

FEBRUARY 2016 PROGRESS REPORT

WHIDBEY MARINE & AUTO SUPPLY SITE FREELAND, WASHINGTON

Submitted by:
Farallon Consulting, L.L.C.
Cornwall Plaza Building
1201 Cornwall Avenue, Suite 105
Bellingham, Washington 98225

Farallon PN: 454-001

For:
Mr. Marty Winn
5857 Captain Vancouver Drive
Langley, Washington 98260

April 18, 2016

Prepared by:



Lyndsey Needham, G.I.T.
Project Geologist

Reviewed by:



Paul C. Grabau, L.G., L.H.G.
Principal Hydrogeologist

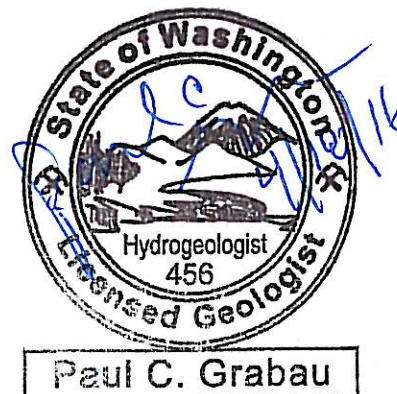




TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS.....	ii
EXECUTIVE SUMMARY	iii
1.0 INTRODUCTION.....	1-1
2.0 GROUNDWATER MONITORING AND SAMPLING.....	2-1
2.1 FIELD METHODS	2-1
2.2 ANALYTICAL METHODS	2-1
2.3 GROUNDWATER MONITORING RESULTS	2-2
2.3.1 Groundwater Elevation	2-2
2.3.2 Analytical Results	2-2
2.3.3 LNAPL Monitoring	2-4
3.0 SUMMARY AND DISCUSSION.....	3-1
3.1 GROUNDWATER CONCENTRATION TRENDS.....	3-1
3.1.1 Perched Zone Monitoring Wells	3-1
3.1.2 Sea Level Aquifer Monitoring Wells.....	3-3
3.2 LNAPL MONITORING	3-4
3.3 RECOMMENDATIONS.....	3-5

FIGURES

- Figure 1 *Site Vicinity Map*
- Figure 2 *Aerial Photograph Showing Monitoring Well Locations*
- Figure 3 *Site Plan Showing February 2016 Groundwater Elevation Contours and TPH and BTEX Concentrations in Groundwater-Perched Groundwater Zone*
- Figure 4 *Aerial Photograph Showing February 2016 Groundwater Elevation Contours and TPH and BTEX Concentrations in Groundwater Sea Level Aquifer*

TABLES

- Table 1 *Groundwater Elevation Data*
- Table 2 *Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater*

APPENDIX

- Appendix A *Laboratory Analytical Report*



ACRONYMS AND ABBREVIATIONS

BTEX	benzene, toluene, ethylbenzene, and xylenes
DRO	total petroleum hydrocarbons as diesel-range organics
Ecology	Washington State Department of Ecology
Farallon	Farallon Consulting, L.L.C.
GRO	total petroleum hydrocarbons as gasoline-range organics
LNAPL	light nonaqueous-phase liquid
msl	mean sea level
MTCA	Washington State Model Toxics Control Act Cleanup Regulation
ORO	total petroleum hydrocarbons as oil-range organics
Site	the area on and down-gradient of the Whidbey Marine & Auto Supply facility where concentrations of petroleum hydrocarbon constituents in soil and/or groundwater exceed MTCA cleanup levels as a result of a release from the Whidbey Marine & Auto Supply facility



EXECUTIVE SUMMARY

Farallon Consulting, L.L.C. (Farallon) has prepared this progress report to document the results of groundwater monitoring and sampling activities conducted in February 2016 at the Whidbey Marine & Auto Supply Site in Freeland, Washington. Periodic monitoring activities conducted between September 2015 and February 2016 also are discussed, including measurement of depth to groundwater in selected monitoring wells and measurement of the thickness of light nonaqueous-phase liquid (LNAPL) in monitoring well MW-9. LNAPL removal activities conducted at the Whidbey Marine & Auto Supply Site during the reporting period are also discussed in this progress report.

The Site is defined as the area on and down-gradient of the Whidbey Marine & Auto Supply facility where concentrations of petroleum hydrocarbon constituents in soil and/or groundwater exceed Washington State Model Toxics Control Act Cleanup Regulation (MTCA) cleanup levels as a result of a release from the Whidbey Marine & Auto Supply facility. Groundwater monitoring has been ongoing since December 2005 to assess the nature and extent of a release of unleaded gasoline at the Site.

Two groundwater zones are present at the Site: the Perched Groundwater Zone at approximately 55 feet below ground surface and the Sea Level Aquifer at approximately 100 to 105 feet below ground surface. Groundwater monitoring conducted at the Site on February 2 and 3, 2016 included measuring the depth to groundwater and collecting groundwater samples from four Perched Groundwater Zone monitoring wells and six Sea Level Aquifer monitoring wells. The groundwater flow direction determined from the February 2016 water level measurements was generally west in the Perched Groundwater Zone and southeast in the Sea Level Aquifer. These flow directions are consistent with those determined during previous monitoring events.

Total petroleum hydrocarbons as gasoline-range organics (GRO) and as diesel-range organics (DRO) and benzene were detected at concentrations exceeding MTCA Method A cleanup levels in the groundwater samples collected from Perched Groundwater Zone monitoring well MW-4. GRO and benzene were detected at concentrations exceeding MTCA Method A cleanup levels in the groundwater samples collected from Perched Groundwater Zone monitoring wells MW-6 and MW-8. In general, the concentrations of GRO and benzene, toluene, ethylbenzene, and xylenes detected in groundwater samples collected from the Perched Zone monitoring wells during the February 2016 monitoring event were some of the lowest detected to date, with the lowest concentrations detected during the July 2015 monitoring event.

Total petroleum hydrocarbons as oil-range organics (ORO) had been detected at concentrations exceeding the MTCA Method A cleanup level in groundwater samples collected from monitoring well MW-2 during the previous three monitoring events. The concentration of ORO detected in the groundwater sample collected from monitoring well MW-2 during the February 2016 monitoring event was less than the MTCA Method A cleanup level. The source of ORO detected



in groundwater samples collected from monitoring well MW-2 is unknown, but appears anomalous given the lack of detections in adjacent Perched Groundwater Zone monitoring wells.

None of the constituents analyzed for was detected at concentrations exceeding MTCA Method A cleanup levels in the groundwater samples collected from Sea Level Aquifer monitoring wells MW-11 and MW-14 through MW-16.

DRO, GRO, and xylenes were detected at concentrations exceeding MTCA Method A cleanup levels in groundwater samples collected from Sea Level Aquifer monitoring wells MW-12 and MW-13. Benzene, toluene, and ethylbenzene were also detected at concentrations exceeding the MTCA Method A cleanup level in the groundwater sample collected from monitoring well MW-13. GRO and BTEX concentrations detected in groundwater samples collected from monitoring well MW-12 during the February 2016 monitoring event were the lowest since the well was installed in 2009.

The highest concentrations of GRO, benzene, toluene, ethylbenzene, and xylenes over the past year have been detected in groundwater samples collected from Sea Level Aquifer monitoring well MW-13. None of the constituents analyzed for was detected at concentrations exceeding laboratory MTCA Method A cleanup levels in the groundwater samples collected from monitoring well MW-11 during the last four monitoring events. In six rounds of sampling conducted since December 2013, none of the constituents analyzed for has been detected in groundwater samples collected from monitoring wells MW-15 or MW-16, the two Site monitoring wells farthest down-gradient in the Sea Level Aquifer. During the February 2016 monitoring event, none of the constituents analyzed for was detected at concentrations exceeding laboratory reporting limits in the sample collected from monitoring well MW-14.

LNAPL was detected in monitoring well MW-9 during the September and October 2015 and February 2016 monitoring events. Installation of a passive LNAPL skimmer pump is recommended for monitoring well MW-9 because the LNAPL thickness measured exceeds the threshold thickness for operation of a skimmer. Additional details of the recent groundwater monitoring and sampling activities at the Site are provided herein.



1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this progress report to document the status of the cleanup action for the release of gasoline from the underground storage tank system at the former Whidbey Marine & Auto Supply facility at 1689 Main Street in Freeland, Washington (Figure 1). The Site is defined as the area on and down-gradient of the Whidbey Marine & Auto Supply facility where concentrations of petroleum hydrocarbon constituents in soil and/or groundwater exceed Washington State Model Toxics Control Act Cleanup Regulation (MTCA) cleanup levels as a result of a release from the Whidbey Marine & Auto Supply facility. The cleanup action at the Site is being conducted under the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program and in accordance with the provisions of MTCA, as established in Chapter 173-340 of the Washington Administrative Code. The Site has been assigned Voluntary Cleanup Program Identification No. NW1529 by Ecology.

This progress report presents the results of the Site-wide groundwater monitoring and sampling activities conducted in February 2016. The work was conducted in accordance with the technical memorandum regarding Scope of Work for January 2016 Groundwater Sampling and Ongoing LNAPL Monitoring and Maintenance, Whidbey Marine & Auto Supply Site, Freeland Washington dated January 8, 2016, prepared by Farallon (2016 Scope of Work). Periodic monitoring activities conducted between September 2015 and February 2016 also are discussed, including measurement of depth to groundwater in selected monitoring wells, measurement of the thickness of light nonaqueous-phase liquid (LNAPL) in monitoring well MW-9, and LNAPL removal activities.

The report is organized as follows:

- **Section 2** describes the February 2016 groundwater monitoring and sampling activities and results, and the periodic LNAPL monitoring and removal activities conducted between September 2015 and February 2016; and
- **Section 3** presents a summary and discussion of the groundwater monitoring activities, and recommendations for additional work.



2.0 GROUNDWATER MONITORING AND SAMPLING

Two groundwater zones are present at the Site: the Perched Groundwater Zone at approximately 55 feet below ground surface and the Sea Level Aquifer at approximately 100 to 105 feet below ground surface. The groundwater monitoring conducted at the Site on February 2 and 3, 2016 included measuring the depth to groundwater at the monitoring wells at the Site, and collecting groundwater samples from Perched Groundwater Zone monitoring wells MW-2, MW-4, MW-6, and MW-8; and from Sea Level Aquifer monitoring wells MW-11 through MW-16 (Figure 2). The work was conducted in accordance with the 2016 Scope of Work. Details of the field activities and the results for the February 2016 monitoring and sampling event are presented below.

2.1 FIELD METHODS

Prior to sampling, Farallon measured the depth to groundwater in each monitoring well using an electronic water-level indicator. The monitoring wells were opened, and the water levels were allowed to equilibrate prior to measurement. The groundwater level in each monitoring well was measured to the surveyed reference point on the top of the well casing to derive the groundwater elevation at each location to an accuracy of 0.01 foot. An oil-water interface probe was used to measure the depth to water and the potential thickness of LNAPL in monitoring wells MW-9, MW-12, and MW-13. The oil-water interface probe was not used in the other monitoring wells at the Site to minimize the potential for cross-contamination of groundwater.

Monitoring well MW-2 was sampled using a dedicated disposable 0.75-inch-diameter polyethylene bailer to bypass a blockage caused by broken tubing in the well. The remaining monitoring wells were sampled using a bladder pump and dedicated disposable bladders. During groundwater purging for the monitoring wells sampled with the bladder pump, field measurements were collected for pH, temperature, specific conductivity, dissolved oxygen, and oxidation-reduction potential using a YSI Model MPS 556 water-quality analyzer equipped with a flow-through cell. Groundwater was purged at a flow rate of approximately 150 milliliters per minute. Groundwater samples were collected after the pH, temperature, and specific conductivity parameters stabilized. Stabilization was defined for pH as a change of ± 0.1 pH unit between readings for three consecutive measurements, and for temperature and specific conductivity as a relative percent difference of less than 3 percent. Except in monitoring well MW-2, groundwater samples were collected by pumping groundwater directly from each well through dedicated polyethylene tubing into laboratory-prepared containers. The groundwater samples were labeled, placed on ice, and transported in accordance with chain-of-custody protocols to ALS Environmental laboratories in Everett, Washington for analysis.

