

INTERIM ACTION WORK PLAN FORMER REYNOLDS METALS REDUCTION PLANT – LONGVIEW

Prepared for

Washington State Department of Ecology

On Behalf of

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June 2014

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LIST OF ACRONYMS AND ABBREVIATIONS

AO	Agreed Order
BMP	best management practice
CCC	Cowlitz County Code
CWA	Clean Water Act
cy	cubic yard
Ecology	Washington State Department of Ecology
EDR	Engineering Design Report
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FS	Feasibility Study
GMA	Washington State Growth Management Act
HPA	Hydraulics Project Approval
Interim Action	interim remedial action
JARPA	Joint Aquatic Resources Permit Application
MBTL	Millennium Bulk Terminals – Longview, LLC
MTCA	Model Toxics Control Act
NEPA	National Environmental Protection Act
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries Service
Northwest Alloys	Northwest Alloys, Inc.
NPDES	National Pollutant Discharge Elimination System
NW	Nationwide Permit
RCW	Revised Code of Washington
Former Reynolds Plant	Former Reynolds Metals Reduction Plant
RI	Remedial Investigation
SEPA	State Environmental Policy Act
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington State Department of Natural Resources
Work Plan	Interim Action Work Plan
WQC	Water Quality Certification
WQMP	Water Quality Monitoring Plan

1 INTRODUCTION

This document describes an interim remedial action (Interim Action) to be performed as required under an amendment to Model Toxics Control Act (MTCA) Agreed Order (AO) No. DE-8940 for the former Reynolds Metals Reduction Plant (Former Reynolds Plant) in Longview, Washington (see Figure 1). The purpose of the Interim Action is solely to implement the remediation of a localized area of contaminated sediments identified adjacent to the Former Reynolds Plant.

The Interim Action work to be performed includes dredging and removing from the Columbia River up to 5,000 cubic yards (cy) of sediment from the vicinity of Outfall 002A (see Figures 2 and 3). The removal area will be backfilled with an equal quantity of clean sand. The sediments are to be managed by upland placement in an area identified by Ecology (see Figure 5). The placed sediments will be managed in accordance with the final Cleanup Action Plan issued by Ecology.

1.1 Project Location

The Former Reynolds Plant is located at 4029 Industrial Way along the Columbia River just outside the city limits of Longview, Washington 98632 (see Figure 1). The Former Reynolds Plant includes Tax Parcels #6195302, 61950, and 61953, which are owned by Northwest Alloys. MBTL has been the owner of the plant assets and a tenant on the property since January, 2011.

The Northwest Alloys-owned property extends to the extreme low water mark of the Columbia River. The aquatic lands located offshore of this point are owned by the State of Washington and are managed by the Washington State Department of Natural Resources (WDNR). The sediment remediation area is located on land leased to Northwest Alloys by WDNR (WDNR Aquatic Lands Lease #20-B09222).

The sediment remediation area (see Figures 2 and 3) was delineated during sediment sampling overseen by Ecology during development of the Draft Remedial Investigation/Feasibility Study (RI/FS; Anchor QEA 2014). Those data indicated elevated

concentrations of total polynuclear aromatic hydrocarbons (PAH) and potential impacts to the benthic community at one sample station (station SS-09) located adjacent to Outfall 002A. Ecology determined that the area in question had been appropriately delineated in lateral extent and depth, and determined that removal and upland placement of the contaminated sediments was the most appropriate remedy for this area.

The conservatively delineated remediation area encompasses approximately 31,250 square feet (approximately 0.7 acre) and extends less than 2 feet below the sediment mudline (see Figure 4). RI/FS investigations indicate that sources from Outfall 002A have been controlled (Anchor QEA 2014).

The remediation area ranges in mudline elevation from approximately 0 to -25 feet National Geodetic Vertical Datum 29. Surface sediment in the removal area consists of a thin layer of brown flocculent material, underlain by silty sand. In the shallower half of the sediment area (i.e., toward the shoreline), silty sands are underlain by a poorly graded sand unit or by more silty sands. In the deeper half of the sediment area (i.e., toward the channel), silty sands are underlain by a hard silt/clay unit at 1 foot to 1.5 feet below mudline. Outfall 002A discharges through a diffuser approximately 49 feet in length located within the remediation area. The diffuser consists of a 30-inch diameter iron sewer line with a series of 8-inch diffuser ports. The outfall and diffuser are anchored by sacked concrete and shot rock.

1.2 Work Plan Organization

This Interim Action Work Plan (Work Plan) describes the scope of work to be conducted during the Interim Action, including the best management practices (BMPs) to be utilized during implementation. This information will be supplemented in the Engineering Design Report (EDR) to be prepared and submitted for Ecology review as a deliverable under the AO as amended. Information contained in this Work Plan includes the following:

- Section 2—Interim Action Components
- Section 3—Permitting and Substantive Requirements
- Section 4—Reporting
- Section 5—Timeline
- Section 6—Integration with Final Cleanup Action

The following appendix to this document has been included:

- Appendix A—Best Management Practices

2 INTERIM ACTION COMPONENTS

The Interim Action will consist of the removal of up to 5,000 cy of contaminated sediment from the Columbia River, the placement of dredged sediment in an on-site upland placement area, and restoration of the remediation area by placing clean backfill. Work elements are described in Sections 2.1 through 2.5.

All in-water work will occur during the general work window for the Columbia River near Longview, Washington, from October 1 into or through December. Best management practices (BMPs) will be used for all project phases, as detailed in Appendix A. These BMPs may be updated during project permitting.

An EDR will be prepared as a deliverable under this Work Plan. That document will include a Water Quality Monitoring Plan (WQMP) and a Compliance Monitoring Plan (CMP), as well as additional details regarding the dredging and backfill methods to be used.

2.1 Dredging

Prior to dredging, debris will be removed as necessary from the sediment removal area. If logs are encountered, they will be removed from the work area as necessary to complete the remediation and will be managed consistent with project permitting requirements. Debris material removed from the river will be disposed of appropriately.

The depth of dredging will be a minimum of 2 feet below mudline, with an over-dredge allowance of approximately 2 feet (approximate total dredging depth up to 4 feet below mudline). Figure 3 shows a plan view of the dredging area, and Figure 4 shows cross-sections of the dredging area and dredging depths. Including over-dredge allowance, up to 5,000 cy of sediment will be dredged from the river, over approximately 0.7 acre.

Contaminated sediment will be dredged by mechanical means. Dredging will use an environmental bucket to the extent practicable, and oil booms will be deployed throughout dredging. A digging bucket may be utilized only if required for the dredging of hard clay sediment in the south portion of the dredging area. Outfall 002A will remain in place with

appropriate dredging offsets to protect the stability of the outfall (see Figure 3). Dredging will comply with the BMPs defined in Appendix A.

Dredged material will be placed on a barge and moved to the transload facility location. Appropriate BMPs (see Appendix A) will be used during barge transport and sediment transloading to ensure compliance with water quality criteria, manage associated dredge water and prevent return of the dredged sediment and associated constituents to the Columbia River. The transload location will be finalized during engineering design and may include one of two potential on-site locations (see Figure 5) or an appropriately permitted off-site location.

