

**CONTAMINATED MEDIA
MANAGEMENT PLAN**
Parcel 15 (Portac) Cleanup Phase 1
Prepared for: Port of Tacoma

Project No. 210158 • June 10, 2022 FINAL



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1 Introduction

Aspect Consulting, LLC (Aspect) has prepared this Contaminated Media Management Plan (CMMP) on behalf of the Port of Tacoma (Port) for implementation of the Cleanup Action Plan (CAP; Ecology, 2021) at the Parcel 15 (Portac) property (Site). The Port entered Agreed Order No. DE 15816 (Agreed Order) with the Washington State Department of Ecology (Ecology) on June 23, 2021, to implement the Phase 1 Cleanup activities.

The CAP will be implemented in two phases. The Phase 1 Cleanup constructed elements are stormwater conveyance system improvements and a permeable reactive barrier (PRB) described in the Engineering Design Report (EDR; Aspect, 2022). The second phase of cleanup will be implemented concurrent with a future development of the Site under an Agreed Order Amendment or Consent Decree. The second phase of cleanup in the CAP consists of replacement of the existing roller compacted concrete (RCC) cap, with a low-permeability cap.

This CMMP is required by the Agreed Order to define the methods to be used to manage contaminated soil or groundwater generated during Phase 1 Cleanup construction of stormwater conveyance system improvements and a permeable reactive barrier (PRB)¹ and future remedy maintenance activities. In addition, this CMMP will be used to guide future Site Port maintenance and redevelopment projects not directly related to cleanup implementation, as well as the second phase of the cleanup mentioned above.

1.1 Organization

The CMMP is organized in the following sections:

- **Section 2** summarizes the contamination at the Site as a basis of soil and groundwater management requirements in this CMMP.
- **Section 3** establishes the health and safety requirements for all workers who will handle and have potential exposure to contaminated soil or groundwater at the Site.
- **Section 4** defines the soil types at the Site, soil-generating activities, and the soil management requirements.
- **Section 5** defines the water management requirements for contaminated groundwater at the Site.
- **Section 6** defines the responsibility of the Port and all other entities for compliance with this CMMP.
- **Section 7** describes the reporting and schedule of soil and groundwater management activities.

¹ The contractor requirements for soil and water management for Phase 1 Cleanup stormwater conveyance system improvements and the PRB are defined in the project specifications as contract documents. They are also included in this CMMP to satisfy Agreed Order requirements.

2 Site Summary

The Site is located at 4215 State Route (SR) 509 – North Frontage Road in an industrial area between Interstate 5 and Commencement Bay in Tacoma, Washington, and is shown relative to surrounding physical features on Figure 1. The Site consists of two historical use areas: the former sawmill area (Sawmill) in the southwestern portion of the property, and the former log yard area (Log Yard) occupying the remainder of the Site. The Site, Sawmill, and Log Yard are shown on Figure 2.

The Port completed a Remedial Investigation for the Site, which characterized the nature and extent of contamination at the Site (GSI, 2018a). This section summarizes the contamination at the Site as a basis of soil and groundwater management requirements in this CMMP.

2.1 Sawmill Contamination Summary

Pentachlorophenol (PCP) was used historically at the former sawmill and applied in a water-based solution using spray booths and a dip tank. Closure actions taken by Portac in 2008 and 2009 during demolition included removal of the dip tank, excavation of PCP and/or petroleum-impacted soils, and confirmation sampling of the sidewalls and bases of the excavated areas (GSI, 2018a).

The CAP identifies PCP as the Site contaminant of concern (COC) in the Sawmill area. PCP consistently exceeds the groundwater cleanup level (CUL) of 1 microgram per liter ($\mu\text{g/L}$) at MW-2R, which is located in the former dip tank excavation. A standard POC (i.e., site-wide) for groundwater will be applied to PCP in the Sawmill.

2.2 Log Yard Contamination Summary

Slag from the former ASARCO smelter was used as road base to stabilize surface soils in the Log Yard. During Log Yard operations, the slag was pulverized by operating equipment and mixed with wood waste, which produced a reducing environment that leached heavy metals, principally arsenic, from the slag.

