Public Review Draft Interim Action Work Plan—Hub Building (AOC 3)

Former Northern State Multi Service Center

Sedro-Woolley, Washington

Agreed Order No. DE 16309

Cleanup Site ID: 10048

Prepared for:

Port of Skagit

Burlington, Washington
March 26, 2026
Project No. M0624.04.025

Prepared by:

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MAUL FOSTER ALONGI

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Sedro-Woolley, Washington

The material and data in this report were prepared under the supervision and direction of the undersigned.

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Abbreviations

AO	Agreed Order DE 16309
AOC	area of concern
bgs	below ground surface
Ecology	Department of Ecology (Washington)
EPA	U.S. Environmental Protection Agency
ESA	environmental site assessment
FP-XRF	field-portable X-ray fluorescence
HASP	health and safety plan
IAWP	interim action work plan
MFA	Maul Foster & Alongi, Inc.
MTCA	Model Toxics Control Act
PCUL	preliminary cleanup level
the Port	Port of Skagit
the Property	2070 Northern State Road in Sedro-Woolley, Washington
QA/QC	quality assurance and quality control
SAP/QAPP	sampling and analysis plan and quality assurance project plan
the Site	Northern State Multi Service Center
SWIFT	Sedro-Woolley Innovation for Tomorrow
TCLP	toxicity characteristic leaching procedure
mg/L	milligrams per liter

1 Introduction

On behalf of the Port of Skagit (the Port), Maul Foster & Alongi, Inc. (MFA) has prepared this interim action plan (IAWP) for the interim remedial action of lead in shallow soil at the Hub Building, which makes up a portion of area of concern 3 (AOC 3) at the Northern State Multi Service Center site (the Site) (Facility Site ID: 65415931; Cleanup Site ID: 10048). The Site is located at the Sedro-Woolley Innovation for Tomorrow (SWIFT) Center (former Northern State Hospital) property at 2070 Northern State Road in Sedro-Woolley, Washington (the Property) (see Figure 1-1).

1.1 Regulatory Framework and Purpose

The Site is currently under Agreed Order DE 16309 (AO) between the Port and the Washington State Department of Ecology (Ecology). This IAWP was prepared in accordance with the requirements specified in Exhibit B of the AO.

During investigations on the Site, AOC 3 was identified based on elevated lead concentrations in shallow soil adjacent to historical buildings on the Property, including the historic Hub Building (MFA 2025). The Hub Building (also known as the Assembly Hall) is currently undergoing plans for rehabilitation and renovation to be used as a gathering space supporting the SWIFT Center campus and broader community.

The proposed interim action consists of excavation and off-site disposal of soil with elevated lead concentrations adjacent to the Hub Building in conjunction with the rehabilitation project. This proposed interim action is intended to mitigate direct-contact exposure risk for visitors and occupants of the Property visiting the Hub Building (MFA 2025).

This IAWP defines the approach to implement the interim cleanup action, involving soil excavation and off-site disposal. The IAWP follows the requirements of Washington Administrative Code 173-340-430 including:

- General information on the facility, including a summary of information on the previous environmental investigations (see Section 2).
- Contaminant and contaminated-media characteristics and relevant cleanup standards applied to the property (see Section 3).
- Identification of who will be responsible for the cleanup action during and following construction (see Section 4)
- The proposed interim remedial action, including design assumptions and calculations as well as sampling specifications. (see Section 5)
- Appendices, including preliminary construction plans (see Drawings) detailing the work to be performed; a health and safety plan (HASP) (see Appendix A); and a sampling and analysis plan/quality assurance project plan (SAP/QAPP) (see Appendix B).

2 Site Background

2.1 Property Description

The approximately 220-acre Property includes 12 tax parcels located in the northeast corner of Sedro-Woolley (see Figure 1-1). The Property was annexed by the City of Sedro-Woolley (the City) on September 19, 2015. A boundary line adjustment was completed on June 29, 2018. The Property is bordered on the north, east, and south by the Northern State Recreation Area, a public open space owned and managed by Skagit County and historically associated with the former Northern State Hospital. The Property is bordered by Fruitdale Road and residential properties to the west.

The Property is in sections 7, 8, 17, and 18 of township 35 north and range 5 east of the Willamette Meridian, on a small plateau with a slight downward topographic slope toward the east, south, and southwest in the direction of the Skagit River in the Skagit Valley. The Property currently comprises over 80 buildings and structures. Some buildings are occupied by tenants, including the Cascade Job Corps, but the majority are vacant. The Cascade Job Corps uses some buildings for on-site housing and educational services.

2.2 Property History

The Property was developed in 1909 and operated as a treatment and residence facility and hospital for people with mental illness until its closure in 1973. After the facility's closure, the treatment and residential campus was transferred from the Washington State Department of Social and Health Services to the Washington State General Services Administration, which later became the Department of Enterprise Services. The adjacent farmland was transferred to the Department of Natural Resources, which later transferred ownership to Skagit County. On July 1, 2018, the Property was transferred from DES to the Port.

The Northern State Hospital was designed to be self-sustaining and included on-site patient and staff housing, dedicated water supply reservoirs and an associated potable water treatment facility, a fueling station for on-site vehicles, maintenance and paint shops, and a laundry facility. During the construction of the hospital, much of the Property was logged, graded, drained, and terraced to provide a suitable ground surface throughout the campus (Artifacts Consulting 2008).

Several buildings associated with the original campus have been demolished. Many of the remaining buildings and structures associated with the former facility, as well as the campus landscape, are listed on the National Register of Historic Places.

3 Site Conditions

3.1 Geology and Hydrogeology

According to the geologic map of the Sedro-Woolley North and Lyman 7.5-minute quadrangles, the Property and vicinity are underlain by Quaternary glaciomarine drift (Dragovich et al., 1999). The glaciomarine deposits typically consist of, "poorly sorted, poorly compacted diamicton consisting of silty, sandy, gravelly clay to clayey gravel; moderately well- to well-sorted sandy silt, sandy clay, clayey silt, and clay" (Dragovich et al., 1999). Regionally, geologic cross sections developed through the interpretation of well logs, geotechnical borings, and field information show approximately 100- to 130-foot-thick horizontally-oriented deposits of Quaternary glaciomarine drift in the surrounding area (Dragovich et al., 1999). Subsurface investigations in the vicinity of the Hub Building indicate that soil generally consists of silt with sand to approximately 10 feet below ground surface (bgs).

Groundwater levels on the Property measured during previous investigations ranged from 3.77 to 18.88 feet bgs across the northern portion of the Property (see Table 3-1) (MFA 2025). Because of the large size of the Property and the limited area represented by the monitoring wells, it is possible that the groundwater flow direction varies throughout the Property. In the vicinity of the Hub Building, it is inferred that shallow groundwater flows either southeast, because of the gradual topographic slope of the area toward the Skagit River Valley; west toward Brickyard Creek; or east toward Hansen Creek (see Figure 1-1). It is unlikely that groundwater will be encountered during the proposed excavation work described in this IAWP.

3.2 Environmental Conditions

AOC 3 includes elevated lead concentrations in soil surrounding historical buildings on the Site. Elevated concentrations of lead above the preliminary screening levels were identified in shallow soil immediately adjacent to historical buildings on the Site, including the Hub Building. The lateral and vertical extent of lead concentrations around these buildings was informed by previous investigations of lead in soil adjacent to historic buildings on the Property (MFA 2014, 2015, 2018, 2025).

It appears that lead-containing paint has flaked or peeled off the historical building surfaces and has been deposited in adjacent shallow soil. Therefore, the elevated concentrations of lead identified in these soil samples suggests that lead paint is or was present in the exterior paint of historical buildings and is the source of elevated lead concentrations in shallow soil adjacent to historical buildings on the Property. The condition of the historical buildings on the Property varies significantly; some buildings have paint visibly flaking off the exteriors while others have been well maintained with no visible flaking. Based on analytical results, it appears that, regardless of maintenance status, the shallow soil adjacent to the historical buildings on the Property has elevated concentrations of lead.

Elevated detections of lead in soil surrounding historical buildings appear to be localized in both vertical and lateral extent, with concentrations decreasing with depth and distance from the

buildings (MFA 2018, 2025). Lead impacts generally extend laterally out to 5 feet from the building footprint and vertically down to 1.5 feet bgs.

The Hub Building was identified as a historical building with adjacent lead impacts to soil following collection of a soil sample (HA2) adjacent to the building (see Figure 3-1). The analytical result for the soil sample is provided in Table 3-2 below.

Table 3-2: Soil Sampling Analytical Summary – Hub Building

Location	Sample Name	Collection Date	Collection Depth (ft bgs)	Lead
			Units	mg/kg
HA2	HA2-S-0.5	4/23/2015	0.5	1,100

Notes:
ft bgs = feet below ground surface.
mg/kg = milligrams per kilogram.

Preliminary cleanup standards for the Site were developed based on the conceptual site model presented in the draft remedial investigation report (see Figure 3-2) (MFA 2025). Lead was identified as a chemical of concern in soil for AOC 3. The preliminary cleanup level (PCUL) for AOC 3 is summarized in Table 3-3 below.

Table 3-3: Proposed Preliminary Cleanup Level

Chemical of Concern	Soil PCUL (mg/kg)	Soil CUL Basis
Lead	118	Ecological and Human Health

Notes:
PCUL = preliminary cleanup level.
mg/kg = milligrams per kilogram.

4 Project Organization and Schedule

4.1 Project Organization

The following organization shall apply to the project:

- Regulator—Ecology
- Owner—Port
- Engineer—MFA
- Sitework Contractor—to be determined through formal bid process

Responsibilities of project personnel are described in Section 3.1 of the SAP/QAPP (see Appendix B).

4.2 Schedule

The following schedule is anticipated to complete the work outlined in this report:

Task	Duration (Weeks)	Anticipated Start Date	Anticipated End Date
Interim Action Work Plan			
Draft Interim Action Work Plan	12 (90 days)	October 14, 2025	January 12, 2026
Regulatory review	8	January 13, 2026	March 9, 2026
Incorporate regulatory comments and Finalize Interim Action Work Plan	6	March 9, 2026	April 20, 2026
Public Comment Period	4	June 2026	July 2026
Project permitting and subcontractor selection			
SEPA Checklist Preparation	6	March 9, 2026	April 20, 2026
Project permitting (grading)	8	May 2026	July 2026
Prepare bid documents	12	August 2026	October 2026
Out to public bid	4	November 2026	December 2026
Select contractor	4	January 2027	February 2027
Hub Building Restoration			
Restoration/Rehabilitation Construction	TBD	March/April 2027	December 2027
Interim Action Fieldwork			
Implement interim action and perform sampling*	TBD based on contractor availability	June 2027	July 2027
Laboratory analysis & follow-up analyses	TBD based sample results	June 2027	July 2027
Data review	4	Immediately upon receipt of final data packages	--
Reporting			
Draft Completion Report	12	After completion of fieldwork and final data packages received	--
Regulatory review	8	After submittal of draft interim action report	--
Incorporate regulatory comments and Finalize Completion Report	4	After receipt of regulatory comments	--
*Implementation of the interim action is anticipated to be completed in conjunction with exterior restoration work.			

5 Interim Remedial Action Engineering Design

The selected remedial action involves removal of soil exceeding preliminary cleanup standards for lead in soil (see Table 3-2). As outlined in Section 3.2, lead was the only chemical of concern identified in shallow soil for the Hub Building (AOC 3).

Soils exceeding the PCUL will be excavated and transported off site to a permitted disposal facility. The selected remedial action will address the following objectives:

- Preventing or minimizing direct contact with or ingestion of contaminated soil by humans or ecological receptors
- Preventing or minimizing the potential for migration of contaminants from soil to groundwater

Anticipated lateral and vertical excavation extents have been established based on analytical results from the field investigations at historical buildings on the Site (MFA 2014, 2015, 2018, 2025). The approximate excavation extent is shown on the attached plan sheets (see Figure 4-1 and Drawings, Sheets C3.0).

Excavated materials will be temporarily stockpiled on-site, then transported off-site for disposal. The lead concentration in soil adjacent to the Hub Building was identified above the 20 times the toxicity characteristic leaching procedure (TCLP) regulatory limit. Although TCLP data for lead at the Site has been historically non-detect, on-site treatment of soil for lead may be required for off-site disposal if waste characterization samples (i.e., stockpile samples above TCLP limits) identify the soil as hazardous waste. If on-site treatment for lead is not feasible because of cost, the contaminated soil will be disposed of at a permitted Subtitle C landfill facility.

The objective of the interim remedial action is to remove all lead-contaminated soil exceeding the PCUL. The volume of removed material is estimated to be approximately 110 cubic yards (170 tons) based on the lateral and vertical characterization of lead-impacted soil adjacent to historical buildings on the Site (see Section 3.2).

If soil exceeding the PCUL for lead is encountered outside the excavation extents shown on the attached drawings, the material will be excavated and disposed of off-site, if allowed by the project budget. If budget funds are not available, a contingency plan will be developed with Ecology that may include capping metals-impacted soils exceeding the PCUL. Soil with remaining lead impacts would be placed under a demarcation fabric and documented in a soil management plan. Future action regarding any remaining concentrations above the PCUL adjacent to the Hub Building will be determined after finalization of the remedial investigation and feasibility study and cleanup action plan for the Site.

Design elements for the interim remedial action are described below.

5.1 Mobilization and Site Preparation

Anticipated excavation extents will be located and painted by the contractor and will be verified by the engineer. The final extent of the excavation will be confirmed by a combination of field-portable X-ray fluorescence (FP-XRF) screening and laboratory-analyzed confirmation samples for lead. Before excavation, the locations of subsurface utilities within 50 feet of the excavation area will be identified by "One Call" public notification and a private utility locating company in accordance with SOP-18 (Appendix B).

Exclusion zones using temporary fencing and warning tape, as well as any additional appropriate site controls necessary, will be established in accordance with the site-specific HASP (Appendix A). The site will be secured and locked when the engineer or contractor is not present.

Equipment will be mobilized to the Site and is expected to include, but not be limited to, the following:

- Trackhoe excavator, or equivalent
- Front-end loader
- Dump truck
- Water truck
- Support vehicles and equipment

Erosion-control measures will be installed by the contractor and are also shown on Sheets C3.0 and C3.1 of the attached drawings. The erosion and sediment control plan requires a downslope perimeter best management practice (e.g. silt fence, straw wattle) to be maintained on site and soil stockpiles to be covered when not in use, overnight, and during rain or wind events. All erosion-control measures will be installed before excavation activities begin and will be maintained throughout the construction effort.

Based on site data, groundwater is not expected to be encountered in the excavations.

5.2 Soil Excavation and Management

The interim remedial action includes the excavation of soil with lead concentrations exceeding PCUL. The anticipated horizontal extents of excavation are shown on Figure 4-1 and Sheet C3.0 of the attached drawings.

Oversight and monitoring for consistency with this IAWP will be performed under the direction of a professional engineer registered in the State of Washington. Field screening will be performed during excavation activities using a FP-XRF instrument. Confirmation sampling will be conducted upon reaching apparent contaminant boundaries using a FP-XRF and verified with results by an analytical laboratory. Field screening and sampling techniques for lead may include, but are not limited to:

- FP-XRF instrument
- Analytical (total metals analysis)

Field XRF results may over- or underestimate actual chemical concentrations in soil. Therefore, to ensure the FP-XRF is accurately identifying exceedances, at least one field screened soil sample with

an exceedance of lead, will be split and submitted to an analytical laboratory to confirm the exceeding concentration.

Additionally, confirmation soil samples will be submitted to an analytical laboratory for analysis and will be compared to XRF screening results prior to extending the planned excavation footprint or depth. Analytical testing may be used to supplement field screening results; however, analytical testing will be performed on confirmation samples in accordance with the procedure outlined in the SAP/QAPP (Appendix B).

5.2.1 Excavation

The vertical extent of the excavation activities will begin with a maximum depth of 1.5-foot bgs, and the lateral extent will be initially limited to within approximately 5-feet from the exterior of the building. Following this initial excavation, newly exposed soils will be screened using an FP-XRF; any remaining contamination above the PCUL will be removed. Excavation will be advanced to no more than 1.5 feet within two feet of the building; the Port will consult with a structural engineer to identify if a more restrictive excavation approach is needed immediately adjacent to the building to protect its foundation and a historic landscape architect to determine if any existing landscape plantings should be retained and identify appropriate restoration landscaping plantings, as needed.

The horizonal extent shown on Sheets C3.0 represent the anticipated extent of soil concentrations above PCULs based on previous environmental investigations (MFA 2025). Contractors will start excavations adjacent to the exterior of the building and dig outward toward the anticipated excavation boundary. Soil from the sidewalls will be regularly screened in the field at approximately 10-foot intervals along every new sidewall length exposed as excavation proceeds with an FP-XRF to inform horizontal extent of soils above the PCUL.

Once confirmation samples collected from the sidewalls and base of the excavation[1] indicate that the PCUL has been met, the excavation will be considered complete with approval of the engineer. Six-point sidewall confirmation soil samples will be collected every 60 linear feet, with sampling increments collected every 10 feet, along the outer sidewalls of the excavation for submittal to an analytical laboratory. Sidewall confirmation samples from the excavation area will be collected approximately halfway between the floor of the excavation and the original ground surface[2]. Six-point base confirmation samples will be collected at roughly every 400 square feet of exposed base of the excavation. Base confirmation samples will be collected approximately halfway between the exterior of the building and the sidewall. One field duplicate sample will be collected for every 20 confirmation samples analyzed. Soil sampling and analysis are described further in the SAP/QAPP (Appendix B).

The results of the initial excavation confirmation sampling may be reviewed with Ecology to determine whether any adaptive management (e.g., placement of a demarcation fabric) is required before backfilling if elevated concentrations of lead remain above the PCUL. This could include additional removal, further evaluation of risk, and/or management through institutional controls. If a concentration of lead is left in place that indicates a potential exceedance of TCLP criteria, analysis of the sample by TCLP may be conducted. If additional excavation is conducted after evaluation of

[1] MFA anticipates collecting approximately six confirmation sidewall samples and approximately six confirmation base samples from the final excavation extent.
[2] Note that sidewall samples will only be collected from the outer perimeter of the excavation around the Hub Building as no excavation will occur below the building footprint.

the confirmation samples, the sampling procedures described above will be followed for these newly developed excavation limits.

The estimated volume of removed soil is 110 cubic yards (170 tons). Because of the uncertainty associated with estimating the true size of the excavations, a 15 percent volume contingency above the estimated volume has been assumed for the purposes of cost estimating.

The final excavation limits and the limits of any areas within the excavation where soil concentrations still exceed the PCUL will be recorded with a differential global positioning system capable of sub-meter accuracy.

5.2.2 Dust Mitigation

The excavation process will disturb soil and has the potential to generate dust. Appropriate dust-control methods will be employed during excavation as necessary to prevent the generation of airborne contaminants. These control methods will include soil wetting and misting, at a minimum.

The contractor will locate a nearby water source (e.g., fire hydrant) to fill a water tank/truck and keep water readily available during the construction activities. Soil will be kept damp during handling until the soil is placed in haul trucks and covered, pending transport to an off-site permitted landfill. Dry excavation, dry shoveling, or dry sweeping of soil will not be allowed.

5.2.3 Stockpiling

All excavated soils will be placed into approximately 100 cubic yard stockpiles adjacent to the excavation to facilitate analytic testing, as applicable.

Stockpiles will be managed in a manner that minimizes erosion, contact with stormwater runoff, dust generation, and worker and public contact, unless the soil is immediately loaded into trucks for off-site disposal.

Soil stockpiles will be placed on plastic sheeting liners and will be covered with plastic sheeting at the end of each workday to minimize erosion, dust generation, and direct contact by humans. The plastic sheeting that covers the pile must be regularly inspected to ensure that it remains functional and protective of human health and the environment. Temporary stockpiles of contaminated soil must be properly managed and disposed of off site within 60 days of completion of excavation work.

5.2.4 Waste Characterization and Designation

Historical TCLP data collected from soil at the Site have not had detections of lead, indicating that lead in soil at the Site is not leachable. However, stockpiles will be analyzed for lead by the TCLP to further confirm the excavated soil is non-hazardous. Three (3) five-point composite samples will be collected from each 100 cubic yard stockpile and analyzed for lead by TCLP.

Once the TCLP data for the stockpiled soil have been received, the following process will be implemented:

- If concentrations pass TCLP (Lead TCLP concentration less than 5 milligrams per liter [mg/L]):
  - Stockpiled soil will be disposed of off-site as a special waste (i.e., non-hazardous) at a Subtitle D landfill.

- If concentrations fail TCLP (Lead TCLP concentrations greater than 5 mg/L)[3]:
  - Stockpiled soil will be treated on-site to stabilize any leachable lead and reduce concentrations below TCLP criteria. Stabilization will consist of the addition of Portland cement to the stockpile material to reduce the leachability of lead in the waste material in accordance with Ecology guidance (Ecology 2002). After amendment, a 10-point composite sample will be collected and analyzed for lead by the TCLP. If detections of lead by TCLP are below 5 mg/L the material will be sent to a Subtitle D landfill for disposal.
  - If after stabilization, the material does not pass the TCLP, the process will be repeated with additional amendment until concentrations of lead by TCLP are reduced below 5 mg/L.
- Prior to on-site treatment, MFA will evaluate treatment procedures based on site logistics and cost. If implementing on-site treatment is not feasible or practical, the material will be disposed of at a permitted Subtitle C landfill facility.

Laboratory quality assurance and quality control (QA/QC) data, along with sample results, will be validated before disposal requirements are determined for any soil. This review will be conducted as laboratory reports are received so that soil management may proceed efficiently. Specifics regarding soil sampling, handling, and QA/QC requirements are provided in the SAP/QAPP (Appendix B).

5.3 Backfill, Compaction, and Final Grade

Following confirmation sampling, authorization to proceed with backfill operations will be provided by the engineer. If confirmation sampling indicates that soil in the base of the excavation exceeds the PCUL for lead, the engineer will require that a demarcation layer of orange construction fencing, or approved equivalent, be placed in the base of the excavation prior to backfilling.

Excavations will be backfilled using clean soil from a local source. One ten-point composite sample of imported soil will be sampled and analyzed prior to delivery to the Site, following applicable EPA test methods, to ensure that the soil does not contain contaminant concentrations exceeding natural background values. Additionally, a fill source statement will be required from the landowner for each proposed off-site soil borrow source, indicating the location and the current and previous land uses, and confirming that to the best of the landowner's knowledge there has never been contamination of the borrow source site with hazardous or toxic materials.

Clean soil backfill will be placed in the excavated areas and compacted in accordance with project specifications (see Drawings). The final grade will match the existing grades of the areas prior to excavation.

Disturbed areas shall be reseeded with mulch or grass stabilize soils and restore initial conditions.

