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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Southwest Region Office

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September 18, 2025

Dean Kerstetter
Executive VP of Operations
Mendicino Forest Products Company, LLC
PO Box 996
Ukiah, CA 95482
dkerstetter@mendoco.com

Re: Further Action for the following contaminated Site:

- **Site Name:** Trueguard LLC (aka Allweather Wood)
- **Site Address:** 725 South 32nd St, Washougal, Clark County, WA 98671
- **Facility/Site ID:** 75455855
- **Cleanup Site ID:** 4833
- **VCP Project ID:** SW0916

Dear Dean Kerstetter:

The Washington State Department of Ecology (Ecology) received your Independent Cleanup Report (Report) and request for opinion at the Trueguard LLC property (Site), also known as Allweather Wood (AWW). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA),¹ chapter 70A.305 Revised Code of Washington (RCW).²

¹ <https://fortress.wa.gov/ecy/publications/SummaryPages/9406.html>

² <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305>

Issue Presented and Opinion

Ecology has determined that further remedial action is necessary to clean up contamination at the Site. Ecology concurs with the institutional and engineering controls (IECs) and ongoing soil and groundwater cleanup actions that you have implemented at the Site to date. This letter presents the next steps necessary address data gaps that would eventually lead to an NFA determination by opinion letter.

This opinion is based on an analysis of whether the investigative/remedial work and groundwater data to date meets the substantive requirements of MTCA, Chapter 70A.305 RCW, and its implementing regulations, Washington Administrative Code (WAC) Chapter 173-340 (collectively “substantive requirements of MTCA”). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Metals including arsenic, boron, chromium, and copper into soil and groundwater.

The Site is currently located at 725 South 32nd Street in Washougal, Clark County, Washington and is located within tax parcel No. 71281137. The Site is an active wood treating facility nearly 21-acres in size and is located in the Camas and Washougal Industrial Park, which was developed in the 1960s. The Site and industrial park were built over a large marsh with the existing Steigerwald Marsh (part of the Steigerwald Lake National Wildlife Refuge) being located to the east of the Facility. A detailed description of the Site is included as **Enclosure A**.

Please note a parcel of real property can be affected by multiple sites. At this time, Ecology has no information that the parcel associated with this Site is affected by other sites; however this Facility is located adjacent to the Burlington Environmental LLC Washougal (Phillips Services Corp Washougal) facility (FSID #1018). At this time, we have no information that those parcel(s) are actually affected. This opinion does not apply to any contamination associated with the Burlington Environmental LLC Washougal facility.

Basis for the Opinion

This opinion is based on the information contained in the documents listed in **Enclosure B**.

These documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. Information on obtaining those records can be found on [Ecology's public records requests web page](#).³ Some site documents may be available on [Ecology's Cleanup Site Search web page](#).⁴

Opinion

A brief summary of the past and present investigative and in-situ interim remedial measures are summarized in Enclosure B. These activities are described in greater detail in Section 3.1 of the 2025 Independent Cleanup report submitted by MFA.⁵

Ecology Comments

Site Investigation (Addressing Data Gaps #1 - #4)

Data Gap #1 – Lateral Plume Width. Ecology does not concur that arsenic-impacted groundwater has been delineated at the Site. Groundwater should be delineated north of MW-1, south of MW-26, MW-27, MW-28, and MW-15, and east of wells MW-13, MW-14, and MW-15.

The southerly delineation should be implemented with respect to the nearest tax lot boundary so as not to involve the remainder of unimpacted tax lots across the Site. This proposed well installation approach along the tax lot or southern property boundary should also ensure the dissolved arsenic plume in groundwater is defined with a single well installation event. While Ecology understands that groundwater extraction should be inducing a groundwater gradient across the southerly well field and over the northeasterly silt unit slope, said hydraulic effects may not be as significant or extensive given the business hours only, Monday-through-Friday extraction schedule. Additionally, the arsenic concentrations present in the southerly wells remain above the site-specific groundwater CUL (SSCUL), despite the operation of the groundwater extraction system. Further delineation beyond the southerly wells would also provide information as to whether higher or lower arsenic concentrations may exist beyond and relative to the southerly well

³ <https://ecology.wa.gov/Footer/Public-records-requests>

⁴ <https://apps.ecology.wa.gov/cleanupsearch/site/4833>

⁵ Maul Foster Alongi (MFA), Independent Cleanup Report – AllWeather Wood, August 4, 2025.

concentrations. Cost-effective direct-push data could be obtained first, in order to refine the approach for installing permanent groundwater monitoring wells.

Data Gap #2 – Vertical Plume Delineation. Ecology concurs that the vertical plume extent has been adequately delineated and characterized to meet WAC 173-340-350(7). However, given the silty unit may constitute a semi-confining layer and may thereby be potentially leaky, Ecology recommends periodic monitoring of MW-3D and MW-14D on 15-month basis for at least the next 5 years.

Data Gap #3 – Off-Site Groundwater Stormwater System Intrusion. Ecology concurs that groundwater from the Site has not impacted the South 32nd St storm sewer system to date and that this data gap has been addressed.

Data Gap #4 – Wetland Groundwater Discharge Investigation. Ecology concurs that while arsenic-impacted groundwater from the Site is migrating towards the wetland east of the Site, it does appear to be discharging to the wetlands at concentrations above the SSCUL.

Site Remediation

Ecology concurs that in-situ chemical injectate technologies are neither technically nor cost-effective to remediate dissolved arsenic in groundwater at the Site. Ecology also concurs that the current use of groundwater extraction (GE) and air sparging (AS) is the most effective combination of remedial technologies to employ at the Site. However, given the current arsenic concentrations in groundwater, these technologies will not likely meet cleanup standards for the Site within a reasonable timeframe.

Site-Specific Groundwater CUL

Ecology continues to concur that the SSCUL for arsenic is 14.2 micrograms per liter ($\mu\text{g/L}$).

Ecology acknowledges that the adjacent Stericycle Site is screening arsenic in groundwater concentrations with a SSCUL of 22.84 $\mu\text{g/L}$. Of note and after additional review of the SSCUL of 22.84 $\mu\text{g/L}$ for the adjacent Stericycle Site, it is unclear what wells and what degree of statistical confidence and confidence limit (e.g., 90th percentile) was used to develop the SSCUL. Stericycle's natural background assessment considered both area and natural background and the report concluded that "It is difficult to ascertain if these background values should be categorized strictly as natural background values or area background values given that the Site has both natural and anthropogenic (area) influences."⁶ Regarding derivation of any SSCUL, the case needs to be made that what is

⁶ Dalton Olmsted Fuglevand, Revised Feasibility Study, pg 20, second paragraph, April 25, 2020.

derived represents natural background versus a background that is undetermined (natural vs area).

