Periodic Review

North Marina Bayside ABW
1332 West Marine View Drive
Everett, WA 98201

Facility Site ID#: 9286485
Cleanup Site ID#: 2224
VCP Project No.: NW2842

Prepared by:
Headquarters Cleanup Section
Toxics Cleanup Program

June 2022

1.0 INTRODUCTION

This document is a review by the Washington State Department of Ecology (Ecology) of post-cleanup Site conditions and monitoring data to assure human health and the environment are being protected at the American Boiler Works (i.e., ABW Technologies, Inc.; ABW)/Bayside Marine Site (Site). Cleanup at this Site was implemented under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code (WAC). With the completion of the cleanup, and the recent completion of the residential, commercial, and public access development, this Site is an example of a successful brownfield redevelopment.

Cleanup activities at this Site were completed under the Voluntary Cleanup Program (VCP) as Project No. NW2842[1] (most recent activities) and Project No. NW1876 (for cleanup activities conducted in the early 2000s). Compliance soil samples collected during the cleanup activities indicate that contaminant concentration levels in soil remaining at the Site are below Site cleanup levels. Arsenic is present in groundwater at concentrations greater than the Site cleanup levels, but the detected concentrations have been attributed to naturally reducing conditions at the Site and are not the result of a Site release (Landau Associates, 2015). The downgradient monitoring well (P-27C), the selected point of compliance, sample concentrations have been below Site cleanup levels. The MTCA cleanup levels for soil are established under WAC 173-340-740. The MTCA cleanup levels for groundwater are established under WAC 173-340-720. WAC 173-340-420(2) requires Ecology to conduct a periodic review of a Site every five years under the following conditions:

1. Whenever the department conducts a cleanup action
2. Whenever the department approves a cleanup action under an order, agreed order or consent decree
3. Or, as resources permit, whenever the department issues a no further action opinion, and one of the following conditions exists at the Site:
    (a) Institutional controls or financial assurance are required as part of the cleanup;
    (b) Where the cleanup level is based on a practical quantitation limit; or
    (c) Where, in the department's judgment, modifications to the default equations or assumptions using Site-specific information would significantly increase the concentration of hazardous substances remaining at the Site after cleanup or the uncertainty in the ecological evaluation or the reliability of the cleanup action is

[1] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Voluntary-Cleanup-Program

such that additional review is necessary to assure long-term protection of human health and the environment.

When evaluating whether human health and the environment are being protected, the factors Ecology shall consider include [WAC 173-340-420(4)]:

(a) The effectiveness of ongoing or completed cleanup actions, including the effectiveness of engineered controls and institutional controls in limiting exposure to hazardous substances remaining at the Site.

(b) New scientific information for individual hazardous substances of mixtures present at the Site.

(c) New applicable state and federal laws for hazardous substances present at the Site.

(d) Current and projected Site use.

(e) Availability and practicability of higher preference technologies; and.

(f) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

Ecology shall publish a notice of all periodic reviews in the Site Register and provide an opportunity for public comment.

2.0 SUMMARY OF SITE CONDITIONS

2.1 Site Background

The ABW/Bayside Marine Site is located on the eastern portion of the Port of Everett's (Port) Waterfront Place Central Redevelopment (formerly known as the North Marina Redevelopment) project boundary in Everett, Washington. Appendix 6.1 shows the Site location.

The Site is generally bounded by 13th Street/Port Gardner Way to the north, West Marine View Drive to the east, and 14th Street to the south. Other MTCA cleanup sites in the vicinity include North Marina Ameron Hulbert to the north, Everett Shipyard to the south, and the Phase I VCP Site to the west. Port Gardner Bay and the Port's Central Marina are located to the southwest of the Site. The Property is approximately three acres in size.

This Site was previously part of a broader VCP site known as the North Marina Redevelopment VCP Site (VCP reference number NW1249).[2] On November 14, 2007, the North Marina VCP Site was removed from the VCP list and split into six separate sites under the State's Puget Sound Initiative (PSI).[3] At the request of the Ecology, three of these sites were to be enrolled into the VCP. This Site was originally referenced as NW1876 until work was suspended in 2009 and was reopened in 2014 as VCP Site NW2842.[4]

Over the past five years, the Site has been redeveloped by the Port, its tenants, and a new property owner. The central portion of the Site, corresponding to the former ABW Technologies leasehold, was recently developed into a four-story apartment building with a parking lot and landscaping. The western portion of the Site corresponding to the former Bayside Marine Leasehold, was recently developed into a hotel and restaurant, which includes a surface parking lot and landscaping. Site improvements include stormwater facility upgrades to protect the adjacent surface water body and sediment quality, including the installation of a stormwater treatment systems known as a Modular Wetland System (MWS). Stormwater is either discharged to the City sanitary system or through the MWS.

[2] https://apps.ecology.wa.gov/cleanupsearch/site/992
[3] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Cleanup-sites/Puget-Sound
[4] https://apps.ecology.wa.gov/cleanupsearch/site/2224

2.1.1 Site History+

The following Site history discussion is from Ecology's No Further Action Opinion Letter dated Oct 1, 2015.

There have been a variety of leaseholds by the Port to various tenants around the North Marina Area. The tenants utilized the leaseholds for a variety of business ventures, primarily related to marine repair and other marine support services. Former leaseholds within the Site include ABW and Bayside Marine. Appendix 6.2 shows former leaseholds.

The ABW Plant I leasehold was located at the southwest corner of the intersection of West Marine View Drive and 13th Street. Based on review of aerial photographs, the eastern portion of the manufacturing building was constructed between 1965 and 1969. The western portion of the manufacturing building was constructed between 1974 and 1976. The facility was historically used for metal manufacturing and machining operations. Milling machines that used cutting oil were commonly used within the building. A smaller office building was located near the southeast corner of the leasehold and appears to have been present since approximately 1953. The manufacturing building was vacated and demolished in 2005, leaving the footings and original concrete pad in place and the office building was demolished in 2009.

