

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 10

IN THE MATTER OF:

Portland Harbor Superfund Site Portland,
Multnomah County, Oregon

Atlantic Richfield Company, BP Products
North America Inc., Brix Maritime Co.,
Exxon Mobil Corporation, and Kinder
Morgan Liquids Terminals, LLC

Respondents

Proceeding Under Sections 104, 107, and
122 of the Comprehensive, Environmental
Response, Compensation, and Liability
Act, 42 U.S.C. §§ 9604, 9607 and 9622

CERCLA Docket No. 10-2020-0055

ADMINISTRATIVE SETTLEMENT
AGREEMENT AND ORDER ON
CONSENT FOR REMEDIAL DESIGN
AT B1a PROJECT AREA

TABLE OF CONTENTS

	Page
I. JURISDICTION AND GENERAL PROVISIONS.....	1
II. PARTIES BOUND	1
III. STATEMENT OF PURPOSE	2
IV. DEFINITIONS.....	2
V. FINDINGS OF FACT.....	7
VI. CONCLUSIONS OF LAW AND DETERMINATIONS	10
VII. SETTLEMENT AGREEMENT AND ORDER.....	10
VIII. PERFORMANCE OF THE WORK.....	11
IX. NOTICES AND SUBMISSIONS	13
X. PROPERTY REQUIREMENTS	14
XI. ACCESS TO INFORMATION	16
XII. RECORD RETENTION.....	17
XIII. COMPLIANCE WITH OTHER LAWS	17
XIV. PAYMENT OF RESPONSE COSTS.....	18
XV. DISBURSEMENT OF SPECIAL ACCOUNT FUNDS	21
XVI. DISPUTE RESOLUTION	25
XVII. FORCE MAJEURE	25
XVIII. STIPULATED PENALTIES	27
XIX. COVENANTS BY EPA	29
XX. RESERVATIONS OF RIGHTS BY EPA	29
XXI. COVENANTS BY RESPONDENTS.....	31
XXII. OTHER CLAIMS	32
XXIII. EFFECT OF SETTLEMENT/CONTRIBUTION	33
XXIV. INDEMNIFICATION.....	33
XXV. INSURANCE.....	34
XXVI. FINANCIAL ASSURANCE	35
XXVII. INTEGRATION/APPENDICES	39
XXVIII. MODIFICATION	39
XXIX. NOTICE OF WORK COMPLETION.....	40
XXX. EFFECTIVE DATE.....	40

I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Settlement Agreement and Order on Consent (Settlement) is entered into voluntarily by the United States Environmental Protection Agency (EPA) and Atlantic Richfield Company, BP Products North America Inc., Brix Maritime Co., Exxon Mobil Corporation, and Kinder Morgan Liquids Terminals, LLC (Respondents). This Settlement provides for the performance of 100% Remedial Design (RD) of the B1a Project Area and the payment by Respondents of certain response costs incurred by the EPA, and incurred by the Oregon Department of Environmental Quality (ODEQ) and the Tribal Governments pursuant to separate written agreements, at or in connection with the Work conducted under this Settlement, related to the January 3, 2017 Record of Decision (ROD) for the Portland Harbor Superfund Site (the Site).

2. This Settlement is issued under the authority vested in the President of the United States by Sections 104, 107, and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9604, 9607, and 9622 (CERCLA). This authority was delegated to the EPA Administrator on January 23, 1987 by Executive Order 12580, 52 Fed. Reg. 2923 (Jan. 29, 1987), and further delegated to the EPA Regional Administrators by EPA Delegation Nos. 14-14-C (Administrative Actions Through Consent Orders, Jan. 18, 2017) and 14-14-D (Cost Recovery Non-Judicial Agreements and Administrative Consent Orders, Jan. 18, 2017). This authority has been re-delegated by the Region 10, Regional Administrator (Regional Administrator) to the Region 10, Director, Superfund and Emergency Management Division, and Branch Chiefs thereunder by EPA Delegations R10 14-14-C and 14-14-D (April 15, 2019).

3. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. § 9622(j)(1), EPA notified the natural resource trustees for the Portland Harbor Site of negotiations with Respondents regarding the release of hazardous substances that may have resulted in injury to the natural resources under federal trusteeship and encouraged the trustees to participate in the negotiation of this Settlement consistent with the process agreed to in the 2001 Memorandum of Understanding related to the Site.

4. EPA and Respondents recognize that this Settlement has been negotiated in good faith and that the actions undertaken by Respondents in accordance with this Settlement do not constitute an admission of any liability. Respondents do not admit, and retain the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement, the validity of the findings of facts, conclusions of law, and determinations in Sections V (Findings of Fact) and VI (Conclusions of Law and Determinations) of this Settlement. Respondents agree to comply with and be bound by the terms of this Settlement and further agree that they will not contest the basis or validity of this Settlement or its terms.

II. PARTIES BOUND

5. This Settlement is binding upon EPA and upon Respondents and their successors, and assigns. Any change in ownership or corporate status of a Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter such Respondent's responsibilities under this Settlement.

6. EPA contends that Respondents are jointly and severally liable for carrying out all activities required by this Settlement. In the event of the insolvency or other failure of any Respondent to implement the requirements of this Settlement, the remaining Respondents shall complete all such requirements.

7. Each undersigned representative of Respondents certifies that she or he is fully authorized to enter into the terms and conditions of this Settlement and to execute and legally bind Respondents to this Settlement.

8. Respondents shall provide a copy of this Settlement to each contractor hired to perform the Work required by this Settlement and to each person representing any Respondent with respect to the Work, and shall condition all contracts entered into under this Settlement on performance of the Work in conformity with the terms of this Settlement. Respondents or their contractors shall provide written notice of the Settlement to all subcontractors hired to perform any portion of the Work required by this Settlement. Respondents shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Work in accordance with the terms of this Settlement.

III. STATEMENT OF PURPOSE

9. The purpose of this Settlement is to implement 100% RD at the B1a Project Area. The EPA signed a ROD that selected Remedial Actions (RA) for the in-river portion of the Site from approximately river miles (RMs) 1.9 to 11.8. The ROD provides that during RD site-specific conditions at specific Sediment Management Areas (SMAs) will be appropriately characterized and assessed for future remedy implementation purposes. The ROD provides information about how Site data will influence RD, remedial construction, and future maintenance of remediated areas. The ROD states that the actual technologies assigned to a specific area of the river during RD will be dependent on a number of area-specific characteristics and environmental conditions to ensure that the final constructed remedy is appropriate for actual area-specific conditions, e.g., Sediment Management Areas (SMAs). The ROD also identifies post-ROD/RD sampling activities that will support and refine the Site's Conceptual Site Model (CSM) and be used to implement RD and RA. Data collected since the ROD as part of the Portland Harbor Pre-Remedial Design Investigation (PDI) and Baseline Sampling Study (AECOM and Geosyntec, 2019) has been approved by EPA and, combined with Site data previously approved by EPA, and data collected for the B1a Project Area pursuant to this Settlement, will be used to refine SMAs, select appropriate remedial technologies and identify any uncontrolled sources of recontamination. This Settlement does not include performance of the RA for the B1a Project Area.

