-32440-5

Date Collected: 04/18/12 12:20

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	1.8		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
2-Methylnaphthalene	0.15		0.025		ug/L		04/20/12 12:53	04/27/12 16:12	1
1-Methylnaphthalene	0.52		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Acenaphthylene	0.058		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Acenaphthene	6.5		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Fluorene	0.24		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Phenanthrene	0.11		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Anthracene	0.051		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Fluoranthene	0.54		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Pyrene	0.43		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Benzo[a]anthracene	0.029		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Chrysene	0.031		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 16:12	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	79		20 - 150				04/20/12 12:53	04/27/12 16:12	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			04/24/12 03:32	1
Toluene	ND		0.50		ug/L			04/24/12 03:32	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 03:32	1
m-Xylene & p-Xylene	ND		1.0		ug/L			04/24/12 03:32	1
o-Xylene	ND		1.0		ug/L			04/24/12 03:32	1
Xylenes, Total	ND		1.0		ug/L			04/24/12 03:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	109		50 - 150					04/24/12 03:32	1
4-Bromofluorobenzene (Surr)	96		80 - 130					04/24/12 03:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.074		0.050		mg/L			04/24/12 03:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		50 - 150					04/24/12 03:32	1
Trifluorotoluene (Surr)	103		50 - 150					04/24/12 03:32	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.24	Y	0.12		mg/L		04/25/12 11:13	05/02/12 13:26	1
Motor Oil (>C24-C36)	ND		0.24		mg/L		04/25/12 11:13	05/02/12 13:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				04/25/12 11:13	05/02/12 13:26	1
n-Decanoic Acid (Surr)	0.1		0 - 1				04/25/12 11:13	05/02/12 13:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-202-Filtered

Lab Sample ID: 580-32440-6

Date Collected: 04/18/12 12:20

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.76		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 16:34	1
1-Methylnaphthalene	0.094		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Acenaphthylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Acenaphthene	0.40		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Fluorene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Phenanthrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 16:34	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	82		20 - 150	04/20/12 12:53	04/27/12 16:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-203

Lab Sample ID: 580-32440-7

Date Collected: 04/18/12 14:55

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 16:57	1
1-Methylnaphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Acenaphthylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Acenaphthene	0.42		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Fluorene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Phenanthrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Anthracene	0.028		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Fluoranthene	0.042		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Pyrene	0.076		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 16:57	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 16:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	79		20 - 150				04/20/12 12:53	04/27/12 16:57	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			04/24/12 04:40	1
Toluene	ND		0.50		ug/L			04/24/12 04:40	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 04:40	1
m-Xylene & p-Xylene	ND		1.0		ug/L			04/24/12 04:40	1
o-Xylene	ND		1.0		ug/L			04/24/12 04:40	1
Xylenes, Total	ND		1.0		ug/L			04/24/12 04:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	110		50 - 150					04/24/12 04:40	1
4-Bromofluorobenzene (Surr)	96		80 - 130					04/24/12 04:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			04/24/12 04:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		50 - 150					04/24/12 04:40	1
Trifluorotoluene (Surr)	104		50 - 150					04/24/12 04:40	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.14	Y	0.12		mg/L		04/25/12 11:13	05/02/12 13:49	1
Motor Oil (>C24-C36)	ND		0.24		mg/L		04/25/12 11:13	05/02/12 13:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				04/25/12 11:13	05/02/12 13:49	1
n-Decanoic Acid (Surr)	0.1		0 - 1				04/25/12 11:13	05/02/12 13:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-203-Filtered

Lab Sample ID: 580-32440-8

Date Collected: 04/18/12 14:55

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 17:19	1
1-Methylnaphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Acenaphthylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Acenaphthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Fluorene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Phenanthrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 17:19	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	80		20 - 150	04/20/12 12:53	04/27/12 17:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-204

Lab Sample ID: 580-32440-9

Date Collected: 04/18/12 16:20

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.34		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 17:41	1
1-Methylnaphthalene	0.30		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Acenaphthylene	0.37		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Acenaphthene	3.3		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Fluorene	3.2		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Phenanthrene	1.1		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Anthracene	0.21		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Fluoranthene	0.050		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Pyrene	0.032		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 17:41	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 17:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	84		20 - 150				04/20/12 12:53	04/27/12 17:41	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.6		0.50		ug/L			04/24/12 05:03	1
Toluene	1.7		0.50		ug/L			04/24/12 05:03	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 05:03	1
m-Xylene & p-Xylene	3.7		1.0		ug/L			04/24/12 05:03	1
o-Xylene	ND		1.0		ug/L			04/24/12 05:03	1
Xylenes, Total	4.1		1.0		ug/L			04/24/12 05:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	109		50 - 150					04/24/12 05:03	1
4-Bromofluorobenzene (Surr)	103		80 - 130					04/24/12 05:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.69		0.050		mg/L			04/24/12 05:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		50 - 150					04/24/12 05:03	1
Trifluorotoluene (Surr)	104		50 - 150					04/24/12 05:03	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.2	Y	0.12		mg/L		04/25/12 11:13	05/02/12 14:10	1
Motor Oil (>C24-C36)	0.64	Y	0.24		mg/L		04/25/12 11:13	05/02/12 14:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	89		50 - 150				04/25/12 11:13	05/02/12 14:10	1
n-Decanoic Acid (Surr)	0.3		0 - 1				04/25/12 11:13	05/02/12 14:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-204-Filtered

Lab Sample ID: 580-32440-10

Date Collected: 04/18/12 16:20

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.28		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 18:04	1
1-Methylnaphthalene	0.35		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Acenaphthylene	0.19		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Acenaphthene	2.8		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Fluorene	1.2		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Phenanthrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Anthracene	0.10		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 18:04	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	96		20 - 150				04/20/12 12:53	04/27/12 18:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-204-NEAR