The Bayside Marine former leasehold was located west of the ABW Plant I leasehold. Bayside Marine leased the property from 1992 to 2007. The leasehold was previously leased by others for marine-related business ventures similar to Bayside Marine. The leasehold included a gravel boatyard, a dry stack building that was used for covered storage of boats, and a combination maintenance shop and office building. The dry stack building was constructed between 1961 and 1965 and the office/shop building was built between 1970 and 1971; both were demolished in early 2008. The buildings were located on the western portion of the leasehold, which was included in the Phase I VCP Site and is not part of the ABW/Bayside Marine Site.

2.1.2 Current Conditions

The Site underwent various cleanup actions culminating in a no further action (NFA) determination issued by Ecology in October 2015. In 2017, the Site was subdivided by way of a boundary line adjustment into parcels and tracts. Appendices 6.3 & 6.4 show the current parcel numbers and Site features.

These parcels/tracts are now developed and include the following uses:

- Hotel Indigo, under a ground lease with the Port,
- SeaLevel Apartment Building North and its associated parking lot owned by American Classic Homes, and
- Port of Everett owned public amenities including a paved roadway with street level parking and a concrete esplanade.

With the development activities completed as of 2021, the Site is now open to the public, and includes buildings, roadways, concrete hardscapes, electric vehicle charging stations, and landscaped areas.

2.2 Site Investigations

The following discussion is from *Environmental Investigation and Cleanup Documentation American Boiler Works/Bayside Marine Site, Everett, Washington*, dated April 27, 2015.

Several environmental investigations have been conducted to determine the nature and extent of contamination within the North Marina Area, including the Site. These investigations include:

- A Phase I ESA conducted in 2001 (Landau Associates 2001).
- A Phase II ESA conducted in late 2003 and early 2004 (Landau Associates 2004).
- A Data Gaps Investigation (DGI) conducted in late 2004 and early 2005 to fill data gaps in environmental characterization that remained following the completion of the previous investigations (Landau Associates 2005).
- A Supplemental DGI (Landau Associates 2006b) conducted in late 2005 to provide a similar level of environmental characterization in the Craftsman District as that accomplished for other portions of the North Marina Area, and to further delineate isolated areas of shallow soil contamination, including portions of the Site.
- A limited soil investigation conducted in 2006 to characterize soil conditions beneath the former ABW manufacturing building (Pinnacle GeoSciences 2006).
- Additional characterization soil sampling conducted by Landau Associates in 2006 and 2007 to characterize soil encountered during Site cleanup (Landau Associates 2015).

- Additional soil and groundwater quality characterization conducted by Landau Associates in 2014 to characterize soil conditions in the area of the boat wash facility and to characterize groundwater conditions in the southwestern portion of the Site where oil-range petroleum hydrocarbons were detected in groundwater during a previous investigation (Landau Associates 2015).
- Additional soil and groundwater quality characterization conducted by HWA Geosciences, Inc. (HWA) in 2014 and by Landau Associates in 2014 and 2015 to characterize fill quality beneath the former ABW building and to further evaluate groundwater quality across the Site (Landau Associates 2015).

All investigations were conducted under sampling and analysis plans. Sampling and analysis plans prepared after completion of the Phase II ESA were reviewed by Ecology under the VCP, including the Data Gaps Investigation work plan (Landau Associates 2004b).

2.3 Cleanup Levels and Points of Compliance

This section discusses Site cleanup standards for chemical constituents that were detected in affected Site media at concentrations above screening levels developed during Site characterization. The affected media included groundwater and soil. Cleanup standards consist of 1) cleanup levels defined by regulatory criteria that are adequately protective of human health and the environment, and 2) the point of compliance at which the cleanup levels must be met.

Cleanup levels for the Site are summarized as follows:

Table 1 – Cleanup Levels

Constituent of Concern	Groundwater Cleanup Level (microgram per liter)	Soil Cleanup Level (milligram per kilogram)
TPH Gasoline-range	800[2]	100[1]
TPH Diesel/Oil-range	500[2]	2,000[1]
cPAHs TEQ	NA	0.1
Arsenic	5[2]	20[1]
Zinc	81[2]	NA

1 – MTCA Method A Cleanup Level for soil
2 – Marine aquatic life-based concentration for surface water

The following cleanup levels and points of compliance discussion is from Ecology's No Further Action Opinion Letter dated Oct 1, 2015.

2.3.1 Groundwater

Since groundwater is not potable per WAC 173-340-720(2), groundwater cleanup levels for protection of drinking water are not applicable. As a result, groundwater water cleanup levels protective of marine surface water were developed in accordance with WAC 173-340-730(3). MTCA cleanup levels of 1,000 microgram per liter (µg/L) for TPH-gasoline, 500 µg/L for TPH-diesel and TPH-oil, 5 µg/L for arsenic, and 81 µg/L for zinc were selected for groundwater at the Site.

Groundwater at the Site in is considered non-potable per WAC 173-340-720(2)(d); therefore, groundwater cleanup levels are based on protection of marine surface water. A conditional point of compliance (CPOC) was established at the southwest corner of the property boundary, which is the closest monitoring well to the point of discharge to marine surface water in accordance with WAC 173-340-720(8)(c).

2.3.2 Soil

A terrestrial ecological evaluation (TEE) has been completed and is excluded because all contaminated soil, is or will be covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife. Therefore, soil cleanup levels protective of terrestrial species are not required.

The Site does not meet the MTCA definition of an industrial property; therefore, soil cleanup levels suitable for unrestricted land use are appropriate. Soil cleanup levels based on leaching (protection of surface water protective of human health and aquatic organisms) and protection of direct contact are appropriate. MTCA cleanup levels of 2,000 milligram per kilogram (mg/kg) for TPH-diesel and TPH-oil, 100 mg/kg for TPH-gasoline, 0.1 mg/kg for cPAHs, and 20 mg/kg for arsenic were selected for soils at the Site.

The point of compliance based on both direct contact from 0 feet (ft) to 15ft below ground surface and leaching for the protection of marine surface water is site-wide throughout the soil profile and may extend below the water table in accordance with WAC 173-340-740(6)(b).

