THIRD FIVE-YEAR REVIEW REPORT FOR
TAYLOR LUMBER AND TREATING SUPERFUND SITE
YAMHILL COUNTY, OREGON

MAY 2022

Prepared by

U.S. Environmental Protection Agency
Region 10
Seattle, Washington

/s/ May 12, 2022

Calvin J. Terada, Division Director **Date**

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LIST OF ABBREVIATIONS & ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
BMP	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIC	Community Involvement Coordinator
CFR	Code of Federal Regulations
COC	Contaminant of Concern
DEQ	Department of Environmental Quality
DNAPL	Dense Non-Aqueous Phase Liquid
EES	Easement and Equitable Servitude
EPA	United States Environmental Protection Agency
ERRS	Emergency and Rapid Response Services
FYR	Five-Year Review
gpm	Gallons per Minute
HQ	Hazard Quotient
IC	Institutional Control
MCL	Maximum Contaminant Level
µg/L	Micrograms per Liter
mg/kg	Milligrams per Kilogram
MW	Monitoring Well
NCP	National Contingency Plan
ng/kg	Nanograms per Kilogram
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PCP	Pentachlorophenol
PPA	Prospective Purchasing Agreement
PWPO	Pacific Wood Preserving of Oregon
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RfD	Reference Dose
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
SWTS	Surface Water Treatment System
TEQ	Toxic Equivalency Quotient
UU/UE	Unlimited Use/Unrestricted Exposure

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings and conclusions of reviews are documented in FYR reports. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii)) and considering EPA policy.

This is the third FYR for the Taylor Lumber and Treating Superfund site (the Site). The triggering action for this statutory review is the completion date of the previous FYR. The FYR has been prepared because hazardous substances, pollutants or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE). The Site consists of one operable unit (OU). The OU addresses soil, subsurface soil and groundwater. This FYR Report addresses the OU.

EPA remedial project manager (RPM) Patrick Hickey led the FYR. Participants included EPA hydrogeologist Don Clabaugh, Nancy Sawka from the Oregon Department of Environmental Quality (DEQ), and Ryan Burdge and Colleen Scott from EPA support contractor Skeo. The review began on 10/28/2021.

Site Background

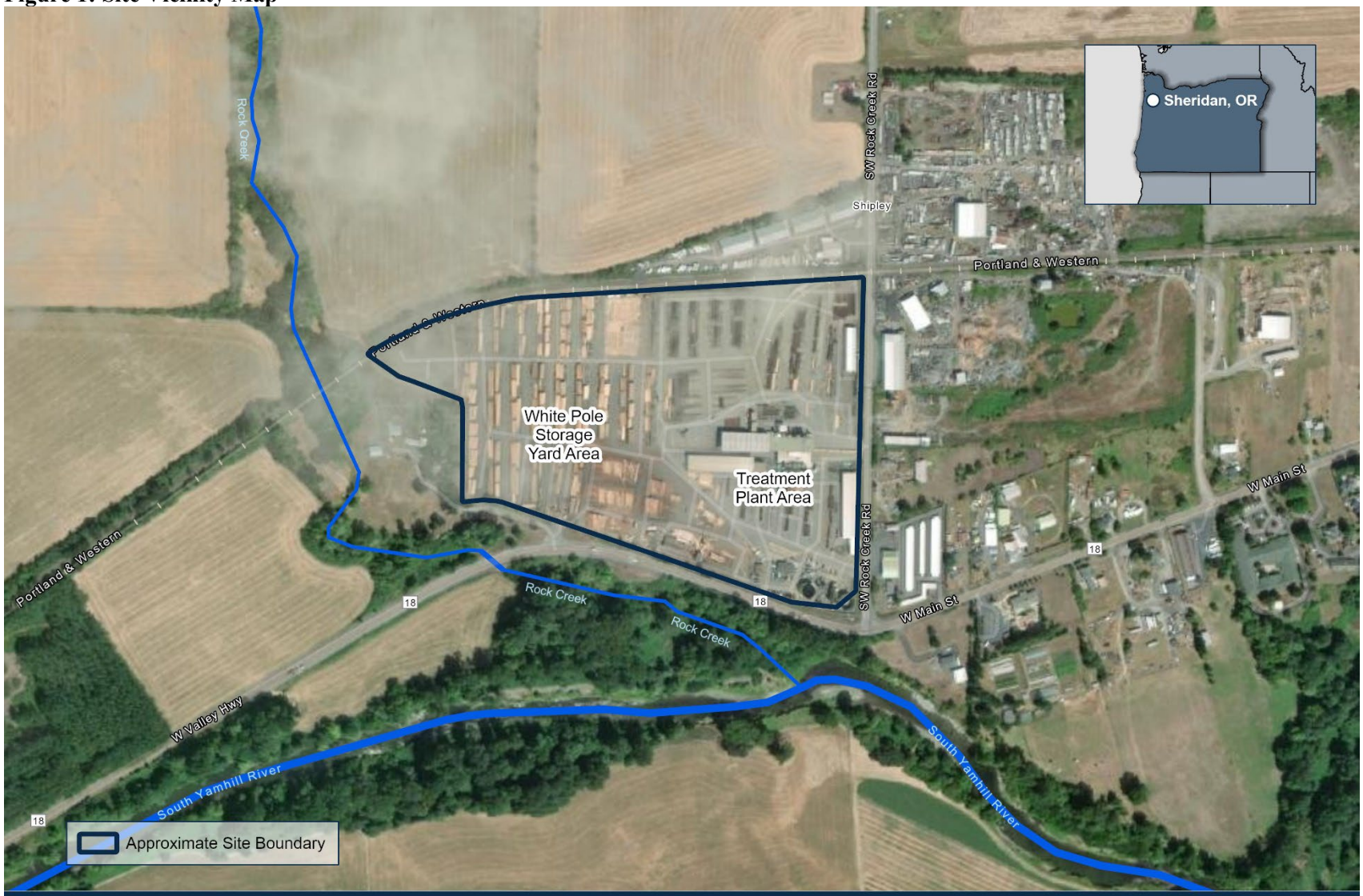
The 34-acre Site is located at 22125 Southwest Rock Creek Road, about 1 mile west of Sheridan in Yamhill County, Oregon. Taylor Lumber operated a sawmill east of the Site (East Facility) beginning in 1946 and treated Douglas fir logs at the Site (West Facility) starting in 1966. The Site consists of the West Facility, which includes the Treatment Plant Area and the White Pole Storage Yard Area. (Figure 1) The primary wood-treating chemicals included creosote, pentachlorophenol (PCP) and Chemonite (a solution of arsenic, copper, zinc, and ammonia). Site operations contaminated soil and groundwater. All operations ceased when Taylor Lumber filed for bankruptcy in 2001.

In 2002, Pacific Wood Preserving of Oregon (PWPO), now the Stella-Jones Corporation, entered into a Prospective Purchaser Agreement (PPA) with EPA and purchased the West Facility. Wood-treating operations have been ongoing at the Site since 2002 under the PPA (updated in 2011 and 2013). Stella-Jones does not assume CERCLA liability but performs operation and maintenance (O&M) work for cleanup actions taken at the Site in accordance with the PPA.

The Site is zoned for industrial uses and is expected to remain in industrial use. Current and expected future land uses in the surrounding area include recreational, residential, commercial, and industrial uses. Rock Creek flows into the South Yamhill River about 150 feet from the southern boundary of the Site. Surface water also drains via ditches toward Rock Creek and the South Yamhill River. The South Yamhill River runs through lands held in trust for the Confederated Tribes of the Grande Ronde Community of Oregon upstream of the Site. The river is an important migratory pathway for tribal fish populations. In addition, during the dry summer months the City of Sheridan supplements public water supply with river water from an intake 2.5 miles downstream of the Site.

A shallow alluvial aquifer is present beneath the Site. Historical investigations indicate groundwater occurs between 2 and 10 feet below ground surface and flows south and southeast along the relatively flat floodplain (Figure C-2). Siltstone classified as the Yamhill Formation, which is estimated to be about 2,000 feet thick, underlies the aquifer. The groundwater is classified as potable. Historically, two residential groundwater wells used for on-property watering operate within 500 feet of the Site, one upgradient to the west and one downgradient to the east. For more information, Appendix A includes a list of documents reviewed during this FYR. Appendix B includes a chronology of events that have occurred at the Site.

Figure 1: Site Vicinity Map



FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Taylor Lumber and Treating		
EPA ID: ORD009042532		
Region: 10	**State:** Oregon	**City/County:** Sheridan/Yamhill
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	**Has the Site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name: Patrick Hickey, with additional support provided by Skeo		
Author affiliation: EPA Region 10		
Review period: 10/28/2021 - 5/11/2022		
Date of site inspection: 12/1/2021		
Type of review: Statutory		
Review number: 3		
Triggering action date: 5/11/2017		
Due date *(five years after triggering action date)*: 5/11/2022		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

In 1988, EPA conducted a site inspection and groundwater assessment at the wood-treating plant as a preliminary step to listing the Site on the Superfund program's National Priorities List (NPL). EPA completed a CERCLA site inspection and a Resource Conservation and Recovery Act (RCRA) facility investigation in 1990. EPA listed the Site on the NPL in June 2001. From 2001 to 2004, EPA conducted a remedial investigation and feasibility study (RI/FS) for the Site and published its findings in May 2005. The RI identified contaminants of concern (COCs) including dioxins and arsenic in surface and subsurface soils associated with treated lumber storage, spills from treating operations and surface water runoff. PCP contamination in groundwater resulted from past drips, spills and leaks of wood-treating chemicals from aboveground storage tanks and drip pads. Human health and ecological risk assessments identified risks under industrial, residential, recreational, and tribal use scenarios (Table 1).

Table 1: Potential Human Health Exposure Routes

Exposure Media	Scenario	Exposure Pathway
Soil (on site)	Current and future industrial	Incidental ingestion, dermal contact and dust inhalation of soil and subsurface soil from working areas.
Soil (off site)	Current and future residential	Incidental ingestion, dermal contact and dust inhalation of surface soil from residential yards.
	Current and future recreational	Incidental ingestion, dermal contact and dust inhalation of surface soil from off-property ditches.
	Current and future tribal	Incidental ingestion, dermal contact and dust inhalation of surface soil from off-property ditches by tribal users.
Groundwater (on site)	Hypothetical future residential	Ingestion, dermal contact and vapor inhalation by a hypothetical resident extracting groundwater from inside or outside the barrier wall.
Groundwater (off site)	Current and future residential	Ingestion, dermal contact and vapor inhalation from residents extracting off-property groundwater.
Surface water and sediment (off site)	Current and future recreational	Dermal contact with and incidental ingestion of surface water and sediment in Rock Creek or the South Yamhill River, or ingestion of fish from these waters.
	Current and future tribal	Dermal contact with and incidental ingestion of surface water and sediment in Rock Creek or the South Yamhill River, or ingestion of fish from these waters.[a]

Notes:
[a]The Site's ecological risk assessment evaluated risks to ecological endpoints. The assessment found one instance of risk to terrestrial mammals and birds that warranted targeted cleanup of dioxins/furans from surface soil in off-property ditches.

Source: 2005 ROD, Table 4.

EPA identified the Site's COCs as arsenic in surface and subsurface soils and PCP in groundwater based on the human health and ecological risk assessments. While dioxins were also identified in surface soils at the Treated Pole Storage Area, they were determined to be co-located with arsenic and would be addressed by the existing remedial action. Arsenic was detected in groundwater, but during the RI/FS EPA determined that arsenic concentrations outside of the barrier wall were consistent with background concentrations and therefore not related to Site activities. EPA identified dense non-aqueous phase liquid (DNAPL) in groundwater during initial assessments in 1996 and 1997 and determined that removal actions taken in 1999 and 2000 were sufficient to contain the DNAPL.

Response Actions

From 1990 to 2000, EPA undertook several removal actions to limit off-property migration of contaminated surface soils and shallow groundwater. These actions are recorded in the 1999 Action Memorandum, a 2000 Action Memorandum Amendment, and the 2001 Removal Action Report. Removal actions included:

- Paved a 2-acre section of the Treated Pole Storage Area with asphalt to prevent exposure to arsenic and dioxins in surface and subsurface soils.
- Excavated contaminated soils from the southern portion of the White Pole Storage Area and adjacent ditches to prevent off-property migration and exposure to recreational and tribal users and ecological receptors.
- Constructed a subsurface soil and bentonite vertical barrier wall and paved the overlying Treatment Plant Area to contain PCP-contaminated shallow groundwater and DNAPL and prevent residential exposure.
- Constructed a groundwater extraction system within the subsurface barrier wall to provide hydraulic containment of contaminated groundwater and lower water levels to ensure the structural integrity of the overlying cap.