IV. DEFINITIONS

10. Unless otherwise expressly provided in this Settlement, terms used in this Settlement that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Settlement or its attached appendices, the following definitions shall apply:

“Affected Property” shall mean all real property at the Site and any other real property where EPA determines, at any time, that access or land, water, or other resource use restrictions are needed to implement the Work under this Settlement.

“B1a Project Area” shall mean for purposes of this Settlement the active cleanup areas designated on Figure 30 of the ROD generally spanning from RM 3.5 to the downstream end of the St. Johns Bridge along the west side of the river and encompassing approximately 11 acres, within the Portland Harbor Superfund Site, and generally located on or adjacent to numerous properties, including properties owned or formerly owned by BP Products North America Inc., successor-by-merger to BP West Coast Products LLC and its affiliate Atlantic Richfield Company, Brix Maritime Co., Exxon Mobil Corporation, and Kinder Morgan Liquids Terminals, LLC in Portland, Multnomah County, Oregon. The B1a Project Area is depicted in Appendix B to this Settlement. The final extent of the SMAs requiring active cleanup will be determined in accordance with the process described in the SOW. The B1a Project Area includes certain riverbanks from top of the bank to the river.

“CERCLA” shall mean the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9601-9675.

“Day” or “day” shall mean a calendar day. In computing any period of time under this Settlement, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next working day.

“Effective Date” shall mean the effective date of this Settlement as provided in Section XXX.

“Eligible Acre” or “Eligible Acreage” shall mean the acreage of the sediment management areas within the B1a Project Area, as calculated based on Figure 30 of the Record of Decision for the Portland Harbor Site, for SMA Alternative F Mod, and which is determined at the time this Settlement is executed to be 11 acres.

“EPA” shall mean the United States Environmental Protection Agency and its successor departments, agencies, or instrumentalities.

“EPA Hazardous Substance Superfund” shall mean the Hazardous Substance Superfund established by the Internal Revenue Code, 26 U.S.C. § 9507.

“EPA Future Response Costs” shall mean all costs including, but not limited to, direct and indirect costs, that the EPA incurs from October 25, 2019 through the date of the Notice of Completion pursuant to Section XXIX (Notice of Work Completion) in reviewing or developing deliverables submitted pursuant to this Settlement, in overseeing implementation of the Work, or otherwise implementing, overseeing, or enforcing this Settlement, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Section X (Property Requirements) (including, but not limited to, cost of attorney time and any monies paid to secure or enforce access), ¶ 74 (Work Takeover), ¶ 17 (Emergencies and Releases), ¶ 98 (Access to Financial Assurance), ¶ 18 (Community Involvement) (including the costs of any technical assistance grant under Section 117(e) of CERCLA, 42 U.S.C. § 9617(e)), and the costs incurred by the United States in enforcing the terms of this Settlement, including all

costs incurred in connection with Dispute Resolution pursuant to Section XVI (Dispute Resolution) and all litigation costs. EPA Future Response Costs shall also include, but not be limited to, direct and indirect costs, paid or incurred by EPA prior to the Effective Date in connection with negotiating this Settlement and charged to account 10SH beginning October 25, 2019. EPA Future Response Costs shall not include the costs of EPA oversight or data collected by EPA concerning any other response action or Settlement Agreement associated with the Portland Harbor Superfund Site or other activities that do not pertain specifically to this Settlement.

“Interest” shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year. Rates are available online at <https://www.epa.gov/superfund/superfund-interest-rates>.

“Interest Earned” shall mean interest earned on amounts in the Portland Harbor B1a Disbursement Special Account, which shall be computed monthly at a rate based on the annual return on investments of the EPA Hazardous Substance Superfund. The applicable rate of interest shall be the rate in effect at the time the interest accrues.

“National Contingency Plan” or “NCP” shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

“Non-Settling Owner” shall mean any person, other than Respondents, that owns or controls any Affected Property. The phrase “Non-Settling Owner’s Affected Property” means Affected Property owned or controlled by Non-Settling Owner.

“ODEQ” shall mean the Oregon Department of Environmental Quality and any successor departments or agencies of the State.

“ODEQ Response Costs” shall mean all direct and indirect costs that ODEQ incurs in coordinating and consulting with EPA in conjunction with EPA’s planning and implementation of this Settlement Agreement. ODEQ Response Costs are only those costs incurred to fulfill the requirements of this Settlement, including review of plans, reports, and assessments prepared pursuant to this Settlement Agreement and Community Involvement activities; and scoping, planning, and negotiating this Settlement Agreement, but excluding any costs related to natural resource damages assessments, liability or restoration. ODEQ Responses Costs are not inconsistent with the NCP, 40 C.F.R. Part 300, and are recoverable response costs pursuant to Sections 104 and 107 of CERCLA, 42 U.S.C. §§ 9604 and 9607. ODEQ Response Costs shall not include the costs of oversight or data gathered by ODEQ concerning any other response action or Settlement Agreement associated with the Site.

“Owner Respondent” shall mean a Respondent who owns or controls some of the Affected Property. The phrase “Owner Respondent’s Affected Property” means Affected Property owned or controlled by Owner Respondent.

“Paragraph” or “¶” shall mean a portion of this Settlement identified by an Arabic numeral or an upper or lower case letter.

“Parties” shall mean EPA and Respondents.

“Performing Parties” shall mean each entity who signs this Settlement with EPA.

“Portland Harbor B1a Disbursement Special Account” or “B1a Disbursement Special Account” shall mean the special account, within the EPA Hazardous Substance Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3), and ¶ 42 (Creation of B1a Disbursement Special Account).

“Portland Harbor Remedial Design Special Account” or “RD Special Account” shall mean the special account, within the EPA Hazardous Substance Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3), through the Settlement Agreement for Funding Remedial Design, CERCLA Docket no. 10-2019-0094.

“Portland Harbor Special Account” shall mean the special account within the EPA Hazardous Substance Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3) through prior settlements related to the Site.

“Portland Harbor Superfund Site” or “Site” for purposes of this Settlement shall mean the in-river portion of the site in Portland, Multnomah County, Oregon listed on the National Priorities List (NPL) on December 1, 2000, 65 Fed. Reg. 75179-01, and for which a final remedy was selected in the January 2017 Record of Decision. As described in the Record of Decision, the Site extends in-river from approximately river mile (RM) 1.9 to 11.8.

“RCRA” shall mean the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992 (also known as the Resource Conservation and Recovery Act).

“Record of Decision” or “ROD” shall mean the EPA Record of Decision relating to the Site, signed on January 3, 2017, by the Administrator of EPA, all attachments thereto and the Final Explanation of Significant Differences (ESD) issued by EPA on December 9, 2019. A copy of the ROD can be found at <https://semspub.epa.gov/work/10/100036257.pdf>.

“Remedial Action” or “RA” shall mean the remedial action selected in the ROD.

“Remedial Design” or “RD” shall mean those remedial design activities to be undertaken to develop the final plans and specifications for the RA as stated in the SOW depicted as the B1a Project Area on the map attached as Appendix B.

“Respondents” shall mean BP Products North America Inc. and its affiliate Atlantic Richfield Company, Brix Maritime Co., Exxon Mobil Corporation, and Kinder Morgan Liquids Terminals, LLC.