Lab Sample ID: 580-32440-11

Date Collected: 04/18/12 16:40

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.33		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 18:26	1
1-Methylnaphthalene	0.31		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Acenaphthylene	0.36		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Acenaphthene	3.3		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Fluorene	3.0		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Phenanthrene	1.1		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Anthracene	0.19		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Fluoranthene	0.048		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Pyrene	0.030		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 18:26	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	75		20 - 150				04/20/12 12:53	04/27/12 18:26	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0		0.50		ug/L			04/24/12 05:25	1
Toluene	1.8		0.50		ug/L			04/24/12 05:25	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 05:25	1
m-Xylene & p-Xylene	4.7		1.0		ug/L			04/24/12 05:25	1
o-Xylene	ND		1.0		ug/L			04/24/12 05:25	1
Xylenes, Total	5.3		1.0		ug/L			04/24/12 05:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	110		50 - 150					04/24/12 05:25	1
4-Bromofluorobenzene (Surr)	105		80 - 130					04/24/12 05:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.90		0.050		mg/L			04/24/12 05:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		50 - 150					04/24/12 05:25	1
Trifluorotoluene (Surr)	103		50 - 150					04/24/12 05:25	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.2	Y	0.12		mg/L		04/25/12 11:13	05/02/12 14:33	1
Motor Oil (>C24-C36)	1.6	Y	0.24		mg/L		04/25/12 11:13	05/02/12 14:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150				04/25/12 11:13	05/02/12 14:33	1
n-Decanoic Acid (Surr)	0.3		0 - 1				04/25/12 11:13	05/02/12 14:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-204-NEAR-Filtered

Lab Sample ID: 580-32440-12

Date Collected: 04/18/12 16:40

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.76		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 18:48	1
1-Methylnaphthalene	0.26		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Acenaphthylene	0.30		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Acenaphthene	3.2		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Fluorene	1.7		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Phenanthrene	0.023		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Anthracene	0.085		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 18:48	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 18:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	88		20 - 150	04/20/12 12:53	04/27/12 18:48	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-205

Lab Sample ID: 580-32440-13

Date Collected: 04/18/12 17:25

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 19:11	1
1-Methylnaphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Acenaphthylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Acenaphthene	1.6		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Fluorene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Phenanthrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 19:11	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	65		20 - 150				04/20/12 12:53	04/27/12 19:11	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			04/24/12 05:48	1
Toluene	ND		0.50		ug/L			04/24/12 05:48	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 05:48	1
m-Xylene & p-Xylene	ND		1.0		ug/L			04/24/12 05:48	1
o-Xylene	ND		1.0		ug/L			04/24/12 05:48	1
Xylenes, Total	ND		1.0		ug/L			04/24/12 05:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	110		50 - 150					04/24/12 05:48	1
4-Bromofluorobenzene (Surr)	97		80 - 130					04/24/12 05:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			04/24/12 05:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		50 - 150					04/24/12 05:48	1
Trifluorotoluene (Surr)	105		50 - 150					04/24/12 05:48	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.16	Y	0.12		mg/L		04/25/12 11:13	05/02/12 14:55	1
Motor Oil (>C24-C36)	ND		0.24		mg/L		04/25/12 11:13	05/02/12 14:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	87		50 - 150				04/25/12 11:13	05/02/12 14:55	1
n-Decanoic Acid (Surr)	0.1		0 - 1				04/25/12 11:13	05/02/12 14:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-205-Filtered

Lab Sample ID: 580-32440-14

Date Collected: 04/18/12 17:25

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 19:33	1
1-Methylnaphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Acenaphthylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Acenaphthene	0.16		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Fluorene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Phenanthrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 19:33	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	71		20 - 150	04/20/12 12:53	04/27/12 19:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-205-NEAR

Lab Sample ID: 580-32440-15

Date Collected: 04/18/12 17:45

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 19:55	1
1-Methylnaphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Acenaphthylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Acenaphthene	1.6		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Fluorene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Phenanthrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 19:55	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 19:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		20 - 150	04/20/12 12:53	04/27/12 19:55	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			04/24/12 06:11	1
Toluene	ND		0.50		ug/L			04/24/12 06:11	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 06:11	1
m-Xylene & p-Xylene	ND		1.0		ug/L			04/24/12 06:11	1
o-Xylene	ND		1.0		ug/L			04/24/12 06:11	1
Xylenes, Total	ND		1.0		ug/L			04/24/12 06:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	106		50 - 150		04/24/12 06:11	1
4-Bromofluorobenzene (Surr)	97		80 - 130		04/24/12 06:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			04/24/12 06:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		50 - 150		04/24/12 06:11	1
Trifluorotoluene (Surr)	102		50 - 150		04/24/12 06:11	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	7.4	Y	0.12		mg/L		04/25/12 11:13	05/02/12 16:25	1
Motor Oil (>C24-C36)	4.8	Y	0.24		mg/L		04/25/12 11:13	05/02/12 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	97		50 - 150	04/25/12 11:13	05/02/12 16:25	1
n-Decanoic Acid (Surr)	0.5		0 - 1	04/25/12 11:13	05/02/12 16:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-205-NEAR-Filtered

Lab Sample ID: 580-32440-16

Date Collected: 04/18/12 17:45

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 20:18	1
1-Methylnaphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Acenaphthylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Acenaphthene	0.80		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Fluorene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Phenanthrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 20:18	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	70		20 - 150	04/20/12 12:53	04/27/12 20:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-206

Lab Sample ID: 580-32440-17

Date Collected: 04/18/12 10:35

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.022		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 20:40	1
1-Methylnaphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Acenaphthylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Acenaphthene	0.18		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Fluorene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Phenanthrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Anthracene	0.042		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Fluoranthene	0.31		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Pyrene	0.19		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 20:40	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 20:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	75		20 - 150				04/20/12 12:53	04/27/12 20:40	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			04/24/12 06:33	1
Toluene	ND		0.50		ug/L			04/24/12 06:33	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 06:33	1
m-Xylene & p-Xylene	ND		1.0		ug/L			04/24/12 06:33	1
o-Xylene	ND		1.0		ug/L			04/24/12 06:33	1
Xylenes, Total	ND		1.0		ug/L			04/24/12 06:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	111		50 - 150					04/24/12 06:33	1
4-Bromofluorobenzene (Surr)	98		80 - 130					04/24/12 06:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			04/24/12 06:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		50 - 150					04/24/12 06:33	1
Trifluorotoluene (Surr)	103		50 - 150					04/24/12 06:33	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.12		mg/L		04/25/12 11:13	05/02/12 16:46	1
Motor Oil (>C24-C36)	ND		0.24		mg/L		04/25/12 11:13	05/02/12 16:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	94		50 - 150				04/25/12 11:13	05/02/12 16:46	1
n-Decanoic Acid (Surr)	0.1		0 - 1				04/25/12 11:13	05/02/12 16:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-206-Filtered

Lab Sample ID: 580-32440-18

Date Collected: 04/18/12 10:35

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 21:02	1
1-Methylnaphthalene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Acenaphthylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Acenaphthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Fluorene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Phenanthrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 21:02	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	80		20 - 150	04/20/12 12:53	04/27/12 21:02	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-207

