PROGRESS REPORT - SECOND QUARTER 2013

Fred Meyer Property (aka Bethel Texaco, Facility Site ID #2641)

Port Orchard, Washington

Ecology Site ID #2555, Agreed Order No. DE 9040

Prepared for:

Fred Meyer Stores, Inc.
3300 SE 22nd Ave.
Suite 23E
Portland, Oregon 97202-2999

Washington State Department of Ecology
Toxics Cleanup Program
3190 160th Avenue, SE
Bellevue, Washington 98008

Prepared by:

AMEC Environment & Infrastructure, Inc.
7376 SW Durham Road
Portland, Oregon 97224
(503) 639-3400

August 2013

Project No. 9-61M-102820

August 12, 2013
Project No. 9-61M-102820

Daniel Hermann
Fred Meyer Stores, Inc.
3300 SE 22nd Ave.
Suite 23E
Portland, Oregon 97202-2999

Louise Bardy
Washington State Department of Ecology
Toxics Cleanup Program
3190 160th Ave., SE
Bellevue, Washington 98008

Subject: **Progress Report – Second Quarter 2013**
Fred Meyer Property (aka Bethel Texaco, Facility Site ID #2614)
1900 SE Sedgewick Road
Port Orchard, Washington
Ecology Site ID #2555, Agreed Order No. DE 9040

Dear Mr. Hermann and Ms. Bardy:

AMEC Environment & Infrastructure, Inc. (AMEC) is pleased to submit this Progress Report for the above referenced Site as provided in Agreed Order No. DE 9040. This report summarizes the results of the groundwater quality monitoring and other activities conducted at the Site during the second quarter of 2013. We appreciate the opportunity to assist Fred Meyer in implementing this project. If you have any questions or comments regarding this report, please contact the undersigned at (503) 639-3400.

Sincerely,

AMEC Environment & Infrastructure, Inc.

Joel Eledge, CHMM
Environmental Scientist

Reviewed by:

Kurt Harrington, PE
Project Manager

Attachments

JE/KH/lp

AMEC Environment & Infrastructure, Inc.
7376 SW Durham Road
Portland, Oregon
USA 97224
Tel+1 (503) 639-3400
Fax+1 (503) 620-7892
www.amec.com

TABLE OF CONTENTS

Page

TABLES

FIGURES

APPENDICES

PROGRESS REPORT
Second Quarter 2013
Fred Meyer Property (aka Bethel Texaco, Facility Site ID #2614)
Port Orchard, Washington

1.0 INTRODUCTION

AMEC Environment & Infrastructure, Inc. (AMEC) has prepared this Progress Report (Report) on behalf of Fred Meyer Stores, Inc. (Fred Meyer) to document groundwater quality monitoring and remediation system maintenance performed by AMEC at the Fred Meyer-Port Orchard service station (Site) on June 11 and 12, 2013. The Report is being prepared and submitted pursuant to Agreed Order No. DE 9040, Section VIII.H

The Site is located at the southeastern corner of the intersection of SE Sedgewick Road and Bethel Road SE in Port Orchard, Washington (Figure 1). Historical releases from a pre-1990 underground storage tank (UST) system associated with Bethel Texaco service station (Facility/Site ID #2614) that formerly occupied the Site had impacted underlying soil and groundwater. Between 1999 and 2001, the Site was redeveloped with the existing Fred Meyer branded fuel station.

Release Identification number 2555 has been assigned to the Site by the Washington State Department of Ecology (Ecology). Previous investigations and remedial efforts conducted at the Site are documented in the Remedial Investigation Report (AMEC, 2010a). Cleanup action alternatives for treating residual petroleum-related contamination in subsurface soil and groundwater beneath the Site were evaluated and the most feasible cleanup action was identified in the Cleanup Action Plan (AMEC, 2010b). Continued operation of the existing air sparging (AS) and soil vapor extraction (SVE) system will continue until concentrations of contaminants of potential concern (COPCs) remaining in soil and groundwater beneath the Site are reduced to levels less than the Model Toxics Control Act (MTCA) Method A cleanup standards. An Agreed Order governing the Site remediation (No. DE 9040) was signed on May 10, 2012 (State of Washington Department of Ecology, 2012).

2.0 STATUS OF SUBSURFACE REMEDIATION SYSTEMS, ON-SITE ACTIVITIES, AND DEVIATIONS FROM CAP OR SCHEDULE

AMEC has operated an air sparging/soil vapor extraction (AS/SVE) system at the Site since March 2000. The current air sparging (AS) and vapor extraction (VE) points are shown on Figure 2. A

description of the original system design, installation, and operations is presented in AMEC's third quarter 2004 Quarterly Site Report dated January 20, 2005 (AMEC, 2005). Because of damage incurred during construction of the Fred Meyer branded fuel station and expansion of adjacent roadways from 1999 into the early 2000s, the AS groundwater treatment system was completely offline between August 2002 and February 21, 2009 and the SVE system operated at a limited capacity from July 2001 through June 2006. During June 2006, further damage to the SVE system's aboveground components resulted in the SVE component becoming inoperable.

AMEC conducted an assessment of the AS/SVE system during a Site visit on June 19, 2008, and began a series of system repairs and optimization steps as detailed in the Progress Report - First Quarter 2012 (AMEC, 2012a). During October 2008, four shallow groundwater monitoring wells (MW-108A, MW-109, MW-110, and MW-111) were installed in place of wells that had been inadvertently destroyed during construction activities in 1999 and 2000.

To increase flow in the sparging system, the AS manifold was modified to separate high-flow and low-flow sparge points in January 2012 (AMEC, 2012a). The high-flow sparge points (AS-1 and AS-10) were connected to low-pressure/high-volume rotary vane compressor #2 and the low-flow sparge points (AS-5, AS-6, and AS-7) were connected to a newly installed high-pressure/low-volume air compressor. Rotary vane compressor #1 and select sparge points were taken off-line to focus air flow and sparging near monitoring wells MW-103 and MW-110 (AMEC, 2012b).

In February 2013, AMEC shut down the two high-pressure/low-volume air compressors and re-routed all active sparge points (AS-1, AS-5, AS-6, AS 7, and AS-10) to the low-pressure/high-volume rotary vane compressor #2 when it was observed that subsurface entry pressures at wellheads AS-1 and AS-10 had decreased.

2.1 DEVIATIONS FROM CAP OR SCHEDULE

During this reporting period, there were no deviations from the required tasks under the Agreed Order or from the Corrective Action Plan (CAP), and no deviations in schedule.

3.0 GROUNDWATER MONITORING

3.1 MONITORING WELL MW-109A INSTALLATION

In the first quarter 2013 monitoring report, AMEC recommended installing a new monitoring well (MW-109A) within the landscaped area immediately north of MW-109 (Figure 2) to better assess surrounding subsurface conditions in the vicinity of MW-109, where benzene has been

intermittently detected in shallow groundwater. Ms. Carrie Pederson, the Ecology project manager, provided approval for the installation of new monitoring well MW-109A via email on June 4, 2013.

On June 11, 2013, monitoring well MW-109A was installed using hollow-stem auger drilling methods in accordance with applicable Ecology monitoring well regulations. Drilling was performed by Holt Services, Inc. of Edgewood, Washington. The 2-inch diameter monitoring well was installed to a depth of 30 feet below ground surface (bgs) with a 10 foot screened interval located between 20 and 30 feet bgs.

An AMEC environmental scientist logged the character of the soil encountered in addition to any other observations (i.e., visual evidence of impact, olfactory indications of impact, and headspace readings). Soil was field screened for the presence of volatile organic compounds (VOCs) using a photoionization detector (PID). The character of the soil encountered, in addition to any other observations (e.g., visual and olfactory indications of impact), were recorded in on a soil log. The soil boring and well construction log for MW-109A is included in Appendix A.

Subsurface conditions encountered in the boring beneath the approximately 2.5 feet of fill consisted of medium dense, brown or gray, fine to medium silty sand with occasional gravel. Saturated soils were initially observed at approximately 20 feet bgs. No elevated PID readings or other evidence of contamination (odors, discoloration, or sheen) were observed in the boring.

AMEC personnel surged and developed monitoring well MW-109A following installation on June 11, 2013. The well as mechanically surged with a surge block and then approximately 55 gallons of groundwater were removed from it with a hand bailer and stored in a sealed 55-gallon drum pending chemical characterization and off-site disposal. A copy of the field form documenting the well development is included as Appendix A. AMEC also conducted a relative top-of-casing elevation survey for the new monitoring well using a construction level. MW-109A was surveyed relative to existing wells MW-109 and MW-110 to establish mean sea level (msl) elevation

Second quarter 2013 groundwater quality monitoring was conducted on June 12, 2013. Construction details for the Site's groundwater monitoring and remediation wells are summarized in Table 1. Field logs are provided in Appendix A. Sampling methodology and monitoring results are discussed below.

3.2 SITE HYDROGEOLOGY

Depth-to-water measurements were recorded in monitoring wells MW-103, MW-105, MW-108A, MW-109, MW-019A, MW-110, and MW-111 to the nearest 0.01-foot from the top of the well casing

(TOC) using an electronic water level indicator. The measurements were converted to elevations relative to msl using surveyed TOC elevations. Groundwater elevation data are presented in Table 2 and Figure 2.

The calculated groundwater elevations suggest that the overall direction of shallow groundwater flow at the Site was directed to the west-southwest, consistent with previous monitoring events. AMEC calculated a shallow groundwater gradient of approximately 0.06 vertical feet per lateral foot (ft/ft) between monitoring wells MW-109 and MW-111 for the monitoring event.

However, unlike previous monitoring events, the groundwater elevations in monitoring wells MW-110, MW-103, and MW-105 were higher than is consistent with a continuous west-southwest flow gradient across the Site. The increased volume of air flow directed from the sparging system into groundwater near monitoring wells MW-103 and MW-110 since February 2013 may have caused localized groundwater mounding, resulting in the higher than expected groundwater elevations observed in these wells.

3.3 GROUNDWATER SAMPLING

On June 12, 2013 groundwater samples were collected from monitoring wells MW-103, MW-105, MW-108A, MW-109A, MW-110, and MW-111 using low-flow techniques. Prior to sampling, groundwater was purged from each monitoring well using a direct-current electric submersible pump equipped with a check-valve and an attached disposable sample bailer. Water quality indicator parameters including temperature, hydrogen ion concentration (pH), dissolved oxygen, specific conductivity, and oxidation-reduction potential were measured using field instrumentation and recorded on groundwater sampling logs (Appendix A). Purging continued until values of the indicator parameters stabilized, indicating that formation water was entering the well casing and sampling intake. Samples were transferred from the bailer to laboratory-supplied containers, labeled, stored with ice in an insulated container, and transported under chain-of-custody protocol to Apex Labs, Inc. in Tigard, Oregon. Non-disposable sampling equipment was decontaminated between uses by scrubbing in an Alconox detergent solution, followed by two successive deionized water rinses.

3.3.1 Analytical Program

The June 12, 2013 groundwater samples were analyzed for gasoline-range organics (GRO) by Northwest Method Total Petroleum Hydrocarbon-Gasoline (NWTPH-Gx) and for selected VOCs by United States Environmental Protection Agency (EPA) Method 8260B.

Photocopies of the analytical reports and the chain-of-custody documents are provided in Appendix B. The analytical data for the June 2013 groundwater samples will be entered into Ecology's Environmental Information Management System (EIM), as required by Agreed Order No. 9040 (Ecology, 2012). A historical summary of COPCs detected in groundwater from May 1991 through June 2013 is presented in Appendix C.

Concentrations of constituents measured in the groundwater samples were compared to screening criteria developed on the basis of Ecology's MTCA regulations. MTCA Method A screening criteria were used when available for detected constituents. These MTCA methods provide conservative cleanup levels for use in routine cleanup actions and are used herein as screening tools.

3.3.2 Analytical Results and Cleanup Levels

The analytical results for the June 2013 groundwater samples are summarized in Table 2 and depicted on Figure 3. VOCs were detected in one of the wells sampled at the Site (MW-109A).

- GRO was not detected in any of the wells samples at the Site on June 12, 2013.
- Benzene was detected in MW-109A at 6.69 micrograms per liter (µg/L) in the June 12, 2013 sample, exceeding the MTCA Method A criterion (5 µg/L). No other VOC compounds were detected above their respective laboratory method detection limits (MDLs) in the groundwater samples tested.

3.3.3 Non-Aqueous Phase Liquid - Not Present

Neither measurable non-aqueous phase liquid (NAPL) nor a petroleum-related sheen were observed in groundwater samples collected from monitoring wells MW-103, MW-105, MW-108A, MW-109A, MW-110, and MW-111 during the second quarter 2013 (1Q13) event.

3.3.4 Data Trends

The patterns of GRO and VOCs observed in MW-103 and MW-110 exhibit seasonal variations, and appear to be inversely correlated with groundwater levels to some extent. Consistent with past second quarter sampling events, GRO and VOCs were not detected in MW-103 and MW-110. GRO and VOC concentrations in wells MW-105, MW-108A, and MW-111 remained below MDLs. GRO and VOCs have not been detected in MW-105 since the June 2008 monitoring event or in MW-108A since installation and initial sampling in January 2009.

Benzene Detections in MW-109 and MW-109A

Intermittent detections of benzene have been reported in MW-109 since the well was initially sampled in January 2009. Groundwater data from January 2009 through February 2013 (Appendix C) do not indicate any apparent correlation between benzene detections and

groundwater elevations or between benzene detections and any particular quarter of the year. The intermittent nature of these detections and the absence other volatile petroleum constituents in the benzene-containing samples suggest that the benzene detected in MW-109 may be from a different source than the contamination detected in down-gradient wells MW-103 and MW-110.

MW-109 is located approximately 20 feet north of and down slope from the fueling islands in a high vehicle traffic area. Because the well monument is located in a high traffic driveway and is elevated slightly above the existing pavement grade, AMEC surmised it was possible that the cumulative effects of vehicles driving over the protruding monument could have produced minor fractures in the monument or the well casing (too small to be observed by visual inspection) that allowed finite periodic infiltration of surface runoff contaminants.

In order to better assess subsurface conditions in the vicinity of MW-109 and potential of surface infiltration, AMEC installed new monitoring well MW-109A with a similar screened interval approximately 10 feet to the north within the landscaped area – outside of the vehicle traffic and fueling station pavement runoff pathways. Benzene was detected in the June 12, 2013 groundwater sample collected from monitoring well MW-109A. The detection of benzene in new well MW-109A suggests the benzene detections in the vicinity of MW-109 and MW-109A do not appear to be related to infiltration of surface runoff contaminants on the Fred Meyer property.

Groundwater monitoring wells MW-109 and MW-109A appear to be located up-gradient or cross-gradient from known historical and current fuel station operations on the Fred Meyer property. AMEC is currently evaluating other potential off-Site sources for these benzene detections, including the Sedgwick One Stop BP cleanup facility located to the north of the Fred Meyer property across Sedgwick Road, in a potentially up-gradient orientation.

3.3.5 Quality Assurance/Quality Control

AMEC reviewed the laboratory's analytical reports (Appendix B) to assess overall data quality. The data has not been limited by qualifiers and is usable as reported for the purposes of this report.

4.0 AIR SPARGING/SOIL VAPOR EXTRACTION SYSTEM MONITORING

The AS/SVE system monitoring and maintenance visit was conducted on June 11, 2012. The SVE system was operating at 100% on arrival for the maintenance visit. A copy of the February 11 AS/SVE performance monitoring data sheet is provided in Appendix A. AMEC measured total VOC concentrations in return air, vacuum pressure, and flow velocity for each of the five SVE wells located at the Site and for the total system. Total VOC concentrations were measured using a PID calibrated to isobutylene. Total influent VOCs were measured as 0.0 parts per million (ppm). A

vacuum gauge reading of 60 inches of water was observed for each of the SVE wells. A combined flow rate of 260 cubic feet per minute (cfm) was estimated from measured vacuum and the manufacturer's blower curve. Based on the VOC system influent concentrations and volumetric flow rates at the beginning and end of the monitoring period, the SVE remediation system removed approximately 0 pounds (lbs) of volatile constituents from the subsurface over the 120-day monitoring period (Table 3).

In February 2013, AMEC shut down the two high-pressure/low-volume air compressors and re-routed the sparging to connect all active sparge points (AS-1, AS-5, AS-6, AS-7, and AS-10) to the low-pressure/high-volume rotary vane compressor #2 (AMEC, 2013). Air flow rates measured on June 11, 2013 in each of the five active AS well conveyance lines ranged from 5 to 15 cfm, with a mean value of 11 cfm. Dissolved oxygen (DO) levels were measured in each of the six Site groundwater monitoring wells on June 12, 2013. DO levels ranged from 0.75 milligrams per liter (mg/L) in monitoring well MW-111 to 18.9 mg/L in monitoring well MW-110. The DO levels measured in monitoring wells MW-103, MW-105, and MW-110 exceeded saturation (calculated based on the measured water temperatures and specific conductivity values).

DO levels measured in the groundwater monitoring wells since reactivation of the AS system in February 2009 are summarized in Table 4. Since the December 2011 monitoring event, oxygen concentrations have remained generally elevated in all wells, with the exception of downgradient MW-111. The super-saturated oxygen concentrations observed in monitoring wells MW-103, MW-105, and MW-110 in the June 2013 monitoring event suggest that the February 2013 AS system modifications have been successful at focusing additional air delivery into the groundwater in this portion of the Site, as intended.

Overall, concentrations of weathered GRO in groundwater samples obtained from monitoring wells MW-103 and MW-110 appear to be decreasing since efforts to increase air sparging in the vicinity of these source area wells were initiated in January 2012. As mentioned, GRO levels in MW-103 and MW-110 exhibit seasonal variations in response to decreasing water levels during the summer months. However, GRO levels in these wells have only exceeded the MTCA Method A cleanup standard of 800 μg/L in one of the last six monitoring events since January 2012.

5.0 SUMMARY

The results of the second quarter 2013 monitoring event are summarized as follows:

1. On June 11, 2013, new monitoring well MW-109A was installed within the landscaped area approximately 10 feet to the north of existing monitoring well MW-109 (Figure 3). The

MW-109 and MW-109A well locations are designed to serve as a compliance monitoring point upgradient of the residual contamination associated with the former Bethel Texaco station service.

2. The shallow groundwater piezometric surface was evaluated from water level measurements collected from Site monitoring wells. Similar to previous monitoring events, the overall gradient was directed to the west-southwest with an estimated magnitude of 0.06 ft/ft. Unlike previous monitoring events, the groundwater elevations in monitoring wells MW-110, MW-103, and MW-105 were higher than is consistent with a continuous west-southwest flow gradient across the Site. The increased volume of air flow directed from the sparging system into groundwater near monitoring wells MW-103 and MW-110 appears to have caused localized groundwater mounding, resulting in the higher than expected groundwater elevations observed in these wells.
3. Neither measurable NAPL nor sheen was observed. NAPL and sheen have not been observed in the monitoring wells since 1999.
4. The AS/SVE system was 100% operational during the second quarter 2013 reporting period.
5. GRO was not detected above the MDL in the Site groundwater monitoring wells.
6. Benzene was detected in MW-109A at 6.69 µg/L in the June 12, 2013 groundwater sample, exceeding the MTCA Method A criterion. The source of previous intermittent benzene detections in MW-109 and the recent benzene detection in MW-109A is currently unknown. The presence of benzene in new well MW-109A suggests benzene detections in the vicinity of MW-109 and MW-109A do not appear to be related to infiltration of surface runoff contaminants. AMEC is currently evaluating other potential sources of these benzene detections.
7. Apart from the detection of benzene in monitoring well MW-109A, VOCs were not detected above their respective laboratory MDLs in MW-109A or the remaining Site groundwater monitoring wells.