The AWW report characterized the Site SSCUL as natural background, whereas with Stericycle, it was undetermined (natural vs area). To consider using the Stericycle SSCUL, a case would have to be made that said SSCUL is a better representation of natural background (upgradient of the AWW Site and sources) for the shallow water-bearing zone (wbz) and that it is based on a 90th or 4x50th percentile, whichever is lower. Groundwater data from AWW wells MW-5 and -6 could be incorporated to re-calculate the CUL since these locations would represent natural background.

Proposed Cleanup Standards and Points of Compliance

Cleanup Standards

Soil. Ecology concurs with the use of MTCA Method A and B (MTCA A/B) CULs for screening arsenic, chromium and copper data in soil. Ecology also concurs that the chromium and copper soil concentrations are much less than the MTCA A/B CULs. In addition, Ecology concurs that arsenic concentrations in soil exceeding the CUL:

- have been adequately delineated;
- are contained within the property interior near the source area;
- are covered with pavement, concrete, and buildings;
- and will remain so into the foreseeable future.

While human exposure to arsenic in soil is unlikely now or in the foreseeable future, Ecology concurs that the presence of such would require inclusion in an environmental covenant (EC) and contaminated media management plan (CMMP) upon any form of eventual site closure.

Groundwater. As discussed above, Ecology continues to concur with the SSCUL CUL for arsenic of 14.2 micrograms per liter ($\mu\text{g/L}$). Ecology would consider other SSCULs as may be applicable based on an evaluation of natural background as discussed above.

Points of Compliance

Soil. Ecology does not concur that the standard direct contact soil POC of 15 feet bgs is applicable. Rather, the standard soil POC for this Site would be based on leaching to groundwater and protection of groundwater throughout the Site. Ecology concurs that the arsenic concentrations in soil at the Site are currently inaccessible, and could be effectively managed via an EC and CMMP if the Site were eligible for an NFA.

Groundwater. Ecology concurs that a standard POC consisting of the entire site is not possible to achieve at this time within a reasonable time frame throughout the entire shallow wbz arsenic plume. Ecology concurs that monitoring wells MW-13, MW-14, and MW-15 could potentially comprise a conditional POC for the shallow wbz if arsenic concentrations in groundwater meet the SSCUL at those wells. A conditional point of compliance for groundwater also requires demonstrating that a reasonable restoration time frame cannot be met for Site arsenic concentrations in groundwater to be less than the SSCUL at MW-13, MW-14, and MW-15. Alternately, dissolved arsenic concentrations in groundwater may persist in excess of the SSCUL such that it becomes necessary to consider an off-Property conditional point of compliance with monitoring wells on the east side of S 32nd St.

For the lower wbz, Ecology concurs that the standard POC of the entire site has been met. This is based on the fact that arsenic has not been detected at or above the method reporting limit of 3 µg/L in the lower wbz wells MW-13D and MW-14D during four sampling events from December 2023 to February 2025.

Surface Water/Wetlands. Ecology concurs that groundwater is not discharging to the wetlands with arsenic concentrations greater than the natural background concentration represented by the SSCUL. However, Ecology recommends that monitoring wells be installed on the eastern side of 32nd Avenue to assess arsenic concentrations before it impact the wetlands and to serve as the POC

Conclusions/Recommendations/Next Steps

Relative to Ecology's prior opinion and recommendations therein⁷ and excluding the lateral extent of shallow groundwater contamination, Ecology concurs that the magnitude and extent of arsenic in soil and deep wbz groundwater and three of the four data gaps identified by Ecology appear to have been addressed. As with all Sites that are regulated under MTCA, any actions that assess and foster cleanup of the contaminated groundwater and protection of human health and the environment can lead to the eventual receipt of a conditional NFA determination from Ecology.

Ecology appreciates that AWW has tested and utilized various alternatives to assess and facilitate cleanup of arsenic-contaminated groundwater at the Site and that the combination of GE/AS have been implemented as the preferred groundwater cleanup actions. The assessment activities and cleanup actions have led to the conclusions that arsenic-impacted groundwater exceeding the SSCUL is currently contained within the property boundary, that arsenic groundwater concentrations are currently stable or declining, and that the GE/AS systems are the most effective combined technology at removing arsenic mass in groundwater. Further, groundwater contamination appears to be confined within the shallow wbz, has been absent from the lower wbz after 18 years since the release, and that arsenic-impacted groundwater intrusion above the SSCUL is not occurring in either the South 32nd Street storm sewer or in the wetlands east of South 32nd Street.

Regarding exposure to As-impacted groundwater and soil above the respective CULs, the existing Site conditions, uses, and institutional controls (impacted soil beneath buildings and pavements) currently prevent exposure to either media. Further, subsurface arsenic-impacted soil above the CUL that exists beneath the various on-Site surface covers is also not currently accessible for active remediation. As a result, no current human and ecological receptor risk of exposure likely exists to arsenic from the Site.

Continued use of groundwater on the property for any purpose other than those specified in the Water Right Permit #G 2-26638 P, as amended by the Ecology-approved Showing of Compliance, is restricted. Further, occupational (worker) use and minimizing exposure to said groundwater would also be regulated via the employer's responsibility to ensure safe

⁷ Ecology, Review of Maul Foster Alongi's June 10, 2016 Technical Memorandum: Updated Arsenic Background Groundwater Evaluation, August 10, 2017.

working conditions under both the WA Industrial Safety and Health Act (WAC 296-800) and federal OSHA (40 CFR 1910.120).

The aforementioned notwithstanding, Ecology cannot grant a conditional NFA with EC until the groundwater arsenic concentrations are either at or near the SSCUL across the Site. Ecology does concur that 1) the in-situ groundwater remedial pilot test results at the Site indicate that implementation of said technology would neither be technically nor financially feasible and 2) that the GE/AS system at the Site appears to constitute the most optimal form of arsenic groundwater remediation that could be employed over the long term.

