2017 Annual Groundwater Monitoring Report
North Marina Bayside/ABW
Everett, Washington

February 1, 2018

Prepared for

Port of Everett
Everett, Washington

LANDAU ASSOCIATES

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2017 Annual Groundwater Monitoring Report
North Marina Bayside/ABW
Everett, Washington

This document was prepared by, or under the direct supervision of, the technical professionals noted below.

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Project Manager

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Associate; Quality Reviewer

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Project Coordinator: tam

LANDAU ASSOCIATES

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TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

LIST OF ABBREVIATIONS AND ACRONYMS

Bayside/ABW.....North Marina Bayside Marine/American Boiler Works
°C..... degrees Celsius
Ecology.....Washington State Department of Ecology
EPA..... US Environmental Protection Agency
FeAs.....iron-arsenic
ft.....foot/feet
LAI .....Landau Associates, Inc.
µg/L..... micrograms per liter
µS/cm.....microsiemens per centimeter
mg/L.....milligrams per liter
mV.....millivolt
MTCA.....Model Toxics Control Act
NFA .....no further action
Port ..... Port of Everett
PVC..... polyvinylchloride
Site .....North Marina Bayside Marine/American Boiler Works
TOC.....Top of Casing
VCP.....voluntary cleanup program

1.0 INTRODUCTION

This report summarizes the field activities and analytical results for the annual groundwater quality monitoring events completed on May 16, 2017 at the North Marina Bayside Marine/American Boiler Works site (Bayside/ABW Site or Site) in Everett, Washington (Figure 1).

1.1 Background

Cleanup at the Site was completed through the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP) in 2015 as described in the Investigation and Cleanup Report (Landau Associates, Inc. [LAI] 2015). Ecology issued a no further action (NFA) determination in October 2015 (Ecology 2015). The NFA and associated environmental covenant require confirmational groundwater monitoring for a period of 5 years in order to demonstrate that concentrations of arsenic in groundwater are above the Model Toxics Control Act (MTCA) Method A cleanup level only where reducing conditions are present, and that concentrations of arsenic in groundwater meet the cleanup level at the downgradient point of compliance (monitoring well P-27). The four monitoring wells identified for groundwater monitoring consist of wells HWA-MW1, HWA-MW2, P-26, and P-27.

Monitoring well P-27 was inadvertently paved over during construction activities associated with the adjacent Everett Shipyard Site. With approval from Ecology, monitoring well P-27 was replaced with P-27B, which was installed in mid-March 2016 in the immediate vicinity of monitoring well P-27. The well locations are shown on Figure 2.

1.2 Site Description

The Site is located on the eastern portion of the Port of Everett (Port) Waterfront Place Central Redevelopment Area and is approximately 3 acres in size. The Site is generally bounded by 13th Street/Port Gardner Way followed by a boatyard to the north, West Marine View Drive followed by railroad tracks to the east, 14th Street followed by the former Everett Shipyard Site to the south, and undeveloped land and a boat storage yard to the west. Port Gardner Bay and a marina are located to the southwest of the Site. The eastern portion of the Bayside Marine/ABW VCP Site consists of the former ABW Plant I leasehold. The western portion of the Site consists of a portion of the former Everett Bayside Marine Leasehold. The Port owns the property within the Site and redevelopment is in progress.

2.0 GROUNDWATER MONITORING ACTIVITIES

This section describes water level measurements, groundwater sampling, and groundwater analyses associated with the annual groundwater monitoring events conducted on May 15, 2017.

As indicated above, redevelopment activities are in progress at the Site. Prior to the annual monitoring event, P-27B was damaged (monument and cap broken off) and buried during a road construction project. The Port contractor later uncovered both P-27 and P-27B. Monitoring well P-27B was inspected and sounded using a weighted tape. Several feet of water were present in the well and the well was included in the 2017 monitoring event.

2.1 Water Level Measurements

Static water levels were measured prior to groundwater sampling at each of the four wells (HWA-MW1, HWA-MW2, P-26, and P-27B). The depth to groundwater was measured to the nearest 0.01 foot (ft) from the top of the north side of the polyvinylchloride (PVC) casing to groundwater using an electric water level indicator. Depth to water measurements at each well were converted to groundwater elevations using surveyed elevations for the top of the PVC casing. The surveyed top of casing (TOC) elevation for P-27 was used to generate groundwater elevations for P-27B as the TOC elevation for P-27B was not surveyed.

2.2 Groundwater Sampling

The groundwater samples were collected with a peristaltic pump using low-flow groundwater sampling procedures. Prior to collecting samples, depth to groundwater was measured at each location. The wells were then purged and field parameters (temperature in degrees Celsius [°C]; conductivity [microsiemens per centimeter {µS/cm}]; dissolved oxygen [milligrams per liter {mg/L}]; pH; and oxygen reduction potential [millivolts {mV}]) were recorded every 3 minutes until stabilization objectives were achieved.

2.3 Groundwater Analysis

In accordance with the Confirmational Monitoring Plan (Ecology 2015), samples were collected and analyzed for dissolved arsenic, nitrate, sulfate, and methane at each monitoring well. Samples for dissolved arsenic analysis were field-filtered using a 0.45-micron single-use groundwater filter. The filtered sample from P-27B was submitted to the laboratory with an additional request to allow the sample to settle prior to analysis of dissolved arsenic. Samples were submitted to ALS Environmental laboratory in Everett, Washington. Samples were also tested for ferrous iron in the field using a Hach® iron field testing kit.

2.4 Quality Assurance

Field and laboratory control samples were used to evaluate data precision, accuracy, representativeness, completeness, and comparability of the analytical results. The quality control

samples included collection and analysis of one field duplicate for each analysis performed and analysis of a laboratory duplicate. The field duplicate was collected from monitoring well HWA-MW1 and identified on the chain-of-custody as DUP.

Validation of the analytical data was performed by LAI following the guidelines in the appropriate sections of the US Environmental Protection Agency (EPA) Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review (EPA 1999; 2004) and included evaluation of the following:

- Chain-of-Custody records
- Holding times
- Laboratory method blanks
- Blank spikes/laboratory control samples
- Field duplicate results
- Completeness
- Overall assessment of data quality.