2.4 Remedial Actions

The following remedial action discussion is from Ecology's No Further Action Opinion Letter dated Oct 1, 2015.

2.4.1 Cleanup Actions

Between 2006 and 2007 approximately 3,795 tons of contaminated soil was excavated and removed from the Site during various cleanup actions conducted by the Port. During 2015, an additional 1,095 tons of contaminated soil were removed from a previously inaccessible area of the Site. Based on the results of confirmational sampling, soil at the Site has been cleaned up to the selected MTCA cleanup levels.

Grab groundwater samples collected between 2004 and 2005 indicated the presence of TPH-oil (B-4 920 µg/1), arsenic (L-FA-1 54 µg/1), and zinc (L-FA-1 158 µg/1) at concentrations greater than the selected cleanup levels. Between July 2014 and March 2015, groundwater sample results from five groundwater monitoring wells were below the selected cleanup levels for four consecutive quarters for all analytes sampled and tested, with exception of arsenic in monitoring wells P-26, HW-MW1, and HW-MW2 (Appendix 6.4).

Based on soil removal activities and Site groundwater data, it appears that the arsenic present in Site groundwater is the result of natural reducing conditions and more likely than not the result of a Site release. Reducing conditions could cause dissolution of naturally occurring solid phase arsenic in soil, releasing arsenic to groundwater.

2.4.2 Post-NFA Compliance Monitoring

As required by the No Further Action letter, and associated environmental covenant, Ecology determined that confirmational monitoring was necessary at the Site to confirm the long-term effectiveness of the cleanup. The monitoring data was evaluated by Ecology during this periodic review of post-cleanup conditions. The Ecology-approved monitoring plan required quarterly monitoring for the first year (2016), and annual monitoring for the subsequent 4 years (2017 to 2020).

The four monitoring wells identified for groundwater monitoring included wells HWA-MW1, HWA-MW2, P-26, and P-27. Due to construction activities at the Site, a new monitoring well P-27B was installed to replace P-27, which was then replaced by P-27C. Both P-27B and P-27C are

located within the immediate vicinity of P-27. The replacement locations were reviewed and approved by Ecology.

Eight monitoring events have occurred since the covenant was recorded. These analytical results are summarized in Appendix 6.5

At monitoring wells HWA-MW1, HWA-MW2, and P-26, groundwater arsenic concentrations remained greater than the cleanup up level of 5 µg/L. The maximum arsenic concentrations at the three locations were 36 µg/L, 24 µg/L, and 23 µg/L, respectively.

P-27 and its replacement wells act as the conditional point of compliance (CPOC), where the cleanup level must be met. Dissolved arsenic concentrations were below the cleanup level at the CPOC with one exception; it slightly exceeded the cleanup level of 5.0 µg/L during the 2017 monitoring event with a detection of 6.2 µg/L. However, subsequent monitoring conducted between 2018 and 2020 demonstrated that groundwater concentrations were below the cleanup level at P-27.

In addition to dissolved arsenic, geochemical parameters including methane, nitrate, sulfate, and ferrous iron were also monitored to confirm the presence of a reducing environment. The presence of ferrous iron and methane indicate that the aquifer is not only iron reducing but also methanogenic.

2.5 Environmental Covenant

Because residual groundwater impacts above the MTCA Method A cleanup levels were present for arsenic in monitoring wells P-26, HW-MW1, and HW-MW2, an environmental covenant (Covenant) restricting groundwater use was recorded with Snohomish County. This Covenant is recorded based on the legal description of the area covered under the Covenant and runs with the land, binding on all current and future owners of any portion of the area.

The Covenant prohibits activities that will result in exposure to contaminated groundwater at the Site, including installation of water supply wells, and prohibits any use of the property that is inconsistent with the Covenant. It serves to ensure the long-term integrity of the remedy. The recent development of the Site was completed consistent with the Covenant.

The Covenant is available as Appendix 6.6. The Covenant imposes the following limitations:

Section 1. General Restrictions and Requirements

a. Interference with Remedial Action. The Grantor shall not engage in any activity on the Property that may impact or interfere with the remedial action and any operation, maintenance, inspection or monitoring of that remedial action without prior written approval from Ecology.

b. Protection of Human Health and the Environment. The Grantor shall not engage in any activity on the Property that may threaten continued protection of human health or the environment without prior written approval from Ecology.

c. Continued Compliance Required. Grantor shall not convey any interest in any portion of the Property without providing for the continued adequate and complete operation, maintenance and monitoring of remedial actions and continued compliance with this Covenant.

d. Leases. Grantor shall restrict any lease for any portion of the Property to uses and activities consistent with this Covenant and notify all lessees of the restrictions on the use of the Property.

e. Amendment to the Covenant. Grantor must notify and obtain approval from Ecology at least sixty (60) days in advance of any proposed activity or use of the Property in a manner that is inconsistent with this Covenant. Before approving any proposal, Ecology must issue a public notice and provide an opportunity for the public to comment on the proposal. If Ecology approves the proposal, the Covenant will be amended to reflect the change.

Section 2. Specific Prohibitions and Requirements.

In addition to the general restrictions in Section 1 of this Covenant, the following additional specific restrictions and requirements shall apply to the Property.

a. Groundwater use. The groundwater beneath the Property remains contaminated and shall not be extracted for any purpose other than temporary construction dewatering, investigation, monitoring or remediation. No groundwater may be taken from the property for domestic use, therefore drilling of a well for any water supply purpose is strictly prohibited. Groundwater extracted from the Property for any purpose shall be considered potentially contaminated and any discharge of this water shall be done in accordance with state and federal law.

b. Monitoring. Several groundwater monitoring wells are currently located on the Property to monitor the performance of the remedial action. The number and locations of monitoring wells may change, subject to approval from Ecology, to facilitate redevelopment and ongoing operation at the Property. The Gran tor shall maintain clear access to these devices and protect them from damage. The Grantor shall report to Ecology within forty-eight (48) hours of the discovery of any damage to any monitoring device. Unless Ecology approves of an alternative plan in writing, the Grantor shall promptly repair the damage and submit a report documenting this work to Ecology within thirty (30) days of completing the repairs.