5.4 Inadvertent Discovery Plan

Under the Washington State Governor's Executive Order 21-02, archaeological and cultural resources must be evaluated to satisfy federal regulations 36 CFR 800. RCW 27.44 (Indian Graves and Records) addresses the need to protect graves, cairns, and glyptic marks, and provides associated penalties, civil actions, and procedures. RCW 27.5 (Archaeological Sites and Resources) lays out the State of Washington's interest in protecting archaeological resources and establishes

[3]All steps will be taken to comply with Dangerous Waste regulations in WAC 173-303.

and empowers the Washington State Department of Archaeology and Historic Preservation to complete an inventory, conduct studies, make National Register of Historic Places nominations, and identify and excavate the "state's archaeological resources" (RCW 27.53.020). WAC 25-48 establishes procedures for implementing the permit sections of RCW 27.53. WAC 25-46 establishes regulation procedures for historic archaeological resources on, in, or under aquatic lands owned by the state; RCW 79.105.600 deals with "archaeological activities" on state aquatic lands and addresses shoreline management (via RCW 79.105). RCW 42.56.300 exempts disclosure of the location of archaeological sites.

An IDP detailing procedures to ensure that cultural resources are identified if encountered during soil disturbing activity, and appropriate procedures in such an event, has been provided as Appendix C.

References

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Limitations

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Figures

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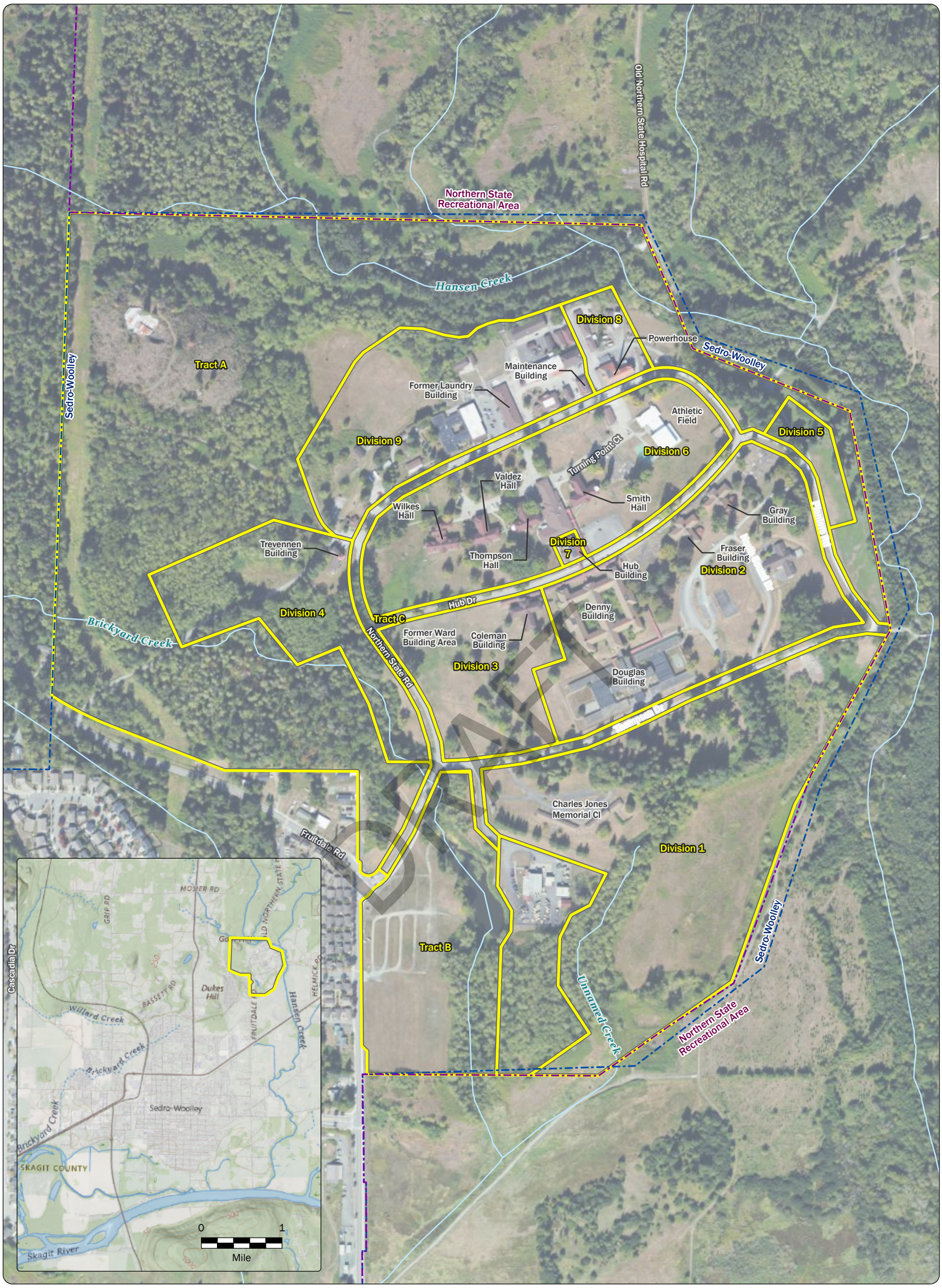

Data Sources
Aerial photograph obtained from the U.S. Department of Agriculture; property boundary and streams obtained from Skagit County; city limits obtained from the Washington Department of Transportation.

Legend

- Property Parcel and Parcel Name
- Northern State Recreational Area
- Sedro-Woolley City Limits (Post Annexation)
- Stream

Figure 1-1
Property Vicinity
Northern State
Multi Service Center
Port of Skagit
Sedro-Woolley, WA

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AOCs
AOC 1 = Former Laundry Building
AOC 2 = Power House
AOC 3 = Lead in Soil
AOC 4 = Arsenic and Lead in Soil in Ward Area and Athletic Field
AOC 5 = Property-Wide Metals in Soil (not shown in figure)
AOC 6 = Maintenance Building
AOC 7 = Groundwater (not shown in figure)

Old Northern State Hospital Rd
Hansen Creek
Powerhouse Dr
Power House (AOC 2)
Maintenance Building (AOC 6)
Former Laundry Building (AOC 1)
Athletic Field (AOC 4)
Turning Point Ct
Valdez Hall
Wilkes Hall
Smith Hall
Gray Building
Trevennen Building
Thompson Hall
Hub Building
Fraser Building
North Sound Dr
Hub Dr
Former Ward Building Area (AOC 4)
Denny Building
Northern State Rd
Coleman Building
Douglas Building
Brickyard Creek
Thompson Dr
Charles Jones Memorial Cl
Wildflower Way
Fruitdale Rd
Unnamed Creek

Notes
AOC = area of concern.

Data Sources
Aerial photograph obtained from the U.S. Department of Agriculture; property boundary and streams obtained from Skagit County; city limits obtained from the Washington Department of Transportation.

Legend
- Hand Auger
- Work Area Boundary
- AOC 3
- Property Boundary
- Stream

Figure 3-1
AOC Overview
Northern State
Multi Service Center
Port of Skagit
Sedro-Woolley, WA

0 300
Feet

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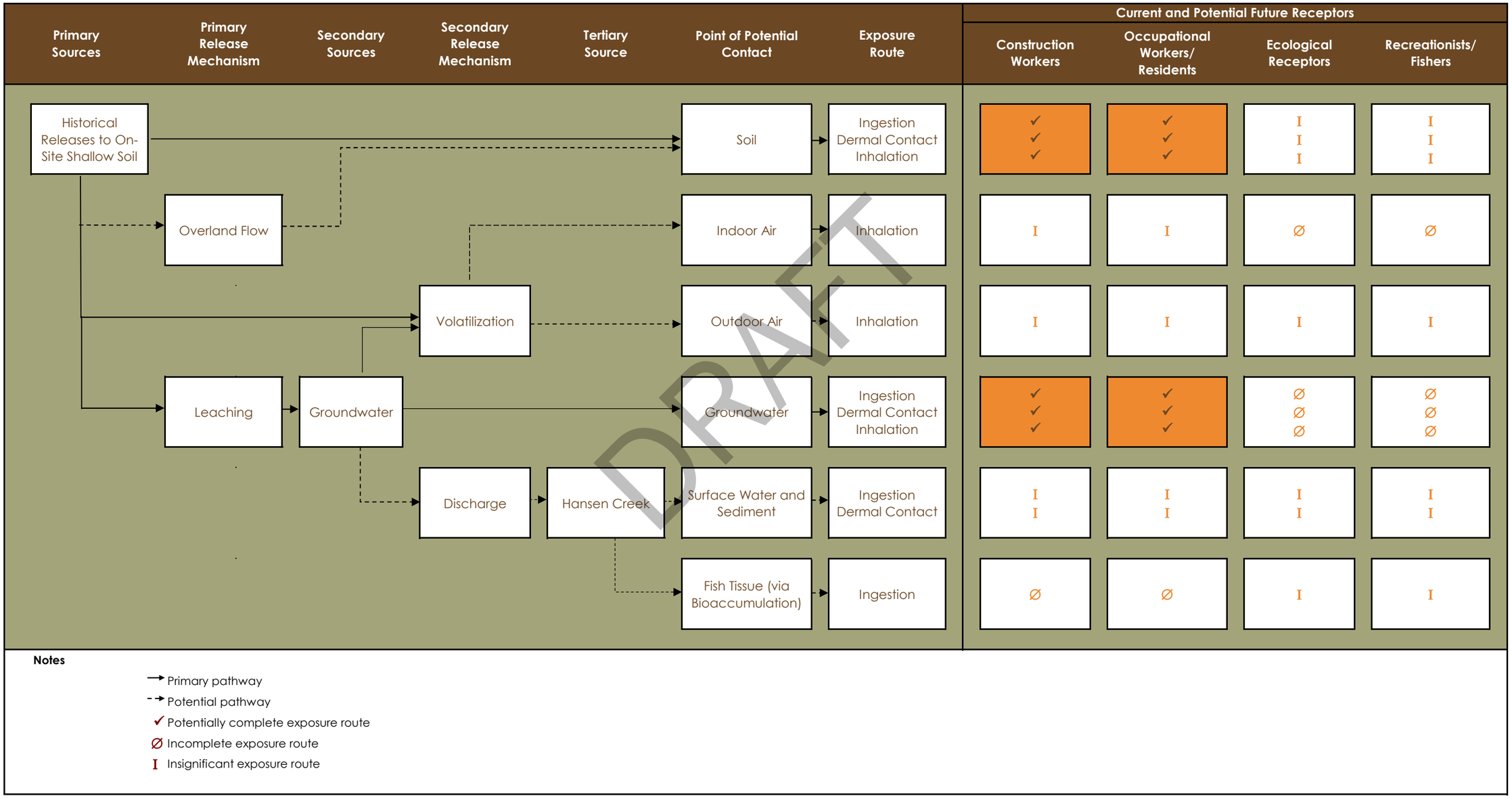
Figure 3-2
Conceptual Site Model
Northern State Multi Service Center
Sedro-Woolley, Washington



Notes

→ Primary pathway

⇢ Potential pathway

✓ Potentially complete exposure route

∅ Incomplete exposure route

I Insignificant exposure route

M0624.04.025, 03/26/2026, Fig3-2_CSM

Notes
AOC = area of concern.

Data Sources
Aerial photograph obtained from Google.

Legend

- Hand Auger
- Approximate Excavation Extent
- Work Area Boundary

Figure 4-1
Proposed Excavation Area– Hub Building

Northern State
Multi Service Center
Port of Skagit
Sedro-Woolley, WA

0 40
Feet

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Table

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Table 3-1
Water Level Measurements
Northern State Multi Service Center
Sedro-Woolley, Washington

Well ID	TOC Elevation (feet NGVD 29)	Date	Time	DTW (feet)	DTB (feet)	Groundwater Elevation (feet NGVD 29)
MW01	133.81	06/10/2015	2:29 PM	14.34	24.55	119.47
		09/01/2017	NA	16.05	24.55	117.76
		05/01/2018	9:30 AM	13.41	24.55	120.40
		05/17/2021	9:03 AM	14.45	24.60	119.36
MW02	131.03	06/10/2015	11:14 AM	17.78	19.45	113.25
		09/01/2017	NA	18.88	19.45	112.15
		05/01/2018	10:15 AM	16.35	19.45	114.68
		05/17/2021	9:08 AM	17.41	19.47	113.62
MW03	125.86	06/10/2015	4:30 PM	10.40	19.00	115.46
		09/01/2017	NA	11.82	19.00	114.04
		05/01/2018	10:05 AM	9.28	19.00	116.58
		05/17/2021	8:33 AM	10.13	19.00	115.73
MW04	117.39	06/10/2015	8:37 AM	12.94	19.43	104.45
		09/01/2017	NA	12.40	19.43	104.99
		05/01/2018	10:20 AM	9.32	19.43	108.07
		05/17/2021	9:25 AM	11.77	19.48	105.62
MW05	117.62	09/01/2017	NA	7.51	17.10	110.11
		05/01/2018	10:30 AM	6.55	17.10	111.07
		05/17/2021	9:16 AM	6.85	17.27	110.77
MW06	129.71	09/01/2017	NA	7.99	NA	121.72
		05/01/2018	9:45 AM	NA[a]	NA[a]	NA[a]
		05/17/2021	8:40 AM	3.77	16.32	125.94
MW07[b]	127.10	09/01/2017	NA	10.16	16.95	116.94
		05/01/2018	9:58 AM	7.75	16.95	119.35
MW08	128.02	09/01/2017	NA	12.62	NA	115.40
		05/01/2018	9:55 AM	NA[a]	NA[a]	NA[a]
		05/17/2021	8:20 AM	6.93	16.29	121.09
MW09	131.10	05/01/2018	9:25 AM	5.95	28.92	125.15
		05/17/2021	8:59 AM	4.87	28.98	126.23
MW10	130.41	05/01/2018	9:15 AM	5.20	29.34	125.21
		05/17/2021	8:49 AM	5.57	29.36	124.84
MW11	130.15	05/01/2018	9:20 AM	6.30	26.55	123.85
		05/17/2021	8:54 AM	6.17	26.58	123.98

Table 3-1
Water Level Measurements
Northern State Multi Service Center
Sedro-Woolley, Washington

Notes

DTW and DTB are measured from the TOC.

DTB = depth to bottom of well.

DTW = depth to water.

ID = identification.

NA = not available.

NGVD 29 = National Geodetic Vertical Datum of 1929.

TOC = top of casing.

[a]Unable to remove well cap to measure water level.

[b]Well has been decommissioned on 11/08/18.

Drawings

MAUL FOSTER ALONGI

INTERIM REMEDIAL ACTION - SOIL REMOVAL HUB BUILDING

PREPARED FOR:

PORT OF SKAGIT

LOCATED IN SEC. 7,8,17,AND 18, T. 35 N., R. 5 E., W.M., SKAGIT COUNTY, SEDRO-WOOLLEY, WASHINGTON

PROJECT CONTACTS

CLIENT	CIVIL ENGINEER
PORT OF SKAGIT 15400 AIRPORT DRIVE BURLINGTON, WA 98233 P: 360-757-0011 HEATHER ROGERSON HEATHER@PORTOFSKAGIT.COM	MAUL, FOSTER & ALONGI, INC. 114 W MAGNOLIA STREET BELLINGHAM, WA 98225 P: 503-501-5236 JOSH ELLIOTT JELLIOTT@MAULFOSTER.COM
SURVEYOR	
SKAGIT SURVEYORS 806 METCALF ST. SEDRO-WOOLLEY, WA 98284 P: 360-855-2121	

PROJECT SUMMARY

SITE ADDRESS:
2070 NORTHERN STATE ROAD
SEDRO-WOOLLEY, WA 98284

WORK DESCRIPTION:
THE REMEDIAL ACTION PLAN DETAILED IN THIS PLAN SET CONSISTS OF EXCAVATION AND OFF-SITE DISPOSAL OF LEAD-IMPACTED SOIL IN ONE AREA OF THE FORMER NORTHERN STATE HOSPITAL. EXCAVATION BOUNDS SHOWN ARE ESTIMATED BASED ON THE DATA AVAILABLE. FINAL EXCAVATION EXTENTS WILL BE DETERMINED BY CONFIRMATION SAMPLES COLLECTED DURING CONSTRUCTION.

VICINITY MAP

NOT TO SCALE

SHEET INDEX

GENERAL NOTES

1. SURVEY PERFORMED BY SKAGIT SURVEYORS IN 2007. CONTOURS AND FEATURES SHOWN IN THIS PLAN SET ARE CONSIDERED TO BE APPROXIMATE AND SHOULD BE CONFIRMED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
2. HORIZONTAL DATUM: WASHINGTON STATE PLANE COORDINATE SYSTEM NORTH ZONE, NAD 83/91. ELEVATION DATUM: NAVD 88
3. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION. A MINIMUM OF TWO FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 (UTILITY NOTIFICATION CENTER) FOR LOCATION MARK-UP OF EXISTING UTILITIES.
4. ALL CONSTRUCTION, MATERIALS, AND WORKMANSHIP SHALL CONFORM TO THE LATEST STANDARDS AND PRACTICES OF THE CITY OF SEDRO-WOOLLEY AND THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" PREPARED BY WSDOT/APWA.
5. IN CASE OF A CONFLICT BETWEEN THE REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.
6. ANY CHANGES TO THE DESIGN AND/OR CONSTRUCTION SHALL BE APPROVED BY THE OWNER AND THE ENGINEER.
7. APPROVAL OF THESE PLANS DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER CONSTRUCTION NOT SPECIFICALLY SHOWN ON THE PLANS. PLANS FOR STRUCTURES SUCH AS BRIDGES, BUILDINGS, TANKS, VAULTS, ROCKERIES, AND RETAINING WALLS MAY REQUIRE A SEPARATE REVIEW AND APPROVAL BY THE BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.
8. A COPY OF THESE APPROVED PLANS SHALL BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONSTRUCTION EASEMENTS AND PERMITS NECESSARY TO PERFORM THE WORK. THE PORT OF SKAGIT HAS OBTAINED A CLEARING AND GRADING PERMIT FROM CITY OF SEDRO-WOOLLEY AND A CONSTRUCTION GENERAL STORMWATER PERMIT FROM THE DEPARTMENT OF ECOLOGY FOR THIS WORK. THE CONSTRUCTION GENERAL STORMWATER PERMIT WILL BE TRANSFERRED TO THE CONTRACTOR.
10. THE CONTRACTOR IS RESPONSIBLE FOR STAKING PRELIMINARY EXCAVATION BOUNDARIES.
11. PUBLIC AND PRIVATE DRAINAGE WAYS SHALL BE PROTECTED FROM POLLUTION. NO MATERIAL IS TO BE DISCHARGED TO OR DEPOSITED IN STORMWATER SYSTEMS IF IT MAY RESULT IN VIOLATION OF LOCAL, STATE, OR FEDERAL WATER QUALITY STANDARDS.
12. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL HAVE AN APPROVED PUBLIC RIGHT-OF-WAY WORK PERMIT PRIOR TO ANY CONSTRUCTION ACTIVITY.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED MEASURES TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION. TWO-WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES ON THE ADJACENT PUBLIC STREETS.
14. ANY PUBLIC OR PRIVATE CURB, GUTTER, SIDEWALK, OR ASPHALT DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO CITY OF SEDRO-WOOLLEY STANDARDS AT NO ADDITIONAL COST TO OWNER.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ADJACENT UTILITIES, WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WATER, SANITARY SEWER, STORMWATER, POWER, TELEPHONE, CABLE TV, GAS, IRRIGATION, AND STREET LIGHTING. THE CONTRACTOR SHALL NOTIFY THE OWNER 72 HOURS IN ADVANCE OF ANY WORK AFFECTING ACCESS OR SERVICE AND SHALL MINIMIZE INTERRUPTIONS TO DRIVEWAYS FOR RESIDENTS AND BUSINESSES ADJACENT TO THE PROJECT. THE OWNER SHALL NOTIFY RESIDENTS AND ADJACENT BUSINESSES OF ANY OUTAGES.
16. ALL DISTURBED LAWNS AND VEGETATED AREAS WILL BE RESTORED TO ORIGINAL CONDITION. ANY DISTURBANCE OR DAMAGE TO OTHER PROPERTY ON ADJACENT PARCELS OR IN THE PUBLIC RIGHT OF WAY SHALL ALSO BE REPAIRED OR RESTORED TO ORIGINAL CONDITION AT NO ADDITIONAL COST TO OWNER.

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INTERIM REMEDIAL ACTION - SOIL REMOVAL HUB BUILDING
PORT OF SKAGIT
SEDRO-WOOLLEY, WASHINGTON

ISSUE	DATE	DESCRIPTION

PROJECT: 0624.04.25
DESIGNED: M. KARN
DRAWN: M. KARN
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE
SHEET TITLE
COVER
SHEET
C0.0

PLOTTED ON: 2026-01-06 11:55 AM PLOTTED BY: Mia Karn FILENAME: g:\00_mfa civil 3d\00_projects\0624.04 port of skagit\25_HUB YEARS\C0.0 COVER.dwg

CONSTRUCTION NOTES

EROSION AND SEDIMENT CONTROL

1. ALL GRADING AND EROSION CONTROL MATERIALS, WORKMANSHIP AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE CURRENT EDITION OF THE "STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON" PREPARED BY THE WASHINGTON STATE DEPARTMENT OF ECOLOGY.

2. THE CONTRACTOR SHALL MAINTAIN AN ON-SITE WRITTEN DAILY LOG OF EROSION CONTROL AND MAINTENANCE.

3. DURING THE PERIOD FROM OCTOBER 1ST TO APRIL 30TH, NO SOIL SHALL BE EXPOSED FOR MORE THAN TWO (2) DAYS. FROM MAY 1ST TO SEPTEMBER 30TH, NO SOILS SHALL REMAIN EXPOSED FOR MORE THAN SEVEN (7) DAYS.

4. THE CONSTRUCTION ENTRANCE MAY BE REDUCED TO LESS THAN 100' WITH APPROVAL OF THE EROSION CONTROL INSPECTOR.

5. INLET PROTECTION FABRIC SHALL BE INSTALLED UNDER GRATES FOR INLETS IN LANDSCAPED AREAS.

6. THE CONTRACTOR WILL PROVIDE APPROPRIATE PROACTIVE EROSION CONTROL DURING CONSTRUCTION TO PREVENT THE EROSION CONTROL SYSTEMS FROM FAILING DUE TO SILT. THE CONTRACTOR SHALL ENSURE THAT SEDIMENT DOES NOT IMPACT THE ADJACENT PROPERTIES OR THE SURROUNDING PUBLIC ROADS DURING CONSTRUCTION.

7. THE IMPLEMENTATION OF THESE EROSION AND SEDIMENT CONTROL (ESC) PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED, AND VEGETATION IS ESTABLISHED.

8. THE BOUNDARIES OF THE WORK AREA LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED WORK AREA LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.