Based on the validation, all of the data were determined to be acceptable for use. No qualification of the data was necessary, with the exception of nitrate concentrations for two samples (HWA-MW1 and duplicate), which were flagged as estimated values due to high relative percent difference between the parent and duplicate samples.

2.5 Monitoring Well Decommissioning

As indicated above, monitoring well P-27B was damaged and buried during a road construction project. When P-27B was uncovered, the original downgradient well (P-27), which had been paved over previously, was also located. Redevelopment activities are ongoing in this area of the Site, and the wells were damaged beyond repair; therefore, following collection of the groundwater samples for the 2017 monitoring event, monitoring wells P-27 and P-27B were decommissioned on May 19, 2017 by a licensed driller. Site monitoring well HWA-MW3, which is not included in the monitoring network, was also decommissioned. Well logs from the decommissioning are included in Appendix A. Installation of a new downgradient monitoring well will be required prior to the 2018 annual monitoring event.

3.0 2017 GROUNDWATER MONITORING RESULTS

This section presents the results of the 2017 annual groundwater monitoring event, which consists of groundwater level data and groundwater quality data.

3.1 Groundwater Levels

Groundwater elevations calculated using water level measurements collected from each monitoring well were used to evaluate groundwater flow direction at the Site. The calculated groundwater elevations are presented in Table 1. Groundwater elevation contours were plotted using the calculated groundwater elevations and are shown on Figure 3. The contours indicate the groundwater at the Site generally flows to the west.

3.2 Groundwater Quality

The 2017 annual monitoring event was completed on May 16, 2017. The analytical results are summarized in Table 2 and the laboratory analytical report is included in Appendix B. Groundwater samples were analyzed for dissolved arsenic, methane, nitrate, and sulfate at all sample locations. In addition, samples were tested for ferrous iron using a field test kit.

Arsenic was detected in all of the samples at concentrations ranging from 6.2 micrograms per liter (µg/L; P-27B) to 18 µg/L (HWA-MW1 and P-26). Consistent with Site groundwater monitoring data from previous sampling events, detected concentrations of arsenic exceeded the cleanup level (5 µg/L) in the samples from monitoring wells HWA-MW1, HWA-MW2, and P-26. The detected concentrations of dissolved arsenic in these wells were within the range of previously detected concentrations. Dissolved arsenic was detected at a concentration of 6.2 µg/L, above the cleanup level, at downgradient well P-27B. This result is inconsistent with previous Site monitoring data, which indicate a maximum detected arsenic concentration of 2.2 µg/L during quarterly monitoring events in 2016. As discussed further in Section 4.0, the detected concentration of arsenic in this sample is potentially the result of material entering the well, which has been damaged during a construction project at the Site.

The annual 2017 groundwater data indicate that conditions are naturally reduced at the Site, which is consistent with previous Site data. Conditions that are at least iron-reducing will release arsenic due to reduction (solubilization) of iron-arsenic (FeAs) complexes. Site data indicate that Site conditions are not only iron-reducing, based on the detection of ferrous iron at HWA-MW1 and P-26, but also indicate sulfate reduction (i.e. conditions are more strongly reducing than required for solubilization of FeAs), based on the low detected concentrations of sulfate (less than 0.26 mg/L to 3.3 mg/L) in three of the four Site monitoring wells. In addition, methane was detected in all of the groundwater samples, indicating that conditions are also methanogenic (methane producing), which is also indicative of highly reducing conditions. Detected concentrations of nitrate, sulfate, and ferrous iron at downgradient well P-27B were outside of the ranges of previously detected concentrations.

4.0 SUMMARY OF 2017 MONITORING RESULTS

Concentrations of dissolved arsenic detected in groundwater at the Site during quarterly monitoring completed in 2017 are generally consistent with previous sampling data, with the exception of the results for the downgradient well (P-27B). While the arsenic concentration at the downgradient well (P-27B) was above the cleanup level (5 µg/L), the result is not consistent with historical data from wells P-27 and P-27B. The exceedance is likely due to material entering the well when it was damaged and not likely representative of an increase in dissolved arsenic concentrations at this location. The maximum detected concentration of dissolved arsenic during the 2017 monitoring event (18 µg/L at HWA-MW-1 and P-26) is lower than the maximum detected concentrations during monitoring completed in 2016 (36 µg/L at MW-1), 2015 (52.5 µg/L at MW-1), and 2014 (91 µg/L at MW-1). Concentrations of dissolved arsenic are stable and generally decreasing. Data from 2014 and 2015 monitoring events are included in Appendix C.

Site data continue to support the conclusion that elevated concentrations of arsenic are present due to reducing conditions and are unrelated to Site releases. Ferrous iron was detected in two of the four samples and methane was detected in all samples during the 2017 event; nitrate was not detected in samples from two of the four wells. Sulfate was either not detected or detected at low concentrations in all but the downgradient well. This trend supports the conclusion that elevated arsenic concentrations at the Site are associated with reducing conditions.

Downgradient monitoring well P-27B was damaged during a construction project and was decommissioned following collection of samples for the 2017 monitoring event. Installation of a new downgradient monitoring well will be required prior to the 2018 monitoring event.

5.0 CONCLUSIONS

Based on the results of 2017 groundwater monitoring, Site groundwater does not pose a threat to human health and the environment. Because groundwater at the Site is not used as drinking water, the pathway of concern is a release to marine surface water. Arsenic was not detected at concentrations greater than the cleanup level in any of the nine groundwater samples collected from the downgradient monitoring well P-27/P-27B between March of 2014 and November of 2016, indicating that there is no complete pathway to surface water. The detected concentration of arsenic in the downgradient well during the May 2017 sampling event is not consistent with previous sampling data, and likely the result of a damaged well.