2.2 ANALYTICAL METHODS

The groundwater samples were analyzed for total petroleum hydrocarbons as gasoline-range organics (GRO) by Northwest Method NWTPH-Gx, and for benzene, toluene, ethylbenzene, and xylenes (BTEX) by U.S. Environmental Protection Agency Method 8021B. The groundwater



samples collected from monitoring wells MW-2, MW-4, MW-12, and MW-13 also were analyzed for total petroleum hydrocarbons as diesel-range organics (DRO) and as oil-range organics (ORO) by Northwest Method NWTPH-Dx.

2.3 GROUNDWATER MONITORING RESULTS

Table 1 presents a summary of the groundwater elevation data for the Site. Table 2 presents groundwater analytical results for DRO, ORO, GRO, and BTEX for the February 2016 and previous monitoring events, along with a comparison to corresponding MTCA Method A cleanup levels. A copy of the laboratory analytical report for the February 2016 groundwater monitoring event is provided in Appendix A.

2.3.1 Groundwater Elevation

Groundwater elevations measured in the Perched Groundwater Zone at the Site on February 2, 2016 ranged from 66.35 feet above mean sea level (msl) in monitoring well MW-1 to 59.66 feet msl in monitoring well MW-6 (Table 1). The corresponding depths to groundwater measured below the top of the well casings were 50.29 and 56.90 feet for monitoring wells MW-1 and MW-6, respectively. Groundwater elevation contours for the Perched Groundwater Zone based on the water levels measured on February 2, 2016 are shown on Figure 3. The general groundwater flow direction in the Perched Groundwater Zone at the Site is west, with a hydraulic gradient of approximately 0.03 foot per foot in the eastern portion of the former Whidbey Marine & Auto Supply facility, and a considerably steeper gradient of 0.14 foot per foot to the west (Figure 3).

Groundwater elevations measured in the Sea Level Aquifer at the Site on February 2, 2016 ranged from 12.81 feet msl in monitoring well MW-11 to 12.25 feet msl in monitoring well MW-16 (Table 1). The corresponding depths to groundwater measured below the top of the well casings were 101.43 and 104.67 feet for monitoring wells MW-11 and MW-16, respectively. Groundwater elevation contours for the Sea Level Aquifer based on the water levels measured on February 2, 2016 are shown on Figure 4. The general groundwater flow direction in the Sea Level Aquifer at the Site was southeast based on the February 2, 2016 measurements, with a gradient of 0.0013 foot per foot (Figure 3).

2.3.2 Analytical Results

The groundwater analytical results for the Perched Groundwater Zone and the Sea Level Aquifer for the February 2, 2016 monitoring event are presented in Table 2 and on Figures 3 and 4, respectively. The results are summarized below.

2.3.2.1 Perched Zone Monitoring Wells

The analytical results for the Perched Zone monitoring wells sampled during the February 2016 monitoring event at the Site are as follows:

- **Monitoring Well MW-2:** DRO, GRO, toluene, ethylbenzene, and xylenes were not detected at concentrations exceeding laboratory reporting limits in the



groundwater samples collected from monitoring well MW-2. ORO and benzene were detected at concentrations exceeding laboratory reporting limits but less than the respective MTCA Method A cleanup levels. According to the laboratory report for the February 2016 monitoring event, the chromatogram indicated that the sample likely contained an unidentified oil-range product.

- **Monitoring Well MW-4:** DRO, GRO, and benzene were detected at concentrations exceeding MTCA Method A cleanup levels in the groundwater samples collected. According to the laboratory report for the February 2016 monitoring event, the chromatogram indicated that the sample likely contained highly weathered gasoline, weathered diesel, and an unidentified oil-range product, and that the diesel result was biased high due to overlap from the gasoline range.
- **Monitoring Well MW-6:** GRO and benzene were detected at concentrations exceeding MTCA Method A cleanup levels in the groundwater samples collected. According to the laboratory report for the February 2016 monitoring event, the chromatogram indicated that the sample likely contained highly weathered gasoline.
- **Monitoring Well MW-8:** GRO and benzene were the only constituents detected at concentrations exceeding MTCA Method A cleanup levels in the groundwater samples collected. According to the laboratory report for the February 2016 monitoring event, the chromatogram indicated that the sample likely contained highly weathered gasoline.

2.3.2.2 Sea Level Aquifer Monitoring Wells

The analytical results for the Sea Level Aquifer monitoring wells sampled during the February 2016 monitoring event at the Site are as follows:

- **Monitoring Well MW-11:** None of the constituents analyzed for was detected at concentrations at or exceeding laboratory reporting limits in the groundwater samples collected. According to the laboratory report for the July 2015 monitoring event, the chromatogram indicated that the sample likely contained highly weathered gasoline.
- **Monitoring Well MW-12:** DRO, GRO, and xylenes were detected at concentrations exceeding MTCA Method A cleanup levels in the groundwater samples collected. The laboratory reporting limit for benzene also exceeded the MTCA Method A cleanup level. According to the laboratory report for the February 2016 monitoring event, the chromatogram indicated that the sample likely contained highly weathered gasoline, weathered diesel, and an unidentified oil-range product, and that the diesel result was biased high due to overlap from the gasoline range.
- **Monitoring Well MW-13:** DRO, GRO, and each of the BTEX constituents were detected at concentrations exceeding MTCA Method A cleanup levels in the



groundwater samples collected. According to the laboratory report for the February 2016 monitoring event, the chromatogram indicated that the sample likely contained lightly weathered gasoline, weathered diesel, and an unidentified oil-range product; the diesel result was biased high due to overlap from the gasoline range; and the ORO result was biased high due to overlap from the diesel range.

- **Monitoring Wells MW-14, MW-15, and MW-16:** None of the constituents analyzed for was detected at concentrations at or exceeding laboratory reporting limits in the groundwater samples collected.

2.3.3 LNAPL Monitoring

Farallon initiated LNAPL monitoring and removal activities following the discovery of LNAPL in monitoring well MW-9 in September 2013. LNAPL monitoring was conducted at monitoring well MW-9 on September 4 and October 15, 2015 and during the February 2016 groundwater monitoring and sampling event. Sorbent socks were not placed in the well prior to the monitoring events to allow assessment of the accumulation between events. On September 4, 2015, approximately 0.06 foot of LNAPL was measured in monitoring well MW-9. Groundwater and LNAPL were bailed from monitoring well MW-9 following gauging on September 4, 2015. On October 15, 2015, approximately 0.06 foot of LNAPL was measured in monitoring well MW-9; and approximately 0.5 gallons of groundwater and LNAPL were bailed from monitoring well MW-9.

Approximately 0.12 foot of LNAPL was measured in monitoring well MW-9 during the February 2016 monitoring event. Approximately 1.5 gallons of groundwater and LNAPL were bailed from monitoring well MW-9 following gauging during the February 2016 monitoring event. The removed groundwater and LNAPL were placed into a drum in the fenced and locked remediation compound area behind the former Whidbey Marine & Auto Supply facility. Monitoring wells MW-12 and MW-13 were gauged for the presence of LNAPL on February 2, 2016 and LNAPL was not detected in these wells.



3.0 SUMMARY AND DISCUSSION

This section presents a summary of analytical results and a general discussion of trends in contaminant concentrations for monitoring wells at the Site. Also included are recommendations for additional work at the Site.

3.1 GROUNDWATER CONCENTRATION TRENDS

3.1.1 Perched Zone Monitoring Wells

The concentrations of GRO and BTEX continue to attenuate in the groundwater samples collected from the Perched Zone monitoring wells. In general, the concentrations of GRO and BTEX detected in groundwater samples collected from the Perched Zone monitoring wells during the February 2016 monitoring event were among the lowest detected to date. Additional discussion of contaminant trends in the Perched Zone monitoring wells is provided below, by monitoring well.

3.1.1.1 Monitoring Well MW-1

Monitoring well MW-1 was not sampled during the February 2016 monitoring event. None of the constituents analyzed for has been detected at concentrations exceeding MTCA Method A cleanup levels in groundwater samples obtained from monitoring well MW-1 since January 2007. Prior operation of the soil vapor extraction system at the Site appears to have successfully reduced the contaminant mass flux from vadose zone soil to groundwater in the area of monitoring well MW-1. Monitoring well MW-1 was plumbed to the soil vapor extraction system.

3.1.1.2 Monitoring Well MW-2

Prior to the July 2015 monitoring event, monitoring well MW-2 had not been sampled since March 2014 due to the presence of an obstruction in the well. GRO and BTEX have been detected at concentrations less than MTCA Method A cleanup levels in groundwater samples collected from monitoring well MW-2 since March 2011. The prior chemical oxidant injection activities appear to have significantly reduced GRO and BTEX concentrations in groundwater near this monitoring well.

DRO and ORO were detected at concentrations exceeding MTCA Method A cleanup levels in groundwater samples collected during the December 2013 monitoring event. DRO or ORO had not been analyzed for in groundwater samples collected from this or the other Perched Groundwater Zone monitoring wells prior to the December 2013 monitoring event. ORO was detected also in groundwater samples collected from monitoring well MW-2 during the March 2014, July 2015, and February 2016 monitoring events. DRO was not detected at a concentration exceeding laboratory reporting limits during the March 2014, July 2015, or February 2016 monitoring events; however, reporting limits exceeded the MTCA Method A cleanup level during the March 2014 and July 2015 monitoring



events. The concentration of ORO detected during the February 2016 monitoring event was over an order of magnitude less than during the previous monitoring event in July 2015 and was less than the MTCA Method A cleanup level.

The source of ORO detected in groundwater samples collected from monitoring well MW-2 is unknown, but appears anomalous given the lack of detections in adjacent Perched Groundwater Zone monitoring wells. According to the laboratory report narratives for July 2014, July 2015, and February 2016, the chromatograms indicated that the samples contained an unidentified oil-range product.

3.1.1.3 Monitoring Well MW-3

Monitoring well MW-3 was not sampled during the February 2016 monitoring event. None of the constituents analyzed for has been detected at concentrations exceeding laboratory reporting limits or MTCA Method A cleanup levels in groundwater samples collected from monitoring well MW-3 since the well was installed in 2005.

3.1.1.4 Monitoring Well MW-4

After a significant reduction in GRO and xylene concentrations following completion of the in-situ chemical oxidant injections in 2011, these constituents rebounded to pre-injection magnitudes by the December 2013 monitoring event. GRO, ethylbenzene, and xylene concentrations decreased between December 2013 and July 2014, followed by a continued and marked decrease between July 2014 and July 2015. The GRO concentration decreased to the lowest concentration to date during the July 2015 monitoring event and remained at a similar concentration during the February 2016 monitoring event. The xylene concentration decreased significantly during the July 2015 monitoring event and was the lowest to date during the February 2016 monitoring event. Concentrations of ethylbenzene and toluene have been less than MTCA Method A cleanup levels for the past six and eight monitoring events, respectively.

3.1.1.5 Monitoring Well MW-6

The concentrations of GRO and xylenes detected in groundwater samples collected from monitoring well MW-6 during the December 2013 monitoring event decreased to about one-half the levels detected in May 2012, and were the lowest detected since the monitoring well was installed in early 2008. Although GRO, ethylbenzene, and xylene concentrations increased slightly between December 2013 and July 2014, the concentrations of each of these constituents decreased significantly between July 2014 and July 2015. GRO and xylenes concentrations increased approximately five-fold between July 2015 and February 2016, whereas benzene decreased slightly.