6.0 FUTURE PLANNED ACTIVITIES AND DELIVERABLES

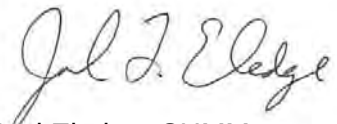
During the next reporting period, AMEC will continue to conduct monthly maintenance checks on the AS and SVE systems to ensure they are operating properly in accordance with the requirements of Agreed Order No. 9040 (Ecology, 2012). AMEC will conduct the next quarterly groundwater and quality samples visit within the third quarter of 2013.

AMEC is currently evaluating potential off-Site sources for the benzene detections in groundwater monitoring wells MW-109 and MW-109A, including the Sedgwick One Stop BP cleanup facility located to the north of the Fred Meyer property across Sedgwick Road, in a potentially up-gradient orientation. AMEC submitted a Public Records Request to Ecology for this facility on July 10, 2013 and will conduct a review of this facility's regulatory file, once made available by Ecology.

7.0 CLOSING

AMEC appreciates the opportunity to be of service to Fred Meyer on this project. If you have any questions, or if we can be of further assistance, please contact the undersigned at (503) 639-3400.

AMEC Environment & Infrastructure, Inc.



Joel Eledge, CHMM
Environmental Scientist

Reviewed by:

Kurt Harrington, PE
Project Manager

JE/KH/lp

REFERENCES

AMEC Earth & Environmental, Inc., 2005. Quarterly Site Report - Third Quarter 2004, Fred Meyer Property, Port Orchard, Washington. January 20, 2005.

----, 2010a, Remedial Investigation Report, Fred Meyer Stores, Inc. - Port Orchard Site, 1900 SE Sedgwick Road, Port Orchard, Washington, Ecology Site ID #96424236 (formerly J5E03), May 4, 2010.

----, 2010b, Cleanup Action Plan, Fred Meyer Stores, Inc. - Port Orchard Site, 1900 SE Sedgwick Road, Port Orchard, Washington, Ecology Site ID #96424236 (formerly J5E03), May 4, 2010.

AMEC Environment & Infrastructure, Inc. 2012a. Progress Report - Fourth Quarter 2011 & First Quarter 2012, Fred Meyer Property (aka Bethel Texaco, Facility Site ID #2614), 1900 SE Sedgewick Road, Port Orchard, Washington. March 8, 2012.

----, 2012b. Progress Report - Second Quarter 2012, Fred Meyer Property (aka Bethel Texaco, Facility Site ID #2614), 1900 SE Sedgewick Road, Port Orchard, Washington. July 2, 2012.

----, 2013. Progress Report - First Quarter 2013, Fred Meyer Property (aka Bethel Texaco, Facility Site ID #2614), 1900 SE Sedgewick Road, Port Orchard, Washington. May 14, 2013.

State of Washington Department of Ecology (Ecology), 2012. Agreed Order No. 9040 for Final Cleanup Action and Compliance Monitoring. May 10, 2012.

LIMITATIONS

This report was prepared exclusively for Fred Meyer Stores, Inc. (Fred Meyer) and its agents by AMEC Environment & Infrastructure, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and are based on: i) information available at the time of preparation; ii) data supplied by outside sources; and iii) the assumptions, conditions and qualifications set forth in this report. This report is intended for use by Fred Meyer, for the Site at 1900 SE Sedgewick Road, Port Orchard, Washington only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

The findings contained herein are relevant to the dates of the AMEC Site visits and should not be relied upon to represent conditions later. In the event that changes in the nature, usage, or layout of the property or nearby properties are made, the conclusions and recommendations contained in this report may not be valid. If additional information becomes available, it should be provided to AMEC so the original conclusions and recommendations can be modified as necessary.

TABLES

TABLE 1
Well Construction Summary
Fred Meyer Facility, Port Orchard, Washington

Well ID	Install Date	Top of Casing Elevation (feet msl)	Boring Depth (feet bgs)	Casing Diameter (inches)	Screen Interval (feet bgs)
Active Monitoring Wells					
MW-103	5/6/91	311.70	32	4	12-32
MW-105	11/10/99	310.46	30	2	10-30
MW-108A	10/1/08	310.38	30	2	15-30
MW-109	10/02/08	310.48	32	2	15-30
MW-109A	06/11/13	311.71	30	2	20-30
MW-110	10/1/08	312.77	30	2	15-30
MW-111	10/1/08	310.62	40	2	25-40
Vapor Extraction Wells					
VE-1^	11/4/99	NA	15	0.75	~7.5-15
VE-2^	11/4/99	NA	15	0.75	~7.5-15
VE-3	11/3/99	NA	15	0.75	7.5-15
VE-4	11/3/99	NA	15	0.75	7.5-15
VE-5	11/3/99	NA	15	0.75	7.5-15
Air-Sparging Wells					
AS-1^	11/4/99	NA	~35	0.75	~30-35
AS-2^	11/4/99	NA	~35	0.75	~30-35
AS-3^	11/4/99	NA	~35	0.75	~30-35
AS-4^	11/4/99	NA	~35	0.75	~30-35
AS-5	11/3/99	NA	~35	0.75	30-35
AS-6	11/3/99	NA	~35	0.75	30-35
AS-7	11/3/99	NA	~35	0.75	30-35
AS-8^	11/3/99	NA	~35	0.75	~30-35
AS-9	11/3/99	NA	~35	0.75	30-35
AS-10	11/3/99	NA	~35	0.75	30-35
Destroyed and Decommissioned Monitoring Wells					
MW-1S	10/15/90	312.56	38.5	2	18.5-38.5
MW-1D	10/15/90	313.00	79.5	2	34.5-80
MW-2S	10/23/90	304.53	38	2	18-38
MW-2D	10/23/90	301.13	78	2	43-78
MW-101	5/13/91	not reported	79	2	60-79
MW-102	5/13/91	not reported	81	2	61-81
MW-104	5/6/91	not reported	not reported	2	not reported
MW-106*	11/10/99	311.73	30	2	10-30
MW-107*	11/9/99	310.59	30	2	10-30
MW-108*	11/9/99	309.94	30	2	10-30

Notes:
msl = Mean sea level
bgs = Below ground surface
^ = Well at 45° angle
* = Well was destroyed during construction of the fueling station
NA = not applicable
~ = approximately

TABLE 2
Groundwater Elevations and Analytical Results
Detected Constituents - Second Quarter 2013 Monitoring Event
Fred Meyer Facility, Port Orchard, Washington

			Volatile Organic Compounds								Groundwater Levels			Final Dissolved Oxygen
Well No.	**Date**	**Gasoline Range Organics**	**Benzene**	**Toluene**	**Ethyl-benzene**	**Total Xylenes**	**MTBE**	**EDC**	**EDB**	**Naph-thalene**	**Casing Elev.**	**Depth to Water**	**Water Elev.**	
CAS RN		not applicable	71-43-2	108-88-3	100-41-4	1330-20-7	1634-04-4	107-06-2	106-93-4	91-20-3				
		(µg/L)	(µg/L)								(feet msl)	(feet toc)	(feet msl)	(mg/L)
MTCA Method A		**800**	**5**	**1,000**	**700**	**1,000**	**20**	**5**	**0.01**	**160**				
Well ID	Date													
MW-103	8/8/2012	**2,490**	0.250 U	1.00 U	**4.30**	**27.0**	1.00 U	0.500 U	0.500 U	**3.04**	311.70	22.61	289.09	9.92
MW-103	11/14/2012	**305**	0.250 U	1.00 U	**0.650**	**1.51**	1.00 U	0.500 U	0.500 U	2.00 U	311.70	24.45	287.25	2.97
MW-103	2/11/2013	**311**	0.125 U	0.500 U	**0.450 J**	**1.62**	0.500 U	0.250 U	0.250 U	1.00 U	311.70	18.79	292.91	3.05
MW-103	6/12/2013	100U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	311.70	19.80	291.90	15.81
MW-105	8/8/2012	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.46	19.72	290.74	8.00
MW-105	11/14/2012	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.46	20.57	289.89	3.85
MW-105	2/11/2013	50 U	0.125 U	0.500 U	0.250 U	0.750 U	0.500 U	0.250 U	0.250 U	1.00 U	310.46	16.02	294.44	4.47
MW-105	6/12/2013	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.46	17.13	293.33	16.11
MW-108A	8/8/2012	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.38	22.80	287.58	2.81
MW-108A	11/14/2012	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.38	24.31	286.07	0.67
MW-108A	2/11/2013	50 U	0.125 U	0.500 U	0.250 U	0.750 U	0.500 U	0.250 U	0.250 U	1.00 U	310.38	19.90	290.48	0.84
MW-108A	6/12/2013	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.38	21.05	289.33	4.38
MW-109	8/8/2012	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.48	17.91	292.57	4.96
MW-109	11/14/2012	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.48	17.98	292.50	1.62
MW-109	2/11/2013	**62.4 J**	**26.1**	0.500 U	0.250 U	0.750 U	0.500 U	0.250 U	0.250 U	1.00 U	310.48	14.19	296.29	2.01
MW-109	2/28/2013	-	**4.44**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.48	13.91	296.57	8.47
MW-109	6/12/2013	-	-	-	-	-	-	-	-	-	310.48	18.77	291.71	-
MW-109A	6/12/2013	100 U	**6.69**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	311.71	20.51	291.20	10.57
MW-110	8/8/2012	**1,630**	0.250 U	1.00 U	**3.21**	**8.45**	1.00 U	0.500 U	0.500 U	**3.41**	312.77	21.50	291.27	11.46
MW-110	11/14/2012	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	312.77	25.07	287.70	5.73
MW-110	2/11/2013	50 U	0.125 U	0.500 U	0.250 U	0.750 U	0.500 U	0.250 U	0.250 U	1.00 U	312.77	18.23	294.54	6.17
MW-110	6/12/2013	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	312.77	17.43	295.34	18.90
MW-111	8/8/2012	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.62	29.90	280.72	0.64
MW-111	11/14/2012	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.62	31.21	279.41	0.49
MW-111	2/11/2013	50 U	0.125 U	0.500 U	0.250 U	0.750 U	0.500 U	0.250 U	0.250 U	1.00 U	310.62	28.20	282.42	0.65
MW-111	6/12/2013	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	2.00 U	310.62	29.05	281.57	0.75

Notes:

CAS RN: Chemical Abstracts Service Registry Number

MTCA Method A: Washington Department of Ecology Model Toxics Control Act Method A cleanup standards

MTBE: methyl tert-butyl ether

EDC: 1,2-dichloroethane

EDB: 1,2-dibromoethane

µg/L: micrograms per liter

mg/L: milligrams per liter

feet msl = feet above mean sea level

feet toc = feet below top of well casing

Bold values indicate constituent detected at concentration greater than laboratory reporting limit (MRL)

Red values indicate the concentration exceeds the MTCA Method A cleanup level

U: The analyte was not detected above the MRL or method detection limit (MDL) presented

J: The analyte was detected at a concentration greater than or equal to the MDL, but less than the MRL. The concentration is an approximate value.

-: The analyte was not tested for by this method

TABLE 3
Soil Vapor Extraction System Monitoring Data
Fred Meyer Facility, Port Orchard, Washington

Date	Monitoring Days	Operational Days	% Operational	Total Influent VOC Level[1]	Vacuum[2]	Total Flow Velocity	Bleed Flow Velocity	Total Recovered Flow Rate[3]	Volatile Removal Rate at End of Period	Estimated VOCs Removed for Period	Estimated VOCs Removed to Date
				(ppmv)	(inches H2O)	(feet per minute)		(cfm)	(lbs./day)	(pounds)	
3/1/00	-	-	-	105.0	90	1,200	0	105	2.31	0	0
5/24/00	84	84	100%	160.9	> 100	1,000	0	87	2.95	221	221
8/17/00	85	85	100%	66.1	75	NA	0	220	3.05	255	476
10/19/00	63	63	100%	17.9	34	NA	0	320	1.20	134	610
12/13/00	55	55	100%	62.2	> 100	1,000	0	87	1.14	64	674
2/22/01	71	71	100%	4.0	71	NA	0	225	0.19	47	721
3/19/01	25	25	100%	28.3	90	NA	0	160	0.95	14	736
AMEC finds that select SVE wells were destroyed during expansion of the Bethel Road SE and SE Sedgewick Road right-of-ways adjacent to site.											
6/28/01	101	101	100%	11.2	80	NA	0	200	0.47	72	807
9/23/01	87	43	49%	4.2	100	NA	0	120	0.11	12	820
12/11/01	79	39	49%	0.0	100	NA	0	120	0.00	2.1	822
3/20/02	99	50	51%	1.4	100	NA	0	120	0.04	0.9	823
6/11/02	83	29	35%	0.0	90	NA	0	160	0.00	0.5	823
AS system is completely off-line as a result of damages incurred during site redevelopment											
9/25/02	106	106	56%	0.0	90	2,600	0	227	0.00	0	823
12/12/02	78	78	50%	2.7	90	2,500	0	218	0.12	4.8	828
4/1/03	110	110	100%	6.0	80	3,000	0	262	0.33	25	853
6/22/03	82	82	100%	0.0	100	NA	0	120	0.00	14	867
9/23/03	93	93	100%	0.0	60	4,100	0	358	0.00	0	867
12/17/03	85	85	100%	0.0	70	3,800	0	331	0.00	0	867
3/31/04	105	0	0%	0.0	0	0	0	0	0.00	0	867
6/29/04	90	90	100%	0.0	60	4,100	0	358	0.00	0	867
9/29/04	92	92	100%	0.0	60	4,100	0	358	0.00	0	867
11/9/04	41	41	100%	0.0	55	4,300	0	375	0.00	0	867
3/10/05	121	121	100%	0.0	50	4,500	0	393	0.00	0	867
6/21/05	103	103	100%	0.0	55	2,000	0	174	0.00	0	867
9/23/05	94	94	100%	0.0	100	NA	0	120	0.00	0	867
12/1/05	69	69	100%	0.0	100	NA	0	120	0.00	0	867
3/9/06*	98	unknown	unknown	0.0	0	0	0	0	0.00	0	867
SVE system is completely off-line as a result of damages to blower.											
6/8/06**	91	0	0%	0.0	0	0	0	0	0.00	0	867
9/22/06	106	0	0%	0.0	0	0	0	0	0.00	0	867
12/12/06	81	0	0%	0.0	0	0	0	0	0.00	0	867
3/28/07	106	0	0%	0.0	0	0	0	0	0.00	0	867
6/13/07	77	0	0%	0.0	0	0	0	0	0.00	0	867
8/28/07	76	0	0%	0.0	0	0	0	0	0.00	0	867
11/28/07	92	0	0%	0.0	0	0	0	0	0.00	0	867
4/15/08	139	0	0%	0.0	0	0	0	0	0.00	0	867
6/19/08	65	0	0%	0.0	0	0	0	0	0.00	0	867
9/16/08	89	0	0%	0.0	0	0	0	0	0.00	0	867
1/24/09	130	0	0%	0.0	0	0	0	0	0.00	0	867
AS/SVE System Repaired and Restarted on 02/20/09											
2/21/09	28	1	100%	28.3	90	6,000	1,200	175	0.00	0	867
3/28/09	35	35	100%	31.2	90	6,000	1,200	175	1.15	40	907
6/11/09***	75	70	93%	4.0	90	6,000	1,200	175	0.15	45	952
9/10/09	91	91	100%	0.5	100	6,000	1,200	150	0.02	7.4	959
1/22/10	134	134	100%	0.6	54	6,000	1,200	285	0.04	3.5	963
3/5/10	42	42	100%	0.5	100	6,000	1,200	150	0.02	1.1	964
6/10/10****	97	97	50%	0.2	100	6,000	1,000	150	0.01	1.1	965
9/9/10	91	91	100%	0.6	100	4,000	2,000	150	0.02	1.1	966
12/6/10	88	88	100%	0.4	100	4,300	1,700	150	0.01	1.4	968
3/29/11*****	113	113	100%	0.4	100	5,000	1,000	150	0.01	1.4	969
6/21/11***	84	42	50%	0.6	90	4,300	2,500	175	0.02	0.7	970

TABLE 3
Soil Vapor Extraction System Monitoring Data
Fred Meyer Facility, Port Orchard, Washington

Date	Monitoring Days	Operational Days	% Operational	Total Influent VOC Level[1]	Vacuum[2]	Total Flow Velocity	Bleed Flow Velocity	Total Recovered Flow Rate[3]	Volatile Removal Rate at End of Period	Estimated VOCs Removed for Period	Estimated VOCs Removed to Date
				(ppmv)	(inches H2O)	(feet per minute)		(cfm)	(lbs./day)	(pounds)	
One AS blower and one blower connector replaced on 6/21/11											
9/27/11	98	98	100%	0.9	100	4,000	1,500	150	0.03	2.5	972
12/7/11	71	71	100%	0.0	90	6,000	1,500	175	0.00	1.0	973
1/12/12******	36	0	0%	0.0	0	0	0	0	0.00	0.0	973
5/10/12	119	119	100%	0.0	60	6,000	1,500	260	0.00	0.0	973
8/8/12	90	90	100%	0.0	60	6,000	1,500	260	0.00	0.0	973
11/14/12	98	98	100%	0.0	100	4,000	1,500	150	0.00	0.0	973
2/11/13	89	89	100%	0.0	60	6,000	1,500	260	0.00	0.0	973
6/11/13	120	120	100%	0.0	60	6,000	1,500	260	0.00	0.0	973

Notes:
VOC = volatile organic compounds
1 = Reflects VOC concentration of total system influent at monitoring event arrival time based on photoionization detector measurement.
2 = Reflects vacuum measurements collected at total system influent intake at monitoring event arrival time
3 = Volumetric flows through December 2005 were determined from total flow velocity or from measured vacuum and manufacturer's blower curves, if vacuum not available.
Volumetric flows from February 2009 are determined from measured vacuum and manufacturer's blower curves, due to uncertainty of field velocity measurements.
NA = measurement not taken
PID = photoionization detector
ppmv = parts per million by volume
cfm = cubic feet per minute
* = The knock out tank and all piping were full of water upon arrival for this monitoring day. Normal system readings could not be taken
** = The system was off upon arrival and departure from the site. The SVE blowers did not work properly
*** = The VES blower was off upon arrival and turned on at departure.
**** = The discharge pipe was melted at arrival; damaged sometime between 1Q2010 event and 2Q2010 event.
***** = Air sparging blower #1 was off on arrival and departure due to failed connector.
****** = Air sparging blower #1 was off on arrival due tripped circuit breaker.