Pursuant to the 1988 Order on Consent, State of Washington Department of Ecology Docket No. DE 88-S326 under RCW 90.48 (Order on Consent), Portac and the Port agreed to cap the Log Yard to abate metals contamination from surface water runoff discharging to the adjacent Wapato Creek. The primary purpose for capping the Log Yard was to mitigate surface water impacts. The capping was also conducted to prevent stormwater infiltration through the slag/wood waste fill and reduce leaching of metals to groundwater. The Site was capped between late 1988 and early 1989, and inspection and maintenance of the cap have been ongoing under the 1988 Order on Consent, Section VI (4).

The Site-associated contaminant identified for cleanup in the Log Yard is arsenic. The CAP identifies arsenic as the Site contaminant of concern (COC). Arsenic exceeds the CUL of 20 mg/kg where slag is present. Arsenic exceeds the groundwater cleanup level of 5 $\mu\text{g/L}$ where slag is leaching to groundwater.

Due to the reducing subsurface environment, the CAP also identifies methane gas as a Site-associated contaminant in the Log Yard. Methane gas in soil at the Site poses a potential risk for indoor air quality for potential future use scenarios at the Site. The CUL for methane in air at the Site is 0.5 percent by volume (or 10 percent of the lower explosive limit). There are no soil or groundwater management requirements associated with methane gas.

3 Health and Safety Requirements

The Washington State Model Toxics Control Act (MTCA) establishes health and safety requirements to protect workers at contaminated sites. The following requirements apply to all workers who will handle and have potential exposure to contaminated soil or groundwater at the Site:

- Complete 40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training in accordance with the Occupational Safety and Health Administration Part 1910.120 of Title 29 of the Code of Federal Regulations.
- Prepare and operate under a Site-specific Health and Safety Plan (HASP) in accordance with WAC 173-840-810.

The Port is responsible for establishing these health and safety requirements for all other entities (i.e., other public entities, consultants, and contractors) conducting Site work. When applicable, the Port shall include these health and safety requirements in contract documents for entities contracted to conduct work. All entities conducting Site work are responsible for the health and safety of their own workers.

4 Soil Management

Contaminated soil exists at the Site that requires handling as contaminated material.

The existing Log Yard cap was constructed with crushed rock base course and roller compacted concrete (RCC). An average RCC thickness of 15 inches and asphalt overlay, and average crushed rock base course thickness of 26 inches was estimated in the 2014 Log Yard Soil Testing Report (Anchor, 2014). The crushed rock base course and RCC are not contaminated and do not have special contaminated requirements. If disturbed, the RCC and base course material can be reused on Site or disposed of off-Site in accordance with applicable local and state requirements.

This section outlines the soil types at the Site, soil-generating activities, and the soil management requirements.

4.1 Soil Types

Based on observations made by the Washington State licensed geologist during the Remedial Investigation, generalized descriptions of the soil units on the Site are (GSI, 2018a):

- **Fill containing slag** – A Fill consisting of sand, silt, slag, and wood material is present in the Log Yard beneath the RCC cap. The proportion of wood and slag varies and is observed in a dark brown organic soil or silty sand matrix. The slag is black in color and 1/4 inch to 3 inches in size. The texture of the slag varies from angular, to glassy with conchoidal fractures, to vesicular, to slag with an undulating texture on the surface.

It is estimated that 40,000 tons of slag were placed at the Site ranging in thickness of 1 to 6 feet (HC, 1988). The average thickness of fill containing slag is estimated as 38 inches (Anchor, 2014). The fill containing slag is unsaturated, except for in the perched water zones shown in Figure 2.

- **Dredged Sediment Fill** – The silty sand material that is situated above the fine-grained native alluvial deposits likely originated from sediment that was dredged during construction of the adjacent Blair Waterway and deposited onto the Site and surrounding area between 1959 and 1965. The unit ranges from relatively clean fine-grained poorly graded sand (SP) to silty sand with occasional minor gravel. Most of the unit is dark gray in color with red and black lithics. In the western Log Yard area, dredged fill extends to an average depth of 21 feet bgs.
- **Native Alluvium** – The natural deposits from the Puyallup River wetlands consist of a mixture of interbedded silt, sand, and clay. The native alluvium underlies the dredged sediment fill.