Lab Sample ID: 580-32440-19

Date Collected: 04/18/12 10:50

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.23		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 21:25	1
1-Methylnaphthalene	0.085		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Acenaphthylene	0.019		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Acenaphthene	0.84		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Fluorene	0.074		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Phenanthrene	0.021		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Anthracene	0.040		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Fluoranthene	0.19		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Pyrene	0.17		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 21:25	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	74		20 - 150				04/20/12 12:53	04/27/12 21:25	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			04/24/12 06:56	1
Toluene	ND		0.50		ug/L			04/24/12 06:56	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 06:56	1
m-Xylene & p-Xylene	ND		1.0		ug/L			04/24/12 06:56	1
o-Xylene	ND		1.0		ug/L			04/24/12 06:56	1
Xylenes, Total	ND		1.0		ug/L			04/24/12 06:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	108		50 - 150					04/24/12 06:56	1
4-Bromofluorobenzene (Surr)	96		80 - 130					04/24/12 06:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			04/24/12 06:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		50 - 150					04/24/12 06:56	1
Trifluorotoluene (Surr)	103		50 - 150					04/24/12 06:56	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.12		mg/L		04/25/12 11:13	05/02/12 17:09	1
Motor Oil (>C24-C36)	ND		0.24		mg/L		04/25/12 11:13	05/02/12 17:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	86		50 - 150				04/25/12 11:13	05/02/12 17:09	1
n-Decanoic Acid (Surr)	0.1		0 - 1				04/25/12 11:13	05/02/12 17:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-207-Filtered

Lab Sample ID: 580-32440-20

Date Collected: 04/18/12 10:50

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.23		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
2-Methylnaphthalene	ND		0.025		ug/L		04/20/12 12:53	04/27/12 21:47	1
1-Methylnaphthalene	0.098		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Acenaphthylene	0.021		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Acenaphthene	0.93		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Fluorene	0.080		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Phenanthrene	0.025		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Anthracene	0.047		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Fluoranthene	0.21		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Pyrene	0.19		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Benzo[a]anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Chrysene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/20/12 12:53	04/27/12 21:47	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/20/12 12:53	04/27/12 21:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	75		20 - 150				04/20/12 12:53	04/27/12 21:47	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: DUP-1

Lab Sample ID: 580-32440-21

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.37		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
2-Methylnaphthalene	ND		0.025		ug/L		04/23/12 10:48	04/30/12 17:06	1
1-Methylnaphthalene	0.30		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Acenaphthylene	0.41		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Acenaphthene	3.8		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Fluorene	3.6		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Phenanthrene	1.2		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Anthracene	0.19		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Fluoranthene	0.047		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Pyrene	0.037		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Benzo[a]anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Chrysene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/23/12 10:48	04/30/12 17:06	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	89		20 - 150				04/23/12 10:48	04/30/12 17:06	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0		0.50		ug/L			04/24/12 08:26	1
Toluene	1.7		0.50		ug/L			04/24/12 08:26	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 08:26	1
m-Xylene & p-Xylene	4.7		1.0		ug/L			04/24/12 08:26	1
o-Xylene	ND		1.0		ug/L			04/24/12 08:26	1
Xylenes, Total	5.3		1.0		ug/L			04/24/12 08:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	110		50 - 150					04/24/12 08:26	1
4-Bromofluorobenzene (Surr)	105		80 - 130					04/24/12 08:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.87		0.050		mg/L			04/24/12 08:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		50 - 150					04/24/12 08:26	1
Trifluorotoluene (Surr)	102		50 - 150					04/24/12 08:26	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.2	Y	0.12		mg/L		04/25/12 11:13	05/02/12 17:31	1
Motor Oil (>C24-C36)	1.4	Y	0.24		mg/L		04/25/12 11:13	05/02/12 17:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		50 - 150				04/25/12 11:13	05/02/12 17:31	1
n-Decanoic Acid (Surr)	0.3		0 - 1				04/25/12 11:13	05/02/12 17:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: DUP-1-Filtered

Lab Sample ID: 580-32440-22

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.16		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
2-Methylnaphthalene	ND		0.025		ug/L		04/23/12 10:48	04/30/12 17:28	1
1-Methylnaphthalene	0.15		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Acenaphthylene	0.032		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Acenaphthene	0.82		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Fluorene	0.019		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Phenanthrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Anthracene	0.071		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Pyrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Benzo[a]anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Chrysene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/23/12 10:48	04/30/12 17:28	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	82		20 - 150	04/23/12 10:48	04/30/12 17:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: DUP-2

Lab Sample ID: 580-32440-23

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
2-Methylnaphthalene	ND		0.025		ug/L		04/23/12 10:48	04/30/12 17:51	1
1-Methylnaphthalene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Acenaphthylene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Acenaphthene	1.9		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Fluorene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Phenanthrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Pyrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Benzo[a]anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Chrysene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/23/12 10:48	04/30/12 17:51	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 17:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	81		20 - 150	04/23/12 10:48	04/30/12 17:51	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			04/24/12 08:49	1
Toluene	ND		0.50		ug/L			04/24/12 08:49	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 08:49	1
m-Xylene & p-Xylene	ND		1.0		ug/L			04/24/12 08:49	1
o-Xylene	ND		1.0		ug/L			04/24/12 08:49	1
Xylenes, Total	ND		1.0		ug/L			04/24/12 08:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	112		50 - 150		04/24/12 08:49	1
4-Bromofluorobenzene (Surr)	97		80 - 130		04/24/12 08:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			04/24/12 08:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		50 - 150		04/24/12 08:49	1
Trifluorotoluene (Surr)	103		50 - 150		04/24/12 08:49	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.25	Y	0.12		mg/L		04/25/12 11:13	05/02/12 17:53	1
Motor Oil (>C24-C36)	0.44	Y	0.24		mg/L		04/25/12 11:13	05/02/12 17:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	84		50 - 150	04/25/12 11:13	05/02/12 17:53	1
n-Decanoic Acid (Surr)	0.1		0 - 1	04/25/12 11:13	05/02/12 17:53	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: DUP-2-Filtered

Lab Sample ID: 580-32440-24

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
2-Methylnaphthalene	ND		0.025		ug/L		04/23/12 10:48	04/30/12 18:13	1
1-Methylnaphthalene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Acenaphthylene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Acenaphthene	0.32		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Fluorene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Phenanthrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Pyrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Benzo[a]anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Chrysene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/23/12 10:48	04/30/12 18:13	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	67		20 - 150	04/23/12 10:48	04/30/12 18:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: DUP-NEAR