A post-compliance groundwater monitoring plan outline is included in the covenant as an appendix.

Section 3. Access.

a. The Grantor shall maintain clear access to all remedial action components necessary to construct, operate, inspect, monitor, and maintain the remedial action.

b. The Grantor freely and voluntarily grants Ecology and its authorized representatives, upon reasonable notice, the right to enter the Property at reasonable times to evaluate the effectiveness of this Covenant and associated remedial actions, and enforce compliance with this Covenant and those actions, including the right to take samples, inspect any remedial actions conducted on the Property, and to inspect related records.

c. No right of access or use by a third party to any portion of the Property is conveyed by this instrument.

Section 4. Notice Requirements.

a. Conveyance of Any Interest. The Grantor, when conveying any interest in any part of the Property, including but not limited to title, easement, leases, and security or other interests, must:

    i. Notify Ecology at least thirty (30) days in advance of the conveyance.

    ii. Include in the conveying document a notice in substantially the following form, as well as a complete copy of this Covenant:

    NOTICE: THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL COVENANT GRANTED TO THE WASHINGTON STATE DEPARTMENT OF ECOLOGY ON

SEPTEMBER 22, 2015 AND RECORDED WITH THE SNOHOMISH COUNTY AUDITOR UNDER RECORDING NUMBER 201509220729. USES AND ACTIVITIES ON THIS PROPERTY MUST COMPLY WITH THAT COVENANT, A COMPLETE COPY OF WHICH IS ATTACHED TO THIS DOCUMENT.

iii. Unless otherwise agreed to in writing by Ecology, provide Ecology with a complete copy of the executed document within thirty (30) days of the date of execution of such document.

b. Reporting Violations. Should the Grantor become aware of any violation of this Covenant, Grantor shall promptly report such violation to Ecology.

c. Emergencies. For any emergency or significant change in site conditions due to Acts of Nature (for example, flood, fire) resulting in a violation of this Covenant, the Grantor is authorized to respond to such an event in accordance with state and federal law. The Grantor must notify Ecology of the event and response actions planned or taken as soon as practical but no later than within 24 hours of the discovery of the event.

d. Any required written notice, approval, or communication shall be personally delivered or sent by first class mail to the following persons. Any change in this contact information shall be submitted in writing to all parties to this Covenant.

Port of Everett c/o Elise Gronewald P.O. Box 538 Everett, WA 98206 (425) 388-0630	Environmental Covenants Coordinator Washington State Department of Ecology Toxics Cleanup Program PO Box 47600 Olympia, WA 98504 - 7600 (360) 407-6000

As an alternative to providing written notice and change in contact information by mail, these documents may be provided electronically in an agreed upon format at the time of submittal.

Section 5. Modification or Termination.

a. If the conditions at the site requiring a Covenant have changed or no longer exist, then the Grantor may submit a request to Ecology that this Covenant be amended or terminated. Any amendment or termination of this Covenant must follow the procedures in Chapter 64. 70 RCW and Chapter 70.105D RCW and any rules promulgated under these chapters.

3.0 PERIODIC REVIEW

3.1 Effectiveness of Completed Cleanup Actions

Ecology issued a No Further Action determination upon completion of the cleanup at the Site in 2015. Site soil compliance monitoring data indicates that there is no risk of direct contact with soils containing arsenic at concentrations exceeding MTCA Method A cleanup levels.

Groundwater with arsenic concentrations higher than MTCA cleanup levels is still present at the Site due to reducing conditions. However, the Covenant implements institutional controls that prevent human exposure to this contamination by ingestion and direct contact with groundwater. The Covenant also ensures the long-term integrity of the remedy.

The zoning of the Site changed from Waterfront Commercial to Mixed Urban. The hotel and apartment buildings located in or near the plume of arsenic contaminated groundwater have their potable water supplied by the City of Everett's municipal system.

During the Site visit conducted on April 14, 2022, there were no observed indications that the integrity of the remedial action has been compromised. There was no evidence of the installation of new wells or other activities that may expose contaminated groundwater located beneath the Site or being discharged to surface or marine waters. A photo log is available as Appendix 6.7.

3.2 New scientific information for individual hazardous substances for mixtures present at the Site

In January 2017, the US Environmental Protection Agency published several changes to the toxicity values for benzo[a]pyrene in its integrated Risk Information System (EPA, 2017). EPA has also determined that benzo[a]pyrene has a mutagenic mode of action, and therefore recommends using age-dependent adjustment factors to address increased childhood sensitivity (compared to adults) to its carcinogenic effects. These changes affect some MTCA Method B cleanup levels for benzo[a]pyrene and for carcinogenic polycyclic aromatic hydrocarbons (cPAHs), which is one of the contaminants of concern in the Site soil. However, the changes in the cleanup level for cPAHs does not appear to effect the protectiveness of the overall cleanup at the Site.

3.3 New applicable state and federal laws for hazardous substances present at the Site

Washington state's Method B and Method C default cleanup level equations are found in the MTCA Cleanup Rule, Chapter 173-340 WAC. Cleanup Levels and Risk Calculation (CLARC) is a compendium of technical information related to calculating cleanup levels under Washington's Cleanup Rule.

Ecology updated CLARC to show how the changes to the toxicity values for benzo[a]pyrene affect MTCA Method B and Method C Cleanup Levels for soil, groundwater, surface water, and air. However, MTCA Method A cleanup levels for groundwater and soil, which are the basis for the Site cleanup levels, remain unchanged.

Ecology has developed a regional background concentration of arsenic in groundwater of 8.0 µg/L for the Puget Sound region. Hence, the selected cleanup level for arsenic in groundwater (5.0 µg/L) is slightly more restrictive than the regional background concentration. This background concentration does not appear to effect cleanup decisions at the Site.

3.4 Current and projected Site use

The Site is currently mixed commercial/residential land uses. The future land use is not likely to change. The Covenant is anticipated to still be sufficiently protective under such a land use change.