The geology in the Sawmill area is the same as the Log Yard with the exception that 1) the slag was not reported to be used as ballast (except for in the log ramp area), and the surface is not capped with RCC.

4.2 Soil Management Requirements

This section outlines the soil management requirements for soil types present at the Site. The soil management requirements apply to all future Site activities, such as utility trenching, excavations, or redevelopment. The soil management requirements also apply to remedy maintenance activities, and the second phase of cleanup in the CAP consisting of replacing the existing (RCC) cap with a low-permeability cap².

4.2.1 Fill Containing Slag

Fill containing slag generated during Site activities may be reused on Site or disposed of at a permitted Subtitle D landfill facility.

The reuse of fill containing slag includes backfill when placed with at least 5 feet of separation from the groundwater table and within the footprint of the Log Yard cap. The reuse of fill containing slag as backfill may not occur in areas of perched water shown in Figure 2.

Fill containing slag may also be removed from Site and disposed of at a permitted Subtitle D landfill facility. Fill containing slag generated during RI activities (GSI, 2018a) were characterized as nonhazardous contaminated soil. For disposal of any fill containing slag, soil sampling shall be conducted for waste characterization based on the selected Subtitle D landfill facility acceptance requirements.

The LRI Subtitle D Landfill in Graham, Washington is an approved location for disposal of fill containing slag. Waste acceptance to the LRI Subtitle D Landfill requires a Waste Disposal Authorization (WDA) and must be obtained from Pierce County.

Trucks transporting fill containing slag from the Site will comply with applicable state and federal regulations and local ordinances and will be covered from the time they are loaded on Site until they offload at the designated off-Site disposal facility.

4.2.2 Dredged Sediment Fill or Native Alluvium

Any dredged sediment fill or native alluvium soil generated during Site activities may be reused or handled as clean soil if free of slag and the arsenic concentration is less than 20 mg/kg. This soil may be reused as backfill on the Site if geotechnically suitable. It may also be transported off Site and handled as clean soil.

If the arsenic concentration is above 20 mg/kg, the soil management requirements are the same as fill containing slag described in the previous section.

4.2.3 Temporary Stockpiling

If temporary stockpiling of soil is needed during a Site activity, stockpiles will be located away from storm-drain catch basins and Wapato Creek. Temporary stockpiles shall be underlain by plastic sheeting with a minimum 10-mil thickness, with adjacent sheeting sections continuously overlapped by a minimum of 3 feet. Each stockpile will be covered by plastic sheeting of minimum 10-mil thickness to prevent precipitation from entering

² The second phase of cleanup will be implemented under an Agreed Order Amendment or Consent Decree legal agreement. The scope of soil management for the second phase of cleanup would be defined in remedial design deliverables required by the legal agreement.

the stockpiled material. Each stockpile cover will be anchored (e.g., using sand bags) sufficiently to prevent it from being removed by wind. All stockpiles will be covered when not in use, and as needed, during periods of rain.

4.3 Phase 1 Cleanup Soil Management

The Phase 1 Cleanup will generate an estimated 2,000 tons of soils during the PRB construction and an estimated 100 tons of soils from stormwater vault replacement. The dredged sediment fill soils for PRB construction are eligible for reuse; however due to space constraints during construction, all soils generated during Phase 1 Cleanup activities will be removed from the Site and disposed of at LRI Subtitle D Landfill.

The crushed rock base course underlying the RCC cap to be excavated for the PRB and stormwater vault replacement areas will be temporarily stockpiled and reused for backfill.

5 Water Management

Contaminated groundwater exists at the Site that requires handling as contaminated material. Potential future use of the Site may involve dewatering for utilities, earthwork, or Site development. All water generated may be transported and disposed of at a permitted off-Site facility in accordance with their acceptance requirements.