Regarding the necessity of an NFA/EC relative to the Site conditions, at this time it appears that the customer will continue to own and operate the Site as a wood-treating business in perpetuity and in the industrial area that it is located within. It also appears that the customer will continue to be proactive regarding the ongoing groundwater remediation with the existing GE/AS system and conducting groundwater monitoring at key locations and frequencies necessary to confirm the continued effectiveness of said remedial system. Given the magnitude of arsenic groundwater impacts at the Site, implementation of the remedial and monitoring activities may be required over a decade or more to achieve compliance with the current SSCUL. Given such activities would need to be performed to achieve said compliance under an EC as well as not, no additional benefit would be conveyed under an NFA/EC at the present time. This beyond current groundwater arsenic concentrations precluding consideration of an NFA/EC at this time. Sans an NFA/EC and in the spirit of offering alternative approaches during the interim, should the VCP customer's end goal for the property change (e.g., sell) in the future under the current remedial and groundwater monitoring regime, Ecology would be willing to provide documentation such that the current remedial system and groundwater monitoring constitutes the most optimal combination of technologies for long-term remediation of the arsenic-impacted groundwater that could potentially lead to an eventual NFA.

To that end, Ecology offers the following additional recommendations to further assess the existing data and further support pursuit of a no further action opinion for the Site.

1. Perform statistical analyses on the well data to date to assess the existence of any decreasing data trends that may be used to forecast on a reasonable restoration timeframe and support whether a standard vs conditional POC is appropriate for the Site or not.
2. Continue all of the activities specified under receipt of an NFA under Section 8 of the current 2025 MFA Independent Cleanup Action report.
3. Terrestrial Ecological Assessment. Please complete and submit a simplified TEE⁸ for the Site and use Table 749-2⁹.

Limitations of the Opinion

1. Opinion Does Not Settle Liability with the State.

Liable persons are strictly liable, jointly, and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70A.305.040(4).

2. Opinion Does Not Constitute a Determination of Substantial Equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action a party performs is substantially equivalent. Courts make that determination. See RCW 70A.305.080 and WAC 173-340-545.

⁸ WAC 173-340-7492.

⁹ Technical Document: Terrestrial Ecological Evaluations under the MTCA, Chapter 4, February 2017.

3. State is Immune from Liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. See RCW 70A.305.170(6).

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our [Voluntary Cleanup Program web site](#).¹⁰ If you have any questions about this opinion, please contact me at (360) 489-5347 or joe.hunt@ecy.wa.gov.

Sincerely,



Joseph B. Hunt, LHG
Toxics Cleanup Program
Southwest Region Office

JH:kw

Enclosure: A – Site Description/Investigative History
 B – Documents List

cc: Mike Foget, SHN Consulting, mfoget@shn-engr.com
Jim Pelkey, Mendicino Forest Products, LLC, jpelkey@mendoco.com
Alan Wade, Trueguard LLC, a.wade@allweatherwood.com
David Weatherby, MFA, dweatherby@maulfoster.com
Tim Mullin, LHG, Ecology, tim.mullin@ecy.wa.gov
Ecology Site File

¹⁰ <https://www.ecy.wa.gov/vcp>

Enclosure A

Site Description/Investigative History

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Property Description and History

The Property is owned and operated by Mendocino Forest Products Company, LLC, doing business as Allweather Wood (AWW). The nearly 21-acre site is located in Clark County, Washington, and is approximately 1,000 feet north of the Columbia River, in section 17 of township 1 north, range 4 east of the Willamette Meridian. The Property is comprised of Clark County parcels: 71281120, 71281137, 71281141, 71281161, 71281162, 71281165, and 71281168.

Adjoining properties include the PSC Environmental Services, LLC (PSC) hazardous waste treatment, storage, and disposal facility to the north; industrial properties to the west and southeast; and undeveloped property to the east. Land in the vicinity of the site is zoned heavy industrial, except for the Steigerwald Marsh (which is part of the Steigerwald Lake National Wildlife Refuge to the east of the site) and park areas along the Columbia River. The site is in the Camas and Washougal Industrial Park, which was developed in the 1960s. The PSC facility adjacent to the site is a Resource Conservation and Recovery Act (RCRA) permitted hazardous waste management facility. A RCRA Part B permit for the PSC facility was issued in October 1992. However, activities related to corrective action have been conducted since 1980, when the facility was an "Interim Status" RCRA facility. Investigations have been performed for over three decades at the PSC facility, which has a robust monitoring well network. AWW treated wood with chromated copper arsenate (CCA) in the original retort (Retort 1) beginning in 1984. A second retort (Retort 2) was added adjacent to the first in 1993. Both retorts exclusively used CCA until February 2002, when Retort 1 was switched to alkaline copper quaternary (ACQ) preservative formulated with boric acid. Retort 2 was switched to the same ACQ formulation in January 2004. In January 2004, the chemical in Retort 1 was switched back to CCA although beginning in October 2004, both borates and the CCA formulation were used in Retort 1. Retort 2 was switched to a non-boric acid ACQ formulation in January 2006 and has been used since. Use of CCA ceased in December 2023. In 1984, a 98-foot deep water supply well was installed in the northwest corner of the Site solely for the purpose of providing water for the wood treating process. AWW subsequently obtained Water Right Permit #G 2-26638 P for use of this well for that intended purpose.

Wood-treating chemicals have been stored at two indoor tank farm areas: within the Retort building and built in 1984 without a roof although now covered and west of the Retort building and built in 2004 with a synthetic liner under a secondary containment structure. Said secondary containment area is sloped from north to south so that liquids drain south to the Retort area whereby they drop to the retort floor, which is also part of the secondary containment. The retort floor is sloped from south to north, and has a channel that allows liquids to flow east to sump D.

In 2008, AWW indicated that chemical product and rainwater was found on the secondary containment floor of this area during routine operations that occurred between 1984 and 1991. As a result, the original tank farm and retort area were roofed and the floor was coated with a rubberized sealer in 1991. In 1993, a second retort was added along with its dedicated sump C. Further, in 1997, a water stop was installed in the channel leading to sump D because of observations that groundwater was entering the area in the vicinity of

the retort footings. Also in 2008, AWW indicated that occasional minor spills of treatment chemicals occurred from the primary containment area due to operator and equipment failures from 1991 to 2000, but that these spills only flooded the secondary containment structures of the original 1984 tank farm and retort area. This resulted in diluted chemicals sitting in the channel area for as many as two days at a time. AWW also recorded four spills of chemicals on to the retort floor but within the secondary containment structure in March/June 2003 and February/April 2004.

During the same period from the late 1990s to the early 2000s, the retort door sump experienced overflows due to operator errors and equipment failures. These overflows occurred in the area where the aforementioned crack was discovered and repaired, and said overflows constitute the suspected arsenic groundwater source at the site. Although arsenic-containing chemicals were used at the property beginning in 1984, their use ceased in December 2023.

Geology and Hydrogeology

The site lies within the Willamette Lowland Aquifer system (McFarland and Morgan, 1996). Based on data from assessment work at the site, and data from the adjacent PSC facility (AMEC, 2013), there are three primary hydrogeologic units beneath the site: a shallow unconfined water-bearing zone (wbz), a semi-confining silt unit, and a lower wbz.