3.1.1.6 Monitoring Well MW-8

The concentrations of GRO, ethylbenzene, and xylenes detected in groundwater samples collected from monitoring well MW-8 have been decreasing steadily since November



2011. During the July 2015 monitoring event, the concentration of benzene increased to a level exceeding the laboratory reporting limit for the first time since the monitoring well was installed in 2008. However, the laboratory reporting limits for benzene have typically been elevated above the MTCA Method A cleanup level. Toluene has been detected at concentrations less than the MTCA Method A cleanup level in groundwater samples collected from monitoring well MW-8 since October 2010. The GRO and xylenes detected during the February 2016 monitoring event were the lowest since the well was installed in 2008.

3.1.2 Sea Level Aquifer Monitoring Wells

Contaminant trends and LNAPL thickness observations in the Sea Level Aquifer monitoring wells are discussed below, by monitoring well.

3.1.2.1 Monitoring Well MW-9

LNAPL thickness in monitoring well MW-9 has varied from 0.98 foot in September 2012 to less than 0.01 foot in June and July 2013 and April and July 2015. LNAPL thickness during the September and October 2015 monitoring events was 0.06 foot. The maximum LNAPL thickness during 2015 and 2016 monitoring events was 0.12 foot on February 2, 2016.

3.1.2.2 Monitoring Well MW-10

None of the constituents analyzed for has been detected at concentrations exceeding MTCA Method A cleanup levels in groundwater samples collected from monitoring well MW-10 since the well was installed in 2009.

3.1.2.3 Monitoring Well MW-11

The maximum concentrations of GRO and BTEX in monitoring well MW-11 were detected in May 2011 following a steady rise in concentrations since the well was installed in early 2009. GRO and BTEX concentrations detected in groundwater samples collected from this well during the December 2013 monitoring event were significantly reduced relative to previous events. Concentrations of each of these constituents were less than laboratory reporting limits during the February and July 2015 monitoring events. During the February 2016 monitoring event, GRO was detected at a concentration slightly exceeding the laboratory detection limit but less than the MTCA Method A cleanup level, and BTEX was not detected at concentrations exceeding laboratory detection limits.

3.1.2.4 Monitoring Well MW-12

DRO, GRO, and xylenes were detected at concentrations exceeding MTCA Method A cleanup levels during the February 2016 monitoring event. In addition, the laboratory reporting limit for benzene exceeded the MTCA Method A cleanup level during this monitoring event. GRO and BTEX concentrations detected in groundwater samples collected from monitoring well MW-12 during the February 2016 monitoring event were



the lowest since the well was installed in 2009. The DRO, GRO, toluene, ethylbenzene, and xylenes concentrations detected during the February 2016 monitoring event were significantly lower than were detected during the previous monitoring event in July 2015.

According to the February 2016 and previous laboratory reports for monitoring well MW-12, the chromatograms indicate that the samples likely have contained weathered gasoline, weathered diesel and an unidentified oil-range or lube oil product. The source for the diesel- or oil-range petroleum hydrocarbons is unknown.

3.1.2.5 Monitoring Well MW-13

DRO, GRO, and BTEX were detected at concentrations exceeding MTCA Method A cleanup levels in monitoring well MW-13 during the February 2016 monitoring event. A quality assurance/quality control duplicate sample was collected from monitoring well MW-13 during the February 2016 monitoring event and the results for the duplicate analyses were similar to the results for the initial groundwater samples collected from the well. According to the February 2016 and previous laboratory reports for monitoring well MW-13, the chromatograms indicate that the samples likely have contained weathered gasoline and weathered diesel. The source for the diesel-range petroleum hydrocarbons is unknown. The February 2016 laboratory report also noted that the chromatograms indicated that the samples likely contained an unidentified oil-range product. The source for the oil-range product is unknown.

3.1.2.6 Monitoring Well MW-14

GRO, benzene, ethylbenzene, and xylenes have not been detected at concentrations exceeding laboratory detection limits since July 2014. Low concentrations of toluene were detected in groundwater samples collected from monitoring well MW-14 in July 2014 and July 2015. However, during the February 2016 monitoring event, toluene was not detected at a concentration exceeding the laboratory reporting limit.

3.1.2.7 Monitoring Wells MW-15 and MW-16

None of the constituents analyzed for has been detected at concentrations at or exceeding laboratory reporting limits in groundwater samples collected from monitoring wells MW-15 or MW-16 since the wells were installed in December 2013.

3.2 LNAPL MONITORING

An LNAPL thickness of 0.06 foot was measured in monitoring well MW-9 on September 4 and October 15, 2015. An LNAPL thickness of 0.12 foot was measured in monitoring well MW-9 on February 2, 2016. Farallon previously recommended installation of a 2-inch-diameter passive LNAPL skimmer pump for more-efficient recovery of LNAPL from monitoring well MW-9. However, a minimum initial LNAPL thickness of 0.25 inch (0.02 foot) is recommended for installation of the skimmer pumps researched and LNAPL thickness were typically less than this threshold value in earlier monitoring events in 2015. Based on the LNAPL thickness measured



during the September and October 2015 and February 2016 monitoring events, installation of a passive LNAPL skimmer pump now may be warranted.

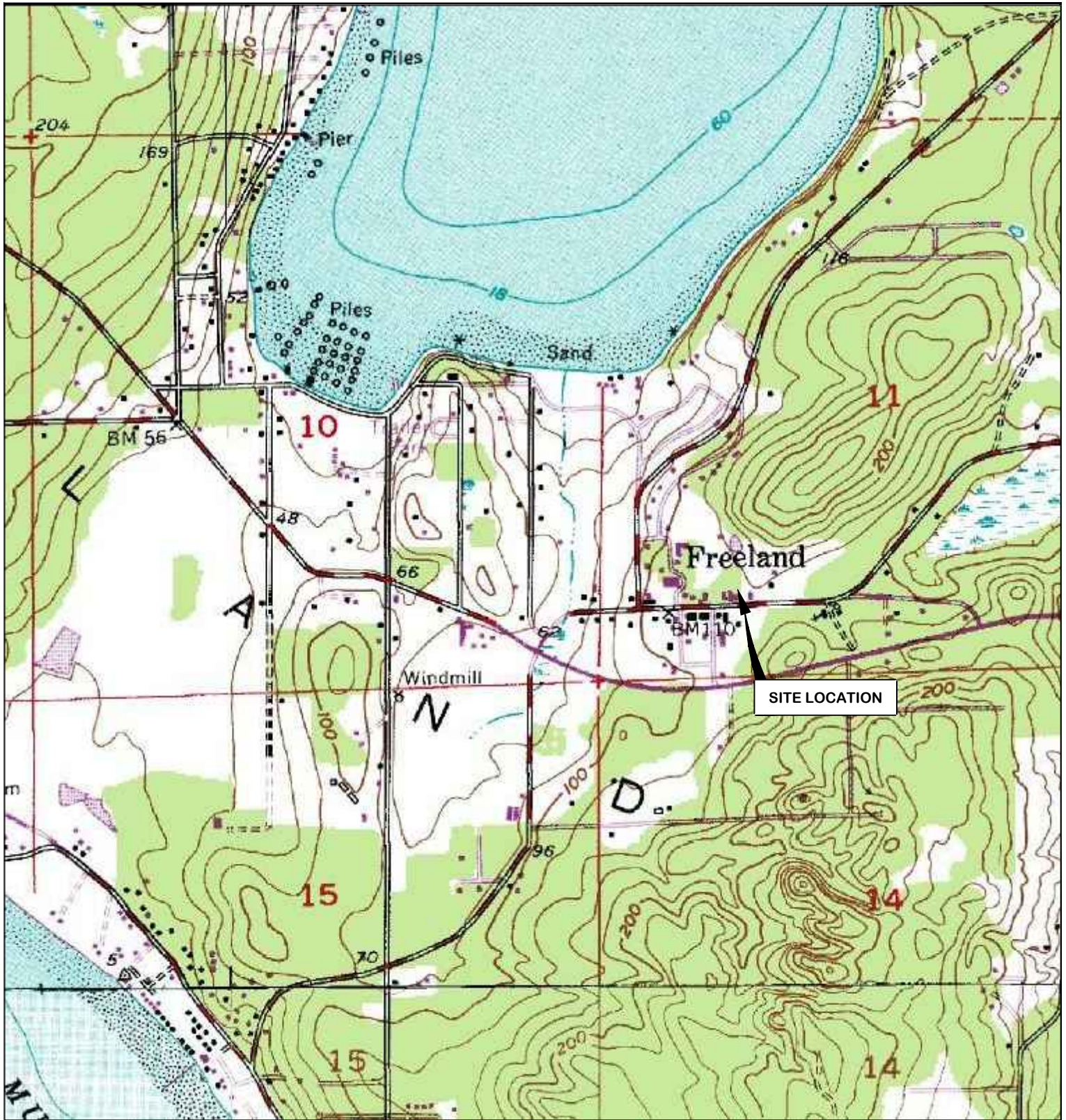
3.3 RECOMMENDATIONS

Farallon recommends purchase and installation of a passive LNAPL skimmer pump in monitoring well MW-9. The skimmer pump should be monitored on a periodic basis with the frequency determined based on the LNAPL reservoir fill rate observed during initial monthly inspection.

FIGURES

FEBRUARY 2016 PROGRESS REPORT Whidbey Marine & Auto Supply Site Freeland, Washington