TABLE 4
Air Sparging System Performance Monitoring Data
Fred Meyer Facility, Port Orchard, Washington

Monitoring Well	Date	Groundwater Depth Below Top of Casing (Feet)	Groundwater Elevation (Feet)	Final Dissolved Oxygen (mg/L)	Gasoline-Range Organics (µg/L)
MW-103	*AS/SVE Systems Reactivated on 02/21/2009*				
	3/28/2009	18.16	293.54	1.50	80 U
	6/11/2009	18.61	293.09	2.34	100 U
	9/10/2009	21.47	290.23	8.71	**179**
	1/22/2010	19.31	292.39	1.66	**1,320**
	3/5/2010	18.30	293.40	1.31	100 U
	6/10/2010	19.44	292.26	1.94	**403**
	9/9/2010	21.86	289.84	0.78	**7,430**
	12/6/2010	20.60	291.10	0.72	**4,060**
	3/29/2011	15.75	295.95	0.81	100 U
	6/21/2011	18.06	293.64	0.51	100 U
	9/27/2011	21.12	290.58	1.41	**4,330**
	12/7/2011	20.05	291.65	6.24	**664**
	1/12/2012	20.70	291.00	6.97	100 U
	5/10/2012	21.28	290.42	7.42	**108**
	8/8/2012	22.61	289.09	9.92	**2,490**
	11/14/2012	24.45	287.25	2.97	**305**
	2/11/2013	18.79	292.91	3.05	**311**
	6/12/2013	19.80	291.90	15.81	100 U
MW-105	*AS/SVE Systems Reactivated on 02/21/2009*				
	3/28/2009	17.17	293.29	1.58	80 U
	6/11/2009	17.63	292.83	1.29	100 U
	9/10/2009	21.48	288.98	3.30	80 U
	1/22/2010	17.46	293.00	7.66	80 U
	3/5/2010	16.98	293.48	1.38	100 U
	6/10/2010	18.11	292.35	2.59	100 U
	9/9/2010	20.62	289.84	1.91	100 U
	12/6/2010	19.22	291.24	1.89	100 U
	3/29/2011	14.22	296.24	0.96	100 U
	6/21/2011	16.20	294.26	0.93	100 U
	9/27/2011	20.28	290.18	2.57	100 U
	12/7/2011	18.51	291.95	2.70	100 U
	1/12/2012	18.34	292.12	3.80	100 U
	5/10/2012	16.28	294.18	6.55	100 U
	8/8/2012	19.72	290.74	8.00	100 U
	11/14/2012	20.57	289.89	3.85	100 U
	2/11/2013	16.02	294.44	4.47	50 U
	6/12/2013	17.13	293.33	16.11	100 U
MW-108A	*AS/SVE Systems Reactivated on 02/21/2009*				
	3/28/2009	22.70	287.76	1.21	80 U
	6/11/2009	23.42	287.04	1.07	100 U
	9/10/2009	25.52	284.86	0.75	80 U
	1/22/2010	22.69	287.69	2.57	80 U
	3/5/2010	21.13	289.25	1.21	100 U
	6/10/2010	21.48	288.90	0.36	100 U
	9/9/2010	23.50	286.88	1.02	100 U
	12/6/2010	23.15	287.23	1.20	100 U
	3/29/2011	17.62	292.76	0.85	100 U
	6/21/2011	19.89	290.49	0.84	100 U
	9/27/2011	22.95	287.43	0.46	100 U
	12/7/2011	23.05	287.33	0.62	100 U
	1/12/2012	23.17	287.21	1.97	100 U
	5/10/2012	21.03	289.35	2.94	100 U
	8/8/2012	22.80	287.58	2.81	100 U
	11/14/2012	24.31	286.07	0.37	100 U
	2/11/2013	19.90	290.48	0.84	50 U
	6/12/2013	21.05	289.33	4.38	100 U

TABLE 4
Air Sparging System Performance Monitoring Data
Fred Meyer Facility, Port Orchard, Washington

Monitoring Well	Date	Groundwater Depth Below Top of Casing (Feet)	Groundwater Elevation (Feet)	Final Dissolved Oxygen (mg/L)	Gasoline-Range Organics (µg/L)
MTCA Method A Cleanup Standard					**800**
MW-109	*AS/SVE Systems Reactivated on 02/21/2009*				
	3/28/2009	16.13	294.33	0.99	80 U
	6/11/2009	16.27	294.19	0.74	100 U
	9/10/2009	19.77	290.71	1.95	80 U
	1/22/2010	15.25	295.23	6.44	80 U
	3/5/2010	15.23	295.25	0.85	100 U
	6/10/2010	16.20	294.28	1.86	100 U
	9/9/2010	18.92	291.56	0.97	100 U
	12/6/2010	16.71	293.77	0.79	100 U
	3/29/2011	13.30	297.18	0.67	100 U
	6/21/2011	14.70	295.78	0.65	100 U
	9/27/2011	18.86	291.62	0.60	100 U
	12/7/2011	15.99	294.49	2.57	**137**
	1/12/2012	15.76	294.72	3.40	100 U
	5/10/2012	14.48	296.00	4.00	100 U
	8/8/2012	17.91	292.57	4.96	100 U
	11/14/2012	17.98	292.50	1.62	100 U
	2/11/2013	14.19	296.29	2.01	**62.4 J**
	6/12/2013	18.77	291.71	-	**-**
MW-109A	*Installed on 6/11/2013*				
	6/12/2013	20.51	291.20	10.57	100 U
MW-110	*AS/SVE Systems Reactivated on 02/21/2009*				
	3/28/2009	16.44	294.02	1.10	**162**
	6/11/2009	--	--	6.31	100 U
	9/10/2009	22.60	290.17	9.68	80 U
	1/22/2010	19.76	293.01	6.19	**687**
	3/5/2010	18.56	294.21	2.16	100 U
	6/10/2010	19.94	292.83	1.13	100 U
	9/9/2010	22.30	290.47	3.55	**1,880**
	12/6/2010	20.63	292.14	3.85	**371**
	3/29/2011	17.33	295.44	1.53	**442**
	6/21/2011	19.52	293.25	1.07	100 U
	9/27/2011	21.86	290.91	4.45	**4,020**
	12/7/2011	20.23	2912.54	3.54	**1,230**
	1/12/2012	20.22	292.55	7.50	100 U
	5/10/2012	20.63	292.14	9.44	100 U
	8/8/2012	21.50	291.27	11.46	**1,630**
	11/14/2012	25.07	287.70	5.73	100 U
	2/11/2013	18.23	294.54	6.17	100 U
	6/12/2013	17.43	295.34	18.90	100 U

TABLE 4
Air Sparging System Performance Monitoring Data
Fred Meyer Facility, Port Orchard, Washington

Monitoring Well	Date	Groundwater Depth Below Top of Casing (Feet)	Groundwater Elevation (Feet)	Final Dissolved Oxygen (mg/L)	Gasoline-Range Organics (µg/L)
MW-111	*AS/SVE Systems Reactivated on 02/21/2009*				
	3/28/2009	32.04	278.42	0.80	80 U
	6/11/2009	31.44	279.02	0.67	100 U
	9/10/2009	32.02	278.60	1.17	80 U
	1/22/2010	31.52	279.10	8.58	80 U
	3/5/2010	29.76	280.86	0.57	100 U
	6/10/2010	28.85	281.77	0.26	100 U
	9/9/2010	30.19	280.43	0.65	100 U
	12/6/2010	31.02	279.60	0.80	100 U
	3/29/2011	26.71	283.91	0.70	100 U
	6/21/2011	27.31	283.31	0.40	100 U
	9/27/2011	29.73	280.89	0.57	100 U
	12/7/2011	30.77	279.85	9.08	100 U
	1/12/2012	30.97	279.65	8.95	100 U
	5/10/2012	28.90	281.72	0.52	100 U
	8/8/2012	29.90	280.72	0.64	100 U
	11/14/2012	31.21	279.41	0.49	100 U
	2/11/2013	28.20	282.42	0.65	50 U
	6/12/2013	29.05	281.57	0.75	100 U
MTCA Method A Cleanup Standard					**800**

Notes:

MTCA Method A = Washington Department of Ecology Model Toxics Control Act Method A screening criteria

mg/L = milligrams per liter

µg/L = micrograms per liter

AS/SVE = air sparging and soil vapor extraction

Bold values indicate concentrations detected above laboratory reporting limit

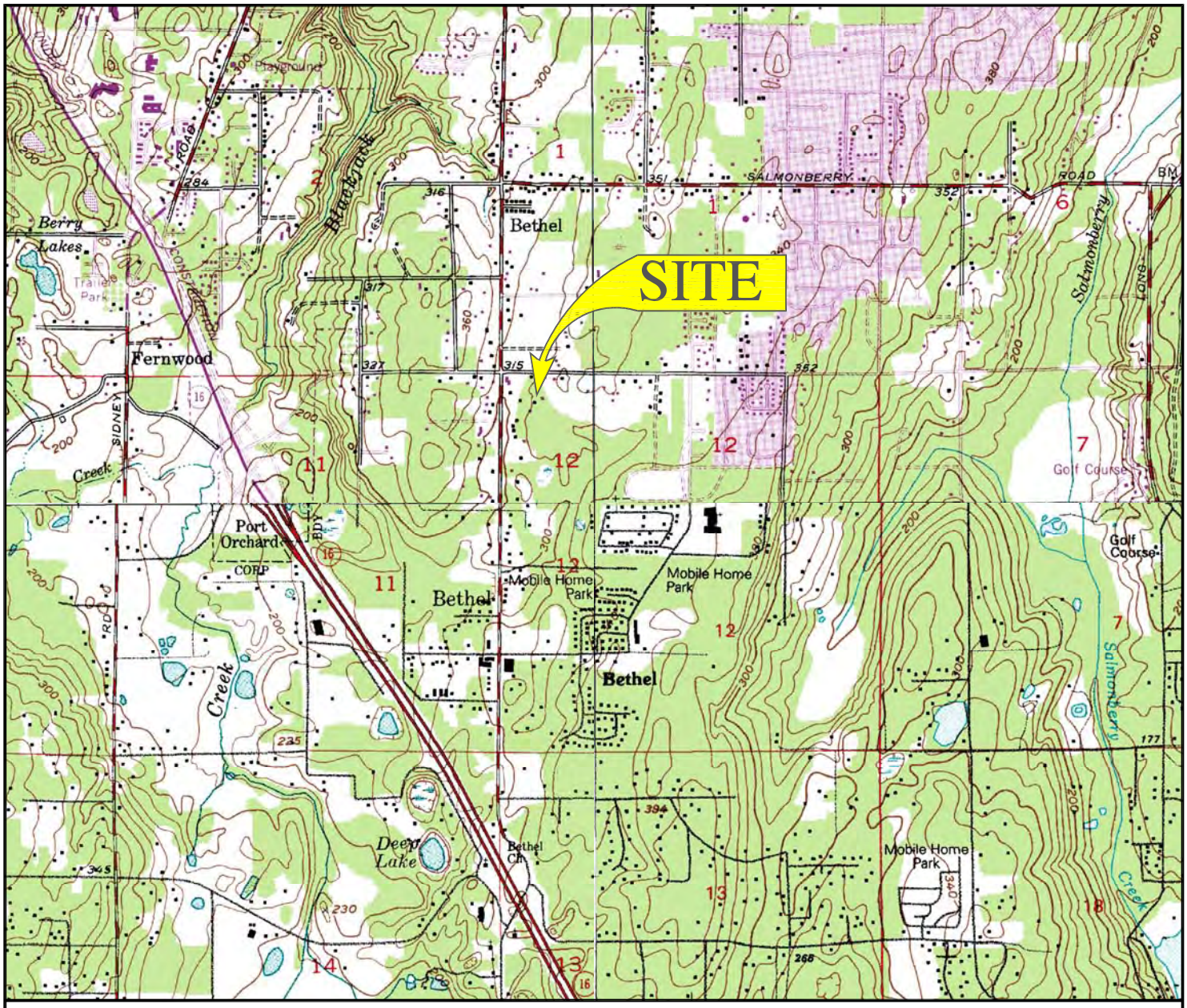
Red values indicate the concentration exceeds the MTCA Method A cleanup standard

U = The analyte was not detected above method reporting limit (MRL) or method detection limit (MDL) presented

J = The analyte detected at concentration greater than or equal to the MDL, but less than the MRL. The concentration is an approximate value.

"--" = not measured

FIGURES



Heavy-duty
Medium-duty
Light-duty
Unimproved dirt
U.S. Route
State Route
Interstate Route

BREMERTON WEST, WASH.
47122-E6-TF-024
1953
PHOTOREVISED 1981
DMA 1479 II SERIES V891

BREMERTON EAST, WASH.
N4730-W12230/7.5
1953
PHOTOREVISED 1981
DMA 1479 II SERIES V891

BURLEY, WASH.
47122-D6-TF-024
1953
PHOTOREVISED 1994
DMA 1478 II NW-SERIES V891

OLALLA, WASH.
47122-D5-TF-024
1953
PHOTOREVISED 1981
DMA 1478 I NE SERIES V891

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

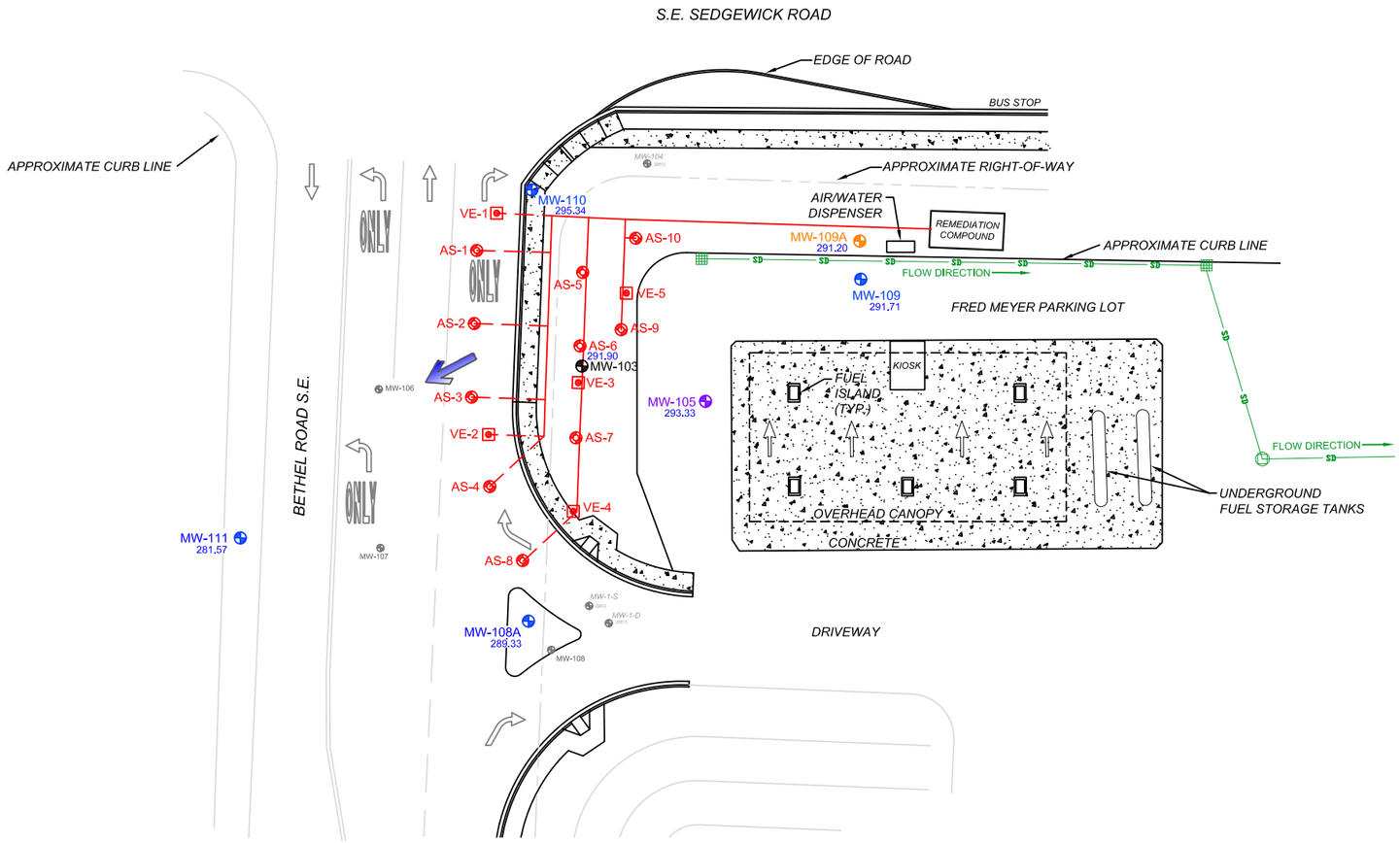
SOURCE: USGS QUAD SHEET: BREMERTON WEST, BREMERTON EAST, BURLEY AND OLALLA, WASH.

AMEC
7376 S.W. Durham Road
Portland OR. U.S.A. 97224

CLIENT: FRED MEYER

PROJECT: FRED MEYER - PORT ORCHARD	DWN BY: PM/SD	DATUM: -	DATE: AUGUST 2013
TITLE: SITE LOCATION MAP	CHK'D BY: JE	REV. NO.: -	PROJECT NO.: 9-61M-10282-0
	PROJECTION: -	SCALE: 1:24,000	FIGURE NO.: 1

K:\10000\10200\10282\Quarterly Reports\2013\202013\Figures\Figure 1 - Site Location Map.dwg - - Aug. 06, 2013 8:36am - stephane.descombes



LEGEND

- AS-10 — AIR SPARGING WELL NUMBER AND APPROXIMATE LOCATION
- VE-5 — VAPOR EXTRACTION WELL NUMBER AND APPROXIMATE LOCATION
- MW-103 — ACTIVE 4" DIAMETER MONITORING WELL (ECOLOGY, 1991)
- MW-105 — ACTIVE 2" DIAMETER MONITORING WELL (AGRA, 1999)
- MW-110 — ACTIVE 2" DIAMETER MONITORING WELL (AMEC, 2008)
- MW-109A — ACTIVE 2" DIAMETER MONITORING WELL (AMEC, 2013)
- MW-104 (DEC) — MONITORING WELL DECOMMISSIONED
- MW-108 (DESTROYED) — MONITORING WELL DESTROYED BY CONSTRUCTION ACTIVITIES
- 296.29 — SPOT GROUNDWATER SURFACE ELEVATION IN FEET
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- REMEDIATION SYSTEM TRENCH
- ANGLED WELL LOCATION
- CATCH BASIN
- SD — STORMWATER LINE
- DIRECTION OF TRAFFIC

N

0' 20' 40' 60'

1" = 40'

SOURCE: AHBL CIVIL AND STRUCTURAL ENGINEERS,
FILE NAME: 98169-B.dwg.