“Section” shall mean a portion of this Settlement identified by a Roman numeral.

“Settlement” shall mean this Administrative Settlement Agreement and Order on Consent and all appendices attached hereto (listed in Section XXVII (Integration/Appendices)). In the event of conflict between this Settlement and any appendix, this Settlement shall control.

“Settling Funding Parties” shall mean the City of Portland and State of Oregon, by and through its Department of Transportation and its Department of State Lands.

“Settlement Agreement for Funding Remedial Design” shall mean the settlement agreement entered into by the EPA and the Settling Funding Parties under CERCLA Docket No. 10-2019-0094.

“Statement of Work” or “SOW” shall mean the document describing the activities Respondents must perform, which is attached as Appendix A.

“Supervising Contractor” shall mean the principal contractor retained by Respondents to supervise and direct the implementation of the Work under this Settlement.

“Transfer” shall mean to sell, assign, convey, lease, mortgage, or grant a security interest in, or where used as a noun, a sale, assignment, conveyance, or other disposition of any interest by operation of law or otherwise.

“Tribal Governments” shall mean the Confederated Tribes and Bands of the Yakama Nation, the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of Siletz Indians, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Nez Perce Tribe. References to “Tribal Governments” in this Settlement Agreement may be a reference to an individual tribe, the tribes collectively, or some combination thereof.

“Tribal Response Costs” shall mean all direct and indirect costs that the Tribal Governments and their employees, agents, contractors, consultants and other authorized representatives incur in coordinating and consulting with EPA in conjunction with EPA’s planning and implementation of this Settlement Agreement. Tribal Response Costs are only those costs incurred to fulfill the requirements of this Settlement Agreement, including review of plans, reports, and assessments prepared pursuant to this Settlement Agreement; development of common positions and coordination among the Tribes; briefings to tribal leaders and tribal communities; and scoping and planning, and negotiating this Settlement Agreement and budgets; participation in community involvement activities; negotiation and implementation of any response cost funding agreements with the Respondents; and the costs incurred in enforcing the terms of any response cost funding agreements with the Respondents, including all costs incurred in connection with dispute resolution and all litigation costs, but excluding any costs related to natural resource damages assessments, liability or restoration. Tribal Response Costs are not inconsistent with the NCP, 40 C.F.R. Part 300, and are recoverable response costs pursuant to Sections 104 and 107 of CERCLA, 42 U.S.C. §§ 9604 and 9607. Tribal Response Costs shall not include the costs of oversight or data gathered by Tribal Governments concerning any other response action or Settlement Agreement associated with the Site.

“United States” shall mean the United States of America and each department, agency, and instrumentality of the United States, including EPA and any federal natural resource trustee.

“Waste Material” shall mean (1) any “hazardous substance” under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (3) any “solid waste” under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27); and (4) any “hazardous substance” under ORS 465.200 *et seq.*

“Work” shall mean all activities and obligations that EPA and Respondents have agreed will be performed to design the remedy that will be implemented within the B1a Project Area, including delineation of SMAs, implementation of any sampling necessary for design, and application of the ROD’s technology matrix in a manner that will ensure that the future constructed remedy is appropriate for actual area-specific conditions, pursuant to the SOW as described in Appendix A and under this Settlement, except those required by Section XII (Record Retention).

V. FINDINGS OF FACT

11. Based on available information and investigation, EPA finds the following facts, which Respondents neither admit nor deny:

a. Historical industrial, commercial, agricultural, and municipal practices and releases of contaminants dating back to the early 1900s contributed to the observed chemical distribution of sediments within the Site. Historical sources responsible for the existing contamination at the Site include, but are not limited to: ship building, repair and dismantling; wood treatment and lumber milling; storage of bulk fuels and manufactured gas plant (MGP) waste; chemical manufacturing and storage; metal recycling, production and fabrication; steel mills, smelters and foundries; electrical production and distribution; municipal combined sewer overflows; and stormwater from industrial, commercial, transportation, residential and agricultural land uses. Operations that continue to exist today include: bulk fuel storage; barge building; ship repair; automobile scrapping; recycling; steel manufacturing; cement manufacturing; operation and repair of electrical transformers; and many smaller industrial operations, as well as other commercial, agricultural, and municipal practices.

b. On December 1, 2000, the Portland Harbor Superfund Site was listed on the National Priorities List due mainly to concerns about contamination in the sediments and the potential risks to human health and the environment from consuming fish. The most widespread contaminants found at the Site include, but are not limited to, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and dioxins/furans.

c. In 2001, EPA entered into a Memorandum of Understanding for the Portland Harbor Site (the MOU) with ODEQ, National Oceanic and Atmospheric Administration within the Department of Commerce, the United States Fish and Wildlife Service within the Department of the Interior, the Oregon Department of Fish and Wildlife and the Tribal Governments. The MOU, among other things, established the roles and responsibilities between EPA and ODEQ on managing the upland and in-river portions of the Site and set up a framework for technical and legal coordination among EPA and the Natural Resource Trustees; and relative

to the Tribal Governments it sought to acknowledge the federal government's consultation requirements concerning the Portland Harbor Superfund Site, and to ensure the Tribal Governments' participation in the response actions at the Portland Harbor Superfund Site.

d. The Tribal Governments have treaty-reserved rights and resources and other rights, interests, or resources in the Site. The National Oceanic and Atmospheric Administration, the United States Department of the Interior, the Oregon Department of Fish & Wildlife, and the Tribal Governments are designated Natural Resource Trustees overseeing the assessment of natural resource damages at the Site. To the extent practicable, and if consistent with the Work, EPA intends that the Work under this Settlement will be conducted so as to be coordinated with any natural resource damage assessment and restoration of the Portland Harbor Superfund Site. EPA intends to provide the Tribal Governments and the federal and state Natural Resource Trustees an opportunity to review and comment on plans, reports, and other deliverables submitted by Respondents to EPA under this Settlement.

e. A remedial investigation and feasibility study (RI/FS) was initiated in 2001 and completed in 2017. As part of the RI/FS, baseline human health and ecological risk assessments were conducted to estimate the current and future effects of contaminants in sediments, surface water, groundwater seeps, and fish tissue on human health and the environment. The risk assessments provided the basis for taking action and identified the contaminants of potential concern (COPCs) and exposure pathways that the remedial action should address.

f. The baseline human health risk assessment (BHHRA) estimated cancer risks and noncancer health hazards from exposures to a set of chemicals in sediments (both beach and in-river), surface water, groundwater seeps, and fish tissue from samples collected at the Site.

g. The baseline ecological risk assessment (BERA) estimated risks to aquatic and aquatic-dependent species exposed to hazardous substances associated with the in-river portion of the Site.

h. The BHHRA and BERA concluded that contamination within the Site poses unacceptable risks to human health and the environment from numerous contaminants of potential concern in surface water, groundwater, sediment, and fish tissue. The selected remedy reduced the COPCs to 64 contaminants of concern (COCs) that contribute the most significant amount of risk to the human and ecological receptors. See ROD, Appendix II, Tables 1–5.