- Constructed a treatment system to treat collected groundwater and stormwater prior to discharge the South Yamhill River.
- Consolidated contaminated soil from previous and interim actions in containment cells in the northwest corner of the Site.

EPA determined that soil contamination at a residence directly east of the Site posed an unacceptable risk to the residents and conducted two separate removal actions. In November 2004, EPA excavated approximately 6 inches of soil and gravel contaminated with arsenic, PCP and dioxins from the front and side yards of the residence and an adjacent roadside ditch and replaced it with clean topsoil and grass. EPA removed and disposed of about 510 tons of materials at an off-site landfill. In July 2005, EPA excavated an additional 138 cubic yards of contaminated soil from an 850-foot stretch of the ditch that runs north and south along Rock Creek Road in front of the same residence. A portion of that ditch directly in front of the residence had been excavated in 2004. The material removed from the ditch was consolidated in a containment cell on the Taylor Lumber site. The consolidated contaminated soils were later addressed as part of the final remedy. Both these actions are recorded in 2004 Action Memorandum and 2005 Trip Report.

Oregon DEQ issued a National Pollution Discharge Elimination System (NPDES) permit to PWPO in December 2004 to discharge treated stormwater runoff and extracted groundwater via outfall 003 to a drainage ditch that routes the water to the South Yamhill River. Figure 2 shows the locations of the stormwater outfalls.

EPA issued a Record of Decision (ROD) for the Site on September 30, 2005. The ROD set cleanup levels for arsenic in soil and PCP in groundwater (Table 2) and established the following remedial action objectives (RAOs):

- Prevent migration of DNAPL and contaminated groundwater outside the vertical barrier wall.
- Restrict human exposure to groundwater with contaminant concentrations that exceed federal drinking water standards both inside and outside the barrier wall.
- Minimize future migration of contaminated groundwater to adjacent surface water (Rock Creek, South Yamhill River) to protect ecological receptors.
- Reduce or eliminate human exposure through direct contact (incidental soil ingestion, skin contact, or inhalation of dust) with contaminated soils that exceed cleanup levels.
- Reduce or eliminate risks to ecological receptors from contaminated soils in ditches.

Remedial components required by the ROD include:

- Excavation of contaminated soils with on-property consolidation under a cap or off-site disposal.
- Continued operation of the stormwater treatment system.
- Continued O&M activities for the subsurface vertical barrier wall system at the Site, including continuing extraction of groundwater from within the barrier wall and treatment by the stormwater treatment system.
- Replacement of the existing 4.6-acre asphalt cap, which covers the soils contained inside the existing slurry wall, with a more durable low-permeability cap to eliminate human exposure by direct contact with contaminated soils.
- Long-term monitoring of groundwater.
- Implementation of institutional controls for land use and groundwater use.

Table 2: Site COCs and Cleanup Levels, by Media

COC	Level	Media	Basis
Arsenic	159 mg/kg	Surface and subsurface soil	Risk-based value for industrial worker scenario
PCP	1.0 µg/L	Groundwater	Maximum contaminant level (MCL)

Notes:
Cleanup of soils is driven by human health risk from arsenic and dioxins. The extent of the remedial action was guided by arsenic cleanup levels and a cleanup level for dioxins was not set. Because dioxins are co-located with arsenic, it follows that the remedy will also concurrently address dioxin contamination.

Source: 2005 ROD.

mg/kg = milligrams per kilogram
µg/L = micrograms per liter

Status of Implementation

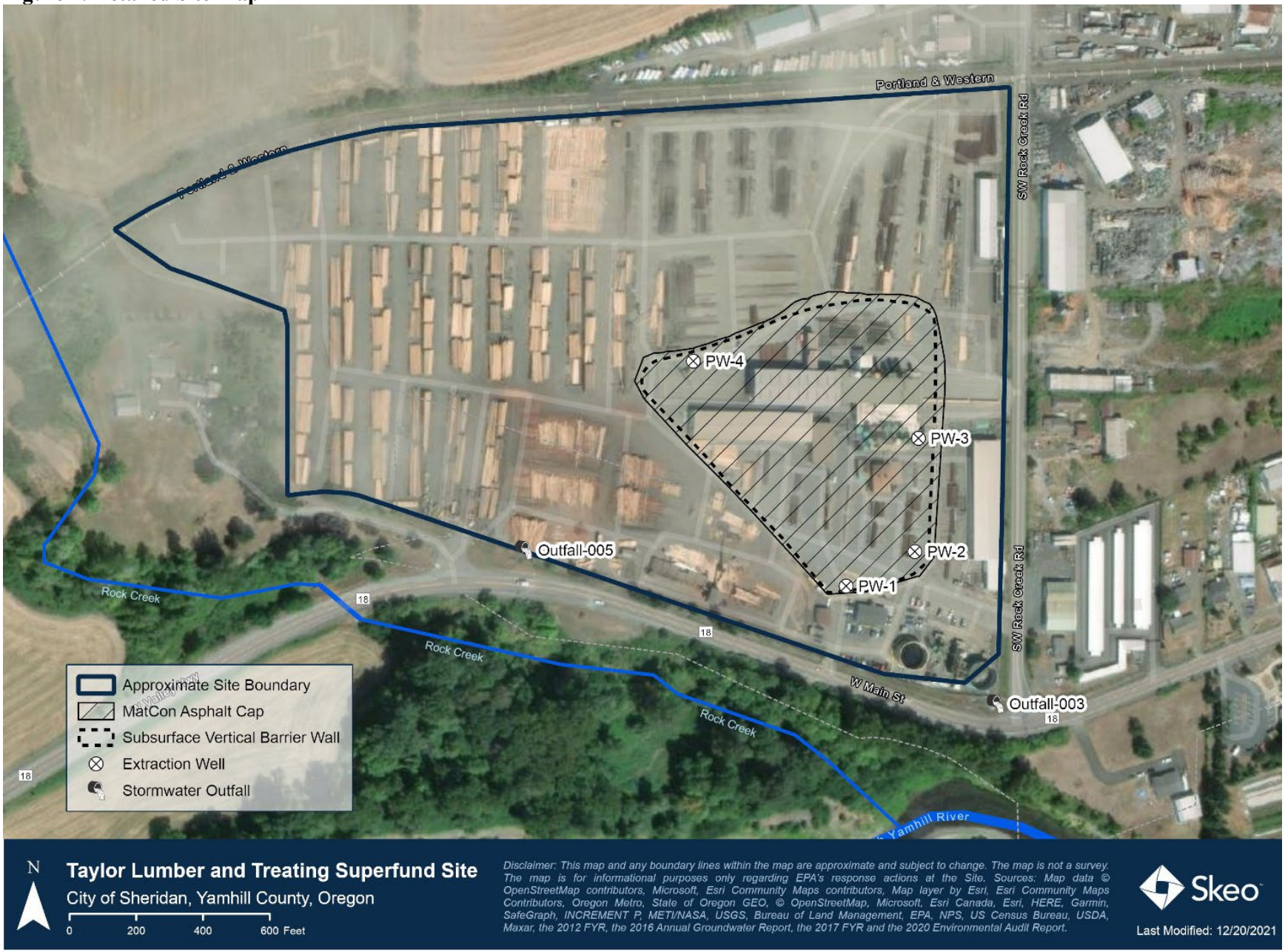
After finalizing the remedial design in December 2006, EPA began the remedial action in April 2007. EPA excavated nearly 15,700 cubic yards of contaminated soils from nearly 5 acres of the Site. In addition, approximately 2,300 cubic yards of soil was excavated from roadside ditches adjacent to the Site and from two ditches flowing to the South Yamhill River. With the exception of soils within the 4.6-acre capped area, all contaminated soils exceeding cleanup levels – including those soils contained in the historical soil containment cells on the northwest part of the Site – were disposed offsite at an appropriately permitted landfill. Post-excavation confirmation soil sampling and laboratory analysis verified achievement of the ROD's arsenic cleanup goal for soil of 159 milligrams per kilogram (mg/kg).

The remedy also included groundwater extraction and stormwater collection and treatment. Groundwater and stormwater are treated in the same system. Treatment includes oil-water separation, a flocculant-sedimentation system to remove the metals and suspended solids, and a granulated activated carbon system to remove PCP. At the time, EPA determined that the vertical barrier wall, in conjunction with groundwater extraction and treatment, was effective for hydraulic containment and would prevent DNAPL and PCP-contaminated groundwater from migrating outside the barrier wall. In 2009, EPA and Oregon DEQ developed an O&M Plan for the subsurface barrier wall, MATCON asphalt cap, and water treatment system. While the barrier wall is passive and requires little maintenance, the plan includes monitoring the integrity of the barrier wall to assess its long-term effectiveness.

To impede stormwater infiltration into the area within the barrier wall, EPA replaced the existing asphalt cap with a more durable, low-permeability proprietary material in 2007. The 4-inch-thick MatCon cap achieves a permeability of no greater than $1x10^{-8}$ centimeters per second. Oregon DEQ inspects the MatCon cap annually to ensure its integrity.

Groundwater monitoring is conducted by Oregon DEQ at a minimum of once every five years to assess the effectiveness of the vertical barrier wall in controlling the migration of DNAPL and PCP-contaminated groundwater to the surrounding area. EPA permanently abandoned some groundwater monitoring wells that had been sampled during site investigations, but were determined to no longer be necessary for long-term monitoring and were located where the MatCon cap was to be installed. Twenty-six monitoring wells and piezometers remain in the network, in addition to four extraction wells.

Figure 2: Detailed Site Map



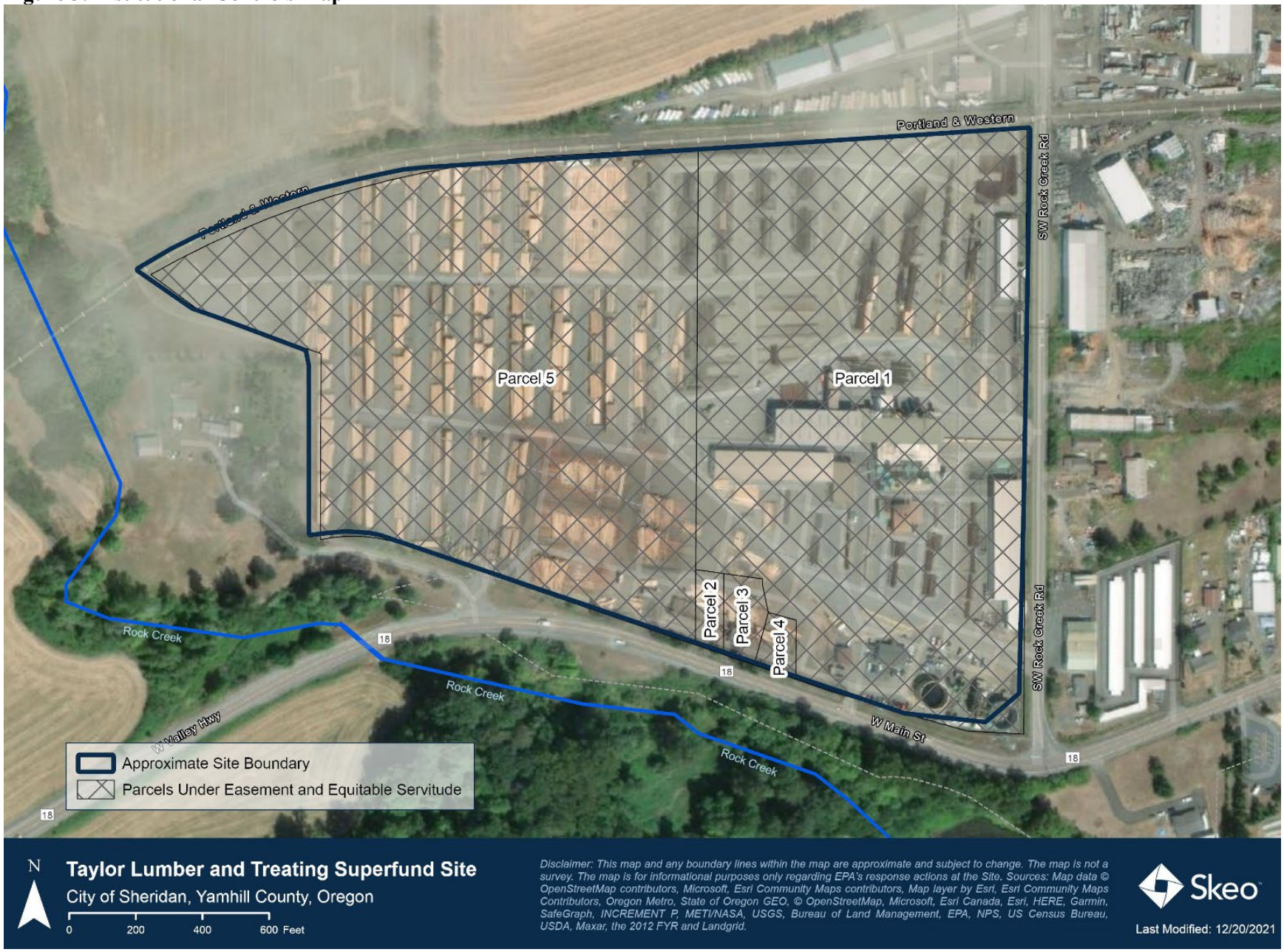
Institutional Controls (IC) Review

The ROD calls for institutional controls to restrict land and groundwater use. PWPO surveyed the Site and provided updated property information to EPA and Oregon DEQ in 2011. The parties prepared an Easement and Equitable Servitude (EES) for the property that establishes institutional controls as required by the ROD (Table 3 and Figure 3). PWPO recorded the EES on the property in July 2011.