Lab Sample ID: 580-32440-25

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.31		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
2-Methylnaphthalene	ND		0.025		ug/L		04/23/12 10:48	04/30/12 18:36	1
1-Methylnaphthalene	0.28		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Acenaphthylene	0.35		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Acenaphthene	3.2		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Fluorene	2.9		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Phenanthrene	1.2		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Anthracene	0.18		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Fluoranthene	0.045		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Pyrene	0.037		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Benzo[a]anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Chrysene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/23/12 10:48	04/30/12 18:36	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	94		20 - 150				04/23/12 10:48	04/30/12 18:36	1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0		0.50		ug/L			04/24/12 09:11	1
Toluene	1.8		0.50		ug/L			04/24/12 09:11	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 09:11	1
m-Xylene & p-Xylene	4.7		1.0		ug/L			04/24/12 09:11	1
o-Xylene	ND		1.0		ug/L			04/24/12 09:11	1
Xylenes, Total	5.3		1.0		ug/L			04/24/12 09:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	109		50 - 150					04/24/12 09:11	1
4-Bromofluorobenzene (Surr)	105		80 - 130					04/24/12 09:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.90		0.050		mg/L			04/24/12 09:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		50 - 150					04/24/12 09:11	1
Trifluorotoluene (Surr)	102		50 - 150					04/24/12 09:11	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.3	Y	0.12		mg/L		04/25/12 11:13	05/02/12 18:15	1
Motor Oil (>C24-C36)	2.8	Y	0.24		mg/L		04/25/12 11:13	05/02/12 18:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150				04/25/12 11:13	05/02/12 18:15	1
n-Decanoic Acid (Surr)	0.3		0 - 1				04/25/12 11:13	05/02/12 18:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: DUP-NEAR-Filtered

Lab Sample ID: 580-32440-26

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.21		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
2-Methylnaphthalene	ND		0.025		ug/L		04/23/12 10:48	04/30/12 18:58	1
1-Methylnaphthalene	0.17		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Acenaphthylene	0.053		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Acenaphthene	0.91		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Fluorene	0.14		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Phenanthrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Anthracene	0.084		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Pyrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Benzo[a]anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Chrysene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Benzo[b]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Benzo[k]fluoranthene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Benzo[a]pyrene	ND		0.0096		ug/L		04/23/12 10:48	04/30/12 18:58	1
Indeno[1,2,3-cd]pyrene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Dibenz(a,h)anthracene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Benzo[g,h,i]perylene	ND		0.019		ug/L		04/23/12 10:48	04/30/12 18:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	77		20 - 150				04/23/12 10:48	04/30/12 18:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: Trip Blank

Lab Sample ID: 580-32440-27

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

Method: 8021B - Volatile Organics by 8021B (BTEX)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			04/24/12 00:31	1
Toluene	ND		0.50		ug/L			04/24/12 00:31	1
Ethylbenzene	ND		0.50		ug/L			04/24/12 00:31	1
m-Xylene & p-Xylene	ND		1.0		ug/L			04/24/12 00:31	1
o-Xylene	ND		1.0		ug/L			04/24/12 00:31	1
Xylenes, Total	ND		1.0		ug/L			04/24/12 00:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	107		50 - 150		04/24/12 00:31	1
4-Bromofluorobenzene (Surr)	97		80 - 130		04/24/12 00:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			04/24/12 00:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		50 - 150		04/24/12 00:31	1
Trifluorotoluene (Surr)	105		50 - 150		04/24/12 00:31	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

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

Lab Sample ID: MB 580-109748/1-A

Matrix: Water

Analysis Batch: 110170

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 109748

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
2-Methylnaphthalene	ND		0.026		ug/L		04/20/12 12:52	04/27/12 13:37	1
1-Methylnaphthalene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Acenaphthylene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Acenaphthene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Fluorene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Phenanthrene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Anthracene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Fluoranthene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Pyrene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Benzo[a]anthracene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Chrysene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Benzo[b]fluoranthene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Benzo[k]fluoranthene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Benzo[a]pyrene	ND		0.010		ug/L		04/20/12 12:52	04/27/12 13:37	1
Indeno[1,2,3-cd]pyrene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Dibenz(a,h)anthracene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1
Benzo[g,h,i]perylene	ND		0.020		ug/L		04/20/12 12:52	04/27/12 13:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	71		20 - 150	04/20/12 12:52	04/27/12 13:37	1

Lab Sample ID: LCS 580-109748/2-A

Matrix: Water

Analysis Batch: 110170

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 109748

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	2.00	1.79		ug/L		89	65 - 125
2-Methylnaphthalene	2.00	1.83		ug/L		92	65 - 125
1-Methylnaphthalene	2.00	1.81		ug/L		90	65 - 125
Acenaphthylene	2.00	1.88		ug/L		94	70 - 125
Acenaphthene	2.00	1.75		ug/L		87	65 - 125
Fluorene	2.01	1.81		ug/L		90	70 - 125
Phenanthrene	2.00	1.79		ug/L		90	70 - 125
Anthracene	2.00	1.56		ug/L		78	60 - 125
Fluoranthene	2.00	1.94		ug/L		97	75 - 125
Pyrene	2.00	1.86		ug/L		93	75 - 125
Benzo[a]anthracene	2.00	1.83		ug/L		92	70 - 125
Chrysene	2.00	1.73		ug/L		87	75 - 125
Benzo[b]fluoranthene	2.00	1.71		ug/L		86	70 - 125
Benzo[k]fluoranthene	2.00	1.70		ug/L		85	70 - 125
Benzo[a]pyrene	2.00	1.47		ug/L		74	55 - 125
Indeno[1,2,3-cd]pyrene	2.00	2.14		ug/L		107	65 - 125
Dibenz(a,h)anthracene	2.00	2.05		ug/L		102	65 - 130
Benzo[g,h,i]perylene	2.00	1.91		ug/L		96	65 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	75		20 - 150