The shallow wbz consists of sandy fill placed on the Columbia River floodplain. The fill consists of dark yellowish-brown to dark gray, poorly sorted, fine- to medium-grained sands, and the unit contains a saturated and an unsaturated zone. This unit extends from the ground surface to the variable pre-fill elevation of the Columbia River floodplain. Based on boring logs for monitoring wells completed at the site, the thickness of the fill ranges from about 7 to 18 feet. Similar fill thicknesses were observed at the adjacent PSC site.

The upper semi-confining layer consists of a silt unit corresponding to the Columbia River floodplain surface prior to filling and development. This layer consists of dark greenish-gray to black silt with some sand. Using the depth at which the silt was encountered in Site monitoring wells, and converting the depth to absolute elevation, MFA prepared a topographic map of the top of the silt unit. The upper surface of the silt includes a conspicuous trough that trends generally west-northwest to east-southeast, with topographic lows coinciding with wells EW-5, MW-3, MW-11, MW-16, MW-12, EW-3, MW-22, MW-25, EW-7, and MW-14D. The trough is likely a swale-like feature that was present on the floodplain prior to filling. To the east of South 32nd Street, and in-line with the axis of the trough, MFA observed a swale and drainage channel with standing or flowing water (depending on the time of year and weather) and groundwater discharge that continues in an east-southeast direction. This swale is likely the remnant of the swale that continues west-northwest as the trough under the site. At monitoring well MW-3D in the northwest corner of the site, the silt lies at a depth of 11 to 26 feet below ground surface (bgs) and is 15 feet thick. At monitoring well MW-14D near the east site boundary, the silt lies at a depth of 11 to 20 feet bgs and is 9 feet thick. At both wells, the silt unit overlies the lower wbz.

At MW-3D and MW-14D, the lower wbz consists of brown, fine to coarse, subrounded to rounded, loose silty gravel and gravel with silt and is at least 30 feet thick. At the on-site water supply well installed in 1984, the lower wbz is present from 10 to 50 feet bgs, and is underlain by a deeper sandy clay confining unit from 50 to 61 feet bgs, followed by sand and silty sand to the total well depth of 98 feet bgs. The well screen is slotted from 93 to 98 feet bgs. As such, the well screen is isolated from the contaminated shallow wbz by the confining silt unit and the deeper sandy clay confining unit.

Groundwater is present in the shallow unconfined wbz at depths of 1 to 13 feet bgs, depending on the time of year and location, with an average depth of about 4.3 feet bgs. The shallow wbz groundwater gradient in August 2018, was 0.008 foot per foot (ft/ft) and trends east-northeast, with a localized depression in the water table at extraction well EW-3. Subsequent to the installation and operation of the additional extraction wells EW-5, EW-6, and EW-7, groundwater contours along the trough are influenced by the water level drawdown at the extraction wells, and become concentric around the wells. Beyond the influence of the extraction wells, the groundwater flow direction continues to be to the east.

The arsenic analytical results from the February 2025 semiannual shallow aquifer groundwater monitoring indicates that the highest dissolved arsenic groundwater concentrations occur in monitoring wells located along the axis of the aforementioned silt trough, including former MW-10 now replaced with extraction well EW-5 (2,400 micrograms per liter [ug/L]), MW-11 (710 ug/L), EW-6 (280 ug/L), MW-16 (92 ug/L), MW-12 (130 ug/L), EW-7 (65 ug/L), and MW-25 (57 ug/L). The groundwater data indicate that the trough is a preferential groundwater flow pathway from the source area to the east towards the downgradient site boundary adjacent to South 32nd Street. It is for this reason that the extraction wells were installed within the trough to maximize extraction of the most highly-contaminated groundwater.

Figure 2-1 illustrates both the well network and the elevations at the top of the silt confining unit.

Investigative/Remedial History

Past Cleanup Actions (2007-2017)

Past Site investigations have identified arsenic in shallow groundwater, which was later sourced to a cracked foundation under the main Retort 1 door sump, and which was repaired in 2007. Following identification and repair of the retort door sump release, monitoring wells MW-8 through MW-15 were installed in 2007 to begin assessing the extent of the arsenic plume. Site conditions at the time suggested that in-situ remediation methods which were designed to induce strongly reducing conditions in the groundwater, could be applied successfully.

Starting in 2008 and continuing through the present, AWW conducted a series of field pilot studies to identify appropriate in-situ technologies that might to address the elevated arsenic groundwater concentrations. The in-situ pilot tests included:

April 2008 In-situ Field Pilot Test. Utilized the zero-valent-iron-based reducing compound Adventus EHC-M. The data from this test did not support full-scale implementation.

June 2009 Bench Test and December 2009 In-situ Pilot Test. Utilized mixture of activated red mud (GeoBind) and persulfate (Klozur™). The data from this test did not support full-scale implementation.

Spring 2010 In-situ Air Sparging (AS) Field Pilot Test. The data from this test confirmed that AS successfully reduced arsenic concentrations in some wells to below the U.S. Environmental Protection Agency Maximum Contaminant Level (10.0 micrograms per liter [µg/L]). These data supported full-scale implementation of AS and MFA recommended full-scale implementation of horizontal AS at the downgradient portion of the arsenic plume (i.e., near the eastern property boundary). The intended effect of the AS system is to create a continuous zone of oxidizing groundwater that will precipitate arsenic onto the surface of oxidized iron minerals in the formation. This oxidation zone (or barrier) would significantly reduce the amount of arsenic in groundwater traveling downgradient and off site.

June 2011 AS System Implementation/Groundwater Monitoring. The system became operational (running continuously) in July 2011 and consisted of an approximately 500-foot long horizontal AS well installed adjacent and parallel to the eastern site boundary at the location shown on **Figure 2-1**. Semi-annual groundwater monitoring at the site-wide groundwater monitoring well network continued after installation of the AS well, including at three monitoring wells located on the upgradient side (MW-24 through MW-26) and three monitoring wells on the downgradient side (MW-13 through MW-15) of the AS well. In addition to monitoring for total and dissolved arsenic, DO and ORP were monitored during each sampling event. The semi-annual monitoring results indicated the AS system was not increasing DO concentrations nor significantly reducing dissolved arsenic concentrations at the downgradient wells. Based on these results, the AS system was discontinued in February 2017 but was restarted in February 2022 to run on a 30-minute on/off cycle.