The dredged sediment will be disposed in the upland on-site placement area (see Figure 5) described in Sections 2.3 and 2.4.

Bathymetric surveys performed before and after dredging will be used to ensure that sediment removal achieves target elevations.

2.2 Backfilling

Clean, sandy backfill material will be placed in the dredging prism to balance the quantity of materials removed from the Columbia River. The backfill will consist of clean (non-contaminated) sandy materials similar to the existing sandy sediments located in the Columbia River adjacent to the Former Reynolds Plant. Sand specifications will be defined in the EDR.

The total placement quantity will be consistent with the quantity of material removed by dredging. Placement thicknesses will vary, with 1-foot minimum thickness placed throughout the dredging area. As part of residuals management, the sand placement will also be performed in areas adjacent to the dredge prism as directed by Ecology. Final placement areas will be defined in the EDR.

Clean backfill material will be transported to the work area by barge and will be placed in the dredging area using mechanical dredging equipment. Volume, tonnage, lead line measurements, bathymetric surveys performed before and after the placement of backfill,

and/or another similar method will verify that placement has occurred according to project requirements.

2.3 Placement Area Preparation

The Interim Action includes placement of the dredged sediments within a bermed area located within upland property owned by Northwest Alloys (see Figure 5). Consistent with Ecology direction, the dredged sediments will be placed and covered pending implementation of the final MTCA cleanup action for the upland property. At that time, the materials will be managed in accordance with the final Cleanup Action Plan issued by Ecology.

The placement area will be cleared and grubbed and then surrounded by a perimeter berm up to 6 feet in height. The placement area and berm footprint total approximately 0.9 acre. The grading of the placement area will facilitate collection of waters generated during dewatering of the dredge materials. Any collected waters will be treated in the existing National Pollutant Discharge Elimination System (NPDES) water treatment system known as Facility 73. Facility 73 includes a retention basin and a filter plant.

Approximately 2,000 cy of clean soils suitable for construction of an engineered embankment will be used to construct the berm. The embankment will be placed in thin lifts and compacted using conventional earth-moving equipment. Upland placement area preparation will comply with the project BMPs (see Appendix A).

2.4 Transloading and Placement of Dredged Material

Following dredging and the preparation of the placement area, the dredged sediment will be barged to the transload location. Figure 5 shows two alternate on-site transload locations. The final transloading location and methods will be defined in the EDR.

The first on-site transload location is located just off shore of the upland placement area. If this transload location is used, the sediments will be transloaded from the barge to the upland using a high-solids pump or conveyor. The alternate transload location is the existing Former Reynolds Plant dock. If this transload location is used, the sediments will be

transloaded from the barge to the dock using mechanical equipment, and then transferred to the sediment placement area by trucks. If an off-site transload facility is used, the sediments will be transloaded from the barge to the dock using mechanical equipment and then transferred to the sediment placement area by trucks. In all cases, BMPs and appropriate water management will be employed to minimize the potential for spill or release, and barges will remain in sufficient water depth at all times to avoid grounding during low-tide conditions.

As described in the project BMPs (see Appendix A), barges used for sediment dredging, transport and transloading will not be allowed to ground. Barges may be held in place during dredging or transloading with anchors or spuds. If additional methods are required, they will be defined in the EDR and project permit application documents.

Water generated from the upland placement area will be collected and pumped to the existing on-site water treatment facility for treatment consistent applicable requirements of NPDES permit No. WA-000008-6. Stormwater and waters generated during passive sediment dewatering in the placement area will also be managed in this manner.

Following placement and passive dewatering, the sediment fill and berm will be re-graded so that the surface drains consistent with existing site conditions. Finally, the upland placement area will be covered with a temporary synthetic cover to secure the material pending grading and management of the material during the final upland remediation.

2.5 Post-Construction Monitoring and Reporting

Post- construction compliance monitoring will be performed to verify that construction has been carried out as planned.

- Bathymetric surveys performed before and after dredging operations will verify that targeted sediment has been removed.
- Volume, tonnage, lead line measurements, bathymetric surveys, and/or another similar method performed before and after placement will verify that clean sand placement has met project requirements.
- Upland placement area construction will be documented with construction as-builts.

- Compliance monitoring samples from the dredging and sand placement areas will document achieved sediment quality.
- All results will be summarized in a project Completion Report. That report will be submitted to Ecology for review and will be finalized after addressing Ecology comments.
- All analytical data will be submitted into Ecology's EIM database at the time the Completion Report is submitted to Ecology.

3 PERMITTING AND SUBSTANTIVE REQUIREMENTS

This Interim Action will be conducted under AO No. DE-8940, as amended. The amended AO requires identification of the permits or specific federal, state, or local requirements that Ecology has determined are applicable and that are known at the time of entry of the Order. In performing the Interim Action, MBTL and NW Alloys are exempt from the procedural requirements of Chapters 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 Revised Code of Washington (RCW) and of any laws requiring or authorizing local government permits or approvals but must still comply with the substantive requirements of such permits or approvals.

3.1 Applicable Permits and Requirements

Implementation of the Interim Action will include procurement of or compliance with the following permits and environmental reviews:

- **U.S. Army Corps of Engineers Nationwide Permit 38:** Section 404 of the Clean Water Act (CWA), 33 U.S.C. § 1344, requires a permit prior to discharging dredged or fill material into the waters of the United States, including special aquatic sites such as wetlands. Additionally, Section 10 of the Rivers and Harbors Act, 33 U.S.C § 403, requires a permit for work in, over, or under navigable waters of the United States. MBTL and Northwest Alloys will obtain and comply with the conditions of a Nationwide Permit (NW) 38, which covers the cleanup of hazardous and toxic wastes that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. The NW 38 will address the requirements of both Section 404 of the CWA and Section of the Rivers and Harbors Act. Project permitting will be initiated with submittal of a Joint Aquatic Resources Permit Application (JARPA) to the U.S. Army Corps of Engineers (USACE). The USACE permitting process includes compliance with the following additional requirements:
 - National Environmental Policy Act (NEPA), 42 U.S.C § 55, is a federal law that requires federal agencies to consider the likely environmental consequences of a proposal before approving or denying it. Under the Nationwide Permit program, the U.S. Army Corps of Engineers conducts programmatic NEPA review as part of each permit authorization. A project-specific NEPA review is not required for