i. A subset of the COCs, called focused COCs, was developed in order to simplify analysis and develop and evaluate remedial alternatives for the Site. The focused COCs include PCBs, PAHs, dioxins and furans, and DDX; and they contribute the most significant amount of site-wide risk to human and ecological receptors.

j. PCBs are classified as probable human carcinogens. Children exposed to PCBs may develop learning and behavioral problems later in life. PCBs are known to impact the human immune system and skin, especially in child receptors, and may cause cancer in people. Nursing infants can be exposed to PCBs in breast milk. PCBs can also bioaccumulate in fish,

shellfish, and mammals. In birds and mammals, PCBs can cause adverse effects such as anemia and injuries to the liver, stomach, and thyroid gland. PCBs also can cause problems with the immune system, behavioral problems, and impaired reproduction.

k. PAHs are human health and ecological COCs. PAHs are suspected human carcinogens with potential to cause lung, skin, and bladder cancers with occupational exposure. Animal studies show that certain PAHs affect the hematopoietic, immune, reproductive and neurologic systems and cause developmental effects. They can cause inhibited reproduction, delayed emergence, sediment avoidance, and mortality. In fish, PAHs cause liver abnormalities and impairment of the immune system.

l. Dioxins and furans are human health and ecological COCs. Toxic effects in humans include reproductive problems, problems in fetal development or early childhood, immune system damage, and cancer. Nursing infants can be exposed to dioxins and furans in breast milk. Dioxins and furans can bioaccumulate in fish, shellfish, and mammals. Animal effects include developmental and reproductive problems, hemorrhaging, and immune system problems.

m. DDx, which represents collectively DDT and its primary breakdown products dichlorodiphenyldichloroethane (DDD) and dichlorodiphenyldichloroethene (DDE), are human health and ecological COCs. DDT is considered a possible human carcinogen. DDT and DDE are stored in the body's fatty tissues. In pregnant women, DDT and DDE can be passed to the fetus. Nursing infants can be exposed to DDx in breast milk. Laboratory animal studies showed effects on the liver and reproduction. These compounds can accumulate in fish, shellfish and mammals and can cause adverse reproductive effects such as eggshell thinning in birds.

n. The B1a Project Area and adjacent upland properties currently and was historically used for various commercial and industrial activities, including bulk fuel operations and storage; petroleum product storage and distribution; plywood manufacturing; bridge maintenance; and electrical transmission and maintenance activities. There have been documented releases of COCs to the Site, including the B1a Project Area that were discharged to or migrated to the Willamette River via contaminated groundwater, soils, riverbanks and/or storm water.

o. The ROD requires active remediation (dredging, capping and enhanced natural recovery) at areas exceeding the remedial action levels (RALs) for the focused COCs and contaminated riverbanks adjacent to some of those areas, referred to as Sediment Management Areas (SMAs). The ROD allows approximately 1,774 acres of sediment to recover naturally. The ROD estimated the remedy would take 13 years to construct.

p. BP West Coast Products LLC and its affiliate Atlantic Richfield Company owned and operated a facility on property within the Portland Harbor Superfund Site adjacent to the B1a Project Area at the time of disposal of a hazardous substance at the Site. Respondent BP Products North America Inc. is the successor-by-merger to BP West Coast Products LLC.

q. Respondent, Brix Maritime Co. owns and operates a facility on property within the Portland Harbor Superfund Site adjacent to the B1a Project Area at the time of disposal of a hazardous substance at the Site.

r. Respondent, Exxon Mobil Corporation owns and operates a facility on property within the Portland Harbor Superfund Site, including property adjacent to the B1a Project Area, and has owned or operated on other such properties at the time of disposal of a hazardous substance at the Site.

s. Respondent, Kinder Morgan Liquids Terminals, LLC owns and operates a facility on property within the Portland Harbor Superfund Site, including property adjacent to the B1a Project Area, and has owned or operated on other such properties at the time of disposal of a hazardous substance at the Site.

VI. CONCLUSIONS OF LAW AND DETERMINATIONS

12. Based on the Findings of Fact set forth above and the administrative record, EPA has determined that:

a. The Portland Harbor Superfund Site is a “facility” as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

b. The contamination found at the Site, as identified in the Findings of Fact above, includes “hazardous substance(s)” as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

c. Respondents are a “person” as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

d. Each Respondent is a potentially responsible party under Section 107(a)(1) and/or (2) of CERCLA, 42 U.S.C. § 9607(a)(1) and/or (2).

e. The conditions described in the Findings of Fact above constitute an actual or threatened “release” of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

f. The Work agreed upon in this Settlement is necessary to protect the public health, welfare, or the environment and, if carried out in compliance with the terms of this Settlement, will be consistent with the NCP, as provided in Section 300.700(c)(3)(ii) of the NCP.

13. Respondents enter into this Agreement without admitting liability for releases to or within the Portland Harbor Superfund Site or the B1a Project Area.

VII. SETTLEMENT AGREEMENT AND ORDER

14. Based upon EPA’s Findings of Fact, Conclusions of Law, and Determinations set forth above, and the administrative record, it is hereby Ordered and Agreed that Respondents

shall comply with all provisions of this Settlement, including, but not limited to, all appendices to this Settlement and all documents incorporated by reference into this Settlement.

VIII. PERFORMANCE OF THE WORK

15. Coordination and Supervision

a. Project Coordinators.

(1) Respondents' Project Coordinator must have sufficient technical expertise to coordinate the Work. Respondents' Project Coordinator may not be an attorney representing any Respondent in this matter and may not act as the Supervising Contractor. Respondents' Project Coordinator may assign other representatives, including other contractors, to assist in coordinating the Work.

(2) EPA's designated Project Coordinator is Sean Sheldrake, Remedial Project Manager in Region 10's Superfund and Emergency Management Division. EPA may designate other representatives, which may include its employees, contractors and/or consultants, to oversee the Work. EPA may arrange for ODEQ personnel to act as the authorized Project Coordinator for certain aspects of the RD Work, with EPA remaining as lead agency, subject to Respondents' agreement. EPA's Project Coordinator will have the same authority as a remedial project manager and/or an on-scene coordinator, as described in the NCP. This includes the authority to halt the Work and/or to conduct or direct any necessary response action when he or she determines that conditions at the Site constitute an emergency or may present an immediate threat to public health or welfare or the environment due to a release or threatened release of Waste Material.

(3) Respondents' Project Coordinator shall provide monthly progress reports to EPA and meet with EPA's Project Coordinator at least monthly to update EPA on the progress of the Work and resolve any technical questions regarding the Work under this Settlement.

b. Supervising Contractor. Respondents' proposed Supervising Contractor must have sufficient technical expertise to supervise the Work and a quality assurance system that complies with ASQ/ANSI E4:2014, "Quality management systems for environmental information and technology programs - Requirements with guidance for use" (American Society for Quality, February 2014).

c. Procedures for Disapproval/Notice to Proceed

(1) Respondents shall designate, and notify EPA, within 90 days after the Effective Date, of the name(s), title(s), contact information, and qualifications of Respondents' proposed Project Coordinator and Supervising Contractor, whose qualifications shall be subject to EPA's review for verification based on objective assessment criteria (e.g., experience, capacity, technical expertise) and do not have a conflict of interest with respect to the project.