Farallon PN: 454-001



REFERENCE: 7.5 MINUTE USGS QUADRANGLE FREELAND, WASHINGTON. DATED 1993



Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Bend | Baker City

California
Oakland | Sacramento | Irvine

FARALLON
CONSULTING

Quality Service for Environmental Solutions | farallonconsulting.com

FIGURE 1
SITE VICINITY MAP
WHIDBEY MARINE & AUTO SUPPLY SITE
FREELAND, WASHINGTON

FARALLON PN: 454-001

Drawn By: DEW

Checked By: PJ

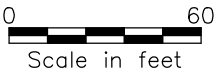
Date: 7/11/07

Disk Reference: 454001



LEGEND

- PERCHED ZONE MONITORING WELL
- SEA LEVEL AQUIFER MONITORING WELL





FARALLON
CONSULTING

Quality Service for Environmental Solutions | farallonconsulting.com

Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Bend | Baler City

California
Oakland | Sacramento | Irvine

FIGURE 2

AERIAL PHOTOGRAPH SHOWING
MONITORING WELL LOCATIONS
WHIDBEY MARINE & AUTO SUPPLY SITE
FREELAND, WASHINGTON

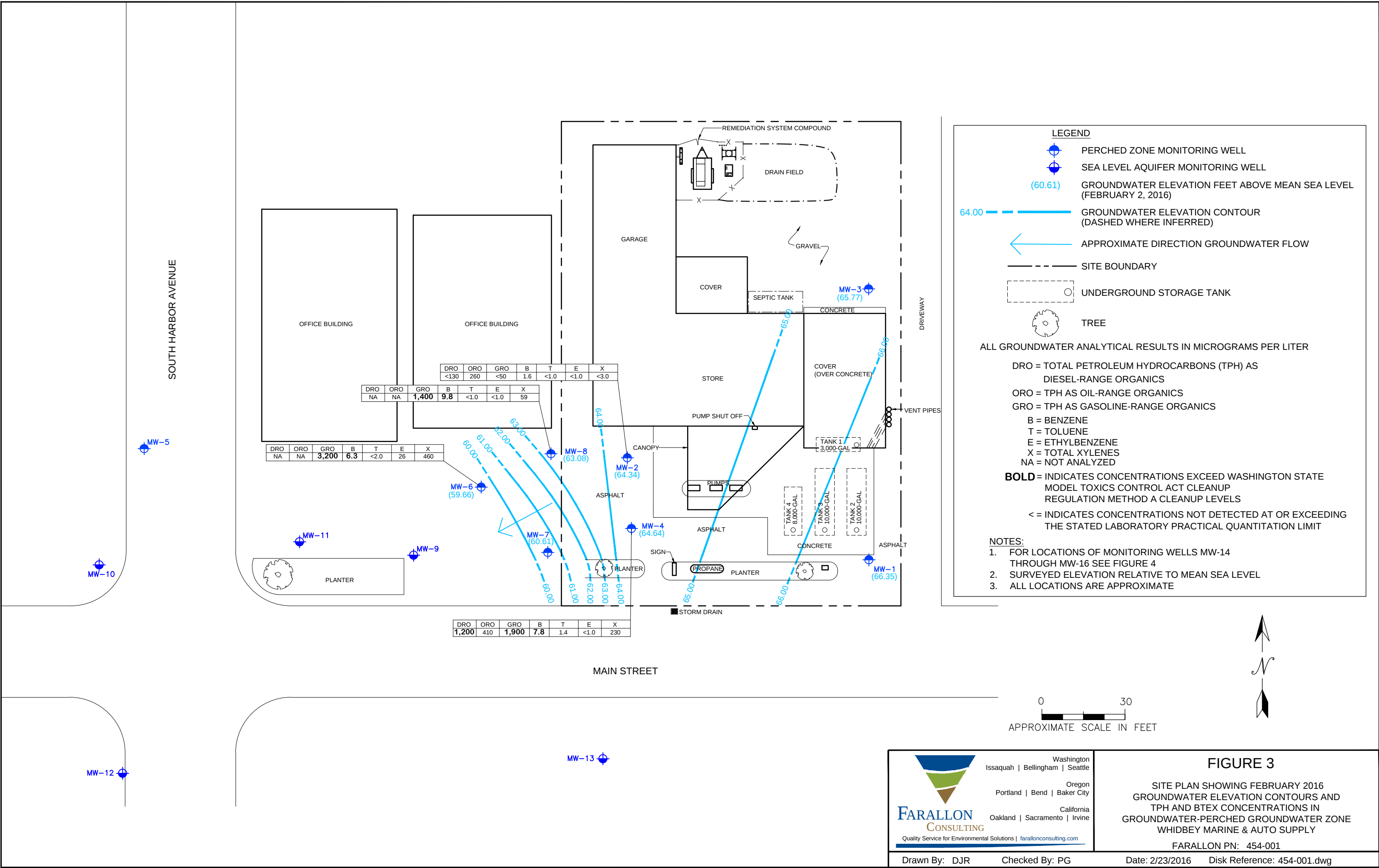
FARALLON PN: 454-001

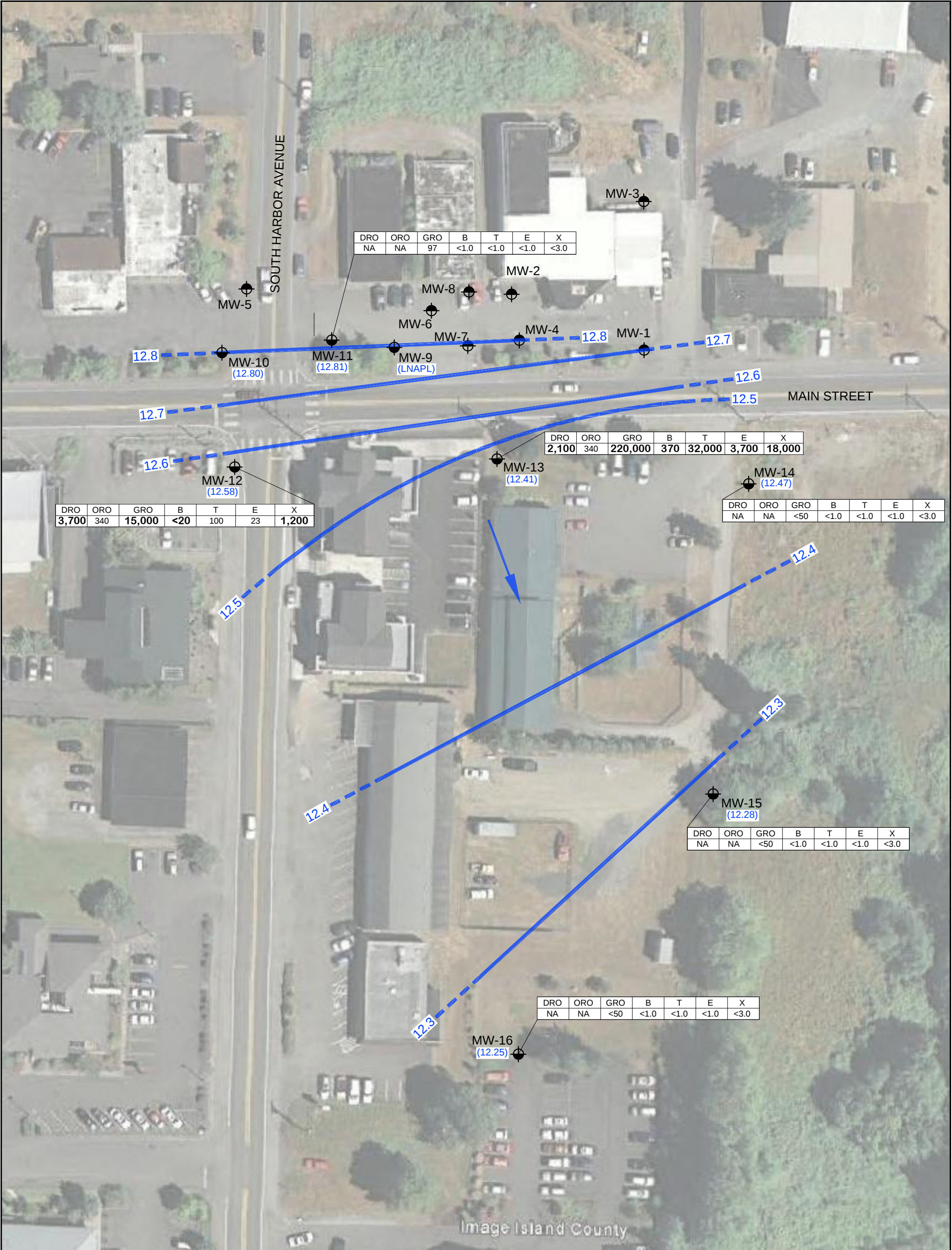
Drawn By: DEW

Checked By: PG

Date: 11/7/2014

Disk Reference: AERIAL





LEGEND

- PERCHED ZONE MONITORING WELL
- SEA LEVEL AQUIFER MONITORING WELL

(12.25) GROUNDWATER ELEVATION FEET ABOVE MEAN SEA LEVEL (FEBRUARY 2, 2016)

12.3 GROUNDWATER ELEVATION CONTOUR DASHED WHERE INFERRED

APPROXIMATE DIRECTION OF GROUNDWATER FLOW

BOLD = INDICATES CONCENTRATIONS EXCEED WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVELS
< = INDICATES CONCENTRATIONS NOT DETECTED AT OR EXCEEDING THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT

0 60
Scale in feet



ALL GROUNDWATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER
DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS
ORO = TPH AS OIL-RANGE ORGANICS
GRO = TPH AS GASOLINE-RANGE ORGANICS
B = BENZENE
T = TOLUENE
E = ETHYLBENZENE
X = TOTAL XYLENES
NA = NOT ANALYZED
LNAPL = LIGHT NONAQUEOUS-PHASE-LIQUID



FARALLON
CONSULTING
Quality Service for Environmental Solutions | farallonconsulting.com

Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Bend | Baker City

California
Oakland | Sacramento | Irvine

FIGURE 4

AERIAL PHOTOGRAPH SHOWING FEBRUARY 2016 GROUNDWATER ELEVATION CONTOURS, TPH AND BTEX CONCENTRATIONS IN GROUNDWATER SEA LEVEL AQUIFER WHIDBEY MARINE & AUTO SUPPLY SITE FREELAND, WASHINGTON

FARALLON PN: 454-001

Drawn By: DJR Checked By: DEW Date: 2/23/2016 Disk Reference: 454-001_AERIAL.dwg

TABLES

FEBRUARY 2016 PROGRESS REPORT Whidbey Marine & Auto Supply Site Freeland, Washington

Farallon PN: 454-001

Table 1
Groundwater Elevation Data
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Well Identification	Groundwater Zone	Date	Top of Well Casing Elevation (feet) ¹	Depth to LNAPL (feet) ²	Depth to Water (feet) ²	Groundwater Elevation (feet) ^{1,3}
MW-1 ⁴	Perched Zone	12/5/05	116.64	NM	52.54	64.10
		6/7/06		NM	52.67	63.97
		10/9/06		NM	51.93	64.71
		1/9/07		NM	51.80	64.84
		3/27/07		NM	51.50	65.14
		6/19/07		NM	51.66	64.98
		12/7/07		NM	51.98	64.66
		4/17/08		NM	51.10	65.54
		6/30/08		NM	51.24	65.40
		8/14/08		NM	51.36	65.28
		9/9/08		NM	51.45	65.19
		10/21/08		NM	51.63	65.01
		1/15/09		NM	51.63	65.01
		5/12/09		NM	51.29	65.35
		8/5/09		NM	51.46	65.18
		2/10/10		NM	51.13	65.51
		10/21/10		NM	51.28	65.36
		5/18/11		NM	50.20	66.44
		11/17/11		NM	49.98	66.66
		5/15/12		NM	51.05	65.59
		12/18/13		NM	51.16	65.48
		3/27/14		NM	50.88	65.76
		7/28/14		NM	50.85	65.79
		7/20/15		NM	50.50	66.14
		2/2/16		NM	50.29	66.35
MW-2	Perched Zone	12/5/05	117.49	NM	55.06	62.43
		6/7/06		NM	55.56	61.93
		10/9/06		NM	54.69	62.80
		1/9/07		NM	54.60	62.89
		3/27/07		NM	54.44	63.05
		6/19/07		NM	54.50	62.99
		12/7/07		NM	54.81	62.68
		4/17/08		NM	54.06	63.43
		6/30/08		NM	54.12	63.37
		8/14/08		NM	54.21	63.28
		9/9/08		NM	54.26	63.23
		10/21/08		NM	54.44	63.05
		1/15/09		NM	54.40	63.09
		5/12/09		NM	54.08	63.41
		8/5/09		NM	54.19	63.30
		2/10/10		NM	53.92	63.57
		10/21/10		NM	54.11	63.38
		5/18/11		NM	53.22	64.27
		11/17/11		NM	53.80	63.69
		5/15/12		NM	53.75	63.74
		7/22/13		ND	53.64	63.85
		12/18/13		NM	53.69	63.80
		3/27/14		NM	53.68	63.81
		7/28/14		NM	53.53	63.96
		7/20/15		NM	53.45	64.04
		2/2/16		NM	53.15	64.34