Prior to the start-up, in December 2021, monitoring wells MW-31 and MW-32 were installed in the shallow wbz in December 2021 about 5 feet downgradient of the AS well. The wells were sampled on December 22, 2021 and again on February 1, 2022 just prior to system start-up with the December/February M-31 and M32 results at 25.9/20.7 ug/L and 158/196 ug/L, respectively.

Following system start-up in February 2022, the arsenic concentrations decreased slightly at MW-31, and during the last five semi-annual groundwater sampling events in 2023 through February and March 2025, ranged from 13 to 14 ug/L during the wet season (slightly less than the SSCUL), and 21 to 35 ug/L during the dry season (slightly greater than the SSCUL).

Post system start-up arsenic concentrations decreased significantly in MW-32 from 42.9 ug/L (April 2022) to 12.1 ug/L (less than the SSCUL in December 2022). During the last five semi-annual groundwater sampling events in 2023 through February/March 2025, arsenic has not been detected above the detection limit of 3 ug/L during the wet season, and arsenic concentrations have ranged from 9.2 to 13 ug/L (less than the SSCUL) during the wet season.

In June 2023, MW-33 was installed about 5 feet downgradient of the AS well to provide an immediate downgradient monitoring point along the southern half of the AS well. During five sampling events from June 2023 to February/March 2025, arsenic has not been detected above the detection limit of 3 ug/L although arsenic was detected at 22 ug/L in the further downgradient well MW-15.

Following the re-start of the AS well, semi-annual groundwater monitoring has documented a notable decrease in arsenic concentrations at downgradient wells MW-13 and MW-14. During the 2017 to February 2022 period when the AS well was not operating, the average arsenic concentration at MW-13 was 60 ug/L over 10 sampling events. Since the system re-start, the average concentration is now 33 ug/L over nine sampling events. Similarly, at MW-14, the average arsenic concentration was 55 ug/L over 10 sampling events during the non-operating period, and is now 29 ug/L over nine sampling events since system re-start. At MW-15, arsenic concentrations have averaged about 20 ug/L prior to and after the re-start of the AS well.

March 2013 Groundwater Extraction. Since former on-Site well MW-10 was located near the suspected arsenic source and generally exhibited the highest arsenic concentrations in shallow water-bearing zone (wbz) groundwater from 5-15 feet below ground surface (bgs), AWW began pumping MW-10 and using the water as process water for wood treating. In September 2018, MW-10 was abandoned and replaced with the 4-inch diameter extraction well EW-5 and which was located 5 feet east of former well MW-10.

The main objective of pumping MW-10 was to assess its ability to remove the arsenic mass in groundwater. Initially, the well was pumped at a rate of 1,000 to 2,000 gallons per day (gpd) although that was increased to about 2,000 to 4,000 gpd, and steady at 4,400 gpd from March 2016 until its abandonment in September 2018. Prior to pumping, during the 2009 to 2011 time period, dissolved arsenic concentrations at MW-10 ranged from 3,700 to 6,400 µg/L. Two years later in March 2018, it was estimated that approximately 4.5 million gallons of water and 66 pounds of arsenic mass had been removed and the dissolved arsenic concentration at MW-10 decreased steadily to 947 µg/L in February 2018. At well MW-3, located between MW-10 and the former source area, dissolved arsenic concentrations decreased from 1,000 µg/L in 2009 to 23.2 µg/L in February 2018. Pumping MW-10 continued until July 2018, when iron-bacteria fouling of the well led to the decision to abandon the well and replace it with EW-5.

In September 2015, extraction was also implemented at MW-11, located downgradient of the source area, and MW-10 where extraction had been ongoing since March 2013. As of December 2017, approximately 150,000 gallons of water had been removed, corresponding to an estimated arsenic mass of 1.33 pounds removed. Due to the low yield and corresponding low arsenic mass removal at the well, groundwater extraction at MW-11 ceased in December 2017. In June 2016, extraction was implemented at the 2-inch diameter, shallow wbz well MW-16 (screened from 4-14 feet bgs), located further downgradient of the source area. The extracted water was used as process water for wood

treating. However, due to the low yield and corresponding low arsenic mass removal at the well, extraction at MW-16 ceased in December 2017. In summary, arsenic concentration data at MW-3 and 4-inch diameter well MW-10 demonstrated that groundwater extraction at a high-yielding well was effective at removing arsenic mass and reducing arsenic concentrations in groundwater at the source area.

The current active extraction wells along the silty confining layer trench include EW-5, EW-3, EW-6, and EW-7 adjacent to the horizontal AS well. Groundwater extraction occurs during active business hours and does not occur during evenings nor on weekends. The AS well runs continuously on a 30-minute on/off cycle.

Data Gap Investigations

Beginning in 2017, MFA began addressing the four gaps identified by Ecology as described below. This section provides a brief summary of each investigation.

3.3.1 Data Gap #1: Lateral Plume Width In July 2017, four monitoring wells (MW-27 through MW-30 on Figures 2-1 through 2-3) were installed in the shallow aquifer to augment the monitoring well network to further delineate the lateral plume width (north and south margins of the plume). Since then, these and many other wells have been sampled on a semiannual basis to delineate the plume width.

North Plume Margin

- At MW-30, the arsenic concentration has ranged from less than to slightly greater than the SSCUL. Arsenic concentrations in groundwater at the site vary seasonally, with lower concentrations detected during the wet season and higher concentrations detected during the dry season. After the February 2019 wet-season sampling event, the well was only sampled during the dry season until February 2025 when it was again sampled during the wet season. The lack of wet-season data between the February 2019 and February 2025 wet season sampling events explains why all concentrations during that period are slightly higher than the SSCUL. Since all other wet-season concentrations at this well are less than the SSCUL, it is likely that the same was true during the 2020 to 2024 wet seasons.
- At MW-24, MW-29, and MW-31, the pattern is the same as at MW-30. Arsenic concentrations are less than the SSCUL during the wet season, and greater than the SSCUL during the dry season.
- At MW-13, located furthest down-gradient, the arsenic concentration is slightly greater than the SSCUL.

In summary, the north margin of the plume is generally delineated at MW-24, MW-29, MW-30, and MW-31. At MW-13, the north margin of the plume is located further north.

South Plume Margin

- At MW-27, like MW-30 above, the well was last sampled during the wet season in February 2019 when the arsenic concentration was 38.8 ug/L. The dry season concentrations since then have ranged from 23.3 to 65.5 ug/L. During the wet season sampling event in February 2025, the concentration was 17 ug/L, slightly greater than the SSCUL, and the lowest concentration to date.
- At MW-28, the arsenic concentrations are slightly greater than the SSCUL.
- At MW-26, the arsenic concentrations have generally ranged from greater than 20 to less than 50 ug/L.