(2) EPA shall issue notices of disapproval and/or authorizations to proceed regarding the proposed Project Coordinator and Supervising Contractor, as applicable. If EPA issues a notice of disapproval, Respondents shall, within 30 days, submit to EPA a list of supplemental proposed Project Coordinators and/or Supervising Contractors, as applicable, including a description of the qualifications of each. EPA shall issue a notice of disapproval or authorization to proceed regarding each supplemental proposed coordinator and/or contractor. Respondents may select any coordinator/contractor covered by an authorization to proceed and shall, within 21 days, notify EPA of Respondents' selection.

(3) Respondents may change their Project Coordinator and/or Supervising Contractor, as applicable, by following the procedures of ¶¶ 15.c(1) and 15.c(2).

16. **Performance of Work in Accordance with SOW.** Respondents shall develop the RD in accordance with the SOW and all EPA-approved, conditionally-approved, or modified deliverables as required by the SOW. All deliverables required to be submitted for approval under the Settlement or SOW shall be subject to approval by EPA in accordance with ¶ 5.5 (Approval of Deliverables) of the SOW.

17. **Emergencies and Releases.** Respondents shall comply with the emergency and release response and reporting requirements under Section 3.12 (Emergency Response and Reporting) of the SOW. Subject to Section XIX (Covenants by EPA), nothing in this Settlement, including Section 3.12 of the SOW, limits any authority of EPA: (a) to take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, or (b) to direct or order such action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site. If, due to Respondents' failure to take appropriate response action under Section 3.12 of the SOW, EPA takes such action instead, Respondents shall reimburse EPA under Section XIV (Payment of Response Costs) for all costs of the response action.

18. **Community Involvement.** If requested by EPA, Respondents shall conduct community involvement activities under EPA's oversight with respect to the Work within the B1a Project Area as provided for in, and in accordance with, Section 2 (Community Involvement) of the SOW. Such activities may include, but are not limited to, designation of a Community Involvement Coordinator. Costs incurred by EPA under this Section for the B1a Project Area constitute Future Response Costs to be reimbursed under Section XIV (Payment of Response Costs).

19. **Modification of SOW or Related Deliverables**

a. If EPA determines that it is necessary to modify the work specified in the SOW and/or in deliverables developed under the SOW in order to carry out the RD under this Settlement as provided in Section III (Statement of Purpose), then EPA shall notify Respondents of such modification. If Respondents object to the modification they may, within 30 days after EPA's notification, seek dispute resolution under Section XVI (Dispute Resolution).

b. The SOW and/or related work plans shall be modified: (1) in accordance with the modification issued by EPA; or (2) if Respondents invoke dispute resolution, in accordance with the final resolution of the dispute. The modification shall be incorporated into and enforceable under this Settlement, and Respondents shall implement all work required by such modification. Respondents shall incorporate the modification into the deliverable required under the SOW, as appropriate.

c. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions as otherwise provided in this Settlement consistent with the Statement of Purpose in Section III.

IX. NOTICES AND SUBMISSIONS

20. Respondents shall deliver a copy of this fully-executed Settlement to the Settling Funding Parties and their Trustee within 7 days of the Effective Date of this Settlement.

As to Settling Funding Parties:

State of Oregon:

Jim McKenna
Natural Resources Policy Analyst
Office of Governor Kate Brown
1600 SW 4th Avenue, Suite 109
Portland, Oregon 97201
jim.j.mckenna@oregon.gov

Lynne Perry
Senior Assistant Attorney General
Natural Resources Section
Oregon Department of Justice
100 SW Market Street
Portland, OR 97201
lynne.perry@doj.state.or.us

City of Portland:

Annie Von Burg
Environmental Policy Manager
Bureau of Environmental Services
888 SW 5th Avenue, Suite 400
Portland, Oregon 97204
Annie.VonBurg@portlandoregon.gov

Nanci Klinger
Sr. Deputy City Attorney
Office of Portland City Attorney

1221 SW 4th Avenue
Portland, OR 97204
Nanci.Klinger@portlandoregon.gov

As to the Trustee:

Daniel J. Silver
Trustee for Portland Harbor Remedial Design Trust
606 Columbia St. NW Suite 212
Olympia, WA 98501
danieljsilver@msn.com

X. PROPERTY REQUIREMENTS

21. **Agreements Regarding Access and Non-Interference.** Respondents shall, with respect to any Non-Settling Owner's Affected Property, use best efforts to secure access from such Non-Settling Owner an agreement, enforceable by Respondents and the EPA, providing that such Non-Settling Owner, and each Owner Respondent shall, with respect to the Affected Property and the Owner Respondent's Affected Property, respectively: (i) provide EPA, ODEQ, the Respondents, and their representatives, contractors, and subcontractors with access at all reasonable times to such Affected Property to conduct any activity regarding the Settlement, including those activities listed in ¶ 21.a (Access Requirements); and (ii) refrain from using such Affected Property in any manner that EPA determines will pose an unacceptable risk to human health or to the environment due to exposure to Waste Material, or that interferes with or adversely affects the implementation or integrity of the Work under this Settlement. Respondents shall provide a copy of such access and use restriction agreement(s) to EPA.

a. **Access Requirements.** The following is a list of activities for which access is required regarding the Affected Property:

- (1) Monitoring the Work;
- (2) Verifying any data or information submitted to the United States;
- (3) Conducting investigations regarding contamination at or near the Site;
- (4) Obtaining samples;
- (5) Assessing the need for, planning, implementing, or monitoring response actions;
- (6) Assessing implementation of data management and ICIAP as provided in the SOW;
- (7) Implementing the Work pursuant to the conditions set forth in ¶ 74 (Work Takeover);

(8) Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Respondents or their agents, consistent with Section XI (Access to Information);

(9) Assessing Respondents' compliance with the Settlement;

(10) Determining whether the Affected Property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted under the Settlement; and

(11) Implementing, monitoring, maintaining, reporting on, and enforcing any land, water, or other resource use restrictions regarding the Affected Property.

22. **Best Efforts.** As used in this Section, "best efforts" means the efforts that a reasonable person in the position of Respondents would use so as to achieve the goal in a timely manner, including the cost of employing professional assistance and the payment of reasonable sums of money to secure access, as required by this Section. If Respondents are unable to accomplish what is required through "best efforts" in a timely manner, they shall notify EPA, and include a description of the steps taken to comply with the requirements. If EPA deems it appropriate, it may assist Respondents, or take independent action, in obtaining such access. All costs incurred by the United States in providing such assistance or taking such action, including the cost of attorney time and the amount of monetary consideration or just compensation paid, constitute EPA Future Response Costs to be reimbursed under Section XIV (Payment of Response Costs).

23. If EPA determines in a decision document prepared in accordance with the NCP that institutional controls in the form of state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices are needed, Respondents shall cooperate with EPA's efforts to secure and ensure compliance with such institutional controls.

24. In the event of any Transfer of the Affected Property, unless EPA otherwise consents in writing, Respondents shall continue to comply with their obligations under the Settlement, including their obligation to secure access.

