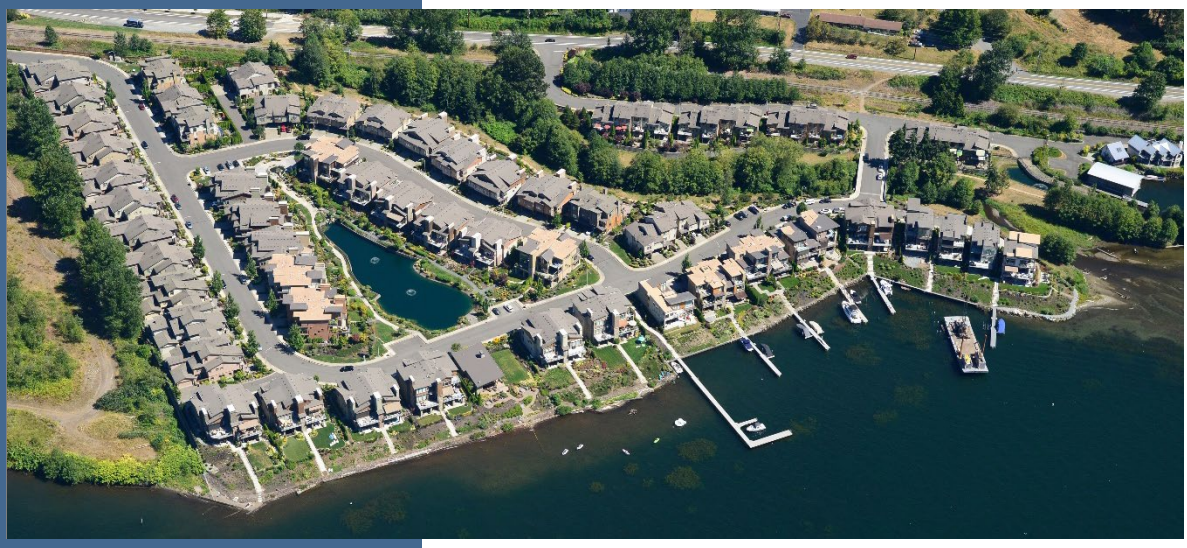

Draft Cleanup Action Plan

Barbee Mill Company Site
Renton, Washington

Toxics Cleanup Program

Washington State Department of Ecology

Northwest Regional Office

Shoreline, Washington

August 2024

DEPARTMENT OF ECOLOGY
State of Washington

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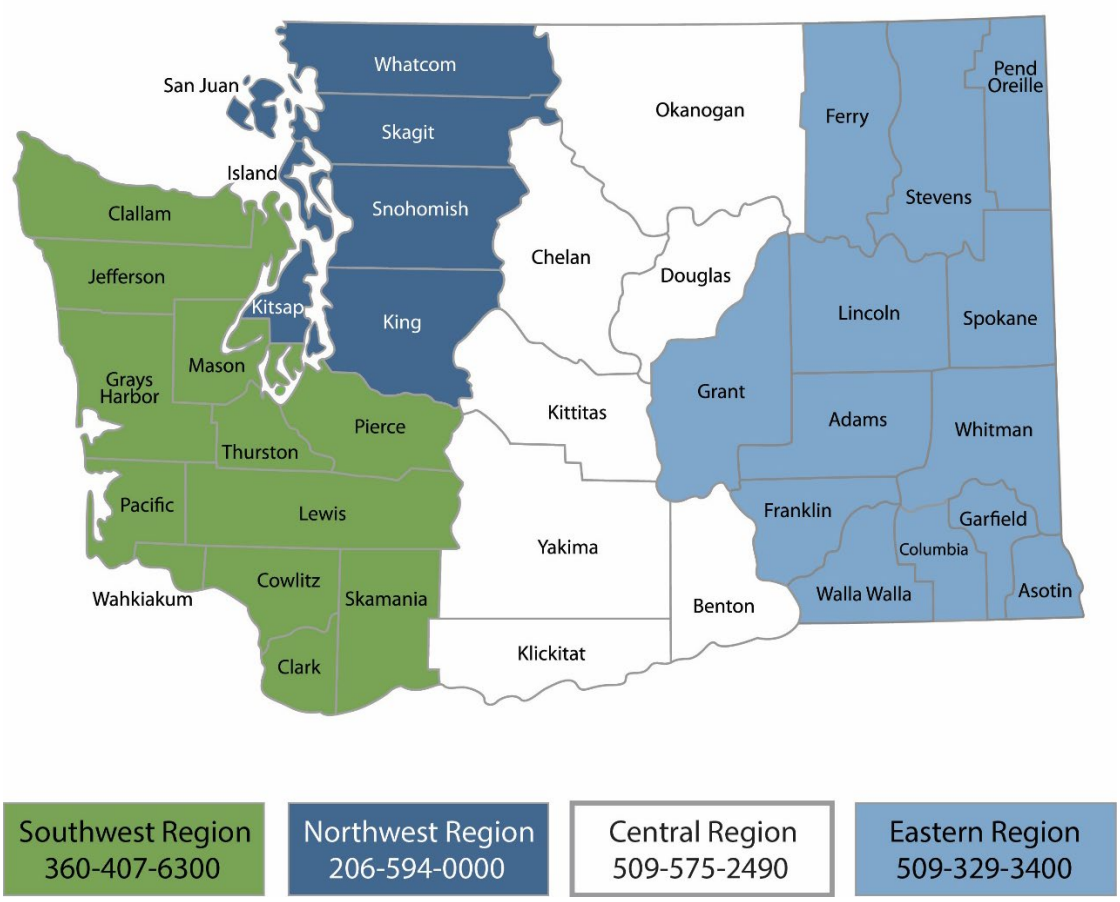

Southwest Region 360-407-6300	Northwest Region 206-594-0000	Central Region 509-575-2490	Eastern Region 509-329-3400

Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 46700 Olympia, WA 98504	360-407-6000

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Acronyms

AO	Agreed Order
AAI	All Appropriate Inquiries
Aspect	Aspect Consulting
Barbee Forest	Barbee Forest Products, Inc.
Barbee Mill	Barbee Mill Co., Inc.
bgs	below ground surface
bml	below mudline
CAP	Cleanup Action Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cm	centimeter
COC	constituent of concern
CUL	cleanup level
DCA	disproportionate cost analysis
dCAP	Draft Cleanup Action Report
DNR	Washington Department of Natural Resources
Ecology	Washington Department of Ecology
IC	institutional control
ISCR	In Situ Chemical Reduction
ISS	In Situ Solidification/Stabilization
mg/kg	milligrams/kilograms
µg/L	micrograms per liter
MNA	monitored natural attenuation
MTCA	Model Toxics Control Act
NPDES	National Pollution Discharge Elimination System
OSHA	Occupational Safety and Health Administration
PAZ	passive attenuation zone

PCP	pentachlorophenol
POC	point of compliance
PQL	practical quantitation limit
RAO	remedial action objective
RCRA	Resource and Recovery Act
RCW	Revised Code of Washington
REL	remediation level
RI/FS	Remedial Investigation/Feasibility Study
RMC	Renton Municipal Code
SCO	sediment cleanup objective
SEPA	State Environmental Policy Act
SMS	Sediment Management Standards
SWAC	surface weighted average concentration
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TPH-D	diesel-range total petroleum hydrocarbons
TPH-O	oil-range total petroleum hydrocarbons
USACE	U. S. Army Corps of Engineers
USC	United States Code
WAC	Washington Administrative Code

1 Introduction

On behalf of Barbee Mill Co., Inc. (Barbee Mill), Aspect Consulting (Aspect) has prepared this Draft Cleanup Action Plan (dCAP) for the Barbee Mill Company Site (Site) in accordance with the Agreed Order between the Washington State Department of Ecology (Ecology) and Barbee Mill effective December 1, 2009 (Agreed Order No. DE5396), the First Amendment to Agreed Order effective December 16, 2010, the Second Amendment to Agreed Order effective May 30, 2012, and Modifications to Agreed Order Schedule and Deliverables letter dated November 17, 2020 (collectively, the AO). The Barbee Mill Facility Site Identification Number (FSID) is 76716221 and the Cleanup Site Identification Number (CSID) is 2368. This dCAP was prepared consistent with the requirements of the Model Toxics Control Act (MTCA: Chapter 70A.305 Revised Code of Washington [RCW]) and applicable regulations (Washington State Administrative Code [WAC] 173-340) and the Sediment Management Standards (SMS: WAC 173-204; Ecology, 2013a).

Since 1996, Barbee Mill has completed numerous investigations and remedial actions to address soil, groundwater, and sediment contamination at the Site. All work to date is summarized in the Remedial Investigation and Feasibility Study (RI/FS) Report (Aspect and Geosyntec, 2024). The RI/FS developed and evaluated potential remedial actions and identified a preferred cleanup action for the Site. On June 4, 2024, Ecology approved the RI/FS Report for submittal for public comment.

This dCAP defines the preferred cleanup action identified in the Ecology-approved RI/FS Report. The RI/FS Report and this dCAP will be submitted concurrently for public comment and will be finalized after the public comment period ends. The final CAP will be incorporated into a Consent Decree between the State of Washington, Barbee Mill, and Barbee Forest Products, Inc. (Barbee Forest).

1.1 Site Description

The Site is generally located at 4101 Lake Washington Boulevard North in Renton, Washington (Figure 1) on the southeastern shoreline of Lake Washington at the mouth of May Creek (Figure 2). The Site is located within a former industrial area that now includes residential and potential future commercial uses. The approximately 37-acre Site includes the former Barbee Mill property (Barbee Property), a portion of the adjacent Quendall Terminals property (Quendall Property), and a portion of state-owned aquatic land located in Lake Washington immediately adjacent to the Barbee Property and the Quendall Property[1]. The Site boundary is shown on Figure 2.

[1] The Quendall Terminals Superfund Site (Quendall Site), which is divided into an upland Operable Unit (OU-1) and an aquatic Operable Unit (OU-2), includes portions of the Quendall Property. Preremedial design activities for the Quendall Site, under oversight by the U.S. Environmental Protection Agency (EPA), are ongoing. The Quendall Site OU-1 and OU-2 boundaries are shown on Figure 2 for context. Based on the Quendall Site Record of Decision (ROD; EPA, 2020), the Quendall

Barbee Mill owned and operated a sawmill on the portion of the Barbee Property north of May Creek from the 1940s until 1984. In 1984, Barbee Forest became the owner of the Barbee Property, while Barbee Mill continued to own the improvements and continued its operations. The Barbee Property was sold to Conner Homes at Barbee Mill, LLC in the early 2000s. The Barbee Property was redeveloped for residential use in 2006, as described in Section 2.1. Former operations on the Barbee Property resulted in impacts to soil, groundwater, and sediments on the Barbee Property, on a portion of the north-adjacent Quendall Property, and on west-adjacent, state-owned aquatic lands of Lake Washington. The Site consists of the area of these properties where contamination has come to be located, including the areas previously addressed by remedial actions.

1.2 Purpose and Content

The purpose of the CAP is to identify the proposed cleanup action for the Site and to provide an explanatory document for public review. This CAP is organized as follows:

- **Section 2** describes the Site and summarizes current site conditions.
- **Section 3** identifies constituents of concern (COCs) and cleanup standards.
- **Section 4** identifies state and federal laws and other regulatory requirements potentially applicable to the cleanup.
- **Section 5** summarizes the cleanup action alternatives considered in the remedy selection process, the evaluation of alternatives, and the rationale for selection of the preferred alternative.
- **Section 6** describes the selected cleanup action for the Site.
- **Section 7** provides a summary of the reporting schedule and public participation plan for the CAP.

Ecology has made a preliminary determination that a cleanup conducted in conformance with this CAP will comply with the requirements for selection of a remedy under WAC 173-340-360.

Site remedy in the area where the Barbee Site and the Quendall Site overlap would include placement of an upland cap and groundwater monitoring.

2 Summary of Site Conditions

This section provides a summary of Site conditions, which are described in detail in the RI/FS Report.

2.1 Environmental Setting

Existing Site features are shown on Figure 3. An overview of Site geology, hydrogeology, surface water, and sediment conditions is provided below.

2.1.1 Geology

Site soils consist of the following, from the surface down:

- **Recent Fill:** Over most of the Site, up to 10 feet of fill soils were placed on the Barbee Property during redevelopment and in areas excavated during interim remedial actions in 2006 and 2007; arsenic-contaminated soil was excavated and replaced with a 1- to 1.5-inch-layer crushed rock, general fill, and structural fill at depths up to approximately 18 feet relative to current Site grade on the Barbee Property.
- **Historical Fill:** Beneath the Recent Fill is a layer of older fill materials, generally up to approximately 5 feet thick, consisting of sand and gravel with silt and locally abundant wood and saw dust. The Historical Fill layer is thickest along the western edge of the Site (at the shoreline).
- **Shallow Alluvium:** Beneath the Historical Fill is an approximately 20- to 30-foot-thick layer of very heterogeneous alluvial sand, silt, and peat associated with deltaic deposits from May Creek. This layer is present to a depth of approximately 30 to 40 feet based on current Site grade on the Barbee Property.
- **Deeper Alluvium:** A thick sequence of dense sands and gravels, estimated to be at least 80 feet thick, underlies the Shallow Alluvium.

2.1.2 Hydrogeologic Conditions

Site groundwater is encountered at depths ranging from approximately 2 to 13 feet below ground surface (bgs). Groundwater levels fluctuate seasonally and are influenced by the seasonal elevation of Lake Washington and the stage of May Creek. The lake water level fluctuation results in seasonally varying hydraulic gradients that are highest in the winter, when the lake is low and recharge is high, and lowest in the summer, when the lake is high and recharge is low. Groundwater flow directions across the Site are relatively constant throughout the year, generally flowing to the west or west-northwest.

Horizontal hydraulic gradients are generally westward toward Lake Washington, with a northerly component in the northern portion of the Site. Vertical hydraulic gradients are upward near the lake, on the western portion of the Site, and generally downward in the middle and eastern portion of the Site.

2.1.3 Surface Water

The Site is located along and includes a portion of Lake Washington's eastern shoreline. Lake Washington is a naturally occurring freshwater lake with water levels controlled

directly by the U.S. Army Corps of Engineers (USACE); due to controlled levels and no tidal influence, sea level rise due to climate change is not expected to directly affect the Site.

The May Creek drainage flows through the Barbee Property and discharges to Lake Washington (Figure 2). Due to upstream urban development, the creek experiences elevated peak flows and relatively large sediment loads. Maintenance dredging at the mouth of May Creek has been performed periodically to remove accumulated sediment. The last maintenance dredging event was 2019.

2.1.4 Sediment Substrate

The lake bottom slopes gently to the west. The lake bottom substrate consists of sandy silt with silty clay and sand lenses at depth, based on pre-2020 sediment investigations. Surface sediment substrate observed post-2020 was comprised of mostly sandy silt with varying amounts of organic matter. Areas containing significant accumulation of woody debris from former log rafting operations were dredged in 1999 and 2002. A habitat restoration project completed in 2005 included removing a former bulkhead, removing fill that had been placed in former aquatic lands, and placing a layer of gravel just offshore of the northern portion of the Barbee Property.