Table 3: Summary of Planned and/or Implemented Institutional Controls (ICs)

Media, Engineered Controls, and Areas That Do Not Support UU/UE Based on Current Conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Groundwater	Yes	Yes	Parcel 1, 2, 3, 4 and 5 (Figure 3)	Restrict installation of groundwater wells and groundwater use.	Easement and Equitable Servitude, July 2011
Soil	Yes	Yes	Parcel 1, 2, 3, 4 and 5 (Figure 3)	Restrict any activities that could damage the MatCon cap. Prohibit non-industrial use of the property.	Easement and Equitable Servitude, July 2011

Figure 3: Institutional Controls Map



Systems Operations/Operation and Maintenance (O&M)

EPA determined that the remedy was operational and functional in September 2009. Stella-Jones continues to carry out O&M activities related to the MatCon cap maintenance and the surface water treatment system (SWTS), following the 2009 Site O&M Plan, the 2010 Long-term Groundwater Monitoring and Reporting Plan and the SWTS O&M Plan, with oversight from Oregon DEQ, and will continue to submit annual environmental audit reports to EPA for as long as the company operates at the Site. As stated in the 2011 Easement and Equitable Servitude document, all proposed soil excavation projects on the property must be submitted and approved by Oregon DEQ, and a Soil Management Plan to be developed as needed. Oregon DEQ is responsible for MatCon cap inspections and groundwater sampling.

MatCon Cap
Stella-Jones maintains the MatCon cap in accordance with the 2009 Site O&M Plan and notifies Oregon DEQ of any damages or requests to modify the cap. Damages are defined as gouges that exceed ¾ inches in depth or smooth depressions more than 1 inch in depth. Oregon DEQ conducts annual inspections to assess the cap's condition and integrity. A Stella-Jones environmental services manager conducts weekly inspections. Stella-Jones performs a complete sweeping of the cap at least once per month and repaints the line delineating the bentonite barrier wall once per year (frequency changed in 2017 from twice per year). During the FYR period, Stella-Jones made more than a dozen minor repairs to the cap. No major repairs were made.

Stella-Jones performed several additional maintenance actions during the FYR period. In 2020, Stella-Jones completed several major multi-year water line, discharge line and curbing projects. Despite drainage improvements, Stella-Jones has observed ponding in the White Pole Storage Area resulting in overflow of an estimated 1,000 gallons of water, mud and gravel onto the MatCon cap that should be draining to the west outfall. The company added a drain to redirect the flow to a southwest swale with Oregon DEQ approval.

Groundwater Extraction System
In 2010, EPA and Oregon DEQ developed a Long-term Groundwater Monitoring and Reporting Plan. The plan calls for annual monitoring of wells associated with the Site and two residential wells used for outdoor watering (Figure 4). Residential well RW-02 was subsequently found to be damaged and no longer in use, and was removed from the sampling program. Sampling was conducted annually from 2011 to 2016. The plan was then modified to call for sampling every five years. The next sampling is expected in the spring of 2022.

Stella-Jones continues to collect and treat groundwater from inside the subsurface barrier wall and discharge it in accordance with its NPDES permit. Daily, weekly and quarterly maintenance inspections of the groundwater extraction system are conducted by an environmental services manager. Stella-Jones conducts weekly tests to evaluate flow rates for all four extraction wells and provides quarterly records as required. Stella-Jones replaced extraction well PW-4 in 2018 and the pump for the same well in February 2019. Extraction well flow rates typically range from 0.05 gallons per minute (gpm) to 0.4 gpm.

Extracted groundwater is transferred to and treated in the Site's SWTS, which includes flocculation-sedimentation to remove suspended solids and metals, and activated carbon filtration to remove PCP, and other organic and petroleum-based compounds used in the wood treating process.

Stormwater Monitoring
The Site's SWTS O&M Plan was first issued in 2012. A revised version, issued in July 2014, included checklists for documenting routine inspections. Stella-Jones continues to conduct annual and routine inspections of the conveyance and treatment system components over the course of several months, in accordance with the O&M Plan, to ensure that all components of the conveyance system are operating properly, and debris is removed as needed to prevent obstructions. Two system upsets occurred during the 2016-2017 winter season due to ice blockages. Stella-Jones installed system enhancements in response to these upsets, as well as a new 500,000-gallon stormwater retention tank to improve drainage capacity. The SWTS O&M Plan was updated in 2018 to reflect these additions.

System effluent is sampled according to the NPDES permit requirements. No exceedances were noted during this FYR period.

Best Management Practices Plan
Stella-Jones and Oregon DEQ submitted a best management practices (BMP) Plan in May 2012 (with minor revisions in August 2014 and September 2018). The BMP Plan includes routine inspections of the water conveyance systems at the Site and documentation of any corrective actions. Stella-Jones noted and addressed several minor leaks in 2018 and 2019. Stella-Jones is in compliance with BMP requirements.

III. PROGRESS SINCE THE PREVIOUS REVIEW

This section includes the protectiveness determinations and statements from the previous FYR Report.

Table 3: Protectiveness Determinations/Statements from the 2017 FYR Report

OU #	Protectiveness Determination	Protectiveness Statement
1	Protective	The remedy is protective of human health and the environment, and the environment and exposure pathways that could result in unacceptable risks are being controlled.

The 2017 FYR Report did not identify any issues that impacted protectiveness. Two findings that were considered to not affect current and/or future protectiveness were identified in the 2017 FYR: 1) continued elevated PCP concentrations in MW-25S; and 2) during the previous FYR site inspection, participants could not locate MW-17S. These findings are discussed further in Data Review and Technical Assessment. EPA is determining a course of action to address these concerns.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Community Involvement and Site Interviews

A public notice was made available by a newspaper posting in the *Newburg Graphic* and as an online banner for the publication on February 2, 2022. It stated that the FYR was underway and invited the public to submit any comments to EPA. The results of the review and the report will be made available at the Site's information repository, Sheridan Public Library, located at 142 NW Yamhill Street in Sheridan, Oregon. The press notice is available in Appendix D.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date. The interviews are summarized below. The full interview forms are included in Appendix E.

Nancy Sawka (Oregon DEQ) reported the remedy is working well. The cleanup and maintenance activities are working, and that these activities (cap maintenance and groundwater extraction/treatment) might need to continue indefinitely before cleanup goals are met. She noted the MatCon cap appears to be in good condition and performing well with minor maintenance and repairs.

Andy Whisenhunt (Plant Manager), Reonsha Sullivan (Environmental Manager) and Rick Williams (EHS Supervisor) from Stella-Jones each completed the Facility Owner/Operator and O&M interview forms. Each person stated that the facility and remedy performance are both working well and that the Site has not affected the surrounding community. They confirmed that there is a continuous on-site O&M presence due to the nature of the treatment plant's operations, and that staff members follow all requirements outlined in the PPA for the MatCon cap and the groundwater extraction system. They highlighted improvements to the stormwater treatment system and wastewater treatment system during the review period to optimize O&M efficiency.

In January 2022, EPA held a conference call with a representative of the Grand Ronde tribe to discuss the Site. During the call, the RPM overviewed the site status and explained the FYR process. The tribe noted an interest in any additional work that might occur at the Site and a desire to hear about any potential impacts to cultural resources. Following the call, EPA shared a summary of the Site status and a copy of the 2017 FYR via email.

Data Review

Groundwater monitoring data are collected once every five years, and the last monitoring event was in 2017 after completion of the last FYR. Oregon DEQ adjusted the sampling to every five years after the 2017 annual monitoring event. The next sampling is scheduled to be performed in Spring of 2022 but will not be completed prior completion of this FYR.

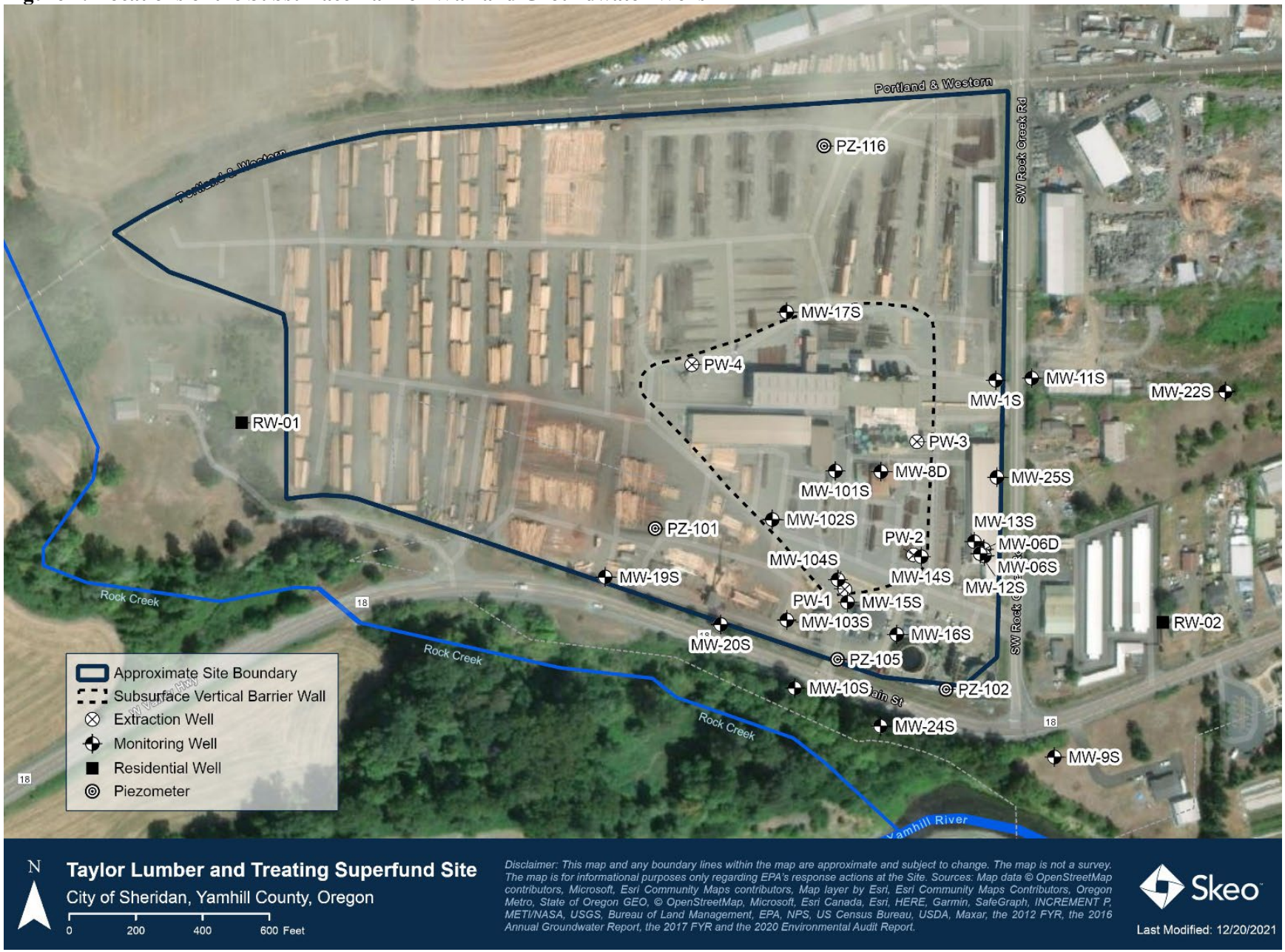
EPA's hydrogeological analysis of available data suggests that groundwater flow may not be fully contained within the barrier wall, based on the following findings:

- There are insufficient measurements of groundwater elevation northwest of the barrier or within the barrier, since pumping well measurements are not accurate unless well efficiency and the drawdown cone of depression are known.
- The potentiometric map (Figure C-2) does not depict a depression in the groundwater flow path that coincides with the perimeter of the wall.
- Contour lines within the barrier wall are not perpendicular to the perimeter line and suggest that contaminated groundwater is not isolated but flowing outside the barrier.