9. CARE SHOULD BE TAKEN NOT TO DISTURB MORE AREA THAN NEEDED FOR CONSTRUCTION REQUIREMENTS. ALL DISTURBED SOILS SURFACES ARE TO BE STABILIZED. STABILIZATION OF DISTURBED SOIL AREAS SHALL CONSIST OF: HYDROSEEDING OR HANDSEEDING, MULCHING, OR PLACING OF EROSION CONTROL BLANKETS OR PLASTIC IN LANDSCAPING SOIL AREAS. IT WILL ALSO CONSIST OF PAVING AND CONCRETE WORK IN DRIVING, PARKING, AND SIDEWALK AREAS. ALL SEEDED AREAS ARE TO BE FERTILIZED, WATERED, AND MAINTAINED TO ENHANCE THE IMMEDIATE REGROWTH OF VEGETATION.

10. MATERIAL STOCKPILES ARE TO BE PROTECTED FROM PRECIPITATION BY THE FOLLOWING MEANS:

    • TEMPORARY - COVER PILES WITH TARPS OR PLASTIC SHEETING WEIGHTED WITH TIRES, LUMBER, OR CONCRETE BLOCKS.

    • PERMANENT - COVER PILES WITH TARPS OR PLASTIC, OR RESEED. PERIMETER AREAS AROUND PILES ARE TO BE SURROUNDED WITH EROSION CONTROL FILTER FABRIC FENCES UNTIL SOILS SURFACE IS STABILIZED WITH RESEEDING.

10. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE CONTINUOUS FUNCTIONING. INSPECTION AND MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO:

    • VERIFYING THAT ALL AREAS ARE GRADED SUCH THAT ALL RUNOFF IS DIRECTED TO A SEDIMENTATION TRAP FACILITY BEFORE BEING DISCHARGED TO SURFACE.

    • REMOVAL OF TRAPPED SILTS AT SILT BARRIERS, SILT TRAPS, OR POINTS OF ACCUMULATION.

    • ADDITIONAL PROTECTIVE MEASURES, AS REQUIRED, DUE TO JOB SITE CONDITIONS.

    • STABILIZED CONSTRUCTION ENTRANCES INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. MONITORING OF VEHICLES LEAVING THE SITE TO MINIMIZE TRANSMISSION OF LOOSE SOILS TO THE PUBLIC ROADWAYS.

    • IF SEDIMENT IS TRANSPORTED ONTO A ROAD SURFACE, THE SURFACE IS TO BE CLEANED THOROUGHLY AT THE END OF EACH DAY.

11. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT.

12. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.

13. SILT FENCE CONSTRUCTION SPECIFICATIONS:

    • THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED 30 INCHES.

    • A MINIMUM 4 INCH WIDE BY 4 INCH DEEP TRENCH SHALL BE EXCAVATED ALONG THE LINE OF POSTS AND UPSLOPE OF THE BARRIER.

    • THE TRENCH SHALL BE BACKFILLED WITH CLEAN, NATIVE, OR IMPORTED SOIL.

    • SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT AND WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER.

    • ANY SEDIMENT DEPOSITS COLLECTED SHALL BE DISPOSED OF WITH STOCKPILED MATERIAL.

14. THIS EROSION AND SEDIMENT CONTROL PLAN IS INTENDED TO BE USED AS A GUIDE TO CONTROL THE TRANSPORTATION OF LOOSE SOILS FROM THE PROPERTY THAT CAUSE WATER QUALITY AND NUISANCE PROBLEMS OUTSIDE THE CONSTRUCTION AREA.

15. DEPENDING ON THE CONTRACTOR'S CONSTRUCTION PRACTICES, SOME PORTIONS OF THE PROPOSED EROSION AND SEDIMENT CONTROL PLAN MAY BE VARIED ACCORDING TO THE JOB SITE CONDITION. ALL CHANGES TO THE PLAN MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ADJUSTMENT.

EXCAVATION

16. THE CONTRACTOR SHALL START EXCAVATION ACTIVITIES AT THE LOCATIONS OF THE KNOWN MODEL TOXICS CONTROL ACT METHOD A CLEANUP LEVEL EXCEEDANCES AS OUTLINED IN THE INTERIM ACTION PLAN.

17. EXCAVATION EXTENT SHALL BE DETERMINED BY THE ENGINEER BASED ON FLOOR AND SIDEWALL SAMPLES ANALYZED WITH A PORTABLE FIELD XRF AND CONFIRMED WITH LABORATORY ANALYSIS.

18. EXCAVATED MATERIAL SHALL BE PLACED IN STOCKPILES IN PREDETERMINED AREAS OVER PLASTIC SHEETING. STOCKPILES SHALL BE PROTECTED FROM EROSION IN ACCORDANCE WITH THE "STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON." SEE DETAILS B AND C ON SHEET 3.1 OF THIS PLAN SET FOR STOCKPILING GUIDELINES.

19. PRIOR TO OFFSITE DISPOSAL, STOCKPILED MATERIAL SHALL BE SAMPLED BY ENGINEER AND ANALYZED FOR LEAD, USING THE TCLP ANALYSIS AS DESCRIBED IN THE INTERIM ACTION PLAN.

SITE GRADING

20. FINAL GRADE FOR BACKFILLED EXCAVATION SHALL MATCH EXISTING CONDITIONS.

21. ALL SURFACES SHALL BE COMPACTED AND GRADED SMOOTH AND FREE OF IRREGULARITIES THAT MIGHT ACCUMULATE SURFACE WATER.

22. ALL GRADING OPERATIONS AND DISTURBED SURFACE STABILIZATION SHALL BE IN ACCORDANCE WITH THE PROJECT EROSION AND SEDIMENT CONTROL PLAN.

23. VEGETATION WITHIN THE LIMITS OF EXCAVATION SHALL BE CLEARED AND GRUBBED.

24. THE CONTRACTOR SHALL MINIMIZE DISRUPTION OF EXISTING VEGETATION OUTSIDE THE EXCAVATION LIMITS.

PRELIMINARY NOT FOR CONSTRUCTION

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INTERIM REMEDIAL ACTION - SOIL REMOVAL HUB BUILDING
PORT OF SKAGIT
SEDRO-WOOLLEY, WASHINGTON

ISSUE	DATE	DESCRIPTION

PROJECT: M0624.04.25
DESIGNED: M. KARN
DRAWN: M. KARN
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE

SHEET TITLE
REMEDIATION NOTES

SHEET
1.0

PLOTTED BY: Max Karn FILENAME: g:\00_mfa cad 3d\00_projects\0624.04 port of skagit\25_IRAR\PLANS\1.0 CONSTRUCTION NOTES.dwg
PLOTTED ON: 2026-01-06 11:03 AM

ABBREVIATIONS

AC	ACRE, ASPHALT CONCRETE PAVEMENT	LB	POUND(-S)
ACOE	ARMY CORPS OF ENGINEERS	LF	LINEAR FEET
AD	AREA DRAIN	LONG.	LONGITUDINAL
AGG	AGGREGATE	LT	LEFT
AIR	AIR RELIEF	MAX	MAXIMUM
AMSL	ABOVE MEAN SEA LEVEL	MFA	MAUL FOSTER & ALONGI, INC.
AP	ANGLE POINT	MFR	MANUFACTURER
APN	APPARENT PARCEL NUMBER	MH	MANHOLE
APPD	APPROVED	MIC	MONUMENT (IN CASE)
APPROX, ±	APPROXIMAT(-E, -LY)	MIN	MINIMUM; MINUTE
ASPH	ASPHALT	MISC	MISCELLANEOUS
ASSY	ASSEMBLY	MJ	MECHANICAL JOINT
		MON	MONUMENT (SURFACE)
BCR	BEGIN CURB RETURN	MW	MONITORING WELL
BF	BUTTERFLY		
BGS	BELOW GROUND SURFACE	N	NORTH
BLDG	BUILDING	N/A	NOT APPLICABLE
BLVD	BOULEVARD	NAT G, NG	NATURAL GAS
BM	BENCHMARK	NE	NORTHEAST
BMP	BEST MANAGEMENT PRACTICE	NO.	NUMBER
BO	BLOW-OFF	NTS	NOT TO SCALE
BOC	BACK OF CURB	NW	NORTHWEST
BOT, BTM	BOTTOM		
B.O.W.	BOTTOM OF WALL	OC	ON CENTER
BVC	BEGIN VERTICAL CURVE	OD	OUTSIDE DIAMETER
		OHP	OVERHEAD POWER
CB	CATCH BASIN	OT	OWNERSHIP TIE
CDF	CONTROLLED DENSITY FILL		
CEM	CEMENT	P	PIPE
CF	CUBIC FEET	P TRAN	PAD MOUNTED TRANSFORMER
CFS	CUBIC FEET PER SECOND	PC	POINT OF CURVATURE
CIP	CAST IRON PIPE	PCC	PORTLAND CEMENT CONCRETE
CIR	CIRCLE	PEN.	PENETRATION
CK	CHECK	PERF	PERFORAT(-E, -ED, -ES, -ION)
CL, ℄	CENTERLINE	PIP	PRESERVE IN PLACE
CMP	CORRUGATED METAL PIPE	P.L., PL	PROPERTY LINE, PLACE
CO	CLEANOUT	POW V	POWER VAULT
COMP	COMPACTION	PP	POWER POLE
CONC	CONCRETE	PROP.	PROPOSED
CPE	CORRUGATED POLYETHYLENE	PS	PUMP STATION
CPL	COUPLING	PSF	POUNDS PER SQUARE FOOT
CT	COURT	PSI	POUNDS PER SQUARE INCH
CTR	CENTER	PT	POINT OF TANGENT
CULV	CULVERT	PV	PLUG VALVE
CY	CUBIC YARD	PVI	POINT OF VERTICAL INTERSECTION
		PVC	POLYVINYL CHLORIDE
D	DEPTH	PVMT	PAVEMENT
DEG	DEGREE(-S)		
DI	DUCTILE IRON	R, RAD	RADIUS
DIA	DIAMETER	RC	REINFORCED CONCRETE
DIM.	DIMENSION(-S)	RCP	REINFORCED CONCRETE PIPE
DIP, D.I.P.	DUCTILE IRON PIPE	RD	ROOF DRAIN
DOT	DEPARTMENT OF TRANSPORTATION	RED	REDUCER
		REQD	REQUIRED
DR	DIMENSION RATIO	REQT	REQUIREMENT
DTL	DETAIL	REV	REVISION
DWG(S)	DRAWING(-S)	R/W, ROW	RIGHT-OF-WAY
		RT	RIGHT
E	EAST		
EA	EACH	S	SOUTH, SLOPE
ECR	END CURB RETURN	SB	SOIL BORING
EG	EXISTING GROUND	SCH	SCHEDULE
EL, ELEV	ELEVATION	SD	STORM DRAIN
ELB, ELL	ELBOW	SDR	STANDARD DIMENSION RATIO
ELEC	ELECTRIC(-AL)	SE	SOUTHEAST
ENGR	ENGINEER	SF	SQUARE FEET
ENTR	ENTRANCE	SHT	SHEET
EP, EOP	EDGE OF PAVEMENT	SL	SLOPE
EQ	EQUAL(-LY)	SPEC	SPECIFICATIONS
ESC	EROSION CONTROL	SQ	SQUARE
ESMT	EASEMENT	SQ IN	SQUARE INCHES
EST	ESTIMATE(-D)	SRF	SURFACE
EVC	END VERTICAL CURVE	SSWR	SANITARY SEWER
EX.,	EXTG. EXISTING	ST	STREET
EXC	EXCAVATE	STA	STATION
EW	EACH WAY	STD	STANDARD
		STL	STEEL
FF	FINISH FLOOR	STRM	STORM
FG	FINISH GRADE	STRUCT	STRUCTUR(-E, -AL)
FH	FIRE HYDRANT	SW,S/W	SIDEWALK, SOUTHWEST
FL	FLOW LINE		
FLG	FLANGE	TB	THRUST BLOCK
FM	FORCE MAIN	TBM	TEMPORARY BENCHMARK
FT	FEET, FOOT	TC	TOP OF CURB
		TEL, TELE	TELEPHONE
GAL	GALLON(-S)	TEMP	TEMPORARY
GM	GAS METER	TP	TOP OF PAVEMENT, TEL POLE, TURNING POINT
GND	GROUND		
GP	GUARD POST	TW	TOP OF WALL
GPM	GALLONS PER MINUTE	TYP	TYPICAL
GRD	GRADE		
GV	GAS VALVE, GATE VALVE	UG	UNDERGROUND
		UGE	UNDERGROUND ELECTRIC
HDPE	HIGH DENSITY POLYETHYLENE	UTIL	UTILITY
HGT, HT	HEIGHT		
HORZ	HORIZONTAL	VC	VERTICAL CURVE
HP	HORSEPOWER	VERT	VERTICAL
HYD	HYDRANT	VOL	VOLUME
ID	INSIDE DIAMETER	W	WIDTH; WIDE; WEST
IE	INVERT ELEVATION	W/	WITH
IN	INCH(-ES)	WATR	WATER
INTX	INTERSECTION	WM	WATER METER
INV	INVERT	W/O	WITHOUT
IP	IRON PIPE	WSE	WATER SURFACE ELEVATION
		WV	GATE/GENERAL WATER VALVE
L	LENGTH	XRF	X-RAY FLUORESCENCE
LAT	LATERAL	YD	YARD
		YR	YEAR

GENERAL LEGEND

GAS/POWER/TELEPHONE SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		GAS METER
		GAS VALVE
		PAD MOUNTED TRANSFORMER
P		POWER VAULT
		TRANSMISSION TOWER
		UTILITY POLE
		UTILITY POLE ANCHOR
		TELEPHONE RISER
T		TELEPHONE VAULT
		LIGHT POLE

SURVEY SYMBOLS

SYMBOL THEOR./ EXIST.	SYMBOL FOUND/ PROP.	DESCRIPTION
		ANGLE POINT
		BENCH MARK
		BLOCK CORNER
		IRON PIPE
		MONUMENT
		OWNERSHIP TIE
		SECTION DATA:
		SECTION CENTER
		SECTION CORNER
		QUARTER CORNER
		SIXTEENTH CORNER
		CLOSING CORNER
MC WC	MC WC	MEANDER CORNER
		WITNESS CORNER
		SOIL BORING
		SPOT ELEVATION

27	EXISTING GRADE MAJOR CONTOUR
27	EXISTING GRADE MINOR CONTOUR
SD_x	EXISTING STORM DRAIN PIPE
W_x	EXISTING WATER PIPE
SS_x	EXISTING SANITARY SEWER PIPE
	EXISTING AC PAVEMENT
	EXISTING CONCRETE SURFACING
	EXISTING GRAVEL SURFACING
	EXISTING BUILDING
	EXISTING FENCE LINE
	EXISTING ROAD CENTERLINE
	EXISTING RIGHT-OF-WAY
PL	EXISTING PROPERTY LINE

WATER SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		CAP/PLUG
		COUPLING
		GUARD POST / BOLLARD
		REDUCER
		THRUST BLOCK
		WATER METER
		DOUBLE CHECK VALVE ASSEMBLY
		FIRE HYDRANT
		AIR RELIEF
		BLOW-OFF VALVE
		CHECK VALVE
		GATE VALVE
		BENDS:
		90 DEGREE BEND
		45 DEGREE BEND
		22.5 DEGREE BEND
		11.25 DEGREE BEND
		VERTICAL BEND
		TEE
		CROSS

SANITARY/STORM SEWER SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		SAN. SEWER CLEANOUT
	S	SAN. SEWER MANHOLE
		STORM DRAIN CATCH BASIN
		STORM DRAIN CULVERT
	D	STORM DRAIN MANHOLE
		DRY WELL
		AREA DRAIN

27	PROPOSED GRADE MAJOR CONTOUR (5.0' INTERVAL)
27	PROPOSED GRADE MINOR CONTOUR (1.0' INTERVAL)
	PROPOSED STORM DRAIN PIPE
	PROPOSED WATER PIPE
	PROPOSED SANITARY SEWER PIPE
	PROPOSED AC PAVEMENT
	PROPOSED EXCAVATION AREA
	PROPOSED GRASS SURFACING
	PROPOSED BUILDING
	PROPOSED FENCE LINE
	PROPOSED ROAD CENTERLINE
	PROPOSED RIGHT-OF-WAY
PL	PROPOSED PROPERTY LINE

CHANNELIZATION SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		BIKE PATH
		DISABLED ACCESS
STOP	STOP	STOP
		RAISED MARKERS:
		LANE MARKERS TYPE I
		LANE MARKERS TYPE II
		SIGN

MISCELLANEOUS SYMBOLS

SYMBOL EXIST.	SYMBOL PROP.	DESCRIPTION
		MONITORING WELL
		INLET PROTECTION PILLOW
		CONSTRUCTION ENTRANCE
	FG 83.88	PROPOSED SPOT SHOT
	#	SOIL SAMPLE BELOW MTCA METHOD A CRITERIA
	#	SOIL SAMPLE ABOVE MTCA METHOD A CRITERIA

SECTION NUMBER / A / C1.X / SECTION REFERENCE SHEET

TYPICAL SECTION CALLOUT

DETAIL NUMBER / X / C1.X / DETAIL REFERENCE SHEET

TYPICAL DETAIL CALLOUT

SF	PROPOSED SEDIMENT FENCE
OR OR	PROPOSED FLOW DIRECTION
	PROPOSED GRADE BREAK
	PROPOSED DITCH FLOW LINE
	PROPOSED COMPOST SOCK
	PROPOSED PAINT STRIPE
	PROPOSED STOCKPILE AREA
	EXISTING FLOW DIRECTION
P	EXISTING OVERHEAD POWER
E_x	EXISTING UNDERGROUND POWER
T	EXISTING UNDERGROUND TELEPHONE
G	EXISTING UNDERGROUND GAS

DRAFT

PRELIMINARY

MAUL FOSTER ALONGI
114 W MAGNOLIA STREET, SUITE 500
BELLINGHAM, WA 98225
PHONE: 360.594.6262
www.maulfoster.com

INTERIM REMEDIAL ACTION - SOIL REMOVAL HUB BUILDING
PORT OF SKAGIT
SEDRO-WOOLLEY, WASHINGTON

ISSUE	DATE	DESCRIPTION

PROJECT: M0624.04.25
DESIGNED: M. KARN
DRAWN: M. KARN
CHECKED: J. ELLIOTT
SCALE

SHEET TITLE
MASTER LEGEND

SHEET
C1.1

PLOTTED BY: Max Korn FILENAME: g:\05_mfa corr 3a\05_projects\0624\04 port of skagit\25_AMB\PLANS\C1.1 - MASTER LEGEND.dwg
PLOTTED ON: 2024-01-06 11:06 AM

PRELIMINARY

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INTERIM REMEDIAL ACTION - SOIL REMOVAL HUB BUILDING

PORT OF SKAGIT
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ISSUE	DATE	DESCRIPTION

PROJECT: M0624.04.25
DESIGNED: M. KARN
DRAWN: M. KARN
CHECKED: J. ELLIOT

SCALE

0 100' 200

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE

PROPERTY OVERVIEW

SHEET

C1.2

PLOTTED ON: 2024-01-04 11:56 AM PLOTTED BY: Max Korn FILENAME: g:\30_mfa civil 3d\30_projects\0624.04 port of skagit\25_HUB\PLANS\C1.2 PROPERTY OVERVIEW.dwg

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INTERIM REMEDIAL ACTION - SOIL REMOVAL HUB BUILDING

PORT OF SKAGIT

SEDRO-WOOLLEY, WASHINGTON

ISSUE	DATE	DESCRIPTION
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PROJECT: M0624.04.25

DESIGNED: M. KARN

DRAWN: M. KARN

CHECKED: J. ELLIOTT

SCALE

0 20' 40'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE

EXISTING CONDITIONS PLAN - FORMER HUB BUILDING

SHEET

C2.0

NOTES:

1. LOCATIONS OF SURVEYED FEATURES ARE APPROXIMATE AND MAY NOT REPRESENT ALL HAZARDS PRESENT IN THE WORK AREA. ADDITIONAL SURVEY SHALL BE CONDUCTED PRIOR TO START OF WORK.

PRELIMINARY

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INTERIM REMEDIAL ACTION - SOIL REMOVAL HUB BUILDING

PORT OF SKAGIT

SEDRO-WOOLLEY, WASHINGTON

ISSUE	DATE	DESCRIPTION
####	####	####

PROJECT: M0624.04.25
DESIGNED: M. KARN
DRAWN: M. KARN
CHECKED: J. ELLIOTT

SCALE

0 20' 40'

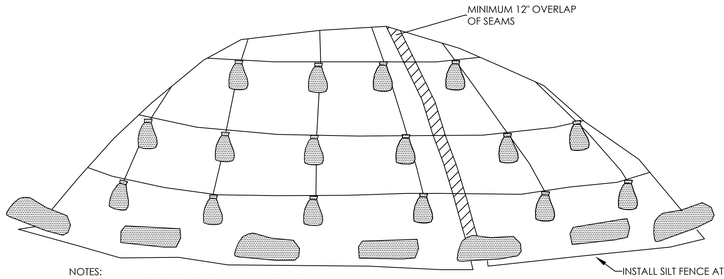
NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

SHEET TITLE

REMEDIATION PLAN - HUB BUILDING

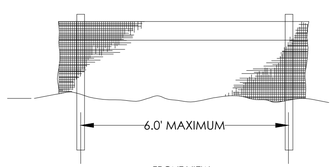
SHEET

C3.0

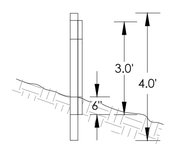


NOTES:
1. MINIMUM 12" COVER OVERLAP AT ALL SEAMS.
2. COMPOST SOCK OR SILT FENCE REQUIRED AT TOE OF STOCKPILE AREA AS SHOWN IN THE PERIMETER PLAN VIEW, DETAIL B, THIS SHEET.
   2.1. SILT FENCE IS TO BE INSTALLED AS SHOWN IN PERIMETER PLAN VIEW, DETAIL C, THIS SHEET.
3. STOCKPILE COVER SHALL BE MAINTAINED TIGHTLY IN PLACE BY USING SAND BAGS OR TIRES ON ROPES WITH A MAXIMUM OF 10' GRID SPACING IN ALL DIRECTIONS.
4. STOCKPILE COVERING SHALL BE BLACK PLASTIC WITH U.V. PROTECTION.

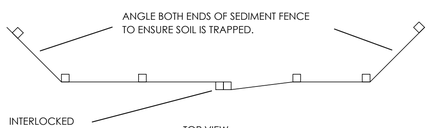
A STOCKPILE COVER DETAIL
NTS



FRONT VIEW



SIDE VIEW



TOP VIEW

NOTES:
1. BURY BOTTOM OF FILTER FABRIC 6" MIN. VERTICALLY BELOW GRADE.
2. 2" x 2" FIR, PINE, OR STEEL FENCE POSTS.
3. STITCHED LOOPS TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
4. COMPACT NATIVE FILL IN ALL AREAS OF FILTER FABRIC TRENCH.
5. SILT FENCING SHALL BE INSTALLED ON CONTOUR.