2.2 Site History and Source Areas

The Barbee Mill Site was originally associated with the May Creek Lumber Company and Railway in the 1920s, where a dock and rail line operated in the southern portion of the Site, as well as a reported small lumber mill. Subsequent transfers resulted in use of the Barbee Property as a marine shipyard in 1943 and, ultimately, a lumber mill in 1945. May Creek was rerouted through the Barbee Property several times. Historical operational areas are shown on Figure 4. Milling operations included a variety of processes, such as use of chemicals for wood treatment and operating and maintaining equipment, that are detailed in the RI/FS Report. Two processes that were identified as key sources of Site contamination are described below.

Log Rafting

As part of lumber mill operations, untreated logs were stored offshore, prior to processing, in areas leased from the Washington Department of Natural Resources (DNR). Log rafting occurred throughout the period of mill operation. Log transfer and rafting operations resulted in historical accumulations of wood debris in Lake Washington sediments that were periodically dredged to facilitate navigation.

Wood Treatment Operations

An arsenic-based compound was used briefly for treatment of wood pilings in the northeast portion of the Site. In addition, two fungicide products—one containing pentachlorophenol (PCP; Permatox 100) and a proprietary fungicide product, Sta Brite P—were used for sap stain control. The fungicides were applied in three relatively small spray areas, as shown on Figure 4.

2.3 Interim Remedial Actions

Site remedial actions have included dredging contaminated sediments, excavation of contaminated soil, installation of an in situ passive attenuation zone (PAZ) for

groundwater treatment, and installation and operation of a groundwater extraction and treatment (pump-and-treat) system. Areas addressed by removal actions (dredging or excavation) are shown on Figure 5, and the locations of the PAZ and pump-and-treat infrastructure are shown on Figure 6. These actions are as follows:

- **Sediment Removal (1999).** In 1999, Barbee Mill dredged approximately 6,000 cubic yards of bark, wood debris, and associated sediment in an area adjacent to the Barbee Property.
- **Sediment Removal (2002).** In 2002, approximately 20,000 cubic yards of sediment containing elevated total organic carbon (TOC) and wood debris was dredged from the Lake Washington shoreline adjacent to the Barbee Property.
- **Shoreline Habitat Restoration (2005).** In 2005, an area of leased aquatic land that had historically been filled and used for upland mill operations was restored to beach habitat. The habitat restoration project included removal of a wooden pier and pilings, excavation of upland fill and removal of a bulkhead, and construction of beach consisting of coarse sand and gravel (ACC Hurlen, 2006; Anchor, 2005b).
- **Excavation of Arsenic Contaminated Soil (2006).** Between January and May 2006, soil exceeding 20 milligrams per kilogram (mg/kg) arsenic was removed to a maximum depth of 15 feet. A total of 54,215 tons of arsenic-impacted soil were excavated and transported to the Roosevelt Regional Landfill in Roosevelt, Washington, for disposal.
- **Excavation of Total Petroleum Hydrocarbon (TPH)- and PCP-Contaminated Soil (2006).** In 2006, a total of 623 tons of impacted material was transported to Roosevelt Regional Landfill for disposal as nonhazardous waste.
- **Passive Attenuation Zone Column and Pilot Testing (2006)**. In July and August 2006, a column test was performed to evaluate the effectiveness of potential treatment media for the PAZ. Based on that column test, granular iron was selected as the most cost-effective medium. In September 2006, a pilot test of the PAZ was conducted by constructing a small (40 feet long and 15 feet deep) PAZ along the downgradient Barbee Property boundary.
- **PAZ Installation (2007).** Based on the performance of the pilot-scale PAZ, the full-scale PAZ was installed between February and April 2007. The installed PAZ consisted of a 690-foot-long, 10- to 35-foot-wide mixture of granular iron filings and sand placed in a trench to intercept the arsenic-impacted groundwater plume (maximum depth of 22 feet at the time of installation). Arsenic in groundwater passing through the iron/sand mixture is immobilized by the iron and iron mineral precipitates.
- **Barbee Property Environmental Covenant (2008).** An environmental covenant was placed on the Barbee Property on May 8, 2008. The covenant prohibits taking groundwater for any use or any activities that may interfere with the integrity of the interim remedial actions on the Barbee Property.

- **Pump-and-Treat System Installation (2007–2008).** The pump-and-treat system, which includes 8 extraction wells, was constructed in two phases to coordinate the work with the Conner Homes redevelopment. The system was operated from June 3, 2009, to August 5, 2011, and removed 15,700,000 gallons of groundwater containing an estimated 37 pounds of arsenic.
- **Quendall Property Environmental Covenant (2023).** An environmental covenant was placed on the Quendall Property on April 21, 2023. The covenant prohibits taking groundwater for any use or any activities that may interfere with the integrity of the interim remedial actions on the Quendall Property.

2.4 Nature and Extent of Contamination

The nature and extent of contamination is discussed in detail in the RI/FS Report. This section identifies COCs for soil, groundwater, and sediment and summarizes current conditions.

2.4.1 Soil and Groundwater

Soil and groundwater COCs include the following:

- **Metals:** arsenic and zinc
- **SVOCs**: PCP (soil only)
- **TPH:** diesel-range TPH (TPH-D) and oil-range TPH (TPH-O)

Arsenic

Arsenic concentrations exceeding the RI soil screening level (20 mg/kg) and groundwater screening level (16 µg/L) were historically detected around and downgradient (west to west-northwest) of the former arsenic treatment area identified on Figure 4. In 2006, an excavation removed 54,215 tons of soil from this area. No soil samples outside the lateral limits of the excavation exceeded the arsenic screening level. Nine soil samples at the base of the excavation (15 feet or greater below current ground surface) exceeded the soil screening level, at a maximum concentration of 88 mg/kg.

Arsenic concentrations in groundwater extend downgradient to the Lake Washington shoreline. Porewater sampling indicates that concentrations discharging to Lake Washington are below the screening level at the mudline, which was identified in the RI/FS Report as the conditional point of compliance for Site groundwater. The current extent of arsenic in groundwater is shown on Figure 7.

Zinc

Zinc concentrations in soil exceeding the RI screening level (85 mg/kg) were generally collocated with arsenic exceedances, and most zinc exceedances were removed during the 2006 excavation. Following the 2006 excavation, 3 samples out of 90 collected at or beyond the final excavation limits exceeded the screening level. No exceedances of zinc above the RI screening level (100 µg/L) were detected in groundwater following the 2006 excavation.

PCP

PCP concentrations exceeding the RI screening level (2.5 mg/kg) were historically detected in the former spray area near the sawmill (see Figure 4). The PCP-contaminated soil area was excavated in 2006, with all confirmation samples below the screening level. PCP has not been detected in Site groundwater above the RI screening level (0.1 µg/L).

TPH

TPH-D and/or TPH-O concentrations exceeding the RI soil screening level (2,000 mg/kg) in one location south of the former mill building and TPH-D concentrations exceeded the RI groundwater screening level (500 µg/L) in one location adjacent to two former underground storage tanks (Tank 2 and Tank 3: see Figure 4). TPH-contaminated soil was excavated from these areas in 2006, with all confirmation soil samples below the screening level. TPH was not detected in any groundwater samples after the 2006 soil excavation.

2.4.2 Sediment

Sediment COCs include arsenic, wood debris, and TOC.

Arsenic

Arsenic concentrations exceeding RI screening levels in sediment were detected at one location, near former Outfall 001 (Figure 4), and offshore of the Quendall Property. The area near Outfall 001 was dredged in 2002. The area offshore of the Quendall Property was evaluated via bioassay in 2022, and no unacceptable benthic risk was identified as described in the RI/FS Report.

Wood Debris and TOC

TOC or wood debris concentrations above RI screening levels were historically located in sediments beneath former log-rafting operations. Most of these exceedances were removed during dredging in 1999 and 2002. Bioassay tests indicated that remaining areas of TOC or wood debris above RI screening levels (generally located on or west of the Quendall Property) do not pose an unacceptable benthic risk.

2.5 Human Health and Environmental Concerns

Most Site contamination was addressed by prior remedial actions; however, arsenic is still present in soil and groundwater above RI screening levels on a portion of the Site. Potential exposure pathways are:

- **Groundwater**: Direct human exposure via ingestion

However, Site groundwater is not a current source of drinking water, and is unlikely to be a source of drinking water in the foreseeable future, as the Site is located within the City of Renton municipal water supply service area. Additionally, the Barbee Property Environmental Covenant prohibits any use of groundwater.

After completion of the 2006 excavation actions, no remaining soil contamination has been identified above direct contact-based screening levels within the standard point of compliance for direct contact (15 feet).

Under current Site conditions, contaminant concentrations in sediment porewater are below potential cleanup levels. However, this condition may, in part, depend on the continued treatment of arsenic-contaminated groundwater by the PAZ. Potential exposure pathways for groundwater contamination migrating to surface water include:

- Ecological exposure to aquatic organisms
- Human exposure via ingestion of surface water and aquatic organisms

Potential receptors at the Site include residents, aquatic organisms and wildlife, and recreational users. A figure illustrating the conceptual site model, including potential contaminant transport and exposure pathways, is provided on Figure 8.

3 Cleanup Objectives

This section describes Site cleanup objectives, including cleanup levels, points of compliance, remediation levels, and remedial action objectives. A cleanup standard consists of a cleanup level for a hazardous substance present at a site, combined with the location where the cleanup level must be met (point of compliance), and other regulatory requirements that apply to the site ("applicable state and federal laws"). A remediation level is a concentration (or other method of identification) of a hazardous substance above which a particular cleanup action component will be required as part of a cleanup action. Remedial action objectives (RAOs) are specific goals to be achieved by remedial alternatives that meet cleanup standards and provide adequate protection of human health and the environment under a specified land use.

3.1 Cleanup Levels

Cleanup levels for COCs in soil, groundwater, and sediment are provided below.

3.1.1 Soil

Cleanup levels for soil consider protection of direct contact, protection of groundwater as drinking water, and protection of surface water and sediment. The preliminary cleanup levels are based on the lowest screening level of potentially complete pathways for each COC, adjusted to natural background or practical quantitation limit (PQL), whichever is higher, if higher than the lowest screening level.

Cleanup levels for soil COCs are as follows:

- **Arsenic**: 20 mg/kg, based on the MTCA Method A Cleanup Level for Unrestricted Use (Natural Background)
- **Zinc**: 85 mg/kg, based on Puget Sound natural background concentrations (Ecology, 1994)
- **PCP**: 2.5 mg/kg, based on MTCA Method B Cleanup Level for direct contact
- **Sum of TPH-D and TPH-O**: 2,000 mg/kg, based on the MTCA Method A Cleanup Level for Unrestricted Use

3.1.2 Groundwater

Cleanup levels for groundwater consider protection of drinking water and protection of surface water and sediment. The cleanup levels are based on the lowest screening level of potentially complete pathways for each COC, adjusted to natural background or PQL, whichever is higher, if higher than the lowest screening level.

Cleanup levels for groundwater COCs are as follows:

- **Arsenic:** 16 ug/L, based on Site-specific natural background (established in the RI/FS Report (Aspect and Geosyntec, 2024)
- **Zinc:** 100 ug/L, based on MTCA Method B Cleanup Level for protection of surface water

- **TPH-D:** 500 ug/L, based on the MTCA Method A Cleanup Level for Unrestricted Use

3.1.3 Sediment

Sediment cleanup levels consider protection of benthic organisms, human health, and ecological receptors. They are based on the lowest risk-based concentration protective of potential receptors for each COC, adjusted to natural background or the PQL, whichever is higher, if higher than lowest screening level.

The cleanup levels for sediment Site-related COCs are as follows:

- **Arsenic:** 14 mg/kg (as points, benthic SCO) and 11 mg/kg (as surface weighted average concentrations [SWACs], bioaccumulative sediment cleanup objective [SCO])
- **Wood debris:** 50 percent (as points, benthic Site-specific)
- **TOC:** 13.5 percent (as points, benthic Site-specific)

3.2 Points of Compliance

3.2.1 Soil

The standard points of compliance for soil are as follows:

- Soil for protection of direct contact. From ground surface to a depth of 15 feet.
- Soil for protection of groundwater. Throughout the Site.

Remedies that involve containment of hazardous substances may not meet cleanup levels for soil at the standard point of compliance (POC), but may be determined by Ecology to comply with cleanup standards provided: (1) the selected remedy is permanent to the maximum extent practicable, (2) the cleanup action is protective of human health and the environment, and (3) appropriate institutional controls (ICs), including compliance monitoring and periodic reviews, are implemented (WAC 173-340-740(6)(f)).

3.2.2 Groundwater

MTCA allows Ecology to approve a conditional POC for groundwater if it is not possible to achieve cleanup levels at the standard POC within a reasonable restoration time frame, which was demonstrated in the RI/FS Report. At properties abutting or near surface water, a conditional POC may be set within the surface water body as close as technically possible to the point or points where groundwater flows into the surface water under certain conditions. These conditions have been met for the Site and selected remedy as described in the RI/FS Report. Therefore, the point of compliance for groundwater at the Site is the bottom of the bioactive zone, 10 centimeters (cm) below mudline (bml) in Lake Washington.

3.2.3 Sediment

The POCs for sediment address multiple exposure pathways and receptors. The Site-wide POC depth is 10 cm bml for all Site-wide exposure pathways (benthic, bioaccumulative, human health direct contact). The POC depth for nearshore sediments is the top 45 cm depth bml (beach play).

For sediments, the POC also involves a spatial component. Compliance is evaluated on a point basis for benthic protection and a SWAC basis for protection of human and ecological health.

4 Applicable or Relevant and Appropriate Requirements

Pursuant to authority granted by MTCA (Chapter 70A.305 RCW), Ecology adopted cleanup standards for remedial actions at sites where hazardous substances are present. The MTCA regulations define processes for identifying, investigating, and cleaning up these sites and set groundwater, soil, surface water, and air cleanup standards (Chapter 173-340 WAC.) The Washington State SMS (Chapter 173-204 WAC) defines the process for evaluating and cleaning up contaminated sediments.