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

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

Lab Sample ID: LCSD 580-109748/3-A

Matrix: Water

Analysis Batch: 110170

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 109748

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Naphthalene	2.00	1.90		ug/L		95	65 - 125	6	20	
2-Methylnaphthalene	2.00	1.92		ug/L		96	65 - 125	4	20	
1-Methylnaphthalene	2.00	1.88		ug/L		94	65 - 125	4	20	
Acenaphthylene	2.00	1.99		ug/L		99	70 - 125	6	20	
Acenaphthene	2.00	1.85		ug/L		92	65 - 125	5	20	
Fluorene	2.01	1.90		ug/L		95	70 - 125	5	20	
Phenanthrene	2.00	1.84		ug/L		92	70 - 125	3	20	
Anthracene	2.00	1.60		ug/L		80	60 - 125	3	20	
Fluoranthene	2.00	2.00		ug/L		100	75 - 125	3	20	
Pyrene	2.00	1.92		ug/L		96	75 - 125	3	20	
Benzo[a]anthracene	2.00	1.90		ug/L		95	70 - 125	4	20	
Chrysene	2.00	1.79		ug/L		90	75 - 125	3	20	
Benzo[b]fluoranthene	2.00	1.76		ug/L		88	70 - 125	2	20	
Benzo[k]fluoranthene	2.00	1.72		ug/L		86	70 - 125	1	20	
Benzo[a]pyrene	2.00	1.51		ug/L		76	55 - 125	2	20	
Indeno[1,2,3-cd]pyrene	2.00	2.27		ug/L		113	65 - 125	6	20	
Dibenz(a,h)anthracene	2.00	2.12		ug/L		106	65 - 130	3	20	
Benzo[g,h,i]perylene	2.00	2.00		ug/L		100	65 - 125	4	20	

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	74		20 - 150

Lab Sample ID: MB 580-109804/1-A

Matrix: Water

Analysis Batch: 110288

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 109804

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Naphthalene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
2-Methylnaphthalene	ND		0.026		ug/L		04/23/12 10:47	04/30/12 15:59	2
1-Methylnaphthalene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Acenaphthylene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Acenaphthene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Fluorene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Phenanthrene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Anthracene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Fluoranthene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Pyrene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Benzo[a]anthracene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Chrysene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Benzo[b]fluoranthene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Benzo[k]fluoranthene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Benzo[a]pyrene	ND		0.010		ug/L		04/23/12 10:47	04/30/12 15:59	2
Indeno[1,2,3-cd]pyrene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Dibenz(a,h)anthracene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2
Benzo[g,h,i]perylene	ND		0.020		ug/L		04/23/12 10:47	04/30/12 15:59	2

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14	78		20 - 150	04/23/12 10:47	04/30/12 15:59	2

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

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

Lab Sample ID: LCS 580-109804/2-A

Matrix: Water

Analysis Batch: 110288

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 109804

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	2.00	1.86		ug/L		93	65 - 125
2-Methylnaphthalene	2.00	1.89		ug/L		94	65 - 125
1-Methylnaphthalene	2.00	1.89		ug/L		95	65 - 125
Acenaphthylene	2.00	1.91		ug/L		96	70 - 125
Acenaphthene	2.00	1.80		ug/L		90	65 - 125
Fluorene	2.01	1.88		ug/L		94	70 - 125
Phenanthrene	2.00	1.85		ug/L		93	70 - 125
Anthracene	2.00	1.64		ug/L		82	60 - 125
Fluoranthene	2.00	2.13		ug/L		106	75 - 125
Pyrene	2.00	2.02		ug/L		101	75 - 125
Benzo[a]anthracene	2.00	1.91		ug/L		95	70 - 125
Chrysene	2.00	1.93		ug/L		96	75 - 125
Benzo[b]fluoranthene	2.00	1.75		ug/L		88	70 - 125
Benzo[k]fluoranthene	2.00	1.82		ug/L		91	70 - 125
Benzo[a]pyrene	2.00	1.40		ug/L		70	55 - 125
Indeno[1,2,3-cd]pyrene	2.00	1.84		ug/L		92	65 - 125
Dibenz(a,h)anthracene	2.00	1.95		ug/L		98	65 - 130
Benzo[g,h,i]perylene	2.00	1.92		ug/L		96	65 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Terphenyl-d14	80		20 - 150

Lab Sample ID: LCSD 580-109804/3-A

Matrix: Water

Analysis Batch: 110288

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 109804

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	2.00	1.63		ug/L		81	65 - 125	13	20
2-Methylnaphthalene	2.00	1.67		ug/L		83	65 - 125	12	20
1-Methylnaphthalene	2.00	1.68		ug/L		84	65 - 125	12	20
Acenaphthylene	2.00	1.71		ug/L		86	70 - 125	11	20
Acenaphthene	2.00	1.62		ug/L		81	65 - 125	10	20
Fluorene	2.01	1.74		ug/L		87	70 - 125	8	20
Phenanthrene	2.00	1.77		ug/L		89	70 - 125	4	20
Anthracene	2.00	1.59		ug/L		80	60 - 125	3	20
Fluoranthene	2.00	2.10		ug/L		105	75 - 125	1	20
Pyrene	2.00	1.99		ug/L		99	75 - 125	1	20
Benzo[a]anthracene	2.00	1.84		ug/L		92	70 - 125	4	20
Chrysene	2.00	1.88		ug/L		94	75 - 125	2	20
Benzo[b]fluoranthene	2.00	1.67		ug/L		84	70 - 125	5	20
Benzo[k]fluoranthene	2.00	1.73		ug/L		87	70 - 125	5	20
Benzo[a]pyrene	2.00	1.33		ug/L		67	55 - 125	5	20
Indeno[1,2,3-cd]pyrene	2.00	1.86		ug/L		93	65 - 125	1	20
Dibenz(a,h)anthracene	2.00	1.91		ug/L		96	65 - 130	2	20
Benzo[g,h,i]perylene	2.00	1.87		ug/L		93	65 - 125	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	82		20 - 150

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Method: 8021B - Volatile Organics by 8021B (BTEX)

Lab Sample ID: MB 580-109855/4

Matrix: Water

Analysis Batch: 109855

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			04/23/12 22:38	1
Toluene	ND		0.50		ug/L			04/23/12 22:38	1
Ethylbenzene	ND		0.50		ug/L			04/23/12 22:38	1
m-Xylene & p-Xylene	ND		1.0		ug/L			04/23/12 22:38	1
o-Xylene	ND		1.0		ug/L			04/23/12 22:38	1
Xylenes, Total	ND		1.0		ug/L			04/23/12 22:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	111		50 - 150		04/23/12 22:38	1
4-Bromofluorobenzene (Surr)	98		80 - 130		04/23/12 22:38	1

Lab Sample ID: LCS 580-109855/5

Matrix: Water

Analysis Batch: 109855

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	24.8		ug/L		99	80 - 125
Toluene	25.0	25.5		ug/L		102	80 - 120
Ethylbenzene	25.0	24.6		ug/L		98	80 - 125
m-Xylene & p-Xylene	50.0	50.0		ug/L		100	75 - 120
o-Xylene	25.0	24.5		ug/L		98	75 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene	92		50 - 150
4-Bromofluorobenzene (Surr)	97		80 - 130