CLIENT: FRED MEYER

AMEC
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

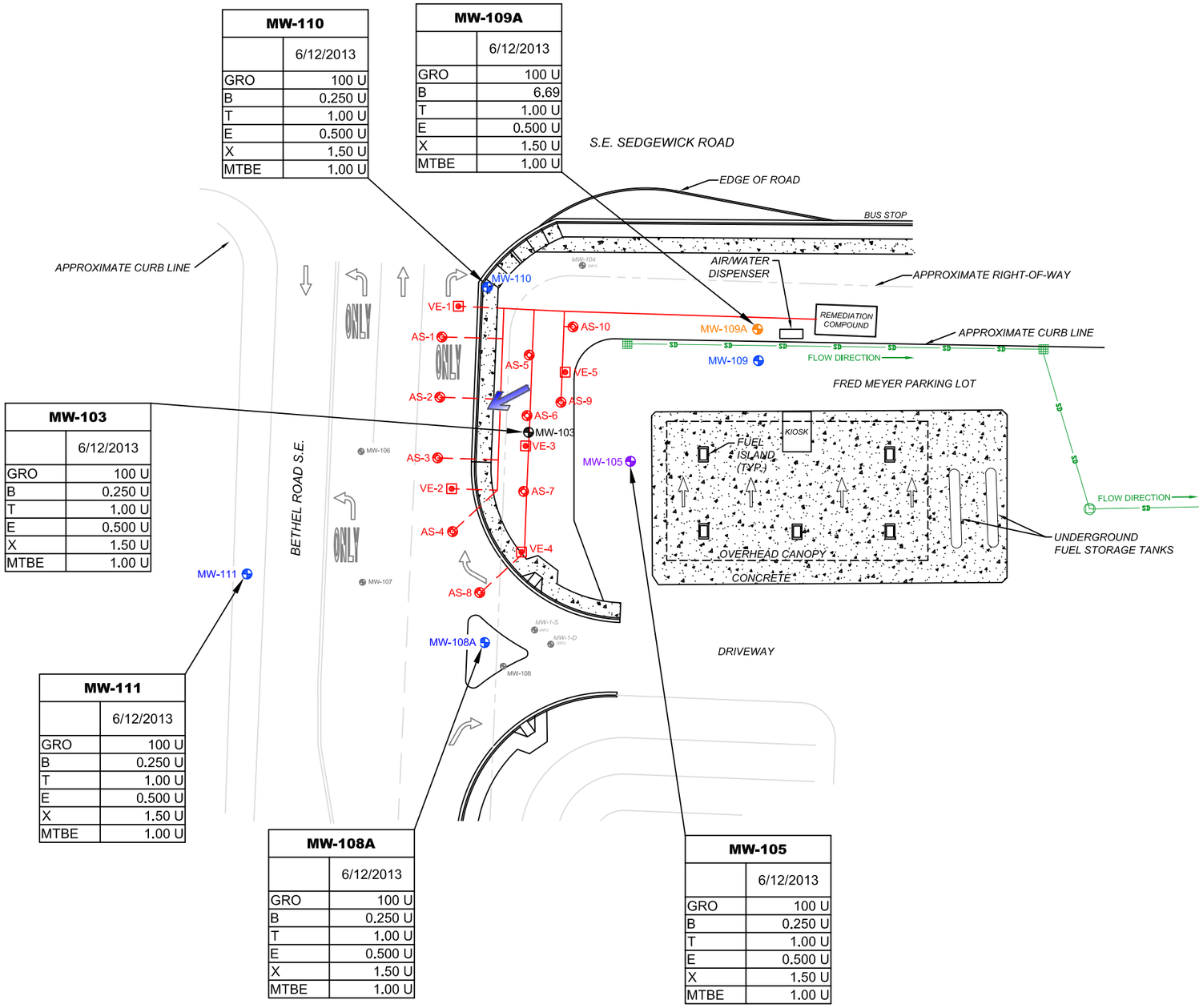
DWN BY:	PM/SD
CHK'D BY:	JE
DATUM:	-
PROJECTION:	-
SCALE:	1" = 40'

PROJECT: FRED MEYER - PORT ORCHARD

TITLE: GROUNDWATER ELEVATIONS JUNE 2013

DATE:	AUGUST 2013
PROJECT NO.:	9-61M-10282-0
REV. NO.:	-
FIGURE NO.:	2

K:\10000\10200\10282\Quarterly Reports\2013\2Q2013\Figures\Figure 2 – Groundwater Elevations Q2 2013.dwg – – – Aug. 07, 2013 3:13pm – stephane.descombes



MW-110	
	6/12/2013
GRO	100 U
B	0.250 U
T	1.00 U
E	0.500 U
X	1.50 U
MTBE	1.00 U

MW-109A	
	6/12/2013
GRO	100 U
B	6.69
T	1.00 U
E	0.500 U
X	1.50 U
MTBE	1.00 U

MW-103	
	6/12/2013
GRO	100 U
B	0.250 U
T	1.00 U
E	0.500 U
X	1.50 U
MTBE	1.00 U

MW-111	
	6/12/2013
GRO	100 U
B	0.250 U
T	1.00 U
E	0.500 U
X	1.50 U
MTBE	1.00 U

MW-108A	
	6/12/2013
GRO	100 U
B	0.250 U
T	1.00 U
E	0.500 U
X	1.50 U
MTBE	1.00 U

MW-105	
	6/12/2013
GRO	100 U
B	0.250 U
T	1.00 U
E	0.500 U
X	1.50 U
MTBE	1.00 U

LEGEND

- AS-10 — AIR SPARGING WELL NUMBER AND APPROXIMATE LOCATION
- VE-5 — VAPOR EXTRACTION WELL NUMBER AND APPROXIMATE LOCATION
- MW-103 — ACTIVE 4" DIAMETER MONITORING WELL (ECOLOGY, 1991)
- MW-105 — ACTIVE 2" DIAMETER MONITORING WELL (AGRA, 1999)
- MW-110 — ACTIVE 2" DIAMETER MONITORING WELL (AMEC, 2008)
- MW-109A — ACTIVE 2" DIAMETER MONITORING WELL (AMEC, 2013)
- MW-104 (DEC) — MONITORING WELL DECOMMISSIONED
- MW-108 (DESTROYED) — MONITORING WELL DESTROYED BY CONSTRUCTION ACTIVITIES
- REMEDIATION SYSTEM TRENCH
- ANGLED WELL LOCATION
- CATCH BASIN
- SD — STORMWATER LINE
- DIRECTION OF TRAFFIC

GRO	GASOLINE RANGE ORGANICS (µg/L)
B	BENZENE (µg/L)
T	TOLUENE (µg/L)
E	ETHYLBENZENE (µg/L)
X	TOTAL XYLENES (µg/L)
MTBE	METHYL-TERT-BUTYL ETHER (µg/L)
U	ANALYTE NOT DETECTED ABOVE METHOD REPORTING OR METHOD DETECTION LIMIT PRESENTED IN TABLE.
µg/L	MICROGRAMS PER LITER
NT	NOT TESTED

N

0' 20' 40' 60'

1" = 40'

SOURCE: AHBL CIVIL AND STRUCTURAL ENGINEERS, FILE NAME: 98169-B.dwg.

CLIENT: FRED MEYER

AMEC
7376 S.W. Durham Road
Portland, OR. U.S.A. 97224

DWN BY: PM/SD
CHK'D BY: JE
DATUM: -
PROJECTION: -
SCALE: 1" = 40'

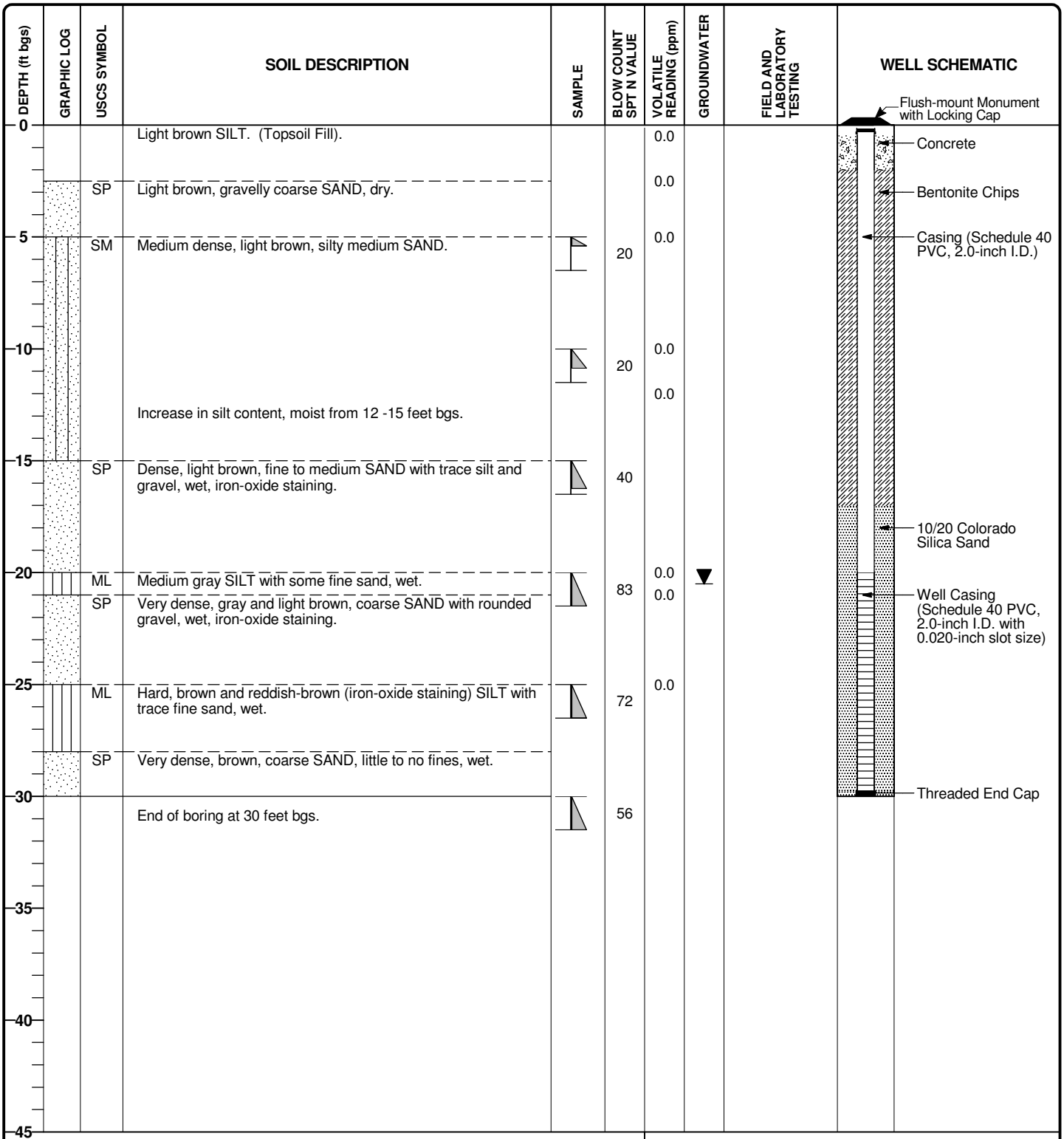
PROJECT: FRED MEYER - PORT ORCHARD

TITLE: GROUNDWATER ANALYTICAL RESULTS JUNE 2013

DATE: AUGUST 2013
PROJECT NO.: 9-61M-10282-0
REV. NO.: -
FIGURE NO.: 3

APPENDIX A

Monitoring Well Construction Log and Field Data Acquisition Forms



BORING METHOD: Hollow Stem Auger
BOREHOLE DIAMETER: 10.0 (in)
DRILL RIG: Hollow Stem Auger
CONTRACTOR: Holt Drilling
LOGGED BY: J. Gardner

ELEVATION REFERENCE: NA
GROUND SURFACE ELEVATION: NA
CASING ELEVATION: NA
START CARD/TAG ID: BHU673
DRILLING DATES: 6/11/2013 - 6/11/2013

REMARKS:
Log revised by J. Fassio.

ENVR+WELL BORING 9-61M-102820.GPJ AMEC PORTLAND.GDT 8/8/13

Fred Meyer Port Orchard

9-61M-102820

AMEC Environment & Infrastructure, Inc.
7376 SW Durham Road
Portland, Oregon
USA 97224
Tel (503) 639-3400
Fax (503) 620-7892

LOG OF BORING MW-109A

amec

WELL DEVELOPMENT LOG

Project Name: Fred Meyer Port Orchard Project Number: 9601M10282-0

Date: 6/11/13 Completed By: Jason Gardner / Holt

Well Name: MW109A

Well Development Method: Surge / Block - Pump Purge then Hand Bail

Contractor Name: Holt

Static Water Level Before Development (ft): 20.69 Depth of Well (toc): 30'

Inside Diameter (in): 2" Volume of Water in Filter Pack and Well (gal):

Time Start Development: 11:30

Sediment in Well Bottom (in): Start: 0.21' Finish: 0.0'

Time ~~Start~~ Finish Development: 16:00

Time	Pumping Rate	Total Volume	Turbidity (NTU)	Notes
11:55	1 gpm	10 gal	OR.	DC Pump After Surge/Block
12:30	1 gpm	55 gal	14.3	DC Pump After Surge/Block
14:00	.25 gpm	New Drum 15 gal	26.7	Hand Bail / Surge
15:00	.25 gpm	30 gal	10.6	" "
16:00	.25-.5	55 gal	4.9	" "

Volume of Water Removed from Well (gal): 110

Time Complete Development: 16:00

Static Water Level After Development (ft): 20.39

Notes: Drums

QUARTERLY SYSTEM & GROUNDWATER MONITORING PROGRAM

Fred Meyer - Port Orchard

S.E. Intersection of SE Sedgewick Road & Bethel Road SE
Port Orchard, Washington

Project #: 9-61M-10282-0
Project Manager: Kurt Harrington
DATE: 6/12/13
Arrival Time: 6/11/13 system

TECHNICIAN: JG

Revised: Jan. 20, 2009

Groundwater Levels / Product Thickness / Groundwater/Product Pump Operation / 7.5-Gallon Influent Tanks

Monitoring Point	DTW	TIME SAMPLED
MW-103	19.80	9:15
MW-105	17.13	10:45
MW-108A	21.05	8:30
MW-109A	20.51	11:30
MW-109	18.77	NA
MW-110	17.43	10:00
MW-111	29.05	7:30
Interface Corrected Factor:	feet	

Vapor Extraction System Monitoring

VES Line	Vapor Level (ppm)	Vacuum (inches of water)	Flow (fpm)	VES Lines (ON / OFF) Arrival	Depart
Total System - Arrival	0.0	60"	6000	ON	
VES-1				ON	ON
VES-2				ON	ON
VES-3				ON	ON
VES-4				ON	ON
VES-5				ON	ON
Total System - Depart					ON

VES Blower Model:	Gast R7100R-50	PID Type:	6	Knockout Tank:	Yes
Outlet pipe diameter:	2 outlets @ 2" each	PID Number:		Full (YES / NO):	no — no
VES Blower Arrival (ON / OFF):	on	PID Calibrated:		Emptied (YES / NO):	no
VES Blower Depart (ON / OFF):	on	Anemometer #	5	Quantity:	0 gallons

Air Sparging System

		AS Lines (ON / OFF)				AS Lines (ON / OFF)	
Air Sparging Line	Flow (cfm)	Arrival	Departure	Air Sparging Line	Flow (cfm)	Arrival	Departure
AS-1	15	ON	ON	AS-6	10	ON	ON
AS-2	—	OFF	OFF	AS-7	—	OFF	OFF
AS-3	—			AS-8	—	OFF	OFF
AS-4	—			AS-9	5	ON	ON
AS-5	10	ON	ON	AS-10	15	ON	ON

Air Sparging System at Arrival (ON / OFF):	**ON**	Air Sparging System at Departure (ON / OFF):	**ON**
Air Sparging Blower 1# (top) at Arrival :	**DOWN**	Air Sparging Blower 2 (top) at Arrival (ON / OFF):	**ON**
Air Sparging Blower 1# (top) at Depart :	**DOWN**	Air Sparging Blower 2 (top) at Depart (ON / OFF):	**ON**
Total Air Sparging System Pressure for Rotory vane 16 psi		Air Sparging System Pressure for high pressure:	—

Notes:
MW109A installed 6/11/13 by Holt drilling

Arrival Time:
Departure Time:

Budget: 6 hours (includes: prep, travel, field, and report)

amec

GROUNDWATER SAMPLING FIELD FORM

Fred Meyer Port Orchard
Quarterly Groundwater Monitoring
AMEC Job #: 9-61M-10282-0
Date: 6/12/13

Field Personnel: J. Gardner — Monitoring Well ID: MW103
Start Time: 08:45 — Weather Conditions: O.C. — Approx. Air Temp (°F): ~65

INITIAL WELL DATA & WELL PURGING INFORMATION

Water Temperature (degree C)	Water pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mV)	Water Level (feet bgs)	Time (0:00 - 23:59)	Volume Purged (gal or liters)
13.60	7.20	118	44.3	16.74	-48.5	19.80	08:45	0
12.96	6.86	118	23.9	15.51	+42.0	19.86	9:05	4
12.96	6.88	118	23.5	15.78	+43.1	19.86	9:10	5
12.94	6.80	118	23.2	14.81	+43.0	19.86	9:15	6

Ferrous Iron (2+) using the field kit:

0.5 inch tubing: 0.020 gallons/linear foot — 2" well casing: 0.17 gal/linear foot — Total Purged = 6 L
Purge Pumping Rate (approx. L/m): .2 L/M
Approx. Pump/Intake Depth:
Well Yield: High / Moderate / Low
Decontamination Method: NA

WELL CONDITION

Casing Size and Type: 4" PVC

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs/Repaired
Cap Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs/Repaired

NOTES:

SAMPLING INFORMATION / DATA

QA/QC Sample (circle one): Duplicate Lab QA/QC NONE
Sampling Method (circle one): dedicated Dual Valve Pump peristaltic pump

Analytical Parameters	Destination Laboratory	Preservative	Bottle size	Number of bottles	Sample ID	Time Sampled
NW TPH-Gx 8021	APEX	HCL & ice	40 ML	3	MW103-061213	9:15
8260 Suite	APEX	HCL & ice	40 ML	3		

Method of Transportation of samples:
All samples were immediately placed into a cooler and packed with ice or "Blue Ice" YES / NO

Field Observations/Notes of Sampling Event:

Iron bact. fouling

Signature of Field Personnel: Date: 6/12/13

amec

GROUNDWATER SAMPLING FIELD FORM

Fred Meyer Port Orchard
Quarterly Groundwater Monitoring
AMEC Job #: 9-61M-10282-0
Date: 6/12/13

Field Personnel: J. Gardner — **Monitoring Well ID:** MW105
Start Time: 10:15 — Weather Conditions: OC. — Approx. Air Temp (°F): ~65

INITIAL WELL DATA & WELL PURGING INFORMATION

Water Temperature (degree C)	Water pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mV)	Water Level (feet bgs)	Time (0:00 - 23:59)	Volume Purged (gal or liters)
12.73	6.43	165	30.6	15.52	+8.1	17.13	10:15	0
12.48	6.22	164	9.7	16.17	+13.1	17.20	10:35	4
12.47	6.20	163	9.2	16.10	+13.0	17.20	10:40	5
12.46	6.21	162	8.4	16.11	+12.9	17.20	10:45	6

Ferrous Iron (2+) using the field kit:

0.5 inch tubing: 0.020 gallons/linear foot — 2" well casing: 0.17 gal/linear foot — Total Purged = 6 L
Purge Pumping Rate (approx. L/m): .2 L/M
Approx. Pump/Intake Depth: Screen
Well Yield: High / Moderate / Low
Decontamination Method: NA

WELL CONDITION

Casing Size and Type: 2" PVC
Casing Condition: OK / NA / Needs Repairs/Repaired — Lock Condition: OK / NA / Needs Repairs/Repaired
Cap Condition: OK / NA / Needs Repairs/Repaired — Monument Condition: OK / NA / Needs Repairs/Repaired

NOTES:

SAMPLING INFORMATION / DATA

QA/QC Sample (circle one): Duplicate Lab QA/QC NONE
Sampling Method (circle one): dedicated Dual Valve Pump peristaltic pump