3.5 Availability and practicability of higher preference technologies

The implemented remedy included the removal of all Site soil contamination, and the containment of hazardous substances in groundwater, and it continues to be protective of human health and the environment. No higher preference cleanup technologies are practicable at this Site currently.

3.6 Availability of improved analytical techniques to evaluate compliance with cleanup levels

The analytical methods used at the time of the remedial action were capable of detection below selected Site cleanup levels. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

4.0 CONCLUSIONS

Since arsenic is still present in groundwater at concentrations above cleanup levels at the Site, and although it appears to be naturally occurring due to natural reducing conditions, Ecology, and the Port must satisfy the requirements of the No Further Action Letter Periodic Review section. That section of the NFA states:

> *Ecology will conduct periodic reviews of post-cleanup conditions at the Site to ensure that they remain protective of human health and the environment. If Ecology determines, based on a periodic review, that further remedial action is necessary at the Site, then Ecology will withdraw this opinion.*

Although the arsenic cleanup level in groundwater was not met within the Site (one exceedance occurred at the CPOC), no active remedial actions are required based on the following considerations:

- Approximately 4,890 tons of contaminated soils were removed from the Site during previous cleanup activities. Arsenic concentrations in soil were less than the cleanup level of 20 mg/kg for unrestricted use. Other contaminants in soil were also cleaned up to less than the selected cleanup level.
- A single exceedance in groundwater arsenic concentration above the cleanup level (6.2 µg/L compared to 5 µg/L) was observed in one out of eight monitoring events. Arsenic exceedances at the Site have also been attributed to reducing conditions found naturally and are more likely than not due to a Site release. In addition, the detected concentration at this location is less than the Puget Sound regional background concentration in groundwater of 8.0 µg/L.

Overall findings from this periodic review are as follows:

- The cleanup actions completed at the Site appear to be protective of human health and the environment.
- Some portions of the Site are affected by naturally occurring elevated arsenic concentrations in groundwater; however, no additional active remedial actions are required, as discussed above.
- Institutional controls in the form of a Covenant are in place at the Site and will be effective in protecting public health and the environment from exposure to hazardous substances and protecting the integrity of the cleanup action.

Based on this periodic review, Ecology has determined that the requirements of the Covenant are being followed. No additional cleanup actions are required by the property owner.

Because groundwater with arsenic concentrations higher than the MTCA cleanup level are still present, continued monitoring for arsenic in monitoring wells HWA-MW1 and P-27C is needed. However, sampling frequency can be reduced from once a year to every two and a half years.

4.1 Next Review

The next review for the Site will be scheduled five years from the date this periodic review is completed. In the event that additional cleanup actions or institutional controls are required, the next periodic review will be scheduled five years from the completion of those activities.

As discussed above, sampling of monitoring well HWA-MW1 and P-27C for arsenic will be needed for every two and a half years during the next five years. Depending on the monitoring results, future sampling requirements (frequency, location, etc.) could be further adjusted.

Based on the results of the round of groundwater monitoring and periodic review, Ecology will determined if further periodic reviews will be needed for the Site.

5.0 REFERENCES

Ecology. *Site Visit*. April 14, 2022.

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Port of Everett. *Environmental Covenant*. May 7, 2014.

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Pinnacle GeoSciences. *Limited Soil investigation, Former ABW Technologies Facility, 1332 West Marine View Drive, Everett, Washington*. February 2, 2006.

Landau Associates. *Ecology Review Draft, Data Gaps Investigation, North Marina Redevelopment Site, Everett, Washington*. May 13, 2005.

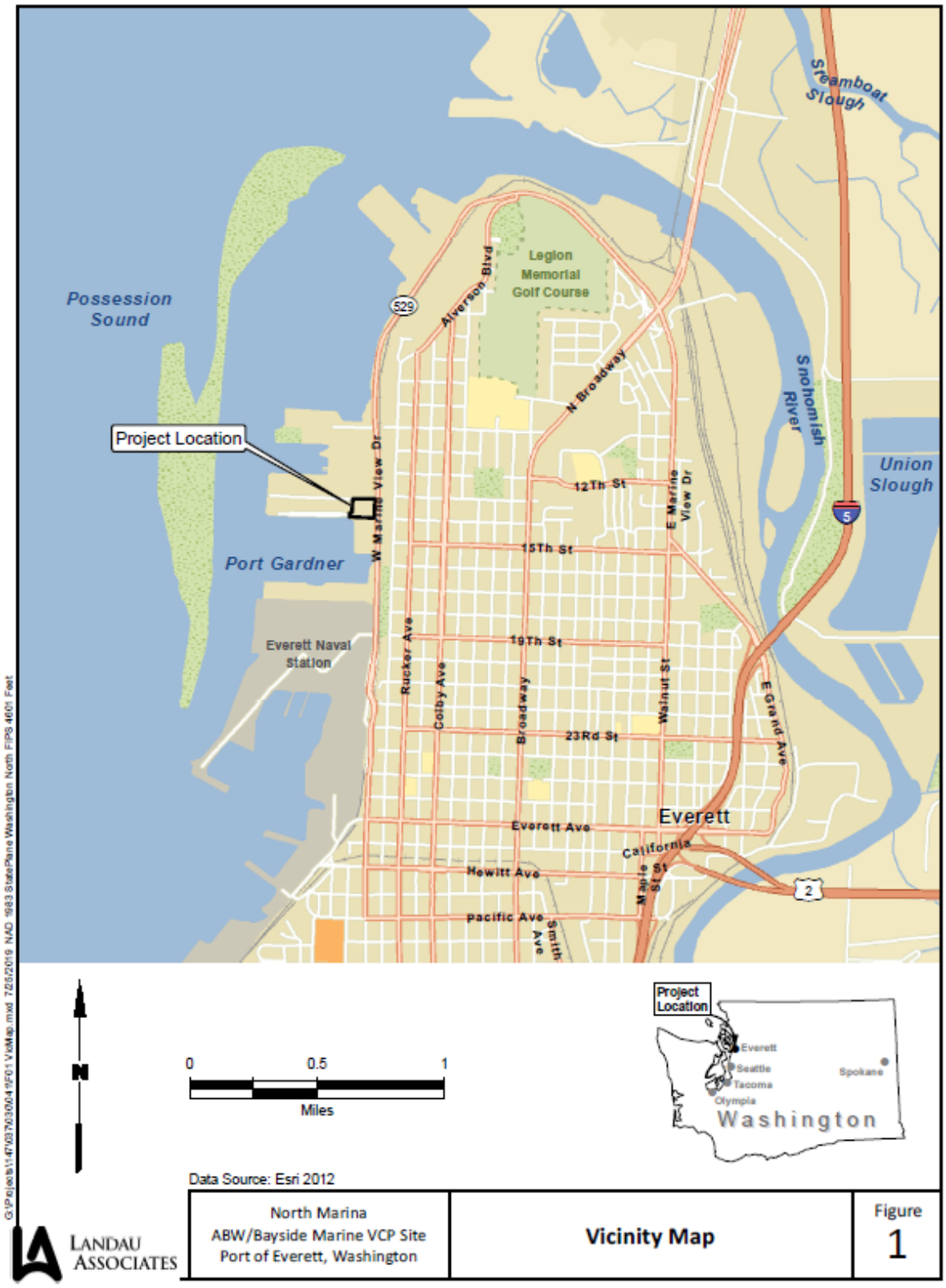
Landau Associates. *Phase II Environmental Site Assessment Report, North Marina Area, Port of Everett, Everett, Washington.* April 13, 2004a.