Lab Sample ID: LCSD 580-109855/6

Matrix: Water

Analysis Batch: 109855

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	25.0	24.2		ug/L		97	80 - 125	2	20
Toluene	25.0	24.8		ug/L		99	80 - 120	3	20
Ethylbenzene	25.0	24.1		ug/L		96	80 - 125	2	20
m-Xylene & p-Xylene	50.0	49.0		ug/L		98	75 - 120	2	20
o-Xylene	25.0	24.1		ug/L		96	75 - 120	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene	89		50 - 150
4-Bromofluorobenzene (Surr)	97		80 - 130

Lab Sample ID: 580-32440-5 MS

Matrix: Water

Analysis Batch: 109855

Client Sample ID: MW-202

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		20.1	22.8		ug/L		114	60 - 135
Toluene	ND		20.1	22.7		ug/L		113	65 - 135
Ethylbenzene	ND		20.1	22.1		ug/L		109	65 - 135

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Method: 8021B - Volatile Organics by 8021B (BTEX) (Continued)

Lab Sample ID: 580-32440-5 MS

Matrix: Water

Analysis Batch: 109855

Client Sample ID: MW-202

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits	
	Result	Qualifier	Added	Result	Qualifier					
m-Xylene & p-Xylene	ND		40.1	44.5		ug/L		110	65 - 130	
o-Xylene	ND		20.1	21.4		ug/L		107	65 - 130	
Surrogate	%Recovery	MS Qualifier	Limits							
a,a,a-Trifluorotoluene	113		50 - 150							
4-Bromofluorobenzene (Surr)	96		80 - 130							

Lab Sample ID: 580-32440-5 MSD

Matrix: Water

Analysis Batch: 109855

Client Sample ID: MW-202

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Benzene	ND		20.1	22.7		ug/L		113	60 - 135	0	25
Toluene	ND		20.1	22.6		ug/L		113	65 - 135	0	25
Ethylbenzene	ND		20.1	22.1		ug/L		109	65 - 135	0	25
m-Xylene & p-Xylene	ND		40.1	44.3		ug/L		110	65 - 130	0	25
o-Xylene	ND		20.1	21.4		ug/L		107	65 - 130	0	25
Surrogate	%Recovery	MSD Qualifier	Limits								
a,a,a-Trifluorotoluene	113		50 - 150								
4-Bromofluorobenzene (Surr)	96		80 - 130								

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

Lab Sample ID: MB 580-109852/5

Matrix: Water

Analysis Batch: 109852

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline	ND		0.050		mg/L			04/23/12 22:38	1
Surrogate	%Recovery	MB Qualifier	Limits						
4-Bromofluorobenzene (Surr)	86		50 - 150						
Trifluorotoluene (Surr)	107		50 - 150						

Lab Sample ID: LCS 580-109852/6

Matrix: Water

Analysis Batch: 109852

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Gasoline	1.00	0.896		mg/L		90	79 - 110
Surrogate	%Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	90		50 - 150				
Trifluorotoluene (Surr)	94		50 - 150				

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

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

Lab Sample ID: LCSD 580-109852/7

Matrix: Water

Analysis Batch: 109852

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
Gasoline	1.00	0.868		mg/L		87	79 - 110	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
4-Bromofluorobenzene (Surr)	89		50 - 150
Trifluorotoluene (Surr)	90		50 - 150

Lab Sample ID: 580-32440-3 MS

Matrix: Water

Analysis Batch: 109852

Client Sample ID: MW-201

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	0.14		1.16	1.23		mg/L		94	50 - 150		

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	88		50 - 150
Trifluorotoluene (Surr)	105		50 - 150

Lab Sample ID: 580-32440-3 MSD

Matrix: Water

Analysis Batch: 109852

Client Sample ID: MW-201

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	0.14		1.16	1.24		mg/L		95	50 - 150	1	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	89		50 - 150
Trifluorotoluene (Surr)	105		50 - 150

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

Lab Sample ID: MB 580-109985/1-B

Matrix: Water

Analysis Batch: 110449

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 109985

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.13		mg/L		04/25/12 11:12	05/02/12 11:34	1
Motor Oil (>C24-C36)	ND		0.25		mg/L		04/25/12 11:12	05/02/12 11:34	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150	04/25/12 11:12	05/02/12 11:34	1
n-Decanoic Acid (Surr)	0.1		0 - 1	04/25/12 11:12	05/02/12 11:34	1

Lab Sample ID: LCS 580-109985/2-B

Matrix: Water

Analysis Batch: 110449

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 109985

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	5.00	3.89		mg/L		78	70 - 130		

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH with Silica Gel Cleanup

(Continued)

Lab Sample ID: LCS 580-109985/2-B

Matrix: Water

Analysis Batch: 110449

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 109985

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Motor Oil (>C24-C36)	5.00	4.36		mg/L		87	70 - 130
Surrogate							
		LCS	LCS				
		%Recovery	Qualifier				Limits
<i>o-Terphenyl</i>		82					50 - 150
<i>n-Decanoic Acid (Surr)</i>		0.9					0 - 1

Lab Sample ID: LCSD 580-109985/3-B

Matrix: Water

Analysis Batch: 110449

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 109985

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
#2 Diesel (C10-C24)	5.00	3.95		mg/L		79	70 - 130	2	30
Motor Oil (>C24-C36)	5.00	4.45		mg/L		89	70 - 130	2	30
Surrogate									
		LCSD	LCSD						
		%Recovery	Qualifier				Limits		
<i>o-Terphenyl</i>		85					50 - 150		
<i>n-Decanoic Acid (Surr)</i>		0.9					0 - 1		

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-200
Date Collected: 04/18/12 12:05
Date Received: 04/19/12 16:00

Lab Sample ID: 580-32440-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C	DL		109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM	DL	20	110170	04/27/12 22:31	BT	TAL SEA
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 14:43	BT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 00:54	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 00:54	JMB	TAL SEA
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 12:41	KKW	TAL SEA

Client Sample ID: MW-200-Filtered
Date Collected: 04/18/12 12:05
Date Received: 04/19/12 16:00

Lab Sample ID: 580-32440-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C	DL		109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM	DL	10	110170	04/27/12 22:53	BT	TAL SEA
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 15:05	BT	TAL SEA