Other applicable regulatory requirements include:

- The federal Safe Drinking Water Act (42 United States Code [USC] 300f; 40 Code of Federal Regulations [CFR] Part 141)
- The federal Clean Water Act (33 USC Section 1251; 40 CFR Part 230)
- National Pollutant Discharge Elimination System Regulations (NPDES) (40 CFR 122; Chapter 90.48 RCW; Chapter 173-226 WAC)
- The Washington Water Pollution Control Act (Chapter 90.48 RCW; Chapter 173-201A WAC; Chapter 173-200 WAC)
- Washington State Water Quality Criteria for Aquatic Life and Human Health (173-201A WAC)
- Washington Toxics Rule (40 CFR 131.45)
- Washington State Department of Health Group A Public Water Supply Regulations (246-290 WAC)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and All Appropriate Inquiries (AAI) (40 CFR Part 312)
- The Resource and Recovery Act (RCRA)
- Fish and Wildlife Coordination Act (16 USC 662&663; 40 CFR 6.302g)
- Endangered Species Act (16 USC 1531 et seq.; 50 CFR Part 17)
- River and Harbors Act (33 USC 401 et seq.; 33 CFR 320-330)
- Solid Waste Disposal Act (42 USC 6901-6917; 40 CFR 257-258)
- Federal and State Clean Air Acts (42 USC 7401 et seq.; 40 CFR 50; RCW 70.94; WAC 173-400, 403)
- Hazardous Waste Operations (Chapter 296-843 WAC)
- National Historic Preservation Act of 1996 (NHPA); Indian Graves and Records (RCW 27.44); Archaeological Sites and Resources (RCW 27.53); Archaeological Excavation and Removal Permit (WAC 25-48)
- Washington State Shoreline Management Act of 1971 (RCW 90.58)
- The Occupational Safety and Health Act (OSHA) (29 CFR 1910)

- General Occupational Health Standards (Chapter 296-62 WAC)
- Safety Standards for Construction Work (Chapter 296-155 WAC)
- Minimum Standards for Construction and Maintenance of Wells (Chapter 173-160 WAC)
- City of Renton Shoreline Master Program (references Chapter 90.58 RCW; Chapter 173-27 WAC; City of Renton Ordinance #5633; Critical Area Regulations (RMC 4-3-050)
- City of Renton Municipal Code (RMC)

In addition, local municipalities may require permits for certain Site activities.

5 Remedial Alternatives

This section provides an overview of the remedial alternatives that were evaluated in the RI/FS Report and a summary of the evaluation.

5.1 Alternative Descriptions

Five remedial alternatives were evaluated for the Site in the RI/FS Report, each incorporating different levels of passive and active treatment to address arsenic. The key components of each alternative are summarized below.

Alternative 1 – Monitored Natural Attenuation (MNA) and Institutional Controls (ICs)

- Continued operation of the PAZ to remove arsenic from groundwater.
- Monitoring continued natural attenuation of arsenic.
- Maintaining existing environmental covenants on the Barbee Property and Quendall Property.

Alternative 2 – In Situ Chemical Reduction (ISCR) of Arsenic Hot Spot on Quendall Property, MNA and ICs

- Continued operation of the PAZ in conjunction with MNA and ICs, as described in Alternative 1.
- Injection of chemical amendments into groundwater downgradient of the PAZ on the Quendall Property to reduce arsenic concentrations below 150 µg/L.[2]

Alternative 3 – PAZ Extension on Quendall Property, MNA and ICs

- Continued operation of the PAZ in conjunction with MNA and ICs, as described in Alternative 1.
- Extending the PAZ north along shoreline to reduce arsenic-contaminated groundwater offshore.

Alternative 4 – In Situ Solidification/Stabilization (ISS) of Shallow Arsenic Plume on Quendall Property, MNA and ICs

- Continued operation of the PAZ in conjunction with MNA and ICs, as described in Alternative 1.
- Adding amendments (e.g., cement) downgradient of PAZ to solidify soil and stabilize arsenic in the shallow groundwater plume and prevent desorption of arsenic from impacted soil. This alternative would target all accessible soil (on the Quendall Property) in which shallow groundwater exceeds the cleanup level.

Alternative 5 – ISS of Shallow and Deep Arsenic Plumes on Quendall Property, Pump-and-Treat on Barbee Property, MNA and ICs

[2] 150 ug/L was identified in the RI/FS Report as a potential Remediation Level for treatment of arsenic in groundwater.

- Continued operation of the PAZ in conjunction with MNA and ICs, as described in Alternative 1.
- Stabilization of both shallow and deep groundwater plumes on the Quendall Property by mixing in amendments, such as cement, into all accessible soil (on the Quendall Property) in which shallow and deep groundwater exceeds the cleanup level. This alternative is an expansion of Alternative 4.
- Additional treatment of the arsenic plume via operation of the pump-and-treat system on the Barbee Property.

5.2 Summary of Alternative Evaluation

Cleanup actions selected under MTCA must meet the following 10 requirements identified in WAC 173-340-360(3)(a):

- Protect human health and the environment, including likely vulnerable populations and overburdened communities
- Comply with cleanup standards
- Comply with applicable state and federal laws
- Prevent or minimize present and future releases and migration of hazardous substances in the environment
- Provide resilience to climate change impacts that have a high likelihood of occurring and severely compromising its long-term effectiveness
- Provide for compliance monitoring
- Not rely primarily on ICs and monitoring at a site, or portion thereof, if it is technically possible to implement a more permanent action
- Not rely primarily on dilution and dispersion unless the incremental costs of any active remedial measures over the costs of dilution and dispersion grossly exceed the incremental degree of benefits of active remedial measures over the benefits of dilution and dispersion
- Provide for a reasonable time frame
- Use permanent solutions to the maximum extent practicable

Cleanup actions must also meet action-specific and media-specific requirements as applicable. Action-specific requirements, identified in WAC 173-340-360(3)(b), potentially applicable to the Site include:

- Use of remediation levels in accordance with WAC 173-340-355
- Use of institutional controls in accordance with WAC 173-340-440
- Provision of financial assurances in accordance with WAC 173-340-440(11)
- Provision for periodic reviews in accordance with WAC 173-340-420(2)

Media-specific requirements, identified in WAC 173-340-360(3)(c), potentially applicable to the Site include:

- A soil cleanup action must treat, remove, or contain contaminated soils that qualify as a residential area based on current site use.
- A groundwater cleanup action must be permanent if such an action is practicable or Ecology determines such an action is in the public interest.
- A nonpermanent groundwater cleanup action must contain contaminated groundwater to the maximum extent practicable to prevent lateral and vertical expansion of the groundwater volume affected by the hazardous substances and to prevent the migration of the hazardous substances.

For Ecology-supervised remedial actions, Ecology will also consider the following when selecting a cleanup action:

- Public concerns, including the concerns of likely vulnerable populations and overburdened communities, identified through public outreach and comments on the RI, FS, and CAP.
- Indian tribes' rights and interests, through meaningful engagement and development of a site tribal engagement plan with tribes that may be adversely affected by the site.

A disproportionate cost analysis (DCA) was conducted to assess the extent to which the remedial alternatives would use permanent solutions to the maximum extent practicable. The DCA quantified the environmental benefits of each remedial alternative, and then compared alternative benefits versus costs. Alternatives were ranked from most to least permanent, and the most permanent alternative was the baseline alternative against which other alternatives are compared. Costs are disproportionate to benefits if the incremental cost of a more permanent alternative over that of a lower-cost alternative exceeds the incremental benefits achieved by the alternative over that of the lower-cost alternative. Alternatives that exhibit disproportionate costs are considered "impracticable" under MTCA.

All five of the alternatives evaluated met the MTCA requirements. Results of the DCA indicated that Alternative 1 has the highest benefit/cost ratio. Alternatives 4 and 5 were the most permanent alternatives, but the costs of these alternatives were disproportionate to the incremental environmental benefit when compared to other alternatives. Alternative 1 provides treatment to the maximum extent practicable based on the results of the DCA, and was identified as the preferred Site remedy.

6 Selected Cleanup Action

This section describes the selected cleanup action, consisting of the following components:

- ICs
- Continued PAZ operation
- MNA of arsenic contamination
- Contingency actions, if needed

6.1 Institutional Controls

ICs are administrative mechanisms for ensuring the long-term performance of cleanup actions. ICs protect exposure pathways and prevent interference with the remedy. The selected cleanup action includes the following ICs for the Site:

- Retaining the existing environmental covenant on the Barbee Property that restricts groundwater use; disturbance of contaminated soil; interference with remedial elements, including the PAZ, extraction wells, and monitoring wells; and maintaining the integrity of the pond liner.
- Retaining the existing environmental covenant on the upland portion of the Quendall Property that restricts groundwater use and the disturbance of the remedy.

Copies of the existing covenants are provided in Appendix A.

Per WAC 173-340-420, because institutional controls are included as part of the cleanup action, Ecology will conduct periodic reviews "at least every five years after the initiation of a cleanup action" to "assure that human health and the environment are being protected." If, as a result of the periodic review, Ecology determines that "substantial changes in the cleanup action are necessary to protect human health and the environment at the site," Ecology can require a revised cleanup action plan to be prepared and conducted.

6.2 PAZ Operation

The PAZ removes arsenic from groundwater through immobilization of arsenic onto iron and iron mineral precipitates. Groundwater flows through the PAZ via natural hydraulic gradients; no active operation or maintenance is performed. Monitoring will be conducted at wells downgradient and surrounding the PAZ to confirm performance.

6.3 Natural Attenuation Monitoring

Periodic groundwater monitoring will be conducted to confirm continued attenuation of the arsenic plume. Wells will be sampled using low-flow sampling techniques and groundwater samples will be analyzed for dissolved arsenic. Water levels at all Site wells and piezometers will be measured to confirm groundwater flow conditions. A long-term monitoring plan, including a sampling and analysis plan and quality assurance project

plan, will be prepared following finalization of the CAP. A schedule of deliverables is included in Section 7.

The existing monitoring network will be utilized, with one additional downgradient well proposed at the shoreline to replace well point sampling locations, which are prone to damage from lake debris and boats. Well points WP-1A and WP-8 will be removed. The monitoring well network, including the proposed new well, is shown on Figure 9.

Groundwater currently meets cleanup levels at the groundwater point of compliance; therefore, the estimated restoration time frame for the selected remedy is zero years. The purpose of the monitoring program is to verify that the arsenic concentrations continue to decline and that the remedy continues to meet cleanup standards. Monitoring will be considered complete when cleanup levels are achieved at the standard POC. The frequency and location of monitoring may be reduced over time as the plume continues to attenuate.

With Ecology approval, monitoring may be reduced to a subset of Site monitoring wells when the following conditions have been achieved:

- No statistically significant increasing trends in arsenic concentrations at any Site monitoring wells.
- Arsenic concentrations in all wells are below the groundwater remediation level identified in in the RI/FS Report of 150 ug/L[3] for at least four consecutive monitoring events.

Monitoring will be conducted initially on an annual basis and will be reduced to a biennial basis at Year 5. Wells exhibiting lower concentrations or that are located farther upland will be sampled less frequently. After Year 10, well monitoring frequency will be evaluated to determine if further frequency reductions are warranted. Based on current results, it is anticipated that after year 5, 6 wells will be monitored every 5 years. The initial monitoring plan is provided in Table 1. Monitoring locations and frequency will be reevaluated in annual monitoring reports based on monitoring results and wells that no longer require monitoring will be decommissioned in accordance with WAC 173-160-381. Prior to a change in monitoring frequency, the monitoring results and rationale for the change will be discussed with, and approved by, Ecology.

6.4 Contingency Actions

At Ecology's direction, Barbee Mill and Barbee Forest will provide Ecology with a Contingency Action Work Plan and schedule, and will implement it, if approved by Ecology. Ecology may require that a Contingency Action Work Plan be developed if monitoring data indicates that RAOs or cleanup standards are not being met. If arsenic concentrations at shoreline monitoring wells demonstrate a statistically significant increase in arsenic concentrations, additional monitoring and/or contingency actions will

[3] The remediation level (REL) of 150 µg/L corresponds to the concentration protective of benthic communities in Lake Washington. This value is also protective of surface water based on existing shallow shoreline groundwater and sediment porewater concentrations and is protective of sediment based on the MTCA Method B Cleanup Level for protection of sediment at freshwater sites (320 µg/L).

be considered. An initial evaluation of the magnitude of the increase relative to concentrations measured during historical performance monitoring would be conducted to determine if porewater concentrations need to be reevaluated. If shoreline groundwater concentrations exceed levels that were previously demonstrated to be protective of porewater, additional porewater sampling may be conducted. If porewater concentrations exceed the Site cleanup level for arsenic, contingency actions may be implemented.

The Contingency Action Work Plan may include:

- Resuming operation of the existing pump-and-treat system.
- Implementation of ISCR on the Quendall Property in the Barbee Mill arsenic plume above the remediation level (REL). ISCR is the preferred form of in situ chemical stabilization using injection of chemical amendments to precipitate arsenic (e.g., a zero valent iron slurry) to confirm ability to distribute amendments in the subsurface and achieve the REL.

7 Schedule, Reporting, and Public Participation

The Consent Decree will include a schedule of deliverables for implementing the cleanup action. Anticipated documents include a long-term monitoring plan (Compliance Monitoring Plan) and periodic monitoring reports (Progress Reports). Progress Reports will be prepared at the frequency of monitoring. Groundwater compliance monitoring will continue until the standard POC has been met. The proposed schedule of deliverables is shown below in Table 2.

This dCAP, along with the RI/FS Report and proposed Consent Decree, will be submitted for public review and comment for a period of 30 days. Public comments received will be reviewed and considered in preparing the final CAP, and a responsiveness summary will be prepared.

Table 2. Schedule of Deliverables

Deliverables[1]	Due Dates in Calendar Days
Agency Review Draft Compliance Monitoring Plan	60 days from finalization of the Consent Decree
Final Compliance Monitoring Plan	30 days following receipt of Ecology comments on the Agency Review Draft Compliance Monitoring Plan
Agency Review Draft Annual Progress Report	Annually[2], 90 days from validation of all final analytical data collected for the compliance monitoring event from the laboratory
Final Annual Progress Report	30 days following receipt of Ecology comments on the Agency Review Draft Annual Progress Report

Notes:

1. Documents are considered to be Agency Review Drafts until Ecology has approved them as Final.
2. The frequency of the Progress Report will be reduced to match the frequency of the monitoring schedule if less than annual.

8 References

Aspect Consulting (Aspect) and Geosyntec Consultants, Inc. (Geosyntec) 2024. Public-Review Draft Remedial Investigation and Feasibility Study Report, Barbee Mill Site. May 15, 2024.

Washington State Department of Ecology (Ecology), 1994, Natural Background Soil Metals Concentrations in Washington State, Publication no. 94-115.

TABLES

Table 1. Groundwater Monitoring Plan

DRAFT

Project No. AS050004, Barbee Mill, Renton, WA

Well	Year								
	2024	2025	2026	2027	2028	2030	2032	2034	2044
Shoreline Wells									
CMW-1	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As
CMW-2S	**A** - As	WL	**A** - As	WL	**A** - As	WL	**A** - As	WL	WL
CMW-2D	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As
CMW-3	**A** - As	WL	**A** - As	WL	**A** - As	WL	**A** - As	WL	WL
CMW-7	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	WL
Inland Wells									
BH-29A	**A** - As	WL	**A** - As	WL	**A** - As	WL	**A** - As	WL	WL
BH-31B	**A** - As	WL	**A** - As	WL	**A** - As	WL	**A** - As	WL	WL
CMW-4S	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As
CMW-4D	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As
CMW-5	**A** - As	WL	**A** - As	WL	**A** - As	WL	**A** - As	WL	WL
CMW-6	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As
EW-1	WL	WL	WL	WL	WL	WL	WL	WL	WL
EW-2	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	WL
EW-3	WL	WL	WL	WL	WL	WL	WL	WL	WL
EW-4	**A** - As	WL	**A** - As	WL	**A** - As	WL	**A** - As	WL	WL
EW-5	WL	WL	WL	WL	WL	WL	WL	WL	WL
EW-6	**A** - As	WL	**A** - As	WL	**A** - As	WL	**A** - As	WL	WL
EW-7	WL	WL	WL	WL	WL	WL	WL	WL	WL
EW-8	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As	**A** - As
PZ-1	WL	WL	WL	WL	WL	WL	WL	WL	WL
PZ-2	WL	WL	WL	WL	WL	WL	WL	WL	WL

Notes:

WL Monitored for water levels only.