If on-Site management of groundwater is required for a future Site activity, then infiltration upgradient of the PRB, or permitted discharge to sanitary sewer or to surface will be used to manage groundwater. Discharge to surface waters of the State would require a Construction Stormwater General Permit (CSWGP) issued by Washington State Department of Ecology Water Quality. Discharge to a sanitary sewer would be permitted through a discharge authorization with the City of Tacoma.

5.1 Phase 1 Cleanup Water Management

The Phase 1 Cleanup will comply with Washington State Department of Ecology Water Quality standards for managing stormwater on contaminated sites. All construction-generated water will be managed through off-Site permitted disposal, or discharge to a sanitary sewer in accordance with City of Tacoma Special Approved Discharge (SAD) Authorization No. 22-007.

Water to be generated and managed during the Phase 1 Cleanup includes stormwater bypass during vault replacement and trenchless pipe repair, and groundwater mixed with biopolymer slurry during PRB construction. All water will be containerized and discharged in accordance with City of Tacoma SAD Authorization No. 22-007. Any water that does not meet conditions of City of Tacoma SAD Authorization No. 22-007, will be transported off Site for disposal at a permitted disposal facility.

6 Responsibility

The Port is responsible for assuring all requirements of this CMMP are satisfied by entities conducting Site work (i.e., other public entities, consultants, and contractors). When applicable, the Port shall include CMMP requirements in contract documents for entities contracted to conduct work. All entities conducting Site work are responsible for complying with the CMMP. All entities must immediately report any issues, discovery of unanticipated conditions, or request for deviations from this CMMP to the Port.

Aspect is the Port's representative for Phase 1 Cleanup activities. Aspect will have a field representative on Site during subsurface construction activities to oversee management of contaminated soil and groundwater.

7 Reporting and Schedule

The management of soil and groundwater during the Phase 1 Cleanup activities will be reported in the Phase 1 Cleanup Construction Completion Report as outlined in the Engineering Design Report (Aspect, 2022). The Port will notify Ecology of any future Site activities that require management of contaminated soil or groundwater and demonstrate conformance with the methods outlined in this CMMP.