Prior to the 2018 annual event, a replacement downgradient well will be installed. Redevelopment activities are ongoing at the Site. It is possible that additional monitoring wells within the current monitoring network will require replacement as the redevelopment project progresses. The proposed location of any new monitoring wells, including the downgradient monitoring well, will be submitted to Ecology for approval prior to installation. In accordance with the NFA and environmental covenant, compliance monitoring and reporting will continue to be conducted on an annual basis until 2020.

6.0 USE OF THIS REPORT

This document has been prepared for the exclusive use of the Port of Everett and Ecology for specific application to the North Marina Bayside/ABW Project. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of the Port and Landau Associates. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by the Port and Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

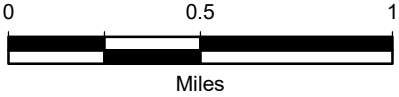
7.0 REFERENCES

Ecology. 2015. Letter: Re: No Further Action at the following Site: North Marina Bayside ABW, 1332 West Marine View Drive, Everett, WA 98201. From Washington State Department of Ecology, to Elise Gronewald, Port of Everett. October 1.

EPA. 1999. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. Edited by Office of Emergency and Remedial Response. Washington, DC: US Environmental Protection Agency.

EPA. 2004. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. Edited by Office of Superfund Remediation and Technology Innovation: US Environmental Protection Agency.

LAI. 2015. Environmental Investigation and Cleanup Documentation, American Boiler Works/Bayside Marine Site, Everett, Washington. Landau Associates, Inc. April 27.



Data Source: Esri 2012

G:\Projects\147\037\030038\2016 Annual Monitoring Report\F01 VicMap.mxd 4/12/2017 NAD 1983 StatePlane Washington North FIPS 4601 Feet

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North Marina ABW/Bayside Marine VCP Site Port of Everett, Washington	**Vicinity Map**	Figure 1

Legend

- Monitoring Well Location
- Monitoring Well to be Included in Monitoring Network (P-27B replaced P-27)
- Snohomish County Parcel Line / Area of Groundwater Use Restriction

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 80 160

Scale in Feet

Source: ©Bing Imagery, 2015; Snohomish County GIS (parcel data);

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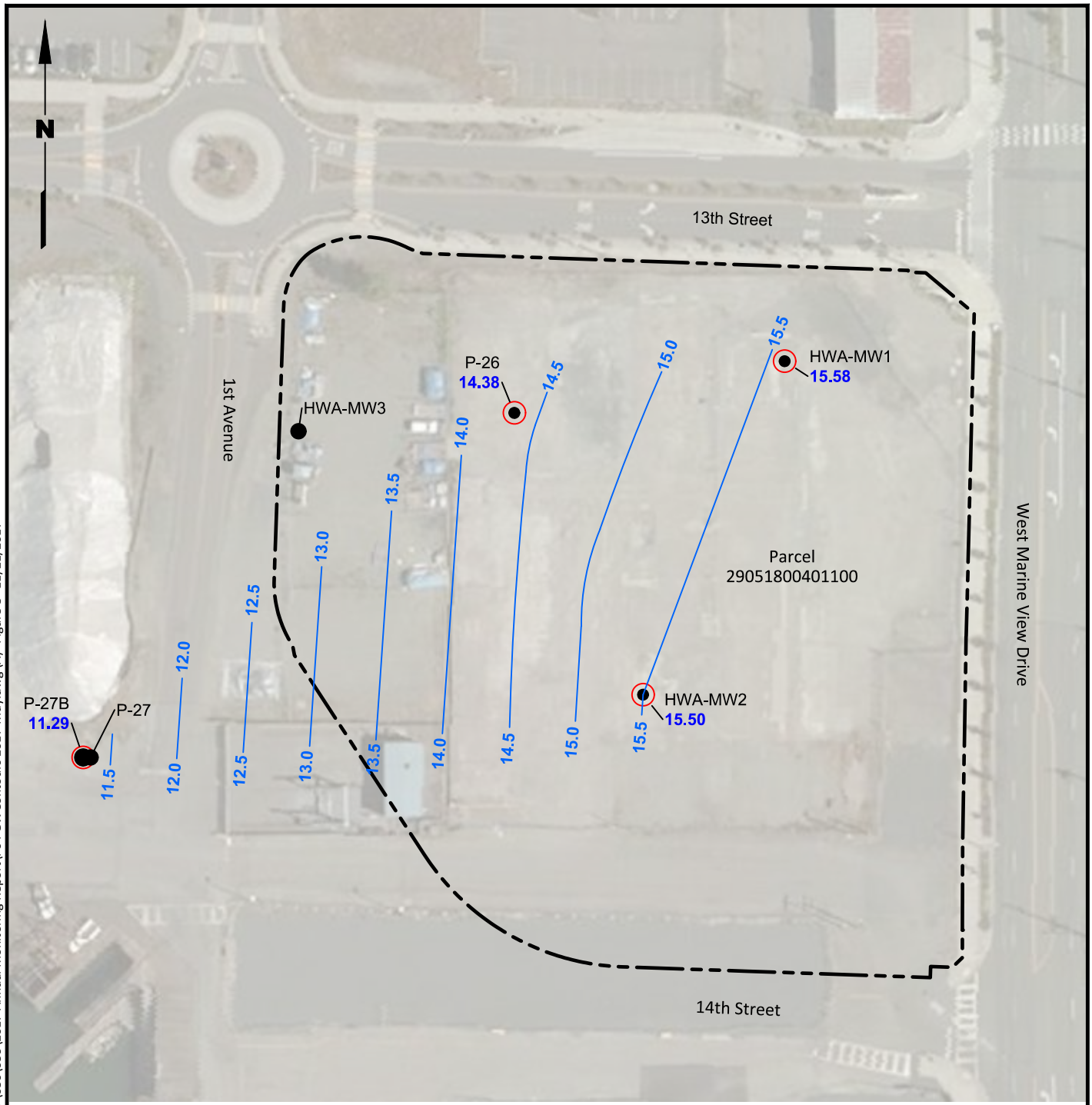
North Marina
ABW/Bayside Marine VCP Site
Port of Everett, Washington