A Annual

-- No monitoring planned

Annual monitoring will be performed in December.

Field parameters (temperature, conductivity, pH, dissolved oxygen, ORP) and water levels collected during each monitoring event

The monitoring program may be reevaluated, based on the collected data, in annual monitoring reports

As Analysis for Dissolved Arsenic (field filtered) by EPA Method 6020.

FIGURES

Location Map

Barbee Mill Site
Cleanup Action Plan
Renton, Washington

Aspect CONSULTING	FEB-2024	BY: DFR / EAH	FIGURE NO. 1
	PROJECT NO. 050004	REV BY: DIM / NCP / HMD	

GIS Path: G:\projects\BarbeeMills_050004\BarbeeMills_050004.aprx || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/27/2024 || User: haleyduran || Print Date: 6/7/2024

GIS Path: G:\projects\Barbee\Mills_050004\Delivered\RIFS\Barbee\Mill_050004_RIFS.aprx: 02 - Barbee Mill and Quendall Property Boundaries | | User: : haley.duran | | Print Date: 6/7/2024

Lake Washington

State-Owned
Aquatic Lands

N 42ND PL

N 41ST PL

WILLIAMS AVE N

May Creek

WELLS AVE N

LAKE WASHINGTON BLVD N

N 40TH PL

N 40TH ST

N 39TH CT

PARK AVE N

I-405 FWY

HAZELWOOD LN

DRAFT

Site Boundary

Barbee Property Boundary

Quendall Site OU1 Boundary

Quendall Site OU2 Boundary

Former BNSF Railroad ROW

Quendall Property Boundary

N

0 125 250

Feet

Property and Site Boundaries

Barbee Mill Site
Cleanup Action Plan
Renton, Washington

Aspect CONSULTING	JUN-2024	BY: DIM / HMD	FIGURE NO. 2
	PROJECT NO. 050004	REVISED BY: ---/---	

Data source credits: None || Basemap Service Layer Credits: Pictometry, King County

WP-8
BH-29B
BH-29A
BH-31B
WP-1A
BH-26B
BH-26A
CMW-4D
CMW-5
CMW-6
CMW-4S
EW-8
CMW-3
Lake
Washington
EW-5
EW-6
EW-7
EW-4
EW-3
CMW-2D
CMW-2S
EW-2
EW-1
Stormwater
Detention Pond
CMW-1
Groundwater Extraction System
Treatment Vault
PZ-1
BMP
N
0
80
160
Feet

Quendall Site Monitoring Well
- Shallow Alluvium Wells
- Deep Alluvium Wells

Shallow Alluvium Wells
- Wellpoint
- Extraction Well
- PAZ Performance Monitoring Well
- Peizometer

- Flow Control BMP
- Inactive Facility
- Inactive Facility Line
- KC Gravity Mains
- KC Metro Manholes
- Manholes
- Gravity Mains

Network Structures
- Inlet
- Manhole
- Control Structure
- Discharge Point
- Pipe
- Virtual Drainline

- WaterMain

Lateral Line
- Domestic
- Hydrant
- Irrigation
- Wastewater

- Remediation System Vault Area
- Pond
- Service Connections
- Wasterwater Taps
- Renton Fire Hydrant
- Junction Box
- Transportation Wire

Source: Aerial Imagery from King County, 2017.

DRAFT

Existing Site Features

Barbee Mill Site
Cleanup Action Plan
Renton, Washington

Aspect Consulting	JUN-2024	BY: DFR / EAC	FIGURE NO. 3
	PROJECT NO. 050004	REV BY: DIM / NCP / HMD	

GIS Path: G:\projects\BarbeeMills_050004\Deliverect\RIFS\BarbeeMill_050004_RIFS.aprx || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 6/7/2024 || User: haleyduran || Print Date: 6/7/2024

Key for Historical Building and Equipment Areas	
A	Sawmill
B	Planer
C	Press/Old Dry Kiln
D	Shop
E	Storage/Loading Facility
F	Dry Kiln
G	Stacker
H	Boise Building/Cut Line/High Lean To
I	Black Building
J	Warehouse 1
K	Warehouse 2
L	Office

See Section 2.3.2.3 of text for detailed descriptions of Historical Operational Areas.

Former Shipyard Area

Outfall 002

Former Spray Area

Former Arsenic Treatment Area

Former Spray Area

Former Spray Area

Tank 1

Tank 2

Tank 3

Tank 4

Tank 5

Tank 6

Discharge to Sanitary Sewer

LAKE WASHINGTON BLVD N

Sawmill Outfall

Outfall 001

Outfall 003

Former Log Storage Area

Parking Area

May Creek

N 40TH ST

Lake Washington

A B C D E F G H I J K L

Former USTs and ASTs
Former Catch Basin
Former Outfall
Former Spray Area
Former Storm Sewer Line
Historical Building Footprint
2' Contours from Engineering Report
Barbee Property Line

Source: Aerial Photo NAIP 2006

0 150 300 Feet

DRAFT

Historical Operational Areas

Barbee Mill Site
Cleanup Action Plan
Renton, Washington

Aspect Consulting	JUN-2024	BY: DFR / EAH	FIGURE NO. 4
	PROJECT NO. 050004	REV BY: DIM / NCP	

2006 Arsenic-Contaminated Soil Excavation Depths

5'	11'
8'	12'
9'	13'
10'	15'

- PCP Excavation Confirmation Sample
- West TPH Excavation Confirmation Sample
- Post-Dredge Sediment Sample
- East TPH Excavation Confirmation Sample
- 2005 Habitat Restoration Area
- 1999/2002 Sediment Dredge Area
- 2006 Soil Excavation Area

Notes:
1) See Figure 3 for arsenic excavation confirmation sample locations.
2) Excavation depths based on pre-development site grade

Source: Aerial Imagery from King County, 2017.

Sediment Dredge Area

BMPD-1 BMPD-2

Sediment Dredge Area

BMPD-6 BMPD-7

BMPD-9 BMPD-10

BMPD-11 BMPD-12 BMPD-13

BMPD-14 BMPD-15 BMPD-16 BMPD-17

Sediment Dredge Area

BMPD-19 BMPD-20

BMPD-21

Lake Washington

Habitat Restoration Area

HSE-B-8 HSE-B-9 HSE-B-10 HSE-B-7 HSE-B-6 HSE-B-5 HSE-B-3 HSE-B-4

HSE-C-1 HSE-C-2 HSE-C-4 HSE-C-5 HSE-C-3

East TPH Excavation Area

PCP Excavation Area

West TPH Excavation Area

HSE-A-3 HSE-A-4 HSE-A-5 HSE-A-1 HSE-A-2

8' 8' 10' 15' 13' 12' 11' 15' 11' 10' 9' 5' 13' 5' 15' 8' 9' 12' 15' 10' 12' 10' 15' 12' 10' 8' 10' 13' 11' 12' 10' 8' 11' 5'

N

0 100 200

Feet

DRAFT

Completed Remedial Actions Soil and Sediment

Barbee Mill Site
Cleanup Action Plan
Renton, Washington

Aspect Consulting	JUN-2024	BY: DFR / EAC	FIGURE NO. 5
	PROJECT NO. 050004	REV BY: DIM / NCP / HMD	

GIS Path: G:\projects\BarbeeMills_050004\Delivered\RIFS\BarbeeMill_050004_RIFS.aprx || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 6/7/2024 || User: haleyduran || Print Date: 6/7/2024

WP-8
BH-29B
BH-29A
BH-31B
PW-CMW-4
WP-1A
CMW-4S/4D
CMW-5
CMW-6
BH-26A
BH-26B
PASSIVE ATTENUATION ZONE
CMW-3
EW-8
PW-CMW-3
PZ-2
EW-5
EW-6
EW-7
Lake
Washington
EW-4
Arsenic Remedial
Excavation Footprint
EW-3
CMW-2S/2D
PW-CMW-2
EW-2
EW-1
CMW-1
Groundwater Extraction System
Treatment Vault
PW-Control
PZ-1

DRAFT

Quendall Site Monitoring Well
- Shallow Alluvium Wells
- Deep Alluvium Wells

Shallow Alluvium Wells
- Wellpoint
- Extraction Well
- PAZ Performance Monitoring Well
- Peizometer
- Porewater Sampling Location
- Excavation Footprint
- Remediation System Utility
- Passive Attenuation Zone
- Remediation System Vault Area

Source: Aerial Imagery from King County, 2017.

N

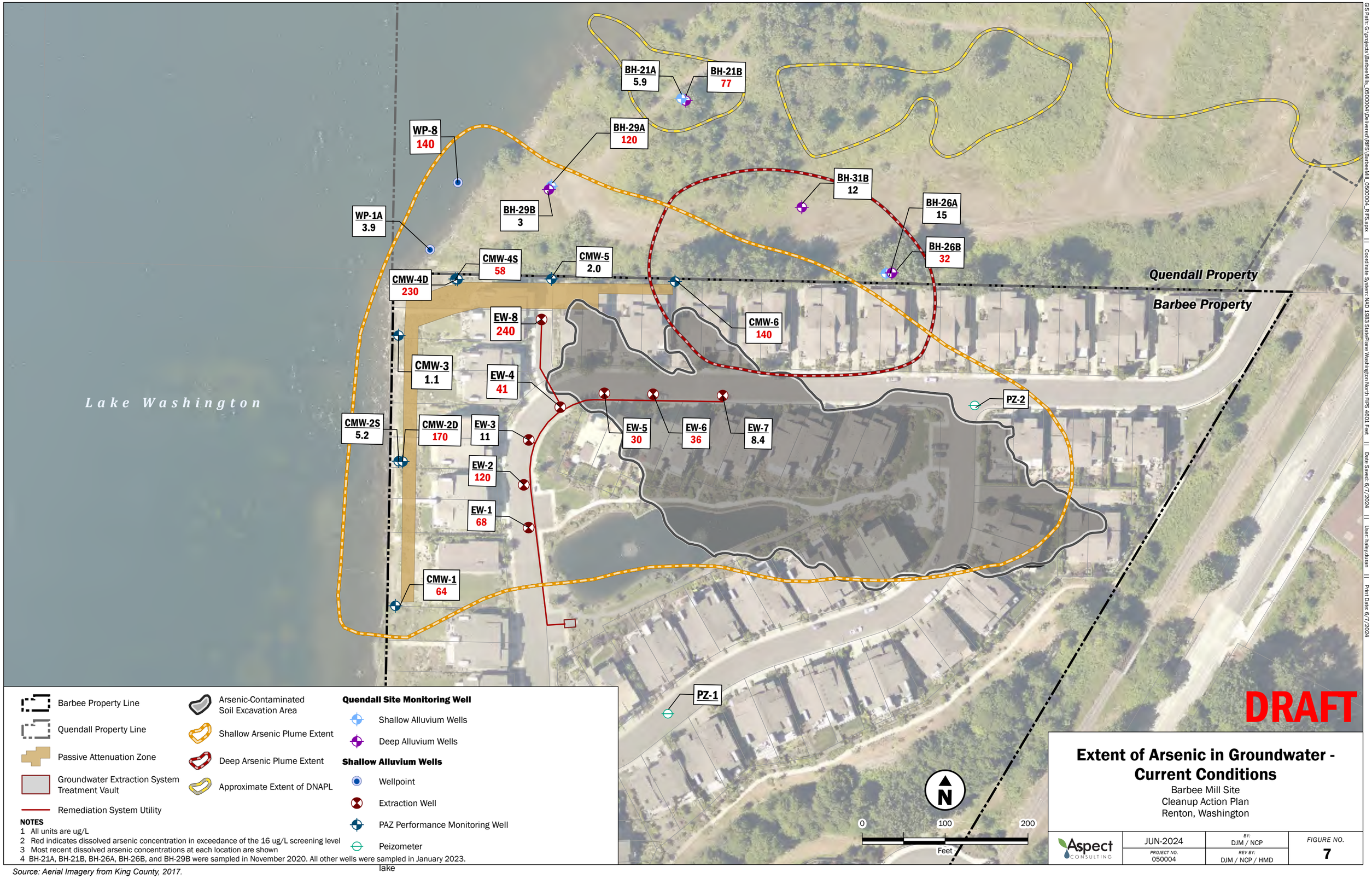
0 75 150
Feet

Interim Remedial Action Treatment System and Groundwater Performance Monitoring Locations

Barbee Mill Site
Cleanup Action Plan
Renton, Washington

Aspect Consulting	JUN-2024	BY: DFR / EAC	FIGURE NO. 6
	PROJECT NO. 050004	REV BY: DIM / NCP	

GIS Path: G:\projects\BarbeeMills_050004\Delivered\RIFS\BarbeeMill_050004_RIFS.aprx || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 6/7/2024 || User: haleyduran || Print Date: 6/7/2024



Barbee Property Line

Quendall Property Line

Passive Attenuation Zone

Groundwater Extraction System Treatment Vault

Remediation System Utility

Arsenic-Contaminated Soil Excavation Area

Shallow Arsenic Plume Extent

Deep Arsenic Plume Extent

Approximate Extent of DNAPL

Quendall Site Monitoring Well

Shallow Alluvium Wells

Deep Alluvium Wells

Shallow Alluvium Wells

Wellpoint

Extraction Well

PAZ Performance Monitoring Well

Peizometer

lake

NOTES

1 All units are ug/L

2 Red indicates dissolved arsenic concentration in exceedance of the 16 ug/L screening level

3 Most recent dissolved arsenic concentrations at each location are shown

4 BH-21A, BH-21B, BH-26A, BH-26B, and BH-29B were sampled in November 2020. All other wells were sampled in January 2023.

Source: Aerial Imagery from King County, 2017.