Analytical Parameters	Destination Laboratory	Preservative	Bottle size	Number of bottles	Sample ID	Time Sampled
NW TPH-Gx 8021	APEX	HCL & ice	40 ML	3	MW105-061213	10:45
8260 Suite	APEX	HCL & ice	40 ML	3		

Method of Transportation of samples:
All samples were immediately placed into a cooler and packed with ice or "Blue Ice" YES / NO

Field Observations/Notes of Sampling Event:

Signature of Field Personnel: — Date: 6/12/13

amec

GROUNDWATER SAMPLING FIELD FORM

Fred Meyer Port Orchard
Quarterly Groundwater Monitoring
AMEC Job #: 9-61M-10282-0
Date: 6/12/13

Field Personnel: J.Gardner | Monitoring Well ID: MW108A
Start Time: 0800 | Weather Conditions: O.C. | Approx. Air Temp (°F): ~65

INITIAL WELL DATA & WELL PURGING INFORMATION

Water Temperature (degree C)	Water pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mV)	Water Level (feet bgs)	Time (0:00 - 23:59)	Volume Purged (gal or liters)
13.09	6.77	141	18.3	4.56	-56.6	21.05	0800	0
13.22	5.58	134	7.4	4.35	-46.1	21.11	0820	4
13.19	5.54	133	6.9	4.35	-46.4	21.11	0825	5
13.21	5.51	133	6.8	4.38	-46.0	21.11		6L

Ferrous Iron (2+) using the field kit:

0.5 inch tubing: 0.020 gallons/linear foot | 2" well casing: 0.17 gal/linear foot | Total Purged = 6L
Purge Pumping Rate (approx. L/m): ~2 L/M
Approx. Pump/Intake Depth: Screen
Well Yield: High / (Moderate) / Low
Decontamination Method: NA

WELL CONDITION

Casing Size and Type: 2" PVC

Casing Condition:	(OK) / NA / Needs Repairs/Repaired	Lock Condition:	(OK) / NA / Needs Repairs/Repaired
Cap Condition:	(OK) / NA / Needs Repairs/Repaired	Monument Condition:	(OK) / NA / Needs Repairs/Repaired

NOTES:

SAMPLING INFORMATION / DATA

QA/QC Sample (circle one): Duplicate Lab QA/QC (NONE)
Sampling Method (circle one): dedicated Dual Valve Pump peristaltic pump

Analytical Parameters	Destination Laboratory	Preservative	Bottle size	Number of bottles	Sample ID	Time Sampled
NW TPH-Gx 8021	APEX	HCL & ice	40 ML	3	MW108A-061213	8:30
8260 Suite	APEX	HCL & ice	40 ML			

Method of Transportation of samples:
All samples were immediately placed into a cooler and packed with ice or "Blue Ice" (YES) / NO

Field Observations/Notes of Sampling Event:

Signature of Field Personnel: Date: 6/12/13

amec

GROUNDWATER SAMPLING FIELD FORM

Fred Meyer Port Orchard
Quarterly Groundwater Monitoring
AMEC Job #: 9-61M-10282-0
Date: 6/12/13

Field Personnel: JGardner — **Monitoring Well ID:** MW109A
Start Time: 11:00 — Weather Conditions: clear — Approx. Air Temp (°F): ~65

INITIAL WELL DATA & WELL PURGING INFORMATION

Water Temperature (degree C)	Water pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mV)	Water Level (feet bgs)	Time (0:00 - 23:59)	Volume Purged (gal or liters)
13.58	6.09	347	6.4	11.98	-1.3	20.35	11:00	0
13.15	6.16	336	3.4	10.67	+38.9	20.51	11:20	4
13.12	6.15	334	3.0	10.60	+37.4	20.51	11:25	5
13.16	6.13	332	3.3	10.57	+37.0	20.51	11:30	6

Ferrous Iron (2+) using the field kit:

0.5 inch tubing: 0.020 gallons/linear foot — 2" well casing: 0.17 gal/linear foot — Total Purged = 6L
Purge Pumping Rate (approx. L/m): .2 L/M
Approx. Pump/Intake Depth:
Well Yield: High / ~~Moderate~~ / Low
Decontamination Method:

WELL CONDITION

Casing Size and Type: 2" PVC

Casing Condition:	~~OK~~ / NA / Needs Repairs/Repaired	Lock Condition:	~~OK~~ / NA / Needs Repairs/Repaired
Cap Condition:	~~OK~~ / NA / Needs Repairs/Repaired	Monument Condition:	~~OK~~ / NA / Needs Repairs/Repaired

NOTES:

SAMPLING INFORMATION / DATA

QA/QC Sample (circle one): Duplicate Lab QA/QC (NONE)
Sampling Method (circle one): dedicated Dual Valve Pump (peristaltic pump)

Analytical Parameters	Destination Laboratory	Preservative	Bottle size	Number of bottles	Sample ID	Time Sampled
NW TPH-Gx 8021	APEX	HCL & ice	40 ML	3	MW109A-061213	11:30
8260 Suite	APEX	HCL & ice	40 ML			

Method of Transportation of samples:
All samples were immediately placed into a cooler and packed with ice or "Blue Ice" (YES) / NO

Field Observations/Notes of Sampling Event:

Signature of Field Personnel: [signature] Date: 6/12/13

amec

GROUNDWATER SAMPLING FIELD FORM

Fred Meyer Port Orchard
Quarterly Groundwater Monitoring
AMEC Job #: 9-61M-10282-0
Date:

Field Personnel: J. Gardner **Monitoring Well ID:** MW110
Start Time: 9:50 Weather Conditions: O.C. Approx. Air Temp (°F): 60s

INITIAL WELL DATA & WELL PURGING INFORMATION

Water Temperature (degree C)	Water pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mV)	Water Level (feet bgs)	Time (0:00 - 23:59)	Volume Purged (gal or liters)
13.17	7.02	84	6.1	16.42	+41.1	17.43	9:30	0
12.83	6.65	85	2.0	19.06	+55.3	17.69	9:50	4
12.81	6.63	85	1.6	18.81	+57.4	17.69	9:55	5
12.81	6.62	85	1.6	18.90	+56.7	17.70	10:00	6

Ferrous Iron (2+) using the field kit:

0.5 inch tubing: 0.020 gallons/linear foot 2" well casing: 0.17 gal/linear foot Total Purged = 6L
Purge Pumping Rate (approx. L/m): ~2 L/m
Approx. Pump/Intake Depth: screen
Well Yield: High / (Moderate) / Low
Decontamination Method: NA

WELL CONDITION

Casing Size and Type: 2"
Casing Condition: (OK) / NA / Needs Repairs/Repaired
Lock Condition: (OK) / NA / Needs Repairs/Repaired
Cap Condition: (OK) / NA / Needs Repairs/Repaired
Monument Condition: (OK) / NA / Needs Repairs/Repaired

NOTES:

SAMPLING INFORMATION / DATA

QA/QC Sample (circle one): Duplicate Lab QA/QC (NONE)
Sampling Method (circle one): dedicated Dual Valve Pump (peristaltic pump)

Analytical Parameters	Destination Laboratory	Preservative	Bottle size	Number of bottles	Sample ID	Time Sampled
NW TPH-Gx 8021	APEX	HCL & ice	40 ML	3	MW110-060213	10:00
8260 Suite	APEX	HCL & ice	40 ML			

Method of Transportation of samples:
All samples were immediately placed into a cooler and packed with ice or "Blue Ice" (YES) / NO

Field Observations/Notes of Sampling Event: Bubbling @ well under pressure

Signature of Field Personnel: Date: 6/12/13

amec

GROUNDWATER SAMPLING FIELD FORM

Fred Meyer Port Orchard
Quarterly Groundwater Monitoring
AMEC Job #: 9-61M-10282-0
Date: 6/12/13

Field Personnel: J. Gardner **Monitoring Well ID:** MW-111
Start Time: 07:00 Weather Conditions: O.C Approx. Air Temp (°F): ~60

INITIAL WELL DATA & WELL PURGING INFORMATION

Water Temperature (degree C)	Water pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	ORP (mV)	Water Level (feet bgs)	Time (0:00 - 23:59)	Volume Purged (gal or liters)
12.15	6.41	157	2.2	1.13	-6.3	29.05	07:00	0
12.31	6.44	157	1.1	0.89	-14.3	29.19	07:20	4
12.34	6.43	157	0.9	0.76	-15.0	29.19	07:25	5
12.37	6.43	157	0.9	0.75	-14.9	29.19	07:30	6

Ferrous Iron (2+) using the field kit:

0.5 inch tubing: 0.020 gallons/linear foot 2" well casing: 0.17 gal/linear foot Total Purged = 6L
Purge Pumping Rate (approx. L/m): .2 L/M
Approx. Pump/Intake Depth:
Well Yield: High / Moderate / Low
Decontamination Method:

WELL CONDITION

Casing Size and Type: 2"

Casing Condition:	OK / NA / Needs Repairs/Repaired	Lock Condition:	OK / NA / Needs Repairs/Repaired
Cap Condition:	OK / NA / Needs Repairs/Repaired	Monument Condition:	OK / NA / Needs Repairs/Repaired

NOTES:

SAMPLING INFORMATION / DATA

QA/QC Sample (circle one): Duplicate Lab QA/QC (NONE)
Sampling Method (circle one): dedicated Dual Valve Pump peristaltic pump

Analytical Parameters	Destination Laboratory	Preservative	Bottle size	Number of bottles	Sample ID	Time Sampled
NW TPH-Gx 8021	APEX	HCL & ice	40 ML	3	MW111-060213	07:30
8260 Suite	APEX	HCL & ice	40 ML			

Method of Transportation of samples:
All samples were immediately placed into a cooler and packed with ice or "Blue Ice" (YES) / NO

Field Observations/Notes of Sampling Event:

Signature of Field Personnel: Date: 6/12/13

APPENDIX B

Laboratory Analytical Results and Chain-or-Custody Documents

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Monday, July 8, 2013

Kurt Harrington
Amec Environment & Infrastructure, Inc
7376 SW Durham Road
Portland, OR 97224

RE: Fred Meyer (FMPO) Port Orchard / 901M10282-0

Enclosed are the results of analyses for work order A3F0348, which was received by the laboratory on 6/13/2013 at 3:45:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: cwoodcock@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Christina M. Woodcock For Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW105-061213	A3F0348-01	Water	06/12/13 10:45	06/13/13 15:45
MW110-061213	A3F0348-02	Water	06/12/13 10:00	06/13/13 15:45
MW103-061213	A3F0348-03	Water	06/12/13 09:15	06/13/13 15:45
MW111-061213	A3F0348-04	Water	06/12/13 07:30	06/13/13 15:45
MW108A-061213	A3F0348-05	Water	06/12/13 08:30	06/13/13 15:45
MW109A-061213	A3F0348-06	Water	06/12/13 11:30	06/13/13 15:45
Trip Blank	A3F0348-07	Water	06/12/13 11:30	06/13/13 15:45

Apex Laboratories

Christina M. Woodcock For Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW105-061213 (A3F0348-01)			**Matrix: Water**		**Batch: 3060420**			
Gasoline Range Organics	ND	---	0.100	mg/L	1	06/17/13 12:31	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 81 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*79 %*	*Limits: 50-150 %*	"	"	"	
MW110-061213 (A3F0348-02)			**Matrix: Water**		**Batch: 3060420**			
Gasoline Range Organics	ND	---	0.100	mg/L	1	06/17/13 14:21	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 80 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*79 %*	*Limits: 50-150 %*	"	"	"	
MW103-061213 (A3F0348-03)			**Matrix: Water**		**Batch: 3060420**			
Gasoline Range Organics	ND	---	0.100	mg/L	1	06/17/13 15:15	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 85 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*84 %*	*Limits: 50-150 %*	"	"	"	
MW111-061213 (A3F0348-04)			**Matrix: Water**		**Batch: 3060420**			
Gasoline Range Organics	ND	---	0.100	mg/L	1	06/17/13 12:58	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 79 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*78 %*	*Limits: 50-150 %*	"	"	"	
MW108A-061213 (A3F0348-05)			**Matrix: Water**		**Batch: 3060420**			
Gasoline Range Organics	ND	---	0.100	mg/L	1	06/17/13 13:25	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 81 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*78 %*	*Limits: 50-150 %*	"	"	"	
MW109A-061213 (A3F0348-06)			**Matrix: Water**		**Batch: 3060420**			
Gasoline Range Organics	ND	---	0.100	mg/L	1	06/17/13 13:55	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 80 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*79 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Christina M. Woodcock For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11

ANALYTICAL SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW105-061213 (A3F0348-01)			**Matrix: Water**		**Batch: 3060420**			
Benzene	ND	---	0.250	ug/L	1	06/17/13 12:31	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
Naphthalene	ND	---	2.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 102 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*106 %*	*Limits: 80-120 %*	"	"	"	
MW110-061213 (A3F0348-02)			**Matrix: Water**		**Batch: 3060420**			
Benzene	ND	---	0.250	ug/L	1	06/17/13 14:21	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
Naphthalene	ND	---	2.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 102 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*94 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*110 %*	*Limits: 80-120 %*	"	"	"	
MW103-061213 (A3F0348-03)			**Matrix: Water**		**Batch: 3060420**			
Benzene	ND	---	0.250	ug/L	1	06/17/13 15:15	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
Naphthalene	ND	---	2.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 106 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*99 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Christina M. Woodcock For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11

ANALYTICAL SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW103-061213 (A3F0348-03)			**Matrix: Water**		**Batch: 3060420**			
Surrogate: 4-Bromofluorobenzene (Surr)			*Recovery: 106 %*	*Limits: 80-120 %*	1	"	EPA 8260B	
MW111-061213 (A3F0348-04)			**Matrix: Water**		**Batch: 3060420**			
Benzene	ND	---	0.250	ug/L	1	06/17/13 12:58	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
Naphthalene	ND	---	2.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 99 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*94 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*97 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*106 %*	*Limits: 80-120 %*	"	"	"	
MW108A-061213 (A3F0348-05)			**Matrix: Water**		**Batch: 3060420**			
Benzene	ND	---	0.250	ug/L	1	06/17/13 13:25	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
Naphthalene	ND	---	2.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 100 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*93 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*108 %*	*Limits: 80-120 %*	"	"	"	
MW109A-061213 (A3F0348-06)			**Matrix: Water**		**Batch: 3060420**			
Benzene	**6.69**	---	0.250	ug/L	1	06/17/13 13:55	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
Naphthalene	ND	---	2.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*	"	"	"	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Christina M. Woodcock For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11

ANALYTICAL SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW109A-061213 (A3F0348-06)			**Matrix: Water**		**Batch: 3060420**			
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 93 %*	*Limits: 80-120 %*	1	"	EPA 8260B	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*110 %*	*Limits: 80-120 %*	"	"	"	
Trip Blank (A3F0348-07)			**Matrix: Water**		**Batch: 3060420**			
Benzene	ND	---	0.250	ug/L	1	06/17/13 16:35	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
Naphthalene	ND	---	2.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	"	"	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 108 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*100 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*94 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*106 %*	*Limits: 80-120 %*	"	"	"	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Christina M. Woodcock For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3060420 - EPA 5030B									**Water**			
Blank (3060420-BLK1)					Prepared: 06/17/13 09:00 Analyzed: 06/17/13 12:01							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 79 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*78 %*	*50-150 %*			*"*					
LCS (3060420-BS2)					Prepared: 06/17/13 09:00 Analyzed: 06/17/13 11:34							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.416	---	0.100	mg/L	1	0.500	---	83	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 77 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*79 %*	*50-150 %*			*"*					
Duplicate (3060420-DUP1)					Prepared: 06/17/13 11:00 Analyzed: 06/17/13 14:48							
QC Source Sample: MW110-061213 (A3F0348-02)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 79 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*80 %*	*50-150 %*			*"*					

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Christina M. Woodcock For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11

QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3060420 - EPA 5030B							**Water**					
Blank (3060420-BLK1)					Prepared: 06/17/13 09:00 Analyzed: 06/17/13 12:01							
EPA 8260B												
Benzene	ND	---	0.250	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	---	1.00	"	"	---	---	---	---	---	---	
o-Xylene	ND	---	0.500	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	2.00	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*				
1,4-Difluorobenzene (Surr)			*94 %*		*80-120 %*			*"*				
Toluene-d8 (Surr)			*96 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*110 %*		*80-120 %*			*"*				
LCS (3060420-BS1)					Prepared: 06/17/13 09:00 Analyzed: 06/17/13 11:04							
EPA 8260B												
Benzene	16.5	---	0.250	ug/L	1	20.0	---	82	70-130%	---	---	
Toluene	17.9	---	1.00	"	"	"	---	90	"	---	---	
Ethylbenzene	18.2	---	0.500	"	"	"	---	91	"	---	---	
m,p-Xylene	37.7	---	1.00	"	"	40.0	---	94	"	---	---	
o-Xylene	18.1	---	0.500	"	"	20.0	---	91	"	---	---	
Xylenes, total	55.8	---	1.50	"	"	60.0	---	93	"	---	---	
Naphthalene	19.3	---	2.00	"	"	20.0	---	97	"	---	---	
Methyl tert-butyl ether (MTBE)	15.8	---	1.00	"	"	"	---	79	"	---	---	
Isopropylbenzene	20.7	---	1.00	"	"	"	---	103	"	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Christina M. Woodcock For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11

QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3060420 - EPA 5030B									**Water**			
LCS (3060420-BS1)					Prepared: 06/17/13 09:00 Analyzed: 06/17/13 11:04							
n-Propylbenzene	17.8	---	0.500	ug/L	"	"	---	89	"	---	---	
1,2,4-Trimethylbenzene	19.0	---	1.00	"	"	"	---	95	"	---	---	
1,3,5-Trimethylbenzene	19.2	---	1.00	"	"	"	---	96	"	---	---	
1,2-Dibromoethane (EDB)	22.4	---	0.500	"	"	"	---	112	"	---	---	
1,2-Dichloroethane (EDC)	18.4	---	0.500	"	"	"	---	92	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 95 %*		*Limits: 80-120 %*			*Dilution: 1x*				
1,4-Difluorobenzene (Surr)			*91 %*		*80-120 %*			*"*				
Toluene-d8 (Surr)			*94 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*107 %*		*80-120 %*			*"*				
Duplicate (3060420-DUP1)					Prepared: 06/17/13 11:00 Analyzed: 06/17/13 14:48							
QC Source Sample: MW110-061213 (A3F0348-02)												
EPA 8260B												
Benzene	ND	---	0.250	ug/L	1	---	ND	---	---	---	30%	
Toluene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
o-Xylene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Xylenes, total	ND	---	1.50	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	---	2.00	"	"	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Surr: Dibromofluoromethane (Surr)			*Recovery: 102 %*		*Limits: 80-120 %*			*Dilution: 1x*				
1,4-Difluorobenzene (Surr)			*95 %*		*80-120 %*			*"*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*107 %*		*80-120 %*			*"*				

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Christina M. Woodcock For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11

QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3060420 - EPA 5030B							**Water**					
Matrix Spike (3060420-MS1)					Prepared: 06/17/13 11:00 Analyzed: 06/17/13 15:42							
QC Source Sample: MW103-061213 (A3F0348-03)												
EPA 8260B												
Benzene	17.8	---	0.250	ug/L	1	20.0	ND	89	70-130%	---	---	
Toluene	18.5	---	1.00	"	"	"	ND	93	"	---	---	
Ethylbenzene	19.4	---	0.500	"	"	"	ND	97	"	---	---	
m,p-Xylene	37.5	---	1.00	"	"	40.0	ND	94	"	---	---	
o-Xylene	18.6	---	0.500	"	"	20.0	ND	93	"	---	---	
Xylenes, total	56.0	---	1.50	"	"	60.0	ND	93	"	---	---	
Naphthalene	18.4	---	2.00	"	"	20.0	ND	92	"	---	---	
Methyl tert-butyl ether (MTBE)	16.2	---	1.00	"	"	"	ND	81	"	---	---	
Isopropylbenzene	21.2	---	1.00	"	"	"	ND	106	"	---	---	
n-Propylbenzene	18.7	---	0.500	"	"	"	ND	94	"	---	---	
1,2,4-Trimethylbenzene	18.2	---	1.00	"	"	"	ND	91	"	---	---	
1,3,5-Trimethylbenzene	17.6	---	1.00	"	"	"	ND	88	"	---	---	
1,2-Dibromoethane (EDB)	20.9	---	0.500	"	"	"	ND	104	"	---	---	
1,2-Dichloroethane (EDC)	19.5	---	0.500	"	"	"	ND	98	"	---	---	

Surr: Dibromofluoromethane (Surr)	*Recovery: 102 %*	*Limits: 80-120 %*	*Dilution: 1x*	
1,4-Difluorobenzene (Surr)	*96 %*	*80-120 %*	*"*	
Toluene-d8 (Surr)	*96 %*	*80-120 %*	*"*	
4-Bromofluorobenzene (Surr)	*107 %*	*80-120 %*	*"*	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Christina M. Woodcock For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11

SAMPLE PREPARATION INFORMATION

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 3060420							
A3F0348-01	Water	NWTPH-Gx (MS)	06/12/13 10:45	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-02	Water	NWTPH-Gx (MS)	06/12/13 10:00	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-03	Water	NWTPH-Gx (MS)	06/12/13 09:15	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-04	Water	NWTPH-Gx (MS)	06/12/13 07:30	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-05	Water	NWTPH-Gx (MS)	06/12/13 08:30	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-06	Water	NWTPH-Gx (MS)	06/12/13 11:30	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00

RBCA Compounds (BTEX+) by EPA 8260B

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 3060420							
A3F0348-01	Water	EPA 8260B	06/12/13 10:45	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-02	Water	EPA 8260B	06/12/13 10:00	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-03	Water	EPA 8260B	06/12/13 09:15	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-04	Water	EPA 8260B	06/12/13 07:30	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-05	Water	EPA 8260B	06/12/13 08:30	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-06	Water	EPA 8260B	06/12/13 11:30	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-07	Water	EPA 8260B	06/12/13 11:30	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00

Apex Laboratories

Christina M. Woodcock For Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

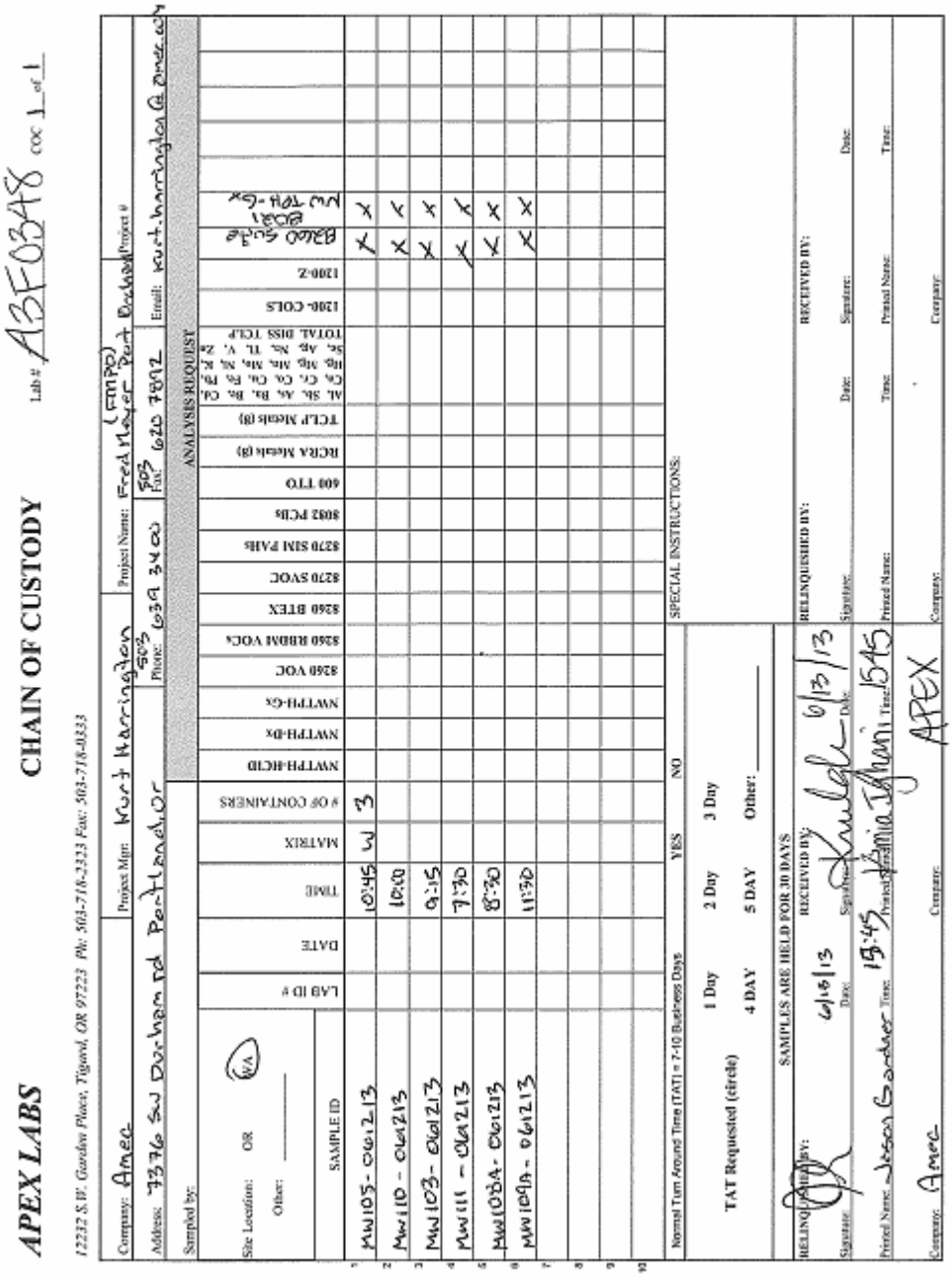
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Christina M. Woodcock For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	07/08/13 13:11



Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Christina M. Woodcock For Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Monday, August 5, 2013

Kurt Harrington
Amec Environment & Infrastructure, Inc
7376 SW Durham Road
Portland, OR 97224

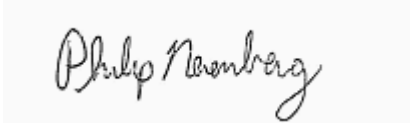
RE: Fred Meyer (FMPO) Port Orchard / 901M10282-0

Enclosed are the results of analyses for work order A3F0348, which was received by the laboratory on 6/13/2013 at 3:45:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

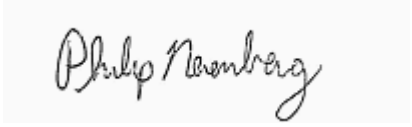
Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	08/05/13 11:28

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW105-061213	A3F0348-01	Water	06/12/13 10:45	06/13/13 15:45
MW110-061213	A3F0348-02	Water	06/12/13 10:00	06/13/13 15:45
MW103-061213	A3F0348-03	Water	06/12/13 09:15	06/13/13 15:45
MW111-061213	A3F0348-04	Water	06/12/13 07:30	06/13/13 15:45
MW108A-061213	A3F0348-05	Water	06/12/13 08:30	06/13/13 15:45
MW109A-061213	A3F0348-06	Water	06/12/13 11:30	06/13/13 15:45
Trip Blank	A3F0348-07	Water	06/12/13 11:30	06/13/13 15:45

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

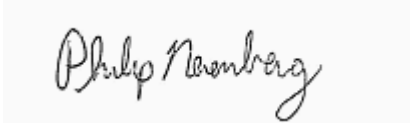
Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	08/05/13 11:28

ANALYTICAL SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW105-061213 (A3F0348-01)			**Matrix: Water**		**Batch: 3060420**			
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/17/13 12:31	EPA 8260B	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 102 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*106 %*	*Limits: 80-120 %*	"	"	"	
MW110-061213 (A3F0348-02)			**Matrix: Water**		**Batch: 3060420**			
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/17/13 14:21	EPA 8260B	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 102 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*94 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*110 %*	*Limits: 80-120 %*	"	"	"	
MW103-061213 (A3F0348-03)			**Matrix: Water**		**Batch: 3060420**			
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/17/13 15:15	EPA 8260B	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 106 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*99 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*106 %*	*Limits: 80-120 %*	"	"	"	
MW111-061213 (A3F0348-04)			**Matrix: Water**		**Batch: 3060420**			
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/17/13 12:58	EPA 8260B	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 99 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*94 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*97 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*106 %*	*Limits: 80-120 %*	"	"	"	
MW108A-061213 (A3F0348-05)			**Matrix: Water**		**Batch: 3060420**			
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/17/13 13:25	EPA 8260B	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 100 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*93 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*108 %*	*Limits: 80-120 %*	"	"	"	
MW109A-061213 (A3F0348-06)			**Matrix: Water**		**Batch: 3060420**			
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/17/13 13:55	EPA 8260B	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*93 %*	*Limits: 80-120 %*	"	"	"	

Apex Laboratories



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

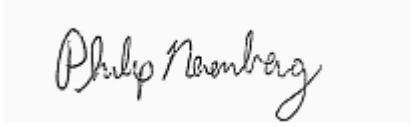
Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	08/05/13 11:28

ANALYTICAL SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW109A-061213 (A3F0348-06)			**Matrix: Water**		**Batch: 3060420**			
Surrogate: Toluene-d8 (Surr)			*Recovery: 95 %*	*Limits: 80-120 %*	1	"	EPA 8260B	
4-Bromofluorobenzene (Surr)			*110 %*	*Limits: 80-120 %*	"	"	"	
Trip Blank (A3F0348-07)			**Matrix: Water**		**Batch: 3060420**			
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	06/17/13 16:35	EPA 8260B	
Surrogate: Dibromofluoromethane (Surr)			*Recovery: 108 %*	*Limits: 80-120 %*	"	"	"	
1,4-Difluorobenzene (Surr)			*100 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*94 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*106 %*	*Limits: 80-120 %*	"	"	"	

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	08/05/13 11:28

QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3060420 - EPA 5030B							**Water**					
Blank (3060420-BLK1)					Prepared: 06/17/13 09:00 Analyzed: 06/17/13 12:01							
EPA 8260B												
Benzene	ND	---	0.250	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	---	1.00	"	"	---	---	---	---	---	---	
o-Xylene	ND	---	0.500	"	"	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	2.00	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	---	---	---	---	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*				
1,4-Difluorobenzene (Surr)			*94 %*		*80-120 %*			*"*				
Toluene-d8 (Surr)			*96 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*110 %*		*80-120 %*			*"*				
LCS (3060420-BS1)					Prepared: 06/17/13 09:00 Analyzed: 06/17/13 11:04							
EPA 8260B												
Benzene	16.5	---	0.250	ug/L	1	20.0	---	82	70-130%	---	---	
Toluene	17.9	---	1.00	"	"	"	---	90	"	---	---	
Ethylbenzene	18.2	---	0.500	"	"	"	---	91	"	---	---	
m,p-Xylene	37.7	---	1.00	"	"	40.0	---	94	"	---	---	
o-Xylene	18.1	---	0.500	"	"	20.0	---	91	"	---	---	
Xylenes, total	55.8	---	1.50	"	"	60.0	---	93	"	---	---	
Naphthalene	19.3	---	2.00	"	"	20.0	---	97	"	---	---	
Methyl tert-butyl ether (MTBE)	15.8	---	1.00	"	"	"	---	79	"	---	---	
Isopropylbenzene	20.7	---	1.00	"	"	"	---	103	"	---	---	

Apex Laboratories

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

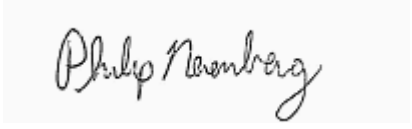
Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	08/05/13 11:28

QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3060420 - EPA 5030B									**Water**			
LCS (3060420-BS1)					Prepared: 06/17/13 09:00 Analyzed: 06/17/13 11:04							
n-Propylbenzene	17.8	---	0.500	ug/L	"	"	---	89	"	---	---	
1,2,4-Trimethylbenzene	19.0	---	1.00	"	"	"	---	95	"	---	---	
1,3,5-Trimethylbenzene	19.2	---	1.00	"	"	"	---	96	"	---	---	
1,2-Dibromoethane (EDB)	22.4	---	0.500	"	"	"	---	112	"	---	---	
1,2-Dichloroethane (EDC)	18.4	---	0.500	"	"	"	---	92	"	---	---	
Surr: Dibromofluoromethane (Surr)			*Recovery: 95 %*		*Limits: 80-120 %*			*Dilution: 1x*				
1,4-Difluorobenzene (Surr)			*91 %*		*80-120 %*			*"*				
Toluene-d8 (Surr)			*94 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*107 %*		*80-120 %*			*"*				
Duplicate (3060420-DUP1)					Prepared: 06/17/13 11:00 Analyzed: 06/17/13 14:48							
QC Source Sample: MW110-061213 (A3F0348-02)												
EPA 8260B												
Benzene	ND	---	0.250	ug/L	1	---	ND	---	---	---	30%	
Toluene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
o-Xylene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Xylenes, total	ND	---	1.50	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	---	2.00	"	"	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	1.00	"	"	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	"	"	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.500	"	"	---	ND	---	---	---	30%	
Surr: Dibromofluoromethane (Surr)			*Recovery: 102 %*		*Limits: 80-120 %*			*Dilution: 1x*				
1,4-Difluorobenzene (Surr)			*95 %*		*80-120 %*			*"*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*107 %*		*80-120 %*			*"*				

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	08/05/13 11:28

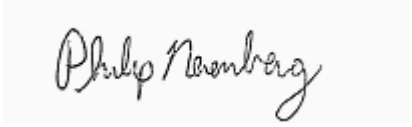
QUALITY CONTROL (QC) SAMPLE RESULTS

RBCA Compounds (BTEX+) by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3060420 - EPA 5030B							**Water**					
Matrix Spike (3060420-MS1)					Prepared: 06/17/13 11:00 Analyzed: 06/17/13 15:42							
QC Source Sample: MW103-061213 (A3F0348-03)												
EPA 8260B												
Benzene	17.8	---	0.250	ug/L	1	20.0	ND	89	70-130%	---	---	
Toluene	18.5	---	1.00	"	"	"	ND	93	"	---	---	
Ethylbenzene	19.4	---	0.500	"	"	"	ND	97	"	---	---	
m,p-Xylene	37.5	---	1.00	"	"	40.0	ND	94	"	---	---	
o-Xylene	18.6	---	0.500	"	"	20.0	ND	93	"	---	---	
Xylenes, total	56.0	---	1.50	"	"	60.0	ND	93	"	---	---	
Naphthalene	18.4	---	2.00	"	"	20.0	ND	92	"	---	---	
Methyl tert-butyl ether (MTBE)	16.2	---	1.00	"	"	"	ND	81	"	---	---	
Isopropylbenzene	21.2	---	1.00	"	"	"	ND	106	"	---	---	
n-Propylbenzene	18.7	---	0.500	"	"	"	ND	94	"	---	---	
1,2,4-Trimethylbenzene	18.2	---	1.00	"	"	"	ND	91	"	---	---	
1,3,5-Trimethylbenzene	17.6	---	1.00	"	"	"	ND	88	"	---	---	
1,2-Dibromoethane (EDB)	20.9	---	0.500	"	"	"	ND	104	"	---	---	
1,2-Dichloroethane (EDC)	19.5	---	0.500	"	"	"	ND	98	"	---	---	

Surr: Dibromofluoromethane (Surr)	*Recovery: 102 %*	*Limits: 80-120 %*	*Dilution: 1x*	
1,4-Difluorobenzene (Surr)	*96 %*	*80-120 %*	*"*	
Toluene-d8 (Surr)	*96 %*	*80-120 %*	*"*	
4-Bromofluorobenzene (Surr)	*107 %*	*80-120 %*	*"*	

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	08/05/13 11:28

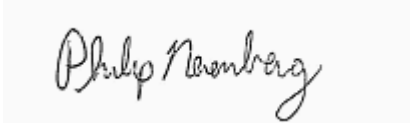
SAMPLE PREPARATION INFORMATION

RBCA Compounds (BTEX+) by EPA 8260B

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 3060420							
A3F0348-01	Water	EPA 8260B	06/12/13 10:45	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-02	Water	EPA 8260B	06/12/13 10:00	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-03	Water	EPA 8260B	06/12/13 09:15	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-04	Water	EPA 8260B	06/12/13 07:30	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-05	Water	EPA 8260B	06/12/13 08:30	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-06	Water	EPA 8260B	06/12/13 11:30	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00
A3F0348-07	Water	EPA 8260B	06/12/13 11:30	06/17/13 11:00	5mL/5mL	5mL/5mL	1.00

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	08/05/13 11:28

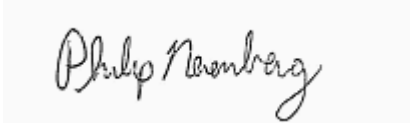
Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories



Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Amec Environment & Infrastructure, Inc	Project: **Fred Meyer (FMPO) Port Orchard**	
7376 SW Durham Road	Project Number: 901M10282-0	**Reported:**
Portland, OR 97224	Project Manager: Kurt Harrington	08/05/13 11:28

APEX LABS **CHAIN OF CUSTODY** Lab # A3F0348 COC 1 of 1

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: Amec | Project Mgr: Kurt Harrington | Project Name: Fred Meyer (FMPO) Port Orchard | Project #

Address: 7376 SW Durham rd Portland, Or | Phone: 503 639 3400 | Fax: 503 620 7892 | Email: kurt.harrington@amec.com

Sampled by:

Site Location: OR (WA) Other: ___

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOC	8260 RBDM VOCs	8260 BTEX	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, K, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200-COLS	1200-Z	8260 Suite	8021 NW TPH-Gx					
1	MW105-061213			10:45	W	3																X	X					
2	MW110-061213			10:00																		X	X					
3	MW103-061213			9:15																		X	X					
4	MW111-061213			7:30																		X	X					
5	MW108A-061213			8:30																		X	X					
6	MW109A-061213			11:30																		X	X					
7																												
8																												
9																												
10																												

Normal Turn Around Time (TAT) = 7-10 Business Days YES NO

TAT Requested (circle) 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: ___

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date: 6/13/13	Signature: [signature] Date: 6/13/13	Signature: Date:	Signature: Date:
Printed Name: Jason Gardner Time: 15:45	Printed Name: Amia Ighani Time: 1545	Printed Name: Time:	Printed Name: Time:
Company: Amec	Company: APEX	Company:	Company:

Apex Laboratories

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

APPENDIX C

Summary of Historical Analytical Results

Appendix C
Groundwater Elevations and Analytical Results
Fred Meyer Facility, Port Orchard, Washington

			Volatile Organic Compounds							Alkylbenzenes & Naphthalene									Groundwater Levels			
Well No.	Date	Gasoline-Range Organics	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	EDC	EDB	i-PB	n-PB	1,2,4-TMB	1,3,5-TMB	tertbutyl Benzene	sec-butyl Benzene	n-butyl-Benzene	4-IP-Toluene	Naph-thalene	Casing Elev.	Depth to Water	NAPL Thick-ness	Water Elev.
CAS RN		not applicable	71-43-2	108-88-3	100-41-4	1330-20-7	1634-04-4	107-06-2	106-93-4	98-82-8	103-65-1	95-63-6	108-67-8	98-06-6	135-98-8	104-51-8	99-87-6	91-20-3				
		(µg/L)	(µg/L)							(µg/L)												
MTCA Method A		**800**	**5**	**1,000**	**700**	**1,000**	**20**	**5**	**0.01**	**None**	**None**	**None**	**None**	**None**	**None**	**None**	**None**	**160**				
Active Wells																						
MW-103	5/22/91	22,000	860	3,900	11	6,800	-	-	-	-	-	-	-	-	-	-	-	-	NM	NM	NM	NM
MW-103	3/25/93	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	311.70	28.04	0.00	283.66
MW-103	5/28/97	42,000	12	1,100	56	9,500	-	-	-	-	-	-	-	-	-	-	-	-	311.70	17.20	0.00	294.50
MW-103	2/18/98	48,000	22	630	350	7,800	-	-	-	-	-	-	-	-	-	-	-	-	NM	NM	NM	NM
MW-103	8/18/99	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	311.70	20.07	0.02	291.63
MW-103	11/2/99	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	311.70	20.90	0.03	290.80
MW-103	3/1/00	47,000	20 U	450	1,200	7,900	20 U	20 U	20 U	-	-	-	-	-	-	-	-	-	311.70	16.99	0.00	294.71
MW-103	5/24/00	3,900	1 U	18	33	594	1 U	1 U	1 U	-	-	-	-	-	-	-	-	-	311.70	18.13	0.00	293.57
MW-103	7/10/00	1,850	1 U	15	16	277	1 U	1 U	1 U	1 U	1 U	27.4	49	1 U	1 U	5.0 U	1 U	25 U	311.70	20.00	0.00	291.70
MW-103	10/19/00	1,000	1 U	17	34	322	1 U	1 U	1 U	1	3.5	98.9	27.8	1 U	1 U	5.0 U	1 U	38	311.70	16.15	0.00	295.55
MW-103	12/13/00	3,810	0.5 U	29	74	597	2	-	-	-	-	-	-	-	-	-	-	-	311.70	19.29	0.00	292.41
MW-103	3/19/01	16,600	10 U	218	528	3,750	10 U	10 U	10 U	21	58.5	1290	389	10 U	10 U	5 U	10 U	309	311.70	19.83	0.00	291.87
MW-103	6/28/01	9,660	10 U	26	126	953	40 U	-	-	-	-	-	-	-	-	-	-	-	311.70	21.03	0.00	290.67
MW-103	9/23/01	23,200	10 U	109	628	3,560	40 U	-	-	-	-	-	-	-	-	-	-	-	311.70	21.24	0.00	290.46
MW-103	12/11/01	21,100	10 U	18	264	1,950	40 U	10 U	10 U	40 U	35.0	1130	441	20 U	20 U	100 U	40 U	137	311.70	18.79	0.00	292.91
MW-103	3/20/02	10,700	2.5 U	10	97	1,130	10 U	2.5 U	2.5 U	10 U	19.1	948	389	5 U	5 U	25 U	10.1	83	311.70	16.32	0.00	295.38
MW-103	6/11/02	2,020	2.5 U	3	32	250	10 U	2.5 U	2.5 U	10 U	6.1	141	51.8	5 U	5 U	25 U	10 U	25	311.70	18.05	0.00	293.65
MW-103	9/25/02	5,190	1 U	2	51	65	2 U	1 U	1 U	5	12	53.8	7.43	1 U	1.7	6.2	-	152	311.70	20.43	0.00	291.27
MW-103	12/12/02	15,200	1 U	7	473	2,021	2 U	1 U	1 U	34	115.0	1710	495	1 U	1 U	54.2	-	163	311.70	22.55	0.00	289.15
MW-103	4/1/03	2,270	2.5 U	2.5 U	13	244	10 U	-	-	-	-	-	-	-	-	-	-	-	311.70	18.75	0.00	292.95
MW-103	6/22/03	15,400	5 U	5 U	252	1,060	20 U	-	-	20 U	78.4	1300	440	10 U	10 U	50 U	-	155	311.70	20.70	0.00	291.00
MW-103	9/23/03	12,500	10 U	10 U	354	1,068	10 U	10 U	10 U	27	70.9	1060	323	10 U	10 U	14.8	1 U	80	311.70	22.17	0.00	289.53
MW-103	12/17/03	4,180	10 U	10 U	152	455	20 U	10 U	10 U	10 U	20.40	288	87	10 U	10 U	10 U	10 U	28	311.70	19.56	0.00	292.14
MW-103	3/31/04	623	0.2 U	0.5 U	16	53	2 U	0.5 U	0.5 U	3	7.6	58.2	10.4	1 U	1 U	5 U	1 U	24	311.70	18.42	0.00	293.28
MW-103	6/29/04	17,300	3	2.5 U	243	1,133	2.5 U	2.5 U	2.5 U	25	69.4	1010	281	2.5 U	2.5 U	14.4	5.98	138	311.70	20.58	0.00	291.12
MW-103	9/29/04	9,680	2 U	5 U	276	1,010	20 U	5 U	5 U	31	88.6	1260	391	10.0 U	10.0 U	50.0 U	10.0 U	95	311.70	21.08	0.00	290.62
MW-103	11/9/04	-	2 U	5 U	310	1,020	20 U	5 U	5 U	45	123.0	1420	440	10.0 U	10.0 U	50.0 U	10.0 U	92	311.70	21.97	0.00	289.73
MW-103	3/10/05	1,570	2 U	5 U	140	612	20 U	5 U	5 U	20	U	918	266	10.0 U	10.0 U	50.0 U	20.0 U	89	311.70	21.27	0.00	290.43
MW-103*	6/21/05	6,660	1 U	2.5 U	114	484	10 U	2.5 U	2.5 U	12	31.8	474	128	5.00 U	5.00 U	25.0 U	10.0 U	58	311.70	20.74	0.00	290.96
MW-103	9/23/05	13,700	0.2 U	0.5 U	26	99	2 U	0.5 U	0.5 U	4.08	12.6	173	57.8	1.00 U	1.00 U	8.00 U	2.00 U	9	311.70	22.12	0.00	289.58
MW-103	12/1/05	3,310	1 U	2.5 U	105	694	10 U	2.5 U	2.5 U	13	23.5	780	289	10.0 U	10.0 U	10.0 U	10.0 U	25	311.70	21.72	0.00	289.98
MW-103	3/9/06	80 U	0.2 U	0.5 U	0.75	1 U	2 U	0.5 U	0.5 U	2 U	1.31	1 U	0.78	1 U	1 U	50 U	2 U	2 U	311.70	16.44	0.00	295.26
MW-103	6/8/06	584	0.2 U	0.5 U	8.32	22	2 U	0.5 U	0.5 U	3.64	12.5	81.3	29.0	2 U	2 U	5.78	2 U	13	311.70	17.62	0.00	294.08
MW-103	9/22/06	3,850	2 U	5 U	152	710	20 U	5 U	5 U	28.30	93.1	1150	446.0	10 U	10 U	50 U	10 U	75.3	311.70	21.54	0.00	290.16
MW-103	12/12/06	1,750	0.5 U	0.5 U	23.2	84.7	2 U	0.5 U	0.5 U	5.83	20.6	176	59.8	1 U	1 U	11 U	2.15	18.5	311.70	17.81	0.00	293.89
MW-103	3/28/07	80 U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	0.5 U	2 U	0.5 U	1 U	0.5 U	1 U	1 U	5 U	2 U	2 U	311.70	16.58	0.00	295.12
MW-103	6/13/07	2,500	0.400 U	1.00 U	17.5	53.3	4.00 U	1.0 U	1.0 U	6.88	25	137	46.5	2.00 U	2.00 U	10.0 U	4.0 U	16.0	311.70	18.90	0.00	292.80
MW-103	8/28/07	264	84.1	0.500 U	0.500 U	6.6	2.00 U	0.50 U	0.50 U	2.00 U	0.50 U	1.47	0.50 U	1.00 U	1.00 U	5.00 U	2.00 U	2.00 U	311.70	19.91	0.00	291.79
MW-103	11/28/07	7,130	0.200 U	0.500 U	32.2	141.0	2.00 U	0.500 U	0.500 U	2.00 U	69	743	287.0	1.00 U	1.00 U	5.00 U	10.80	39.3	311.70	20.93	0.00	290.77
MW-103	4/15/08	4,020	0.500 U	2.00U	51.8	251.9	0.500 U	0.500 U	1.00 U	11.4	33.3	453	63.5	0.500 U	1.00 U	5.00 U	0.500 U	27.5	311.70	19.09	0.00	292.61
MW-103	6/19/08	10,600	0.250 U	1.00 U	91.1	371.0	2.00 U	0.500 U	0.500 U	20.9	81.1	783	272	0.500 U	6.76	1.00 U	26	41.3	311.70	20.51	0.00	291.19
MW-103	9/16/08	2,527	0.500 U	2.00 U	24.8	207.0	2.00 U	1.00 U	1.00 U	3.3	8.9	282	96	5.00 U	100 U	10.10	10.0 U	22.3	311.70	20.11	0.00	291.59
MW-103	1/24/09	202	0.250 U	1.00 U	0.620	4.36	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	8.11	3.24	-	10.0 U	1.00 U	1.00 U	5.00 U	311.70	19.20	0.00	292.50
MW-103	3/28/09	80 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	311.70	18.16	0.00	293.54
MW-103	6/11/09	100 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	2.00 U	311.70	18.61	0.00	293.09
MW-103	9/10/09	179	0.250 U	0.500 U	0.700	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.940	3.12	2.36	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	311.70	21.47	0.00	290.23
MW-103	1/22/10	1,320	0.250 U	0.500 U	7.350	20.86	1.00 U	0.500 U	0.500 U	1.73	4.27	75.6	10.6	0.500 U	1.00 U	4.51	2.72	5.00 U	311.70	19.31	0.00	292.39
MW-103	3/5/10	100 U	0.250 U	0.500 U	0.500 U	3.00 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	2.00 U	1.00 U	2.00 U	1.00 U	1.00 U	5.00 U	311.70	18.30	0.00	293.40
MW-103	6/10/10	403	0.250 U	0.500 U	0.500 U	0.600	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	15.4	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	311.70	19.44	0.00	292.26
MW-103	9/9/10	7,430	0.250 U	1.00 U	69.0	236.6	1.00 U	0.500 U	0.500 U	16.7	56.3	532	231	1.00 U	6.11	36.5	24.2	20.0	311.70	21.86	0.00	289.84

Appendix C
Groundwater Elevations and Analytical Results
Fred Meyer Facility, Port Orchard, Washington

			Volatile Organic Compounds							Alkylbenzenes & Naphthalene									Groundwater Levels			
Well No.	**Date**	**Gasoline-Range Organics**	**Benzene**	**Toluene**	**Ethyl-benzene**	**Total Xylenes**	**MTBE**	**EDC**	**EDB**	**i-PB**	**n-PB**	**1,2,4-TMB**	**1,3,5-TMB**	**tertbutyl Benzene**	**sec-butyl Benzene**	**n-butyl-Benzene**	**4-IP-Toluene**	**Naph-thalene**	**Casing Elev.**	**Depth to Water**	**NAPL Thick-ness**	**Water Elev.**
CAS RN		not applicable	71-43-2	108-88-3	100-41-4	1330-20-7	1634-04-4	107-06-2	106-93-4	98-82-8	103-65-1	95-63-6	108-67-8	98-06-6	135-98-8	104-51-8	99-87-6	91-20-3				
		(µg/L)	(µg/L)							(µg/L)												
MTCA Method A		**800**	**5**	**1,000**	**700**	**1,000**	**20**	**5**	**0.01**	**None**	**None**	**None**	**None**	**None**	**None**	**None**	**None**	**160**				
MW-103	12/6/10	4,060	2.5 U	10.0 U	**15.80**	**77.2**	10.0 U	5.00 U	5.00 U	10.0 U	**8.60**	**261**	**65.3**	10.0 U	10.0 U	13.0 U	10.0 U	20.0 U	311.70	20.60	0.00	291.10
MW-103	3/29/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	311.70	15.75	0.00	295.95
MW-103	6/11/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	311.70	18.06	0.00	293.64
MW-103	9/27/11	4,330	0.250 U	1.00 U	**16.1**	**50.0**	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	**7.71**	311.70	21.12	0.00	290.58
MW-103	12/7/11	**664**	0.250 U	1.00 U	**1.78**	**6.6**	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	311.70	20.05	0.00	291.65
MW-103	1/12/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	311.70	20.70	0.00	291.00
MW-103	5/10/12	**108**	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	311.70	21.28	0.00	290.42
MW-103	8/8/12	2,490	0.250 U	1.00 U	**4.30**	**27.0**	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	**3.04**	311.70	22.61	0.00	289.09
MW-103	11/14/12	**305**	0.250 U	1.00 U	**0.650**	**1.51**	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	311.70	24.45	0.00	287.25
MW-103	2/11/13	**311**	0.125 U	0.500 U	**0.450 J**	**1.62**	0.500 U	0.250 U	0.250 U	-	-	-	-	-	-	-	-	1.00 U	311.70	18.79	0.00	292.91
MW-103	6/12/13	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	311.70	19.80	0.00	291.90
MW-105	11/2/99	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	311.99	21.07	0.00	290.92
MW-105	3/1/00	100U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-	-	-	-	-	-	-	-	-	311.99	15.70	0.00	296.29
MW-105	5/24/00	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	311.99	17.76	0.00	294.23
MW-105	7/10/00	50U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	-	-	-	-	-	-	-	-	-	311.99	18.50	0.00	293.49
MW-105	10/19/00	50U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	25 U	311.99	20.60	0.00	291.39
MW-105	12/13/00	50U	0.5 U	0.5 U	0.5 U	1.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	311.99	21.15	0.00	290.84
MW-105	3/19/01	50U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	25 U	311.99	20.40	0.00	291.59
MW-105	6/28/01	**99.8**	0.5 U	0.5 U	0.5 U	1 U	2 U	-	-	-	-	-	-	-	-	-	-	-	311.99	20.26	0.00	291.73
MW-105	9/23/01	**135**	0.5 U	0.5 U	0.5 U	1 U	2 U	-	-	-	-	-	-	-	-	-	-	-	311.99	20.62	0.00	291.37
MW-105	12/11/01	80U	0.5 U	0.5 U	0.5 U	1 U	2 U	5 U	5 U	2 U	0.5 U	1 U	1 U	1 U	1 U	5 U	2 U	2 U	311.99	18.37	0.00	293.62
MW-105	3/20/02	80U	0.5 U	0.5 U	0.5 U	1 U	2 U	0.5 U	0.5 U	2 U	0.5 U	3 U	1 U	1 U	1 U	5 U	2 U	2 U	311.99	15.81	0.00	296.18
MW-105	6/11/02	80U	0.5 U	0.5 U	0.5 U	**2**	2 U	0.5 U	0.5 U	2 U	2 U	1 U	1 U	1 U	1 U	5 U	2 U	2 U	311.99	17.64	0.00	294.35
MW-105	9/25/02	50U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	311.99	20.65	0.00	291.34
MW-105	12/12/02	50U	1 U	1 U	1 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	311.99	21.49	0.00	290.50
MW-105	4/1/03	80U	0.5 U	0.5 U	0.5 U	1 U	2 U	-	-	-	-	-	-	-	-	-	-	-	311.99	17.93	0.00	294.06
MW-105	6/22/03	80U	0.5 U	0.5 U	0.5 U	1 U	2 U	-	-	2 U	0.5 U	1 U	0.5 U	1 U	1 U	5 U	-	2 U	311.99	19.80	0.00	292.19
MW-105	9/23/03	50U	1 U	1 U	1 U	3 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	311.99	21.61	0.00	290.38
MW-105	12/17/03	50U	0.2 U	0.2 U	0.2 U	0.3 U	1 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	10 U	0.5 U	311.99	19.67	0.00	292.32
MW-105	3/31/04	80U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	0.5 U	2 U	0.5 U	1 U	0.5 U	1 U	1 U	5 U	1 U	2 U	311.99	18.42	0.00	293.57
MW-105	6/29/04	50U	0.2 U	0.2 U	0.2 U	0.8 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	**1**	311.99	19.80	0.00	292.19
MW-105	9/29/04	80U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	0.5 U	2 U	0.5 U	1 U	0.5 U	1 U	1 U	5 U	1 U	2 U	311.99	20.47	0.00	291.52
MW-105	11/9/04	-	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	0.5 U	2 U	0.5 U	1 U	0.5 U	1 U	1 U	5 U	1 U	2 U	311.99	21.14	0.00	290.85
MW-105	3/10/05	80U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	0.5 U	2 U	2 U	1 U	0.5 U	1 U	1 U	5 U	2 U	2 U	311.99	20.35	0.00	291.64
MW-105*	6/21/05	80U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	0.5 U	2 U	0.5 U	1 U	0.5 U	1 U	1 U	5 U	2 U	2 U	311.99	20.06	0.00	291.93
MW-105	9/23/05	80U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	0.5 U	2 U	0.5 U	1 U	0.5 U	1 U	1 U	5 U	2 U	**2**	311.99	21.62	0.00	290.37
MW-105	12/1/05	80U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	0.5 U	2 U	0.5 U	1 U	0.5 U	2 U	2 U	2 U	2 U	2 U	311.99	20.99	0.00	291.00
MW-105	3/9/06	80U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	0.5 U	2 U	0.5 U	1 U	0.5 U	1 U	1 U	5 U	2 U	2 U	311.99	16.55	0.00	295.44
MW-105	6/8/06	80U	0.2 U	0.5 U	0.5 U	1 U	2 U	0.5 U	0.5 U	2 U	0.5 U	1 U	0.5 U	2 U	2 U	2 U	2 U	2 U	311.99	17.33	0.00	294.66
MW-105	9/22/06	2,340	329	**412**	**6.55**	**151**	10 U	2.5 U	2.5 U	10 U	2.5 U	5 U	**6.15**	5 U	5 U	25 U	5 U	10 U	311.99	20.84	0.00	291.15
MW-105	12/12/06	6,140	1,690	1,870	**105**	**549**	40 U	10 U	10 U	40 U	10 U	**57.6**	**24.6**	20 U	20 U	100 U	40 U	40 U	311.99	17.48	0.00	294.51
MW-105	3/28/07	**702**	161	**20**	1 U	**35**	4 U	1 U	1 U	4 U	1 U	**2.48**	**2.48**	2 U	2 U	10 U	4 U	4 U	311.99	15.55	0.00	296.44
MW-105	6/13/07	**647**	176	**39.2**	**8.9**	**65.5**	4.0 U	1.0 U	1.0 U	4.0 U	1.0 U	**5.4**	**4.9**	2.0 U	2.0 U	10.0 U	4.0 U	4.0 U	311.99	15.95	0.00	296.04
MW-105	8/28/07	4,300	1.00 U	2.50 U	**44.1**	**159.0**	10.0 U	2.50 U	2.50 U	**17.2**	**62.9**	**383.0**	**109.0**	5.00 U	5.00 U	25.0 U	10.0 U	**31.9**	311.99	18.74	0.00	293.25
MW-105	11/28/07	**99.4**	45.6	0.500 U	0.500 U	**4.15**	2.00 U	0.500 U	0.500 U	2.00 U	0.50 U	1.00 U	0.50 U	1.00 U	1.00 U	5.00 U	2.00 U	2.00 U	311.99	19.96	0.00	292.03
MW-105	4/15/08	80 U	**2.89**	2.00 U	0.500 U	1.50 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	5.00 U	0.500 U	5.00 U	311.99	18.14	0.00	293.85
MW-105	6/19/08	80 U	**3.44**	1.00 U	0.500 U	**0.540**	2.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	0.500 U	5.00 U	311.99	19.61	0.00	292.38
MW-105	9/16/08	80 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	10.0 U	1.00 U	1.00 U	5.00 U	311.99	19.71	0.00	292.28
MW-105	1/24/09	80 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	-	1.00 U	1.00 U	1.00 U	5.00 U	310.46	18.78	0.00	291.68
MW-105	3/28/09	80 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	0.500 U	1.00 U	5.00 U	310.46	17.17	0.00	293.29
MW-105	6/11/09	100 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	2.00 U	310.46	17.63	0.00	292.83
MW-105	9/10/09	80 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	310.46	21.48	0.00	288.98
MW-105	1/22/10	80 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	310.46	17.46	0.00	293.00