Groundwater Monitoring Locations

Figure 2



Legend

- Monitoring Well Location
- Monitoring Well to be Included in Monitoring Network (P-27B replaced P-27)
- 11.29 Groundwater Elevation (feet, MLLW)
- 11.5 Approximate Groundwater Elevation Contour
- Snohomish County Parcel Line / Area of Groundwater Use Restriction

Notes

1. Groundwater data was collected May 16, 2017.
2. MLLW = Mean Lower Low Water
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 80 160
Scale in Feet

Source: ©Bing Imagery, 2015; Snohomish County GIS (parcel data);

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North Marina
ABW/Bayside Marine VCP Site
Port of Everett, Washington

Groundwater Flow Contours
May 16, 2017

Figure
3

Table 1
Groundwater Elevation Summary
North Marina Bayside/ABW Site
Everett, Washington

Well ID	Date	TOC Elevation (ft)	GW Depth (ft)	GW Elevation
HWA-MW1	3/29/2016	17.45	1.82	15.63
	6/13/2016		4.40	13.05
	9/20/2016		4.92	12.53
	11/29/2016		1.02	16.43
	5/16/2017		1.87	15.58
HWA-MW2	3/29/2016	17.50	1.80	15.70
	6/13/2016		4.13	13.37
	9/20/2016		4.62	12.88
	11/29/2016		2.08	15.42
	5/16/2017		2.00	15.50
P26	3/29/2016	17.22	2.78	14.44
	6/13/2016		4.41	12.81
	9/20/2016		5.98	11.24
	11/29/2016		2.08	15.14
	5/16/2017		2.84	14.38
P27B	3/29/2016	15.24	4.30	10.94
	6/13/2016		4.97	10.27
	9/20/2016		5.20	10.04
	11/29/2016		3.63	11.61
	5/16/2017		3.95	11.29

Abbreviations and Acronyms:

ft = foot/feet
GW = groundwater
ID = identification
TOC = Top of Casing

TABLE 2
QUARTERLY GROUNDWATER MONITORING RESULTS
NORTH MARINA BAYSIDE ABW SITE
EVERETT,WASHINGTON

Sample Location	Sample Date	Sample Type	Laboratory Sample ID	EPA 200.8	RSK-175	EPA 300.0		Hach Kit
				Dissolved Arsenic	Methane	Nitrate	Sulfate	Ferrous Iron
				µg/L	mg/L			
			Site Cleanup Level:	5	NA	NA	NA	NA
HWA-MW1	03/29/2016	N	EV16030229-03	**22**	**3.0 J**	0.15 U	**1.8**	**2.5**
HWA-MW1	03/29/2016	FD	EV16030229-02	**21**	**3.9 J**	0.15 U	**1.8**	**2.5**
HWA-MW1	6/13/2016	N	EV16060085-05	**36**	**3.6**	0.15 U	0.26 U	**1.8**
HWA-MW1	6/13/2016	FD	EV16060085-02	**35**	**3.3**	0.15 U	0.26 U	**1.8**
HWA-MW1	9/20/2016	N	EV16090134-02	**35**	**3.8**	0.15 U	**13**	**2.0**
HWA-MW1	9/20/2016	FD	EV16090134-01	**34**	**4.0**	0.15 U	**13**	**2.0**
HWA-MW1	11/29/2016	N	EV16110191-04	**24**	**2.1**	0.15 U	**2.3**	**3.2**
HWA-MW1	11/29/2016	FD	EV16110191-02	**24**	**1.9**	0.15 U	**2.7**	**3.2**
HWA-MW1	5/16/2017	N	EV17050101-04	**18**	**0.38**	0.15 UJ	**3.3**	**2.0**
HWA-MW1	5/16/2017	FD	EV17050101-03	**18**	**0.38**	0.54 J	**3.3**	NM
HWA-MW2	03/29/2016	N	EV16030229-04	**9.8**	**31**	0.15 U	0.26 U	**1.5**
HWA-MW2	6/13/2016	N	EV16060085-03	**11**	**5.1**	0.15 U	0.26 U	**1.0**
HWA-MW2	9/20/2016	N	EV16090134-04	**24**	**4.8**	0.15 U	0.26 U	**2.6**
HWA-MW2	11/29/2016	N	EV16110191-03	**15**	**8.3**	0.15 U	0.26 U	**2.4**
HWA-MW2	5/16/2017	N	EV17050101-02	**10**	**7.8**	0.15 U	0.26 U	0.0
P-26	03/29/2016	N	EV16030229-01	**18**	**10**	0.15 U	0.26 U	**2.0**
P-26	6/13/2016	N	EV16060085-04	**7.2**	**5.9**	0.15 U	0.26 U	**1.4**
P-26	9/20/2016	N	EV16090134-03	**2.8**	**3.5**	0.15 U	0.26 U	**1.8**
P-26	11/29/2016	N	EV16110191-05	**23**	**2.3**	0.15 U	0.26 U	**2.0**
P-26	5/16/2017	N	EV17050101-05	**18**	**1.6**	0.15 U	0.26 U	**3.4**
P-27B	03/29/2016	N	EV16030229-05	**1.2**	**3.1**	0.15 U	**17**	**0.5**
P-27B	6/13/2016	N	EV16060085-01	**1.3**	**1.8**	0.15 U	**2.6**	**1.2**
P-27B	9/20/2016	N	EV16090134-05	**1.5**	**4.3**	0.15 U	0.26 U	**3.0**
P-27B	11/29/2016	N	EV16110191-01	**2.2**	0.010 U	**0.74**	**16**	**0.8**
P-27B	5/16/2017	N	EV17050101-01	**6.2**	0.21	**8.2**	**120**	0.0

TABLE 2
QUARTERLY GROUNDWATER MONITORING RESULTS
NORTH MARINA BAYSIDE ABW SITE
EVERETT,WASHINGTON

Notes:

U = The compound was not detected at the reported concentration.
UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
Bold = detected compound
Green Box = detected concentration is greater than Site Cleanup Level

Abbreviations and Acronyms:

EPA = United States Environmental Protection Agency
FD = field duplicate
ID = identifcation
µg/L = microgram per liter
mg/L = milligram per liter
NA = not applicable
N = primary sample
NM = not measured