- projects that qualify for coverage under an existing Nationwide Permit, such as NW 38 for certain environmental remediation actions.
- The Endangered Species Act (ESA), 16 U.S.C 1531-1534, is administered by both the National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) and the U.S. Fish and Wildlife Service, collectively called the Services. The ESA provides protection for species and their habitats that are determined to be threatened or endangered at a national level. Among other things, the ESA requires that federal agencies consult with the Services prior to taking or approving actions that may adversely affect species that are listed as threatened or endangered. ESA consultation is coordinated by the U.S. Army Corps of Engineers during review of the NW 38 permit.
 - The Magnuson-Stevens Act (MSA), Public Law 94-265, is the primary law governing marine fisheries management in the United States federal waters. The MSA is administered by NOAA Fisheries and governs impacts to Essential Fish Habitat (EFH), the habitats that particular fish species use to survive and reproduce. An assessment of the impacts to EFH from a given project is typically included as an appendix to an ESA biological assessment and the timeframe for MSA approval is concurrent with the ESA consultation process.
 - Section 106 of the National Historic Preservation Act, 36 Code of Federal Register 800, requires federal agencies to take into account the effects of their actions on historic properties (archaeological sites and historic structures), and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on a project through consultation with the lead federal agency. Section 106 consultation is coordinated by the U.S. Army Corps of Engineers during review of the NW 38 permit.
 - Pursuant to RCW 90.48 and 33 U.S.C. 1341, a project receiving a Section 404 permit from the USACE is required to obtain a CWA Section 401 Water Quality Certification (401 WQC) from Ecology. However, individual 401 review is not required for projects or activities authorized under a NW 38 permit if the project or activity is authorized through a MTCA order or decree. Water quality review under Section 401 is addressed in Section 3.2 under substantive requirements.
- **State Environmental Policy Act Integrated Compliance:** Environmental review of the Interim Action is being performed by Ecology in accordance with the State

Environmental Policy Act (SEPA), Chapter 43.21C RCW, following applicable regulatory requirements, including Washington Administrative Code (WAC) 197-11-268, and Ecology guidance as presented in Ecology Policy 130A Coordination of SEPA and MTCA. Ecology is the lead agency for the Interim Action. A SEPA checklist for the project has been submitted to Ecology, and Ecology has prepared a SEPA threshold determination for the Interim Action. Notice of the SEPA determination is being conducted concurrently with the public notice period for the AO Amendment.

- **National Pollutant Discharge Elimination System Permit Requirements:** Stormwater and wastewaters generated within the Former Reynolds Plant are managed under the site NPDES permit No. WA-000008-6. These waters are subject to treatment and monitoring requirements. Any stormwater or other waters generated from sediment dewatering and placement following transfer of dredged sediments to the upland portions of the Former Reynolds Plant will be managed consistent with requirements of the NPDES permit, including at a minimum collection and treatment in the Retention Basin, and the Filter Plant (Facility 73).

3.2 Permit Exemptions and Substantive Requirements

The Interim Action will comply with the substantive requirements of the following state and local regulations and other requirements, though the Interim Action is procedurally exempt from these permit requirements. Substantive requirements may be further identified in the EDR after Ecology review.

- **Section 401 Water Quality Certification:** Pursuant to RCW 90.48 and 33 U.S.C. 1341, a project receiving a Section 404 permit from the USACE is required to obtain a CWA 401 WQC from Ecology. However, individual 401 review is not required for projects or activities authorized under a NW 38 permit if the project or activity is authorized through a MTCA order or decree. Water quality review for the Interim Action will be addressed during Ecology's review of the EDR and the WQMP, which will be attached to that document.
- **Hydraulics Project Approval, Washington Department of Fish and Wildlife:** Chapter 220-110 WAC (Hydraulic Code Rules) and Chapter 77.55 RCW (Construction Projects in State Waters) regulate work that uses, diverts, obstructs, or changes the natural flow

or bed of any of the salt or fresh waters of the state. For projects not conducted under a MTCA order or decree, the Washington Department of Fish and Wildlife (WDFW) oversees the implementation of these laws and issues a Hydraulic Project Approval (HPA) with appropriate conditions to protect these resources. MBTL and Northwest Alloys will provide a copy of the JARPA to WDFW as part of NW 38 process and seek WDFW's comments concerning what is required for substantive compliance with the Hydraulic Code. MBTL and Northwest Alloys will then comply with the substantive requirements of the Hydraulic Code during implementation of the Interim Action.

- **Shoreline Management Act, RCW 90.58; Cowlitz County Shoreline Permit, Cowlitz County Code (CCC) 19.20:** If not performed pursuant to an MTCA order or decree, the Cowlitz County Shoreline Master Program requires a Shoreline Substantial Development Permit for projects that involve more than 50 cy of grading within the shoreline zone. The Interim Action will occur within a regulated shoreline area governed under Cowlitz County's Shoreline Master Program (SMP). Cowlitz County is in the process of updating their SMP and the updated SMP is expected to be adopted prior to project construction. The proposed shoreline designation for this area is Water Dependent Industrial and the project will comply with substantive provisions of the Shoreline Master Program for this designation.
- **Major Grading Permit; Cowlitz County Grading Ordinance, CCC 16.35:** If not performed under a MTCA order or decree, the Cowlitz County Grading Ordinance (CCC 16.35) would require a Major Grading permit is required from the county for grading projects that involve more than 100 cy of grading. The integration of substantive provisions of the county standards into the engineering design will be described in the EDR.
- **Cowlitz County Stormwater Requirements, CCC 16.22:** Substantive requirements of the Cowlitz County Stormwater Management Ordinance (CCC 16.22), which regulates stormwater discharge from construction and development activities, will be incorporated into the EDR.
- **Critical Areas Permit; Cowlitz County Critical Areas Ordinance, CCC 19.15:** The Washington State Growth Management Act (GMA), RCW 36.90, was enacted in 1990 and requires all cities and counties to plan for future growth while protecting natural resources. Under the GMA, all cities and counties must classify and designate critical areas (e.g., wetlands, fish and wildlife habitat, or aquifer recharge areas) and adopt

regulations to protect them. The Columbia River, Columbia River shoreline, and Columbia River floodplain have been identified as environmentally sensitive or critical areas per the Cowlitz County Code 19.15. Additionally, the reach of the Columbia River adjacent to the project site is designated as critical habitat for 12 populations of salmon and steelhead for migration and rearing. The project will adhere to the requirements associated with working in these critical areas.

4 REPORTING

MBTL and Northwest Alloys will submit the following two reports to Ecology:

- An Engineering Design Report will be submitted to Ecology for review by 30 days following the issuance of the AO amendment. The EDR will be finalized after addressing Ecology comments. The EDR will provide the detailed engineering assumptions for sediment dredging, transloading, upland placement, and also for backfill of the dredging prism. That document will include a water quality monitoring plan and a compliance monitoring plan.
- A Completion Report will be submitted to Ecology 90 days following completion of all construction activities and receipt of validated analytical data from post-construction compliance monitoring. The Completion Report will be finalized after addressing Ecology comments. The Completion Report will include data from monitoring during construction (e.g., water quality monitoring) and performance monitoring to ensure that construction has been performed to specification (e.g., post-construction surveys). All sediment data will be submitted into Ecology's EIM database at the time the Completion Report is submitted to Ecology.