In addition, elevated PCP concentrations persist in well MW-25S, located outside the barrier wall and at the property line (Figures 4 and C-3). The PCP concentration at MW-25S (191 µg/L/49.3 µg /L (duplicate sample[1])) in 2017 represents an increase from 2016 (158 µg/L) and is comparable to the 2011 and 2012 concentrations, 230 and 200 µg/L respectively, and suggesting residual source material and principal threat waste may remain outside the vertical barrier wall and possibly beyond the site property. No data are available from wells MW-22S or RW-2. Further, data from MW-15S (2.86 µg/L PCP) and MW-16S (3.58 µg/L PCP) indicate that the groundwater plume is not contained within the vertical barrier wall due to the concentrations outside of the barrier wall exceeding cleanup levels.

[1] MW-25S had a duplicate field sample taken. The analysis of the two samples resulted in concentrations exceeding 30% relative percent difference. The reported concentrations for that well are considered to be estimates. The cause of the difference is related to matrix interferences and associated challenges with the laboratory analysis.

Figure 4: Locations of the Subsurface Barrier Wall and Groundwater Wells



Site Inspection

The site inspection took place on December 1, 2021. Participants included Patrick Hickey from EPA, Nancy Sawka from Oregon DEQ, Ryan Burdge and Colleen Scott from EPA support contractor Skeo, and Environmental Manager Reonsha Sullivan, EHS Supervisor Rick Williams and Plant Manager Andy Whisenhunt from Stella-Jones. The purpose of the inspection was to assess the protectiveness of the remedy. The completed site inspection checklist is included in Appendix F. Site inspection photos are included in Appendix G.

Participants met in the Stella-Jones conference room and walked around the perimeter of the MatCon asphalt cap. The Stella-Jones representatives noted a yellow line marking the subsurface vertical barrier wall had been repainted in July 2021 but was faded in high-traffic portions of the facility. Bubbles were present on the surface of the cap in some areas. Stella-Jones representatives stated that MatCon had taken samples in areas with bubbles and did not find any structural issues. Stella-Jones appears to have located MW-17S, which had not been found during the 2017 FYR, with a metal detector. The well is presumed to be about 1 foot below ground surface in a graveled area. Participants also observed the locations of other monitoring wells, the extraction wells, the drip pad and the stormwater treatment system. EPA expects to determine additional response actions by September 2024.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Question A Summary:

No, the remedy is not functioning as intended. Construction of the remedial action is complete, and additions to the Site's 2009 O&M Plan for the MatCon area and the 2012 SWTS O&M Plan have been approved and are being implemented fully. Institutional controls are in place and effective for all areas of the property and are tailored to the use restrictions specified in the decision documents, however, as discussed below, the contaminated groundwater plume may have migrated off property into areas where institutional controls are not currently in place. Stella-Jones meets the obligations set by the 2011 PPA Amendment to collect and treat groundwater from inside the subsurface barrier wall, maintain the existing low-permeability MatCon cap, implement a BMP Plan and submit annual environmental audit reports to EPA for as long as Stella-Jones operates on the property. Oregon DEQ is responsible for MatCon cap inspections and groundwater sampling.

PCP contamination persists at MW-25S, located outside the barrier wall and at the property line, and concentrations increased in 2017, with no subsequent sampling. Data suggest residual source material and principal threat waste remain uncontained on the Site and do not indicate decreasing trends towards cleanup levels in the groundwater plume. Therefore, EPA believes sources of COCs remain at Site that have not been adequately addressed. Further, the groundwater monitoring network does not adequately characterize conditions east and southeast of MW-25S and it is likely that contamination observed in MW-25S has migrated off-site. In addition, EPA hydrogeological analysis indicates that contaminated groundwater is not being isolated sufficiently within the vertical barrier wall. Overall, EPA believes migration of contaminants is uncontrolled and poses an unacceptable risk to human health and the environment. To address these concerns, EPA intends to sample the area and fully characterize the nature and extent of contamination, including identifying whether there are any drinking water wells with contaminants above MCLs. If necessary, EPA will implement additional response actions.

Long-term groundwater monitoring has not been conducted since 2017 due to lack of state funding and a subsequent recommendation by Oregon DEQ to lessen the sampling frequency. EPA intends to require continued annual sampling to better assess remedy performance, progress towards RAOs and to monitor site conditions.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels and RAOs used at the time of the remedy selection still valid?

Question B Summary:

RAOs for the Site are not valid. The RAO to "*Minimize future migration of contaminated groundwater to adjacent surface water (Rock Creek, South Yamhill River) to protect ecological receptors*" does not clearly establish a goal for the restoration of groundwater and may be revised following additional site investigations.

Toxicity data and cleanup levels for the Site are still valid and protective. Site conditions have not significantly changed since EPA issued the 2005 ROD. However, the ROD notes that during the dry summer months, the City of Sheridan supplements public water supply with river water from an intake 2.5 miles downstream of the Site. Surface water is currently not sampled. EPA will assess the need for surface water sampling when fully characterizing the nature and extent of contamination.

Although the ROD did not identify a cleanup level for dioxins, the 2017 FYR Report assessed the protectiveness of the remedy due to the EPA toxicity change in 2012. A detailed dioxin analysis is available in Appendix H. Although the maximum concentration of dioxins left in place at the Site slightly exceeds the current industrial screening level and results in a Hazard Quotient of 1.088, this is a conservative estimate based on one sample and assumes long-term industrial exposure. The remaining samples did not exceed screening levels and would equate to a Hazard Quotient less than 1. Institutional controls ensure that land use remains industrial at the Site. One residential property with elevated dioxin concentrations was later resampled and found concentrations close to background levels. Sampling at a second residential property did not result in dioxins exceeding the residential screening level. Based on this review, EPA has determined that dioxins in on- and off-site soils do not pose an unacceptable risk.

The soil remedy addressed contamination above risk-based concentrations for industrial land use. The Site remedy removed substantial quantities of contaminated soil and replaced these areas with clean gravel. Contaminated soil which is likely a continuing source of COCs to groundwater remain within the barrier wall under a low-permeability cap. The industrial risk-based cleanup goal for arsenic in soil of 159 mg/kg is below the current EPA industrial soil screening level of 480 mg/kg, so the soil cleanup goal remains valid.[2] The low-permeability MatCon cap impedes the infiltration of stormwater into the area of groundwater encompassed by the barrier wall. The cap protects people from direct contact with contaminated soils within the barrier wall. The cleanup goal for PCP in groundwater of 1 µg/L is based on the federal MCL, which remains unchanged.[3]

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No, no other information has come to light that could call into question the protectiveness of the remedy.

[2] EPA Regional Screening Levels – Generic Tables: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables. Accessed 12/21/2021.
[3] National Primary Drinking Water Regulations: https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations#one. Accessed 12/22/2021.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the FYR:
None.

Issues and Recommendations Identified in the FYR:

OU: 1	**Issue Category:** Remedy Performance			
	Issue: Concentrations of PCP in groundwater remain above the MCL. MW-25S exceeds the MCL/RAOs on the eastern edge of the Site and due to its proximity to the residential area is likely to pose risks to human health.			
	Recommendation: Define the full nature and extent of groundwater contamination, including whether there are currently any residential wells in use with contaminants above MCLs by implementing a supplemental Remedial Investigation and focused Feasibility Study to evaluate the current site characteristics and remedy, and assess the need for additional remedial actions to address unacceptable exposures, and to restore groundwater throughout the plume. If necessary, execute a ROD amendment or ESD to modify the remedy.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
Yes	Yes	EPA	EPA	9/30/2024

OU: 1	**Issue Category:** Institutional Controls			
	Issue: Though institutional controls preventing the use of contaminated groundwater are in place and effective on the property, the contaminated groundwater plume may have migrated to areas where ICs are not in place.			
	Recommendation: Determine whether additional ICs are needed			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	EPA	EPA	9/30/2024

OU: 1	**Issue Category:** Remedy Performance			
	Issue: A May 2021 hydrogeological analysis of the 2017 data suggests that the subsurface barrier wall is not containing contaminated groundwater effectively.			
	Recommendation: Reevaluate groundwater conditions and determine if modifications are needed to the subsurface barrier wall system.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	EPA	EPA	9/30/2023

OU: 1	Issue Category: Monitoring			
	Issue: The groundwater monitoring frequency was changed from annual to once every five years after the 2017 monitoring event. Additionally, surface water monitoring is not conducted as part of the monitoring plan.			
	Recommendation: Assess the groundwater monitoring frequency, determine whether surface water monitoring should be conducted and update the Long-term Groundwater Monitoring and Reporting Plan to ensure data is being collected on a frequency sufficient to support evaluation of the performance of the remedy and achievement of the RAOs.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	EPA	EPA	9/30/2024

OTHER FINDINGS

Two findings that do not affect current and/or future protectiveness were identified during the FYR:

- Confirm the location of MW-17S and make it operable and accessible, if possible. Alternatively, install another upgradient monitoring well if MW-17S cannot be returned to operation.
- The RAO to "*Minimize future migration of contaminated groundwater to adjacent surface water (Rock Creek, South Yamhill River) to protect ecological receptors*" does not clearly establish a goal for the restoration of groundwater. EPA will assess and revise the RAOs following additional site investigations.

VII. PROTECTIVENESS STATEMENT

Sitewide Protectiveness Statement
Protectiveness Determination: Not Protective
Protectiveness Statement: The remedy for the Taylor Lumber Site is not protective because migration of contaminants is uncontrolled and poses an unacceptable risk to human health and the environment. Concentrations of PCP in groundwater remain above the MCL. MW-25S exceeds the MCL/RAOs on the eastern edge of the Site and due to its proximity to the residential area is likely to pose risks to human health. Monitoring trends indicate that the groundwater performance standards will not be met in the foreseeable future. In addition, sources on the Taylor Lumber Site may be contributing to groundwater contamination. The following actions need to be taken to ensure protectiveness: EPA intends to sample the area and fully characterize the nature and extent of contamination to determine whether additional response actions are needed.

VIII. NEXT REVIEW

The next FYR Report for the Taylor Lumber and Treating Superfund site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

Annual Groundwater Monitoring Report (2017). Apex Companies LLC. Taylor Lumber and Treating Superfund Site, Sheridan, Oregon. May 30, 2017.

Environmental Audit Report (2018). Prepared for Stella-Jones Corporation by Maul Foster & Alongi, Inc. July 2019.

Environmental Audit Report (2019). Prepared for Stella-Jones Corporation by Maul Foster & Alongi, Inc. January 2020.

Environmental Audit Report (2020). Prepared for Stella-Jones Corporation by Maul Foster & Alongi, Inc. January 2021.

Final Record of Decision, Taylor Lumber and Treating Superfund Site, Sheridan, Oregon. EPA Region 10. September 2005.

First Five-Year Review Report, Taylor Lumber and Treating Superfund Site, Sheridan, Oregon. EPA Region 10. May 2012.

Groundwater Monitoring Work Plan Former Taylor Lumber Site Sheridan, Oregon. Oregon DEQ. 2013

Listing Site Inspection Report for Taylor Lumber and Treating, Inc., Sheridan, Oregon. 3 Volumes. EPA Region 10. March 1990.

Long-Term Groundwater Monitoring and Reporting Plan, Taylor Lumber and Treating Superfund Site. EPA Region 10. March 2010.