APPENDIX A

Monitoring Well Decommissioning Logs For P-27, P-27B, and HWA-MW3

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE43106

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: RE 09656

Consulting Firm

Unique Ecology Well IDTag No. BID 269

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☑ Trainee

Name (Print Last, First Name) Pickering, Cole

Driller/Engineer /Trainee Signature

Driller or Trainee License No. 3216

If trainee, licensed driller's Signature and License Number: Adam Harris 2508

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Port of Everett

Site Address 1198 Port Gardner Way

City Everett County Snohomish

Location SE1/4-1/4 NW1/4 Sec 16 Twn 29 R 05

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____

Long Deg ____ Min ____ Sec ____

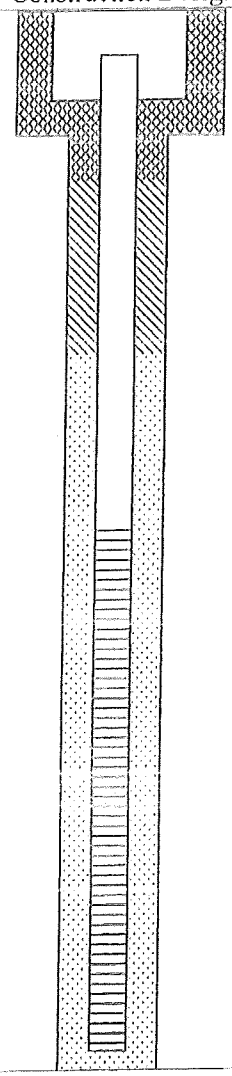
Tax Parcel No. 29051800401100

Cased or Uncased Diameter 1" Static Level

Work/Decommission Start Date 5/19/2017

Work/Decommission Completed Date 5/25/2017

Construction Design



Well Data

MONUMENT TYPE: flush

REMOVED MONUMENT: (YES) NO

PVC BLANK:

SCREEN:

WELL DEPTH: 15'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: (YES) / NO

☐ WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

☑ well was overdrilled/smashed and chipped in place bottom-up.

SCALE: 1"= ____ PAGE 1 OF 3

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE43106

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: RE12584

Consulting Firm _____

Unique Ecology Well IDTag No. BIK423

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☑ Trainee

Name (Print Last, First Name) Pickering, Cole

Driller/Engineer /Trainee Signature [signature]

Driller or Trainee License No. 3216

If trainee, licensed driller's Signature and License Number: [signature] 2508

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Port of Everett

Site Address 1198 Port Gardner Way

City Everett County Snohomish

Location SE1/4-1/4 NW1/4 Sec 16 Twn 29 R 05

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____

Long Deg _____ Min _____ Sec _____

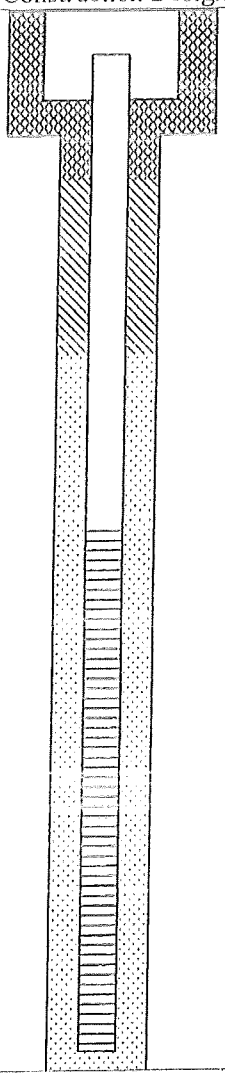
Tax Parcel No. 29051800401100

Cased or Uncased Diameter 1" Static Level _____

Work/Decommission Start Date 5/19/2017

Work/Decommission Completed Date 5/25/2017

Construction Design



Well Data

MONUMENT TYPE: Flush

REMOVED MONUMENT: (YES)/NO

PVC BLANK: _____

SCREEN: _____

WELL DEPTH: 14'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: (YES) / NO

☐ WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

Or well was smashed/overdrilled and chipped in place bottom-up

SCALE: 1"= ____ PAGE 2 OF 3

ECY 050-12 (Rev. 7/06)

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE43106

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: RE10219

Consulting Firm _____

Unique Ecology Well IDTag No. BIE 881

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☒ Trainee

Name (Print Last, First Name) Pickering, Cole

Driller/Engineer /Trainee Signature _____

Driller or Trainee License No. 3216

If trainee, licensed driller's Signature and License Number: Adam Hansen Inc. 2508

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Port of Everett

Site Address 1198 Port Gardner Way

City Everett County Snohomish

Location SE1/4-1/4 NW1/4 Sec 16 Twn 29 R 05

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____

Long Deg _____ Min _____ Sec _____

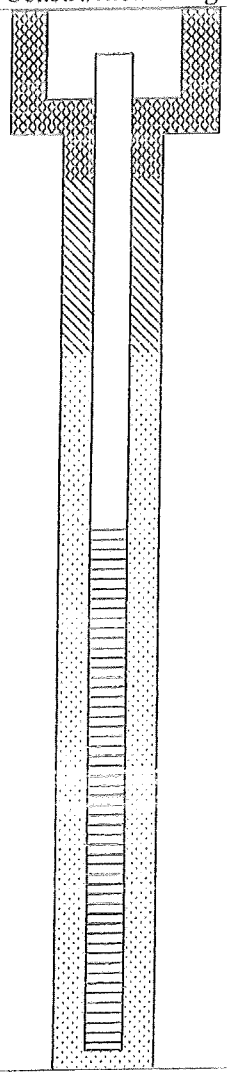
Tax Parcel No. 29051800401100

Cased or Uncased Diameter 1" Static Level _____

Work/Decommission Start Date 5/19/2017

Work/Decommission Completed Date 5/25/2017

Construction Design



Well Data

MONUMENT TYPE: Flush

REMOVED MONUMENT: YES/NO

PVC BLANK: _____

SCREEN: _____

WELL DEPTH: 13'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES / NO

☒ WELL WAS CHIPPED/GROUTED IN PLACE Then casing removed and chipped in place bottom up.