Extent of Arsenic in Groundwater - Current Conditions

Barbee Mill Site
Cleanup Action Plan
Renton, Washington

Aspect Consulting	JUN-2024	BY: DJM / NCP	FIGURE NO. 7
	PROJECT NO. 050004	REV BY: DJM / NCP / HMD	

GIS Path: G:\projects\BarbeeMills_050004\Delivered\RIFS\BarbeeMill_050004_RIFS.aprx || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 6/7/2024 || User: haley.duran || Print Date: 6/7/2024

A Northwest

Southeast **A'**

House (Residents)

House (Residents)

House (Residents)

Lake Washington

Direct Contact to Sediment

Ingestion of Fish/Shellfish

Elevation Scale is in NAVD88

Fill for Development (Gravelly Sand with Silt and/or Topsoil)

Historical Fill

Well Graded Gravelly Sand

Silty Sand with Gravel

Groundwater Level

Clear Rock

3% Iron in Sand

Soil Leaching to Groundwater

Aquatic Organism Exposure

Benthic Organism Exposure

Shallow Alluvium (Interbedded Sand, Sandy Silt, Organic Silt, and Peat)

29% Iron Mixture in Sand

Groundwater Discharge to Surface Water and Sediment

Deeper Alluvium (Sand and Gravel)

30 ft
20 ft
10 ft
0 ft
-10 ft
-20 ft

DRAFT

Recent Fill
Historical Fill
Shallow Alluvium
Deep Alluvium
Passive Attenuation Zone

Groundwater Flow
Soil Leaching to Groundwater
Nearshore Groundwater Mixing and Discharge

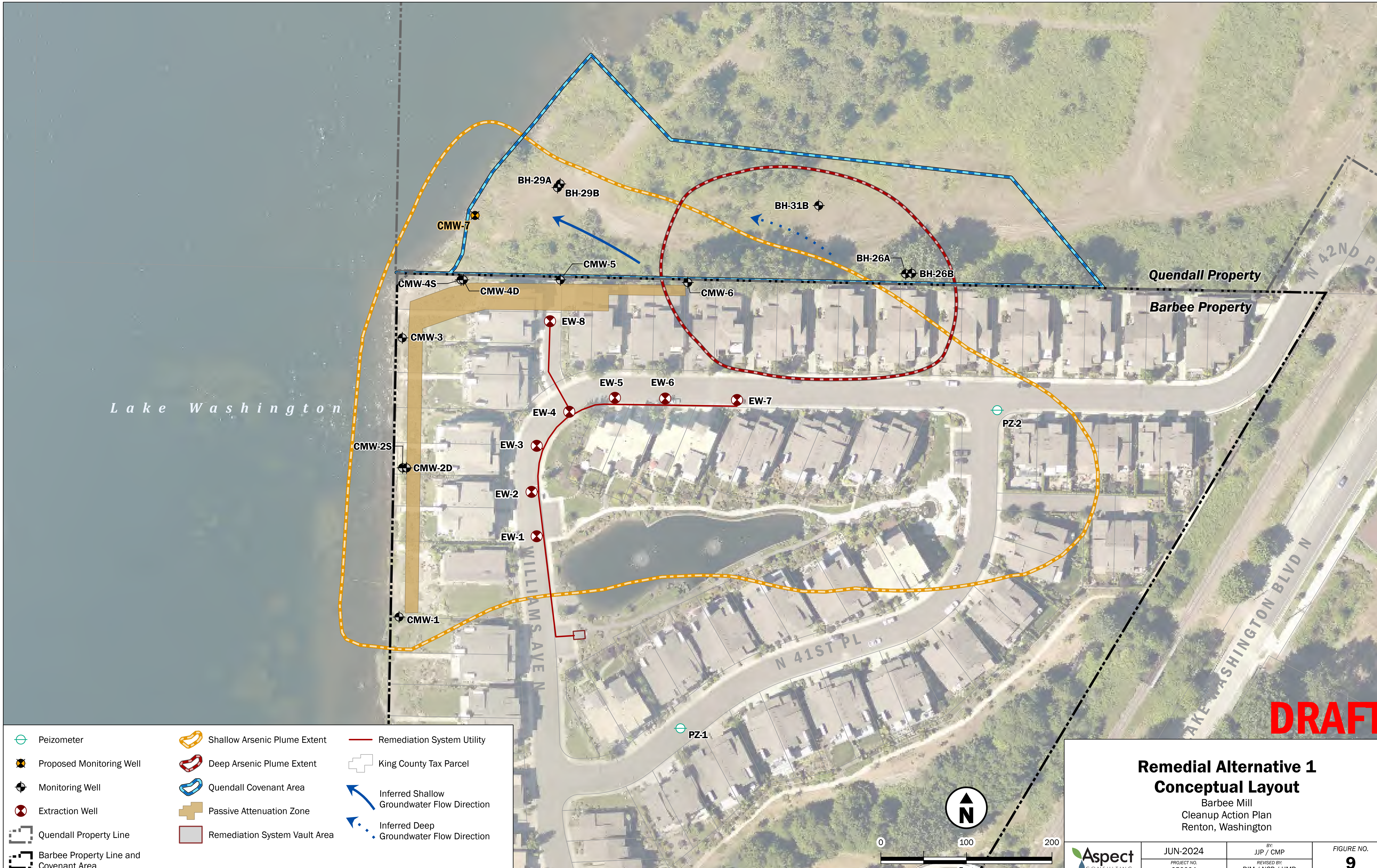
0 50 100 ft
SCALE IS APPROXIMATE

Conceptual Site Model for Migration and Exposure Pathways - Current Conditions

Barbee Mill Site
Cleanup Action Plan
Renton, Washington

Aspect Consulting	DEC-2023	BY: DM / TDR	FIGURE NO. 8
	PROJECT NO. 05004	REV BY: ---	

T:\projects_8\BarbeeMill\Delivered\DraftFinalRIReport\A1\02 Updated Conceptual Site Model for Migration and Exposure Pathways.ai



Remedial Alternative 1 Conceptual Layout

Barbee Mill
Cleanup Action Plan
Renton, Washington

Aspect Consulting

JUN-2024	BY: JJP / CMP	FIGURE NO.
PROJECT NO. 050004	REVISED BY: DIM / NCP / HMD	9

APPENDIX A

Barbee and Quendall Covenants

STATE OF WASHINGTON)
) ss.
COUNTY OF KING)

On this 17th day of April, 2008, I certify that Charles Conner personally appeared before me, acknowledged that he is the President of Conner Homes at Barbee Mill, LLC, the limited liability company that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed of said company, for the uses and purposes therein mentioned, and on oath stated that he was authorized to execute said instrument for said company.

Cathy Decater

Notary Public in and for the State of Washington, residing at Issaquah.
My appointment expires 11.9.09.

CATHY DECATER NOTARY PUBLIC STATE OF WASHINGTON COMMISSION EXPIRES 11-09-09

STATE OF WASHINGTON)
) ss.
COUNTY OF KING)

On this 18th day of April, 2008, I certify that Denis Law personally appeared before me, acknowledged that he/she is the Mayor of the City of Renton, the municipal corporation that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that he/she was authorized to execute said instrument for said corporation.

Jason A. Seth

Notary Public in and for the State of Washington, residing at Renton.
My appointment expires 10-29-09.

JASON A. SETH NOTARY PUBLIC STATE OF WASHINGTON COMMISSION EXPIRES

STATE OF WASHINGTON)
) ss.
COUNTY OF KING)

On this 6 day of May, 2008, I certify that Robert Warren personally appeared before me, acknowledged that he/she is the Section Mgr of the Washington State Department of Ecology, the public agency that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed of said agency, for the uses and purposes therein mentioned, and on oath stated that he/she was authorized to execute said instrument for said agency.

Susanne M. Winter

Notary Public in and for the State of Washington, residing at King.
My appointment expires 11-10-2008.

Section 8. The Owner of the Property reserves the right under WAC 173-340-440 to record an instrument that provides that this Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

Section 9. The remediation at this Site is still in progress, and thus certain contaminants are listed above as "suspected" rather than "confirmed." As the remediation progresses, if Ecology concludes that the list of "confirmed" or "suspected" contaminants at the Site has changed, the Owner or the Owner's representative may request in writing that Ecology issue a written notification of such new information. Upon written request, Ecology will issue a written notice to the Owner confirming the updated information. The Owner may seek to file Ecology's written notice with the county auditor's office, and may, in such a filing, cross reference this Environmental Covenant. However, such notice shall have no effect on the Owner's obligations in this Environmental Covenant, and the terms of this Environmental Covenant shall remain in effect unless Ecology consents, after public notice and comment, to amend or terminate the Covenant pursuant to WAC 173-340-440 and in accordance with the procedure described in RCW 64.70.100.

CONNER HOMES AT BARBEE MILL, LLC

Charles F. Conner
Title: President
Dated: 4-17-8

CITY OF RENTON

Title: Denis Law, Mayor
Dated: 4/18/08

Attest:

Bonnie I. Walton, City Clerk

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Robert Warren
Section Manager
Toxics Cleanup Program
Northwest Regional Office
Dated: 5-6-08

After Recording Return to:
Ching-Pi Wang
Department of Ecology
3190 – 160th Avenue SE
Bellevue, Washington 98008-5452

ORIGINAL

Title of Document: Environmental Covenant

Grantors: Conner Homes at Barbee Mill, LLC, a Washington Limited Liability Company; and City of Renton

Grantee: State of Washington, Department of Ecology

Legal Description: The Plat of Barbee Mill, recorded under King County recording no. 20080208000182, Volume 246, pages 25 to 39 of Plats, records of King County, Washington

Tax Parcel Nos.: 322405-9034-00

ENVIRONMENTAL COVENANT

Grantors, Conner Homes at Barbee Mill, LLC, and the City of Renton, hereby bind Grantors, its successors and assigns to the land use restrictions identified herein and grants such other rights under this environmental covenant (hereafter "Covenant") made this day of April 17, 2008 in favor of the State of Washington Department of Ecology, and its successors and assigns ("Ecology"). Ecology shall have full right of enforcement of the rights conveyed under this Covenant pursuant to the Model Toxics Control Act, RCW 70.105D.030(1)(g), and the Uniform Environmental Covenants Act, 2007 Wash. Law ch. 104, sec. 12.

This Declaration of Covenant is made pursuant to RCW 70.105D.030(1)(f) and (g) and WAC 173-340-440 by Conner Homes at Barbee Mill, LLC, its successors and assigns, the City of Renton, its successors and assigns, and Ecology.

An interim remedial action (hereafter "Remedial Action") occurred at the property that is the subject of this Covenant. The Remedial Action conducted at the property was designed and constructed as described in the documents listed in attached Exhibit E-5:

The Remedial Action will also be the subject of a proposed Agreed Order No. 5396, a copy of which will be on file at Ecology's Northwest Regional Office located at 3190 160th Avenue SE, Bellevue, WA 98008. The Agreed Order will describe the Remedial Action in detail and provide for ongoing remedial actions at the Site.

This Covenant is required to protect the integrity of the Remedial Action on the property, because the Remedial Action may have resulted in concentrations of the following remaining at the Barbee Mill Site:

- Confirmed arsenic in ground water exceeding the MTCA preliminary cleanup level protective of surface water.

- Suspected arsenic in soil exceeding the Model Toxics Control Act (MTCA) preliminary cleanup level for protection of ground water.

- Suspected arsenic in sediment located West and Northwest of the Conner at Barbee Mill uplands exceeding the preliminary freshwater sediment criterion.

- Suspected zinc in ground water exceeding the MTCA preliminary cleanup level protective of surface water

- Suspected diesel-range petroleum hydrocarbons in ground water exceeding the MTCA preliminary cleanup level protective of potable use

The undersigned, Conner Homes at Barbee Mill, LLC, is the fee owner of real property (hereafter "Property") in the County of King, State of Washington, that is subject to this Covenant. The additional undersigned, City of Renton, possesses a street easement in the dedicated rights of way. The Property is legally described in E-1 of this Covenant and made a part hereof by reference. Exhibit E-2 also includes a figure showing Property boundaries.

Conner Homes at Barbee Mill, LLC, and the City of Renton, make the following declaration as to limitations, restrictions, and uses to which the Property may be put and specifies that such declarations shall constitute covenants to run with the land, as provided by law and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Property (hereafter "Owner")

Section 1.

A. No groundwater may be taken for any use from the Property.

B. Soil exceeding MTCA Method A cleanup level for unrestricted use for arsenic remains on the Property at a depth approximately eighteen feet below the ground surface as of December, 2007, at elevations of approximately between 8 and 10 feet North American Vertical Datum 1988 (NAVD878), within the area of the original arsenic excavation as shown in Exhibit E-2. This contamination is below the depth at which direct contact exposure would typically be expected. However, Ecology recommends refraining from conducting any activity in these areas that would disturb the contamination at depth, such as: drilling, digging, bulldozing or earthwork or otherwise altering the soil below a depth approximately eighteen feet below ground surface at time of home construction as of December 2007 with grade elevations of approximately between 26 through 30 NAVD88.

C. Groundwater, and soil exceeding potential cleanup levels for protection of groundwater remains on the Property at or below the maximum groundwater elevation of approximately between 19 and 23 feet NAVD88, within, around, and downgradient of the area

of the original arsenic excavation as shown in E-2. Any activity on the Property that may result in the release or exposure to the environment of this contaminated soil or groundwater, or that creates a new exposure pathway, is prohibited. Some examples of activities that are prohibited in these areas include: drilling, digging, bulldozing or earthwork or otherwise altering the soil below the maximum groundwater elevation of approximately between 19 through 23 feet NAVD88. This restriction shall not apply to maintenance or repair work by the City of Renton or its contractors or agents on the existing sewer main located in the easement recorded under King County Recording no. 7212190390, because the sewer line lies hydraulically upgradient of the area of excavated arsenic contaminated soil.

D. A passive attenuation zone (hereafter PAZ) is present on the Property as shown on Exhibits E-2 and E-3. The top of the PAZ is protected with a geotextile layer covered with quarry spalls. The Owner shall not alter, modify, or remove the PAZ or the protective covering, and any activity on the Property that may damage or reduce the effectiveness of the attenuation zone is prohibited. Some examples of activities that are prohibited in the area of the PAZ include: drilling, digging, bulldozing or earthwork, or placing a heavy object or running heavy equipment on the PAZ causing stress beyond load bearing capacity. This restriction shall not apply to normal construction activities required to build structures on Lots 19, 20, 21, 22, 23, and 24 above the PAZ that are installed in accordance with plans on file with and approved by the City of Renton Department of Community Development, provided that this construction activity does not disturb the PAZ or its protective covering other than through the installation of driven pin piles. Landscaping within the top two feet of existing grade (as of December 2007) shall be allowed above the PAZ.

E. A network of ground water extraction wells linked by piping to a remediation system vault ("hereafter Extraction System") is present on the Property as shown on Exhibits E-2 and E-3. The Extraction System has been designed to pump arsenic-contaminated ground water from beneath the Property and discharge it directly to the sanitary sewer. Any activity that may damage or reduce the effectiveness of the Extraction System is prohibited. Some examples of prohibited activities include digging around the well locations and along the Extraction System pipe runs, blocking the discharge of the Extraction System to the sanitary sewer, or allowing the Extraction System to discharge to Lake Washington, the storm water detention pond, Mill Creek, or any other surface location.

F. A network of ground water monitoring wells is present on the Property as shown on Exhibits E-2 and E-3. Any activity that may damage or reduce the ability of the monitoring wells to be used for their intended purpose is prohibited. Some examples of prohibited activities include covering, sealing, or otherwise obscuring the tops of monitoring wells to reduce access, placing any solid or liquid into a well except as necessary for authorized sampling, digging or otherwise piercing the ground around well locations, storing or placing heavy loads near or on the monitoring wells, or allowing surface water to collect in standing pools of water over monitoring well locations.

G. A storm water detention pond is present within the Property to collect and discharge storm water runoff. The base of the pond is close to the water table, and has a protective liner to prevent mixing of ground water with surface water and loss of surface water. The location and design of the protective liner is presented in Exhibit E-2. Any activity that may damage or reduce the effectiveness or longevity of the protective liner is prohibited.