Client Sample ID: MW-201
Date Collected: 04/18/12 14:00
Date Received: 04/19/12 16:00

Lab Sample ID: 580-32440-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 15:27	BT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 01:16	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 01:16	JMB	TAL SEA
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 13:04	KKW	TAL SEA

Client Sample ID: MW-201-Filtered
Date Collected: 04/18/12 14:00
Date Received: 04/19/12 16:00

Lab Sample ID: 580-32440-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 15:50	BT	TAL SEA

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-202

Lab Sample ID: 580-32440-5

Date Collected: 04/18/12 12:20

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 16:12	BT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 03:32	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 03:32	JMB	TAL SEA
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 13:26	KKW	TAL SEA

Client Sample ID: MW-202-Filtered

Lab Sample ID: 580-32440-6

Date Collected: 04/18/12 12:20

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 16:34	BT	TAL SEA

Client Sample ID: MW-203

Lab Sample ID: 580-32440-7

Date Collected: 04/18/12 14:55

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 16:57	BT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 04:40	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 04:40	JMB	TAL SEA
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 13:49	KKW	TAL SEA

Client Sample ID: MW-203-Filtered

Lab Sample ID: 580-32440-8

Date Collected: 04/18/12 14:55

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 17:19	BT	TAL SEA

Client Sample ID: MW-204

Lab Sample ID: 580-32440-9

Date Collected: 04/18/12 16:20

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 17:41	BT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 05:03	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 05:03	JMB	TAL SEA

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-204

Lab Sample ID: 580-32440-9

Date Collected: 04/18/12 16:20

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 14:10	KKW	TAL SEA

Client Sample ID: MW-204-Filtered

Lab Sample ID: 580-32440-10

Date Collected: 04/18/12 16:20

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 18:04	BT	TAL SEA

Client Sample ID: MW-204-NEAR

Lab Sample ID: 580-32440-11

Date Collected: 04/18/12 16:40

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 18:26	BT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 05:25	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 05:25	JMB	TAL SEA
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 14:33	KKW	TAL SEA

Client Sample ID: MW-204-NEAR-Filtered

Lab Sample ID: 580-32440-12

Date Collected: 04/18/12 16:40

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 18:48	BT	TAL SEA

Client Sample ID: MW-205

Lab Sample ID: 580-32440-13

Date Collected: 04/18/12 17:25

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 19:11	BT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 05:48	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 05:48	JMB	TAL SEA
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 14:55	KKW	TAL SEA

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-205-Filtered

Lab Sample ID: 580-32440-14

Date Collected: 04/18/12 17:25

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 19:33	BT	TAL SEA

Client Sample ID: MW-205-NEAR

Lab Sample ID: 580-32440-15

Date Collected: 04/18/12 17:45

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 19:55	BT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 06:11	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 06:11	JMB	TAL SEA
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 16:25	KKW	TAL SEA

Client Sample ID: MW-205-NEAR-Filtered

Lab Sample ID: 580-32440-16

Date Collected: 04/18/12 17:45

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 20:18	BT	TAL SEA

Client Sample ID: MW-206

Lab Sample ID: 580-32440-17

Date Collected: 04/18/12 10:35

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 20:40	BT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 06:33	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 06:33	JMB	TAL SEA
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 16:46	KKW	TAL SEA

Client Sample ID: MW-206-Filtered

Lab Sample ID: 580-32440-18

Date Collected: 04/18/12 10:35

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 21:02	BT	TAL SEA

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: MW-207

Lab Sample ID: 580-32440-19

Date Collected: 04/18/12 10:50

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 21:25	BT	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 06:56	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 06:56	JMB	TAL SEA
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 17:09	KKW	TAL SEA

Client Sample ID: MW-207-Filtered

Lab Sample ID: 580-32440-20

Date Collected: 04/18/12 10:50

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109748	04/20/12 12:53	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110170	04/27/12 21:47	BT	TAL SEA

Client Sample ID: DUP-1

Lab Sample ID: 580-32440-21

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109804	04/23/12 10:48	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110288	04/30/12 17:06	AP	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 08:26	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 08:26	JMB	TAL SEA
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 17:31	KKW	TAL SEA

Client Sample ID: DUP-1-Filtered

Lab Sample ID: 580-32440-22

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109804	04/23/12 10:48	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110288	04/30/12 17:28	AP	TAL SEA

Client Sample ID: DUP-2

Lab Sample ID: 580-32440-23

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109804	04/23/12 10:48	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110288	04/30/12 17:51	AP	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 08:49	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 08:49	JMB	TAL SEA

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Client Sample ID: DUP-2

Lab Sample ID: 580-32440-23

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 17:53	KKW	TAL SEA

Client Sample ID: DUP-2-Filtered

Lab Sample ID: 580-32440-24

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109804	04/23/12 10:48	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110288	04/30/12 18:13	AP	TAL SEA

Client Sample ID: DUP-NEAR

Lab Sample ID: 580-32440-25

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109804	04/23/12 10:48	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110288	04/30/12 18:36	AP	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 09:11	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 09:11	JMB	TAL SEA
Total/NA	Prep	3520C			109985	04/25/12 11:13	RD	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	110449	05/02/12 18:15	KKW	TAL SEA

Client Sample ID: DUP-NEAR-Filtered

Lab Sample ID: 580-32440-26

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			109804	04/23/12 10:48	RD	TAL SEA
Total/NA	Analysis	8270C SIM		1	110288	04/30/12 18:58	AP	TAL SEA

Client Sample ID: Trip Blank

Lab Sample ID: 580-32440-27

Date Collected: 04/18/12 00:00

Matrix: Water

Date Received: 04/19/12 16:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	109852	04/24/12 00:31	JMB	TAL SEA
Total/NA	Analysis	8021B		1	109855	04/24/12 00:31	JMB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Seattle	Alaska (UST)	State Program	10	UST-022
TestAmerica Seattle	California	NELAC	9	1115CA
TestAmerica Seattle	L-A-B	DoD ELAP		L2236
TestAmerica Seattle	L-A-B	ISO/IEC 17025		L2236
TestAmerica Seattle	Montana (UST)	State Program	8	N/A
TestAmerica Seattle	Oregon	NELAC	10	WA100007
TestAmerica Seattle	USDA	Federal		P330-11-00222
TestAmerica Seattle	Washington	State Program	10	C553

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Chevron Seattle Terminal 2012