Landau Associates. *Ecology Review Draft Work Plan, Data Gaps Investigation, North Marina Redevelopment Site, Everett, Washington*. October 29, 2004b.

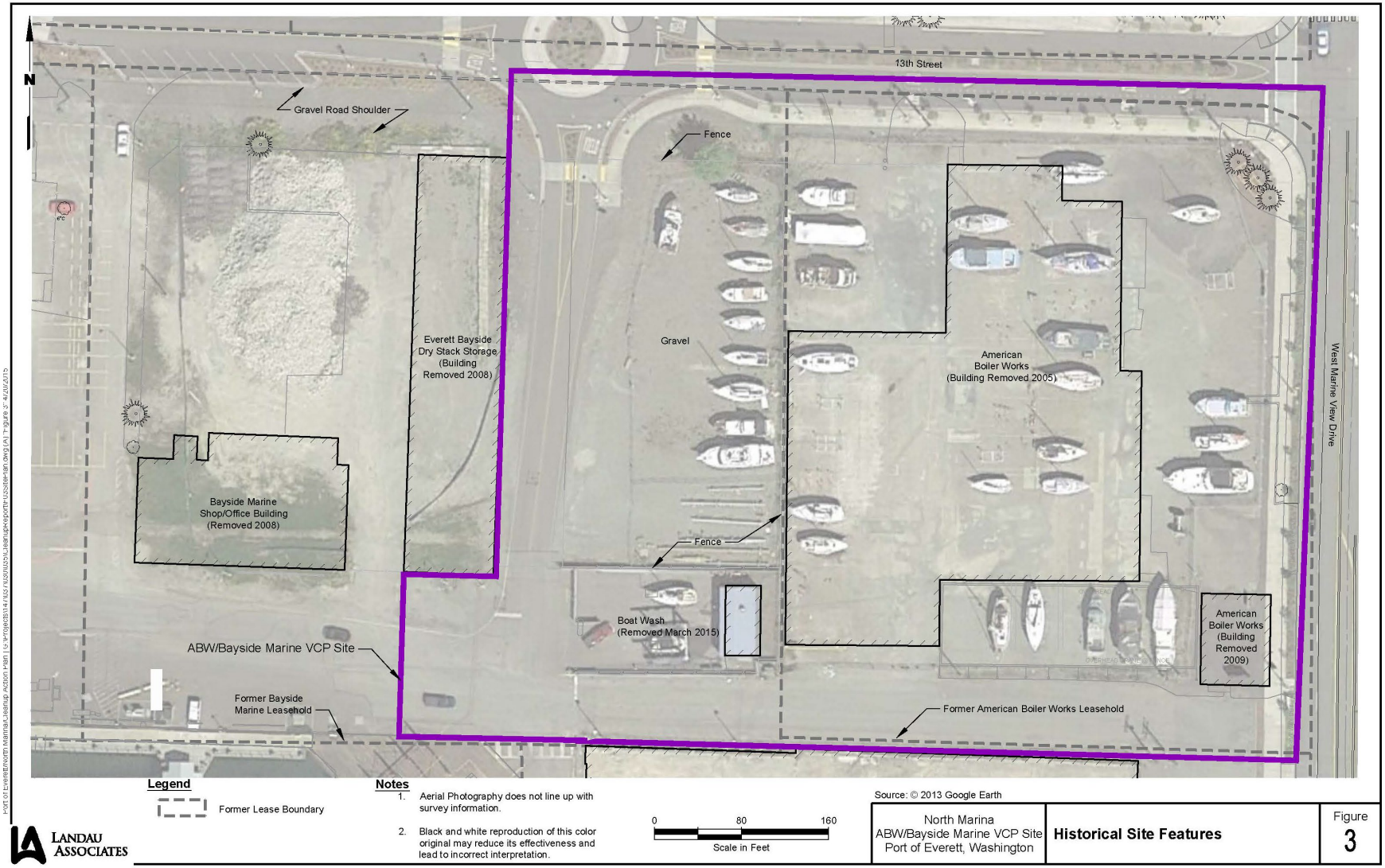
Landau Associates. *Phase I Environmental Site Assessment Report, North Marina Redevelopment Project, Port of Everett, Everett, Washington.* November 28, 2001.