25. **Notice to Successors-in-Title.** Owner Respondents shall, prior to entering into a contract to Transfer their Affected Property, or 60 days prior to Transferring their Affected Property, whichever is earlier: (a) Notify the proposed transferee that EPA has determined that RD must be performed at the Site, that potentially responsible parties have entered into an Administrative Settlement Agreement and Order on Consent requiring implementation of such RD with respect to the B1a Project Area (identifying the name, docket number, and the effective date of this Settlement); and (b) Notify EPA of the name and address of the proposed transferee and provide EPA with a copy of the above notice that it provided to the proposed transferee.

26. Notwithstanding any provision of the Settlement, EPA retains all of its access authorities and rights, as well as all of its rights to require land, water, or other resource use restrictions, including enforcement authorities related thereto under CERCLA, RCRA, and any other applicable statute or regulations.

XI. ACCESS TO INFORMATION

27. Respondents shall provide to EPA, upon request, copies of all records, reports, documents and other information (including records, reports, documents and other information in electronic form) (hereinafter referred to as “Records”) within their possession or control or that of their contractors or agents relating to the implementation of the Work under this Settlement, including activities at the B1a Project Area and at properties owned and/or operated by Respondents adjacent to or upland from the B1a Project Area, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondents shall also make available to EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

28. Privileged and Protected Claims

a. Respondents may assert all or part of a Record requested by EPA is privileged or protected as provided under federal law, in lieu of providing the Record, provided Respondents comply with ¶ 28.b, and except as provided in ¶ 28.c.

b. If Respondents assert such a privilege or protection, they shall provide EPA with the following information regarding such Record: its title; its date; the name, title, affiliation (e.g., company or firm), and address of the author, of each addressee, and of each recipient; a description of the Record’s contents; and the privilege or protection asserted. If a claim of privilege or protection applies only to a portion of a Record, Respondents shall provide the Record to EPA in redacted form to mask the privileged or protected portion only. Respondents shall retain all Records that they claim to be privileged or protected until EPA has had a reasonable opportunity to dispute the privilege or protection claim and any such dispute has been resolved in Respondents’ favor.

c. Respondents may make no claim of privilege or protection regarding: (1) any data that is collected in performing the Work under this Settlement, including, but not limited to, all such sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological, or engineering data, or the portion of any other Record that evidences conditions at or around the B1a Project Area; or (2) the portion of any Record that Respondents are required to create or generate pursuant to this Settlement.

29. **Business Confidential Claims.** Subject to subparagraph 28(c) above, Respondents may assert that all or part of a Record provided to EPA under this Section or Section XII (Record Retention) is business confidential to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Respondents shall segregate and clearly identify all Records or parts thereof submitted under this Settlement for which Respondents assert business confidentiality claims. Records claimed as confidential business information will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies Records when they are submitted to EPA, or if EPA has notified Respondents that the Records are not confidential

under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such Records without further notice to Respondents.

30. Notwithstanding any provision of this Settlement, EPA retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XII. RECORD RETENTION

31. Until 10 years after completion of the Remedial Action, Respondents shall preserve and retain all non-identical copies of Records (including Records in electronic form) now in their possession or control or that come into their possession or control that relate in any manner to the performance of the Work or to their liability under CERCLA with respect to the B1a Project Area, provided, however, that Respondents who are potentially liable as current or former owners or operators of the Site must retain, in addition, all Records that relate to the liability of any other person under CERCLA with respect to the Site. Each Respondent must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above, all non-identical copies of the last draft or final version of any Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to the performance of the Work, provided, however, that each Respondent (and its contractors and agents) must retain, in addition, copies of all data generated during the performance of the Work and not contained in the aforementioned Records required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

32. At the conclusion of the document retention period, Respondents shall notify EPA at least 90 days prior to the destruction of any such Records and, upon request by EPA, and except as provided for in ¶ 28 (Privileged and Protected Claims), Respondents shall deliver any such Records to EPA.

33. Each Respondent certifies individually that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed, or otherwise disposed of any Records (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by EPA and that it has fully complied with any and all EPA requests for information regarding the Site pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927, and state law.

XIII. COMPLIANCE WITH OTHER LAWS

34. Nothing in this Settlement limits Respondents' obligations to comply with the requirements of all applicable federal and state laws and regulations. Respondents must also comply with all applicable or relevant and appropriate requirements of all federal and state environmental laws as set forth in the ROD and the SOW. The activities conducted pursuant to this Settlement, if approved by EPA, shall be considered consistent with the NCP.

35. **Permits.** As provided in Section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and Section 300.400(c)(3) of the NCP, no permit shall be required for any portion of the Work

conducted entirely on-site (i.e. within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Work). Where any portion of the Work that is not on-site requires a federal, state, or local permit or approval, Respondents shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals.

36. Respondents may seek relief under the provisions of Section XVII (Force Majeure) for any delay in performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit or approval referenced in ¶ 35 (Permits) and required for the Work, provided that they have submitted timely and complete applications and taken all other actions necessary to obtain all such permits or approvals. This Settlement is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XIV. PAYMENT OF RESPONSE COSTS

37. **Payments by Respondents for Future Response Costs.** Respondents shall pay to EPA all Future Response Costs not inconsistent with the NCP.

a. **Planning for Response Costs.** Within thirty (30) days of the Effective Date of this Settlement and thereafter prior to January 31st of each year until EPA issues a Notice of Completion for the Work, Respondents and EPA shall meet to discuss the Work planned for the period and EPA's anticipated Response Costs associated with the Work for the period. This will allow the Respondents to plan and budget for the Response Costs.

b. **Periodic Bills.** On a semi-annual basis, EPA will send Respondents a bill requiring payment that includes a SCORPIOS Report or similar EPA-prepared cost summary report, which includes direct and indirect costs incurred by EPA, its contractors, subcontractors, and the United States Department of Justice. Respondents shall make all payments within 60 days after Respondents' receipt of each bill requiring payment, except as otherwise provided in ¶ 39 (Contesting Future Response Costs).

c. **Payments.** Payments made pursuant to this Paragraph 37 shall be made by EFT in accordance with EFT instructions provided by EPA, or by submitting a certified or cashier's check or checks made payable to "EPA Hazardous Substance Superfund," referencing the name and address of the party making the payment, the Site and B1a Project Area, the EPA Region, the account number 10SH, and the EPA docket number for this action. Respondents shall send the check to:

U.S. Environmental Protection Agency
Superfund Payments
Cincinnati Finance Center
P.O. Box 979076
St. Louis, MO 63197-9000

Respondents shall use the following address for payments made by overnight mail:

U.S. Environmental Protection Agency
Government Lockbox 979076

1005 Convention Plaza
SL-MO-C2GL
St. Louis, MO 63101-1229

d. **Notice.** At the time of payment, Respondents shall send notice that payment has been made to EPA to the Region 10 Project Coordinator and to the Servicing Finance Office, EPA Finance Center, MS-NWD, Cincinnati, OH 45268.

e. **Deposit of Future Response Costs Payments.** The total amount to be paid by Respondents pursuant to ¶ 37.b (Periodic Bills) shall be deposited by EPA in the Portland Harbor Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund; provided, however, that EPA may deposit a Future Response Costs payment directly into the EPA Hazardous Substance Superfund if, at the time the payment is received, EPA estimates that the Portland Harbor Special Account balance is sufficient to address currently anticipated future response actions to be conducted or financed by EPA at or in connection with the Site. Any decision by EPA to deposit a Future Response Costs payment directly into the EPA Hazardous Substance Superfund for this reason shall not be subject to challenge by Respondents pursuant to the dispute resolution provisions of this Settlement or in any other forum.