Table 1
Groundwater Elevation Data
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Well Identification	Groundwater Zone	Date	Top of Well Casing Elevation (feet) ¹	Depth to LNAPL (feet) ²	Depth to Water (feet) ²	Groundwater Elevation (feet) ^{1,3}
MW-3	Perched Zone	12/5/05	117.47	NM	53.48	63.99
		6/7/06		NM	53.96	63.51
		10/9/06		NM	53.26	64.21
		1/9/07		NM	53.02	64.45
		3/27/07		NM	52.82	64.65
		6/19/07		NM	52.70	64.77
		12/7/07		NM	53.33	64.14
		4/17/08		NM	52.50	64.97
		6/30/08		NM	52.66	64.81
		8/14/08		NM	52.76	64.71
		9/9/08		NM	52.84	64.63
		10/21/08		NM	52.99	64.48
		1/15/09		NM	53.01	64.46
		5/12/09		NM	52.64	64.83
		8/5/09		NM	52.79	64.68
		2/10/10		NM	52.50	64.97
		10/21/10		NM	52.63	64.84
		5/18/11		NM	51.63	65.84
		11/17/11		NM	52.28	65.19
		5/15/12		NM	52.31	65.16
		12/18/13		NM	52.49	64.98
		3/27/14		NM	52.22	65.25
		7/28/14		NM	52.22	65.25
		7/20/15		NM	51.90	65.57
		2/2/16		NM	51.70	65.77
MW-4	Perched Zone	3/27/07	117.27	NM	53.94	63.33
		6/19/07		NM	54.02	63.25
		12/7/07		NM	54.28	62.99
		4/17/08		NM	53.58	63.69
		6/30/08		NM	53.64	63.63
		8/14/08		NM	53.71	63.56
		9/9/08		NM	53.76	63.51
		10/21/08		NM	53.89	63.38
		1/15/09		NM	53.88	63.39
		5/12/09		NM	53.50	63.77
		8/5/09		NM	53.65	63.62
		2/10/10		NM	53.44	63.83
		10/21/10		NM	53.58	63.69
		5/18/11		NM	52.76	64.51
		11/17/11		NM	53.28	63.99
		5/15/12		NM	53.31	63.96
		7/22/13		ND	53.14	64.13
		12/18/13		NM	53.39	63.88
		3/27/14		NM	53.10	64.17
		7/28/14		NM	53.11	64.16
		7/20/15		NM	52.84	64.43
		2/2/16		NM	52.63	64.64

Table 1
Groundwater Elevation Data
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Well Identification	Groundwater Zone	Date	Top of Well Casing Elevation (feet) ¹	Depth to LNAPL (feet) ²	Depth to Water (feet) ²	Groundwater Elevation (feet) ^{1,3}
MW-6	Perched Zone	4/17/08	116.56	NM	59.84	56.72
		6/30/08		NM	60.07	56.49
		8/14/08		NM	60.26	56.30
		9/9/08		NM	60.35	56.21
		10/21/08		NM	60.47	56.09
		1/15/09		NM	60.50	56.06
		5/12/09		NM	60.34	56.22
		8/5/09		NM	60.49	56.07
		10/21/10		NM	59.45	57.11
		5/18/11		NM	57.76	58.80
		11/17/11		NM	57.75	58.81
		5/15/12		NM	57.10	59.46
		7/22/13		ND	57.68	58.88
		12/18/13		ND	57.90	58.66
		3/27/14		ND	57.86	58.70
		7/28/14		ND	57.74	58.82
		7/20/15		ND	57.23	59.33
		2/2/16		NM	56.90	59.66
MW-7	Perched Zone	4/17/08	116.82	NM	56.98	59.84
		6/30/08		NM	57.42	59.40
		8/14/08		NM	57.87	58.95
		9/9/08		NM	58.25	58.57
		10/21/08		NM	58.34	58.48
		1/15/09		NM	DRY	DRY
		5/12/09		NM	57.43	59.39
		8/5/09		NM	58.32	58.50
		2/10/10		NM	58.24	58.58
		10/21/10		NM	58.30	58.52
		5/18/11		NM	58.05	58.77
		11/17/11		NM	58.72	58.10
		5/15/12		NM	58.73	58.09
		7/22/13		ND	58.24	58.58
		12/18/13		ND	58.22	58.60
		3/27/14		ND	58.25	58.57
		7/28/14		ND	57.59	59.23
		7/20/15		ND	57.02	59.80
		2/2/16		NM	56.21	60.61

Table 1
Groundwater Elevation Data
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Well Identification	Groundwater Zone	Date	Top of Well Casing Elevation (feet) ¹	Depth to LNAPL (feet) ²	Depth to Water (feet) ²	Groundwater Elevation (feet) ^{1,3}
MW-8	Perched Zone	7/28/2014	117.23	NM	55.29	61.94
		6/30/08		NM	55.34	61.89
		8/14/08		NM	55.33	61.90
		9/9/08		NM	55.36	61.87
		10/21/08		NM	55.47	61.76
		1/15/09		NM	55.37	61.86
		5/12/09		NM	55.09	62.14
		8/5/09		NM	55.21	62.02
		2/10/10		NM	54.93	62.30
		10/21/10		NM	55.08	62.15
		5/18/21		NM	54.47	62.76
		11/17/11		NM	54.83	62.40
		5/15/12		NM	54.83	62.40
		12/18/13		ND	54.87	62.36
		3/27/14		ND	54.78	62.45
		7/28/14		ND	54.64	62.59
		7/20/15		ND	54.40	62.83
		2/2/16		NM	54.15	63.08
MW-9	Sea Level Aquifer	5/12/09	114.79	NM	103.54	11.25
		8/5/09		NM	103.85	10.94
		2/10/10		NM	103.79	11.00
		10/21/10		NM	103.77	11.02
		5/18/11		NM	103.12	11.67
		11/17/11		NM	NM	NM
		5/15/12		NM	103.05	11.74
		9/5/12		102.03	103.01	12.50
		11/8/12		102.15	102.97	12.43
		2/8/13		102.13	103.05	12.42
		5/10/13		101.77	101.78	13.02
		6/11/13		ND	101.67	13.12
		7/22/13		ND	101.76	13.03
		10/16/13		101.88	102.18	12.83
		11/20/13		101.74	102.23	12.92
		12/18/13		101.85	102.36	12.81
		2/20/14		102.10	103.02	12.45
		3/27/14		102.05	102.43	12.64
		7/28/14		102.15	102.50	12.55
		10/24/14		102.50	102.75	12.23
		2/10/15		102.70	102.71	12.09
		3/25/15		102.35	102.37	12.43
		4/30/15		ND	102.24	12.55
		6/5/15		102.14	102.19	12.64
		7/20/15		ND	102.30	12.49
		9/4/15		102.41	102.47	12.36
		10/15/15		102.30	102.36	12.47
		2/2/16		102.20	102.32	12.56

Table 1
Groundwater Elevation Data
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Well Identification	Groundwater Zone	Date	Top of Well Casing Elevation (feet) ¹	Depth to LNAPL (feet) ²	Depth to Water (feet) ²	Groundwater Elevation (feet) ^{1,3}
MW-10	Sea Level Aquifer	5/12/09	113.45	NM	102.02	11.43
		8/5/09		NM	102.29	11.16
		2/10/10		NM	102.25	11.20
		10/21/10		NM	101.95	11.50
		5/18/11		NM	101.47	11.98
		11/17/11		NM	100.30	13.15
		5/15/12		NM	100.83	12.62
		9/5/12		ND	100.70	12.75
		11/8/12		ND	100.82	12.63
		2/8/13		ND	100.82	12.63
		5/10/13		ND	100.29	13.16
		6/11/13		ND	100.21	13.24
		7/22/13		ND	100.30	13.15
		10/16/13		ND	100.48	12.97
		11/20/13		ND	100.36	13.09
		12/18/13		ND	100.56	12.89
		2/20/14		NM	100.74	12.71
		3/27/14		ND	100.67	12.78
		7/28/14		ND	100.75	12.70
		2/10/15		NM	101.13	12.32
		3/25/15		NM	100.89	12.56
		7/20/15		ND	100.79	12.66
		2/2/16		NM	100.65	12.80
MW-11	Sea Level Aquifer	5/12/09	114.24	NM	102.82	11.42
		8/5/09		NM	103.09	11.15
		2/10/10		NM	103.09	11.15
		10/21/10		NM	102.82	11.42
		5/18/11		NM	102.31	11.93
		11/17/11		NM	NM	NM
		5/15/12		NM	101.64	12.60
		9/5/12		ND	101.54	12.70
		11/8/12		ND	101.66	12.58
		2/8/13		ND	101.65	12.59
		5/10/13		ND	101.14	13.10
		6/11/13		ND	101.06	13.18
		7/22/13		ND	101.41	12.83
		10/16/13		ND	101.31	12.93
		11/20/13		ND	101.20	13.04
		12/18/13		ND	101.31	12.93
		2/20/14		ND	101.62	12.62
		3/27/14		ND	101.50	12.74
		7/28/14		ND	101.59	12.65
		2/10/15		NM	101.99	12.25
		3/25/15		NM	101.70	12.54
		7/20/15		ND	101.65	12.59
		2/2/16		NM	101.43	12.81

Table 1
Groundwater Elevation Data
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Well Identification	Groundwater Zone	Date	Top of Well Casing Elevation (feet) ¹	Depth to LNAPL (feet) ²	Depth to Water (feet) ²	Groundwater Elevation (feet) ^{1,3}
MW-12	Sea Level Aquifer	5/12/09	114.23	NM	103.96	10.27
		8/5/09		NM	103.24	10.99
		2/10/10		NM	103.36	10.87
		10/21/10		NM	102.90	11.33
		5/18/11		NM	103.37	10.86
		11/17/11		NM	NM	NM
		5/15/12		NM	101.69	12.54
		9/5/12		ND	101.60	12.63
		11/8/12		ND	101.72	12.51
		2/8/13		ND	101.72	12.51
		5/10/13		ND	101.21	13.02
		6/11/13		ND	101.11	13.12
		7/22/13		ND	100.21	14.02
		10/16/13		ND	101.39	12.84
		11/20/13		ND	101.27	12.96
		12/18/13		ND	101.4	12.83
		2/20/14		ND	101.70	12.53
		3/27/14		ND	101.55	12.68
		7/28/14		ND	101.67	12.56
		2/10/15		ND	102.10	12.13
		3/25/15		ND	101.78	12.45
		4/30/15		ND	101.69	12.54
		6/5/15		ND	101.60	12.63
		7/20/15		ND	101.73	12.50
		9/4/15		ND	101.86	12.37
		10/15/15		ND	101.75	12.48
		2/2/16		ND	101.65	12.58
MW-13	Sea Level Aquifer	12/18/13	116.34	ND	103.56	12.78
		2/20/14		ND	103.90	12.44
		3/27/14		ND	103.75	12.59
		7/28/14		ND	103.84	12.50
		2/10/15		ND	104.35	11.99
		3/25/15		ND	103.97	12.37
		4/30/15		ND	103.89	12.45
		6/5/15		ND	103.82	12.52
		7/20/15		ND	103.96	12.38
		9/4/15		ND	104.08	12.26
		10/15/15		ND	103.99	12.35
		2/2/16		ND	103.93	12.41
MW-14	Sea Level Aquifer	12/18/13	116.22	NM	103.61	12.61
		2/20/14		NM	103.73	12.49
		3/27/14		NM	103.54	12.68
		7/28/14		NM	103.80	12.42
		2/10/15		NM	104.05	12.17
		3/25/15		NM	103.90	12.32
		7/20/15		ND	103.84	12.38
		2/2/16		NM	103.75	12.47

Table 1
Groundwater Elevation Data
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Well Identification	Groundwater Zone	Date	Top of Well Casing Elevation (feet) ¹	Depth to LNAPL (feet) ²	Depth to Water (feet) ²	Groundwater Elevation (feet) ^{1,3}
MW-15	Sea Level Aquifer	12/18/13	116.73	NM	104.23	12.50
		2/20/14		NM	104.45	12.28
		3/27/14		NM	104.21	12.52
		7/28/14		NM	104.45	12.28
		2/10/15		NM	104.91	11.82
		3/25/15		NM	104.60	12.13
		7/20/15		ND	104.54	12.19
		2/2/16		NM	104.45	12.28
MW-16	Sea Level Aquifer	12/18/13	116.92	NM	104.46	12.46
		2/20/14		NM	104.68	12.24
		3/27/14		NM	104.40	12.52
		7/28/14		NM	104.71	12.21
		2/10/15		NM	105.08	11.84
		3/25/15		NM	104.80	12.12
		7/20/15		ND	104.77	12.15
		2/2/16		NM	104.67	12.25

NOTES:

¹Feet above mean sea level, based on May 2008 survey data.