5 TIMELINE

The anticipated timeline for the Interim Action is as follows, subject to adjustment after finalization of the EDR and project permitting:

- The EDR will be submitted to Ecology by 30 days following the issuance of the AO amendment. The EDR will be finalized 30 days following receipt of Ecology's comments.
- MBTL and Northwest Alloys will apply for project permits. The work will be performed during 2014, assuming that project permits are obtained with sufficient lead time to implement the work during the 2014 work window in the Columbia River. Alternatively, the work will be implemented in a 2015 work window.
- Construction of the Interim Action is expected to take approximately 5 to 8 weeks to complete, with all in-water construction activities occurring from October 1 and into or through December. The preliminary timeline for construction is as follows:
 - Mobilization, site preparation, on-site landfill facility preparation, and berm construction: 14 days
 - Dredging of up to 5,000 cy of contaminated sediment: 10 days
 - Placement of backfill material in the dredging area: 7 days (some performed concurrent with dredging)
 - Placement of dredged material in the upland placement area: 10 days (some performed concurrent with dredging)
 - Dewatering of dredged material, placement of cover material, and demobilization: 14 days
 - Assuming no overlapping activities, the total construction time is approximately 38 to 55 work days, or approximately 5 to 8 weeks.
- Post-construction compliance monitoring will be performed during and following construction to verify the construction has been carried out consistent with Ecology requirements.
- MBTL and Northwest Alloys shall prepare, for Ecology review and approval, a final Interim Action Completion Report within 90 days following the completion of the Interim Action construction and receipt of validated analytical data from compliance monitoring.

6 INTEGRATION WITH FINAL CLEANUP ACTION

The current Interim Action does not foreclose reasonable alternatives for the final cleanup action at the Former Reynolds Plant. Ecology has determined that the removed sediments will be managed by upland on-site placement, pending selection of the final cleanup actions in the Cleanup Action Plan.

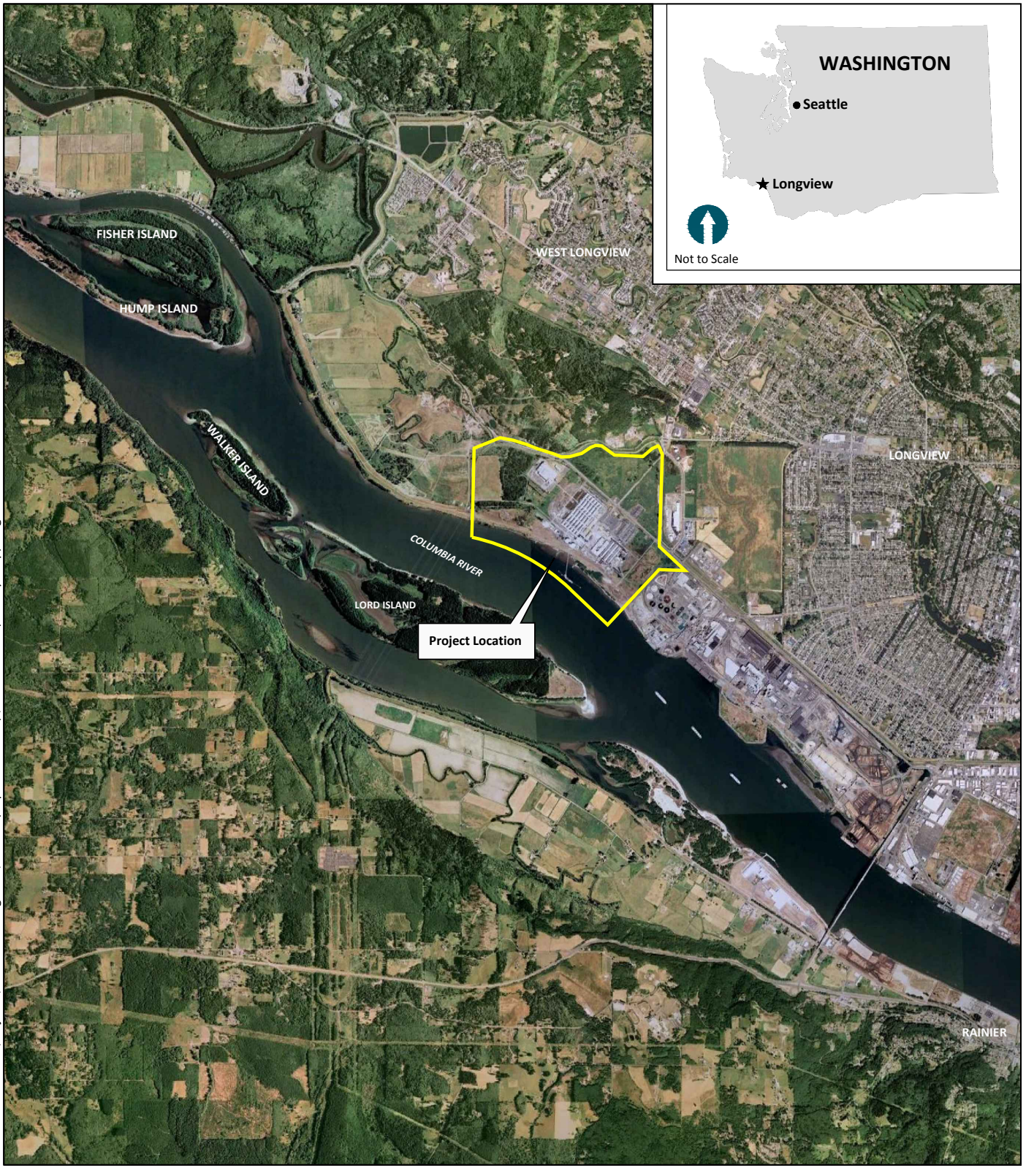
The sediment placement area (see Figure 5) is located within the intended final containment area if on-site containment is selected as a final remedy for this area, thereby minimizing the potential need for re-grading of the materials in the future. However, the final grading and construction of a permanent cap over the material will not be performed until the final cleanup action has been selected by Ecology. The dredged materials will be covered with a temporary synthetic cover pending selection of the final cleanup actions for the site.

7 REFERENCES

Anchor QEA (Anchor QEA, LLC), 2014. Draft Remedial Investigation/Feasibility Study. Former Reynolds Metals Reduction Plant – Longview. Prepared for Washington State Department of Ecology. April 2014.

FIGURES

K:\Projects\0730-MBT-Longview\01-C-03 (Implementation)\0730-WK-004 (Vicinity Map).dwg F1
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AERIAL SOURCE: Google Earth Pro, 2010.