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

SCALE: 1"= ____ PAGE 3 OF 3

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

APPENDIX B

Laboratory Data Reports

May 30, 2017

Ms. Kathryn Hartley
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Ms. Hartley,

On May 16th, 5 samples were received by our laboratory and assigned our laboratory project number EV17050101. The project was identified as your ABW Marine GW - 147037.030.043. 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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/30/2017 EV17050101 EV17050101-01
CLIENT CONTACT:	Kathryn Hartley	DATE RECEIVED:	05/16/2017
CLIENT PROJECT:	ABW Marine GW - 147037.030.043	COLLECTION DATE:	5/16/2017 10:00:00 AM
CLIENT SAMPLE ID	P-27B	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Methane	RSK-175	**0.21**	0.010	1	MG/L	05/26/2017	CCN
Nitrate	EPA-300.0	**8.2**	3.1	20	MG/L	05/17/2017	DNT
Sulfate	EPA-300.0	**120**	5.2	20	MG/L	05/17/2017	DNT
Arsenic (Dissolved)	EPA-200.8	**6.2**	1.0	1	UG/L	05/17/2017	RAL

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/30/2017 EV17050101 EV17050101-02
CLIENT CONTACT:	Kathryn Hartley	DATE RECEIVED:	05/16/2017
CLIENT PROJECT:	ABW Marine GW - 147037.030.043	COLLECTION DATE:	5/16/2017 10:50:00 AM
CLIENT SAMPLE ID	HWA-MW2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Methane	RSK-175	**7.8**	0.10	10	MG/L	05/26/2017	CCN
Nitrate	EPA-300.0	U	0.15	1	MG/L	05/17/2017	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	05/17/2017	DNT
Arsenic (Dissolved)	EPA-200.8	**10**	1.0	1	UG/L	05/17/2017	RAL

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

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ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/30/2017 EV17050101 EV17050101-03
CLIENT CONTACT:	Kathryn Hartley	DATE RECEIVED:	05/16/2017
CLIENT PROJECT:	ABW Marine GW - 147037.030.043	COLLECTION DATE:	5/16/2017 11:00:00 AM
CLIENT SAMPLE ID	DUP	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Methane	RSK-175	**0.38**	0.010	1	MG/L	05/26/2017	CCN
Nitrate	EPA-300.0	**0.54**	0.15	1	MG/L	05/17/2017	DNT
Sulfate	EPA-300.0	**3.3**	0.26	1	MG/L	05/17/2017	DNT
Arsenic (Dissolved)	EPA-200.8	**18**	1.0	1	UG/L	05/17/2017	RAL

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/30/2017 EV17050101 EV17050101-04
CLIENT CONTACT:	Kathryn Hartley	DATE RECEIVED:	05/16/2017
CLIENT PROJECT:	ABW Marine GW - 147037.030.043	COLLECTION DATE:	5/16/2017 11:40:00 AM
CLIENT SAMPLE ID	HWA-MW1	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Methane	RSK-175	**0.38**	0.010	1	MG/L	05/26/2017	CCN
Nitrate	EPA-300.0	U	0.15	1	MG/L	05/17/2017	DNT
Sulfate	EPA-300.0	**3.3**	0.26	1	MG/L	05/17/2017	DNT
Arsenic (Dissolved)	EPA-200.8	**18**	1.0	1	UG/L	05/17/2017	RAL

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/30/2017 EV17050101 EV17050101-05
CLIENT CONTACT:	Kathryn Hartley	DATE RECEIVED:	05/16/2017
CLIENT PROJECT:	ABW Marine GW - 147037.030.043	COLLECTION DATE:	5/16/2017 12:30:00 PM
CLIENT SAMPLE ID	P-26	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Methane	RSK-175	**1.6**	0.010	1	MG/L	05/26/2017	CCN
Nitrate	EPA-300.0	U	0.15	1	MG/L	05/17/2017	DNT
Sulfate	EPA-300.0	U	0.26	1	MG/L	05/17/2017	DNT
Arsenic (Dissolved)	EPA-200.8	**18**	1.0	1	UG/L	05/17/2017	RAL

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

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS SDG#: WDOE ACCREDITATION:	5/30/2017 EV17050101 C601
CLIENT CONTACT:	Kathryn Hartley		
CLIENT PROJECT:	ABW Marine GW - 147037.030.043		

LABORATORY BLANK RESULTS

MBLK-R295374 - Batch R295374 - Water by RSK-175

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Methane	RSK-175	U	MG/L	0.010	05/26/2017	CCN

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

MBLK-295184 - Batch R295184 - Water by EPA-300.0

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Nitrate	EPA-300.0	U	MG/L	0.15	05/17/2017	DNT
Sulfate	EPA-300.0	U	MG/L	0.26	05/17/2017	DNT

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

MB-051717W - Batch 116336 - Water by EPA-200.8

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved)	EPA-200.8	U	UG/L	1.0	05/17/2017	RAL

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS SDG#: WDOE ACCREDITATION:	5/30/2017 EV17050101 C601
CLIENT CONTACT:	Kathryn Hartley		
CLIENT PROJECT:	ABW Marine GW - 147037.030.043		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R295374 - Water by RSK-175

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Methane - BS	RSK-175	**83.0**			80	120	05/26/2017	CCN
Methane - BSD	RSK-175	**87.7**	**6**		80	120	05/26/2017	CCN

ALS Test Batch ID: R295184 - Water by EPA-300.0

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Nitrate - BS	EPA-300.0	**98.0**			80	120	05/17/2017	DNT
Nitrate - BSD	EPA-300.0	**98.0**	**0**		80	120	05/17/2017	DNT
Sulfate - BS	EPA-300.0	**101**			80	120	05/17/2017	DNT
Sulfate - BSD	EPA-300.0	**104**	**3**		80	120	05/17/2017	DNT

ALS Test Batch ID: 116336 - Water by EPA-200.8

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Arsenic (Dissolved) - BS	EPA-200.8	**97.3**			89.1	110	05/17/2017	RAL
Arsenic (Dissolved) - BSD	EPA-200.8	**95.3**	**2**		89.1	110	05/17/2017	RAL

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

EV17050101

LANDAU ASSOCIATES

- [x] **Seattle/Edmonds** (425) 778-0907
- [ ] **Tacoma** (253) 926-2493
- [ ] **Spokane** (509) 327-9737
- [ ] **Portland** (503) 542-1080
- [ ] _____

Chain-of-Custody Record

Date 5-16-17

Page 1 of 1

Project Name ABW Marine GW Project No. 147037.030.043

Project Location/Event Port of Everett/Quarterly Groundwater

Sampler's Name Devon Brandt

Project Contact Kathryn Hartley

Send Results To Kathryn Hartley, Dani Jorgensen & Stephanie Renando.