Some examples of prohibited activities include piercing or otherwise driving objects through the liner, using backhoes or other heavy equipment for excavation purposes near the liner, or placing sharp heavy objects at the base of the pond. Conner Homes at Barbee Mill, LLC and its successors in interest and assigns shall be responsible for future maintenance and any repairs or upgrades for the pond liner.

Section 2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.

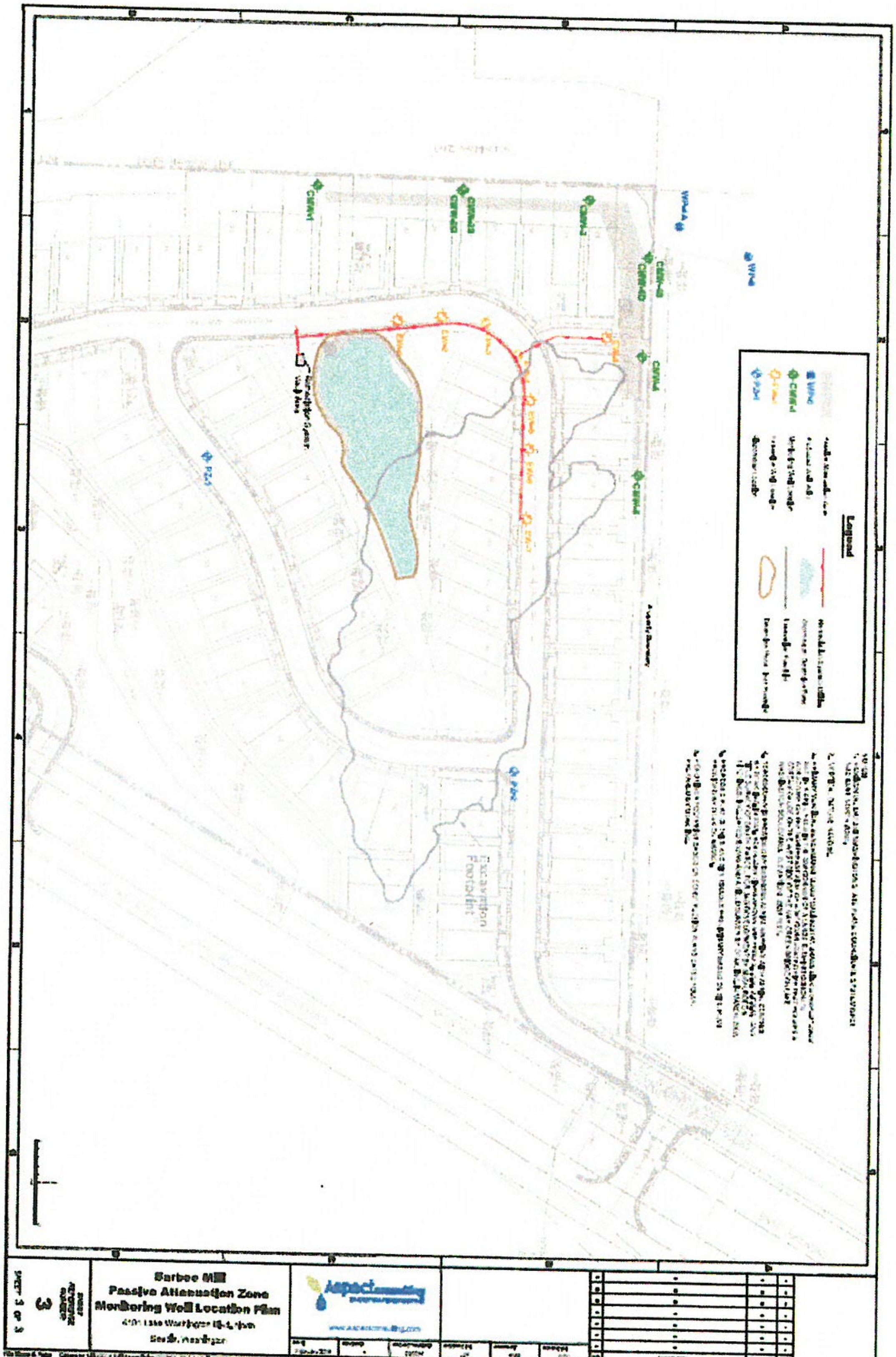
Section 3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.

Section 4. The Owner of the Property must give thirty (30) day advance written notice to Ecology of the Owner's intent to convey any interest in the Property. The written notice shall be in substantially the form attached as Exhibit E-4. WAC 173-340-440(9)(c) provides that "no conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for the continued monitoring, operation, and maintenance of the cleanup action". At the time of signature to this Environmental Covenant, it is expected that the necessary ongoing remedial actions required by Ecology for this Site, other than those described in this Environmental Covenant, will be implemented by named potentially liable persons under an Order or Decree with Ecology. It is further expected that financial assurances intended to ensure the ongoing remediation will be posted by the named potentially liable parties. The requirement for "adequate and complete provision" in this Section shall be deemed to have been satisfied by compliance with the terms of the Order or Decree and this Environmental Covenant. Nothing in this Section shall be construed to require Ecology's approval of any conveyance of title, easement, lease, or other interest in the Property.

Section 5. The Owner must restrict leases to uses and activities consistent with the Covenant and notify all lessees of the restrictions on the use of the Property.

Section 6. The Owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this Covenant. Ecology may approve any inconsistent use only after public notice and comment.

Section 7. The Owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times for the purpose of evaluating the Remedial Action; to take samples, such as from monitoring and extraction wells and from sediments; to inspect remedial actions conducted at the Property; to determine compliance with this Covenant; to inspect records that are related to the Remedial Action; and to take any other action necessary under MTCA. Ecology does not anticipate needing internal access to residential buildings or other residential structures on the Property.



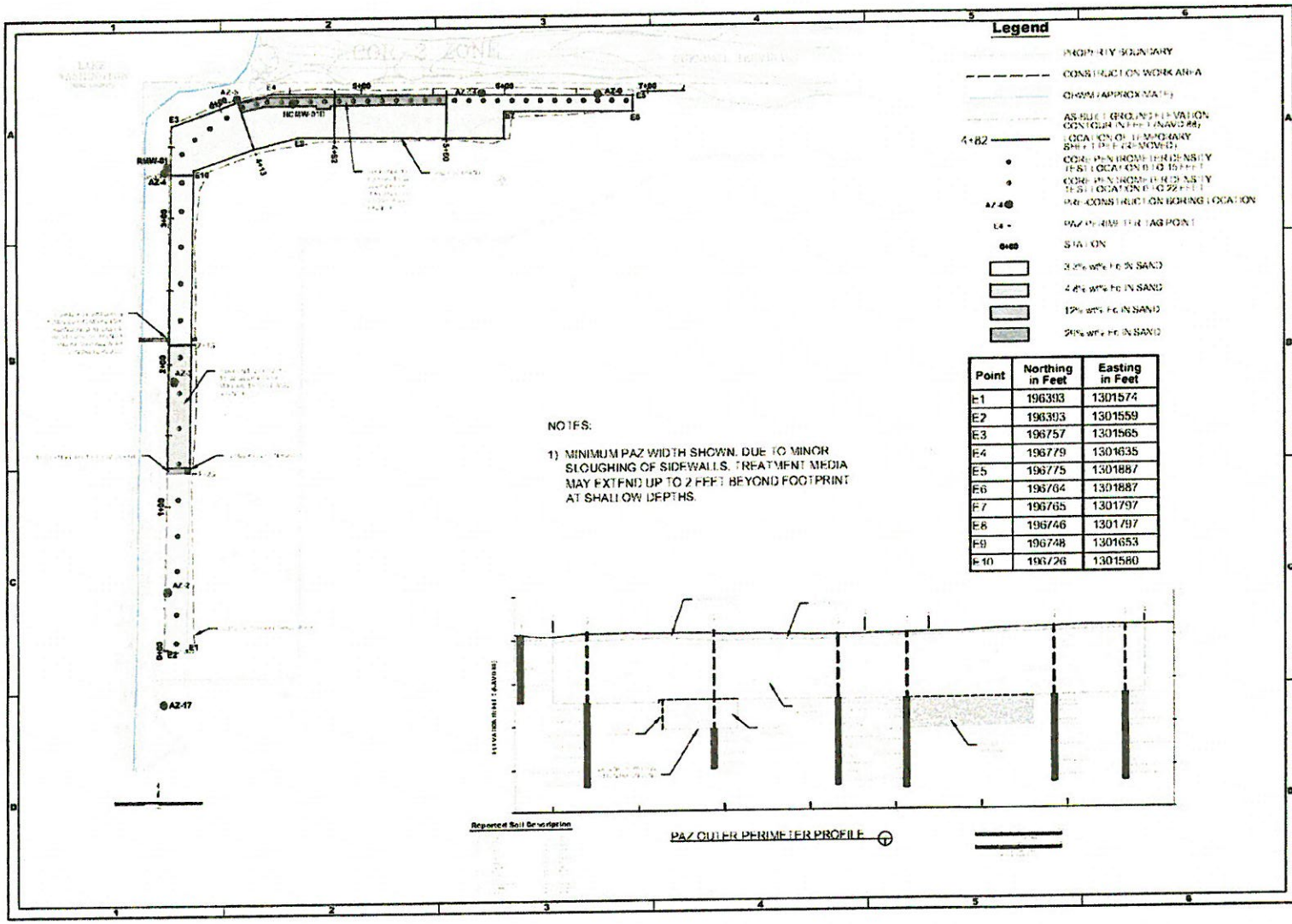
Legend
Excavation Footprint
Barbee Mill
Passive Attenuation Zone
Monitoring Well Location Plan
Aspect consulting
3

Exhibit E-2

EXHIBIT E-1

LEGAL DESCRIPTION OF PROPERTY

he Plat of Barbee Mill, recorded under King County recording no. 20080208000182, Volume 246, pages 25 to 39 of Plats, records of King County, Washington



Point	Northing in Feet	Easting in Feet
E1	196393	1301574
E2	196393	1301559
E3	196757	1301565
E4	196779	1301635
E5	196775	1301887
E6	196764	1301887
E7	196765	1301797
E8	196746	1301797
E9	196748	1301653
E10	196726	1301580

Exhibit E-3

EXHIBIT E-4

NOTIICE OF INTENT TO CONVEY INTEREST

[Insert Date]

Send To:
Current Site Manager, Barbee Mill Company Site
Toxics Cleanup Program, Northwest Regional Office
Washington State Department of Ecology
3190 – 160th Avenue SE
Bellevue, Washington 98008-5452

Re: ***Notice of Intent to Convey Property Interest***
Barbee Mill Company Facility
Facility/Site #76716221, Renton, Washington

Parcel No.: ***[Insert Parcel Number for property subject to conveyance]***

Address: ***[Insert Address for property subject to conveyance]***

In accordance with the Environmental Covenant recorded on the title of my property, I, **[Insert Name of Current Owner]**, am hereby informing the Washington State Department of Ecology that I intend to convey **[Insert a short description of type of property interest you are conveying – for example: "title of my property" or "a leasehold interest in my property"]** to **[Insert name of intended recipient of property interest]**. The anticipated effective date of the conveyance is **[Insert Date of Conveyance]**.

For more information, I can be reached at **[Insert contact information for current owner]**. **[Insert name of intended recipient of property interest]** can be reached at **[Insert contact information for intended recipient of property interest]**.

Sincerely,

[Insert Signature of Current Owner]

EXHIBIT E-5

EPA and Department of Ecology Letters and Remedial Action Documents

Ecology and EPA Letters

1. January 11, 1999, Ecology letter to Mr. Carl Einberger, Hart Crowser, Inc., Subject: Waste Designation at the Barbee Mill Site, Renton, Washington; Re: Hart Crowser, Inc. letter report J-4946-10 dated November 17, 1998

2. November 5, 1990 (1999?), Ecology letter to Mr. Robert Cugini, Barbee Mill Company, Inc., Re: Sediment Analysis of Dredge Spoils from Mill Creek, Barbee Mills, Renton,

3. September 12, 2000, Ecology letter to Mr. Carl Einberger, Hart Crowser, Inc., Re: Independent Remedial Action Plan, Upland Areas, Barbee Mill Company, Renton, Washington, Revised September 6, 2000

4. March 1, 2001, Ecology letter to Mr. Carl Einberger, Hart Crowser, Inc., Re: Dangerous Waste Designation - F035, Barbee Mill Site, Renton, Washington

5. February 27, 2003, Ecology letter to Mr. Robert Cugini, Barbee Mill Co., Re: Independent Remedial Action, Barbee Mill Co.

6. April 3, 2003, Ecology letter to Mr. Robert Cugini, Barbee Mill Co., Re: Stockpiled Sediment Materials, Independent Remedial Action, Barbee Mill Co.

7. September 6, 2005, Ecology letter to Mr. Robert Cugini, Barbee Mill Company, Re: Joint Aquatic Resources Permit Application (JARPA) for Barbee Mill Shoreline Restoration Project, Lake Washington, King County, Washington

8. May 17, 2006, Ecology letter to Mr. Robert Cugini, Vice President, Barbee Mill Company, Re: Opinion pursuit to WAC 173-340-515(5) on Proposed Remedial Action for the following Hazardous Waste Site: Barbee Mill

9. June 1, 2006, EPA Region 10 memorandum to Lynda Priddy, Project Manager, from Rene Fuentes, Hydrogeologist, Office of Environmental

10. Assessment, Subject: Barbee Mill Company Arsenic Plume Independent Remedial Action Plan Addendum, February 8, 2006

Remedial Action Documents

11. November 17, 1998, letter report from Hart Crowser, Re: Updated Summary of Soil and Groundwater Data, Barbee Mill

12. November 17, 1998, letter from Hart Crowser, Re: Waste Designation at the Barbee Mill Site

13. December 17, 1998, letter report from Hart Crowser, Re: Supplemental Report, Additional Site Data, Barbee Mill

14. January 25, 1999, memorandum from Hart Crowser, Re: Review of Facility areas at Barbee Mill

15. May 10, 1999, letter report from Hart Crowser, Re: Review of Site History and Characterization Data, and Proposed Additional Investigation Work, Barbee Mill Company

16. July 16, 1999, transmittal from Hart Crowser, Barbee Mill Co. Site and Exploration Plan, Tables 1-9: Soil and Groundwater Samples

17. November 9, 1999, Draft Remedial Investigation and Focused Feasibility Study for the Quendall Terminals Property, Exponent

18. January 17, 2000, letter from Hart Crowser, Re: Future Use of Dredged Bark and Wood Debris – Barbee Mill Co.

19. September 6, 2000, revised, Independent Remedial Action Plan, Upland Areas, Barbee Mill Company, Hart Crowser

20. January 25, 2001, letter from Hart Crowser, Re: Dangerous Waste Designation at the Barbee Mill Site

21. May 2004, Draft Risk Assessment/Feasibility Study, Port Quendall Terminals Site, Anchor Environmental, L.L.C.

22. February 8, 2006 Draft Independent Remedial Action Plan Addendum, Upland Areas, Aspect Consulting, LLC

23. May 16, 2006, letter from Aspect Consulting, Re: Supplemental Information for IRAP Addendum, Barbee Mill (VCP Site #NW0182)