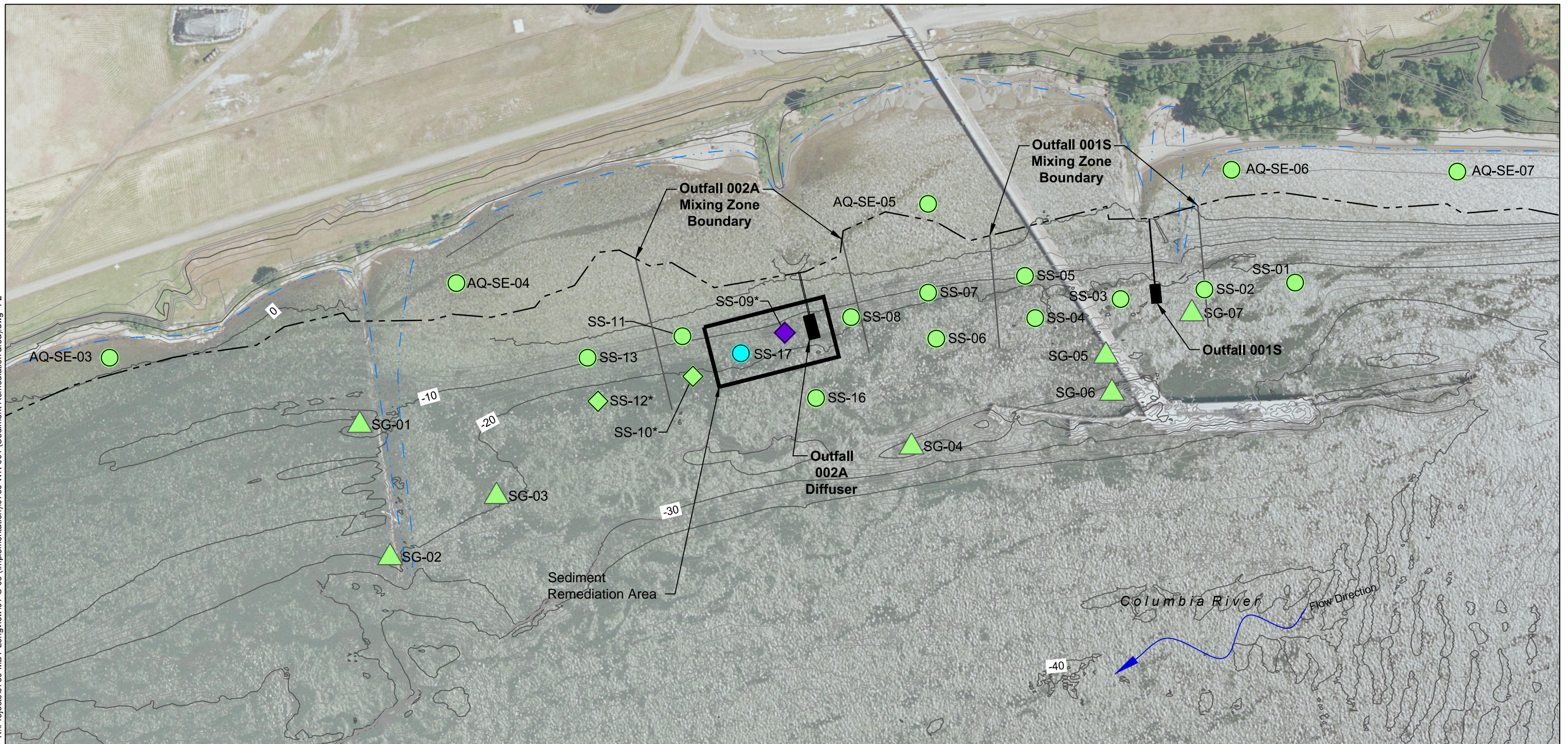


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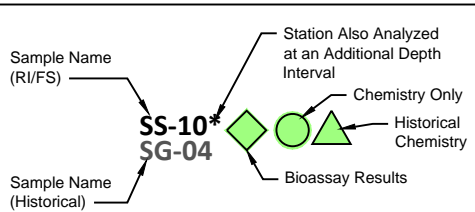
Figure 1
Vicinity Map
Interim Action Work Plan
Former Reynolds Metals Reduction Plant – Longview

K:\Projects\0730-MBT-Longview\01-C-03 (Implementation)\0730-WK-001 (Sediment Remediation area).dwg F2



SOURCE: Aerial image from Aerometric dated June 2013. Bathymetry from Chinook Ventures, dated June 14, 2010 and Terrasond, dated March 4, 2013.
HORIZONTAL DATUM: Washington State Plane South, NAD83, US Feet.
VERTICAL DATUM: National Geodetic Vertical Datum of 1929 (NGVD29).
NOTES:
 1. Results shown are the maximum result from both the NPDES and RI/FS samples at the 0-10 cm interval.
 2. Sediment Management Standards (SMS) Final Rule [WAC 173-204] Ecology, February 22, 2013.
 3. Sediments within the vicinity of Outfall 002A do not exceed the SMS cluster rule criteria as defined in WAC 173-204-510(2)(b).
 4. Results of sampling demonstrate that source control measures have been effective and sediments are naturally recovering.

LEGEND:
 - - - - - Approximate Ordinary High Water Line
 - - - - - Property Line
 [Thick Black Line] Approximate Outfall and Diffuser
 [Thick Grey Line] Preliminary Remediation Area
 [Thin Grey Line] Existing Contours (2' and 10' Interval)



Sediment Quality			
Historical Chemistry	RI/FS and NPDES Chemistry	Bioassay Results (RI/FS)	
▲	●	◆	Meets Sediment Cleanup Objective [2]
▲	●	◆	Exceeds Sediment Cleanup Objective [2]
▲	●	◆	Exceeds Cleanup Screening Level [2]

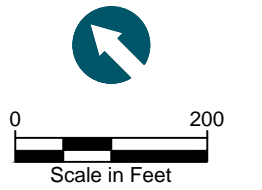
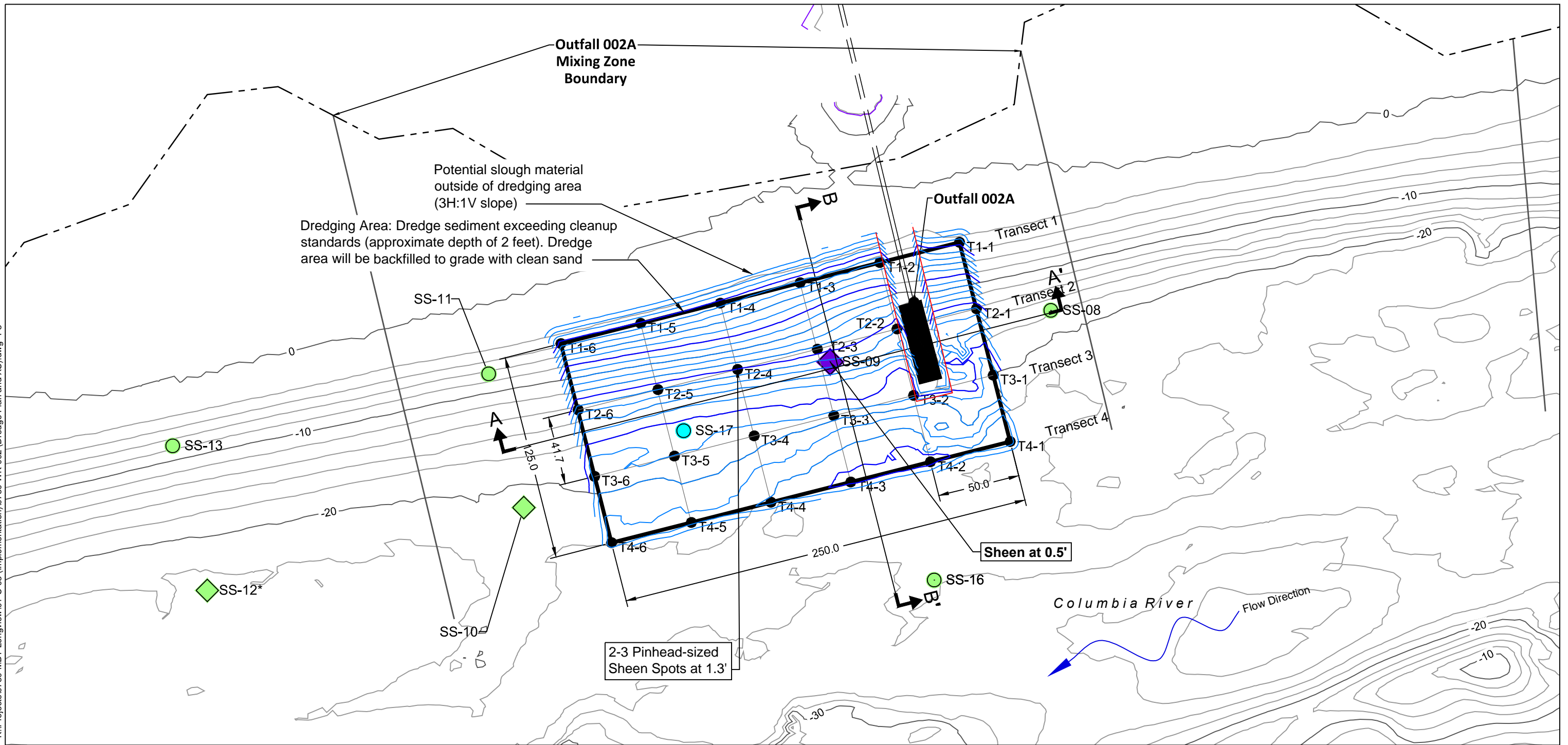