In summary, at MW-27 and MW-28, the south margin of the plume is generally defined by wet season concentrations only slightly greater than the SSCUL. As shown on Figure 2-1, the trough in the silt unit at these wells slopes to the northeast towards the extraction wells. Likewise, groundwater extraction induces a groundwater flow direction from these wells towards the extraction wells, indicating that this portion of the plume is contained on site. At MW-26, the south margin of the plume lies south of this well. Since the AS well extends about 100 feet further south of MW-26 (Figure 2-1), and arsenic has not been detected at MW-33 (located immediately downgradient of the AS well), it is likely that the south extent of the plume is being treated. Since the trough in the silt unit slopes to the north towards EW-7, the plume is likely also contained by groundwater extraction.

3.3.2 Data Gap #2: Vertical Plume Delineation On December 11 and 12, 2023, MFA oversaw the installation of two lower aquifer wells, MW-3D and MW-14D, at the locations shown on Figure 2-1. MW-3D is located near the arsenic plume source area, and MW-14D is located near the downgradient edge of the plume. The wells were installed by Cascade Environmental, using a sonic drilling rig. The well construction logs are provided in Appendix A. Since installation, MW-3D and MW-14D have been sampled four times from December 2023 to February 2025.

Lower aquifer wells MW-3D and MW-14D have been sampled four times from December 2023 to February 2025, as described in Section 3. Arsenic has not been detected above the detection limit of 3 ug/L. Data gap #2 has been addressed. The data at MW-3D and MW-14D indicate the plume does not extend into the lower aquifer.

3.3.3 Data Gap #3: Off-site Groundwater Intrusion Investigation As described in Section 2.5.2, MFA began observing the South 32nd Street storm sewer in May 2024. These observations were made during periods of dry weather when water flows in the sewer from stormwater runoff would be expected to be absent and not obscure flows related to groundwater intrusion. Dry weather flows have never been observed in the North Catch Basin or North Outfall, indicating that groundwater intrusion is not occurring in the

segment of the storm sewer downgradient of the PSC site. During precipitation and stormwater runoff events, stormwater has never been observed discharging from the North Outfall, indicating that all stormwater is conveyed south and discharges at the South Outfall.

At the end of the 2023-2024 wet season, dry weather flow at the South Outfall was observed in May 2024. With the onset of the 2024-2025 wet season, dry weather flows were absent at the South Outfall in October, November, and December, 2024; dry weather flow resumed in early January, 2025.

After four days of dry weather conditions, on January 9, 2025, MFA inspected the South 32nd Street storm sewer system. Water flow was observed to flow north from the South Manhole to the North Manhole and then to the South Outfall. MFA collected water samples from the South Manhole, Middle Manhole, North Manhole, and the South Outfall to assess arsenic concentrations in the water.

It was during this sampling event that MFA observed the inlet pipe at the South Manhole leading towards Detention Facility P361, located southeast of South 32nd Street, as shown in Appendix C. MFA qualitatively (visually) assessed the water flow rate at all sample locations during the sampling event. At the South Manhole, the rate of water entering the manhole from the inlet visually appeared to be the highest of all locations where flow was observed. As the flow was traced north to the Middle Manhole, North Manhole, and South Outfall, the flow appeared to diminish and was barely perceptible at the South Outfall. If groundwater intrusion into the storm sewer was occurring along this segment of the sewer pipe, the expectation is that the flow rate would gradually increase along the flow path of the pipe rather than decrease. Since an apparent decrease in flow was observed, it suggests that the groundwater elevation was below the invert elevation of the storm sewer. These observations indicate that groundwater intrusion is not occurring. Rather, all of the observed flow appears to be originating from a location south of the South Manhole, possibly Detention Facility P361.

After two days of dry weather, on April 4, 2025, MFA sampled the South 32nd Street storm sewer a second time. Similar to the conditions observed during the January 9, 2025 sampling event, water flow was observed originating from the inlet pipe to the South Manhole and continuing north to the North Manhole and then to the South Outfall, with an apparent decrease in the flow rate along this flow path. At the South Outfall, the flow continued south about 100 feet within a broad and shallow, vegetated channel before infiltrating entirely. This channel is interpreted to be the surface expression of the trough in the silt unit observed on site. MFA collected water samples from the South Manhole, Middle Manhole, North Manhole, and the South Outfall. After two days of dry weather, on May 1, 2025, MFA sampled the South 32nd Street storm sewer a third time. Similar to the conditions observed during prior sampling events, water flow was observed originating

from the inlet pipe to the South Manhole and continuing north to the North Manhole and then to the South Outfall, but unlike prior events, the flow was very minor and barely perceptible at the South and North Manholes. There was no apparent increase or decrease in the flow rate along this flow path. At the South Outfall, the water infiltrated within about 10 feet of the outfall. Downstream of this location, the channel was dry, except for an area of apparent groundwater discharge, as described in Section 3.3.4 below. MFA collected water samples from the South Manhole, Middle Manhole, North Manhole, and the South Outfall.

2025 Results. At the South, Middle, and North Manholes, and South Outfall, where dry-weather-flow water samples were collected, as described in Section 3.3.3, MFA used a peristaltic pump and new, disposable polyethylene tubing inserted into the flowing water in manholes or outfall pipe. For all sampling events, water was pumped through a 45-micron filter and then into the sample containers provided by the laboratory.

During all sampling events, the DO content of the water was measured at each sample location using an electric water quality meter.

January 9, 2025. During the January 9, 2025 event, the DO ranged from 7.62 to 11.12 milligrams per Liter (mg/L), which is generally in the range of surface water that is in equilibrium with atmospheric oxygen. For comparison, during 112 measurements of the DO content in groundwater at downgradient monitoring wells MW-13 through MW-15 from 2007 to 2025, the DO content was less than 1 mg/L during 101 events, with a maximum concentration of 2.76 mg/L. The DO data from the storm sewer indicate surface water rather than groundwater is the source of the flow present during the sampling event.

During the January 9, 2025 sampling event, the arsenic concentrations ranged from 0.72 to 0.84 ug/L, as shown on Table 5-1. These concentrations are significantly lower than the SSCUL, and much lower than the arsenic concentrations at the downgradient wells MW-13 through MW-15, where arsenic concentrations ranged from 25 to 41 ug/L in August 2024, and 22 to 31 ug/L in February 2025. With the axis of the trough in the silt unit lying near the North Manhole, if groundwater intrusion was occurring, the expectation is that the arsenic concentration would increase along the flow path from the South Manhole to the South Outfall. This was not the case. The concentrations were essentially the same along the flow path.