8 References

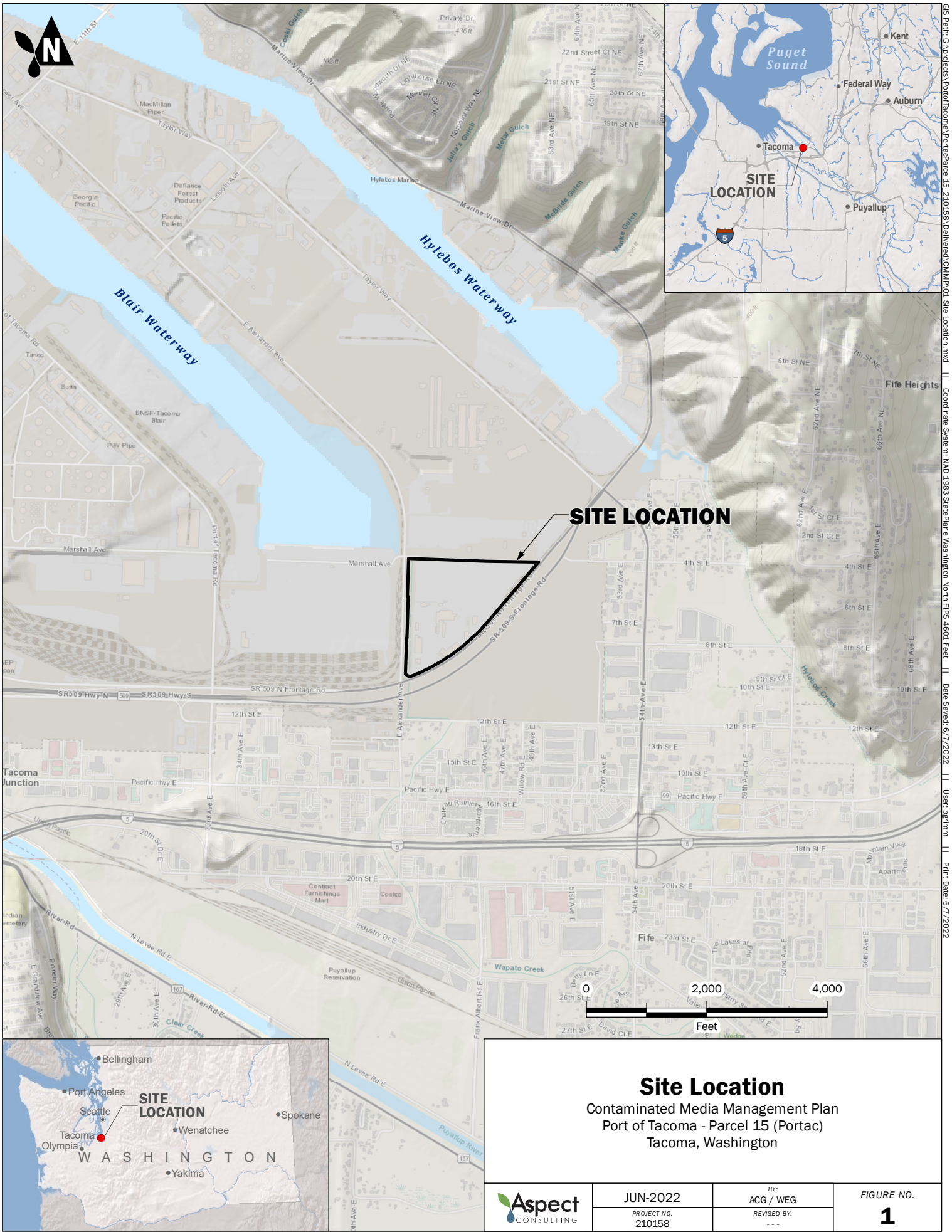
- Anchor QEA (Anchor), 2014. Log Yard Soil Testing Report. Former Portac Inc. Site. Tacoma, WA. 2014.
- Aspect Consulting, LLC (Aspect), 2022, Engineering Design Report, Parcel 15 (Portac), Tacoma, Washington, June 10, 2022.
- GSI Water Solutions, Inc. (GSI), 2018a. Public Review Draft Remedial Investigation Report, Parcel 15 (Portac) Investigation, Ecology Facility Site No. 1215/Cleanup Site. 3642. February 2018.
- GSI. 2018b. Public Review Draft Feasibility Study, Parcel 15 (Portac) Investigation, Ecology Facility Site No. 1215/Cleanup Site. 3642. GSI Water Solutions, Inc. February 2018.
- Hart Crowser, Inc. (HC). 1988. Portac Log Sort Yard Remediation Plan, Volume I and II Appendices. 1988.

9 Limitations

Work for this project was performed for the Port of Tacoma (Client), and this report was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This report does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