Testing Parameters

Turnaround Time
- [x] Standard
- [ ] Accelerated
- [ ] _____

	Sample I.D.	Date	Time	Matrix	No. of Containers	Dissolved As (EPA 200.8)	Nitrate/Sulfate (EPA 300.0)	Methane (RSK-175)	Observations/Comments
1	P-27D	5/16/17	1000	AQ	4	x	x	x	
2	MWA-MW2	5/16/17	1050	AQ	4	x	x	x	
3	DUP	5/16/17	1100	AQ	4	x	x	x	
4	MWA-MW1	5/16/17	1140	AQ	4	x	x	x	
5	P-26	5/16/17	1230	AQ	4	x	x	x	

- [x] Allow water samples to settle, collect aliquot from clear portion
- [ ] NWTPH-Dx - run acid wash silica gel cleanup
- [ ] Analyze for EPH if no specific product identified

VOC/BTEX/VPH (soil):
- [ ] non-preserved
- [ ] preserved w/methanol
- [ ] preserved w/sodium bisulfate
- [ ] Freeze upon receipt

- [x] Dissolved metal water samples field filtered

Other Nitrates have Short Hold

-Bill to: POE (Elise Gronewald)

Special Shipment/Handling or Storage Requirements

Method of Shipment

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Devon Brandt	Printed Name Halle J. Kunst	Printed Name	Printed Name
Company LAI	Company ALS	Company	Company
Date 5/16/17 Time 1329	Date 5/16/17 Time 1329	Date Time	Date Time

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative

12/2014

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV1705010 1

Project: ABW Marine GW

Received Date: 5/16/17 Received Time: 1329 By: HSK

Type of shipping container: Cooler X Box ____ Other ____

Shipped via: FedEx Ground ____ UPS ____ Mail ____ Courier ____ Hand Delivered X
FedEx Express ____

	Yes	No	N/A
Were custody seals on outside of shipping container?	____	X	____
If yes, how many? ____ Where? ____			
Custody seal date: ____ Seal name: ____			
Was Chain of Custody properly filled out (ink, signed, dated, etc.)?	X	____	____
Did all bottles have labels?	X	____	____
Did all bottle labels and tags agree with Chain of Custody?	X	____	____
Were samples received within hold time?	X	____	____
Did all bottles arrive in good condition (unbroken, etc.)?	X	____	____
Was sufficient amount of sample sent for the tests indicated?	X	____	____
Was correct preservation added to samples?	X	____	____

If no, Sample Control added preservative to the following:

Sample Number	Reagent	Analyte

Were VOA vials checked for absence of air bubbles?	X	____	____
Bubbles present in sample #: None			

Temperature of cooler upon receipt: 4.6°C on ice Cold Cool Ambient N/A

Explain any discrepancies: ____

Was client contacted? ____ Who was called? ____ By whom? ____ Date: ____

Outcome of call: ____

APPENDIX C

Groundwater Monitoring Data 2014-2015

GROUNDWATER ANALYTICAL DATA (2014-2015)
NORTH MARINA ABW/BAYSIDE MARINE VCP SITE
PORT OF EVERETT, WASHINGTON

Sample ID Laboratory ID Date Collected	Preliminary Cleanup Level (a)	P-26 7/24/2014	P-26 8/18/2014	P-26 9/3/2014	P-26 ZN28F 12/3/2014	P-26 ZZ75C 3/10/2015	P-27 YC90A 3/13/2014	Dup of P-27 DUP-1 YC90B 3/13/2014	P-27 7/24/2014	P-27 9/3/201	P-27 ZN28A 12/3/2014	Dup of P-27 DUP1 ZN28B 12/3/2014	P-27 AC91A/ZZ75G 3/26/2015	Dup of P-27 DUP-2 ZZ75F 3/10/2015	HWA-MW1 7/24/2014	HWA-MW1 8/18/2014	HWA-MW1 9/3/2014	HWA-MW1 ZN28D 12/3/2014
DISSOLVED METALS (µg/L)																		
Method SW6000-7000																		
Arsenic	5	**15**	**9.8**	**6.3**	**18.6**	**12.8**	0.5 U	**0.6**	1 U	1 U	**3.0**		**1.7**		**64**	**77**	**91**	**65.1**
Cadmium		1 U		1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	0.1 U		0.1 U		1 U		1 U	0.1 U
Chromium	240,000	2 U		2 U	**2**	**1**			2 U	2 U	1 U		0.5 U		**2.1**		**2.2**	**3**
Copper	2.4	2 U		2 U	**0.5**	0.5 U	0.5 U	**0.6**	2 U	2 U	**0.8**		**0.5**		2 U		2 U	**0.7**
Lead		1 U		1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	0.1 U		0.1 U		1 U		1 U	0.1 U
Mercury		0.2 U		0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.1 U		0.1 U		0.2 U		0.2 U	0.1 U
Silver																		
Zinc	81	2.5 U		**5.7**	4 U	4 U	4 U	**5**	2.5 U	**8.2**	**5**		4 U		2.5 U		**7.6**	**8**
NWTPH-Dx (mg/L)																		
Diesel-Range	0.5	**0.14**		**0.18**	0.10 U	0.10 U	0.13 U	0.11 U	0.13 U	0.13 U	0.10 U		0.10 U		**0.15**		**0.13**	0.10 U
Motor Oil-Range	0.5	0.25 U		0.25 U	0.20 U	0.20 U	0.27 U	0.23 U	0.25 U	0.25 U	0.20 U		0.20 U		0.25 U		0.25 U	0.20 U
NWTPH-Gx (mg/kg)																		
Gasoline-Range	0.8										0.25 U	0.25 U	0.25 U	0.25 U				
DISSOLVED GASES (µg/L)																		
RSK-175																		
Methane					**8980**	**15100**					**503**	**536**	**5780**					**15000**
CONVENTIONALS (mg/L)																		
Method EPA300.0																		
Nitrate			**0.18**	**0.19**	0.1 U	**0.1**				0.15 U	0.1 U		0.1 U			0.15 U	**0.27**	**0.1**
Sulfate			0.26 U	**0.37**	0.1 U	**0.2**				**0.58**	**9.1**		**4.1**			0.26 U	0.26 U	**0.5**
Field Parameters																		
pH		6.42	7.01	7.14	6.71	6.04	6.39	6.33	7.05	7.21	7.3		6.37		6.59	6.87	6.8	6.74
Conductance (µS/cm)		1112	989	968	4.59	404	856	856	3430	481	460		421		1259	1204	968	736
Temperature (°C)		18.3	17.6	20.7	13.07	11.94	11.79	11.79	18.5	20.2	10.9		11.54		20.6	17.9	22.7	11.93
Dissolved Oxygen (mg/l)		3	0.33	0.39	0.49	4.41	1.92	1.92	0.23	0.63	0.95		1.19		0.27	0.54	0.39	0.51
ORP (mV)			95	120	-92.2	-82	-84.7	-84.7		39	-42.6		-28			50	49	-114.6
Ferrous Iron (mg/L)			1.2	1	1.2	1.8				0.4	1.5		1.4			1.6	1.5	1.6
Turbidity (NTU)					87.87	12.3	2.57	2.57			0.27		1.66					1.72