B SILT FENCE DETAIL
NTS

PRELIMINARY

MAUL FOSTER ALONGI
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INTERIM REMEDIAL ACTION - SOIL REMOVAL HUB BUILDING
PORT OF SKAGIT
SEDRO-WOOLLEY, WASHINGTON

ISSUE	DATE	DESCRIPTION

PROJECT: M0624.04.25
DESIGNED: M. KARN
DRAWN: M. KARN
CHECKED: J. ELLIOTT
SCALE
DRAWING NOT TO SCALE

SHEET TITLE
EROSION AND SEDIMENT CONTROL DETAILS

SHEET
C3.1

PLOTTED ON: 2026-01-06 11:08 AM PLOTTED BY: Mia Karn FILENAME: g:\00_mfa-civil 3d\00_projects\0624.04 port of skagit\23_HUB\TRANS\C3.2 ESCP DETAILS.dwg

Appendix A

Health and Safety Plan

MAUL FOSTER ALONGI

Health and Safety Plan—Hub Building (AOC 3)

Former Northern State Hospital
Sedro-Woolley, Washington

Agreed Order No. DE 16309

Cleanup Site ID: 10048

Prepared for:

Port Skagit

Burlington, Washington
March 26, 2026
Project No. M0624.01.025

Prepared by:

Maul Foster & Alongi, Inc.
114 W Magnolia Street, Suite 500, Bellingham, WA 98225

MAUL FOSTER ALONGI

Health and Safety Plan—Hub Building (AOC 3)—Hub Building (AOC 3)

Former Northern State Hospital
Sedro-Woolley, Washington

The material and data in this plan were prepared under the supervision and direction of the undersigned.

Maul Foster & Alongi, Inc.

Carolyn R. Wise, LHG
Senior Hydrogeologist

Amanda Bixby, LHG
Project Hydrogeologist

Contents

Appendixes

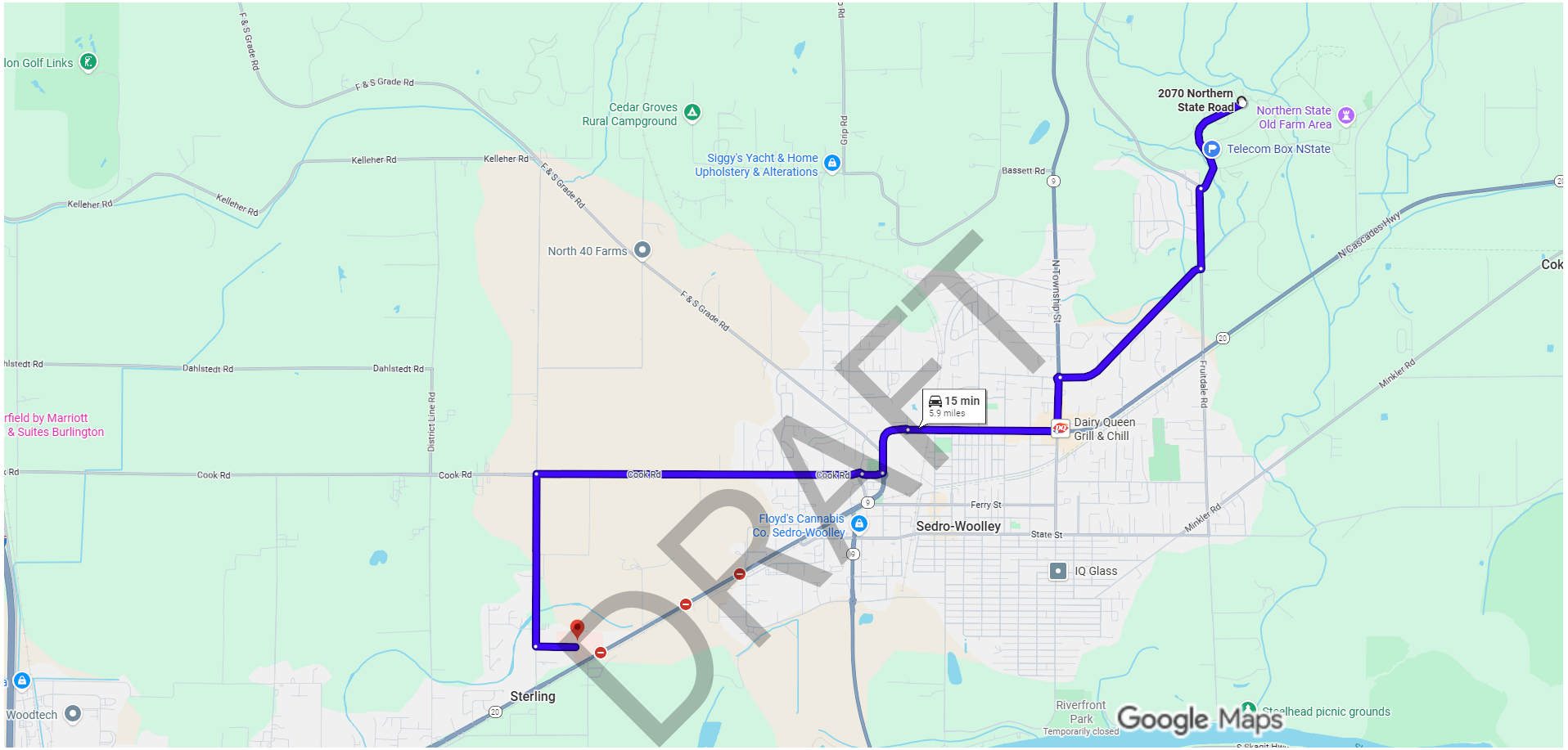
Abbreviations

AED	automated external defibrillator
AOC	area of concern
CFR	Code of Federal Regulations
COPC	chemical of potential concern
HASP	health and safety plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSC	health and safety coordinator
JHA	job hazard analysis
MFA	Maul Foster & Alongi, Inc.
PIC	principal in charge
PPE	personal protective equipment
the Site	2070 Northern State Road, Sedro-Woolley, Washington
SSO	site safety officer
XRF	x-ray fluorescence

Google Maps

2070 Northern State Rd, Sedro-Woolley, WA 98284 to PeaceHealth United General Medical Ctr, 2000 Hospital Dr, Sedro-Woolley, WA 98284

Drive 5.9 miles, 15 min



Imagery ©2025 , Map data ©2025 Google 2000 ft

⚠ This route has restricted usage or private roads.

2070 Northern State Rd

Sedro-Woolley, WA 98284

↑ 1. Head southwest on Northern State Rd towa
Powerhouse Dr

⚠ Partial restricted usage road

3 min (0.6 mi)

1 Nearest Hospital/Emergency Medical Center

1.1 Nearest Hospital

PeaceHealth United General Medical Center

2000 Hospital Dr, Sedro-Woolley, WA 98284

Phone: 360-856-6021

Distance: 5.9 miles

Travel Time: 15 minutes

1.2 Route to Hospital from Site

See the map on the first page of this document.

1.2.1 Driving Directions to Hospital from Site

1. Head southwest on Northern State Rd toward Powerhouse Dr. (0.6 mi)
2. At the traffic circle, take the 2nd exit onto N Fruitdale Rd. (0.4 mi)
3. Turn right onto McGargile Rd. (0.9 mi)
4. Take Moore St and Cook Rd to Collins Rd. (3.0 mi)
5. Continue on Collins Rd. Drive to Hospital Dr in Sedro-Woolley. (1.0 mi)

1.3 Emergency Phone Numbers

Ambulance, Police, Fire	Dial 911
Carolyn Wise Project Manager	Phone: 360-690-5982 Cell: 360-594-6255
Phil Wiescher Principal in Charge (PIC)	Phone: 503-407-1036 Cell: 360-594-6267
Ysabel Perez Health and Safety Coordinator (HSC)	Phone: 971-544-7871 Cell: 360-608-2485

2 Plan Summary

This health and safety plan (HASP) was developed to describe the procedures and practices necessary for protecting the health and safety of Maul Foster & Alongi, Inc. (MFA), employees conducting activities at the Former Northern State Hospital property at 2070 Northern State Road in Sedro-Woolley, Washington (the Site). Other employers, including contractors and subcontractors, are expected to develop and implement their own HASPs to manage the health and safety of their personnel.

MFA personnel conducting activities at the Site are responsible for understanding and adhering to this HASP. Before fieldwork begins, the on-Site personnel will designate a site safety officer (SSO) who is familiar with health and safety procedures and with the Site. Safety deficiencies should be immediately communicated to the SSO and, if necessary, to the project manager, PIC/program manager, or MFA's HSC.

All contractors and subcontractors have the primary responsibility for the safety of their own personnel on the Site. All personnel on the Site have stop work authority if they observe conditions that they believe create an imminent danger.

If MFA employees work on the Site for more than a year, this HASP will be reviewed at least annually. Additionally, this HASP will be updated as new or changed conditions are encountered to ensure that it reflects the current known hazards and requirements associated with the Site.

MFA personnel who will be working on the Site are required to read and understand this HASP. MFA personnel entering the work area must sign the personnel acknowledgment sheet (Section 16), certifying that they have read and that they understand this HASP and agree to abide by it.

3 Key Project Personnel

Name	Responsibility
Phil Wiescher	PIC
Carolyn Wise	Project Manager
Christian Sifford	Field Personnel
Brenden Murphy	Field Personnel
Anna Poliski	Field Personnel
Amanda Bixby	Field Personnel
Ysabel Perez	HSC

4 Emergency Supplies and Equipment List

Equipment	Location and Notes
First Aid Kit	Inside work vehicle.
Fire Extinguishers	Inside work vehicle.
Mobile Phones	On MFA staff.
Traffic Cones	In work vehicle, to be used as needed.
Water and Other Fluid Replenishment	Inside food-only cooler in work vehicle.
Eyewash	In work vehicle.
Health and Safety Plan	In field clipboard.
Dust Meter	To be ordered if needed.

5 Site Description and Background

5.1 Type of Site

The approximately 225-acre Site is located in section 8 of township 35 north and range 5, east of the Willamette Meridian. The Site is a large, historic campus—formerly the Northern State Hospital—that is being redeveloped as a mixed-use property with multiple tenants.

Through numerous environmental investigations, seven Areas of Concern (AOCs) were identified for the Site. This HASP focuses on activities planned for AOC 3, lead in shallow soil adjacent to historic buildings. These activities are further described in the interim action plan report, to which this HASP is an appendix.

5.2 Buildings/Structures

The Site is currently zoned "urban reserve public open space" and is located within the Sedro-Woolley, Washington, city limits. The Site comprises over 80 buildings and structures. Several buildings have been demolished on the Site, and the debris from a few of the buildings has been buried and/or disposed of on site, as determined through interviews of maintenance staff at the Site.

5.3 Topography

The Site is located on a small plateau with a slight downward topographic slope toward the east, south, and southwest toward Hanson Creek (east) and Brickyard Creek (south/southwest).

5.4 General Geologic/Hydrologic Setting

According to the geologic map of the Sedro-Woolley North and Lyman 7.5-minute quadrangles, the Site and vicinity are underlain by Quaternary glaciomarine drift. The glaciomarine deposits typically consist of, "...poorly sorted, poorly compacted diamicton consisting of silty, sandy, gravelly clay to clayey gravel; moderately well- to well-sorted sandy silt, sandy clay, clayey silt, and clay..."[1]

Water levels measured from nine monitoring wells on the northern portion of the Property from June 2015 through May 2021 indicate that shallow groundwater was present between approximately 3.77 feet to 18.88 feet below the ground surface.[2]

Groundwater flows northeast-east-southeast toward Hansen Creek, with a southern component of flow observed from the central portion of the Property toward the Skagit River Valley. Because of the large size of the property and the limited area represented by the monitoring wells, it is possible that the groundwater flow direction varies throughout the Site. It is inferred that shallow groundwater in other areas of the Site flows either southeast, because of the gradual topographic slope of the area toward the Skagit River Valley; west toward Brickyard Creek; or east toward Hansen Creek, depending on the location.

5.5 Site Status

The Site is currently owned by the Port of Skagit, with buildings leased to Cascade Job Corps for on-site housing and educational services.

5.6 General Site History

The Site was developed in 1909 and operated as a treatment and residence facility and hospital for the mentally ill until its closure in 1973. The approximately 225-acre campus, which includes the former treatment and residence facility, hospital, and grounds, was designed to be self-sustaining and included on-site patient and staff housing, dedicated water supply reservoirs and an associated potable water treatment facility, a fueling station for on-site vehicles, maintenance and paint shops, and a laundry facility. After the facility's closure, ownership of the Site was transferred from the Department of Social and Health Services to the General Services Administration (known today as the Department of Enterprise Services). On July 1, 2018, the Site was transferred from the Department of Enterprise Services to the Port of Skagit.

[1] Dragovich, J. D., D. K. Norman, T. J. Lapen, and G. Anderson. 1999. *Geologic map of the Sedro- Woolley North and Lyman 7.5-minute quadrangles, Western Skagit County, Washington*. Geology and Earth Resources, Washington Division.
[2] MFA. 2025. *Remedial Investigation Report, Northern State Multi Service Center, Sedro-Woolley, Washington*. Prepared for Port of Skagit. Maul Foster & Alongi, Inc., Bellingham, Washington. October 16.

6 Hazard Evaluation

6.1 Site Tasks and Operations

MFA has completed job hazard analyses (JHAs) for specific tasks that may be conducted on the Site, depending on the scope of work. JHAs are provided in Appendix A. The following list summarizes planned tasks and operations:

- General work near heavy equipment
- Work near excavations and trenches
- Collecting soil samples

The control measures that field personnel must implement to eliminate or minimize these hazards, such as air monitoring, personal protective equipment (PPE), engineering controls, and decontamination procedures, are detailed in the JHAs and in subsequent sections of this HASP.

6.2 Chemical Hazard Evaluation

Chemicals of potential concern (COPCs) for AOC 3 are summarized in Appendix B. Air monitoring action levels and associated controls are specified in Appendix C.

6.3 Physical Hazards

The specific physical hazards and associated controls for work on the Site are described in the JHAs provided in Appendix A.

6.3.1 Radiological Hazard Evaluation

Field activities may include the use of portable x-ray fluorescence (XRF) device for on-site analysis of metals. The analyst should undergo proper training in the safe operation of the XRF instrument and radiation training before use of the instrument in the field. The analyst should follow the protocols for radiation safety provided in the XRF instrument operator's manual. All operators of XRF units are responsible for understanding safety requirements and implementing controls to ensure safe and responsible use. Best practices include the following:

1. Keep human radiation exposure as low as reasonably achievable, taking into consideration amount of time the XRF device is in use, distance from XRF device use, and shielding during XRF device use.
2. Never test longer than is required to obtain data. Note that a light will flash on the analyzer when x-rays are being emitted.
3. Ensure x-rays are not emitted when a test is not actively being conducted.
4. X-rays travel in a nearly straight line from an XRF device out the front of the analyzer, so never place any part of your body in front of the analyzer, never point the analyzer at yourself or others, and keep the analyzer in direct contact with the sample during testing.

5. X-rays can be scattered from the sample during analysis, so keep your hands or other body parts away from the front of the analyzer during testing.
6. X-rays penetrate low-density materials, so do not test in a way that your lower extremities could be exposed.
7. Watch for radiation exposure warning signs during analyzer use.

7 Site-Control Measures

Control of access to the Site will be established before the work begins. Control measures may include fencing, gates, and signs limiting access to everyone except authorized personnel. The exclusion zone is defined as the area of known or suspected contamination (e.g., the area where a well is being installed), and the contaminant reduction zone is where support activities take place (e.g., packing sample coolers, decontamination activities).

MFA requires the buddy system if personnel conducting the work may potentially be exposed to chemical or physical hazards that would require immediate medical attention or rescue. The buddy system may involve working with non-MFA personnel.

8 Health and Safety Training

MFA personnel who could be exposed to COPCs while conducting work on the Site will have completed training consistent with the Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements in 29 Code of Federal Regulations (CFR) 1910.120(e) before beginning work on the Site. The training will include the following:

- Identification of an SSO, and other safety and health personnel, if applicable
- Identification of safety and health hazards specific to work being conducted
- Proper use of required PPE
- Safe work practices required (e.g., fall protection, confined-space entry procedures, hot-work permits, general safety rules)
- Safe use of engineering controls and equipment
- Medical surveillance requirements, including the recognition of signs and symptoms that might indicate overexposure to hazards
- The project-specific emergency response plan/spill containment plan

The HSC will oversee training for MFA personnel conducting fieldwork. Training records, including an outline, signoffs, and competency records, will be maintained by the HSC.

While the HSC is responsible for maintaining training records, the project manager is responsible for verifying that the training status of field personnel is current before these personnel deploy to the field.

9 Safety Equipment

9.1 Personal Protective Equipment

Individuals on the Site must wear PPE to protect against physical hazards. PPE required on the Site is typically modified Level D, which consists of the following:

- High-visibility vest
- Work boots
- Safety glasses if working around heavy equipment or handling liquid media
- Hard hat if working around heavy equipment
- Nitrile gloves or equivalent if handling media potentially impacted or known to be impacted
- Work gloves if handling materials that might have sharp edges, protrusions, or splinters

Additional PPE may be necessary for specific tasks with additional hazards. The SSO will be responsible for designating additional PPE for specific tasks. Depending on the activity, additional PPE may include the following:

- Hearing protection (to be worn during high-noise tasks)
- Chemical-resistant clothing, (e.g., Tyvek coveralls)
- Chemical-resistant boots
- Chemical-resistant goggles
- Chemical-resistant gloves
- Faceshield
- Respiratory protection

Additional PPE may be required if workers discover unexpected contamination. Characteristics of unexpected contamination could include unusual odors, discolored media, or a visible sheen. MFA employees should contact the SSO and, if necessary, the project manager and/or the HSC as soon as possible after the discovery of unexpected contamination. The SSO and, if applicable, the project manager and/or HSC will determine any need for additional controls and/or training.

PPE used at the Site must meet the requirements of recognized consensus standards (e.g., American National Standards Institute, National Institute for Occupational Safety and Health), and respiratory protection will comply with the requirements set forth in 29 CFR 1910.134.

Project personnel are not permitted to reduce the specified level of required PPE without approval from the SSO or the project manager and/or HSC.

9.2 Safety Equipment

The SSO will be responsible for ensuring that the following safety equipment is available during fieldwork and is properly inspected and maintained:

- Soap and water for decontamination
- Caution tape, traffic cones, and/or barriers
- First aid kit
- Automated external defibrillator (AED)
- Fire extinguisher
- Fluids for hydration, (e.g., drinking water or sports drink)
- Canopy for shade
- Hand-washing station
- Eye-flushing station

9.3 Air Monitoring Equipment

If excessive visible dust is observed and cannot be controlled through dust suppression measures (e.g., water application), the following air monitoring equipment may be used to identify conditions that may require additional controls. See Appendix C for specified action levels and follow-up response actions.

- Dust meter

9.4 Communication Equipment

MFA personnel should have a mobile phone available in case of emergency.

10 Decontamination Procedures

10.1 Partial Decontamination Procedures

MFA employees will implement the following partial decontamination procedures when exiting the work/exclusion zone but remaining on the Site.

- Remove work boots and put on street shoes. Place work boots in a plastic bag or container.
- Wash hands with soap and water.

10.2 Full Decontamination Procedures

When exiting the exclusion zone and leaving the Site (e.g., at the end of the work shift), MFA employees will follow the full decontamination procedures listed below.

- Remove work boots and put on street shoes. Place work boots in a plastic bag or container.
- Remove gloves and deposit in a container labeled for disposable items.
- Wash hands with soap and water.
- Shower as soon after the work shift as practicable.

11 Medical Surveillance

MFA will ensure that its employees who meet the following criteria are enrolled in a medical surveillance program consistent with 29 CFR 1910.120(f):

- The employees are, or may be, exposed to hazardous substances or health hazards at or above established permissible exposure limits for 30 or more days per year.
- The employees are required to wear a respirator for 30 or more days per year.

MFA employees who exhibit signs or symptoms consistent with overexposure to COPCs will be offered medical surveillance consistent with HAZWOPER requirements.

MFA will ensure that its employees who are authorized to wear respirators are medically evaluated and approved for respirator use, consistent with the respiratory protection standard (29 CFR 1910.134). The HSC or administrative designee (e.g., human resources manager) will maintain medical evaluation records, including respirator clearance documentation.

Personnel medically cleared for respirator use will undergo an annual qualitative fit test. The MFA HSC or administrative designee will conduct the annual qualitative fit tests and will manage the documentation.

If employees are required to wear a respirator on the Site, the project manager will verify that the employee has a current annual respirator fit test.

12 Air Monitoring

Based on Site conditions, it is not anticipated that air monitoring will be necessary; however, air monitoring equipment will be ordered if workers encounter conditions that require air monitoring. If such conditions are discovered, workers will exit the area and contact the SSO and, as needed, the project manager or the HSC. If necessary, MFA will use the air monitoring equipment to evaluate the

conditions and determine whether additional controls and/or training are required. Action levels and follow-up actions are provided in Appendix C.

A water truck or similar controls for minimizing dust generation may be used during project work. If controls do not prevent significant visible dust generation, MFA will take measurements with a real-time dust monitor and compare results to the action levels provided in Appendix C.

If air monitoring is necessary, it must be performed by individuals familiar with the calibration, use, and care of the required instruments. Measurements will be documented, and the records must include the following information:

- The name of the person conducting the measurements
- The identity of workers, if any, who have exposure indicated by the measurement results
- Information about the instrument (e.g., type, make, model, serial number)
- The location where the measurement was taken
- The measurement date and start/stop time
- Conditions represented by the measurement, including applicable activities, work practices, weather conditions, Site conditions, and controls in place
- Measurement results
- Other relevant observations or notes

A dust monitoring record is included as Appendix D.

12.1 Air Monitoring Action Levels

If air monitoring is conducted, the results will be compared to the action levels provided in Appendix C. These levels have been established to comply with Occupational Safety and Health Administration permissible exposure limits, American Conference of Governmental Industrial Hygienists threshold limit values, and National Institute for Occupational Safety and Health recommendations for the chemicals that may be encountered on the Site. The action levels have been adjusted for the relative response of common photoionization detection instruments to motor-fuel vapors.

12.2 Instrument Calibrations

Instruments will be calibrated consistent with manufacturers' recommendations. Calibrations will be coordinated by the SSO and the project manager. Calibration and monitoring records will be maintained by the SSO and/or the project manager.

13 Emergency Response, Spill Containment, and Confined Space

MFA employees will follow the emergency response, spill response, and confined-space procedures described in the MFA Policies and Procedures Manual. Incidents will be documented on the incident report form included as Appendix E.