24. June 21, 2006, Construction Report, Barbee Mill Arsenic Remediation, Aspect Consulting, LLC

25. June 21, 2006, Construction Report, Barbee Mill TPH and PCP Remediation, Aspect Consulting, LLC

26. December 15, 2006, memorandum from Aspect Consulting, Re: Passive Attenuation Zone Pilot Test Results, Barbee Mill Arsenic Remediation Project

27. August 2, 2006, draft Engineering Design Report, Barbee Mill Groundwater Remediation, Aspect Consulting, LLC

28. March 5, 2007, Construction and Performance Monitoring Plan, Barbee Mill Groundwater Remediation Project, Aspect Consulting, LLC, received March 5, 2007, undated Construction Specifications, Barbee Mill Passive Attenuation Zone, Aspect Consulting, LLC

29. received March 5, 2007, undated Remedial Action Management Plan, Project: Barbee Mill PAZ, Clearcreek Contracting Company

30. July 12, 2007, letter from Clearcreek Contractors, Re: Spill #561806

31. August 4, 2007, email from John Funderburk, Sound Environmental Strategies, Re: Barbee Mill

32. October 5, 2007, Construction Report – Passive Attenuation Zone, Barbee Mill Arsenic Remediation, Aspect Consulting, LLC

33. December 3, 2007, Partial Sufficiency and Further Action Determination letter to Mr. Robert Cugini from Mr. Mark Adams

Instrument Number: 20230421000210 Document:COV Rec: $217.50 Page-1 of 15
Record Date:4/21/2023 10:43 AM
Electronically Recorded King County, WA

After Filing Return
Original Signed Covenant To:
Lucy McInerney
Toxics Cleanup Program
Department of Ecology
3190 – 160th Avenue SE
Bellevue, Washington 980008

ENVIRONMENTAL COVENANT

Grantor(s):

Lake Washington East, LLC, a Washington limited liability company

☐ Additional names on page _____ of document

Grantee(s):

1. State of Washington, Department of Ecology ("Ecology")
2. Barbee Mill Co., Inc., a Washington corporation ("Barbee")

☐ Additional names on page _____ of document

Abbreviated Legal Description (lot, block and plat name, or section-township-range):

A portion of government lot 5 in section 29, township 24 north, range 5 east, W.M. and shoreland adjoining lying westerly of the Northern Pacific Railroad right-of-way and southerly of a line in King County, Washington.

☒ Additional legal description is on page 12 of document

Assessor's Property Tax Parcel Account Number(s): 2924059002

RECITALS

a. This document is an environmental (restrictive) covenant (hereafter "Covenant") executed pursuant to the Model Toxics Control Act ("MTCA"), chapter 70A.305 RCW, and Uniform Environmental Covenants Act ("UECA"), chapter 64.70 RCW.

b. The property that is the subject of this Covenant is part of a MTCA site commonly known as the Barbee Mill Site, Facility Site ID#76716221. The former Barbee Mill Property, which is also part of the Barbee Mill Site, is the subject of an Environmental Covenant (recording # 20080606001208) recorded in June 2008 pursuant to an Agreed Order with Barbee.

c. Hazardous substances released on the Barbee Mill Property have migrated onto an adjacent property known as Quendall Terminals, which is part of a United States Environmental Protection Agency ("EPA") Superfund Site under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 et seq. ("CERCLA"). That portion of Quendall Terminals that is the subject of this Covenant is legally described in Exhibit A and illustrated in Exhibits B-1 and B-2, both of which are attached (hereafter "Covenant Area"). If there are differences between these Exhibits, the legal description in Exhibit A shall prevail.

d. The Covenant Area is the subject of remedial action conducted under MTCA. At the time this Covenant is being filed, the final remedial action has not been selected by Ecology. This Covenant is required because of the potential for the following contaminants to have migrated from the Barbee Mill Property to the Covenant Area or to be present on the Covenant Area as the result of the activities on Quendall Terminals:

Potential Contaminants Migrating from the Barbee Mill Property:

Medium	Principal Contaminants Present
Soil	N/A
Groundwater	Arsenic

Potential Contaminants Resulting from Activity on Quendall Terminals:

Medium	Principal Contaminants Present
Soil	Arsenic, Chromium, Lead, PAHs, Ethylbenzene
Groundwater	Arsenic, PAHs, Dibenzofuran, Benzene, Ethylbenzene, Xylenes
Surface Water/Sediment	PAHs, Benzene, Toluene

e. It is the purpose of this Covenant to restrict certain activities and uses of the Covenant Area to protect human health and the environment and the integrity of remedial actions conducted at the site. Records describing the extent of residual contamination and remedial actions conducted at the Barbee Mill Site are available for public review through Ecology. A copy of the administrative record for the Quendall Terminals Superfund Site is on file with EPA Region 10 or its successor agency and is available for public review. In order to make arrangements for such review, a person may contact the EPA Superfund Records Center by calling telephone number (206) 553-4494. The EPA Region 10 office is located at 1200 Sixth Avenue, Seattle, Washington.

f. Quendall Terminals is expected to be redeveloped as a mixed-use multi-family residential development (the "Redevelopment"). Barbee will design the remedial action to be in compliance with MTCA and consistent with the Redevelopment. The remedial design will be subject to Ecology review and approval.

g. This Covenant grants Ecology certain rights under UECA and as specified in this Covenant. As a Holder of this Covenant under UECA, Ecology has an interest in real property, however, this is not an ownership interest which equates to liability under MTCA or the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 et seq. The rights of Ecology as an "agency" under UECA, other than its' right as a holder, are not an interest in real property.

COVENANT

Lake Washington East, LLC ("LWE") as Grantor and fee simple owner of the Covenant Area hereby grants to Ecology and Barbee, and their successors and assignees, the following covenants. Furthermore, it is the intent of the Grantor that such covenants shall supersede any prior interests the Grantor has in the property and run with the land and be binding on all current and future owners of any portion of, or interest in, the Covenant Area.

Section 1. General Restrictions and Requirements.

The following general restrictions and requirements shall apply to the Covenant Area:

a. CERCLA Remedial Actions. The Covenant Area may be subject to additional remedial actions as directed by EPA and conducted under CERCLA. Upon advance written notice to Ecology, any EPA directed remedial action for the Quendall Terminals Superfund Site may occur and is not considered a violation of the terms of this Covenant.

b. Interference with Remedial Action. Barbee shall design the remedial action so that it complies with MTCA and is consistent with, and does not materially impact, the Redevelopment and the Grantor is agreeing to the restrictions in this Covenant in reliance on this representation by Barbee. The Barbee Mill Site remedial design will be subject to Ecology review and approval. Grantor agrees that once the remedial action is implemented, it will allow

operation, maintenance, inspection or monitoring of the remedial action. Barbee shall provide Grantor with a copy of any soil or water management plan for the Covenant Area that describes the requirements in the event soil or water that is impacted with arsenic is generated during future activities. Grantor agrees to comply with any soil or water management plan required by Ecology and Barbee shall be responsible for the incremental costs, if any, associated with compliance with the soil or water management plan.

c. Protection of Human Health and the Environment. The Grantor shall not engage in any activity on the Covenant Area that may threaten continued protection of human health or the environment associated with any residual arsenic groundwater contamination on the Covenant Area without prior written approval from Ecology. This includes, but is not limited to, any activity that results in the release of residual contamination that is contained as a part of the remedial action or that exacerbates or creates a new exposure to any residual groundwater contamination remaining on the Covenant Area.

d. Continued Compliance Required. Grantor shall not convey any interest in any portion of the Covenant Area without providing for continued compliance with this Covenant, as outlined in Section 4. In the event of a conveyance, Barbee agrees to continue adequate and complete operation, maintenance and monitoring of remedial actions and continued compliance with this Covenant at Barbee's sole cost, except as provided herein.

e. Leases. It is anticipated that the Redevelopment may include buildings consisting of mixed use multi-family dwellings. If Grantor leases any buildings (as opposed to individual tenant spaces) or otherwise execute leases that permit lessees to disturb the soil or access groundwater underlying the building (e.g., a ground lease) in the Covenant Area, then such leases shall restrict uses and activities to uses and activities consistent with this Covenant and the Grantor shall notify all such lessees of the restrictions on the use of the Covenant Area, as outlined in Section 4.

f. Preservation of Reference Monuments. Grantor and Barbee shall make a good faith effort to preserve any reference monuments and boundary markers used to define the areal extent of coverage of this Covenant. Should Grantor discover that a monument or marker has been damaged or destroyed, Grantor shall notify Barbee. Barbee shall have it replaced by a licensed professional surveyor within 30 days of notice from Grantor or from Barbee's discovery of the damage or destruction, whichever is earlier.

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 Covenant Area.

a. Remedial Action Components. Barbee shall design the remedial action so that it complies with MTCA and is consistent with, and does not materially impact, the

Redevelopment and the Grantor is agreeing to the restrictions in this Covenant in reliance on this representation by Barbee. The remedial design will be subject to Ecology review and approval. Subject to the foregoing, potential future remedial actions may include installation of physical components within the Covenant Area, such as a subsurface Passive Attenuation Zone (PAZ) similar to the PAZ located on the former Barbee Mill Property to the south. In addition, any activity on the Covenant Area that will compromise the integrity of such physical components of the remedy including but not limited to: drilling; digging; piercing the components with sampling device, post, stake or similar device; grading; excavation; or installation of underground utilities; is prohibited without prior written approval by Ecology. The Grantor shall report to Barbee within forty-eight (48) hours of the discovery of any damage to remedial action components. Barbee shall report to Ecology within forty-eight (48) hours of notice from Grantor or from Barbee's discovery of any damage to remedial action components, whichever is earlier. Unless an alternative plan has been approved by Ecology in writing, at its sole cost, Barbee shall promptly repair the damage and submit a report documenting this work to Ecology within thirty (30) days of completing the repairs.

b. Groundwater Use. The groundwater within the Covenant Area illustrated in Exhibits B-1 and B-2 remains contaminated and shall not be extracted for any purpose other than temporary construction dewatering, investigation, monitoring or remediation. Drilling of a well for any water supply purpose is strictly prohibited. Groundwater extracted from within this area for any purpose shall be considered potentially contaminated. The discharging party shall manage any discharge of this water in accordance with state and federal law at that party's sole cost.

c. Soil Disturbance. If Ecology requires a construction management plan for the Covenant Area, any activities that include disturbance of soil below the water table within the Covenant Area shall be conducted pursuant to the construction management plan.

d. Sediments. The restrictions in this Covenant do not apply to Lake Washington or the sediment.

e. Stormwater Facilities. To minimize the potential for mobilization of contaminants remaining in the groundwater on the Covenant Area, no stormwater infiltration facilities or ponds that allow stormwater to infiltrate to groundwater shall be constructed within the Covenant Area. All stormwater catch basins, conveyance systems, and other appurtenances located within this area shall be of water-tight construction.

f. Monitoring. Several groundwater monitoring wells and well points are located on the Covenant Area to monitor the performance of the remedial action. Barbee shall maintain clear access to these devices and protect them from damage and Grantor agrees to cooperate and coordinate with Barbee in these efforts. The Grantor shall report to Barbee within forty-eight (48) hours of the discovery of any damage to any monitoring device. Barbee shall report to Ecology within forty-eight (48) hours of notice from Grantor or from Barbee's discovery of any

damage to any monitoring device, whichever is earlier. Unless Ecology approves of an alternative plan in writing, Barbee shall promptly repair the damage and submit a report documenting this work to Ecology within thirty (30) days of completing the repairs. If any groundwater monitoring wells and well points located on the Covenant Area must be relocated to accommodate the Redevelopment, Barbee shall relocate the groundwater monitoring wells and well points to locations approved by Ecology and Grantor agrees to cooperate and coordinate with Barbee in these efforts.

Section 3. Access.

a. Barbee shall maintain clear access to all remedial action components necessary to construct, operate, inspect, monitor and maintain the remedial action and Grantor agrees to cooperate and coordinate with Barbee in these efforts.

b. The Grantor freely and voluntarily grant Ecology and its authorized representatives, upon reasonable notice, the right to enter the Covenant Area 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 Covenant Area, and to inspect related records. The Grantor has granted access to Barbee pursuant to a recorded easement.

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

Section 4. Notice Requirements.

a. Conveyance of Any Interest. The Grantor, when conveying any interest within the Covenant Area described in Exhibit A and illustrated in Exhibits B-1 and B-2, including but not limited to title, easement, certain leases as specified in Section 1.e, and security or other interests, must:

i. Provide written notice to Barbee of the intended conveyance at least twenty eight (28) days in advance of the conveyance and Barbee shall provide written notice to Ecology within forty-eight (48) hours of receiving notice from Grantor.

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 [DATE] AND RECORDED WITH THE KING COUNTY AUDITOR UNDER RECORDING NUMBER [RECORDING NUMBER]. 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 Barbee with a complete copy of the executed document (i.e., the deed or lease conveying the interest) within twenty eight (28) days of the date of execution of such document and Barbee shall provide a copy of such executed document to Ecology within forty-eight (48) hours of receiving such executed document.

b. Reporting Violations. Should the Grantor become aware of any violation of this Covenant, Grantor shall promptly report such violation in writing to Barbee and Barbee shall promptly report such violation to Ecology. If Barbee becomes aware of any violation of this Covenant, Barbee 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 or fire) resulting in a violation of this Covenant, the Grantor or Barbee are authorized to respond to such an event in accordance with state and federal law. The party discovering such an event must notify all other parties in writing 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. Barbee shall be responsible, at its sole cost, for response action to address a violation of this Covenant due to Acts of Nature.

d. Notification Procedure. Any required written notice, approval, reporting or other 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. Upon mutual agreement of the parties to this Covenant, an alternative to personal delivery or first class mail, such as e-mail or other electronic means, may be used for these communications.

For LWE: Robert Cugini Altino Properties, Inc. P.O. Box 359 Renton, WA 98057 (425) 226-3900 robertc@barbeemill.com	For Ecology: Environmental Covenants Coordinator Washington State Department of Ecology Toxics Cleanup Program P.O. Box 47600 Olympia, WA 98504 – 7600 (360) 407-6000 ToxicsCleanupProgramHQ@ecy.wa.gov For Barbee: Robert Cugini Barbee Mill Co., Inc. P.O. Box 359 Renton, WA 98057 (425) 226-3900 robertc@barbeemill.com

Section 5. Modification or Termination.

a. Grantor must provide Ecology and Barbee with written notice and obtain approval from Ecology at least sixty (60) days in advance of any proposed activity or use of the Covenant Area in a manner that is inconsistent with this Covenant.[1] Barbee will cooperate with and assist the Grantor to obtain Ecology approval of the activity or use. For any proposal that is inconsistent with this Covenant and permanently modifies an activity or use restriction on the Covenant Area:[2]

i. Ecology must issue a public notice and provide an opportunity for the public to comment on the proposal; and

ii. If Ecology approves of the proposal, the Covenant must be amended to reflect the change before the activity or use can proceed.

b. If the conditions at the site requiring a Covenant have changed or no longer exist, then the Grantor or Barbee may submit a request to Ecology that this Covenant be amended or

[1] Example of inconsistent uses is drilling a water supply well when use of the groundwater for water supply is prohibited by the covenant.
[2] An example of an activity that is unlikely to be considered a permanent modification is a proposal to repair an existing underground utility that passes through the Covenant Area. However, installing a permeable stormwater infiltration pond that allows stormwater to migrate to groundwater would be a permanent change.

terminated. Any amendment or termination of this Covenant must follow the procedures in MTCA and UECA and any rules promulgated under these chapters.

c. If Ecology has not signed the Covenant when first recorded, Grantor agrees to re-record the covenant with Ecology's signature when it has been approved by Ecology incorporating any reasonable changes requested by Ecology.