MatCon 2017 Annual Inspection Report for the Taylor Lumber Superfund Site. Oregon DEQ. August 2017.

MatCon 2018 Annual Inspection Report for the Taylor Lumber Superfund Site. Oregon DEQ. June 2018.

MatCon 2019 Annual Inspection Report for the Taylor Lumber Superfund Site. Oregon DEQ. October 2019.

MatCon 2020 Annual Inspection Report for the Taylor Lumber Superfund Site. Oregon DEQ. September 2020.

RI/FS Report, Taylor Lumber and Treating Superfund Site. Remedial Investigation Volume I and II, Baseline Risk Assessment Volume III, Feasibility Study Volume IV. CH2MHill 2004

Resource Conservation and Recovery Act Facility Investigation Workplan Taylor Lumber & Treating, INC. Sheridan, Oregon. Sweet-Edwards/EMCON 1991. EPA Region 10

Site Inspection Report for Taylor Lumber and Treating. INC. Sheridan, Oregon. 1988. EPA Region 10

Second Five-Year Review Report, Taylor Lumber and Treating Superfund Site, Sheridan, Oregon. EPA Region 10. May 2017.

Storm Water Treatment System Operation and Maintenance Plan, Pacific Wood Preserving of Oregon. Prepared by Belunes Consulting, Inc. February 2012.

Taylor Lumber Removal Site Trip Report, TDD: 04-11-0001, August 2005. EPA Region 10

Taylor Lumber and Treating Superfund Site Operation and Maintenance Plan. Prepared by CH2M Hill. October 2009.

Action Memorandum: Request for a Time-Critical Removal Action, Taylor Lumber and Treating Superfund Site. 2004.

APPENDIX B – SITE CHRONOLOGY

Table B-1: Site Chronology

Event	Date
Log treating operations began at the facility	1966
EPA discovered contamination at the property	August 1, 1979
EPA completed an NPL listing site inspection	1990
EPA completed a time-critical removal action	September 1999 – September 2000
EPA listed the Site on the NPL	June 14, 2001
EPA initiated an off-site removal action at a residential property	November 21, 2004
Oregon DEQ issued a NPDES Waste Discharge Permit to PWPO	December 29, 2004
EPA completed a removal action in an off-site drainage ditch	July 28, 2005
EPA completed the RI/FS for the Site EPA issued the ROD for the Site	September 30, 2005
EPA completed the remedial design – Final Design Basis Report, Construction Quality Assurance Plan, Soil Sampling and Analysis Plan, Construction Schedule and Final Design Specifications and Drawings	December 2006
Remedial action started	April 6, 2007
On-site construction started	May 15, 2007
First annual inspection of the MatCon cap	August 11, 2008
EPA issued Site's Preliminary Close-Out Report Site's remedy achieved Construction Completion milestone	September 24, 2008
EPA completed Emergency and Rapid Response Services (ERRS) trench drains replacement	November 20, 2008
EPA ERRS published the Emergency Response and Removal Site Evaluation Report and the Removal Action Report	March 2009
EPA approved the Remedial Action Final Construction Report	April 2, 2009
EPA approved the Low Permeability Asphalt Cap Operation and Maintenance Plan	August 10, 2009
EPA determined the remedy was operational and functional	September 30, 2009
Site Operation and Maintenance Plan	October 2009
Long-Term Groundwater Monitoring and Reporting Plan Final Remedial Action Report	March 2010
Effective date of amended PPA (Amendment to Agreement and Covenant not to Sue, Docket CERCLA 10-2002-0034; PWPO and EPA)	May 26, 2011
Effective date of amended PPA (PWPO and Oregon DEQ)	June 7, 2011
Property owner recorded Easement and Equitable Servitude	July 29, 2011
Sitewide Ready for Anticipated Reuse Certification	August 25, 2011
PWPO Final Storm Water Treatment System Operation and Maintenance Plan	February 3, 2012
PWPO Final 2012 Environmental Audit Report	April 26, 2012
PWPO Final BMP Plan	May 4, 2012
EPA issued the first FYR Report for the Site	May 15, 2012
Contractor completed the stiffness test of the MatCon cap	January 2013
McFarland Cascade (now Stella-Jones) purchased property	November 2013
Oregon DEQ completed the assessment of the bunk storage system on the MatCon cap	November 6, 2014
EPA issued the second FYR Report for the Site	May 11, 2017

APPENDIX C – SITE MAPS

Figure C-1: Facility Map and Monitoring Well Locations

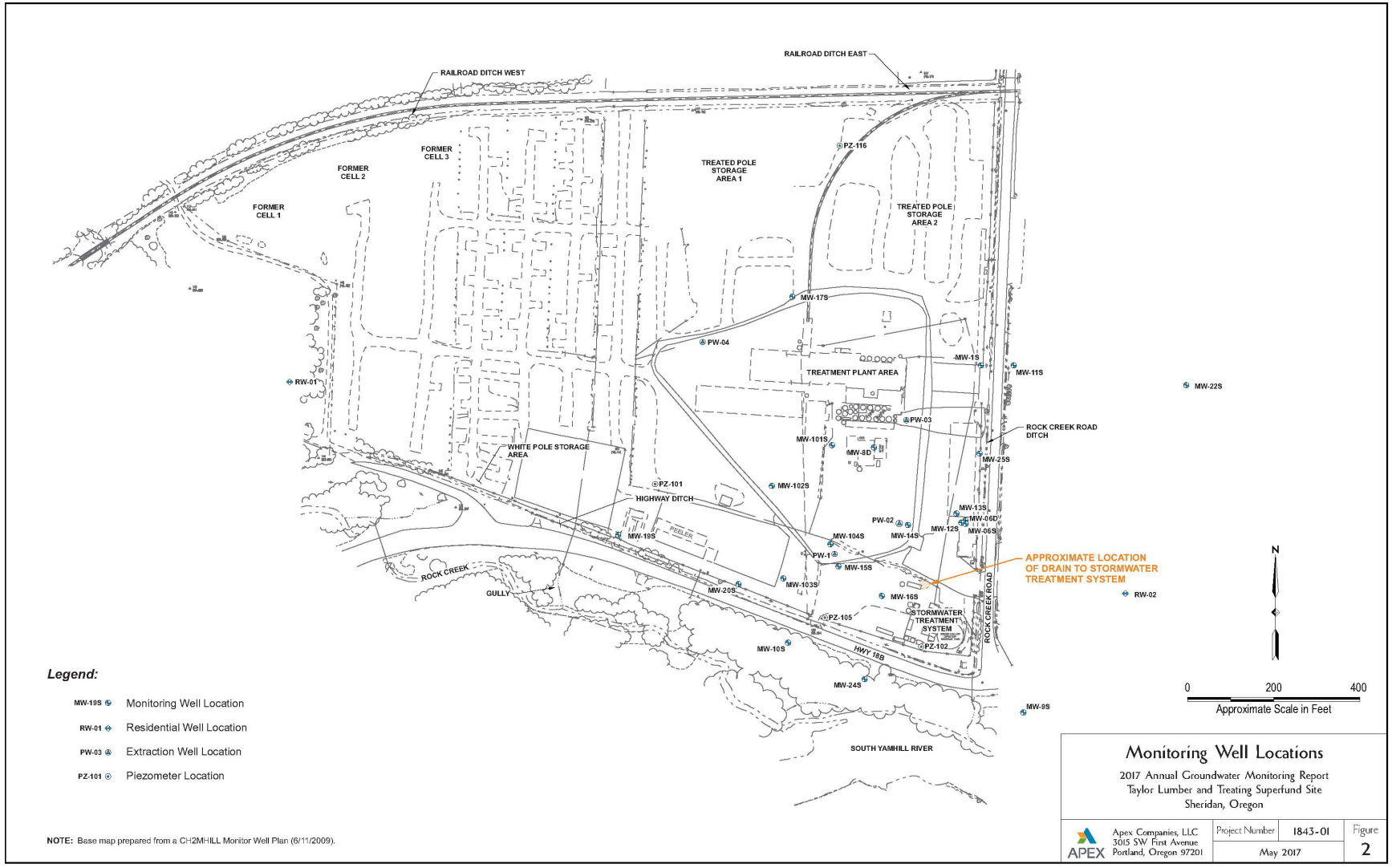


Figure C-2: Groundwater Elevation Contour Map – 2017

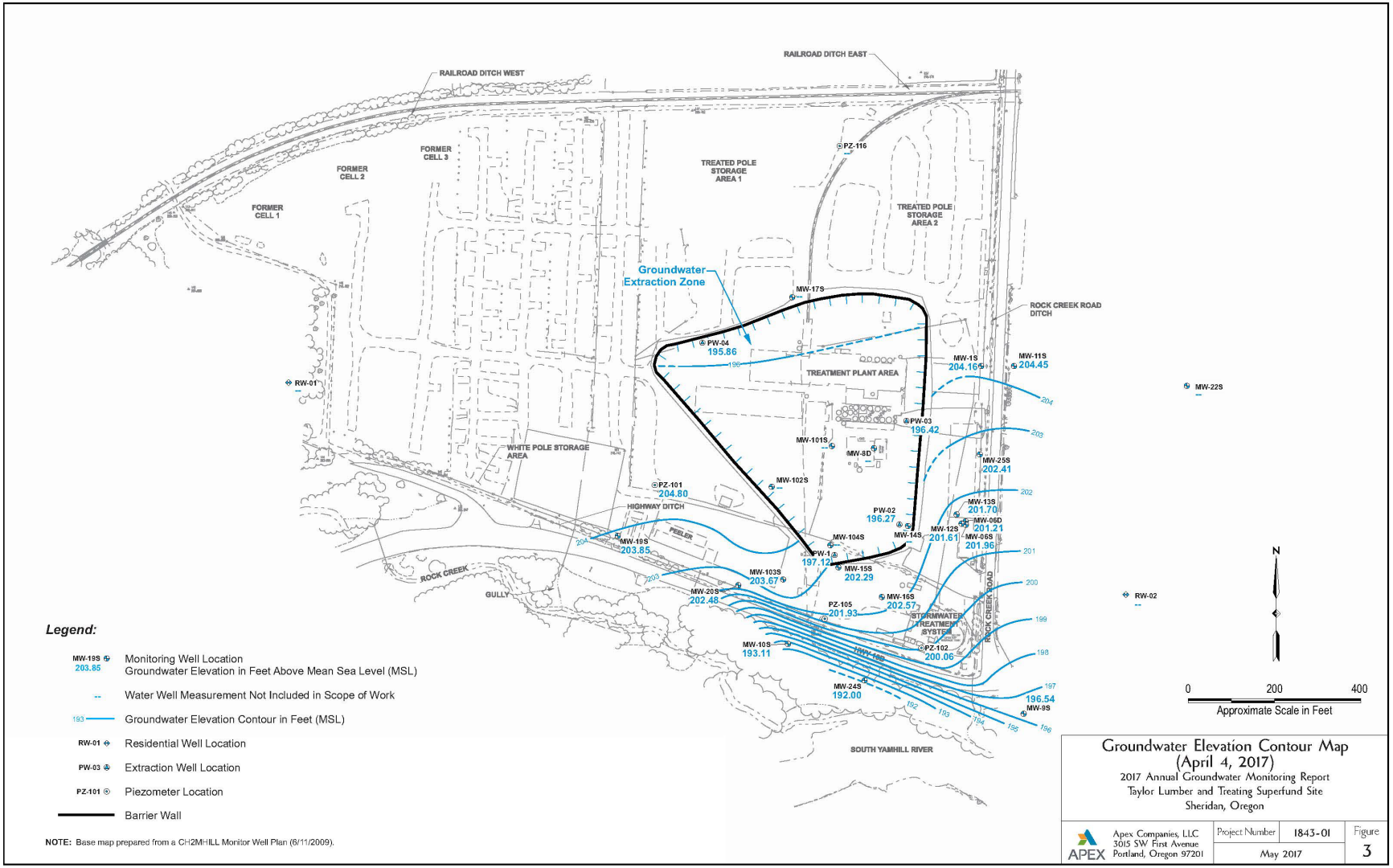
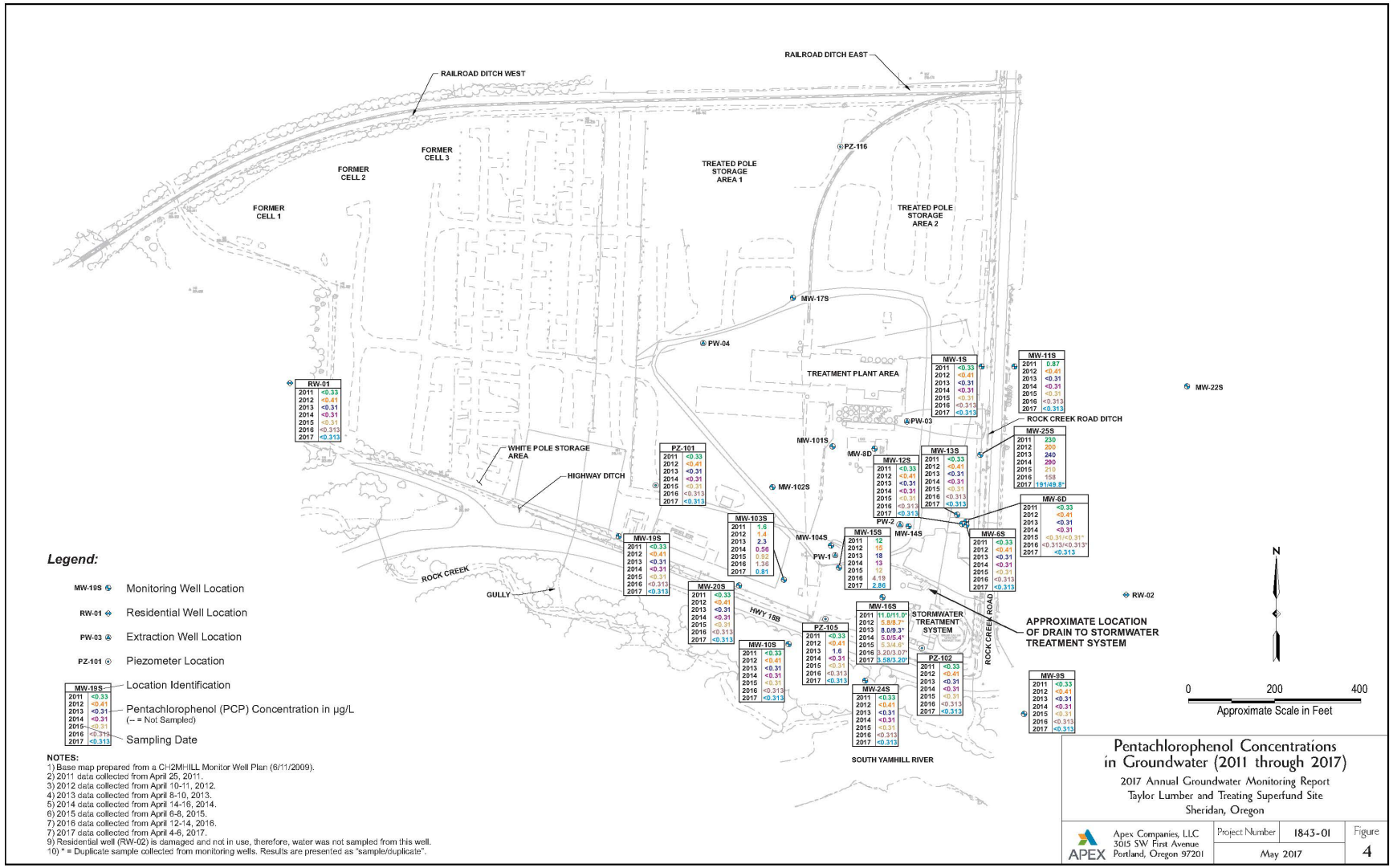