GROUNDWATER ANALYTICAL DATA (2014-2015)
NORTH MARINA ABW/BAYSIDE MARINE VCP SITE
PORT OF EVERETT, WASHINGTON

Sample ID Laboratory ID Date Collected	Preliminary Cleanup Level (a)	Dup of HWA-MW1 DUP2 ZN28E 12/3/2014	HWA-MW1 ZZ75B 3/10/2015	Dup of HWA-MW1 DUP-1 ZZ75A 3/10/2015	HWA-MW2 7/24/2014	HWA-MW2 9/3/2014	HWA-MW2 ZN28G 12/3/2014	HWA-MW2 ZZ75D 3/10/2015	HWA-MW3 7/24/2014	HWA-MW3 9/3/2014	HWA-MW3 ZN28C 12/3/2014	HWA-MW3 ZZ75E 3/10/2015
DISSOLVED METALS (µg/L)												
Method SW6000-7000												
Arsenic	5	**66.3**	**51.5**	**52.5**	**2.7**	**8.2**	**9.6**	**8.1**	**2.1**	1 U	**2.4**	**3.2**
Cadmium		0.1 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.1 U
Chromium	240,000	**2**	**1.8**	**1.8**	**2.1**	**2.8**	**2**	**1.4**	2 U	2 U	**1**	**1.1**
Copper	2.4	**0.7**	**0.8**	**0.7**	2 U	2 U	**0.6**	0.5 U	2 U	2 U	**0.6**	**0.5**
Lead		**0.2**	0.1 U	0.1 U	1 U	1 U	0.1 U	0.1 U	1 U	1 U	0.1 U	0.1 U
Mercury		0.1 U	0.1 U	0.1 U	0.2 U	0.2 U	0.1 U	0.1 U	0.2 U	0.2 U	0.1 U	0.1 U
Silver												
Zinc	81	**8**	**4**	4 U	2.5 U	**13**	**4**	4 U	2.5 U	**10**	**6**	4 U
NWTPH-Dx (mg/L)												
Diesel-Range	0.5	0.10 U	0.10 U	0.10 U	**0.22**	**0.14**	0.10 U	0.10 U	0.13 U	0.13 U	0.10 U	0.10 U
Motor Oil-Range	0.5	0.20 U	0.20 U	0.20 U	0.25 U	0.25 U	0.20 U	0.20 U	0.25 U	0.25 U	0.20 U	0.20 U
NWTPH-Gx (mg/kg)												
Gasoline-Range	0.8											
DISSOLVED GASES (µg/L)												
RSK-175												
Methane		**14000**	**17700**	**16900**			**13300**	**25200**			**3480**	**9550**
CONVENTIONALS (mg/L)												
Method EPA300.0												
Nitrate		**0.1**	0.1 U	0.1 U		0.61	0.1 U	0.1 U		0.17	0.1 U	0.1 U
Sulfate		**0.4**	**0.2**	**0.3**		0.26 U	0.1 U	**0.8**		0.26 U	**0.1**	**0.5**
Field Parameters												
pH		6.75	6.19		6.42	6.38	6.15	6.22	6.71	7.13	6.82	6.78
Conductance (µS/cm)		736	663		1400	847	389	326	1031	938	406	334
Temperature (°C)		11.94	11.95		17.7	20.5	13.23	11.46	15.4	17	11.87	11.09
Dissolved Oxygen (mg/l)		0.52	5.05		0.21	0.66	0.36	2.37	0.26	0.41	0.54	1.54
ORP (mV)		-114.6	-105			75	-13.8	-70		143	-63.5	-80
Ferrous Iron (mg/L)		1.6	1.4			0.6	5	1.8		1.7	1.8	1.4
Turbidity (NTU)		2.05	8.82				104.2	62.1			26.7	70.9

Box indicates exceedance of cleanup level.
Bold indicates detected value.
ND = Not Detected
µg/L = micrograms per liter
mg/L = milligrams per liter
mg/kg = milligrams per kilogram

U = Indicates the compound was undetected
UJ = The analyte was not detected in the sample; the reported sample detection limit is an estimate.