14 Pre-entry Briefing

MFA employees will conduct pre-entry briefings prior to beginning work on the Site (e.g., tailgate meetings; see the checklist provided as Appendix F). Additional briefings shall be conducted as the scope of work or conditions change throughout the project to ensure that employees are familiar with and are adhering to the appropriate safety and health protocol. Attendance and discussion topics will be documented on sign-in sheets that will be maintained by the SSO.

15 Periodic Evaluation

The project manager or designee will evaluate the effectiveness of this HASP by conducting periodic HASP audits. A HASP audit form is included as Appendix G. In addition, HASP effectiveness will be evaluated by tracking ongoing health and safety feedback from field personnel working on the project. This feedback will be reviewed and incorporated into either immediate or annual updates of this HASP, as appropriate. This HASP will be reviewed and updated at least annually. Updating this HASP as necessary ensures that it reflects the known hazards, conditions, and requirements associated with the project. MFA will maintain HASP audit or other periodic evaluation records and track all revisions to this HASP.

16 Safe Work Practices

The following safe work practices are provided to supplement the other information in this HASP.

1. Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of materials is prohibited in areas with potentially contaminated materials.

2. Whenever practicable, field personnel will remain upwind of drilling rigs, open excavations, and other ground-disturbing activities.
3. Subsurface work will not be performed at any location until the area has been confirmed by a utility-locator firm to be free of underground utilities or other obstructions.

17 Acknowledgment

MFA cannot guarantee the health or safety of any person entering the Site. Because of the potentially hazardous nature of active sites, it is not possible to discover, evaluate, and provide protection against all possible hazards that may be encountered at the Site. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury and illness. The health and safety guidelines in this HASP were prepared specifically for the Site and should not be used on any other site without prior evaluation by trained health and safety personnel.

MFA personnel who will work at the Site are to read, understand, and agree to comply with the specific practices and guidelines described in this HASP regarding field safety and health hazards.

This HASP has been developed for the exclusive use of MFA personnel. MFA may make this HASP available for review by contracted or subcontracted personnel for information only. This HASP does not cover the activities performed by employees of any other employer on the project. All contracted or subcontracted personnel are responsible for implementing their own health and safety program, including generating and using their own HASP.

I have read and I understand this HASP and all attachments, and agree to comply with the requirements described herein:

Name	Title	Date

Appendix A

Job Hazard Analyses

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Job Hazard Analysis

Task/Operation: Conducting Fieldwork		
Project Number: M0624.04.025	**Location/Site Where Task/Operation Performed:** Former Northern State Hospital, Hub Building (AOC 3) 2070 Northern State Road, Sedro Woolley, WA	
Date Prepared: 12/15/25 **Date Reviewed:** 12/23/25	**Employee Preparing this Job Hazard Analysis (JHA):** A. Bixby **Employee Reviewing and Certifying this JHA:** C. Wise	
Job/Task Description		
This JHA describes hazards and required safe-work practices that are common to most types of fieldwork. See the separate task-specific JHA for hazards and safe-work practices that are unique to certain tasks (e.g., sampling contaminated media, working in remote areas).		
Physical Hazards		
Hazard/Risk	**Source of Hazard/Risk**	**Hazard/Risk Mitigation**
Heat/cold/sunburn	Weather.	Be aware of seasonal dangers, including frostbite, hypothermia, snow blindness, trench foot, and heat stress. Drink plenty of fluids, especially when perspiring. Wear sunscreen on exposed skin. Stop work if an employee feels symptoms of dehydration, overheating, or heat stroke. Move to a shaded area and drink water. During cold or wet conditions, wear adequate clothing to reduce the potential for hypothermia.
Lightning strike, violent storm	Weather	Lightning: Check NOAA weather reports before fieldwork and try to reschedule jobs if thunderstorms are expected. If thunder is heard within 30 seconds of seeing a lightning flash, seek shelter in a building and stay sheltered for at least 30 minutes after the last audible thunder. If a building is not available for shelter, use a vehicle for shelter. Avoid water, open fields, hilltops, and isolated tall trees. Other storms: Check NOAA weather reports before fieldwork and reschedule jobs if there is a storm warning (extreme flood, tornado, etc.). If caught in an unexpected storm, seek shelter.

Task/Operation: Conducting Fieldwork		
Eye injury	Debris (e.g., soil, water, injection fluids) coming into contact with eyes; working in areas with low, dense vegetation.	Wear eye protection with side shields. If there is a splash hazard, wear tight-fitting chemical goggles. If chemicals come into contact with eyes, immediately wash chemicals out with water. Identify the location of the eyewash station before beginning the work.
Head injury	Heavy equipment, tools, overhead hazards impacting the head.	Wear a hard hat. Do not work near moving or heavy equipment or under overhead hazards.
Foot injury	Sharp objects that could be stepped on; large objects falling on feet.	Wear protective boots (composite or steel-toe).
Hand injury	Pinch points, sharp objects, stress from pulling rope, dermal contact with chemicals and contaminated media.	Wear protective gloves. Appropriate gloves should be identified in the HASP or Safe Work Plan. Avoid placing hands near operating equipment.
Hearing loss	Noise generated by heavy equipment/machinery.	Wear hearing protection such as earplugs or earmuffs.
Bodily harm, including to bystanders and the public and pedestrians in the locality of work	Heavy equipment, drilling rigs, support vehicles, traffic and public rights-of-way; potential to be struck, crushed, or impacted by moving objects.	Wear a safety vest for enhanced visibility. Use cones and caution tape to cordon off the immediate work area. Watch for and escort pedestrians away from the work area. Pause work if necessary. Ensure traffic control measures (e.g., traffic cones, signage) are in place. Do not work near moving or heavy equipment or under overhead hazards. Maintain eye contact with equipment operators. When working around vehicles or heavy equipment, know the locations of emergency equipment (e.g., fire extinguishers, emergency shutoff features).
	Potential to be struck by pressurized equipment and hoses	Install cable guards to prevent a suddenly disconnected hose from striking an individual or confirm with subcontractor that such safeguards are in place. Ensure pressurized tanks have safety relief valves. Do not work around pressurized equipment or within the radius of pressurized hoses.

Task/Operation: Conducting Fieldwork		
Physical stress	Lifting heavy equipment and objects; conducting strenuous activities; kneeling on hard or gravel surfaces.	Use proper lifting techniques, i.e., bending and lifting with the legs and not the back. Do not twist at the waist when turning. Use the buddy system for heavy objects. Use knee pads or a kneeling pad. Take breaks and rest as needed.
Accidents with equipment/tools	Sample-collection equipment/tools.	Verify that you have the appropriate equipment/tools for your tasks. Use equipment/tools as intended by the manufacturer. Only use open blades or sharp-edged tools for their intended purposes. Stow tools in the vehicle properly; use appropriate cases and bags. Secure equipment (including compressed-gas cylinders) in the vehicle with netting and straps; do not leave loose—it can cause property damage or serious injuries to others or yourself.
Slips, trips, and falls	Uneven or unstable ground.	Maintain good housekeeping in work areas to minimize or eliminate slip/trip/fall hazards from equipment and supplies. Walk around rather than over hazards on the ground. Use caution when walking on uneven ground or in snowy and/or icy conditions. Dense vegetation may obscure dangerous features, including biological hazards, riverbanks, cliffs, unstable/steep slopes, excavations, and mine adits. Flagging or marking dangerous areas can help reduce the likelihood of injury.

Task/Operation: Conducting Fieldwork		
Biological/Chemical Hazards		
Biological/Chemical Risk	**Source of Hazard/Risk**	**Hazard/Risk Mitigation**
Biological—animals	Livestock, deer; biting or stinging insects, spiders, and snakes; animal feces.	Do not turn your back on animals even if they seem docile. Make sure you have an escape plan in case an animal becomes aggressive. Use bug repellent. Insect nests should never be disturbed. Use snake chaps or shin guards when grass is above the ankle. Employees who are allergic to stings should not work in areas where there is a high risk of encountering stinging insects. Use a bar to clear spiders and/or snakes from objects and/or vegetation. Check well vaults and security lids for insects; use caution when opening. Avoid contact with animal feces. When working indoors, remove animal feces from the work area—if possible, without creating dust.
Biological—plants	Poisonous plants and other irritant vegetation (e.g., blackberry canes).	Do not touch or approach poisonous or irritant vegetation. Wear long pants and a long-sleeved shirt while on the site if poisonous plants and other irritant vegetation is present.
Exposure to chemicals in environmental media	Chemicals or hazardous materials in soil, groundwater, stormwater, building materials, outdoor air, and excavations.	See the task-specific JHA.
Additional Control Measures and Guidance		
Engineering Controls: No engineering controls specified. The need for engineering controls should be discussed with the project manager, health and safety coordinator, and subcontractors, and identified in the HASP.		
General Safe-Work Practices and Guidance: • Employees should not eat or drink in the immediate area where sampling is being conducted. Employees should wash their hands and faces before eating or drinking. If used, nitrile gloves should be disposed of in a container labeled for disposable items. • Cones, barrier tape, or equivalent methods will be used to establish the work area, if feasible. • Tasks that must be conducted in the work area must be coordinated with equipment operators before work begins. Methods of communication, such as direct eye contact, hand signals, and/or verbal communication, will be established before work begins. • Employees should carry a cellular phone and/or a security radio.		
PPE: Hard hat (when working around heavy equipment, including drill rigs, or overhead hazards), work boots (protective composite or steel-toe boots when working around heavy equipment), high-visibility vest or outer garment, safety glasses with side shields, nitrile gloves (or other hand protection appropriate for the type of physical or chemical hazards present), hearing protection (earplugs or earmuffs) as needed. Use chemical goggles if there is a chemical splash hazard.		

Job Hazard Analysis

Task/Operation: Task-Specific Hazards		
Project Number: M0624.04.025	**Location/Site Where Task/Operation Performed:** Former Northern State Hospital, Hub Building (AOC 3) 2070 Northern State Road, Sedro Woolley, WA	
Date Prepared: 12/15/25 **Date Reviewed:** 12/23/25	**Employee Preparing this Job Hazard Analysis (JHA):** A. Bixby **Employee Reviewing and Certifying this JHA:** C. Wise	
Job/Task Description		
This JHA is specific to certain elements of fieldwork that have unique hazards and require specific safe-work practices to mitigate those hazards. See the separate General Fieldwork Hazards JHA for hazards and safe-work practices that are common to most types of fieldwork.		
Sampling Contaminated Media		
Hazard/Risk	**Source of Hazard/Risk**	**Hazard/Risk Mitigation**
Exposure to chemicals or hazardous substances (e.g., lead) via direct contact and inhalation	Chemicals or hazardous materials in soil and building materials.	See the chemical hazards summary table for applicable chemical hazards.
		Consult the HASP to identify the required PPE for preventing direct contact with contaminated media.
		Consult the HASP to identify required air monitoring equipment, respiratory protection, and action for preventing inhalation of contaminated dust.
		Use plastic garbage bags or plastic sheeting to cover the work area. It is preferable to roll/berm the edges to catch any drips/spills. If it is raining, work under a rain canopy.
		Consult the HASP to identify required PPE for preventing inhalation of contaminated media.
		The HASP identifies required air monitoring equipment, monitoring locations, respiratory protection, and action levels for preventing inhalation of contaminated media.

Task/Operation: Task-Specific Hazards		
Working around or in Excavations		
Bodily harm or death	Confined-space entry.	Excavations may be considered confined spaces. Contact the health and safety coordinator and the project manager if work in excavations will be necessary.
	Falling into open excavation from heights; engulfment/burial from working in excavations.	Ensure the HASP or safe work plan identifies project-specific procedures and engineering controls to mitigate risk of fall, engulfment, and burial.
		Never enter an excavation deeper than 4 feet without first coordinating with the health and safety coordinator and the project manager. Ensure the excavation slope is appropriate for entry (i.e., 34 degrees), shoring/sheet pile is installed, and appropriate ingress and egress points are established.
		Use signs, cones, barrier tape, or equivalent methods to mark open excavations.
		When working in an excavation, minimize time spent working near the excavation sidewall.
		Stay a safe distance from the excavation area—generally defined as a horizontal distance no less than the depth of the excavation.
		If close observation of an excavation is required (e.g., for describing soil stratigraphy, taking photos), slope or bench one side of the excavation sidewall to minimize potential for collapse.
		Backfill excavations as soon as work is complete; never leave excavations unattended or open overnight.
	Exposure to chemicals in soil, groundwater, air.	See the "Sampling Contaminated Solid and Liquid Media" and "Sampling and/or Monitoring Vapors" task-specific hazards above.

Task/Operation: Task-Specific Hazards
Additional Control Measures and Guidance
Engineering Controls: No engineering controls specified. The need for engineering controls should be discussed with the project manager, health and safety coordinator, and subcontractors, and identified in the HASP.
General Safe-Work Practices and Guidance: • See the General Fieldwork Hazards JHA for safe-work practices and guidance common to most types of fieldwork. • If additional safe-work practices are needed to address unique, task-specific hazards, these should be specified in the HASP or safe work plan.

Appendix B

Chemicals of Potential Concern

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Table
Chemical Hazard Summary

Analyte	Soil Range (mg/kg)		OSHA PEL (TWA)	ACGIH TLV (TWA)	NIOSH IDLH[1]	LEL (%)	IP (eV)	Other Hazard
	Low	High						
Lead	3.26	1,400	0.05 mg/m^3	0.05 mg/m^3	100 mg/m^3	NA	NA	C, P

Notes

ACGIH = American Conference of Governmental Industrial Hygienists.

C = carcinogen.

IDLH = immediately dangerous to life and health.

IP (eV) = ionization potential.

LEL = lower explosive limit.

mg/kg = milligrams per kilogram.

NA = not available.

NIOSH = National Institute for Occupational Safety and Health.

OSHA = Occupational Safety and Health Administration.

P = poison.

PEL = permissible exposure level.

TLV = threshold limit value.

TWA = time-weighted average.

Reference

[1]CDC. 2019. "Immediately Dangerous to Life or Health (IDLH) Values." Centers for Disease Control and Prevention, The National Institute for Occupational Safety and Health (NIOSH). October 8. Accessed September 13, 2022. http://www.cdc.gov/niosh/idlh/intridl4.html.

Appendix C

Air Monitoring Action Levels

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Air Monitoring Procedures and Toxicity Action Levels

Instrument	Action Level	Initial Action	Follow-Up Action
Dust meter	**0.05** milligrams per cubic meter of air.	Dust suppression, e.g., misting.	Adjust operations.
Notes **Bold** text indicates an action level.			

Appendix D

Dust Monitoring Record

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Dust Monitoring Record

Property Address: _____

Contractor: _____

Time	Date	Location (upwind/downwind; reference grid for station location)	Type (note visual monitoring or instrument used)	Duration of Sample	Concentration (if instrument used) (mg/m^3)	Recorded By	Dust Control Measures in Use	Work activities, weather conditions, or other applicable notes

Note
Supplemental recordkeeping forms may be required with certain permits and/or types of activities.

Appendix E

Incident Report Form

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Health and Safety Incident Report

PART 1: INCIDENT DESCRIPTION-

This report must be completed in full and submitted within 24 hours to the MFA health and safety coordinator. The project manager, affected coaches, and HR should also be notified.

Project Name: _____

Project Number: _____

Date and Time of Incident: _____

Location: _____

Person Documenting Incident: _____

Type of Incident (check all applicable items):

☐ Illness	☐ Health and safety infraction	☐ Vehicular accident
☐ Injury	☐ Fire, explosion, flash	☐ Electric shock
☐ Property damage or theft	☐ Chemical exposure	☐ Near miss
☐ Spill	☐ Other (describe):	

Description of Incident

Describe what happened and the possible cause of the incident. If reporting a spill, include the quantity or estimated quantity. Identify individual(s) involved, witnesses, and their affiliations. Describe emergency or corrective action taken. Attach additional sheets, drawings, or photographs as needed.

Vehicle Accidents

Refer to the vehicle accident procedures in each MFA vehicle and fill out a collision report, if applicable. (Links to Washington and Oregon report forms).

PART 2: INCIDENT INVESTIGATION

Date Investigation Began: _____

Investigation Team Members _____

Contributing Factors and Root Causes

Identify contributing factors and root causes of the incident. Examples include lack of training, inadequate procedures, lack of communication, etc.

Recommendations

Identify recommendations to address contributing factors and root causes:

1.
2.
3.

Identify the corrective actions taken to address the recommendations, including the date the actions were completed and the person or people who completed the actions. Attach supplemental records, if appropriate:

1.
2.
3.

Communication:

Describe the process used to communicate the results of the incident investigation, including the date(s) of communication.

Health and Safety Coordinator:

Sign this form when the investigation and follow-up actions are completed.

Name	Signature	Date

Appendix F

Tailgate Safety Meeting Checklist

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Tailgate Safety Meeting Checklist

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Client Name:	
Project No.:	
Communicated By:	
Date:	

Yes	NA	Information Reviewed
☐	☐	Emergency Response Procedures and Site Evacuation Routes
☐	☐	Route to Hospital
☐	☐	HASP Review and Location
☐	☐	Key Project Personnel
☐	☐	Emergency Phone Numbers
☐	☐	Stop Work Authority
☐	☐	General Site Description/History and Chemical Hazards
☐	☐	For Active Sites—Site Activities and Vehicular/Equipment Traffic
☐	☐	Site-Specific Physical Hazards
☐	☐	Required Personal Protective Equipment
☐	☐	Available Safety Equipment and Location
☐	☐	Daily Scope of Work (reference JHAs as applicable)
☐	☐	Decontamination Procedures
☐	☐	Identify Work Zones, Exclusion Zones, and Decontamination Zones
☐	☐	Hazardous Atmospheres
☐	☐	Air Monitoring Equipment and Procedures
☐	☐	Identify Potential Site-Specific Slip, Trip, and Fall Hazards
☐	☐	Dust and Vapor Control
☐	☐	Confined Space(s)
☐	☐	Open Pits and Excavation
☐	☐	Extreme Temperatures
☐	☐	Incident Reporting
☐	☐	Other: _____

Additional Health and Safety Practices and Considerations

Attendees		
Name	Signature	Company
1)		
2)		
3)		
4)		
5)		
6)		
7)		
8)		

Appendix G

HASP Audit Checklist

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HASP Audit Checklist

Project Name:	
Project No.:	
Project Location:	
Audit Date / Time:	
Person / Persons Performing Audit:	
MFA Personnel Interviewed or Conducting Fieldwork:	

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	Status			Comment	Recommendation	Assigned to:	Scheduled Completion Date:	Actions Completed:	Person Who Completed Actions:	Date Completed:	Current Status / Notes:
	Yes	No	N/A								
Audit Checklist Item											
1. Is there a written HASP for this project? If so, what is the revision date?											
2. Is the HASP available to project personnel?											
3. Does the HASP appear accurate and complete? For example, are the directions to the hospital and the emergency contact numbers accurate? Are the site contaminants listed?											
4. Do the JHAs appear accurate and complete? For example, do there appear to be risks addressed for all of the applicable activities?											
5. Do you observe violations of the HASP requirements?											
6. If applicable, are employees adhering to the respirator program (see SOP 03, Respiratory Protection)?											
Interview Questions											
7. Where do you keep the HASP for this project?											
8. Have you reviewed the HASP for this project? If so, what was your review process?											
9. Can you tell me how you conduct your site activities? Note to auditor—pick a JHA activity and identify major discrepancies between the answer and the JHA, if any.											
10. Do you have any health and safety questions or concerns? For example, have you observed things on this project that you thought were unsafe? Note to auditor—make sure we come up with a plan to promptly address any listed concerns.											

Signature of Person / Persons Conducting Audit			
Name	Signature	Date	

Signature of Project Manager and Principal in Charge Acknowledging Review of Completed HASP Audit Checklist			
Name	Signature	Date	

Appendix B

Sampling and Analysis Plan/Quality Assurance Project Plan

MAUL FOSTER ALONGI

Sampling and Analysis Plan /Quality Assurance Project Plan—Hub Building (AOC 3)

Former Northern State Hospital
Sedro-Woolley, Washington

Agreed Order No. DE 16309

Cleanup Site ID: 10048

Prepared for:

Port of Skagit

Burlington, Washington
March 26, 2026
Project No. M0624.01.025

Prepared by:

Maul Foster & Alongi, Inc.
114 W Magnolia Street, Suite 500, Bellingham, WA 98225

MAUL FOSTER ALONGI

Sampling and Analysis Plan/Quality Assurance Project Plan—Hub Building (AOC 3)

Former Northern State Hospital
Sedro-Woolley, Washington

The material and data in this report were prepared under the supervision and direction of the undersigned.

Maul Foster & Alongi, Inc.

Carolyn R. Wise, LHG
Senior Hydrogeologist

Amanda Bixby, LHG
Project Hydrogeologist

Contents

Limitations

Tables

Appendix

Abbreviations

AOC 3	lead in shallow soil at the historic Hub Building within area of concern 3
bgs	below ground surface
COC	chain of custody
DQO	data quality objective
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
IDW	investigation-derived waste
IAWP	Interim Action Work Plan
LCS	laboratory control sample
LDS	laboratory duplicate sample
MFA	Maul Foster & Alongi, Inc.
MS	matrix spike
MSD	matrix spike duplicate
Port	Port of Skagit
the Property	2070 Northern State Road in Sedro-Woolley, Washington
QA	quality assurance
QC	quality control
RPD	relative percent difference
RSD	relative standard deviation
SAP/QAPP	sampling and analysis plan and quality assurance plan
the Site	Northern State Multi Service Center
SOP	standard operating procedure
S2AVM	Stage 2A
TCLP	Toxicity Characteristic Leaching Procedure
WAC	Washington Administrative Code
XRF	handheld X-ray fluorescence

1 Introduction

On behalf of the Port of Skagit (the Port), Maul Foster & Alongi, Inc. (MFA) has prepared this sampling and analysis plan/quality assurance project plan (SAP/QAPP) to guide the collection of samples to support the interim remedial action of lead in shallow soil at the historic Hub Building, which makes up a portion of Area of Concern 3 (AOC 3) at the Northern State Multi Service Center site (the Site) (Facility Site ID: 65415931; Cleanup Site ID: 10048). More broadly, AOC 3 includes lead in shallow soil around several historic buildings on the Site.

The Site is located at the Sedro-Woolley Innovation for Tomorrow Center (former Northern State Hospital) property at 2070 Northern State Road in Sedro-Woolley, Washington (the Property) (see Figure 1-1 of the Interim Action Work Plan [IAWP], to which this SAP/QAPP is an appendix). Historically, the Property operated as a self-sustaining mental hospital that included on-site patient and staff housing, laundry facilities, maintenance shops, a powerhouse, and a fueling station. Some buildings are occupied by tenants, including the Cascade Job Corps, but the majority are vacant. The Cascade Job Corps uses some buildings for on-site housing and educational services.