Figure C-3: PCP Concentration Map, 2011 to 2017



APPENDIX D – PRESS NOTICE

EPA United States Environmental Protection Agency

EPA Reviews Cleanup at Taylor Lumber and Treating Superfund Site in Sheridan – Public Input Welcome

The third Five-Year Review of the environmental cleanup at the Taylor Lumber and Treating Superfund Site is underway. This site is located in Sheridan, Oregon. EPA must review Superfund sites every five years when contaminants remain on site to ensure that the cleanup continues to protect human health and the environment.

Taylor Lumber and Treating was a wood-treating facility that operated from about 1946 to 2001 using wood-treating chemicals, such as creosote and pentachlorophenol, which contaminated soil and groundwater at the site. Soil was removed, a cap was installed over the impacted area, and a groundwater treatment system is in place and currently operating. The property is now owned and operated by McFarland Cascade Holdings (Stella-Jones Corporation) who manufactures treated wood utility poles and railway ties.

Feedback welcome: You may know information about the site that would be helpful to our review team. If you have observations, information, or concerns about EPA's review, please contact Patrick Hickey, Project Manager at 800-424-4372 ext. 6295, or 206-553-6295. More information and documents related to this site are available at: **https://www.epa.gov/superfund/taylor-lumber**.

Submit comments: By email to: **hickey.patrick@epa.gov**
or, by mail: Patrick Hickey, MS 12-D12-1, U.S. EPA Region 10, 1200 Sixth Avenue, Suite 155, Seattle, WA 98101.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EPA Reviews Cleanup at Taylor Lumber and Treating Superfund Site in Sheridan.
PUBLIC INPUT WELCOME
More information and documents related to this are available. If you have observations, information, or concerns about EPA's review, please contact us by going here:
https://www.epa.gov/superfund/taylor-lumber.
DAILY NEWS WHERE YOU LIVE
Beaverton Hillsboro Pinevile
Clackamas Lake Oswego Sandy
Canby Madras Sellwood
Columbia Co. Milwaukie Sherwood
Estacada Molalla Tigard
Forest Grove Newberg Tualatin
Gladstone Oregon City West Linn
Gresham Portland Wilsonville
King City Portland SE Woodburn
Happy Valley Portland SW
SPECIAL INTEREST
Biz Trib Public Notices City Club
FM 101 KKL Wheels Offroad Corner


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APPENDIX E – INTERVIEW FORMS

TAYLOR LUMBER AND TREATING SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: Taylor Lumber and Treating	
EPA ID: ORD009042532	
Interviewer name: Ryan Burdge	**Interviewer affiliation:** Skeo
Subject name: Nancy Sawka	**Subject affiliation:** Oregon DEQ, Cleanup Program
Subject contact information: Nancy.sawka@deq.oregon.gov, 503-706-6735	
Interview date: 12/10/21	**Interview time:** N/A
Interview location: Home Office	
Interview format (circle one): In Person Phone Mail (Email) Other:	
Interview category: State Agency	

1. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?

   The project seems to be a success. The cleanup and maintenance activities are working, and the current owner seems to be diligent with the BMPs. It is likely that these activities (cap maintenance and groundwater extraction/treatment) will need to continue indefinitely before cleanup goals are met.

2. What is your assessment of the current performance of the remedy in place at the Site?

   Good. Based on past data and information from the owner, the remedy appears to be working as intended. The MatCon cap appears to be in good condition and performing well with minor maintenance and repairs. DEQ will be conducting groundwater monitoring in February 2022. This will give us a more recent opportunity to evaluate the continued effectiveness of the remedy.

3. Are you aware of any complaints or inquiries regarding site-related environmental issues or remedial activities from residents in the past five years?

   I was assigned as the DEQ project manager for the site on October 1, 2019, after the former project manager, Norman Read, retired. I am not aware of any complaints or inquiries regarding site-related environmental issues or remedial activities since that time.

4. Has your office conducted any site-related activities or communications in the past five years? If so, please describe the purpose and results of these activities.

   DEQ inspects the MatCon Cap every year to assure that it is being maintained and remains effective. The current owner notifies and obtains DEQ approval prior to completing projects on the site that require breaching and/or repairs of the cap.

5. Are you aware of any changes to state laws that might affect the protectiveness of the Site's remedy?

   No.

6. Are you comfortable with the status of the institutional controls at the Site? If not, what are the associated outstanding issues?

   DEQ is comfortable with the status of the ICs.

7. Are you aware of any changes in projected land use(s) at the Site?

   No.

8. Do you have any comments, suggestions or recommendations regarding the management or operation of the Site's remedy?

   None at this time. We are reviewing and plan to implement EPAs recommendations and additions to the long-term groundwater monitoring plan as long as funding is available.

9. Do you consent to have your name included along with your responses to this questionnaire in the FYR report?

   Yes.

TAYLOR LUMBER AND TREATING SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: Taylor Lumber and Treating	
EPA ID: ORD009042532	
Interviewer name: Ryan Burdge	**Interviewer affiliation:** Skeo
Subject name: Nancy Sawka	**Subject affiliation:** Oregon DEQ, Cleanup Program
Subject contact information: Nancy.sawka@deq.oregon.gov. 503-706-6735	
Interview date: 12/29/21	**Interview time:** N/A
Interview location: Home Office	
Interview format (circle one): In Person Phone Mail (Email) Other:	
Interview category: O&M Contractor	

1. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?

   The project seems to be a success. The cleanup and maintenance activities are working, and the current owner seems to be diligent with the BMPs. It is likely that these activities (cap maintenance and groundwater extraction/treatment) will need to continue for quite some time into the future before contaminants will be reduced to below cleanup goals.

2. What is your assessment of the current performance of the remedy in place at the Site?

   Based on the last groundwater monitoring event in 2017, the remedy is effective. PCP in groundwater did not appear to be migrating beyond the barrier wall to the south towards the Yamhill River or to the east under Rock Creek Road. DEQ's contractor will be conducting groundwater monitoring in February 2022 and the effectiveness of the remedy will be re-evaluated at that time.

3. What are the findings from the monitoring data? What are the key trends in contaminant levels that are being documented over time at the Site?

   Based on the last monitoring event in 2017, PCP contaminant trends in the groundwater appear to be stable or decreasing over time.

4. Is there a continuous on-site O&M presence? If so, please describe staff responsibilities and activities. Alternatively, please describe staff responsibilities and the frequency of site inspections and activities if there is not a continuous on-site O&M presence.

   The current property owner and occupant, Stella Jones Corporation (formally McFarland Cascade Holdings, Inc.), is a continued presence on the site and responsible for O&M of the MatCon asphalt cap, the groundwater extraction system and the stormwater collection and treatment system as follows:

   a. MatCon Cap is inspected weekly by a qualified and trained person, is swept clean and repaired as needed. The yellow demarcation line identifying the barrier wall boundary is painted annually. Inspection forms and checklists of inspection and maintenance activities performed over each year are completed and provided to DEQ and EPA in the annual Environmental Audit Report (EAR) required to be submitted by February 1st of the following year.
   b. Weekly inspections and quarterly flow rates are completed on the groundwater extraction system by a qualified and trained person. Repairs and/or tweaks to the system are made as needed. Inspection forms and checklists of inspection results and maintenance activities are provided in the annual EAR.

c. Annual inspection and cleanout is conducted for the stormwater treatment system. Daily, monthly, and weekly inspections are completed on various parts of the stormwater treatment system components and conveyance system and repairs are made as needed. Discharge is monitored under a DEQ NPDES permit. Inspection, maintenance, and general functioning of the system is report in the EAR.

5. Have there been any significant changes in site O&M requirements, maintenance schedules or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.

   There have been no known significant changes.

6. Have there been unexpected O&M difficulties or costs at the Site since start-up or in the last five years? If so, please provide details.

   There have been no known unexpected O&M difficulties or cost.

7. Have there been opportunities to optimize O&M activities or sampling efforts? Please describe changes and any resulting or desired cost savings or improved efficiencies.

   Unknown.

8. Do you have any comments, suggestions or recommendations regarding O&M activities and schedules at the Site?

   No.

9. Do you consent to have your name included along with your responses to this questionnaire in the FYR report?

   Yes.

TAYLOR LUMBER AND TREATING SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: Taylor Lumber and Treating	
EPA ID: ORD009042532	
Interviewer name: Ryan Burdge	**Interviewer affiliation:** Skeo
Subject name: Andy Whisenhunt	**Subject affiliation:** Stella-Jones Plant Manager
Subject contact information: awhisenhunt@stella-jones.com	
Interview date: 12/14/21	**Interview time:** 9 a.m.
Interview location: Sheridan, Oregon	
Interview format (circle one): In Person Phone Mail (Email) Other:	
Interview category: Facility Owner/Operator and O&M	

1. What is your overall impression of the project, including cleanup, maintenance, and reuse activities (as appropriate)?

   To my knowledge – the project went well and being maintained.

2. What is your assessment of the current performance of the remedy in place at the Site?

   Going well.

3. What have been the effects of the Site on the surrounding community, if any?

   None that I am aware of.