TestAmerica Job ID: 580-32440-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-32440-1	MW-200	Water	04/18/12 12:05	04/19/12 16:00
580-32440-2	MW-200-Filtered	Water	04/18/12 12:05	04/19/12 16:00
580-32440-3	MW-201	Water	04/18/12 14:00	04/19/12 16:00
580-32440-4	MW-201-Filtered	Water	04/18/12 14:00	04/19/12 16:00
580-32440-5	MW-202	Water	04/18/12 12:20	04/19/12 16:00
580-32440-6	MW-202-Filtered	Water	04/18/12 12:20	04/19/12 16:00
580-32440-7	MW-203	Water	04/18/12 14:55	04/19/12 16:00
580-32440-8	MW-203-Filtered	Water	04/18/12 14:55	04/19/12 16:00
580-32440-9	MW-204	Water	04/18/12 16:20	04/19/12 16:00
580-32440-10	MW-204-Filtered	Water	04/18/12 16:20	04/19/12 16:00
580-32440-11	MW-204-NEAR	Water	04/18/12 16:40	04/19/12 16:00
580-32440-12	MW-204-NEAR-Filtered	Water	04/18/12 16:40	04/19/12 16:00
580-32440-13	MW-205	Water	04/18/12 17:25	04/19/12 16:00
580-32440-14	MW-205-Filtered	Water	04/18/12 17:25	04/19/12 16:00
580-32440-15	MW-205-NEAR	Water	04/18/12 17:45	04/19/12 16:00
580-32440-16	MW-205-NEAR-Filtered	Water	04/18/12 17:45	04/19/12 16:00
580-32440-17	MW-206	Water	04/18/12 10:35	04/19/12 16:00
580-32440-18	MW-206-Filtered	Water	04/18/12 10:35	04/19/12 16:00
580-32440-19	MW-207	Water	04/18/12 10:50	04/19/12 16:00
580-32440-20	MW-207-Filtered	Water	04/18/12 10:50	04/19/12 16:00
580-32440-21	DUP-1	Water	04/18/12 00:00	04/19/12 16:00
580-32440-22	DUP-1-Filtered	Water	04/18/12 00:00	04/19/12 16:00
580-32440-23	DUP-2	Water	04/18/12 00:00	04/19/12 16:00
580-32440-24	DUP-2-Filtered	Water	04/18/12 00:00	04/19/12 16:00
580-32440-25	DUP-NEAR	Water	04/18/12 00:00	04/19/12 16:00
580-32440-26	DUP-NEAR-Filtered	Water	04/18/12 00:00	04/19/12 16:00
580-32440-27	Trip Blank	Water	04/18/12 00:00	04/19/12 16:00

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamerica.com

Rush
 Short Hold

Chain of
Custody Record

Client: Acudis Client Contact: Saw Miles Date: 4-19-12 Chain of Custody Number: 1 of 14775

Address: 2300 Eastlake Ave East, Suite 200 Telephone Number (Area Code/Fax Number): 206-726-4720/954-2463131 Lab Number: 32440 Page: 1 of 3

City: Seattle, WA 98102 State: WA Zip Code: 98102 Sampler: SWM SWM Lab Contact: Kristine Allen

Project Name and Location (State): Former Unocal Seattle Marketing Billing Contact: Termini 1

Contract/Purchase Order/Quote No.:

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix			Containers & Preservatives						Analysis (Attach list if more space is needed)	Page	
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH			ZnAc/NaOH
MW-200	4-18-12	1205	X											1
MW-200-Filtered		1205	X											2
MW-201		1400	X											3
MW-201-Filtered		1400	X											4
MW-202		1220	X											5
MW-202-Filtered		1220	X											6
MW-203		1455	X											7
MW-203-Filtered		1455	X											8
MW-204		1620	X											9
MW-204-Filtered		1620	X											10
MW-204-NEAR		1646	X											11
MW-204-NEAR-Filtered		1646	X											12

Cooler: Yes No Cooler Temp: _____ Possible Hazard Identification: Non-Hazard Flammable Skin Irritant Poison B Unknown Sample Disposal: Return to Client Disposal By Lab Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): 24 Hours 48 Hours 5 Days 10 Days 15 Days Other: Standard

1. Relinquished By: Francisco Lopez Jr Date: 4/19/12 Time: 1235

2. Relinquished By: Francisco Lopez Jr Date: _____ Time: _____

3. Relinquished By: Francisco Lopez Jr Date: _____ Time: _____

Comments: _____

Rush
 Short Hold

Chain of Custody Record

Client: **Arceadis** Client Contact: **Sara Miles** Date: **4-19-12** Chain of Custody Number: **14771**

Address: **2300 Eastlake Ave East Suite 200** Telephone Number (Area Code)/Fax Number: **206-726-4720/4542903131** Lab Number: **32440** Page: **2 of 3**

City: **Seattle** State: **WA** Zip Code: **98108** Sampler: **SWM SLM** Lab Contact: **Kristine Allen** Billing Contact: **Kristine Allen**

Project Name and Location (State): **Former Unocal Seattle Marketing Terminal**

Sample I.D. and Location/Description <small>(Containers for each sample may be combined on one line)</small>	Date	Time	Matrix			Containers & Preservatives						Analysis (Attach list if more space is needed)	Special Instructions/ Conditions of Receipt	
			Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH			ZnAc/ NaOH
MW-205	4-18-12	1725	X											13
MW-205 Filtered		1725	X											14
MW-205 NEAR		1725	X											15
MW-205 NEAR Filtered		1725	X											16
MW-206		1035	X											17
MW-206 Filtered		1035	X											18
MW-207		1050	X											19
MW-207 Filtered		1050	X											20
Dup-1			X											21
Dup-1 Filtered			X											22
Dup-2			X											23
Dup-2 Filtered			X											24

Cooler: Yes No Cooler Temp: _____ Possible Hazard Identification: Non-Hazard Flammable Skin Irritant Poison B Unknown Sample Disposal: Return to Client Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): 24 Hours 48 Hours 5 Days 10 Days 15 Days Other: **Standard**

1. Relinquished By Sign/Print: **Francisco Lopez J.** Date: **4-19-12** Time: **12:35**

2. Relinquished By Sign/Print: **Francisco Lopez J.** Date: **4-19-12** Time: **12:35**

3. Relinquished By Sign/Print: _____ Date: _____ Time: _____

Comments: _____

DISTRIBUTION: WHITE - Stays with the Samples; CANARY - Returned to Client with Report; PINK - Field Copy

TAL-8274-580 (0210)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 580-32440-1

Login Number: 32440

List Number: 1

Creator: Gamble, Cathy

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	N/A	
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.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