38. **Interest.** In the event that any payment for Future Response Costs pursuant to ¶ 37.b is not made by the date required, Respondents shall pay Interest on the unpaid balance. The Interest on Future Response Costs shall begin to accrue on the date of the bill. The Interest shall accrue through the date of Respondents' payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the EPA by virtue of Respondents' failure to make timely payments under this Section, including but not limited to, payment of stipulated penalties pursuant to Section XVIII (Stipulated Penalties).

39. **Contesting Future Response Costs.** Respondents may initiate the procedures of Section XVI (Dispute Resolution) regarding payment of any Future Response Costs billed under ¶ 37.b (Periodic Bills) if it determines that EPA has made a mathematical error or included a cost item that is not within the definition of Future Response Costs to be paid by Respondents under ¶ 37.b, or if it believes EPA incurred excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. To initiate such dispute, Respondents shall submit a Notice of Dispute in writing to the EPA Project Coordinator within 30 days after receipt of the bill. Any such Notice of Dispute shall specifically identify the contested Future Response Costs and the basis for objection. If Respondents submit a Notice of Dispute, Respondents shall within the 30-day period, also as a requirement for initiating the dispute, (a) pay all uncontested Future Response Costs to EPA in the manner described in ¶ 37.b, and (b) establish, in a duly chartered bank or trust company, an interest-bearing escrow account that is insured by the Federal Deposit Insurance Corporation (FDIC) and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Respondents shall send to the EPA Project Coordinator a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement

showing the initial balance of the escrow account. If EPA prevails in the dispute, within 5 days after the resolution of the dispute, Respondents shall pay the sums due (with accrued interest) to EPA in the manner described in ¶ 37.b. If Respondents prevail concerning any aspect of the contested costs, Respondents shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to EPA in the manner described in ¶ 37.b. Respondents shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XVI (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondents' obligation to reimburse EPA for its Future Response Costs.

40. Payment of ODEQ Response Costs.

a. Respondents shall be responsible under this Settlement for funding ODEQ Response Costs incurred pursuant to this Settlement that are not inconsistent with the NCP under the terms of a separate agreement to be executed by Respondents and ODEQ ("ODEQ Agreement"). Subject to the terms of the ODEQ Agreement, ODEQ will submit a detailed accounting to Respondents' Project Coordinator on a monthly basis of all ODEQ Future Response Costs sought for reimbursement under the ODEQ Agreement.

b. Disputes regarding ODEQ Response Cost bills shall be resolved in accordance with a process agreed to between ODEQ and Respondents under the ODEQ Agreement, and neither ruled by nor conducted under the dispute resolution provisions of this Settlement.

c. Nothing in this Paragraph shall be construed to limit ODEQ's authority under any source other than this Settlement to seek funding from Respondents or any other party of any costs that ODEQ may incur or may have incurred.

d. Respondents anticipate entering into a separate agreement with ODEQ to reimburse ODEQ for its Response Costs associated with the Work. If Respondents enter into a separate agreement with ODEQ, the terms of that agreement will supersede any conflicting terms in this ¶ 40.

41. Payment of Tribal Response Costs.

a. Following the issuance of this Settlement, Respondents shall pay the Tribal Governments for Tribal Response Costs incurred pursuant to this Settlement. Respondents shall pay all Tribal Response Costs associated with this Settlement that are not inconsistent with the NCP and as agreed to by the Tribal Governments and Respondents outside of this Settlement. The Tribal Governments shall provide supporting documentation to the Respondents for all Tribal Response Costs paid by the Respondents, in a manner agreed to by the Tribal Governments and Respondents.

b. Disputes regarding Tribal Response Cost bills shall be resolved in accordance with a process agreed to between the Tribal Governments and Respondents under the separate agreement(s) entered into between Respondents and the Tribal Governments, and neither ruled by nor conducted under the dispute resolution provisions of this Settlement.

c. Nothing in this section shall in any way be construed to limit the rights of the Tribal Governments to seek to recover response costs incurred by the Tribal Governments related to this Settlement and disputed by Respondents, or for natural resource damages as defined by 42 U.S.C. 9607(a)(4)(C).

d. Respondents anticipate entering into a separate agreement(s) with the Tribal Governments to reimburse the Tribal Governments for their Response Costs associated with the Work. If Respondents enter into a separate agreement(s) with the Tribal Governments, the terms of that agreement(s) will supersede any conflicting terms in this ¶ 41.

XV. DISBURSEMENT OF SPECIAL ACCOUNT FUNDS

42. Creation of B1a Disbursement Special Account and Agreement to Disburse Funds to Respondents. Within 30 days after the Effective Date and the receipt of funds from Settling Funding parties into the RD Special Account, EPA shall establish the B1a Disbursement Special Account and transfer \$440,000¹ from the RD Special Account to the B1a Disbursement Special Account. Such funds will then be available for Phase 1 Disbursement as provided in this Section. Funds for Phase 2 Disbursement will only be eligible for disbursement upon amendment of this Settlement as provided in this Section. Subject to the terms and conditions set forth in this Section, EPA agrees to make the funds in the B1a Disbursement Special Account, including Interest Earned on the funds in the B1a Disbursement Special Account, available for disbursement to Respondents as partial reimbursement for performance of the Work. EPA shall disburse funds from the B1a Disbursement Special Account to Respondents in accordance with the procedures and milestones for phased disbursement set forth in this Section.

43. Timing, Amount, and Method of Phase 1 Disbursement From the B1a Disbursement Special Account. Within 30 days after EPA's receipt of a Cost Summary and Certification, as defined by ¶ 45.b, or if EPA has requested additional information under ¶ 45.b or a revised Cost Summary and Certification under ¶ 45.c, within 30 days after receipt of the additional information or revised Cost Summary and Certification, and subject to the conditions set forth in this Section, EPA shall disburse the funds from the B1a Disbursement Special Account at the completion of the following milestone, and in the amount set forth below:

Milestone	Disbursement of Funds
EPA approval of Basis of Design Report	\$440,000 ² from the B1a Disbursement Special Account, plus any Interest Earned on that amount

EPA shall disburse the funds for the Phase 1 Disbursement from the B1a Disbursement Special Account to Respondents in the following manner:

Bank Name: (b) (6)

¹ This amount is calculated by multiplying \$40,000 by the Eligible Acres as defined in this Settlement.

² This amount is calculated by multiplying \$40,000 by the Eligible Acres as defined in this Settlement.