²Feet below top of well casing.

³Groundwater elevation at monitoring well MW-9 corrected as follows:
(Casing Elevation - Depth to Water) + (LNAPL Thickness x LNAPL Specific Gravity) = Corrected Groundwater Elevation using a specific gravity for gasoline of 0.74.

⁴Top of well casing elevation adjusted using change in total depth measurements before and after change in well casing length following soil vapor extraction system installation.

ND = not detected

NM = not measured

LNAPL = light nonaqueous-phase liquid

Table 2
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Sample Location	Groundwater Zone	Sample Identification	Sample Date	Analytical Results (micrograms per liter)						
				DRO ¹	ORO ¹	GRO ²	Benzene ³	Toluene ³	Ethyl-benzene ³	Xylenes ³
MW-1	Perched Zone	MW1-120505	12/5/05	-	-	4,200	480	770	65	318
		MW1-060706	6/7/06	-	-	5,800	500	1,000	70	780
		MW-1-100906	10/9/06	-	-	17,000	2,400	3,800	270	2,200
		MW1-010907	1/9/07	-	-	1,500	14	6	11	120
		QA/QC-010907	1/9/07	-	-	1,500	11	6	10	110
		MW1-032707	3/27/07	-	-	290	1	1	<1	17
		QA/QC-032707	3/27/07	-	-	320	1	<1	<1	19
		MW1-061907	6/19/07	-	-	73	<1	<1	<1	<3
		MW1-120707	12/7/07	-	-	110	<1	<1	<1	<3
		MW1-041808	4/18/08	-	-	74	<1	<1	<1	<3
		MW1-090908	9/9/08	-	-	68	<1	<1	<1	<3
		MW1-051409	5/14/09	-	-	<50	<1	<1	<1	<3
		MW1-021110	2/11/10	-	-	<50	<1	<1	<1	<3
		MW1-102110	10/21/10	-	-	<50	<1	<1	<1	<3
		MW1-051811	5/18/11	-	-	<50	<1	<1	<1	<3
		MW-1-111711	11/17/11	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-1-051512	5/15/12	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-1-121913	12/19/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
		MW-1-072914	7/29/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
MW-2	Perched Zone	MW2-120505	12/5/05	-	-	570	110	110	2.8	50
		MW2-060706	6/7/06	-	-	2,800	440	540	15	430
		MW2-100906	10/9/06	-	-	370	20	44	1	77
		MW2-010907	1/9/07	-	-	730	35	69	11	150
		MW2-032707	3/27/07	-	-	610	6	9	<1	150
		MW2-061907	6/19/07	-	-	1,000	17	52	22	200
		MW2-120707	12/7/07	-	-	2,300	7	310	36	270
		MW2-041808	4/18/08	-	-	3,700	<1	57	33	890
		MW2-090908	9/9/08	-	-	20,000	<50	3,100	470	4,200
		MW2-051309	5/13/09	-	-	4,300	<5	380	130	1,100
		MW2-021110	2/11/10	-	-	15,000	<10	160	590	3,800
		MW2-102210	10/22/10	-	-	12,000	50	15	420	2,400
		MW2-032111	3/21/11	-	-	7,000	<10	1.9	31	1,400
		MW-2-111711	11/17/11	-	-	130	<1.0	1.5	1.3	10
		MW-2-051512	5/15/12	-	-	210	1.9	<1.0	1.1	13
		MW-2-121913	12/19/13	5,400	11,000	82	<1.0	<1.0	<1.0	<3.0
		MW-2-032814	3/28/14	<650	12,000	-	-	-	-	-
		MW-2-072115	7/21/15	<1,000 ⁷	6,800	<50	1.3	<1.0	<1.0	<3.0
		MW-2-020216	2/2/16	<130	260	<50	1.6	<1.0	<1.0	<3.0
MW-3	Perched Zone	MW3-120505	12/5/05	-	-	<100	<1.0	<1.0	<1.0	<2.0
		FD-120505	12/5/05	-	-	<100	<1.0	<1.0	<1.0	<2.0
		MW3-060706	6/7/06	-	-	<50	<1	<1	<1	<3
		MW3-100906	10/9/06	-	-	<50	<1	<1	<1	<3
		MW3-010907	1/9/07	-	-	<50	<1	<1	<1	<3
MTCA Method A Cleanup Levels for Groundwater ⁸				500	500	800	5	1,000	700	1,000

Table 2
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Sample Location	Groundwater Zone	Sample Identification	Sample Date	Analytical Results (micrograms per liter)						
				DRO ¹	ORO ¹	GRO ²	Benzene ³	Toluene ³	Ethyl-benzene ³	Xylenes ³
MW-3	Perched Zone	MW3-032707	3/27/07	-	-	<50	<1	<1	<1	<3
		MW3-061907	6/19/07	-	-	<50	<1	<1	<1	<3
		QA/QC-061907	6/19/07	-	-	<50	<1	<1	<1	<3
		MW3-120707	12/7/07	-	-	<50	<1	<1	<1	<3
		MW3-041808	4/18/08	-	-	<50	<1	<1	<1	<3
		MW3-090908	9/9/08	-	-	<50	<1	<1	<1	<3
		MW3-051409	5/14/09	-	-	<50	<1	<1	<1	<3
		MW3-021110	2/11/10	-	-	<50	<1	<1	<1	<3
		MW3-102110	10/21/10	-	-	<50	<1	<1	<1	<3
		MW3-051811	5/18/11	-	-	<50	<1	1.1	<1	<3
		MW-3-111711	11/17/11	-	-	<50	<1.0	<1	<1.0	<3.0
		MW-3-051512	5/15/12	-	-	<50	<1.0	<1	<1.0	<3.0
		MW-3-121913	12/19/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
		MW-3-072914	7/29/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
MW-4	Perched Zone	MW4-032707	3/27/07	-	-	99,000	31,000	32,000	970	6,000
		MW4-061907	6/19/07	-	-	110,000	22,000	36,000	1,600	8,200
		MW4-120707	12/7/07	-	-	39,000	7,600	12,000	300	2,400
		QA/QC-120707	12/7/07	-	-	60,000	9,500	18,000	710	4,700
		MW4-041808	4/18/08	-	-	140,000	530	42,000	1,600	9,400
		MW4-090908	9/9/08	-	-	120,000	150	40,000	2,000	11,000
		QA/QC-1-090908	9/9/08	-	-	120,000	150	43,000	1,900	11,000
		MW4-051409	5/14/09	680 ⁴	<250	83,000	<50	30,000	1,100	6,600
		MW4-021110	2/11/10	-	-	71,000	<50	20,000	940	5,900
		MW4-102110	10/21/10	-	-	32,000	<10	4,200	1,100	6,600
		MW4-032111	3/21/11	-	-	32,000	<10	160	870	6,900
		MW4-051811	5/18/11	-	-	33,000	<10	550	840	6,700
		MW-4-111811	11/18/11	-	-	2,300	<5.0	20	110	610
		MW-4-051612	5/16/12	-	-	5,200	<10	12	77	1,500
		MW-4-121913	12/19/13	<630 ⁵	<250	41,000	<25	<25	280	11,000
		MW-4-072914	7/29/14	-	-	37,000	<50	<50	63	9,200
		MW-4-072115	7/21/15	2,900	<250	1,400	5.3	3.9	1.3	370
		MW-4-020216	2/2/16	1,200 ⁴	410	1,900	7.8	1.4	<1.0	230
MW-6	Perched Zone	MW6-041708	4/18/08	-	-	23,000	260	1,500	530	3,600
		MW6-090908	9/9/08	-	-	42,000	450	8,500	1,300	7,800
		MW6-051409	5/14/09	-	-	17,000	29	3,200	250	3,100
		MW6-021110	2/11/10	-	-	89,000	<100	16,000	1,800	14,000
		MW6-102210	10/22/10	-	-	39,000	<10	1,800	1,200	7,800
		MW6-032111	3/21/11	-	-	37,000	<20	350	650	9,200
		MW6-051811	5/18/11	-	-	49,000	<25	270	690	11,000
		MW-6-111711	11/17/11	-	-	22,000	<20	1,200	520	5,400
		MW-6-051512	5/15/12	-	-	17,000	<20	220	210	3,700
		MW-6-121913	12/19/13	<250 ⁵	<250	8,900	<5.0	<5.0	120	1,700
		MW-6-073014	7/30/14	-	-	9,700	<10	<10	290	1,800
		MW-6-072115	7/21/15	-	-	660	7.8	<1.0	32	86
		MW-6-020316	2/3/16	-	-	3,200	6.3	<2.0	26	460
MW-7	Perched Zone	MW7-041808	4/18/08	-	-	54,000	13,000	17,000	420	3,700
		MW7-051409	5/14/09	-	-	13,000	2,500	3,700	180	1,700
MTCA Method A Cleanup Levels for Groundwater ⁸				500	500	800	5	1,000	700	1,000

Table 2
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Sample Location	Groundwater Zone	Sample Identification	Sample Date	Analytical Results (micrograms per liter)						
				DRO ¹	ORO ¹	GRO ²	Benzene ³	Toluene ³	Ethyl-benzene ³	Xylenes ³
MW-8	Perched Zone	MW8-041808	4/18/08	-	-	5,400	<1	57	57	890
		QA/QC-1-041808	4/18/08	-	-	5,600	<1	42	55	930
		MW8-090908	9/9/08	-	-	34,000	<50	3,500	670	6,700
		MW8-051309	5/13/09	-	-	60,000	<50	9,000	1,800	9,500
		QA/QC-051309	5/13/09	-	-	57,000	<50	8,900	1,700	9,400
		MW8-021110	2/11/10	-	-	54,000	<50	3,900	2,000	12,000
		MW8-102210	10/22/10	-	-	58,000	<10	770	2,200	15,000
		MW8-032111	3/21/11	-	-	17,000	<10	<10	600	2,900
		MW8-051811	5/18/11	-	-	2,900	<1	2.3	23	320
		MW-8-111711	11/17/11	-	-	47,000	<50	<50	1,200	12,000
		DUP-1-111711	11/17/11	-	-	47,000	<50	<50	1,200	12,000
		MW-8-051512	5/15/12	-	-	46,000	<50	<50	930	10,000
		DUP-1-051512	5/15/12	-	-	42,000	<50	<50	900	9,700
		MW-8-121913	12/19/13	<630 ⁵	<250	24,000	<25	<25	150	4,200
		MW-8-073014	7/30/14	-	-	10,000	<10	<10	13	1,300
		MW-8-072115	7/21/15	-	-	2,900	40	<5.0	<5.0	260
		MW-8-020316	2/3/16	-	-	1,400	9.8	<1.0	<1.0	59
MW-9	Sea Level Aquifer	MW9-051309	5/13/09	800 ⁴	<250	94,000	18,000	32,000	1,500	7,600
		MW9-021010	2/10/10	-	-	32,000	10,000	9,800	390	1,800
		MW9-102210	10/22/10	-	-	160,000	15,000	42,000	2,700	14,000
		MW9-032111	3/21/11	-	-	260,000	13,000	55,000	5,300	27,000
		MW9-051811	5/18/11	-	-	230,000	18,000	55,000	4,000	21,000
		MW-9-111811	11/18/11	-	-	240,000	19,000	68,000	4,400	23,000
		MW-9-051612	5/16/12	-	-	280,000	13,000	59,000	4,700	25,000
MW-10	Sea Level Aquifer	MW10-051309	5/13/09	<130	<250	<50	<1	2	<1	<3
		MW10-021010	2/10/10	-	-	140	<1	3.3	1.5	7.3
		MW10-102210	10/22/10	-	-	<50	<1	4.0	<1	3.2
		MW10-051811	5/18/11	-	-	69	<1	2.6	<1	<3
		MW-10-111711	11/17/11	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-10-051512	5/15/12	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-10-121913	12/19/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
		MW-10-032714	3/27/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
MW-10-072914	7/29/14	-	-	<50	<1.0	<1.0	<1.0	<3.0		
MW-11	Sea Level Aquifer	MW11-051309	5/13/09	<130	<250	2,300	500	530	19	230
		MW11-021010	2/10/10	-	-	23,000	4,000	7,000	340	1,600
		MW11-102210	10/22/10	-	-	29,000	2,400	7,400	790	2,800
		MW11-051811	5/18/11	-	-	70,000	3,100	15,000	1,500	7,200
		MW-11-111811	11/18/11	-	-	24,000	670	3,700	820	3,000
		MW-11-051612	5/16/12	-	-	19,000	700	2,200	700	2,700
		MW-11-122013	12/20/13	<130	<250	2,800	8	64	26	440
		MW-11-032814	3/28/14	-	-	1,200	4.7	13	3	150
		MW-11-073014	7/30/14	-	-	540	3.1	1.1	1.1	32
		MW-11-021015	2/10/15	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-11-072015	7/20/15	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-11-020216	2/2/16	-	-	97	<1.0	<1.0	<1.0	<3.0
MTCA Method A Cleanup Levels for Groundwater ⁸				500	500	800	5	1,000	700	1,000