6.0 APPENDICES

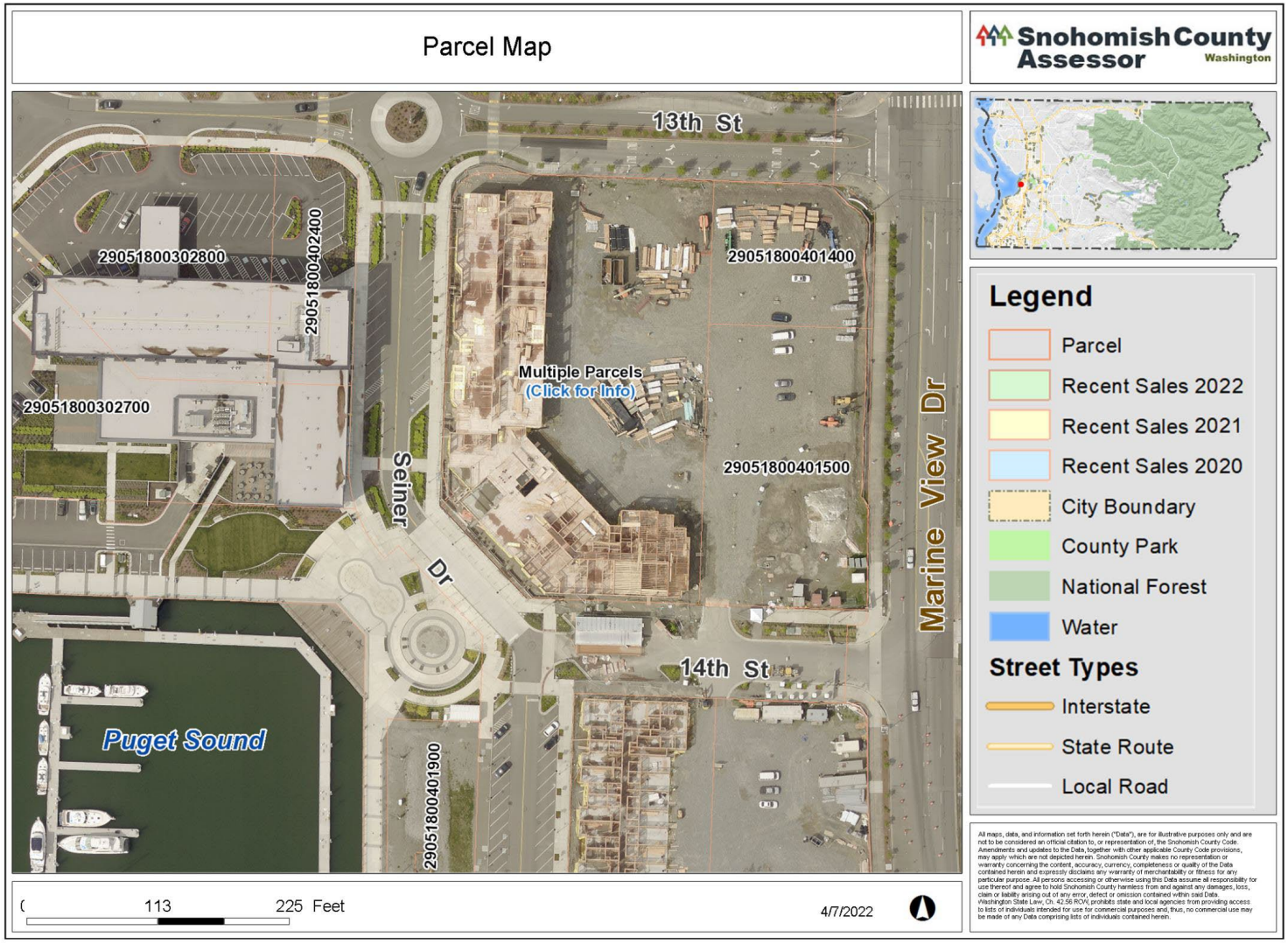
6.1 Vicinity Map



6.2 Historical Site Features



6.3 Parcl Map


Parcel Map
Snohomish County Assessor
Washington
13th St
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Multiple Parcels
(Click for Info)
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Seiner Dr
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Marine View Dr
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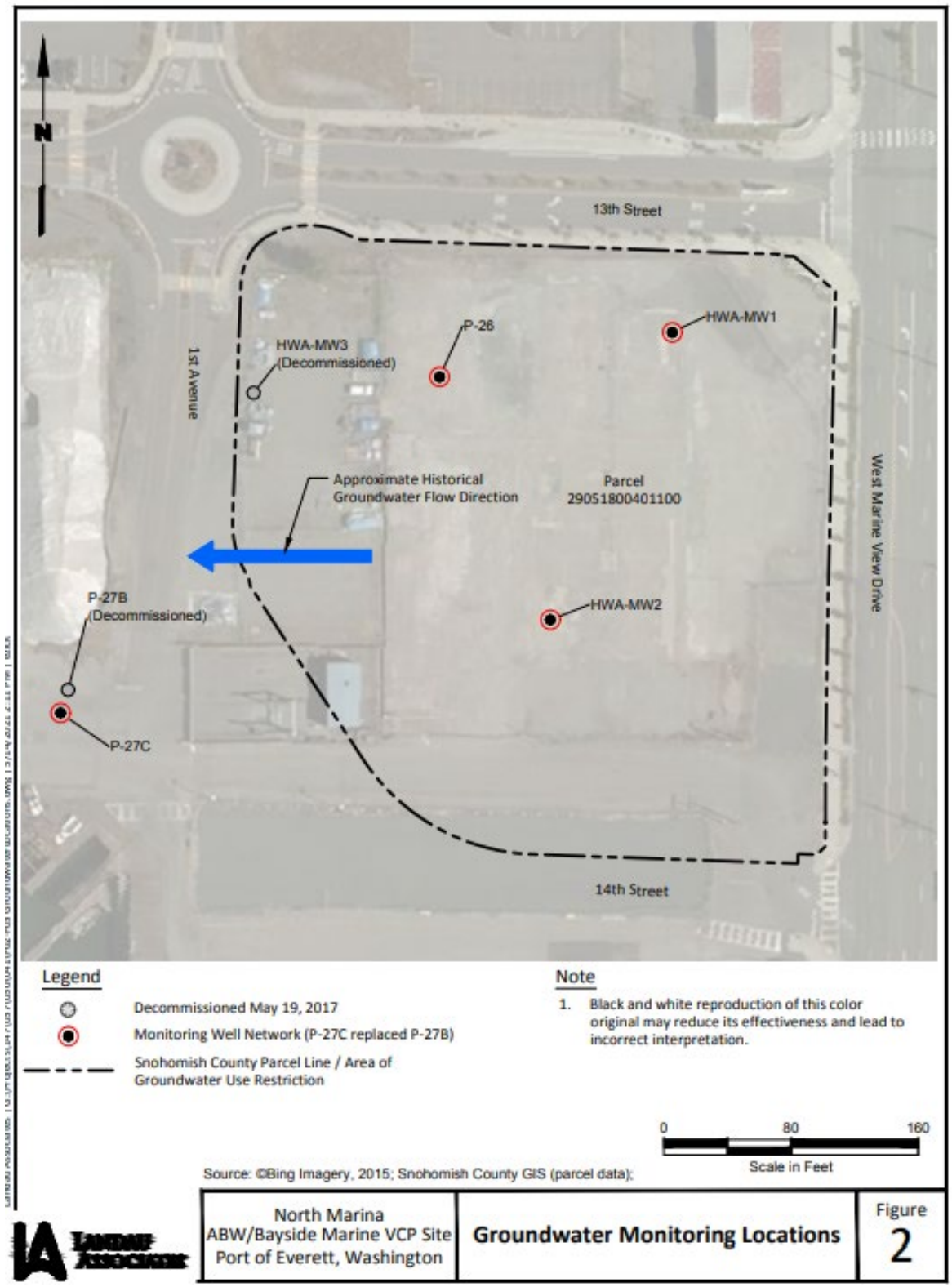
Legend
Parcel
Recent Sales 2022
Recent Sales 2021
Recent Sales 2020
City Boundary
County Park
National Forest
Water
Street Types
Interstate
State Route
Local Road
113
225 Feet
4/7/2022