4. Do you feel well-informed regarding the Site's activities and remedial progress? If not, how might EPA convey site-related information in the future?

   Yes.

5. What are the findings from the monitoring data? What are the key trends in contaminant levels that are being documented over time at the Site?

   DEQ does all the monitoring.

6. Is there a continuous on-site O&M presence? If so, please describe staff responsibilities and activities. Alternatively, please describe staff responsibilities and the frequency of site inspections and activities if there is not a continuous on-site O&M presence.

   Staff on site 24/7 – maintenance performed as required – in an emergency, contact the Plant Manager and the EHS Supervisor.

7. Have there been any significant changes in site O&M requirements, maintenance schedules or sampling routines since start-up or in the last five years? Please describe changes and impacts.

   In the last five years, there have been no significant changes.

8. Have there been unexpected O&M difficulties or costs at the Site since start-up or in the last five years? If so, please provide details.

   No.

9. Have there been opportunities to optimize O&M activities or sampling efforts? Please describe changes and any resulting or desired cost savings or improved efficiencies.

   New storage tank – greater capacity – new treating wastewater evaporator – improve efficiencies.

10. Are you aware of any complaints or inquiries regarding environmental issues or the remedial action from residents since implementation of the cleanup?

    None.

11. Do you have any comments, suggestions or recommendations regarding O&M activities and schedules at the Site?

    None.

12. Do you consent to have your name included along with your responses to this questionnaire in the FYR Report?

    Yes.

TAYLOR LUMBER AND TREATING SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: Taylor Lumber and Treating	
EPA ID: ORD009042532	
Interviewer name: Ryan Burdge	**Interviewer affiliation:** Skeo
Subject name: Reonsha Sullivan	**Subject affiliation:** Stella-Jones, Environmental Manager
Subject contact information: rsullivan@stella-jones.com / 253-552-1072 x5487	
Interview date: 12/14/2021	**Interview time:** 11:15 a.m.
Interview location: Tacoma, Washington	
Interview format (circle one): In Person Phone Mail (Email) Other:	
Interview category: Facility Owner/Operator and O&M	

1. What is your overall impression of the project, including cleanup, maintenance, and reuse activities (as appropriate)?

   The cleanup project and maintenance are going well. Any minor repairs are completed in compliance with the PPA, and all major repairs are reported and corrected according to the PPA. The O&M Plan has been implemented and is being maintained by on-site personnel.

2. What is your assessment of the current performance of the remedy in place at the Site?

   The remedy is performing as expected, with no major issues that would question the integrity of the cap.

3. What have been the effects of the Site on the surrounding community, if any?

   There have been no community issues.

4. Do you feel well informed regarding the Site's activities and remedial progress? If not, how might EPA convey site-related information in the future?

   Yes.

5. What are the findings from the monitoring data? What are the key trends in contaminant levels that are being documented over time at the Site?

   DEQ has been tasked with conducting monitoring/sampling of the wells, but Stella-Jones receives a copy of those reports. The most recent sampling event was conducted in April 2017 and the findings were as follows. The sampling event confirms that PCP is not migrating south towards the South Yamhill River and detected PCP concentrations in MW-15S were the lowest concentrations that has been observed since monitoring began. The trend plots for wells MW-15S, MW-16S, MW-103S and PZ-105 were either stable or decreasing and the PCP concentrations in groundwater in wells MW-10S, MW-24S and MW-9S were all non-detect. Trend plots for wells MW-1S and MW-11S confirmed that PCP in groundwater was not migrating beyond the site barrier wall and to the east under Rock Creek Road. MW-25S has historically maintained the highest PCP concentration since its initial sampling. The concentration of PCP detected during the April 2017 event represented a slight increase as compared to the April 2016 concentration. The slightly higher concentration in MW-25S is still consistent with an overall downward trend in the well and does not indicate a change in site conditions.

6. Is there a continuous on-site O&M presence? If so, please describe staff responsibilities and activities. Alternatively, please describe staff responsibilities and the frequency of site inspections and activities if there is not a continuous on-site O&M presence.

   Yes, there is a continuous on-site O&M presence. Facility personnel follow all O&M requirements outlined in the PPA for the asphalt cap and groundwater extraction system. Some of those activities include: conducting weekly visual inspections of the cap, well vaults and piping; special inspections when there is a site incident, as required; conduct annual inspections; submit annual inspection reports; submit a Corrective Action Plan for major repairs when major repairs are identified; make and document minor repairs as needed; immediately cleanup spills within 24 hours of detection; conduct street sweeping of the asphalt cap as needed and annually; repair/replace inoperable equipment or systems within 14 days; and conduct weekly visual inspections to confirm that water is being pumped through effluent lines.

7. Have there been any significant changes in site O&M requirements, maintenance schedules or sampling routines since start-up or in the last five years? Please describe changes and impacts.

   No, there have been no major changes to the O&M requirements.

8. Have there been unexpected O&M difficulties or costs at the Site since start-up or in the last five years? If so, please provide details.

   No, there have been no unexpected difficulties or costs implementing the O&M Plan.

9. Have there been opportunities to optimize O&M activities or sampling efforts? Please describe changes and any resulting or desired cost savings or improved efficiencies.

   There have been no changes to O&M activities or sampling efforts. We have installed new equipment to improve efficiency to our stormwater system and wastewater treatment system.

10. Are you aware of any complaints or inquiries regarding environmental issues or the remedial action from residents since implementation of the cleanup?

    No, I am not aware of any complaints, etc. regarding the cleanup effort or remedy.

11. Do you have any comments, suggestions or recommendations regarding O&M activities and schedules at the Site?

    No.

12. Do you consent to have your name included along with your responses to this questionnaire in the FYR Report?

    Yes.

TAYLOR LUMBER AND TREATING SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: Taylor Lumber and Treating	
EPA ID: ORD009042532	
Interviewer name: Ryan Burdge	**Interviewer affiliation:** Skeo
Subject name: Rick Williams	**Subject affiliation:** Stella-Jones, EHS Supervisor
Subject contact information: rwilliams@stella-jones.com	
Interview date: 12/14/21	**Interview time:** 9:20 a.m.
Interview location:	
Interview format (circle one): In Person Phone Mail (Email) Other:	
Interview category: Facility Owner/Operator and O&M	

1. What is your overall impression of the project, including cleanup, maintenance, and reuse activities (as appropriate)?

   I think the facility is managed very well, from what I have read in document pertaining to project and clean up, I think it was handled very well and processes in place are working well. The containment area and facility are well maintained.

2. What is your assessment of the current performance of the remedy in place at the Site?

   It is performing very well.

3. What have been the effects of this Site on the surrounding community, if any?

   None that I am aware of.

4. Do you feel well-informed regarding the Site's activities and remedial progress? If not, how might EPA convey site-related information in the future?

   Yes

5. What are the findings from the monitoring data? What are the key trends in contaminant levels that are being documented over time at the Site?

   Oregon DEQ does all of the monitoring from monitoring wells located at our facility. This was my first meeting where we discussed the results of previous testing.

6. Is there a continuous on-site O&M presence? If so, please describe staff responsibilities and activities. Alternatively, please describe staff responsibilities and the frequency of site inspections and activities if there is not a continuous on-site O&M presence.

   The facility has staff on site 24/7 due to the nature of our business, they have the responsibility of monitoring treating systems and operations, planned and regular maintenance is performed as required. In the event of emergency maintenance or other emergency they are required to notify the Plant Manager and the EHS Supervisor.

7. Have there been any significant changes in site O&M requirements, maintenance schedules or sampling routines since start-up or in the last five years? Please describe changes and impacts.

   In the last five years, there have been no significant changes.

8. Have there been unexpected O&M difficulties or costs at the Site since start-up or in the last five years? If so, please provide details.

   No.

9. Have there been opportunities to optimize O&M activities or sampling efforts? Please describe changes and any resulting or desired cost savings or improved efficiencies.

   The new storage tank at stormwater has allowed greater storage capacities during major storm events, allowing better efficiencies. The new treating wastewater evaporator has improved efficiencies from the previous style.

10. Are you aware of any complaints or inquiries regarding environmental issues or the remedial action from residents since implementation of the cleanup?

    None.

11. Do you have any comments, suggestions or recommendations regarding O&M activities and schedules at the Site?

    None.

12. Do you consent to have your name included along with your responses to this questionnaire in the FYR Report?

    Yes.

APPENDIX F – SITE INSPECTION CHECKLIST

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST

I. SITE INFORMATION

Site Name: Taylor Lumber and Treating	**Date of Inspection:** 12/01/2021
Location and Region: Sheridan, Oregon, Region 10	**EPA ID:** ORD009042532
Agency, Office or Company Leading the Five-Year Review: EPA	**Weather/Temperature:** 60°F, sunny

Remedy Includes: (check all that apply)

- ☐ Landfill cover/containment
- ☐ Access controls
- ☒ Institutional controls
- ☒ Groundwater pump and treatment
- ☒ Surface water collection and treatment
- ☐ Other: _____
- ☐ Monitored natural attenuation
- ☒ Groundwater containment
- ☒ Vertical barrier walls

Attachments: ☐ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (check all that apply)

1. **O&M Site Manager** — Andy Whisenhunt (Name) | Plant Manager (Title) | 12/14/2021 (Date)
   Interviewed ☐ at site ☒ at office ☐ by phone Phone: _____
   Problems, suggestions ☐ Report attached: Appendix E

2. **O&M Staff** — Reonsha Sullivan (Name) | Environmental Manager (Title) | 12/14/2021 (Date)
   Interviewed ☐ at site ☒ at office ☐ by phone Phone: 253-552-1072 x5487
   Problems/suggestions ☐ Report attached: Appendix E

   Rick Williams (Name) | EHS Manager (Title) | 12/14/2021 (Date)
   Interviewed ☐ at site ☒ at office ☐ by phone Phone: _____
   Problems/suggestions ☐ Report attached: Appendix E

3. **Local Regulatory Authorities and Response Agencies** (i.e., state and tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices). Fill in all that apply.

   Agency Oregon DEQ
   Contact Nancy Sawka (Name) | Project Manager (Title) | _____ (Date) | 503-378-5075 (Phone No.)
   Problems/suggestions ☐ Report attached: Appendix E

   Agency Confederated Tribes of Grande Ronde
   Contact Torey Wakeland (Name) | Interim Ceded Lands Program Manager (Title) | _____ (Date) | 503-879-2288 (Phone No.)
   Problems/suggestions ☐ Report attached: Appendix E

4. **Other Interviews** (optional) ☐ Report attached: _____

III. ON-SITE DOCUMENTS AND RECORDS VERIFIED (check all that apply)

1.	**O&M Documents**				
	☒ O&M manual	☒ Readily available	☒ Up to date	☐ N/A	
	☒ As-built drawings	☒ Readily available	☒ Up to date	☐ N/A	
	☒ Maintenance logs	☒ Readily available	☒ Up to date	☐ N/A	
	Remarks: _____				
2.	**Site-Specific Health and Safety Plan**	☒ Readily available	☐ Up to date	☐ N/A	
	☐ Contingency plan/emergency response plan	☒ Readily available	☒ Up to date	☐ N/A	
	Remarks: _____				
3.	**O&M and OSHA Training Records**	☒ Readily available	☒ Up to date	☐ N/A	
	Remarks: _____				
4.	**Permits and Service Agreements**				
	☒ Air discharge permit	☒ Readily available	☒ Up to date	☐ N/A	
	☒ Effluent discharge	☒ Readily available	☒ Up to date	☐ N/A	
	☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	☒ N/A	
	☐ Other permits: _____	☐ Readily available	☐ Up to date	☒ N/A	
	Remarks: _____				
5.	**Gas Generation Records**	☐ Readily available	☐ Up to date	☒ N/A	
	Remarks: _____				
6.	**Settlement Monument Records**	☐ Readily available	☐ Up to date	☒ N/A	
	Remarks: _____				
7.	**Groundwater Monitoring Records**	☐ Readily available	☐ Up to date	☒ N/A	
	Remarks: Monitoring not conducted since 2017 due to lack of DEQ resources. Monitoring is tentatively planned for April 2022.				
8.	**Leachate Extraction Records**	☐ Readily available	☐ Up to date	☒ N/A	
	Remarks: _____				
9.	**Discharge Compliance Records**				
	☒ Air	☒ Readily available	☒ Up to date	☐ N/A	
	☒ Water (effluent)	☒ Readily available	☒ Up to date	☐ N/A	
	Remarks: _____				
10.	**Daily Access/Security Logs**	☒ Readily available	☒ Up to date	☐ N/A	
	Remarks: _____				

IV. O&M COSTS

1.	**O&M Organization**		
	☒ State in-house	☐ Contractor for state	
	☒ PRP in-house	☐ Contractor for PRP	
	☐ Federal facility in-house	☐ Contractor for Federal facility	

☐ _____

2. **O&M Cost Records**

☐ Readily available ☐ Up to date

☐ Funding mechanism/agreement in place ☒ Unavailable

Original O&M cost estimate: _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From: _____ Date	To: _____ Date	_____ Total cost	☐ Breakdown attached
From: _____ Date	To: _____ Date	_____ Total cost	☐ Breakdown attached
From: _____ Date	To: _____ Date	_____ Total cost	☐ Breakdown attached
From: _____ Date	To: _____ Date	_____ Total cost	☐ Breakdown attached
From: _____ Date	To: _____ Date	_____ Total cost	☐ Breakdown attached

3. **Unanticipated or Unusually High O&M Costs during Review Period**

Describe costs and reasons: None noted.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing Damaged** ☐ Location shown on site map ☐ Gates secured ☒ N/A

Remarks: Site is fenced along east and south property boundaries, adjacent to public roadways.