During the April 4, 2025 event, the DO ranged from 8.41 to 9.38 mg/L, indicative of a surface water source for the observed flow. During the April 4, 2025 sampling event, arsenic was not detected above the detection limit of 3 ug/L in any sample.

During the May 1, 2025 event, the DO at each location ranged from 8.91 to 9.94 mg/L, again indicating a surface water source for the observed flow. During the May 1, 2025 sampling event, arsenic was not detected above the detection limit of 3 ug/L in any sample.

In summary, data gap #3 has been addressed. The combination of the source, location, and quantity of water flows observed and associated DO readings, and non-detections of arsenic or arsenic concentrations that are much less than on-site concentrations and the SSCUL indicate groundwater intrusion is not occurring.

3.3.4 Data Gap #4: Wetlands Groundwater Discharge Investigation On November 1, 2024, February 7, 2025, and May 1, 2025, MFA conducted groundwater sampling in the wetlands east of South 32nd Street to assess whether the site groundwater arsenic plume was discharging to the wetlands. Using a hand auger, MFA excavated two shallow borings designated RB1 and RB-2 in the wetlands to examine and describe the soil profile, measure the depth to groundwater, and collect a groundwater sample. Groundwater was encountered between 3 and 8 inches bgs.

At RB-1, the soil consisted of loose, very dark brown to dark gray loamy sand to the maximum boring depth of 45 inches. The boring could not be advanced further because shallow groundwater caused sand to slough into the borehole.

At RB-2, the soil consisted of loose, very dark brown to dark grayish brown loamy sand to 13 inches bgs, followed by dark gray to brown silt to the maximum boring depth of 18 inches.

The sand at each boring is interpreted to be the toe of the dredge sand fill placed by the U.S. Army Corps of Engineers, and which underlies and comprises the sandy fill shallow aquifer at the site. The silt at RB-2 is interpreted to be the underlying semi-confining silt unit corresponding to the Columbia River floodplain surface prior to filling and development. As shown on Figure 2-1, RB-1 is in line with the trough in the silt unit, and is adjacent to the channel feature that is interpreted to be the surface expression of the trough in the wetlands. Assuming the trough formerly extended east into the wetlands along the alignment of the channel to the vicinity of RB-1, such an alignment would explain why the sand unit was thicker in the deeper portion of the trough and the silt unit was not encountered at RB-1. The soil stratigraphy observed confirmed that groundwater present in the borings was representative of groundwater within the shallow sand fill aquifer, indicating that the boring locations were ideal for assessing whether the arsenic plume was discharging to the wetlands. A groundwater sample was collected from each boring.

November 2024. During the November 1, 2024 sampling event, the arsenic concentration was 4.2 ug/L at RB-1 and not detected above the detection limit of 3 ug/L at RB-2.

MFA returned on February 7, 2025, re-located RB-1 and RB-2, and confirmed the borings were still open. The depth to groundwater was 1 to 3 inches bgs. MFA collected groundwater samples from both borings. MFA used the same methods during the groundwater sampling event on February 7, 2025. MFA purged groundwater from each boring and measured water quality parameters. At RB1, the DO started at 1.00 mg/L and

decreased to 0.26 mg/L over 18 minutes. At RB-2, the DO started at 1.60 mg/L and decreased to 0.96 mg/L over 21 minutes. Again, these low DO readings are consistent with those in the shallow aquifer on site. MFA then collected the samples using the peristaltic pump and tubing. During the February 7, 2025 sampling event, the arsenic concentration was 4.9 ug/L at RB-1 and not detected above the detection limit of 3 ug/L at RB-2.

April 4, 2025. During the April 4, 2025 storm sewer sampling event, in the surface water channel leading east from the South Outfall, iron oxide staining and bacteria growth was observed on the channel bottom, and an inorganic sheen was observed on the surface of the water. All of these are indicators of shallow groundwater discharge to the channel. Specifically, in saturated wetland soils with anaerobic subsurface conditions (as indicated by the low DO content at RB-1 located about 40 feet north of the channel), iron is typically soluble in groundwater and present in a dissolved form. When the groundwater discharges to and mixes with oxygenated surface water, the dissolved iron will stimulate the growth of iron-oxidizing bacteria, resulting in the indicators described above. Given the locations of the surface water channel and nearby RB-1 in line with the preferential groundwater flow pathway in the silty unit trough on site, these indicators suggested the channel is a likely point of groundwater discharge from the sandy fill shallow aquifer to the wetlands, and an ideal location to sample for addressing data gap #4.

MFA collected a surface water sample from the downstream end of the stained bacterial growth in the channel. The surface water in the channel downstream of the South Outfall was sampled at the apparent point of groundwater discharge on April 4 and May 1, 2025. During the April 4, 2025 sampling event, arsenic was not detected above the detection limit of 3 ug/L.

May 1, 2025. MFA returned on May 1, 2025, re-located RB-1 and RB-2, and confirmed the borings were still open. The depth to groundwater was 1 to 9 inches bgs. MFA collected groundwater samples from both borings. MFA used the same methods during the groundwater sampling event on May 1, 2025. At RB-1, the DO started at 2.19 mg/L and decreased to 1.38 mg/L over 42 minutes. At RB-2, the DO started at 3.57 mg/L and decreased to 2.52 mg/L over 21 minutes. Again, these low DO readings are generally consistent with those in the shallow aquifer on site. The slightly higher DO readings compared to prior sampling events may be due to the sample date being well into the growing season when plants in the heavily vegetated wetlands are actively growing and adding oxygen to the groundwater through rhizosphere oxygenation. MFA then collected the samples using the peristaltic pump and tubing.

When MFA returned on May 1, 2025, there was no continuous surface water or flow in the channel. The minor amount of water discharging from the South Outfall was completely infiltrating within about 10 feet of the outfall. Downstream of that point the channel was dry for about 20 feet, at which point a small area of surface water ponding with iron oxide

staining, bacteria growth, and an inorganic sheen was present. There was no surface water flow, and further downstream the channel was dry. MFA collected a surface water sample from this small area of apparent groundwater discharge.

During the May 1 sampling event, the channel downstream of the South Outfall was dry for about 20 feet, at which point the small area of surface water ponding with iron oxide staining, bacteria growth, and an inorganic sheen was present and indicative of groundwater discharge. The lower DO reading is likely the result of the discharging groundwater not mixing with and being diluted by flows from the South Outfall.

During the May 1, 2025 sampling event, the arsenic concentration was 8.6 ug/L at RB-1 and 3.4 ug/L at RB-2. The surface water in the channel downstream of the South Outfall was sampled at the apparent point of groundwater discharge on April 4 and May 1, 2025. During the May 1, 2025 sampling event, arsenic was detected at a concentration of 10 ug/L.