The work described in this SAP/QAPP is being conducted through Agreed Order DE 16309 between the Port and the Washington State Department of Ecology (Ecology). MFA has prepared this SAP/QAPP consistent with the requirements of Washington Administrative Code (WAC) 173-340-820 for SAPs and the Code of Federal Regulations for quality assurance (QA) (40 CFR 31.45).

1.1 SAP/QAPP Objectives

The purpose of this SAP/QAPP is to outline requirements for field sampling and laboratory analytical activities associated with the interim action at AOC 3. This SAP/QAPP is provided as an appendix to the IAWP for AOC 3, which provides Property-specific background information, discusses proposed cleanup standards, and defines the scope of the interim action.

This SAP/QAPP is designed to ensure that:

- The investigation meets goals and produces complete and accurate environmental data sets that have high precision and low bias.
- Environmental data is representative of Property conditions.
- The QA and quality control (QC) process allows for comparability of environmental data sets so that the Property can be characterized and assessed.

This SAP/QAPP describes methods that will be used for sampling environmental media, decontaminating equipment, and managing investigation-derived waste (IDW). It also includes procedures for collecting, analyzing, evaluating, and reporting useful data. This SAP/QAPP includes QA procedures for field activities, QC procedures, and data validation protocols.

2 Special Training and Certification

All personnel performing work at the Site will be health- and safety-trained as specified in the health and safety plan, which is included as an appendix to the IAWP.

Laboratories will be certified to provide analytical laboratory services for the specific methods and matrices, when applicable, under the Washington State Environmental Laboratory Accreditation Program.

3 Data Generation and Acquisition

3.1 Sampling Process Design

The Port will submit the proposed scope of work in the IAWP for Ecology review and approval before work activities begin. MFA will work closely with the Sitework Contractor to complete interim action in accordance with the procedures listed below.

The anticipated excavation extent around the former Hub Building is shown on Figure 4-1 of the IAWP. Field screening will be performed during excavation activities using a handheld X-ray fluorescence (XRF) instrument. Confirmation sampling will be conducted upon reaching apparent contaminant boundaries based on field screening results; confirmation samples will be collected and submitted for laboratory analysis.

Confirmation soil samples[1] will be collected at the following frequency:

- Sidewalls: One six-point soil sample will be collected roughly every 60 feet horizontally along the sidewalls, with each sample increment collected every 10 linear feet. Sidewall sample increments will be of approximately equal volumes and collected along the same side of the building (e.g., southwest building wall).[2]
- Base: One six-point confirmation sample will be collected roughly every 400 square feet of exposed base of the excavation.

The preferred analytical methods for soil are shown in Table 3-1; performance criteria are shown in Table 3-2; a quality control sample summary is provided in Table 3-3. Soil samples will be collected using procedures as described in the sections below.

[1] MFA anticipates collecting approximately six confirmation sidewall samples and approximately six confirmation base samples from the final excavation extent.
[2] Note that sidewall samples will only be collected from the outer perimeter of the excavation around the Hub Building, as no excavation will occur below the building footprint.

3.2 Sampling Methods

All samples will be collected consistent with the requirements for the medium being sampled and the analytes of interest. Samples will be collected in laboratory-supplied containers to ensure that the container has been properly cleaned and that sufficient sample volume is collected. Specific sample container and preservation requirements are listed in Table 3-1. Soil sampling methods are described below.

Underground utilities present a unique hazard for remedial excavation. Private and public utility-location services will be used to identify locatable utilities in the excavation area before field sampling activities begin (see standard operating procedure [SOP] 18 in the Appendix).

3.2.1 Soil Sampling

Confirmation and stockpile soil sampling will be conducted in accordance with SOP 04 in the Appendix. A description of the soil type for each soil sample will be recorded in the field notebook.

Soil samples will be prepared, handled, and documented as follows:

- New, disposable gloves will be used before the collection of each sample.
- If used, hand tools will be decontaminated between sampling locations, following the procedures identified in the SOP 01 provided in the Appendix.
- Samples for laboratory analysis will be transferred directly into laboratory-supplied glass jars.

3.2.1.1 Field Screening

Field screening will be conducted along the base and sidewalls of the excavations to guide confirmation soil sample collection for lead analysis. A handheld XRF meter will be used in the field to produce real-time estimated lead concentrations; the results may over- or under-estimate actual concentrations in soil. To ensure the handheld XRF is accurately identifying lead concentrations, confirmation soil samples will be submitted for laboratory analysis.

Prior to conducting XRF field screening, a calibration check will be performed to ensure that the XRF is reading within the correct limits of the test specimen provided by the manufacturer. If the XRF passes the calibration check, it will be used to guide soil sample collection. The soil will be placed in a sealed plastic bag and homogenized to ensure the material is evenly distributed for the XRF to collect a representative reading. XRF methods are further described in Section 3.3.

The soil sample results from a handheld XRF will be used to guide the extents of the excavation and inform when to collect composite confirmation samples for laboratory analysis (i.e., when XRF screening results are below the preliminary cleanup level of 118 milligrams per kilogram). Excavation activities will proceed laterally and vertically in the manner presented above until laboratory analytical results of confirmation samples indicate that the extent of impacted soil has been reached or the maximum setback extent of the excavation has been reached.

3.2.1.2 Confirmation Soil Sampling

After field screening indicates that impacted soil has been removed, confirmation soil samples will be collected. For each composite confirmation soil sample, six individual soil increments will be composited into a bag and screened with the XRF. The same volume of sample used for the

composite XRF reading will be placed in a laboratory-provided jar and submitted for analysis. Generally, duplicate soil samples should be collected at the frequency of one duplicate sample for every 20 samples collected.

Samples will be submitted to the analytical laboratory on a rushed, 24- hour turnaround time to expedite characterization of the excavation. Soil samples and associated QC samples will be analyzed for lead by EPA Method 6020, consistent with Tables 3-1 and 3-3.

3.2.1.3 Stockpile Sampling

Soil samples will be collected from excavation stockpiles for waste characterization purposes. Excavated material will be temporarily stockpiled on-site, then transported off-site for disposal. Stockpile sampling will be conducted via compositing, as outlined below:

- Three (3) five-point composite samples will be obtained for every 100 cubic yards of the soil stockpile following the EPA standard operating procedure guidance (Ecology 2016). Five sample increments of approximately equal volume will be collected and composited. The uppermost layer of soil will be removed before each sample increment is obtained.

Stockpile soil samples will be submitted for rushed, 24- hour turnaround time to expedite characterization and disposal of stockpiled soil. Stockpile samples will be analyzed for lead by Toxicity Characteristic Leaching Procedure, as outlined in Table 3-1.

3.3 Field Measurements

3.3.1 XRF Measurement

XRF field screening methods will be conducted generally consistent with the XRF manufacturer's instructions. This section describes general XRF field procedures and methods that may be used during the interim action.

3.3.2 General XRF Field Procedures

XRF screening results will be recorded in the field notebook. While operating XRF equipment, field personnel will follow the manufacturer's instructions as well as the health and safety plan to safely operate the handheld XRF device. Blank samples (described below) will be used to test the XRF equipment prior to use in the field.

Field procedures for improving data quality are as follows:

- Shot time—The shot (measurement) time is user selectable. The length of XRF shot will be dependent on the model being used and should be configured according to the manufacturer's recommendations for the project goals, metals, and media of interest. Shot times of 60 seconds have typically been used with the XRF models used during project work.
- Sample positioning—For the best results, the window of the XRF should be in direct contact with the sample or direct contact with the sample through a clear, thin walled, plastic baggie, which means that the sample should be flat and smooth to provide a good contact surface.
- Blank samples—These are samples containing no metals and are used to evaluate XRF performance. Blank samples will be provided by the XRF vendor and analyzed at the beginning,

middle, and end of each field day in which XRF is used. Blank measurements will be recorded in a field book. If blank detections occur, the field staff will notify the project manager.

- Replicates—Replicate samples measure XRF precision and will be evaluated once per field day in which XRF is used. These measurements will be analyzed 7 times in replicate from a sample with concentrations near the cleanup level. The relative standard deviation (RSD) of the sample mean will be used to assess precision. If the RSD is greater than 20 percent, the field staff will notify the project manager.
- Reference material checks—These are samples containing known concentrations of metals and are used to evaluate XRF performance. Reference material check samples will be provided by the XRF vendor and analyzed at the beginning, middle, and end of each field day in which XRF is used. Reference material check measurements will be recorded in a field book. If measured concentrations are plus or minus 20 percent of the actual concentrations, the field staff will notify the project manager.
- Laboratory confirmation samples—Laboratory confirmation samples evaluate the accuracy of XRF measurements made in the field. The XRF will be used to inform laboratory confirmation sampling.
- Large or unrepresentative debris will be removed from the sample surface before analysis. This debris may include rocks, pebbles, leaves, vegetation, roots, and concrete.

3.3.3 XRF Field Methods

This method generally follows the intrusive (ex-situ) process described in EPA Method 6200. Soil is removed from the ground or sampling apparatus and mixed in a thin plastic baggie or bowl. The material is homogenized, and large rocks and debris are removed. The measurement is then taken from a baggie containing the homogenized material. According to EPA Method 6200, a moisture content between 5 and 20 percent will produce very minimal error in XRF readings. If moisture content is above 20 percent (as visually determined by the field crew) or if the sample was collected below the water table, the sample will be dried in the sun before collecting an XRF reading.

3.4 Sample Handling and Custody

Field sampling personnel will be responsible for the collection, labeling, description, documentation, handling, packaging, storage, and shipping of investigative samples obtained in the field. Proper sample handling and custody procedures are required to retain sample integrity from collection in the field through laboratory analysis and data reporting.

3.4.1 Sample Identification

The field personnel will be responsible for labeling samples and establishing identification. All data will be keyed to the sample's unique sample designation, which will be used on sample containers and associated field data forms, as well as to key the sample identification in the project database.

The field personnel will clearly label each sample container, using permanent ink on a waterproof sample label, as soon as possible following collection. At a minimum, the following information will be written on the sample label:

- Unique sample identification code

- Time and date of collection
- Project number
- Preservative, if appropriate

In order to maintain sample identification consistency in the project database, the unique sample identification code will be assigned according to the following convention: unique sample number—matrix type—depth (if applicable). The following code and information will be included in the sample identification code:

- Matrix type code is "S" for soil.
- Depth below ground surface (bgs); the sample collection midpoint will be used.
- Field duplicate samples will include "DUP" at the end of the identification.

For example, a soil sample collected from an eastern sidewall location 05 at 1 foot bgs would be ESW05-S-1.0, and a field duplicate of the soil sample would be ESW05-S-1.0-DUP. A soil sample collected from a base location 03 at 3 feet bgs would be BASE03-S-3.0. For sample locations representative of an area that was over excavated, the sample locations will use the next available identifying number (e.g., if ESW02-S-1.0 is over excavated and the last collected ESW (east sidewall) sample is 5, the over excavated sample location will be called ESW06-S-1.0). Stockpile samples will be identified as STOCKPILE-01, STOCKPILE-02, etc.

3.4.2 Sample Handling and Custody

The field investigation personnel and the analytical laboratory contractor will be responsible for following sample custody procedures during sampling and analysis, as well as for providing sample tracking. Sample custody procedures will be used to document the history of samples from the time of sample collection through shipment, analysis, and disposal. Samples and sample documentation will be maintained in the physical possession of authorized field personnel or under control in a secure location.

3.4.2.1 Sample Custody in the Field

The field investigation contractor personnel will be responsible for completing the chain of custody (COC) forms upon sample collection. Each COC form will contain, at a minimum, the following information:

- Project number
- Project name
- Project manager
- Unique sample identification code
- Time and date of collection
- Field personnel sampler's name
- Signature, printed name, organization name, date and time of transfer of all persons having custody of samples
- Sample matrix

- Quantity of sample containers
- Requested analysis for each sample
- Requested analytical turnaround time
- Any additional information on requested analysis such as holding time, specific matrix spike and matrix spike duplicate (MS/MSD) samples, etc.

3.4.2.2 Sample Packaging and Shipment

Persons in possession of the samples will be required to sign and date the COC form whenever samples are transferred between individuals or organizations (with the exception of freight carriers).

Samples will be delivered to the laboratory by ground transportation (laboratory courier or field personnel), and the following custody procedures will be followed:

- Samples will be packed in the appropriate shipping containers.
- If transportation is by courier, the laboratory courier will retain a second copy of the COC and shipping forms to allow sample tracking. The top copy of the COC form will accompany the samples.
- If transported to the laboratory by field personnel, COCs will be signed and copies distributed at the time of sample delivery to the laboratory. The COC form will accompany the samples from point of release from the Property to the laboratory.

The laboratory will implement its in-house custody procedures, which begin when sample custody is transferred to laboratory personnel.

3.4.2.3 Sample Custody in the Laboratory

The analytical laboratory contractor's sample custodian will be responsible for the handling and documentation of samples received at the laboratory. The designated sample custodian will accept custody of the received samples and will verify that the COC form matches the samples received. The shipping container, or set of containers, will be given a laboratory identification number, and each sample will be assigned a unique sequential identification number.

3.4.3 Sample Documentation and Records

3.4.3.1 Field Logbooks and Forms

Field investigation personnel will be responsible for maintaining a daily record of significant events, observations, and measurements during field investigations. Field records may be recorded in a bound logbook or on paper or electronic field data sheets. A separate entry will be made for each sample collected. Field logbooks and forms will be included in the project files at the end of field activities to provide a record of sampling.

3.4.3.2 Equipment Calibration Log

Field investigation personnel will be responsible for maintaining an equipment calibration log to record the calibration measurements and frequencies of equipment calibration. This log may be incorporated into the field logbook notes for a specific date and activity.

3.4.3.3 Record Retention

All data collected will be stored on a server supported by MFA. Additionally, validated data will be uploaded to the Ecology's Environmental Information Management database.

All project information will be stored for the duration of the project and 20 years, at minimum.

3.5 Management of Investigation-Derived Waste

IDW will include decontamination fluids and soils collected for field XRF analysis. IDW will be disposed of as part of the waste material being transported off site. Excavated soil will be characterized during excavation activities and by sampling stockpiled soil for lead by TCLP. If the soil concentration in the stockpile fails TCLP limits, stockpiled soil will be treated on-site to stabilize any leachable lead and reduce concentrations below TCLP criteria.[3] Stabilization will consist of the addition of Portland cement to the stockpile material to reduce the leachability of lead in the waste material. After amendment, three (3) 5-point composite samples will be collected and analyzed for lead by TCLP consistent with the procedures in Section 3.2.1.3. If lead detections by TCLP analysis are below 5 milligrams per liter, the material will be sent to a Subtitle D landfill for disposal.

3.6 Data Quality Objectives and Decision Criteria

The data quality objective (DQO) process is used to establish performance and acceptance criteria, which serve as the basis for designing a plan for collecting data of sufficient quality and quantity to support the goals of the study (EPA 2006). The seven steps of the DQO process outlined by the EPA are:

1. **State the problem**—Define the problem; identify members of the planning team; define the budget and schedule.
2. **Identify the goal of the study**—State how environmental data will be used to meet study objectives and solve the problem; identify study questions; define alternative outcomes.
3. **Identify information inputs**—Identify data and information needed to answer study questions.
4. **Define the boundaries of the study**—Specify target population and characteristics of interest; define spatial and temporal limits; define scale of inference.
5. **Develop the analytic approach**—Define parameters of interest; specify type of inference; develop logic for drawing conclusions from findings.
6. **Specify performance or acceptance criteria**—Specify criteria for new data collection (performance metrics) and decision making (probability limits).
7. **Develop the plan for obtaining data**—Develop the SAP/QAPP.

This SAP/QAPP for environmental data collection was developed using the DQO process and presents performance metrics for collection and analysis of soil, the environmental medium that will be sampled.

[3]If TCLP results indicated that the excavated soil is hazardous waste, all steps will be taken to comply with Dangerous Waste Regulations in WAC 173-303.

Screening and action levels include Ecology's Model Toxics Control Act cleanup levels. Applicable preliminary cleanup levels are presented in the IAWP.

3.6.1 Data Precision

Precision is the measure of agreement among repeated measurements of the same property under identical or substantially similar conditions, calculated as either the range or the standard deviation (EPA 2002). Precision is measured by making repeated analyses on the same analytical instrument (laboratory duplicates) or replicate collections of samples in the field (field duplicates). Precision criteria are expressed as the relative percent difference (RPD) between the primary and duplicate samples. The acceptance limits for the RPD are based on the sample matrix and the analytical method used.

The RPD is calculated using the equation:

$$RPD = \frac{2(x_s - x_d)}{x_s + x_d} \times 100\%$$

Where:

x_s = result for primary sample.
x_d = result for duplicate sample.

3.6.2 Data Bias

Bias is defined as the systematic or persistent distortion of a measurement process that causes error in one direction (EPA 2002). Data bias is addressed in the field and the laboratory by calibrating equipment, collecting and analyzing QC blank samples, and analyzing QC standard samples.

3.6.3 Data Accuracy

Accuracy is defined as the measure of the overall agreement of a measurement to a known value and includes a combination of random error (precision) and systematic error (bias) components of both sampling and analytical operations (EPA 2002). Inasmuch as the "true" concentration of sampled media is not known, the degree of accuracy in the measurement is inferred from recovery data determined by sample spiking and/or the analyses of reference standards. The criterion for accuracy is expressed as the percent recovery of the sample spiking. The acceptance limits for percent recovery are based on the analytical method used.

Percent recovery is calculated using the equation:

$$Percent\ Recovery = \frac{x_{ss} - x_s}{T} \times 100\%$$

Where:

x_{ss} = result for spiked sample.
x_s = result for sample.
T = true value of added spike.

3.6.4 Data Completeness

Data completeness is defined as a measure of the amount of valid data needed from a measurement system (EPA 2002). It is measured as the total number of samples collected, for which the valid analytical data are obtained, divided by the total number of samples collected, and multiplied by 100. Criteria for data completeness are provided in Table 3-2.

3.6.5 Data Comparability

Data comparability is a qualitative term that expresses the measure of confidence with which one data set can be compared to another and can be combined for decision-making purposes (EPA 2002). Data comparability will be achieved by using standard sampling and operating procedures and analytical methods. Data comparability will be assessed through documentation of QA/QC procedures.

3.6.6 Data Representativeness

Data representativeness is a qualitative term that expresses, "the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition" (EPA 2002). Data representativeness is evaluated by assessing the accuracy and precision of the sampling program. The criterion for evaluating representativeness will be satisfied by confirming that the sample collection procedures are consistently followed.

3.6.7 Data Sensitivity

Data sensitivity is defined as the capability of a method or instrument to discriminate between measurement responses representing different levels of the variable of interest (EPA 2002). The method reporting limits specified through the DQO process are provided in Table 3-1. Results measured between the reporting limits and the method detection limits will be reported for all analytes and assigned the appropriate qualifier.

3.7 Analytical Methods

All analytical methods used will comply with relevant requirements of applicable state or federal programs or other EPA-approved methods. Ecology-preferred analytical methods specific to this SAP/QAPP are provided in Table 3-1. Confirmation soil samples will be submitted for rushed, 24-hour turnaround time to expedite characterization of the extent of excavation. Stockpile soil samples will be submitted for rushed, 24- hour turnaround time to expedite characterization and disposal of stockpiled soil.

3.8 Quality Control

The quality of data will be monitored and verified by maintaining logs, documenting field activities, and collecting and analyzing field and laboratory QC samples. Table 3-3 summarizes the field and laboratory QC samples, along with the required collection frequency, for each sample matrix. The required field QC samples will be matrix-specific.

3.8.1 Field Quality Control Samples

The field QC samples will be used to assess the accuracy and precision of the field sample collection and handling activities.

3.8.1.1 Equipment Rinsate Blanks

Analysis of equipment rinsate blanks is not anticipated, as field equipment used during sampling will be dedicated. However, if nondedicated equipment is used, equipment blanks will be used to assess the efficiency of field equipment decontamination procedures in preventing cross-contamination of samples. At least one equipment rinsate blank will be collected for each sampling event or for every 20 samples collected. If more than 20 samples are collected with the same equipment, or if high concentrations of contaminants are encountered, additional equipment rinsate blanks will be collected, as warranted. Collection of equipment rinsate blanks consists of passing deionized/distilled water through or over sampling equipment.

3.8.1.2 Field Duplicate Samples

Field duplicate samples are collected to assess reproducibility of field procedures. For nonaqueous matrices (i.e., soil), sample heterogeneity may affect the measured precision for the duplicate sample; field duplicate sample collection will consist of the following:

- One field duplicate for every 20 confirmation samples submitted to the analytical laboratory.
- One field duplicate for every 20 stockpile samples submitted to the analytical laboratory.

Temperature Blank

Temperature blanks are prepared by the laboratory, using analyte-free (reagent) water. Temperature blanks are used by the laboratory to record the temperature of each cooler used to transport samples from the field to the laboratory. Each cooler containing samples that require temperature preservation will contain a temperature blank. The laboratory will verify that the temperature blank measurement is within the acceptable range specific to the analytical method.

3.8.2 Laboratory Quality Control Samples

The laboratory QC samples will be used to assess the accuracy and precision of the field sample collection and handling activities. Laboratory QC samples will be analyzed at the required frequency described in Table 3-3, as applicable, based on analytical method and sample matrix.

3.8.2.1 Calibration Verification

Instruments will initially be calibrated at the start of the project or sample run, as required, and when any ongoing calibration does not meet control criteria. The number of points used in the initial calibration is defined in the analytical method. Calibration will be continued as specified in the analytical method to track instrument performance. If a continuing calibration does not meet control limits, analysis of project samples will be suspended until the source of the control failure is either eliminated or reduced to within control specifications. Any project samples analyzed while the instrument was outside control limits will be reanalyzed.

3.8.2.2 Matrix Spike/Matrix Spike Duplicate

MS samples are analyzed to assess the matrix effects on the accuracy of analytical measurements. MS/MSD samples will be prepared by spiking investigative samples with known amounts of analytes before extraction and preparation and analysis. The recoveries for the MS/MSD samples will be used to assess the accuracy and precision in the analytical method by measuring how well the analytical method recovers the target compounds in the investigative matrices. For each matrix type, at least one set of MS/MSD samples will be analyzed for each analyzed batch of samples with 20 (or fewer) samples received. The MS/MSD samples will be designated on the COC form.

The criteria for acceptable percent recovery and RPD for MS/MSD samples are presented in Table 3-2.

3.8.2.3 Surrogate Spikes

Surrogate spiking consists of adding reference compounds to samples before preparation of the samples for organic analysis. Surrogate compound spiking is used to assess method accuracy on a sample-specific basis. Surrogate compounds will be added to samples in accordance with the analytical method requirements. Surrogate spike percent recovery acceptance limits are determined by the analytical method. The surrogate spike percent recovery results will be reported by the laboratory.

3.8.2.4 Method Blanks

Method blanks are prepared using analyte-free (reagent) water and are processed with the same methodology (e.g., extraction, digestion) as the associated investigative samples. Method blanks are used to document contamination resulting from the laboratory's analytical process. A method blank will be prepared and analyzed for every analytical batch.