6.4 Current Site Features



6.5 Post-NFA Groundwater Monitoring Data

Sample Location	Sample Date (a)	Sample Type	Laboratory Sample ID	EPA 200.8 Dissolved Arsenic µg/L	RSK-175 Methane mg/L	EPA 300.0 Nitrate mg/L	Sulfate mg/L	Hach Kit Ferrous Iron 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-MW1	6/28/2018	N	EV18060181-04	18	0.42 J	0.15 U	3.4	3.3
HWA-MW1	6/28/2018	FD	EV18060181-01	18	0.63 J	0.15 U	3.2	3.3
HWA-MW1	6/18/2019	N	EV19060126-05	12	2.0	0.15 U	0.26 U	4.4
HWA-MW1	6/18/2019	FD	EV19060126-01	12	1.7	0.27	0.26 U	4.4
HWA-MW1	6/10/2020	N	EV20060055-03	11	2.3	0.15 U	0.53 J	3.6 (d)
HWA-MW1	6/10/2020	FD	EV20060055-02	11	2.1	0.15 U	0.93 J	3.6 (d)
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

Sample Location	Sample Date (a)	Sample Type	Laboratory Sample ID	EPA 200.8 Dissolved Arsenic µg/L	RSK-175 Methane mg/L	EPA 300.0 Nitrate mg/L	Sulfate mg/L	Hach Kit Ferrous Iron mg/L
		Site Cleanup Level:		5	NA	NA	NA	NA
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
HWA-MW2	6/28/2018	N	EV18060181-03	18	4.7	0.15 U	0.34	2.4
HWA-MW2	6/18/2019	N	EV19060126-03	17	4.3	0.15 U	0.32	4.4
HWA-MW2	6/10/2020	N	EV20060055-04	11	4.6	0.15 U	8.4	2.2 (d)
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-26	6/28/2018	N	EV18060181-05	18	1.3	0.15 U	0.26 U	4.6
P-26	6/18/2019	N	EV19060126-04	14	3.2	0.15 U	0.26 U	5.0
P-26	6/10/2020	N	EV20060055-01	6.5	5.6	0.15 U	0.26 U	4.2 (d)
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 (b)	5/16/2017	N	EV17050101-01	6.2	0.21	8.2	120	0.0

Sample Location	Sample Date (a)	Sample Type	Laboratory Sample ID	EPA 200.8 Dissolved Arsenic µg/L	RSK-175 Methane mg/L	EPA 300.0 Nitrate mg/L	Sulfate mg/L	Hach Kit Ferrous Iron mg/L
		Site Cleanup Level:		5	NA	NA	NA	NA
P-27C (c)	6/28/2018	N	EV18060181-02	4.0 U	**0.30**	0.15 U	**220**	**4.4**
P-27C	6/18/2019	N	EV19060126-02	1.0 U	**0.21**	**0.18**	**100**	**3.0**
P-27C	6/10/2020	N	EV20060055-05	**1.8**	**0.29**	0.15 U	**34**	**1.5 (d)**

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:

-- = not analyzed
µg/L = microgram per liter
EPA = US Environmental Protection Agency
FD = field duplicate
ID = identification
mg/L = milligram per liter
N = primary sample
NA = not applicable
NM = not measured

(a) Sampling frequency changed from quarterly to annually beginning 2017.

(b) The arsenic reporting limit was raised by the laboratory to address background contamination in the associated method blank.

(c) P-27C installed within immediate vicinity of P-27B, which was decommissioned after the 2017 monitoring event. P-27C was installed to replace P-27B as the point of compliance downgradient of the Site.

(d) Ferrous Iron values were estimated by averaging the results from previous spring (May and June) sampling events.

6.6 Environment Covenant

6.7 Photo Log

Photo 1: Southwest Corner of American Classic Homes Looking Northwest

Photo 2: Southern Border looking East (14th Street)

Photo 3: Northeastern Corner looking Southwest (American Classic Homes North Building and Parking Lot)

Photo 4: Northeastern Corner looking West (13th Street)

Photo 5: Northern Border looking South

Photo 6: Northern Border looking West (13th Street and Seiner Dr)

Photo 7: Seiner Drive and 13th Street looking South

Photo 8: Seiner Drive looking West (Hotel Indigo Parking Lot)