In summary, data gap #4 has been addressed. The soil stratigraphy and DO readings at RB-1 and RB-2 indicate the groundwater samples collected from these borings are representative of groundwater within the shallow aquifer downgradient of the site. The iron oxide staining, bacteria growth, and inorganic sheen in the channel are additional indicators that groundwater within the shallow aquifer flows to and discharges to surface water in this area. The surface water samples collected from the channel provide additional relevant data that address data gap #4. The groundwater and surface water data indicate groundwater is not discharging to the wetlands with arsenic concentrations greater than the natural background concentration represented by the SSCUL.

Site-Wide Groundwater

August 2024 and February 2025 arsenic concentrations in groundwater on a site-wide basis are shown on Figures 5-1 and 5-2, respectively, and in relation to the trough in the silt unit. The data are consistent with prior wet- and dry-season sampling events: the highest concentrations originate at the source area near EW-5 and extend downgradient with decreasing concentrations along the preferential groundwater flow pathway located within the trough in the silt unit.

Arsenic Concentrations Near Source Area Arsenic concentrations in groundwater near the source area are shown on Figure 5-3.

- At EW-5 and former MW-10 (which was used for groundwater extraction but was abandoned and replaced with EW-5 in September 2018), the arsenic concentration steadily decreased over time, but included variability on the order of +/- 2,000 ug/L. Beginning in 2020, the concentration began increasing to a high of 2,400 ug/L in February 2025. Use of CCA ceased in December 2023, and Allweather Wood is not aware of any new releases or site conditions that could account for the increase since 2020.

- At MW-3, the arsenic concentration was low, and below the SSCUL in August 2022. The concentration increased above the SSCUL in 2023 and 2024, and as of February 2025, is now less than the SSCUL.
- At MW-1, the arsenic concentration is consistently above the SSCUL.
- At MW-11, just downgradient of source area, the arsenic concentration has steadily decreased over time. MW-11 was used as an extraction well beginning in September 2015. Due to low yield of groundwater and low arsenic mass removal at the well, groundwater extraction ceased in December 2017.

Arsenic Concentrations Downgradient of AS Well The AS well continues to remain effective based on trends and current arsenic concentrations in groundwater at MW-31, MW-32, and MW-33, located immediately downgradient of the AS well. At MW-31, wet-season arsenic concentrations are now less than the SSCUL. At MW-32 and MW-33, arsenic concentration are now less than the SSCUL or not detected.

Arsenic Concentrations at Downgradient Property Boundary. At the downgradient property boundary wells MW-13 through MW-15, arsenic concentrations decreased after the re-start of AS in February 2022, and remain slightly above the SSCUL. Based on the results of the investigations to address data gaps #3 and #4, groundwater with arsenic concentrations greater than the SSCUL does not extend east of South 32nd Street

Arsenic, Chromium, and Copper in Soil. In 2007 and 2008, soil samples were collected from the sandy fill shallow aquifer at borings GP-15, GP-18, GP-27B through GP-31, and MW-8 and analyzed for arsenic, chromium and copper. The results indicated that arsenic, chromium, and copper were detected in all samples but at concentration less than the MTCA Method A and B CULs.

At MW-8, located near the source area, the arsenic concentration slightly exceeded the ecological indicator concentrations (EICs) for plants and wildlife. However, at other sample locations immediately adjacent to MW-8 (GP-18 and GP-28 through GP-30 on **Figure 3-4**), the arsenic concentrations were much less than the EICs, indicating the exceedance is of limited extent.

In 2022 and 2023, soil samples were collected from the sandy fill shallow aquifer at borings B-101 through B-109, B-201 through B-205, and B-207 through B-212. The boring locations and sample results are shown on the figure and table in Appendix F of the current 2025 Cleanup Report. Arsenic was detected at concentrations exceeding the MTCA Method A CUL only at borings advanced under the retort building floor (B-109, B-202, B-204, B-205, B-207, and B-209 through B-212). At boring B102, on the south exterior side of the retort building, arsenic was detected at the MTCA Method A CUL concentration. At all other borings located outside the retort building and more distant from the source area (B-101 and B-103 through B-108), arsenic was detected at concentrations less than the CUL.

Similarly, arsenic was detected at concentrations exceeding the EICs only at borings advanced under the retort building floor or near the retort building and under existing buildings and pavement.

Based on the combined data from 2007, 2008, 2022, and 2023, the extent of arsenic exceeding the CUL or EICs has been delineated and is contained within the property interior near the source area. In addition, the soils with CUL or EIC exceedances are covered with pavement, concrete, and buildings with no ecological habitat, and will remain so into the foreseeable future. Therefore, human or ecological receptor exposure to arsenic in soil is unlikely now or in the foreseeable future.

5.4 Chromium and Copper in Groundwater Since use and release of CCA is the source of the arsenic plume, prior to and after the release, groundwater samples were analyzed for dissolved chromium and dissolved copper in addition to dissolved arsenic. The data are to date indicated that both chromium and copper were rarely detected. Detected concentrations were less than the MTCA CULs, except for one detection of chromium at MW-3 in March 2002 that slightly exceeded the CUL. Based on these data, analyses for chromium and copper ceased after 2009.

Enclosure B

Documents List

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1. Maul Foster Alongi (MFA), Independent Cleanup Report – Allweather Wood (AWW), August 4, 2025.
2. MFA, Showing of Compliance for Water Right Permit #G 2-26638 P, April 30, 2018.
3. Ecology, Review of June 10, 2016 MFA AWW Natural Background Groundwater Arsenic Proposal, July 19, 2016.
4. Ecology, Review of June 10, 2016 MFA AWW Natural Background Groundwater Arsenic Proposal, August 10, 2017.
5. MFA, Technical Memorandum - Updated Arsenic Background Groundwater Evaluation – AWW, June 10, 2016.
6. MFA, Technical Memorandum - Arsenic Background Groundwater Evaluation – AWW, November 13, 2014.
7. MFA, Technical Memorandum - Arsenic Background Groundwater Evaluation – AWW, June 10, 2016.
8. MFA, Air Sparging Workplan – AWW, August 18, 2010.
9. MFA, *Pilot Scale Testing Protocol for In-Situ Arsenic Groundwater Remediation – AWW*, November 3, 2009.
10. MFA, *Response to Ecology February 28, 2008 Opinion on Proposed Remedial Action – Trueguard LLC*, April 1, 2008.
11. MFA, *In Situ Groundwater Remediation Pilot Test Using Adventus® EHC-M™*, January 31, 2008.