The method blank results are used to verify that reagents and preparation do not impart unacceptable bias to the investigative sample results. The presence of analytes in the method blank sample will be evaluated against method-specific thresholds. If analytes are present in the method blank above the method-specific threshold, corrective action will be taken to eliminate the source of contamination before proceeding with analysis. Investigative samples from an analytical batch associated with method blank results outside acceptance limits will be qualified as appropriate.

3.8.2.5 Laboratory Control Samples

Laboratory control samples (LCSs) are prepared by spiking laboratory-certified, reagent-grade water with the analytes of interest or a certified reference material that has been prepared and analyzed. The result for percent recovery of the LCS is a data quality indicator of the accuracy of the analytical method and laboratory performance. The criteria for acceptable percent recovery of LCSs are presented in Table 3-2.

3.8.2.6 Laboratory Duplicate Samples

Laboratory duplicate samples (LDSs) are prepared by the laboratory by splitting an investigative sample into two separate aliquots and performing separate sample preparation and analysis on each aliquot. The results for RPD of the primary investigative sample and the respective LDS are used to measure precision in the analytical method and laboratory performance. For nonaqueous matrices, sample heterogeneity may affect the measured precision for the LDS. The criteria for acceptable RPD of LDSs are presented in Table 3-2.

3.9 Instrument and Equipment Testing, Inspection, and Maintenance

Instruments for field parameter measurements will follow this SAP/QAPP protocol and manufacturers' recommendations for testing, inspection, and maintenance. Field equipment used for obtaining samples will be decontaminated as required and stored in a clean and secure location.

Laboratory instruments and equipment will comply with the contracted laboratories' QA/QC procedures for testing, inspection, and maintenance. Laboratory instrument and equipment testing, inspection, and maintenance documentation will be provided to the MFA chemist, if requested.

3.10 Instrument and Equipment Calibration and Frequency

Instruments for field parameter measurements will follow manufacturers' recommendations for calibration. Calibration will be conducted at the beginning of each sampling event. Calibration checks will be conducted at the beginning of each sampling day. Calibration may be conducted again during a sampling event, as necessary, based on the results of the calibration check. Calibration records will be recorded in the field logbooks.

3.11 Inspection and Acceptance of Supplies and Consumables

The supplies and consumables that will be used during field operations include, although are not limited to, the following: decontamination fluids, preservatives, reagent water for equipment blanks, equipment tubing, and filters. No materials will be used after the manufacturers' expiration dates. Only water certified by the manufacturers will be used to prepare equipment blanks. If contamination is visible in materials, the item will be discarded. Nondedicated field equipment will be decontaminated prior to use.

The analytical laboratory will inspect supplies and consumables before their use in analysis. The materials description in the analytical methods will be used as a guideline for establishing acceptance criteria. Purity of reagents will be evaluated through analysis of LCSs and method blank samples. The laboratory shall maintain an inventory of supplies and consumables.

3.12 Sample Equipment Decontamination

Sampling equipment and reusable materials that contact sample media will be decontaminated between uses. Decontamination will generally involve the following:

- Tap-water rinse (may consist of an equivalent high-pressure, hot-water rinse)
- Nonphosphate detergent wash, consisting of a dilute measure of Liquinox® or Simple Green® and tap water
- Distilled water rinse

- Methanol solution rinse (1:1 solution with distilled water)
- Final distilled water rinse

3.13 Non-direct Measurements

Non-direct measurements are defined as existing data obtained from non-measurement sources, such as literature files or existing databases. To assess data usability, historical data will be reviewed for accordance with project-specific DQOs and QA/QC criteria. Historical data that may be relied upon for this interim action is provided in the IAWP.

3.14 Data Management

3.14.1 Field Data

Field data may be recorded in a bound logbook or on paper or electronic field data sheets. Hard copies of all field data will be scanned and saved electronically. Field data collected on paper or electronic field data sheets may be imported into an EQuIS™ database. In the event that field data are entered by hand into an electronic format before they are imported into EQuIS™, the data will be reentered and reviewed for data entry errors by separate, qualified individuals.

3.14.2 Laboratory Data

The laboratory shall record the results of each analysis in a laboratory information management system in accordance with the contracted laboratory's QA plan. Data will be provided to MFA as electronic data deliverables, which will be imported directly into an EQuIS™ database used for data storage. Validated laboratory results will be exported and provided as part of the final report for each project.

4 Data Validation and Usability

4.1 Data Review, Verification, and Validation

Data verification is confirmation by examination and provision of objective evidence that specified requirements have been fulfilled (EPA 2001). Data verification is the process of evaluating the completeness, correctness, and compliance of a specific data set against the method, procedural, or contractual specifications (EPA 2002). Data validation is confirmation by examination and provision of objective evidence that the particular requirements for specific, intended use have been fulfilled (EPA 2001). Data validation is an analyte- and sample-specific process that extends the evaluation of data beyond method, procedural, or contractual compliance (i.e., data verification) to the analytical quality of a specific data set (EPA 2002).

4.2 Data Review, Verification, and Validation Methods

The specific data reduction, verification, and reporting procedures and assigned personnel will vary for each laboratory; however, all procedures will be completed in accordance with the laboratory's QA plan and standard operating procedures.

The laboratories will provide a level 2 laboratory report for Stage 2A (S2AVM) data validation. Refer to EPA (2009) guidance for S2AVM data validation and verification requirements.

4.2.1 Data Verification Methods

4.2.1.1 Laboratory Data Verification Methods

The laboratory will be responsible for the reduction of raw data generated at the laboratory bench and verification that data reduction performed by the laboratory instrument or the laboratory information management system is correct.

QC checks for data verification that will be performed for all generated data are as follows:

- Verify that batch QC and field samples were analyzed at the specified frequency.
- Verify calibrations and calibration checks for compliance with laboratory criteria.
- Verify that holding times for extraction and analyses and sample preservation were met.
- Verify that the quantitation limits and method detection limits were met.
- Verify that all project and QC sample results were properly reported and flagged.
- Review COC documentation to verify completeness of the sample set for each data package submitted.
- Assess the impact of laboratory and field QC results.

These QC checks will be performed by laboratory analysts, the assigned laboratory project manager or supervisor, laboratory QC specialists, or a combination of these personnel. After the data reports have been reviewed and verified, the laboratory reports will be signed and released for distribution.

4.2.1.2 Field Data Verification Methods

Data collected during field activities will be evaluated for usability by conducting a QA review that consists of checking procedures used and comparing the data to previous measurements. Field QC samples will be evaluated to ensure that field measurements and sampling protocols have been observed and followed.

The field data verification process will be performed at two levels. The first level will be conducted at the time of collection and consists of following standard procedures and QC checks. The second level will be performed during compilation of field data and will include checks for data anomalies. Inconsistent data or anomalies will be resolved by seeking clarification from field personnel responsible for collecting the data, and the resolution will be documented during the data verification process.

4.2.2 Data Validation Methods

Validation of the analytical data produced under this SAP/QAPP will be performed by an MFA chemist, independent of the analytical laboratory contractor(s) generating the data reports. The data validator will review laboratory performance criteria and sample-specific criteria.

The data validation review of sample-specific criteria will be performed on all data report packages for each analysis type generated by each analytical laboratory contractor. The independent data validation review will include review of the following items from the S2AVM laboratory data reports: consistency with the COC, holding times, surrogate recoveries, MS recoveries, field duplicate agreement, MSD and laboratory duplicate precision, and method blank analyses. Refer to EPA (2009) for S2AVM level data validation and verification requirements.

The purpose of this independent review will be to verify that the laboratory QC program is adequate and that the laboratory met the performance criteria. The data validator will review data and assign data qualifiers to sample results, following parts of the EPA procedures for inorganic data (EPA 2020b), high-resolution data (EPA 2020a), and method-specific guidelines (e.g., EPA 1986).

Data qualifiers are used to classify sample data in terms of their conformance to QC requirements. The most common qualifiers are listed below:

- J—Estimate, qualitatively correct but quantitatively suspect.
- R—Reject, data not suitable for any purpose.
- U—Not detected at a specified detection limit.

Poor surrogate, blank contamination, or calibration problems, among other things, can require qualification of the sample data. The reasons for the qualifications will be stated in the data validation report. QC criteria not defined in the guidelines for evaluating analytical data are adopted, where appropriate, from the analytical method.

5 Assessment and Oversight

5.1 Quality Assurance Assessment and Response Actions

The MFA project manager (Carolyn Wise) and MFA chemist are responsible for developing and initiating corrective action if the data verification and validation identify unacceptable data or conditions. The project manager will notify the chemist if the project issues are significant.

Corrective action may include:

- Reanalyzing samples, if holding time criteria permit
- Resampling and analyzing
- Amending sampling procedures

5.2 Quality Assurance Reports to Management

If significant QA issues arise, the MFA chemist will be responsible for completion of QA progress reports to provide a summary of the project performance and data quality. The QA progress reports will be submitted to the program and project managers on a situation-specific basis. These reports will focus on a summary of specific QA problems encountered and corrective actions implemented. The QA progress reports may include the following:

- QA issues requiring corrective actions; status of corrective actions
- Assessment of completeness of measurement data, including a summary of data qualified as rejected during data verification and validation
- Assessment of representativeness of measurement data and compliance with the project DQOs
- Results of performance audits

Submittal of QA progress reports will be conducted if QA problems occur during implementation of the interim remedial action. If needed, submittal of QA progress reports is not anticipated to exceed once a week. A summary of QA issues and implemented corrective actions will also be provided in the final report. A field sampling report will be generated, summarizing the investigative samples and QC samples collected. A data report that will summarize sampling and field measurement data, and results of the data verification and validation will also be generated.

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Limitations

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Tables

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Table 3-1
Containers, Preservation, and Holding Times
Northern State Multi Service Center Site

Matrix	Method	Analyte	Sample Container	Preservation	Holding Time[(a)]
Handheld XRF Field Screening					
Soil	Modified EPA Method 6200	Lead	Ziploc Bag	None	6 months
Total Metals					
Soil	EPA 6020	Lead	8-oz jar	None	6 months
Toxicity Characteristic Leaching Procedure					
Soil	EPA 1311/6020	Lead	8-oz jar	None	6 months

Notes

Various sample analyses can be combined in same container. Field samplers will consult with laboratory prior to combining sample volumes.

EPA = U.S. Environmental Protection Agency.

oz = ounce.

XRF = x-ray fluorescence.

[(a)]Time by which the sample is to be analyzed or extracted, as dictated by the analytical method. The extraction holding time begins once the sample has been extracted. The laboratory is responsible for testing extracts within the method-specified extraction holding times.

Table 3-2
Preferred Soil Analytical Methods and Performance Criteria
Northern State Multi Service Center Site

Analyte	Preferred Analytical Method	MDL	MRL	LCS/LCSD Accuracy (%)	MS/MSD Accuracy (%)	Precision (RPD)	Completeness (%)
Total Metals (mg/kg)							
Lead	EPA Method 6020	0.032	1	80 - 120	75 - 125	20	90
Toxicity Characteristic Leaching Procedure (mg/L)							
Lead	EPA 1311/6020	0.000080	1.00	80 - 120	50 - 150	20	90

Notes

Limits are provided by Apex Laboratories, LLC. Laboratory is subject to change.

Accuracy and precision acceptance criteria are performance-based and may be updated by the laboratory. Actual MDLs and MRLs may vary due to sample dilutions and dry weight.

EPA = U.S. Environmental Protection Agency.

LCS/LCSD = laboratory control sample/laboratory control sample duplicate.

MDL = method detection limit.

mg/kg = milligrams per kilogram.

mg/L = milligrams per liter.

MRL = method reporting limit.

MS/MSD = matrix spike/matrix spike duplicate.

NA = not applicable.

RPD = relative percent difference.

Table 3-3
Quality Control Sample Summary
Northern State Multi Service Center Site

Quality Control Sample	Frequency	Acceptance Criteria
XRF Quality Control Field Checks		
XRF Blank Samples	Analyzed at the beginning, middle, and end of each field day in which XRF is used	No detections above method reporting limit
XRF Replicates	One per field day in which XRF is used	< 20% RSD
XRF Reference Material Checks	Analyzed at the beginning, middle, and end of each field day in which XRF is used	Field measured concentrations +/- 20% from manufacturer standard
Field Quality Control Samples		
Equipment rinsate blank	One per 20 samples (or fewer)	Below MRL[(a)]
Field duplicate	One per 20 samples per matrix (or fewer)	50% RPD[(a)]
Temperature blank	One per sample cooler	4°C (±2°C)
Laboratory Quality Control Samples		
Method Blank	Each analytical batch of samples for every 20 (or fewer) samples received, when required by method	Below MRL[(a)]
Laboratory Control Sample	Each analytical batch of samples for every 20 (or fewer) samples received, when required by method	Within laboratory control limits
Laboratory Duplicate	Each analytical batch of samples for every 20 (or fewer) samples received, when required by method	20% RPD[(a)(b)]
Matrix Spike/Matrix Spike Duplicate	Each analytical batch of samples for every 20 (or fewer) samples received, when required by method	Within laboratory control limits
Surrogate Spikes/Labeled Analogs	Added to all project and quality control samples, as appropriate for the analytical method (labeled analogs for dioxin/furan analyses only)	Within laboratory control limits

Notes

°C = degrees Celsius.

MRL = method reporting limit.

RPD = relative percent difference.

RSD = relative standard deviation.

XRF = x-ray fluorescence.

[(a)]Criteria may change based on data validation.

[(b)]Sample results less than five times the MRL evaluated using a control limit of the MRL.

Appendix

Standard Operating Procedures

MAUL FOSTER ALONGI

Standard Operating Procedure

Decontamination of Field Equipment

SOP Number: 1
Date: 02/24/2025
Revision Number: 0.2

Scope and Application

This standard operating procedure (SOP) describes the decontamination procedure for field equipment that may come in contact with contaminated media and that Maul Foster & Alongi, Inc. (MFA) staff may reuse at multiple sample locations or sites. Decontamination is performed to reduce the potential for cross-contamination of samples that will be collected with multiuse equipment and that will undergo physical or chemical analyses. Other equipment that is multiuse—not used specifically for sample collection (e.g., water level meter, pump used for well development)—also requires decontamination. Finally, decontamination is necessary to minimize the potential for MFA staff's exposure to chemicals.

Typically, decontamination is not necessary for field equipment that is disposable and intended to be used only once (e.g., disposable bailer). Additionally, this SOP does not apply to equipment used by subcontractors, such as drilling equipment. However, MFA staff should confirm that subcontractors are implementing appropriate decontamination procedures to minimize the potential for cross-contamination of samples or MFA staff's exposure to chemicals.

Equipment and Materials Required

The following materials are necessary for this procedure:

- Nonphosphate detergent solution (e.g., Alconox, Liquinox)
- Distilled and potable water
- Personal protective equipment (as specified in the site-specific health and safety plan)
- Buckets to contain rinsate, brushes, paper towels

Depending on the site conditions and the types of contaminants that may be present, the use of other decontamination materials, such as deionized water, methanol, hexane, or isopropyl alcohol, may be necessary. The need for other materials should be determined prior to fieldwork. The decontamination procedures using other materials should be described in a site-specific sampling and analysis plan (SAP).

Methodology

When the site-specific SAP specifies additional or different requirements for decontamination, it takes precedence over this SOP. In the absence of a SAP, the following procedures shall be used.

General Sampling Procedure:

1. Rinse the equipment with potable water to remove visible soil, petroleum sheen, or contamination.

2. Scrub the equipment with a brush and solution of distilled water and nonphosphate detergent.

3. Rinse the equipment with distilled water.

4. Allow equipment to air dry or dry it with clean paper towels.

5. At all times, ensure that the decontaminated equipment is stored so as to prevent it from becoming contaminated while not in use. Depending on the size of the equipment, it can be wrapped with new aluminum foil or placed in a new plastic bag.

Rinsate Storage:

All fluids resulting from equipment decontamination shall initially be contained in a bucket and then transferred to a Department of Transportation-approved container (e.g., 55-gallon drum) stored on site at a location that does not interfere with on-site activities (e.g., vehicle traffic, pedestrian areas). Place a label on each container and include the following information:

- The date on which fluids were placed in the container
- Contents (e.g., “water from equipment decontamination”)
- Contact information, including MFA staff or client phone number

Note that labels on containers exposed to sunlight or precipitation are prone to fading. Use a waterproof, indelible ink pen (e.g., Sharpie®) whenever possible. In the field notebook, keep a detailed inventory of all containers, including the number of containers, the approximate quantity of liquids generated, and a description of the source of the fluids. Provide this information to the MFA project manager. For future reference, take photographs of (1) each drum label, (2) the drum(s), and (3) the drum storage vicinity on site.

Note that some clients and site owners have specific requirements for labeling and storage of containers. The requirements should be determined in advance of the fieldwork.

Standard Operating Procedure

Surface and Subsurface Soil Sampling Using Hand Tools

SOP Number: 4
Date: 09/13/2023
Revision Number: 0.2

Scope and Application

This standard operating procedure (SOP) describes the use of hand tools for obtaining surface and subsurface soil samples for physical and/or chemical analysis.

Equipment and Materials Required

The following materials are necessary for this procedure:

- Personal protective equipment (as specified in the Health and Safety Plan)
- Tools appropriate for the conditions that may be encountered (e.g., spoon, trowel, shovel, hand auger); tools constructed of stainless steel are preferred.
- Stainless steel bowls
- Tape measure with increments in feet and tenths of a foot.
- Laboratory-supplied sample containers
- Laboratory chain-of-custody form and cooler with ice.
- Equipment decontamination supplies if sampling equipment will be reused between sample locations (see SOP 1 for equipment decontamination procedures).
- Field forms or notebook for documenting the sampling procedures.

Methodology

When the project-specific sampling and analysis plan (SAP) specifies additional or other requirements for soil sampling, it takes precedence over this SOP. In the absence of a SAP, the procedures in this SOP shall be used.

General Sampling Procedure:

- Don gloves as specified in the Health and Safety Plan; replace gloves with new gloves after each sample is collected.
- Clear the ground surface of brush, root mat, grass, leaves, and other debris.
- Use the selected hand tool to remove soil to the targeted sample depth. Use a measuring tape to verify that the sample depth is correct and record the depth in the field notebook or boring log.
- Describe and document the soil lithology in accordance with SOP 2.
- Use the selected hand tool to collect soil and homogenize in a decontaminated stainless-steel bowl or a dedicated Ziploc® bag and then transfer the sample to the sample container using hand tools.

- Before sample collection, and to the extent possible, use the selected hand tool to remove organic debris, anthropogenic material (e.g., brick, metal, glass), and gravels larger than 4 millimeters, unless a project-specific SAP directs otherwise.
- When sampling for gasoline-range total petroleum hydrocarbons (gasoline) or volatile organic compounds (VOCs), a subsample will be obtained from a discrete portion of the collected sample. To minimize the potential loss of volatiles during sampling, the subsample shall not be composited or homogenized. The sample container for gasoline and/or VOC analysis will be filled first if additional containers are necessary for other analysis. Specific procedures for collecting samples for gasoline and/or VOC analysis using the U.S. Environmental Protection Agency Method 5035 are specified in SOP 5.
- The sampling device and field equipment will be decontaminated between sample locations in accordance with SOP 1. Alternatively, new, disposable equipment can be used to collect each sample to preclude the need for equipment decontamination.

Backfilling Sample Locations:

Backfill in accordance with federal and state regulations (e.g., Oregon bentonite requirements per OAR 690-240-0035). Otherwise, manual excavations can be backfilled with excess soil remaining after sample collection, unless the project-specific SAP requires a different backfill procedure.

Standard Operating Procedure

Underground Utility Locates

SOP Number: 18
Date: 03/09/2021
Revision Number: 0.1

Scope and Application

This standard operating procedure (SOP) describes the practices for locating underground utilities. Refer to the MFA health and safety plan (HASP) for additional information regarding communication procedures to be followed when an inadvertent utility strike occurs, as well as regarding methods for mitigating hazards during a utility strike.

Equipment and Materials Required

The following materials are necessary for this procedure:

- Personal protective equipment (as specified in the HASP)
- Marking materials (e.g., marking paint, stakes, flags)
- Field documentation materials

Methodology

When the project-specific sampling and analysis plan (SAP) specifies additional or different requirements for underground utility locates, it takes precedence over this SOP. In the absence of a SAP, the procedures in this SOP shall be used.

Before Conducting Utility Locates:

- Ensure that the locate will be conducted reasonably soon before the excavation work begins, e.g., within 48 hours. There may be project-specific conditions, e.g., weather and/or ground features that could cause markings to fade, which would require scheduling of the excavation work sooner than 48 hours after the locate.
- Clearly define the boundary of the work and the locations of all proposed excavations. Prepare a map of the project area showing the excavation locations.
- Interview site managers/property owners and obtain plans or drawings, if available, showing on-site utilities.
- For project work that will not take place in the public right-of-way, ensure that the public rights-of-way nearest to the project are identified and communicated during the one-call notification.
- Identify the township and range of the project area. This information can be easily attained by a quick email to MFA's GIS Exchange.
- If feasible, conduct a site visit to identify site conditions that could cause fading or disruption of marking paint. Such conditions could include gravel or ground sensitive to erosion and high traffic.
- Check the weather forecast to assess the potential for snow or rain to make marking utilities difficult or cause the markings to fade.

One-Call Utility Notification:

- If possible, initiate the one-call utility notification at least one week before the proposed work begins.
- Include a map or GPS coordinates when submitting the notification.
- Before conducting any excavation activities, confirm with each public utility that the utility locate has been completed.
- On remote or complicated sites, consider meeting public locators on site.
- Document the one-call ticket number and results in the project files.
- Provide the one-call ticket number to subcontractors who will be doing the excavations.

Private Utility Locate:

- Conduct the private utility locate only after confirmation that the public utility locate has been completed and all public utilities have been marked and the results reviewed by MFA staff who will be overseeing the excavations.
- Meet the private locator on site and participate in the entire private utility locate. Be engaged in the process, ask questions, and take time to walk the site thoroughly with the locator.
- Bring a copy of the one-call utility ticket and results of the one-call utility locater to check against the utility markings on the ground.
- If possible, have a site/property representative knowledgeable of on-site utilities participate in the private utility locate.
- If paint alone may not suffice to ensure clear marking of utilities, add vertical markers such as stakes or flags.
- Visually assess the area of the proposed excavation(s) to identify features potentially indicative of buried utilities. Have the private utility locator examine each feature identified below to assess the presence of buried utilities.
  - Examine adjacent public rights-of-way where public utilities have been marked for evidence of utilities that may extend onto the project site.
  - Identify nearby light poles, telephone poles, electrical utility poles, or other overhead utility poles with wires or conductors that run from the overhead utility, down the pole, and into the ground.
  - Identify the location of gas meters, water meters, or other aboveground junction boxes for evidence of utilities extending from these features into the ground.
  - Examine asphalt and concrete ground surfaces for discontinuities in the surface indicative of utility installations. Discontinuities may include recent patches of asphalt or concrete inlaid within older concrete or asphalt surfaces.
  - Identify manholes and catch basins indicative of buried storm or sanitary sewer pipes. Open manholes to examine the orientation of associated pipes to assess whether the utilities may be present near proposed excavations.
  - Identify tank ports and vent pipes.