Table 2
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Sample Location	Groundwater Zone	Sample Identification	Sample Date	Analytical Results (micrograms per liter)						
				DRO ¹	ORO ¹	GRO ²	Benzene ³	Toluene ³	Ethyl-benzene ³	Xylenes ³
MW-12	Sea Level Aquifer	MW12-051309	5/13/09	<1,300 ⁵	<250	55,000	200	8,900	1,700	9,700
		MW12-021010	2/10/10	2,600 ⁴	310	52,000	92	3,900	1,300	8,400
		MW12-102210	10/22/10	-	-	81,000	120	5,300	2,100	14,000
		MW12-051811	5/18/11	-	-	69,000	83	4,400	1,700	11,000
		MW-12-111711	11/17/11	-	-	68,000	82	4,700	1,500	11,000
		MW-12-051512	5/15/12	-	-	77,000	<100	5,100	1,700	13,000
		MW-12-122013	12/20/13	2,500 ⁴	790	78,000	38	3,300	1,200	11,000
		MW-12-032814	3/28/14	2,500 ⁴	<250	75,000	29	4,200	1,500	10,000
		MW-12-073014	7/30/14	2,200 ⁴	<250	75,000	<50	4,500	1,800	11,000
		MW-12-021015	2/10/15	10,000 ⁴	1,100 ⁶	94,000	<100	5,600	2,500	15,000
		MW-12-072015	7/20/15	4,200 ⁴	320	47,000	<200	2,600	1,200	7,600
		MW-12-020316	2/3/16	3,700 ⁴	340	15,000	<20	100	23	1,200
MW-13	Sea Level Aquifer	MW-13-121913	12/19/13	1,000 ⁴	<250	120,000	2,500	30,000	1,100	5,700
		QAQC-1-121913	12/19/13	820 ⁴	290	110,000	2,500	28,000	1,100	5,600
		MW-13-032814	3/28/14	780 ⁴	<250	140,000	1,600	33,000	2,000	9,900
		QA/QC-032814	3/28/14	830 ⁴	<250	140,000	1,600	31,000	1,900	9,600
		MW-13-073014	7/30/14	1,300 ⁴	<250	150,000	1,400	37,000	2,300	11,000
		QA/QC-1-072914	7/30/14	1,400 ⁴	<250	160,000	1,400	37,000	2,200	11,000
		MW-13-021015	2/10/15	4,800 ⁴	<500	190,000	980	45,000	3,400	17,000
		MW-13-072015	7/20/15	860 ⁴	<250	120,000	680	29,000	1,900	9,700
		DUP1-072015	7/20/15	1,800 ⁴	290	190,000	820	42,000	3,500	18,000
		MW-13-020316	2/3/16	2,100 ⁴	340 ⁶	220,000	370	32,000	3,700	18,000
DUP1-020316	2/3/16	2,200 ⁴	<250	200,000	390	30,000	3,600	17,000		
MW-14	Sea Level Aquifer	MW-14-121813	12/18/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
		MW-14-032714	3/27/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-14-072914	7/29/14	-	-	62	<1.0	17	<1.0	<3.0
		MW-14-021015	2/10/15	-	-	<50	<1.0	<1.0	<1.0	<3.0
		DUP1-021015	2/10/15	-	-	<50	<1.0	1.2	<1.0	<3.0
		MW-14-072015	7/20/15	-	-	<50	<1.0	15	<1.0	<3.0
		MW-14-020216	2/2/16	-	-	<50	<1.0	<1.0	<1.0	<3.0
MW-15	Sea Level Aquifer	MW-15-121813	12/18/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
		MW-15-032714	3/27/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-15-072914	7/29/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-15-021015	2/10/15	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-15-072015	7/20/15	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-15-020216	2/2/16	-	-	<50	<1.0	<1.0	<1.0	<3.0
MTCA Method A Cleanup Levels for Groundwater ⁸				500	500	800	5	1,000	700	1,000

Table 2
Summary of Laboratory Analytical Results for TPH and BTEX in Groundwater
Whidbey Marine & Auto Supply Site
Freeland, Washington
Farallon PN: 454-001

Sample Location	Groundwater Zone	Sample Identification	Sample Date	Analytical Results (micrograms per liter)						
				DRO ¹	ORO ¹	GRO ²	Benzene ³	Toluene ³	Ethylbenzene ³	Xylenes ³
MW-16	Sea Level Aquifer	MW-16-121813	12/18/13	<130	<250	<50	<1.0	<1.0	<1.0	<3.0
		MW-16-032714	3/27/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-16-072914	7/29/14	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-16-021015	2/10/15	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-16-072015	7/20/15	-	-	<50	<1.0	<1.0	<1.0	<3.0
		MW-16-020216	2/2/16	-	-	<50	<1.0	<1.0	<1.0	<3.0
MTCA Method A Cleanup Levels for Groundwater ⁸				500	500	800	5	1,000	700	1,000

NOTES:

Results in **bold** denote concentration or laboratory reporting limit exceeds applicable cleanup levels.

< denotes analyte not detected at or exceeding the reporting limit listed.

- denotes sample not analyzed

¹Analyzed by Northwest Method NWTPH-Dx.

²Analyzed by Northwest Method NWTPH-Gx.

³Analyzed by U.S. Environmental Protection Agency Method 8021B.

⁴Laboratory report narrative indicates DRO result is biased high due to GRO overlap.

⁵Laboratory report narrative indicates reporting limit for DRO is elevated due to GRO overlap.

⁶Laboratory report narrative indicates ORO result is biased high due to DRO overlap.

⁷Laboratory report narrative indicates reporting limit for DRO is elevated due to ORO overlap.

⁸Washington State Model Toxics Control Act Cleanup Regulation Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

BTEX = benzene, toluene, ethylbenzene, and xylenes

DRO = TPH as diesel-range organics

GRO = TPH as gasoline-range organics

ORO = TPH as oil-range organics

TPH = total petroleum hydrocarbons

APPENDIX A
LABORATORY ANALYTICAL REPORT

FEBRUARY 2016 PROGRESS REPORT
Whidbey Marine & Auto Supply Site
Freeland, Washington

Farallon PN: 454-001



February 9, 2016

Mr. Paul Grabau
Farallon Consulting
975 Fifth Ave. NW, Suite 100
Issaquah, WA 98027

Dear Mr. Grabau,

On February 3rd, 11 samples were received by our laboratory and assigned our laboratory project number EV16020030. The project was identified as your Whidbey Marine and Auto. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027	DATE:	2/9/2016
		ALS JOB#:	EV16020030
		ALS SAMPLE#:	EV16020030-01
CLIENT CONTACT:	Paul Grabau	DATE RECEIVED:	02/03/2016
CLIENT PROJECT:	Whidbey Marine and Auto	COLLECTION DATE:	2/2/2016 10:55:00 AM
CLIENT SAMPLE ID	MW-16-020216	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/04/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	02/04/2016	PAB

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	101	02/04/2016	PAB
TFT	EPA-8021	104	02/04/2016	PAB

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

CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027	DATE:	2/9/2016
		ALS JOB#:	EV16020030
		ALS SAMPLE#:	EV16020030-02
CLIENT CONTACT:	Paul Grabau	DATE RECEIVED:	02/03/2016
CLIENT PROJECT:	Whidbey Marine and Auto	COLLECTION DATE:	2/2/2016 11:45:00 AM
CLIENT SAMPLE ID	MW-15-020216	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/04/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	02/04/2016	PAB

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	101	02/04/2016	PAB
TFT	EPA-8021	103	02/04/2016	PAB

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

CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027	DATE:	2/9/2016
		ALS JOB#:	EV16020030
		ALS SAMPLE#:	EV16020030-03
CLIENT CONTACT:	Paul Grabau	DATE RECEIVED:	02/03/2016
CLIENT PROJECT:	Whidbey Marine and Auto	COLLECTION DATE:	2/2/2016 12:30:00 PM
CLIENT SAMPLE ID	MW-14-020216	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/04/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	02/04/2016	PAB

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	102	02/04/2016	PAB
TFT	EPA-8021	102	02/04/2016	PAB

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

CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027	DATE:	2/9/2016
CLIENT CONTACT:	Paul Grabau	ALS JOB#:	EV16020030
CLIENT PROJECT:	Whidbey Marine and Auto	ALS SAMPLE#:	EV16020030-04
CLIENT SAMPLE ID	MW-2-020216	DATE RECEIVED:	02/03/2016
		COLLECTION DATE:	2/2/2016 1:05:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/04/2016	PAB
Benzene	EPA-8021	1.6	1.0	1	UG/L	02/04/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	02/04/2016	PAB
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	02/04/2016	EBS
TPH-Oil Range	NWTPH-DX	260	250	1	UG/L	02/04/2016	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	104	02/04/2016	PAB
TFT	EPA-8021	104	02/04/2016	PAB
C25	NWTPH-DX	83.0	02/04/2016	EBS

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

CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027	DATE:	2/9/2016
CLIENT CONTACT:	Paul Grabau	ALS JOB#:	EV16020030
CLIENT PROJECT:	Whidbey Marine and Auto	ALS SAMPLE#:	EV16020030-05
CLIENT SAMPLE ID	MW-4-020216	DATE RECEIVED:	02/03/2016
		COLLECTION DATE:	2/2/2016 1:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	1900	50	1	UG/L	02/04/2016	PAB
Benzene	EPA-8021	7.8	1.0	1	UG/L	02/04/2016	PAB
Toluene	EPA-8021	1.4	1.0	1	UG/L	02/04/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Xylenes	EPA-8021	230	3.0	1	UG/L	02/04/2016	PAB
TPH-Diesel Range	NWTPH-DX	1200	130	1	UG/L	02/04/2016	EBS
TPH-Oil Range	NWTPH-DX	410	250	1	UG/L	02/04/2016	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	110	02/04/2016	PAB
TFT	EPA-8021	107	02/04/2016	PAB
C25	NWTPH-DX	80.5	02/04/2016	EBS

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

Chromatogram indicates that it is likely that sample contains highly weathered gasoline, weathered diesel and an unidentified oil range product.