FIGURES

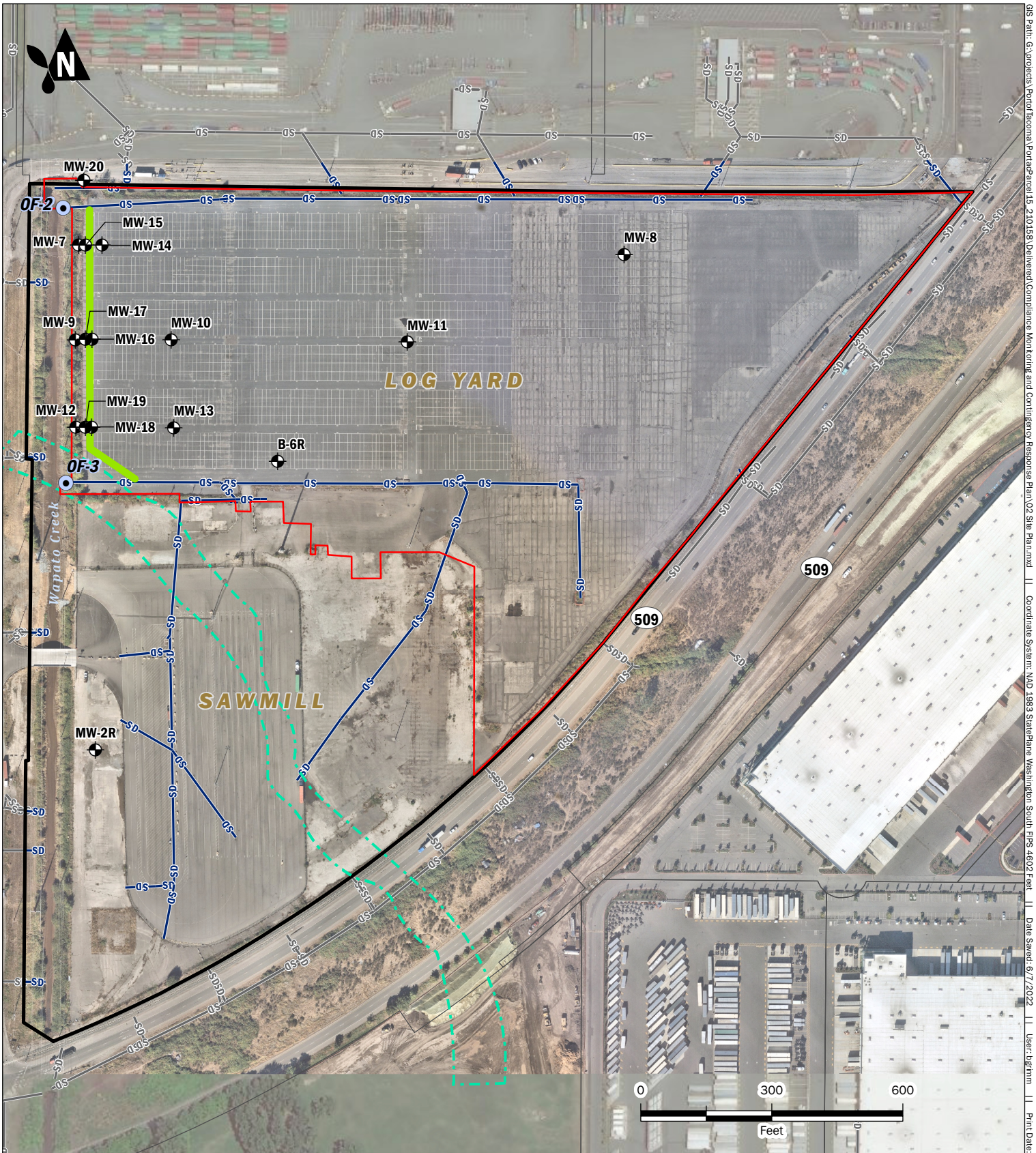


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Site Location
 Contaminated Media Management Plan
 Port of Tacoma - Parcel 15 (Portac)
 Tacoma, Washington

	JUN-2022	BY: ACG / WEG	FIGURE NO. 1
	PROJECT NO. 210158	REVISED BY: ---	

Basemap Layer Credits || Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
 Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



GIS Path: G:\projects\Port Tacoma\PortParcel15_210158_Delivered\Compliance\Monitoring and Contingency Response Plan\02 Site Plan.mxd | Coordinate System: NAD 1983 StatePlane Washington South FIPS 4602 Feet | Date Saved: 6/7/2022 | User: j.grimm | Print Date: 6/7/2022

	Explorations		PRB Alignment
	Stormwater Outfall		Former Creek Channel
	Storm Pipe		Port Parcel 15
	Cap		

Notes:

- Tax parcels modified for cartographic purposes.
- Storm pipes have faded, grey symbology outside area of interest.

Site Plan

Contaminated Media Management Plan
 Port of Tacoma - Parcel 15 (Portac)
 Tacoma, Washington

	JUN-2022	BY: ACG / WEG	FIGURE NO. 2
	PROJECT NO. 210158	REVISED BY: DIM / WEG	