Figure 2
 Sediment Remediation Area
 Interim Action Work Plan
 Former Reynolds Metals Reduction Plant – Longview



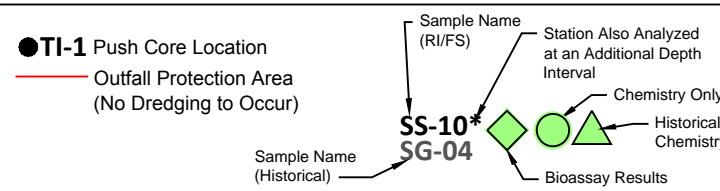
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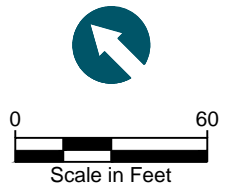
SOURCE: Aerial image from Aerometric dated June 2013. Bathymetry from Chinook Ventures, dated June 14, 2010 and Terrasond, dated March 4, 2013.
HORIZONTAL DATUM: Washington State Plane South, NAD83, US Feet.
VERTICAL DATUM: National Geodetic Vertical Datum of 1929 (NGVD29).
NOTES:
 1. No sheen was observed unless otherwise noted.
 2. Sediment Management Standards (SMS) Final Rule [WAC 173-204] Ecology, February 22, 2013

LEGEND:

- Approximate Ordinary High Water Line
- Property Line
- Approximate Outfall and Diffuser
- Preliminary Remediation Area
- Existing Contours (2' and 10' Interval)
- Approximate Dredge Depth Contours (2' Below Existing, 1' and 5' Interval)
- TI-1 Push Core Location
- Outfall Protection Area (No Dredging to Occur)



Sediment Quality			Bioassay Results (R/FS)	Meets Sediment Cleanup Objective [2]
Historical Chemistry	R/FS and NPDES Chemistry			
			Meets Sediment Cleanup Objective [2]	
			Exceeds Sediment Cleanup Objective [2]	
			Exceeds Cleanup Screening Level [2]	

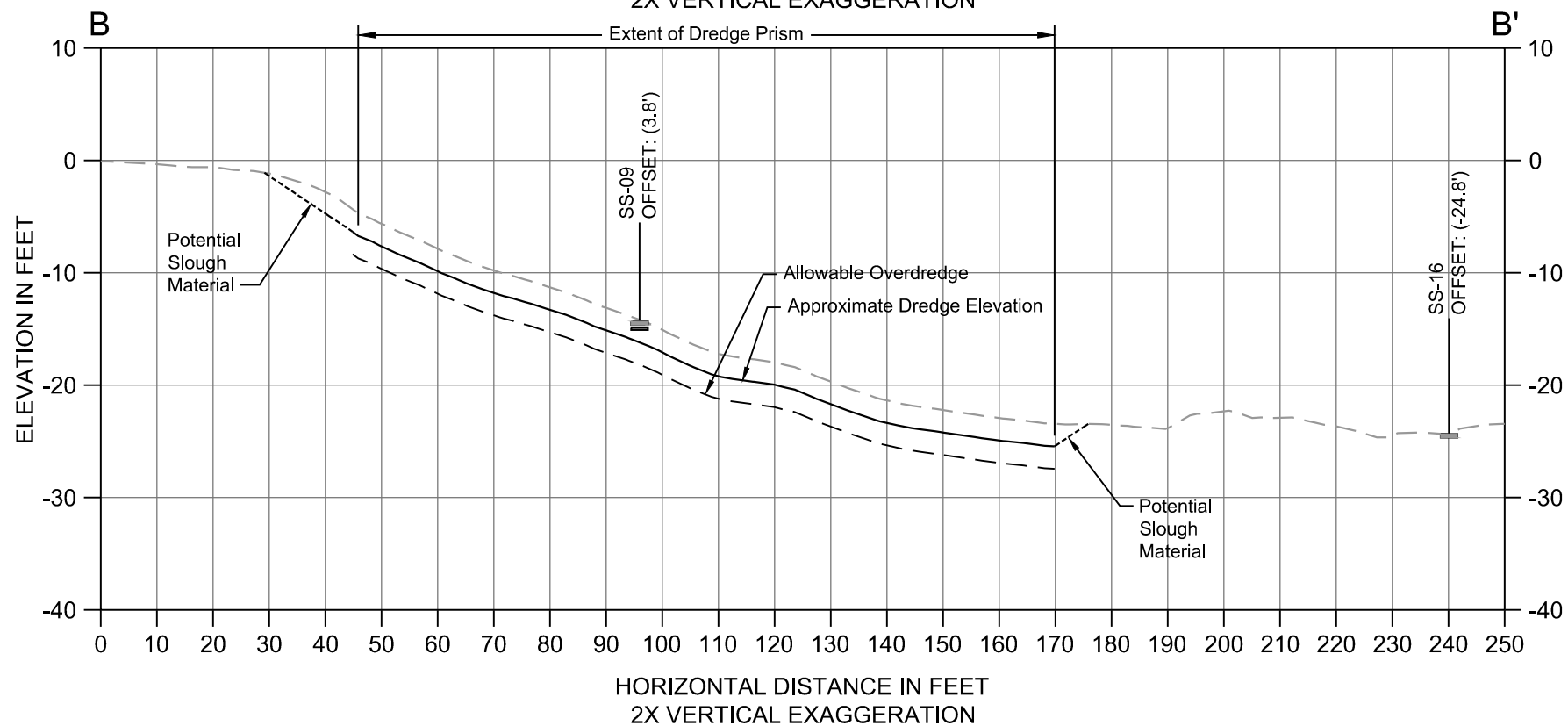
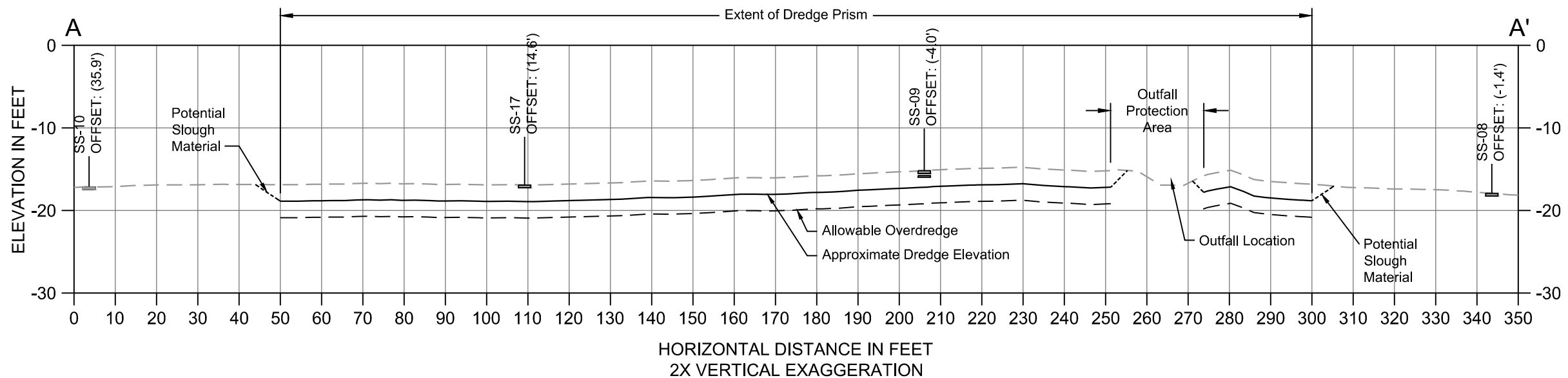