Diesel range product results biased high due to gasoline range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027	DATE:	2/9/2016
CLIENT CONTACT:	Paul Grabau	ALS JOB#:	EV16020030
CLIENT PROJECT:	Whidbey Marine and Auto	ALS SAMPLE#:	EV16020030-06
CLIENT SAMPLE ID	MW-11-020216	DATE RECEIVED:	02/03/2016
		COLLECTION DATE:	2/2/2016 2:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	97	50	1	UG/L	02/05/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	02/05/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	02/05/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/05/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	02/05/2016	PAB

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	96.0	02/05/2016	PAB
TFT	EPA-8021	99.4	02/05/2016	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.

CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027	DATE:	2/9/2016
		ALS JOB#:	EV16020030
		ALS SAMPLE#:	EV16020030-07
CLIENT CONTACT:	Paul Grabau	DATE RECEIVED:	02/03/2016
CLIENT PROJECT:	Whidbey Marine and Auto	COLLECTION DATE:	2/3/2016 10:20:00 AM
CLIENT SAMPLE ID	MW-12-020316	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	15000	1000	20	UG/L	02/05/2016	PAB
Benzene	EPA-8021	U	20	20	UG/L	02/05/2016	PAB
Toluene	EPA-8021	100	20	20	UG/L	02/05/2016	PAB
Ethylbenzene	EPA-8021	23	20	20	UG/L	02/05/2016	PAB
Xylenes	EPA-8021	1200	60	20	UG/L	02/05/2016	PAB
TPH-Diesel Range	NWTPH-DX	3700	130	1	UG/L	02/04/2016	EBS
TPH-Oil Range	NWTPH-DX	340	250	1	UG/L	02/04/2016	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 20X Dilution	NWTPH-GX	91.5	02/05/2016	PAB
TFT 20X Dilution	EPA-8021	95.1	02/05/2016	PAB
C25	NWTPH-DX	85.5	02/04/2016	EBS

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

Chromatogram indicates that it is likely that sample contains highly weathered gasoline, weathered diesel and an unidentified oil range product.

Diesel range product results biased high due to gasoline range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027	DATE:	2/9/2016
		ALS JOB#:	EV16020030
		ALS SAMPLE#:	EV16020030-08
CLIENT CONTACT:	Paul Grabau	DATE RECEIVED:	02/03/2016
CLIENT PROJECT:	Whidbey Marine and Auto	COLLECTION DATE:	2/3/2016 11:20:00 AM
CLIENT SAMPLE ID	MW-8-020316	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	1400	50	1	UG/L	02/04/2016	PAB
Benzene	EPA-8021	9.8	1.0	1	UG/L	02/04/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/04/2016	PAB
Xylenes	EPA-8021	59	3.0	1	UG/L	02/04/2016	PAB

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	93.6	02/04/2016	PAB
TFT	EPA-8021	96.8	02/04/2016	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.

CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027	DATE:	2/9/2016
		ALS JOB#:	EV16020030
		ALS SAMPLE#:	EV16020030-09
CLIENT CONTACT:	Paul Grabau	DATE RECEIVED:	02/03/2016
CLIENT PROJECT:	Whidbey Marine and Auto	COLLECTION DATE:	2/3/2016 12:10:00 PM
CLIENT SAMPLE ID	MW-6-020316	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	3200	100	2	UG/L	02/05/2016	PAB
Benzene	EPA-8021	6.3	2.0	2	UG/L	02/05/2016	PAB
Toluene	EPA-8021	U	2.0	2	UG/L	02/05/2016	PAB
Ethylbenzene	EPA-8021	26	2.0	2	UG/L	02/05/2016	PAB
Xylenes	EPA-8021	460	6.0	2	UG/L	02/05/2016	PAB

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 2X Dilution	NWTPH-GX	98.6	02/05/2016	PAB
TFT 2X Dilution	EPA-8021	113	02/05/2016	PAB

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.

CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027	DATE:	2/9/2016
CLIENT CONTACT:	Paul Grabau	ALS JOB#:	EV16020030
CLIENT PROJECT:	Whidbey Marine and Auto	ALS SAMPLE#:	EV16020030-10
CLIENT SAMPLE ID	MW-13-020316	DATE RECEIVED:	02/03/2016
		COLLECTION DATE:	2/3/2016 12:50:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	220000	10000	200	UG/L	02/06/2016	PAB
Benzene	EPA-8021	370	200	200	UG/L	02/06/2016	PAB
Toluene	EPA-8021	32000	200	200	UG/L	02/06/2016	PAB
Ethylbenzene	EPA-8021	3700	200	200	UG/L	02/06/2016	PAB
Xylenes	EPA-8021	18000	600	200	UG/L	02/06/2016	PAB
TPH-Diesel Range	NWTPH-DX	2100	130	1	UG/L	02/05/2016	EBS
TPH-Oil Range	NWTPH-DX	340	250	1	UG/L	02/05/2016	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 200X Dilution	NWTPH-GX	93.8	02/06/2016	PAB
TFT 200X Dilution	EPA-8021	93.9	02/06/2016	PAB
C25	NWTPH-DX	92.2	02/05/2016	EBS

Chromatogram indicates that it is likely that sample contains lightly weathered gasoline, weathered diesel and an unidentified oil range product.
 Diesel range product results biased high due to gasoline range product overlap.
 Oil range product results biased high due to diesel range product overlap.

CERTIFICATE OF ANALYSIS

CLIENT:	Farallon Consulting 975 Fifth Ave. NW, Suite 100 Issaquah, WA 98027	DATE:	2/9/2016
CLIENT CONTACT:	Paul Grabau	ALS JOB#:	EV16020030
CLIENT PROJECT:	Whidbey Marine and Auto	ALS SAMPLE#:	EV16020030-11
CLIENT SAMPLE ID	DUP1-020316	DATE RECEIVED:	02/03/2016
		COLLECTION DATE:	2/3/2016 12:55:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	200000	10000	200	UG/L	02/06/2016	PAB
Benzene	EPA-8021	390	200	200	UG/L	02/06/2016	PAB
Toluene	EPA-8021	30000	200	200	UG/L	02/06/2016	PAB
Ethylbenzene	EPA-8021	3600	200	200	UG/L	02/06/2016	PAB
Xylenes	EPA-8021	17000	600	200	UG/L	02/06/2016	PAB
TPH-Diesel Range	NWTPH-DX	2200	130	1	UG/L	02/05/2016	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	02/05/2016	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 200X Dilution	NWTPH-GX	98.0	02/06/2016	PAB
TFT 200X Dilution	EPA-8021	99.9	02/06/2016	PAB
C25	NWTPH-DX	89.5	02/05/2016	EBS

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



CERTIFICATE OF ANALYSIS

CLIENT: Farallon Consulting
975 Fifth Ave. NW, Suite 100
Issaquah, WA 98027
DATE: 2/9/2016
ALS SDG#: EV16020030
WDOE ACCREDITATION: C601

CLIENT CONTACT: Paul Grabau
CLIENT PROJECT: Whidbey Marine and Auto

LABORATORY BLANK RESULTS

MBG-020316W3 - Batch 101219 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	UG/L	50	02/03/2016	PAB

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

MB-020316W3 - Batch 101219 - Water by EPA-8021

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	UG/L	1.0	02/03/2016	PAB
Toluene	EPA-8021	U	UG/L	1.0	02/03/2016	PAB
Ethylbenzene	EPA-8021	U	UG/L	1.0	02/03/2016	PAB
Xylenes	EPA-8021	U	UG/L	3.0	02/03/2016	PAB

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

MB-020416W - Batch 101258 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	130	02/04/2016	EBS
TPH-Oil Range	NWTPH-DX	U	UG/L	250	02/04/2016	EBS

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



CERTIFICATE OF ANALYSIS

CLIENT: Farallon Consulting
975 Fifth Ave. NW, Suite 100
Issaquah, WA 98027

DATE: 2/9/2016
ALS SDG#: EV16020030
WDOE ACCREDITATION: C601

CLIENT CONTACT: Paul Grabau
CLIENT PROJECT: Whidbey Marine and Auto

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 101219 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	87.9			02/03/2016	PAB
TPH-Volatile Range - BSD	NWTPH-GX	95.9	9		02/03/2016	PAB

ALS Test Batch ID: 101219 - Water by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8021	98.9			02/03/2016	PAB
Benzene - BSD	EPA-8021	105	6		02/03/2016	PAB
Toluene - BS	EPA-8021	99.6			02/03/2016	PAB
Toluene - BSD	EPA-8021	104	5		02/03/2016	PAB
Ethylbenzene - BS	EPA-8021	99.4			02/03/2016	PAB
Ethylbenzene - BSD	EPA-8021	104	5		02/03/2016	PAB
Xylenes - BS	EPA-8021	99.4			02/03/2016	PAB
Xylenes - BSD	EPA-8021	104	5		02/03/2016	PAB

ALS Test Batch ID: 101258 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	80.8			02/05/2016	EBS
TPH-Diesel Range - BSD	NWTPH-DX	87.6	8		02/05/2016	EBS

APPROVED BY

Laboratory Director



ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job#

(Laboratory Use Only)

EV16620630

Date 2/3/16 Page 1 Of 2

PROJECT ID: Whidbey Marine & Auto				ANALYSIS REQUESTED										OTHER (Specify)									
REPORT TO COMPANY: PARALLAN				MTBE by EPA-8021 ☐ EPA-8260 ☐										TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐									
PROJECT MANAGER: PAUL GABBITO				BTEX by EPA-8021 ☐										Metals Other (Specify)									
ADDRESS: 875 5th Ave NW				NMTPH-GX ☒										Metals-MTCA-5 ☐ RCRA-8 ☐ Pb ☐ TAL ☐									
PHONE: 425-295-0800 FAX: 425-295-0850				NMTPH-DX ☒										PCB ☐ Pesticides ☐ by EPA 8081/8082									
P.O. #: 454-001 E-MAIL: Paul@parallan.com				NMTPH-HCID ☒										Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☐									
INVOICE TO COMPANY: SAME AS ABOVE														Semi-volatile Organic Compounds by EPA 8270									
ATTENTION:														Volatile Organic Compounds by EPA 8260									
ADDRESS:														EDB / EDC by EPA 8260 SIM (water)									
														EDB / EDC by EPA 8260 (soil)									
														Halogenated Volatiles by EPA 8260									
														Receivable in good condition?									
														NUMBER OF CONTAINERS									
SAMPLE I.D.				DATE		TIME		TYPE		LAB#													
1. MW-16-020216				2/2/16		10:55		W		1													
2. MW-15-020216						11:45		W		2													
3. MW-14-020216						12:30		W		3													
4. MW-2-020216						13:05		W		4													
5. MW-4-020216						13:55		W		5													
6. MW-1-020216						14:55		W		6													
7. MW-12-020316				2/3/16		10:20		W		7													
8. MW-8-020316						11:20		W		8													
9. MW-6-020316						12:10		W		9													
10. MW-13-020316						12:50		W		10													

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Paul Gabbitto, PARALLAN, 2/3/16 @ 15:05

Received By: Whidbey Marine & Auto, 2/3/16, 15:05

2. Relinquished By:

Received By:

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis

OTHER:

Specify:

10 ☐ Standard

5 ☐

3 ☐

2 ☐

1 ☐

SAME DAY ☐

Fuels & Hydrocarbon Analysis

10 ☐ Standard

5 ☐

3 ☐

2 ☐

1 ☐

SAME DAY ☐

*Turnaround request less than standard may incur Rush Charges



ALS Job# (Laboratory Use Only)

<http://www.alsglobal.com>

Date 2/3/16 Page 2 of 2

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Kan Seung, FARGALLON, 2/3/16 @ 1505
Received By: Malley Kent, HCS, 2/3/16, 1505

2. Relinquished By: _____

Received By:

TURNAROUND REQUESTED in Business Days*
OTHER: Organic, Metals & Inorganic Analysis

Fuels & Hydrocarbon Analysis

SAME DAY	1	3	5
----------	---	---	---

*Turnaround request less than standard may incur Rush Charges