- Identify irrigation systems and associated features such as valve boxes and controllers.
- Identify any other signs indicating the presence of buried utilities.
- Be wary of utility marks that suddenly begin or dead end.

Preparing to Perform Subsurface Activities after a Locate:

- Ensure that the markings are still visible when the work begins.
- Adjust locations, as needed, to avoid identified utilities, or use alternative methods such as nonmechanical excavation means (i.e., manual excavation or air-knifing) to a minimum depth of 5 feet.

Table
APWA UNIFORM COLOR CODE

	WHITE—Proposed Excavation
	PINK—Temporary Survey Markings
	RED—Electric Power Lines, Cables, Conduit and Lighting Cables
	YELLOW—Gas, Oil, Steam, Petroleum or Gaseous Materials
	ORANGE—Communication, Alarm or Signal Lines, Cables or Conduit
	BLUE—Potable Water
	PURPLE—Reclaimed Water, Irrigation and Slurry Lines
	GREEN—Sewers and Drain Lines

Source: Uniform Color Codes, ANSI Standard Z535.1. American Public Works Association. Revised 1999.

Appendix C

Inadvertent Discovery Plan

MAUL FOSTER ALONGI

INADVERTENT DISCOVERY PLAN

PLAN AND PROCEDURES FOR THE DISCOVERY OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

To request ADA accommodation, including materials in a format for the visually impaired, call Ecology at 360-407-6000 or visit https://ecology.wa.gov/accessibility. People with impaired hearing may call Washington Relay Service at 711. People with a speech disability may call TTY at 877-833-6341.

Site Name(s): Northern State Multi Service Center Location: 2070 Northern State Road, Sedro-Woolley, WA

Project Lead/Organization: Port of Skagit County: Skagit

If this Inadvertent Discovery Plan (IDP) is for multiple (batched) projects, ensure the location information covers all project areas.

1. INTRODUCTION

The IDP outlines procedures to perform in the event of a discovery of archaeological materials or human remains, in accordance with applicable state and federal laws. An IDP is required, as part of Agency Terms and Conditions for all grants and loans, for any project that creates disturbance above or below the ground. An IDP is not a substitute for a formal cultural resource review (Executive 21-02 or Section 106).

Once completed, **the IDP should always be kept at the project site** during all project activities. All staff, contractors, and volunteers should be familiar with its contents and know where to find it.

2. CULTURAL RESOURCE DISCOVERIES

A cultural resource discovery could be prehistoric or historic. Examples include (see images for further examples):

- An accumulation of shell, burned rocks, or other food related materials.
- Bones, intact or in small pieces.
- An area of charcoal or very dark stained soil with artifacts.
- Stone tools or waste flakes (for example, an arrowhead or stone chips).
- Modified or stripped trees, often cedar or aspen, or other modified natural features, such as rock drawings.
- Agricultural or logging materials that appear older than 50 years. These could include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, and many other items.
- Clusters of tin cans or bottles, or other debris that appear older than 50 years.
- Old munitions casings. ***Always assume these are live and never touch or move.***
- Buried railroad tracks, decking, foundations, or other industrial materials.
- Remnants of homesteading. These could include bricks, nails, household items, toys, food containers, and other items associated with homes or farming sites.

The above list does not cover every possible cultural resource. When in doubt, assume the material is a cultural resource.

3. ON-SITE RESPONSIBILITIES

If any employee, contractor, or subcontractor believes that they have uncovered cultural resources or human remains at any point in the project, take the following steps to ***Stop-Protect-Notify***. **If you suspect that the discovery includes human remains, also follow Sections 5 and 6.**

STEP A: Stop Work.

All work must stop immediately in the vicinity of the discovery.

STEP B: Protect the Discovery.

Leave the discovery and the surrounding area untouched and create a clear, identifiable, and wide boundary (30 feet or larger) with temporary fencing, flagging, stakes, or other clear markings. Provide protection and ensure integrity of the discovery until cleared by the Department of Archaeological and Historical Preservation (DAHP) or a licensed, professional archaeologist.

Do not permit vehicles, equipment, or unauthorized personnel to traverse the discovery site. Do not allow work to resume within the boundary until the requirements of this IDP are met.

STEP C: Notify Project Archaeologist (if applicable).

If the project has an archaeologist, notify that person. If there is a monitoring plan in place, the archaeologist will follow the outlined procedure.

STEP D: Notify Project and Washington Department of Ecology (Ecology) contacts.

Project Lead Contacts

Primary Contact		Alternate Contact	
Name:	Carolyn R. Wise	Name:	Phil Wiescher
Organization:	Maul Foster & Alongi, Inc.	Organization:	Maul Foster & Alongi, Inc.
Phone:	360-594-6255	Phone:	360-594-6267
Email:	cwise@maulfoster.com	Email:	pwiescher@maulfoster.com

Ecology Contacts (completed by Ecology Project Manager)

Ecology Project Manager		Alternate or Cultural Resource Contact	
Name:	Chris DeBoer, LHG	Name:	Jon Klem
Program:	Northwest Region Toxics Cleanup Program	Program:	Ecology TCP
Phone:	425-466-8732	Phone:	564-250-6671
Email:	chris.deboer@ecy.wa.gov	Email:	jon.klem@ecy.wa.gov

STEP E: Ecology will notify DAHP.

Once notified, the Ecology Cultural Resource Contact or the Ecology Project Manager will contact DAHP to report and confirm the discovery. To avoid delay, the Project Lead/Organization will contact DAHP if they are not able to reach Ecology.

DAHP will provide the steps to assist with identification. DAHP, Ecology, and Tribal representatives may coordinate a site visit following any necessary safety protocols. DAHP may also inform the Project Lead/Organization and Ecology of additional steps to further protect the site.

Do not continue work until DAHP has issued an approval for work to proceed in the area of, or near, the discovery.

DAHP Contacts:

Name: Rob Whitlam, PhD
Title: State Archaeologist
Cell: 360-890-2615
Email: Rob.Whitlam@dahp.wa.gov
Main Office: 360-586-3065

Human Remains/Bones:

Name: Guy Tasa, PhD
Title: State Anthropologist
Cell: 360-790-1633 (24/7)
Email: Guy.Tasa@dahp.wa.gov

4. TRIBAL CONTACTS

In the event cultural resources are discovered, the following tribes will be contacted. See Section 10 for Additional Resources.

Tribe:	Samish Indian Nation	Tribe:	Upper Skagit Indian Tribe
Name:	Jackie Ferry	Name:	Scott Schuyler
Title:	THPO	Title:	Cultural Resources
Phone:	360-293-6404 ext. 126	Phone:	360-854-7009
Email:	jferry@samishtribe.nsn.us	Email:	sschuyler@upperskagit.com
Tribe:	Tulalip Tribes of Washington	Tribe:	Swinomish Indian Tribal Community
Name:	Richard Young	Name:	Josephine Jefferson
Title:	Cultural Resources	Title:	THPO
Phone:	360-716-2652	Phone:	360-466-7352
Email:	ryoung@tulaliptribes-nsn.gov	Email:	jjefferson@swinomish.nsn.us

Please provide contact information for additional tribes within your project area, if needed, in Section 11.

5. FURTHER CONTACTS (if applicable)

If the discovery is confirmed by DAHP as a cultural or archaeological resource, or as human remains, and there is a partnering federal or state agency, Ecology or the Project Lead/Organization will ensure the partnering agency is immediately notified.

Federal Agency:		State Agency:	
Agency:		Agency:	
Name:		Name:	
Title:		Title:	
Phone:		Phone:	
Email:		Email:	

6. SPECIAL PROCEDURES FOR THE DISCOVERY OF HUMAN SKELETAL MATERIAL

Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Follow the steps under ***Stop-Protect-Notify.*** For specific instructions on how to handle a human remains discovery, see: *RCW 68.50.645: Skeletal human remains—Duty to notify—Ground disturbing activities—Coroner determination—Definitions*.

Suggestion: If you are unsure whether the discovery is human bone or not, contact Guy Tasa with DAHP, for identification and next steps. Do not pick up the discovery.

Guy Tasa, PhD State Physical Anthropologist
Guy.Tasa@dahp.wa.gov
(360) 790-1633 (Cell/Office)

For discoveries that are confirmed or suspected human remains, follow these steps:

1. Notify law enforcement and the Medical Examiner/Coroner using the contacts below. **Do not call 911** unless it is the only number available to you.

   Enter contact information below (required):
   - Local Medical Examiner or Coroner name and phone: Skagit County Coroner, 360-416-1996
   - Local Law Enforcement main name and phone: Sedro-Woolley Police Department, 360-855-0111
   - Local Non-Emergency phone number (911 if without a non-emergency number): Skagit County Sheriff's Office, 360-428-3211
2. The Medical Examiner/Coroner (with assistance of law enforcement personnel) will determine if the remains are human or if the discovery site constitutes a crime scene and will notify DAHP.
3. **DO NOT speak with the media, allow photography or disturbance of the remains, or release any information about the discovery on social media.**
4. If the remains are determined to be non-forensic, Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection and to shield them from being photographed by others or disturbed.

Further activities:

- Per RCW 27.44.055, RCW 68.50, and RCW 68.60, DAHP will have jurisdiction over non-forensic human remains. Ecology staff will participate in consultation. Organizations may also participate in consultation.
- Documentation of human skeletal remains and funerary objects will be agreed upon through the consultation process described in RCW 27.44.055, RCW 68.50, and RCW 68.60.
- When consultation and documentation activities are complete, work in the discovery area may resume as described in Section 8.

If the project occurs on federal lands (such as a national forest or park or a military reservation) the provisions of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) apply and the responsible federal agency will follow its provisions. Note that state highways that cross federal lands are on an easement and are not owned by the state.

If the project occurs on non-federal lands, the Project Lead/Organization will comply with applicable state and federal laws, and the above protocol.

7. DOCUMENTATION OF ARCHAEOLOGICAL MATERIALS

Archaeological resources discovered during construction are protected by state law RCW 27.53 and assumed eligible for inclusion in the National Register of Historic Places under Criterion D until a formal Determination of Eligibility is made.

The Project Lead/Organization must ensure that proper documentation and field assessment are made of all discovered cultural resources in cooperation with all parties: the federal agencies (if any), DAHP, Ecology, affected tribes, and the archaeologist.

The archaeologist will record all prehistoric and historic cultural material discovered during project construction on a standard DAHP archaeological site or isolate inventory form. They will photograph site overviews, features, and artifacts and prepare stratigraphic profiles and soil/sediment descriptions for minimal subsurface exposures. They will document discovery locations on scaled site plans and site location maps.

Cultural features, horizons, and artifacts detected in buried sediments may require the archaeologist to conduct further evaluation using hand-dug test units. They will excavate units in a controlled fashion to expose features, collect samples from undisturbed contexts, or to interpret complex stratigraphy. They may also use a test unit or trench excavation to determine if an intact occupation surface is present. They will only use test units when necessary to gather information on the nature, extent, and integrity of subsurface cultural deposits to evaluate the site's significance. They will conduct excavations using standard archaeological techniques to precisely document the location of cultural deposits, artifacts, and features.

The archaeologist will record spatial information, depth of excavation levels, natural and cultural stratigraphy, presence or absence of cultural material, and depth to sterile soil, regolith, or bedrock for each unit on a standard form. They will complete test excavation unit level forms, which will include plan maps for each excavation level and artifact counts and material types, number, and vertical provenience (depth below

surface and stratum association where applicable) for all recovered artifacts. They will draw a stratigraphic profile for at least one wall of each test excavation unit.

The archaeologist will screen sediments excavated for purposes of cultural resources investigation through 1/8-inch mesh, unless soil conditions warrant 1/4-inch mesh.

The archaeologist will analyze, catalogue, and temporarily curate all prehistoric and historic artifacts collected from the surface and from probes and excavation units. The ultimate disposition of cultural materials will be determined in consultation with the federal agencies (if any), DAHP, Ecology, and the affected tribe(s).

Within 90 days of concluding fieldwork, the archaeologist will provide a technical report describing any and all monitoring and resultant archaeological excavations to the Project Lead/Organization, who will forward the report to Ecology, the federal agencies (if any), DAHP, and the affected tribe(s) for review and comment.

If assessment activities expose human remains (burials, isolated teeth, or bones), the archaeologist and Project Lead/Organization will follow the process described in **Section 6**.

8. PROCEEDING WITH WORK

The Project Lead/Organization shall work with the archaeologist, DAHP, and affected tribe(s) to determine the appropriate discovery boundary and where work can continue.

Work may continue at the discovery location only after the process outlined in this plan is followed and the Project Lead/Organization, DAHP, any affected tribe(s), Ecology, and the federal agencies (if any) determine that compliance with state and federal laws is complete.

9. ORGANIZATION RESPONSIBILITY

The Project Lead/Organization is responsible for ensuring:

- This IDP has complete and accurate information.
- This IDP is immediately available to all field staff at the sites and available by request to any party.
- This IDP is implemented to address any discovery at the site.
- That all field staff, contractors, and volunteers are instructed on how to implement this IDP.

10. ADDITIONAL RESOURCES

Informative Video

Ecology recommends that all project staff, contractors, and volunteers view this informative video explaining the value of IDP protocol and what to do in the event of a discovery. The target audience is anyone working on the project who could unexpectedly find cultural resources or human remains while excavating or digging. The video is also posted on DAHP's inadvertent discovery language website.

Ecology's IDP Video (https://www.youtube.com/watch?v=ioX-4cXfbDY)

Informational Resources

DAHP (https://dahp.wa.gov)

Washington State Archeology (DAHP 2003)
(https://dahp.wa.gov/sites/default/files/Field%20Guide%20to%20WA%20Arch_0.pdf)

Association of Washington Archaeologists (https://www.archaeologyinwashington.com)

Potentially Interested Tribes

Interactive Map of Tribes by Area
(https://dahp.wa.gov/archaeology/tribal-consultation-information)

WSDOT Tribal Contact Website
(https://wsdot.wa.gov/tribal/TribalContacts.htm)

11. ADDITIONAL INFORMATION

Please add any additional contact information or other information needed within this IDP.

Additional tribal contacts:

Stillaguamish Tribe of Indians
Kerry Lyste
THPO, Cultural Resources
360-652-7362 ext. 226
klyste@stillaguamish.com

Snoqualmie Indian Tribe
Adam Osbekoff
Cultural Resource Compliance Manager
adam@snoqualmietribe.us

Sauk-Suiattle Indian Tribe
Cultural Resources
thpo@sauk-suiattle.com

Lummi Nation
Lena Tso
THPO

Implement the IDP if you see…

Chipped stone artifacts.

Examples are:

- Glass-like material.
- Angular material.
- “Unusual” material or shape for the area.
- Regularity of flaking.
- Variability of size.

Stone artifacts from Oregon.

Stone artifacts from Washington.

Biface-knife, scraper, or pre-form found in NE Washington. Thought to be a well knapped object of great antiquity. Courtesy of Methow Salmon Rec. Foundation.

Implement the IDP if you see…

Ground stone artifacts.

Examples are:

- Unusual or unnatural shapes or unusual stone.
- Striations or scratching.
- Etching, perforations, or pecking.
- Regularity in modifications.
- Variability of size, function, or complexity.

Above: Fishing Weight - credit CRITFC Treaty Fishing Rights website.

Artifacts from unknown locations (left and right images).

Implement the IDP if you see…

Bone or shell artifacts, tools, or beads.

Examples are:

- Smooth or carved materials.
- Unusual shape.
- Pointed as if used as a tool.
- Wedge shaped like a “shoehorn”.
- Variability of size.
- Beads from shell (dentalium) or tusk.

Upper Left:*Bone Awls from Oregon.*

Upper Center: *Bone Wedge from California.*

Upper Right: *Plateau dentalium choker and bracelet, from Nez Perce National Historical Park, 19th century, made using Antalis pretiosa shells Credit: Nez Perce - Nez Perce National Historical Park, NEPE 8762, Public Domain.*

Above: *Tooth Pendants. Right: Bone Pendants. Both from Oregon and Washington.*

Implement the IDP if you see…

Culturally modified trees, fiber, or wood artifacts.

Examples are:

- Trees with bark stripped or peeled, carvings, axe cuts, de-limbing, wood removal, and other human modifications.
- Fiber or wood artifacts in a wet environment.
- Variability of size, function, and complexity.

Left and Below: *Culturally modified tree and an old carving on an aspen (Courtesy of DAHP).*

Right, Top to Bottom: *Artifacts from Mud Bay, Olympia: Toy war club, two strand cedar rope, wet basketry.*

Implement the IDP if you see…

Strange, different, or interesting looking dirt, rocks, or shells.

Human activities leave traces in the ground that may or may not have artifacts associated with them. Examples are:

- "Unusual" accumulations of rock (especially fire-cracked rock).
- "Unusual" shaped accumulations of rock (such as a shape similar to a fire ring).
- Charcoal or charcoal-stained soils, burnt-looking soils, or soil that has a "layer cake" appearance.
- Accumulations of shell, bones, or artifacts. Shells may be crushed.
- Look for the "unusual" or out of place (for example, rock piles in areas with otherwise few rocks).

Shell Midden pocket in modern fill discovered in sewer trench.

Underground oven. Courtesy of DAHP.

Shell midden with fire cracked rock.

Hearth excavated near Hamilton, WA.

Implement the IDP if you see…

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Agricultural or logging equipment. May include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, etc.
- Domestic items including square or wire nails, amethyst colored glass, or painted stoneware.

Left: Top to Bottom: *Willow pattern serving bowl and slip joint pocket knife discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*

Right: *Collections of historic artifacts discovered during excavations in eastern Washington cities.*

Implement the IDP if you see…

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Railway tokens, coins, and buttons.
- Spectacles, toys, clothing, and personal items.
- Items helping to understand a culture or identity.
- Food containers and dishware.

Main Image: *Dishes, bottles, workboot found at the North Shore Japanese bath house (ofuro) site, Courtesy Bob Muckle, Archaeologist, Capilano University, B.C. This is an example of an above ground resource.*

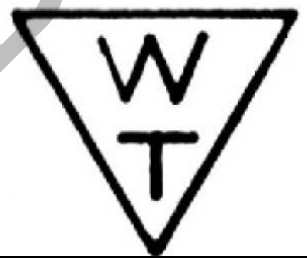
Right, from Top to Bottom: *Coins, token, spectacles and Montgomery Ward pitchfork toy discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*

Implement the IDP if you see…

- Old munition casings – if you see ammunition of any type – ***always assume they are live and never touch or move!***
- Tin cans or glass bottles with an older manufacturer's technique – maker's mark, distinct colors such as turquoise, or an older method of opening the container.

Far Left: .303 British cartridge found by a WCC planting crew on Skagit River. Don't ever touch something like this!
Left: Maker's mark on bottom of old bottle.

Right: *Old beer can found in Oregon. ACME was owned by Olympia Brewery. Courtesy of Heather Simmons.*



Logo employed by Whithall Tatum & Co. between 1924 to 1938 (Lockhart et al. 2016).

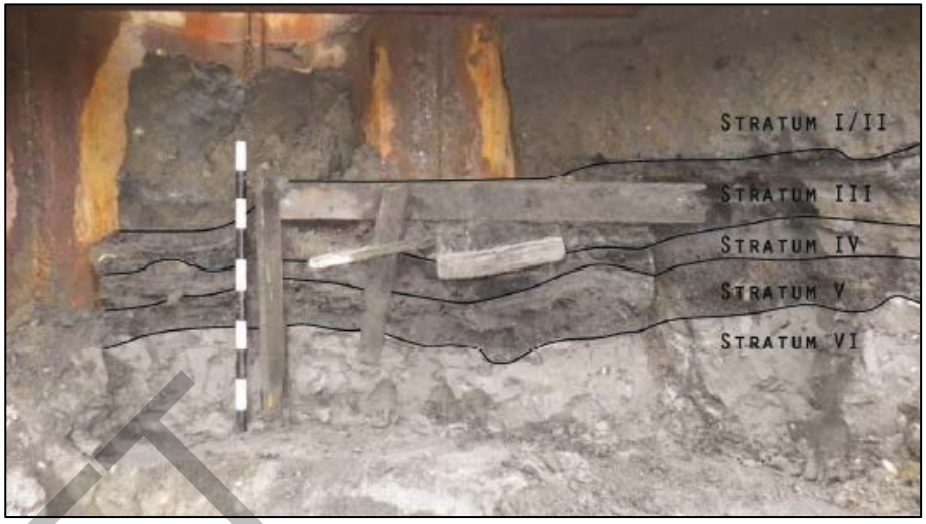
Can opening dates, courtesy of W.M. Schroeder.

Implement the IDP if you see…

You see historic foundations or buried structures.

Examples are:

- Foundations.
- Railroad and trolley tracks.
- Remnants of structures.



Counter Clockwise, Left to Right: *Historic structure 45KI924, in WSDOT right of way for SR99 tunnel. Remnants of Smith Cove shantytown (45-KI-1200) discovered during Ecology CSO excavation, City of Spokane historic trolley tracks uncovered during stormwater project, intact foundation of historic home that survived the Great Ellensburg Fire of July 4, 1889, uncovered beneath parking lot in Ellensburg.*

Implement the IDP if you see...

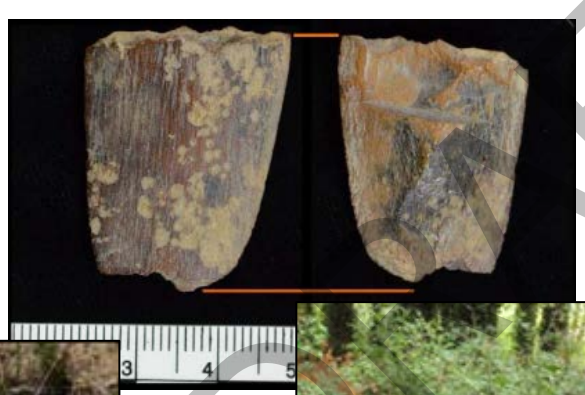
Potential human remains.

Examples are:

- Grave headstones that appear to be older than 50 years.
- Bones or bone tools--intact or in small pieces. It can be difficult to differentiate animal from human so they must be identified by an expert.
- These are all examples of animal bones and are not human.

Center: *Bone wedge tool, courtesy of Smith Cove Shantytown excavation (45KI1200).*

Other images (Top Right, Bottom Left, and Bottom) Center: Courtesy of DAHP.



Directly Above: This is a real discovery at an Ecology sewer project site.

What would you do if you found these items at a site? Who would be the first person you would call?

Hint: *Read the plan!*