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Figure 3
 Dredge Plan View
 Interim Action Work Plan
 Former Reynolds Metals Reduction Plant – Longview

K:\Projects\0730-MBT-Longview\01-C-03 (Implementation)\0730-WK-002 (Dredge Plan and XS).dwg F4



SOURCE: Bathymetry from Chinook Ventures, dated June 14, 2010 and Terrasond, dated March 4, 2013.
VERTICAL DATUM: National Geodetic Vertical Datum of 1929 (NGVD29).
NOTE: Projected Core elevations are shown relative to the mudline elevation at the location of the cross section.

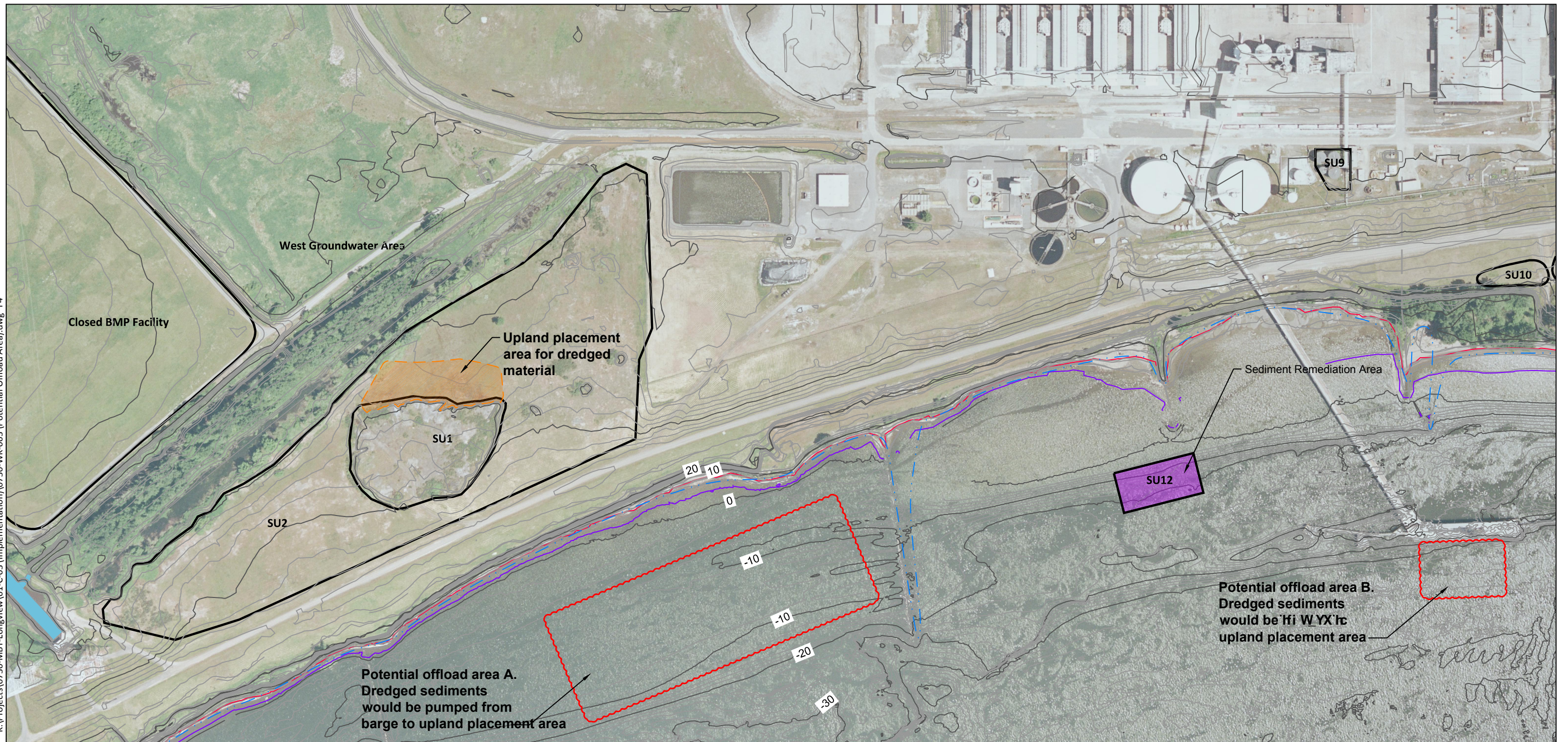
- LEGEND:**
- Existing Bathymetry
 - Design Dredge Surface
 - - - - 2' Allowable Overdredge Surface
 - Sampled Interval (Diver Cores Not Shown)
 - Potential Slough Material



Figure 4
 Dredge Cross-sections
 Interim Action Work Plan
 Former Reynolds Metals Reduction Plant – Longview








K:\Projects\0730-MBT-Longview\01-C-03 (Implementation)\0730-WK-003 (Potential Offload Area).dwg F4





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SOURCE: Upland topography from Minister & Glaeser Surveying, Inc., dated November 11, 2010. Bathymetry from Chinook Ventures, dated June 14, 2010 and Terrasond, dated March 4, 2013. Aerial image from Aerometric dated June 2013.
HORIZONTAL DATUM: Washington State Plane South, NAD83, US Feet.
VERTICAL DATUM: National Geodetic Vertical Datum of 1929 (NGVD29).