Appendix C
Groundwater Elevations and Analytical Results
Fred Meyer Facility, Port Orchard, Washington

			Volatile Organic Compounds							Alkylbenzenes & Naphthalene									Groundwater Levels			
Well No.	Date	Gasoline-Range Organics	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	EDC	EDB	i-PB	n-PB	1,2,4-TMB	1,3,5-TMB	tertbutyl Benzene	sec-butyl Benzene	n-butyl-Benzene	4-IP-Toluene	Naph-thalene	Casing Elev.	Depth to Water	NAPL Thick-ness	Water Elev.
CAS RN		not applicable	71-43-2	108-88-3	100-41-4	1330-20-7	1634-04-4	107-06-2	106-93-4	98-82-8	103-65-1	95-63-6	108-67-8	98-06-6	135-98-8	104-51-8	99-87-6	91-20-3				
		(µg/L)	(µg/L)							(µg/L)												
MTCA Method A		**800**	**5**	**1,000**	**700**	**1,000**	**20**	**5**	**0.01**	**None**	**None**	**None**	**None**	**None**	**None**	**None**	**None**	**160**				
MW-105	3/5/10	100 U	0.250 U	0.500 U	0.500 U	3.00 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	2.00 U	1.00 U	2.00 U	1.00 U	1.00 U	5.00 U	310.46	16.98	0.00	293.48
MW-105	6/10/10	100 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.46	18.11	0.00	292.35
MW-105	9/9/10	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.46	20.62	0.00	289.84
MW-105	12/6/10	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.46	19.22	0.00	291.24
MW-105	3/29/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.46	14.22	0.00	296.24
MW-105	6/21/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.46	16.20	0.00	294.26
MW-105	9/27/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.46	20.28	0.00	290.18
MW-105	12/7/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.46	18.51	0.00	291.95
MW-105	1/12/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.46	18.34	0.00	292.12
MW-105	5/10/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.46	16.28	0.00	294.18
MW-105	8/8/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.46	19.72	0.00	290.74
MW-105	11/14/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.46	20.57	0.00	289.89
MW-105	2/11/13	50 U	0.125 U	0.500 U	0.250 U	0.750 U	0.500 U	0.250 U	0.250 U	-	-	-	-	-	-	-	-	1.00 U	310.46	16.02	0.00	294.44
MW-105	6/12/13	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.46	17.13	0.00	293.33
MW-108A	1/24/09	80 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	-	10.0 U	1.00 U	1.00 U	5.00 U	310.38	23.51	0.00	286.87
MW-108A	3/28/09	80 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	0.500 U	1.00 U	5.00 U	310.38	22.70	0.00	287.68
MW-108A	6/11/09	100 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	2.00 U	310.38	23.42	0.00	286.96
MW-108A	9/10/09	80 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	310.38	25.52	0.00	284.86
MW-108A	1/22/10	80 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	310.38	22.69	0.00	287.69
MW-108A	3/5/10	100 U	0.250 U	0.500 U	0.500 U	3.00 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	2.00 U	1.00 U	2.00 U	1.00 U	1.00 U	5.00 U	310.38	21.13	0.00	289.25
MW-108A	6/10/10	100 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.38	21.48	0.00	288.90
MW-108A	9/9/10	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.38	23.50	0.00	286.88
MW-108A	12/6/10	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.38	23.15	0.00	287.23
MW-108A	3/29/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.38	17.62	0.00	292.76
MW-108A	6/21/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.38	19.89	0.00	290.49
MW-108A	9/27/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.38	22.95	0.00	287.43
MW-108A	12/7/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.38	23.05	0.00	287.33
MW-108A	1/12/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.38	23.17	0.00	287.21
MW-108A	5/10/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.38	21.03	0.00	289.35
MW-108A	8/8/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.38	22.80	0.00	287.58
MW-108A	11/14/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.38	24.31	0.00	286.07
MW-108A	2/11/13	50 U	0.125 U	0.500 U	0.250 U	0.750 U	0.500 U	0.250 U	0.250 U	-	-	-	-	-	-	-	-	1.00 U	310.38	19.90	0.00	290.48
MW-108A	6/12/13	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.38	21.05	0.00	289.33
MW-109	1/24/09	80 U	**1.51**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	-	1.00 U	1.00 U	1.00 U	5.00 U	310.48	16.27	0.00	294.21
MW-109	3/28/09	80 U	**2.02**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	0.500 U	1.00 U	5.00 U	310.48	16.13	0.00	294.35
MW-109	6/11/09	100 U	**27.4**	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	2.00 U	310.48	16.27	0.00	294.21
MW-109	9/10/09	80 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	310.48	19.77	0.00	290.71
MW-109	1/22/10	80 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	310.48	15.25	0.00	295.23
MW-109	3/5/10	100 U	0.250 U	0.500 U	0.500 U	3.00 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	2.00 U	1.00 U	2.00 U	1.00 U	1.00 U	5.00 U	310.48	15.23	0.00	295.25
MW-109	6/10/10	100 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.48	16.20	0.00	294.28
MW-109	9/9/10	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.48	18.92	0.00	291.56
MW-109	12/6/10	100 U	**1.08**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.48	16.71	0.00	293.77
MW-109	3/29/11	100 U	**2.23**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.48	13.30	0.00	297.18
MW-109	6/21/11	100 U	**22.4**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.48	14.70	0.00	295.78
MW-109	9/27/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.48	18.86	0.00	291.62
MW-109	12/7/11	**137**	**46.90**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.48	15.99	0.00	294.49
MW-109	1/12/12	100 U	**4.81**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.48	15.76	0.00	294.72
MW-109	5/10/12	100 U	**0.510**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.48	14.48	0.00	296.00
MW-109	8/8/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.48	17.91	0.00	292.57
MW-109	11/14/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.48	17.98	0.00	292.50
MW-109	2/11/13	**62.4 J**	**26.1**	0.500 U	0.250 U	0.750 U	0.500 U	0.250 U	0.250 U	-	-	-	-	-	-	-	-	1.00 U	310.48	14.19	0.00	296.29
MW-109	2/28/13	-	**4.44**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.48	13.91	0.00	296.57
MW-109	6/12/13	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	310.48	18.77	0.00	291.71
MW-109A	6/12/13	100 U	**6.69**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	311.71	20.51	0.00	291.20

Appendix C
Groundwater Elevations and Analytical Results
Fred Meyer Facility, Port Orchard, Washington

			Volatile Organic Compounds							Alkylbenzenes & Naphthalene									Groundwater Levels			
Well No.	**Date**	**Gasoline-Range Organics**	**Benzene**	**Toluene**	**Ethyl-benzene**	**Total Xylenes**	**MTBE**	**EDC**	**EDB**	**i-PB**	**n-PB**	**1,2,4-TMB**	**1,3,5-TMB**	**tertbutyl Benzene**	**sec-butyl Benzene**	**n-butyl-Benzene**	**4-IP-Toluene**	**Naph-thalene**	**Casing Elev.**	**Depth to Water**	**NAPL Thick-ness**	**Water Elev.**
CAS RN		not applicable	71-43-2	108-88-3	100-41-4	1330-20-7	1634-04-4	107-06-2	106-93-4	98-82-8	103-65-1	95-63-6	108-67-8	98-06-6	135-98-8	104-51-8	99-87-6	91-20-3				
		(µg/L)	(µg/L)							(µg/L)												
MTCA Method A		**800**	**5**	**1,000**	**700**	**1,000**	**20**	**5**	**0.01**	**None**	**None**	**None**	**None**	**None**	**None**	**None**	**None**	**160**				
MW-110	1/24/09	**10,900**	2.50 U	10.0 U	**251**	**938**	10.0 U	5.00 U	5.00 U	**22.4**	**84.1**	**246**	**193**	-	1.00 U	**26.1**	**17.7**	50.0 U	312.77	19.53	0.00	293.24
MW-110	3/28/09	**162**	0.250 U	1.00 U	**1.26**	**4.57**	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	**1.25**	**1.21**	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	312.77	16.44	0.00	296.33
MW-110	6/11/09	100 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	2.00 U	312.77	NA	0.00	NA
MW-110	9/10/09	80 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	312.77	22.60	0.00	290.17
MW-110	1/22/10	**687**	0.250 U	0.500 U	**1.04**	**2.34**	1.00 U	0.500 U	0.500 U	0.500 U	**0.950**	**4.79**	**6.59**	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	312.77	19.76	0.00	293.01
MW-110	3/5/10	100 U	0.250 U	0.500 U	0.500 U	3.00 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	**1.13**	2.00 U	1.00 U	2.00 U	1.00 U	1.00 U	5.00 U	312.77	18.56	0.00	294.21
MW-110	6/10/10	100 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	312.77	19.94	0.00	292.83
MW-110	9/9/10	**1,880**	0.250 U	1.00 U	**30.3**	**32.7**	1.00 U	0.500 U	0.500 U	**6.39**	**19.9**	**57.0**	**37.3**	1.00 U	**3.20**	**9.07**	**4.69**	**7.40**	312.77	22.30	0.00	290.47
MW-110	12/6/10	**371**	0.250 U	1.00 U	**2.36**	**7.72**	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	**5.00**	**3.50**	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	312.77	20.63	0.00	292.14
MW-110	3/29/11	**442**	0.250 U	1.00 U	**2.14**	**4.82**	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	312.77	17.33	0.00	295.44
MW-110	6/21/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	312.77	19.52	0.00	293.25
MW-110	9/27/11	**4,020**	0.250 U	1.00 U	**30.6**	**103**	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	**8.17**	312.77	21.86	0.00	290.91
MW-110	12/7/11	**1,230**	0.250 U	1.00 U	**40.0**	**40.3**	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	**7.28**	312.77	20.23	0.00	292.54
MW-110	1/12/12	100 U	0.250 U	1.00 U	0.500 U	**2.6**	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	312.77	20.22	0.00	292.55
MW-110	5/10/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	312.77	20.63	0.00	292.14
MW-110	8/8/12	**1,630**	0.250 U	1.00 U	**3.21**	**8.45**	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	**3.41**	312.77	21.50	0.00	291.27
MW-110	11/14/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	312.77	25.07	0.00	287.70
MW-110	2/11/13	50 U	0.125 U	0.500 U	0.250 U	0.750 U	0.500 U	0.250 U	0.250 U	-	-	-	-	-	-	-	-	1.00 U	312.77	18.23	0.00	294.54
MW-110	6/12/13	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	312.77	17.43	0.00	295.34
MW-111	1/24/09	80 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	-	1.00 U	1.00 U	1.00 U	5.00 U	310.62	32.25	0.00	278.37
MW-111	3/28/09	80 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	0.500 U	1.00 U	5.00 U	310.62	32.04	0.00	278.58
MW-111	6/11/09	100 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	2.00 U	310.62	31.44	0.00	279.18
MW-111	9/10/09	80 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	310.62	32.02	0.00	278.60
MW-111	1/22/10	80 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	5.00 U	310.62	31.52	0.00	279.10
MW-111	3/5/10	100 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	2.00 U	1.00 U	2.00 U	1.00 U	1.00 U	5.00 U	310.62	29.76	0.00	280.86
MW-111	6/10/10	100 U	0.250 U	0.500 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.62	28.85	0.00	281.77
MW-111	9/9/10	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.62	30.19	0.00	280.43
MW-111	12/6/10	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	1.00 U	0.500 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	310.62	31.02	0.00	279.60
MW-111	3/29/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.62	26.71	0.00	283.91
MW-111	6/21/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.62	27.31	0.00	283.31
MW-111	9/27/11	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.62	29.73	0.00	280.89
MW-111	12/7/11	100 U	**0.340**	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.62	30.77	0.00	279.85
MW-111	1/12/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.62	30.97	0.00	279.65
MW-111	5/10/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.62	28.90	0.00	281.72
MW-111	5/10/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.62	29.90	0.00	280.72
MW-111	11/14/12	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.62	31.21	0.00	279.41
MW-111	2/11/13	50 U	0.125 U	0.500 U	0.250 U	0.750 U	0.500 U	0.250 U	0.250 U	-	-	-	-	-	-	-	-	1.00 U	310.62	28.20	0.00	282.42
MW-111	6/12/13	100 U	0.250 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	-	-	-	-	-	-	-	-	2.00 U	310.62	29.05	0.00	281.57
Air Sparging Wells																						
AS-5	9/16/08	80 U	0.205 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	1.00 U	10.0 U	1.00 U	1.00 U	5.00 U	NA	20.25	0.00	NA
AS-9	9/16/08	80 U	0.205 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	1.00 U	10.0 U	1.00 U	1.00 U	5.00 U	NA	24.77	0.00	NA
AS-10	9/16/08	0.0800 U	0.205 U	1.00 U	0.500 U	1.50 U	1.00 U	0.500 U	0.500 U	0.500 U	0.500 U	1.00 U	1.00 U	0.500 U	10.0 U	1.00 U	1.00 U	5.00 U	NA	23.46	0.00	NA
Destroyed Wells																						
MW-104	05/22/91	**1,000**	1.0 U	20 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-104	03/25/93	250 U	5.0 U	5.0 U	5.0 U	15 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-104	05/28/97	250 U	1.0 U	1.0 U	1.0 U	3.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-104	02/18/98	**120**	**2.6**	**1.0**	**0.88**	**1.0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-104	8/1999	Abandoned August 1999																				
MW-106	11/2/99	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	311.73	24.95	0.00	286.78
MW-106	3/1/00	100 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	311.73	20.88	0.00	290.85
MW-106	5/24/00	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	311.73	25.93	0.00	285.80
MW-106	7/10/00	50 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	311.73	27.00	0.00	284.73
MW-106	10/19/00	50 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	25 U	311.73	25.63	0.00	286.10

Appendix C
Groundwater Elevations and Analytical Results
Fred Meyer Facility, Port Orchard, Washington

			Volatile Organic Compounds							Alkylbenzenes & Naphthalene									Groundwater Levels			
Well No.	**Date**	**Gasoline-Range Organics**	**Benzene**	**Toluene**	**Ethyl-benzene**	**Total Xylenes**	**MTBE**	**EDC**	**EDB**	**i-PB**	**n-PB**	**1,2,4-TMB**	**1,3,5-TMB**	**tertbutyl Benzene**	**sec-butyl Benzene**	**n-butyl-Benzene**	**4-IP-Toluene**	**Naph-thalene**	**Casing Elev.**	**Depth to Water**	**NAPL Thick-ness**	**Water Elev.**
CAS RN		not applicable	71-43-2	108-88-3	100-41-4	1330-20-7	1634-04-4	107-06-2	106-93-4	98-82-8	103-65-1	95-63-6	108-67-8	98-06-6	135-98-8	104-51-8	99-87-6	91-20-3				
		(µg/L)	(µg/L)							(µg/L)												
MTCA Method A		**800**	**5**	**1,000**	**700**	**1,000**	**20**	**5**	**0.01**	**None**	**None**	**None**	**None**	**None**	**None**	**None**	**None**	**160**				
MW-106	12/13/00	50 U	0.5 U	0.5 U	0.5 U	1.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	311.73	26.30	0.00	285.43
MW-106	3/19/01	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	311.73	Dry	Dry	Dry
MW-106	6/28/01	Well destroyed during roadway paving activities																				
MW-107	11/2/99	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	310.59	23.61	0.00	286.98
MW-107	3/1/00	100 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	310.59	19.46	0.00	291.13
MW-107	5/24/00	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	310.59	23.54	0.00	287.05
MW-107	7/10/00	50 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	310.59	24.79	0.00	285.80
MW-107	10/19/00	50 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	25 U	310.59	23.87	0.00	286.72
MW-107	12/13/00	50 U	0.5 U	0.5 U	0.5 U	1.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	310.59	24.50	0.00	286.09
MW-107	3/19/01	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	310.59	26.67	0.00	283.92
MW-107	6/28/01	Well destroyed during roadway paving activities																				
MW-108	11/2/99	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	309.94	22.96	0.00	286.98
MW-108	3/1/00	100 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	309.94	18.55	0.00	291.39
MW-108	5/24/00	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	^	309.94	22.72	0.00	287.22
MW-108	7/10/00	50 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	309.94	24.48	0.00	285.46
MW-108	10/19/00	50 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	25 U	309.94	20.46	0.00	289.48
MW-108	12/13/00	50 U	0.5 U	0.5 U	0.5 U	1.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	309.94	23.47	0.00	286.47
MW-108	3/19/01	50 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	1 U	25 U	309.94	25.43	0.00	284.51
MW-108	6/28/01	Well destroyed during roadway paving activities																				

Notes:
MTCA Method A : Washington Department of Ecology Model Toxics Control Act Method A screening criteria
NAPL: non-aqueous phase liquid
MTBE: methyl tert-butyl ether
EDC: 1,2-dichloroethane
EDB: 1,2-dibromoethane
i-PB: isopropylbenzene
n-PB: n-propylbenzene
TMB: trimethylbenzene
* Corrected field label error for switched MW-103 and MW-105 samples
4-IP-Toulene: 4-isopropyltoluene
µg/L: micrograms per liter
Bold values indicate concentrations detected above aboratory reporting limit (MRL)
NM: not measured
-: The analyte was not tested for by this method
^: not sampled
U: The analyte was not detected above the MRL or method dectection limit (MDL) presented
J: The analyte detected was at a concentration greater than or equal to the the MDL, but less than the MRL. The concentration is an approximate value
Red values indicate the concentration exceeds the MTCA Method A cleanup level
MW-105 resurveyed on January 24, 2009 following repairs. Top of casing elevation previously 311.99 feet, now 310.46 feet.