Section 6. Enforcement and Construction.

a. This Covenant is being freely and voluntarily granted by the Grantor.

b. Within ten (10) days of execution of this Covenant, Barbee shall provide Ecology with an original signed Covenant and proof of recording and a copy of the Covenant and proof of recording to others required by RCW 64.70.070.

c. Barbee and/or Ecology shall be entitled to enforce the terms of this Covenant by resort to specific performance or legal process. All remedies available in this Covenant shall be in addition to any and all remedies at law or in equity, including MTCA and UECA. Enforcement of the terms of this Covenant shall be at the discretion of Ecology, and any forbearance, delay or omission to exercise its rights under this Covenant in the event of a breach of any term of this Covenant is not a waiver by Ecology of that term or of any subsequent breach of that term, or any other term in this Covenant, or of any rights of Ecology under this Covenant.

d. Except as provided herein, Barbee shall be responsible for all costs associated with implementation of this Covenant, provided however that, and except as otherwise specified herein, nothing in this Covenant shall limit Barbee's ability to recover such costs from a third-party, including but not limited to Grantor, in the case of Grantor's negligent or intentional actions. If a Party wishes to modify or terminate this Covenant, upon request by Ecology, that Party shall be obligated to pay for Ecology's costs to process a request for any modification or termination of this Covenant and any approval required by this Covenant.

e. This Covenant shall be liberally construed to meet the intent of MTCA and UECA.

f. The provisions of this Covenant shall be severable. If any provision in this Covenant or its application to any person or circumstance is held invalid, the remainder of this Covenant or its application to any person or circumstance is not affected and shall continue in full force and effect as though such void provision had not been contained herein.

g. A heading used at the beginning of any section or paragraph or exhibit of this Covenant may be used to aid in the interpretation of that section or paragraph or exhibit but does not override the specific requirements in that section or paragraph.

The undersigned Grantor warrants Lake Washington East, LLC holds the title to the Property and he has authority to execute this Covenant.

EXECUTED this 21 day of December, 2022

LAKE WASHINGTON EAST, LLC, a
Washington limited liability company

By: Altino Properties, Inc., Its Manager

By: _____
Robert Cugini, President
Dated: 12/21/2022

LIMITED LIABILITY COMPANY ACKNOWLEDGMENT

STATE OF Washington
COUNTY OF KING

On this 21st day of December, 2022, I certify that Robert Cugini personally appeared before me, acknowledged that he is the President of Altino Properties, Inc., which is the Manager of Lake Washington East, LLC, the entity that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed of said limited liability company, for the uses and purposes therein mentioned, and on oath stated that he was authorized to execute said instrument for said limited liability company.

_____
Notary Public in and for the State of Washington
Residing at Auburn, WA
My appointment expires 10/23/2025

ELIZABETH A GEPPERT
Notary Public
State of Washington
Commission # 195959
My Comm. Expires Oct 23, 2025

The Department of Ecology and Barbee Mill, hereby accept the status as GRANTEES and Holders of the above Environmental Covenant.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

By: _____

Print name: Robert W. Warren

Title: Section Manager, TCP-NWRO

Date: January 24, 2023

BARBEE MILL CO., INC., a Washington corporation

By: Robert Cugini
Robert Cugini, President
Dated: 12/21/2022

CORPORATE ACKNOWLEDGMENT

STATE OF Washington
COUNTY OF KING

On this 21st day of December, 2022 I certify that Robert Cugini personally appeared before me, acknowledged that he is the President of the corporation that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that he was authorized to execute said instrument for said corporation.

Elizabeth A. Geppert
Notary Public in and for the State of Washington
Residing at Auburn, WA
My appointment expires 10/23/2025

ELIZABETH A GEPPERT
Notary Public
State of Washington
Commission # 195959
My Comm. Expires Oct 23, 2025

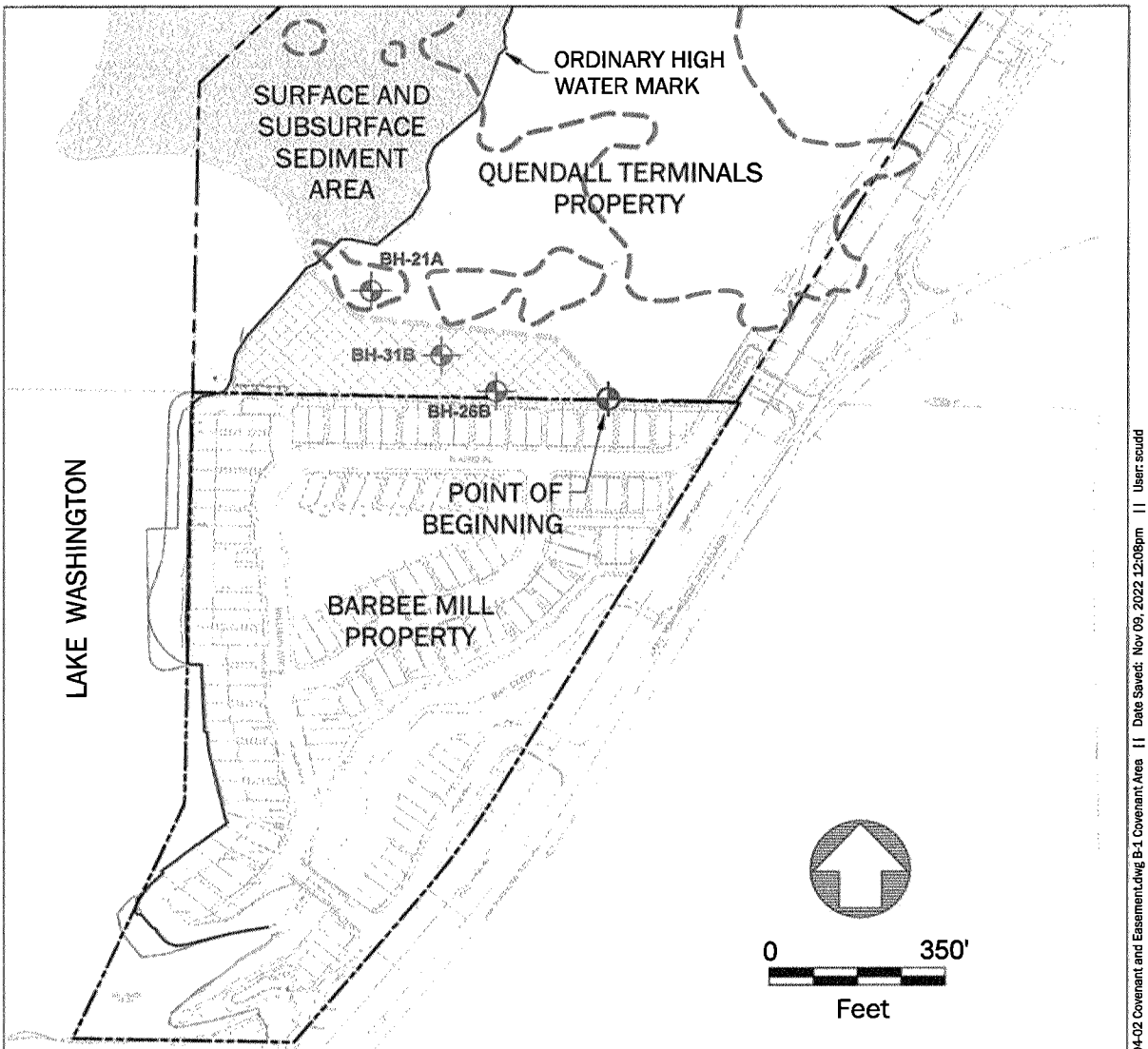
Exhibit A

LEGAL DESCRIPTION OF COVENANT AREA

THAT PORTION OF GOVERNMENT LOT 5 IN SECTION 29, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF SAID SECTION 29;
THENCE NORTH 88°48'29" WEST ALONG THE SOUTH LINE OF SAID GOVERNMENT LOT 5 A DISTANCE OF 1372.78 FEET TO THE TRUE POINT OF BEGINNING;
THENCE NORTH 39°59'51" WEST, A DISTANCE OF 167.24 FEET;
THENCE NORTH 83°40'09" WEST, A DISTANCE OF 400.14 FEET;
THENCE NORTH 43°16'50" WEST, A DISTANCE OF 138.08 FEET MORE OR LESS TO THE ORDINARY HIGH WATER MARK OF LAKE WASHINGTON;
THENCE SOUTHWESTERLY ALONG SAID ORDINARY HIGH WATER MARK TO A POINT ON THE SOUTH LINE OF SAID GOVERNMENT LOT 5 BEARING NORTH 88°48'29" WEST FROM THE POINT OF BEGINNING;
THENCE ALONG SAID SOUTH LINE SOUTH 88°48'29" EAST A DISTANCE OF 765.74 FEET MORE OR LESS TO THE TRUE POINT OF BEGINNING.

CONTAINING 108,836 SQUARE FEET MORE OR LESS.



Note

1. Boundary lines shown are from A.L.T.A. A.C.S.M. Land Title Survey OF south parcel for JAG Development by Bush, Roed AND Hitchings, Inc dated 8/22/96 and a field survey by OTAK, Inc. in March 2002.

Legend

- Covenant Area
- Property Boundary - Quendall
- Property Boundary - Barbee Mill
- Approximate Extent of DNAPL

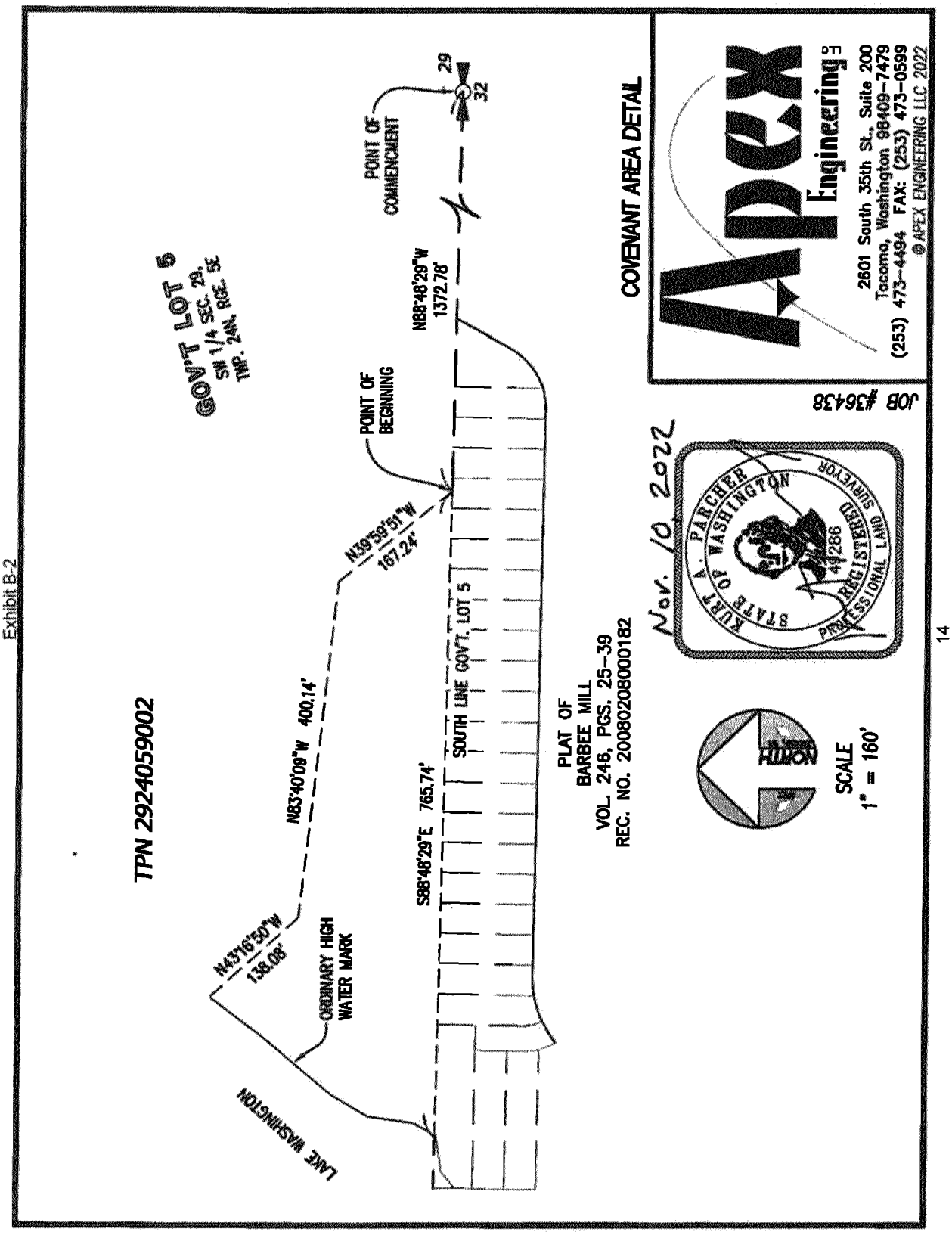
Covenant Area

Quendall Terminals Property - Environmental Covenant for Barbee Mill
Renton, Washington

Aspect CONSULTING	Nov-2022	BY:JJP/SCC	EXHIBIT
	PROJECT NO. 050004		B-1

CAD Path: Q:\Barbee Mill\050004 Barbee Mill\2022-11 Covenant and Easement\050004-02 Covenant and Easement.dwg B-1 Covenant Area || Date Saved: Nov 09, 2022 12:08pm || User: scudd

Exhibit B-2


GOV'T LOT 5
SW 1/4 SEC. 29,
TWP. 24N, RGE. 5E
POINT OF COMMENCMENT
29
32
N88°48'29"W
1372.78'
POINT OF BEGINNING
N39°59'51"W
167.24'
N83°40'09"W 400.14'
N43°16'50"W
138.08'
ORDINARY HIGH WATER MARK
LAKE WASHINGTON
S88°48'29"E 765.74'
SOUTH LINE GOV'T. LOT 5
TPN 2924059002
PLAT OF
BARBEE MILL
VOL. 246, PGS. 25-39
REC. NO. 20080208000182
COVENANT AREA DETAIL
APEX Engineering
2601 South 35th St., Suite 200
Tacoma, Washington 98409-7479
(253) 473-4494 FAX: (253) 473-0599
© APEX ENGINEERING LLC 2022
JOB #364438
Nov. 10, 2022
KURT A. PARCHER
STATE OF WASHINGTON
44286
REGISTERED
PROFESSIONAL LAND
SURVEYOR
SCALE
1" = 160'