B. Other Access Restrictions

1. **Signs and Other Security Measures** ☐ Location shown on site map ☒ N/A

Remarks: Signs are clearly visible at entry gates.

C. Institutional Controls (ICs)

1. **Implementation and Enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (e.g., self-reporting, drive by): Annual audit inspection

Frequency: Once per year

Responsible party/agency: Oregon DEQ

Contact	Nancy Sawka	Project Manager	_____	503 378-5075
	Name	Title	Date	Phone no.

Reporting is up to date	☒ Yes	☐ No	☐ N/A
Reports are verified by the lead agency	☒ Yes	☐ No	☐ N/A
Specific requirements in deed or decision documents have been met	☒ Yes	☐ No	☐ N/A
Violations have been reported	☐ Yes	☒ No	☐ N/A

Other problems or suggestions: ☐ Report attached

2. **Adequacy** ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A

Remarks: _____

D. General

1. **Vandalism/Trespassing** ☐ Location shown on site map ☒ No vandalism evident

Remarks: _____

2. **Land Use Changes On Site** ☒ N/A

Remarks: _____

3. **Land Use Changes Off Site** ☐ N/A

Remarks: New storage facility across the street from the southeastern part of the Site.

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☒ N/A

1. **Roads Damaged** ☐ Location shown on site map ☐ Roads adequate ☒ N/A

Remarks: _____

B. Other Site Conditions

Remarks: No issues noted.

VII. LANDFILL COVERS ☐ Applicable ☒ N/A

VIII. VERTICAL BARRIER WALLS ☒ Applicable ☐ N/A

1. **Settlement** ☒ Location shown on site map ☒ Settlement not evident

Area extent: _____ Depth: _____

Remarks: _____

2. **Performance Monitoring** Type of monitoring: Water levels

☐ Performance not monitored

Frequency: _____ ☐ Evidence of breaching

Head differential: _____

Remarks: _____

IX. GROUNDWATER/SURFACE WATER REMEDIES ☒ Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps and Pipelines ☒ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing and Electrical**

☒ Good condition ☒ All required wells properly operating ☐ Needs maintenance ☐ N/A

Remarks: _____

2. **Extraction System Pipelines, Valves, Valve Boxes and Other Appurtenances**

☒ Good condition ☐ Needs maintenance

Remarks: _____

3. **Spare Parts and Equipment**

☒ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided

Remarks: _____

B. Surface Water Collection Structures, Pumps and Pipelines ☒ Applicable ☐ N/A

1. **Collection Structures, Pumps and Electrical**

☒ Good condition ☐ Needs maintenance

Remarks: _____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes and Other Appurtenances**

☒ Good condition ☐ Needs maintenance

Remarks: _____

3. **Spare Parts and Equipment**

☒ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided

Remarks: _____

C. Treatment System ☒ Applicable ☐ N/A

1. **Treatment Train** (check components that apply)

☐ Metals removal ☐ Oil/water separation ☐ Bioremediation

☐ Air stripping ☐ Carbon adsorbers

☐ Filters: _____

☐ Additive (e.g., chelation agent, flocculent): _____

☐ Others: _____

☒ Good condition ☐ Needs maintenance

☐ Sampling ports properly marked and functional

☒ Sampling/maintenance log displayed and up to date

☒ Equipment properly identified

☐ Quantity of groundwater treated annually: 299,300 gallons (2020)

☐ Quantity of surface water treated annually: ~ 7,840,000 gallons (2020)

Remarks: Pumped groundwater and surface water runoff from process area are combined and treated in

accordance with the Oregon DEQ NPDES permit.

2. **Electrical Enclosures and Panels** (properly rated and functional)

☐ N/A ☒ Good condition ☐ Needs maintenance

Remarks: _____

3. **Tanks, Vaults, Storage Vessels**

☐ N/A ☒ Good condition ☐ Proper secondary containment ☐ Needs maintenance

Remarks: _____

4. **Discharge Structure and Appurtenances**

☐ N/A ☒ Good condition ☐ Needs maintenance

Remarks: _____

5. **Treatment Building(s)**

☐ N/A ☒ Good condition (esp. roof and doorways) ☐ Needs repair

☐ Chemicals and equipment properly stored

Remarks: _____

6. **Monitoring Wells** (pump and treatment remedy)

☒ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition

☐ All required wells located ☐ Needs maintenance ☐ N/A

Remarks: Not sampled since 2017. Need to confirm the location of MW-17S (may be located about 1 foot underground). MW-25S with unusually high concentrations of PCP may need to be flushed if there is sediment accumulation, as suspected. EPA hydrogeological evaluation in May 2021 suggests that the groundwater is ineffectively contained by the subsurface vertical barrier wall. Further data is needed to confirm remedy effectiveness.

D. Monitoring Data

1. **Monitoring Data**

☐ Is routinely submitted on time ☐ Is of acceptable quality

2. **Monitoring Data Suggests:**

☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)

☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition

☐ All required wells located ☐ Needs maintenance ☒ N/A

Remarks: _____

X. OTHER REMEDIES

If there are remedies applied at the site and not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is designed to accomplish (e.g., to contain contaminant plume, minimize infiltration and gas emissions).

All other components of the remedy aside from groundwater monitoring are functioning as designed. Institutional controls are in place and effective for all areas of the Site, and the institutional controls are tailored to the use restrictions specified in the decision documents. However, without groundwater

	monitoring, there is insufficient data to confirm that the remedy is preventing the groundwater contamination from migrating outside the barrier wall or outside the site boundary.
B.	**Adequacy of O&M**
	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. No issues noted.
C.	**Early Indicators of Potential Remedy Problems**
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. The May 2021 EPA hydrogeological analysis of 2017 data suggests the groundwater remedy may be insufficient to contain contaminated groundwater from migrating outside the barrier wall.
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. Resume groundwater monitoring with greater frequency than once every five years.

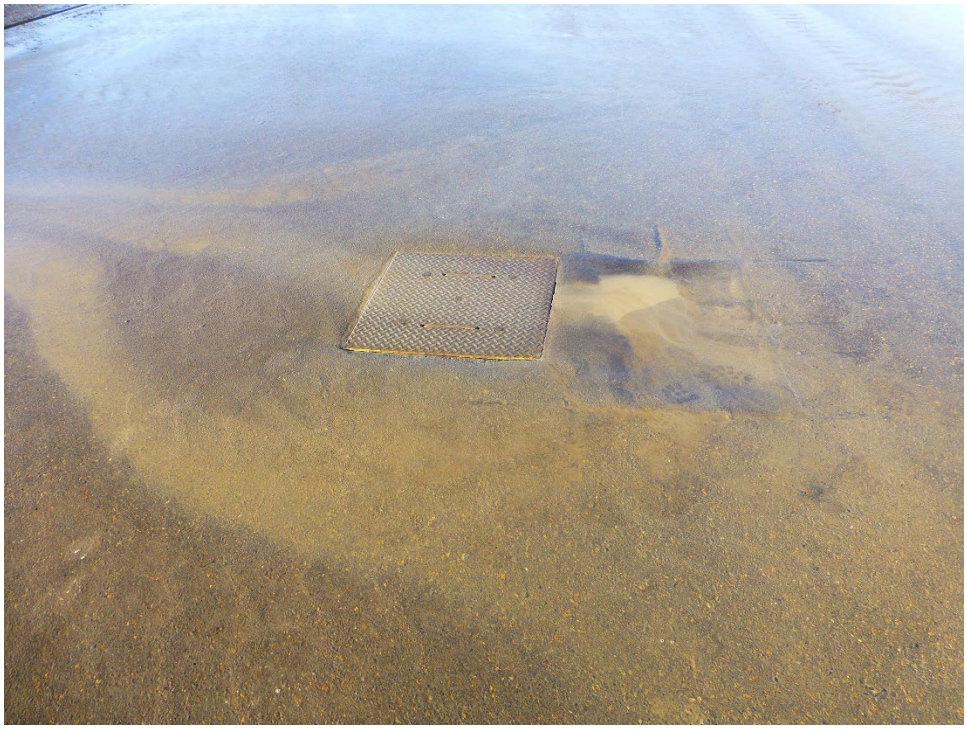
APPENDIX G – SITE INSPECTION PHOTOS

Sign for Stella-Jones

Structures for wood-treating operations

Minor ponding in the White Pole Storage Area

Painted yellow line marking subsurface barrier wall



Groundwater extraction well PW-4

MW-12S, MW-6S and MW-6D

Orange cone marking the potential location of MW-17S

“Bubbles” on the MatCon cap

Stormwater and groundwater treatment system

Outflow 003 discharging treated water

APPENDIX H – DETAILED DIOXIN ANALYSIS

The 2005 ROD for the Site did not identify a soil cleanup level for dioxins because the EPA determined the arsenic cleanup would address co-located dioxin contamination. Since then, the EPA has updated toxicity data for dioxins since the ROD, with review and development from other federal agencies, scientific experts in academia and in the private sector. In February 2012, the EPA released the final human health non-cancer dioxin reassessment on the Integrated Risk Information System[4]. The revised oral non-cancer toxicity value, or reference dose (RfD) is 7×10^{-10} mg/kg-day for 2,3,7,8-tetrachlorodibenzo-p-dioxin. EPA approved the dioxin RfD for immediate use at Superfund sites to ensure protection of human health.

Data collected suggest that there is a high likelihood that the excavation of soil which resulted in "near background" concentrations of arsenic would have also removed any actionable dioxin contamination. Furthermore, based on a review of dioxin concentrations in surface soils collected during the Site's RI/FS, the maximum concentration left in place was 724 nanograms per kilogram (ng/kg) dioxin toxic equivalency (TEQ). This slightly exceeds the current industrial screening level of 720 ng/kg dioxin TEQ. Using the industrial exposure parameters appropriate for this area, long-term exposure to the maximum value would result in a Hazard Quotient (HQ) of 1.088. However, this is a conservative estimate based on one sampled value, and exposure to the range of remaining concentrations would equate to an HQ less than 1. Given current Site conditions, even with the new toxicity information, the remedy remains protective for current and reasonably anticipated future land uses. Institutional controls on the property limit the future use of the property to industrial use only.

Sampling of off-site residences in 2002 found one property east of the facility with elevated levels of dioxins in soil, with a maximum detection of 638 ng/kg dioxin TEQ. In 2004 and 2005, EPA conducted removal actions at the front yard of the property and an adjacent drainage ditch. EPA removed six inches of surface soil in all areas where elevated dioxins, PCP and arsenic were found and replaced the soil with clean fill, sod and gravel. Confirmation sampling for dioxins was unavailable because the contaminants are derived from airborne sources, are strongly sorbed onto soil and are not generally mobile. However, there is strong evidence that the removal action addressed all dioxin contamination. Later sampling of the property backyard found dioxin concentrations comparable to background levels.

Of the remaining off-site residences sampled in 2002, EPA found a maximum dioxin concentration of 46 ng/kg and therefore did not conduct removal actions at these properties. The 2002 concentrations are below the current EPA residential screening level of 51 ng/kg. Therefore, concentrations left in place in off-site soils do not pose an unacceptable risk and remain protective for residential land use.

[4] Integrated Risk History System: https://www.epa.gov/iris