LEGEND:

-  Existing Contours (2' and 10' Interval)
-  Ordinary High Water
-  Mean Higher High Water (MHHW, Elevation 6.51' NGVD29)
-  Mean Lower Low Water (MLLW, Elevation 2.38' NGVD29)
-  SU Site Unit

-  Upland Placement Area for Dredged Material
-  Potential Offload Area

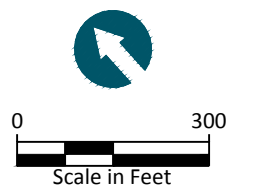


Figure 5
 Potential Offload Area
 Interim Action Work Plan
 Former Reynolds Metals Reduction Plant – Longview

APPENDIX A

BEST MANAGEMENT PRACTICES

BEST MANAGEMENT PRACTICES

The performance of the Interim Action will adhere to the Best Management Practices identified in this document. These may be updated during project permitting or following Ecology review of the Engineering Design Report (EDR).

Permit Conditions

- All applicable permits for the project will be obtained prior to construction activities. All work will be performed according to the requirements and conditions of these permits, other applicable state and local requirements and substantive requirements as specified in the EDR.

Notifications

- The Washington Department of Fish and Wildlife (WDFW) Area Habitat Biologist, the U.S. Army Corps of Engineers (USACE) regulatory lead, and the Washington State Department of Ecology (Ecology) regulatory lead for the project, the Dredge Material Management Program (DMMP) and the Washington Department of Natural Resources (DNR) shall be notified of the project start date.
- If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), the Washington Military Department's Emergency Management Division shall be immediately contacted at 1-800-258-5990.

Work Timing

- In-water work (not including mobilization) will occur during the agency-approved in-water work window, or an approved extension of the work window, for the Columbia River. The applicable dredging work window for listed or protected species is anticipated to be between October 1 into or through December, subject to modification during completion of project permitting and Endangered Species Act review.

Spill Prevention

- Dredge vessel personnel will be trained in hazardous material handling and spill response and will be equipped with appropriate response tools, including absorbent oil booms. If a spill occurs, spill cleanup and containment efforts will begin immediately and will take precedence over normal work.
- The U.S. Coast Guard will be notified immediately if a spill occurs.
- The dredging contractor will inspect fuel hoses, oil or fuel transfer valves, and fittings on a regular basis for drips or leaks in order to prevent spills into the surface water.
- Equipment will have properly functioning mufflers, engine-intake silencers, and engine closures according to federal standards.
- The contractor shall be responsible for the preparation of a Spill, Prevention, Control, and Countermeasure (SPCC) Plan to be used for the duration of the project. The SPCC Plan shall be submitted to the Project Engineer prior to the commencement of any construction activities. A copy of the SPCC Plan, and any updates, will be maintained at the work site by the contractor and will include the following:
 - The SPCC Plan shall identify construction planning elements and recognize potential spill sources at the work site. The SPCC Plan shall outline responsive actions in the event of a spill or release and shall describe notification and reporting procedures. The SPCC Plan shall outline contractor management elements such as personnel responsibilities, project site security, site inspections, and training.
 - The SPCC Plan will outline what measures shall be taken by the contractor to prevent the release or spread of hazardous materials, either found on site and encountered during construction but not identified in contract documents, or any hazardous materials that the contractor stores, uses, or generates on the construction site during construction activities. These items include, but are not limited to, gasoline, oils, and chemicals. Hazardous materials are defined in Revised Code of Washington (RCW) 70.105.010 under “hazardous substance.”
 - The contractor shall maintain at the job site the applicable equipment and material designated in the SPCC Plan.

Dredging and Backfill Placement

- Mechanical dredging equipment shall be used for dredging.
- If woody debris/logs are encountered within the dredging work area, they will be removed from the work area and managed consistent with project permits.
- An oil containment boom will be placed in the water throughout the duration of sediment dredging construction.
- The barge(s) will be maneuvered such that it will not be grounded on the sediment surface during low tide conditions.
- The barge(s) will be managed such that the capacity of the barge is not overloaded with dredged sediment.
- Slope dredging will be initiated at the top of the slope and then proceed in the down-slope direction.
- The contractor will be required to retrieve floating debris generated during construction using a skiff and a net. Debris will be disposed of at an appropriate upland facility.
- For placement of dredge area backfill, the following measures will be observed:
 - The placement of material will generally occur starting at lower elevations and working to higher elevations.
 - Set volume, tonnage, lead line measurements, bathymetry information or similar will be used to confirm adequate coverage during and following material placement.
 - Imported materials will be pre-approved by Ecology and consist of clean, granular material free of roots, organic material, contaminants, and all other deleterious material.

Material Transloading and Upland Disposal

- Upland staging facilities installed for transloading of dredged sediment materials are intended only for temporary use during the project. After the project is completed, these temporary facilities shall be completely removed unless otherwise approved by Ecology.

- Sediments removed from the work area and transloaded to the uplands will be placed in a bermed on-site placement area as approved by Ecology in the Engineering Design Report.
- Excess or waste materials will not be disposed of or abandoned waterward of mean higher high water or allowed to enter waters of the state.
- Erosion control measures for the upland sediment placement area will be defined in the Engineering Design Report and adhered to during construction activities.
- During dredged material transport, transload, and upland placement, the following BMPs will be employed:
 - Visual water quality monitoring and, if necessary, follow-up measurements will be conducted around the barge at the removal and transload area to confirm that material is not being released.
 - If used, transport trucks will be water-tight and covered during transport to the upland placement facility.
- Construction materials will not be stored where high tides, wave action, or upland runoff can cause materials to enter surface waters.

Water Quality

- Water quality will be monitored to ensure construction activities are in compliance with Washington State Surface Water Quality Standards (173-201A WAC) and in accordance with the Project Water Quality Monitoring Plan to be contained in the Engineering Design Report.
- Appropriate BMPs will be employed to minimize sediment loss and turbidity generation during dredging. BMPs will include, but are not limited to, the following:
 - Eliminating multiple bites while the bucket is on the seafloor
 - No stockpiling of dredged material on the seafloor
 - Each pass of the clamshell dredge bucket shall be complete
 - No seafloor leveling
- Depending on the results of the water quality monitoring, enhanced BMPs may also be implemented to further control turbidity. Enhanced BMPs may include, but are not limited to, the following:

- Slowing the velocity (i.e., increasing the cycle time) of the ascending loaded clamshell bucket through the water column
- Pausing the dredge bucket near the bottom while descending and near the water line while ascending
- All barges handling dredged materials within the site shall have hay bales and/or filter fabric placed over the barge scuppers to help filter suspended sediment from the barge effluent.
- Barges leaving the work area will be sealed such that no discharge of water or suspended sediment occurs in the receiving waters.
- No petroleum products or other deleterious materials shall enter surface waters.
- Project activities shall not degrade water quality to the detriment of fish life.
- Stormwater and generated waters from the upland sediment placement area will be managed consistent with the requirements of National Pollutant Discharge Elimination System (NPDES) permit No. WA 000008-6 and shall be treated in Facility 73 using the retention basin and filter plant.