ABA Number: (b) (6)

Account Name: (b) (6)

Account Number: (b) (6)

44. Timing, Amount, and Method of Phase 2 Disbursement From the B1a Disbursement Special Account. Within 30 days after EPA's receipt of a Cost Summary and Certification, as defined by ¶ 45.b, or if EPA has requested additional information under ¶ 45.b or a revised Cost Summary and Certification under ¶ 45.c, within 30 days after receipt of the additional information or revised Cost Summary and Certification, and subject to the conditions set forth in this Section, Respondents shall be eligible to request an amendment of this Settlement to provide for Phase 2 Disbursement.³ The amendment will replace the current text of this Paragraph 44 with the text in Appendix C. EPA will agree to such an amendment if: (1) EPA has issued the Notice of Work Completion, and (2) EPA has sufficient funding in the B1a Disbursement Special Account to provide for the calculated amount of the Phase 2 Disbursement.⁴ To ensure sufficient funding in the B1a Special Account, EPA will transfer funds from the RD Special Account and/or request such funding pursuant to the Settlement Agreement for Funding Remedial Design. Any amendment under this paragraph will be for the sole purpose of memorializing and facilitating the Phase 2 Disbursement.

EPA's obligation to provide for Phase 2 Disbursement under an amendment to this Settlement Agreement shall be limited to funds available in the B1a Disbursement Special Account at the time the amendment is finalized. Nothing in this agreement shall be interpreted to require EPA to obligate funds in excess of amounts available in violation of the Antideficiency Act, 31 U.S.C. § 1341, or construed as implying that Congress will, at a later date, appropriate any funds sufficient to meet any deficiency.

Reimbursement for Disbursement Phase 2 will only be provided for claims made on or before December 31, 2027.

45. Requests for Disbursement of Special Account Funds

a. Within 30 days after issuance of EPA's written confirmation that a milestone of the Work, as defined in ¶¶ 43 and 44 (Timing, Amount, and Method of Disbursing Funds for Phases 1 and 2), has been satisfactorily completed, Respondents shall submit to EPA a Cost Summary and Certification, as defined in ¶ 45.b, covering the Work performed up to the date of completion of that milestone. Respondents shall not include in any submission costs included in a previous Cost Summary and Certification following completion of an earlier milestone of the Work if those costs have been previously sought or reimbursed pursuant to ¶¶ 43 and 44.

³ This amount is calculated by multiplying \$40,000 by the Eligible Acres as defined in this Settlement.

⁴ EPA shall provide written notice to Settling Funding Parties to provide funding to EPA pursuant to paragraph 19 of the Settlement Agreement for Funding Remedial Design.

b. Each Cost Summary and Certification shall include a complete and accurate written cost summary and certification of the necessary costs incurred and paid by Respondents for the Work covered by the particular submission, excluding costs not eligible for disbursement under ¶ 46 (Costs Excluded from Disbursement). Each Cost Summary and Certification shall contain the following statement signed by an Independent Certified Public Accountant:

To the best of my knowledge, after thorough investigation and review of Respondents' documentation of costs incurred and paid for Work performed pursuant to this Settlement [insert, as appropriate: "up to the date of completion of milestone 1," "between the date of completion of milestone 1 and the date of completion of milestone 2,"] I certify that the information contained in or accompanying this submission is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment.

The Independent Certified Public Accountant shall also provide EPA a list of the documents that he or she reviewed in support of the Cost Summary and Certification. Upon request by EPA, Respondents shall submit to EPA any additional information that EPA deems necessary for its review and approval of a Cost Summary and Certification.

c. If EPA finds that a Cost Summary and Certification includes a mathematical error, costs excluded under ¶ 46 (Costs Excluded from Disbursement), costs that are inadequately documented, or costs submitted in a prior Cost Summary and Certification, it will notify Respondents and provide them an opportunity to cure the deficiency by submitting a revised Cost Summary and Certification. If Respondents fail to cure the deficiency within 30 days after being notified of, and given the opportunity to cure, the deficiency, EPA will recalculate Respondents' costs eligible for disbursement for that submission and disburse the corrected amount to Respondents in accordance with the procedures in ¶ 43 (Timing, Amount, and Method of Phase 1 Disbursement). Respondents may dispute EPA's recalculation under this Paragraph pursuant to Section XVI (Dispute Resolution). In no event shall Respondents be disbursed funds from the B1a Disbursement Special Account in excess of amounts properly documented in a Cost Summary and Certification accepted or modified by EPA.

46. Costs Excluded from Disbursement. The following costs are excluded from, and shall not be sought by Respondents for, disbursement from the B1a Disbursement Special Account: (a) response costs paid pursuant to Section XIV (Payment of Response Costs); (b) any other payments made by Respondents to the United States pursuant to this Settlement, including, but not limited to, any Interest or stipulated penalties paid pursuant to Section XIV (Payment of Response Costs) or XVIII (Stipulated Penalties); (c) attorneys' fees and costs; (d) costs of any response activities Respondents perform that are not required under, or approved by EPA pursuant to, this Settlement; (e) costs related to Respondents' litigation, settlement, development of potential contribution claims, or identification of defendants; (f) internal costs of Respondents, including but not limited to, salaries, travel, or in-kind services, except for those costs that represent the work of employees of Respondents directly performing the Work; (g) any costs incurred by Respondents prior to the Effective Date except for approved Work completed pursuant to this Settlement; or (h) any costs incurred by Respondents pursuant to Section XVI (Dispute Resolution).

47. **Termination of Disbursements from the Special Account.** EPA's obligation to disburse funds from the B1a Disbursement Special Account under this Settlement shall terminate upon EPA's determination that Respondents: (a) have knowingly submitted a materially false or misleading Cost Summary and Certification; (b) have submitted a materially inaccurate or incomplete Cost Summary and Certification, and have failed to correct the materially inaccurate or incomplete Cost Summary and Certification within 30 days after being notified of, and given the opportunity to cure, the deficiency; or (c) failed to submit a Cost Summary and Certification as required by ¶ 45 (Requests for Disbursement of Special Account Funds) within 30 days (or such longer period as EPA agrees) after being notified that EPA intends to terminate its obligation to make disbursements pursuant to this Section because of Respondents' failure to submit the Cost Summary and Certification as required by ¶ 45, EPA's obligation to disburse funds from the B1a Disbursement Special Account shall also terminate upon EPA's assumption of performance of any portion of the Work pursuant to 74 (Work Takeover), when such assumption of performance of the Work is not challenged by Respondents or, if challenged, is upheld under Section XVI (Dispute Resolution). Respondents may dispute EPA's termination of special account disbursements under Section XVI.

48. **Recapture of Special Account Disbursements.** Upon termination of disbursements from the B1a Disbursement Special Account under Paragraph 47 (Termination of Disbursements from the Special Account), if EPA has previously disbursed funds from the B1a Disbursement Special Account for activities specifically related to the reason for termination, e.g., discovery of a materially false or misleading submission after disbursement of funds based on that submission, EPA shall submit a bill to Respondents for those amounts already disbursed from the B1a Disbursement Special Account specifically related to the reason for termination, plus Interest on that amount covering the period from the date of disbursement of the funds by EPA to the date of repayment of the funds by Respondents. Within 30 days after receipt of EPA's bill, Respondents shall reimburse the EPA Hazardous Substance Superfund for the total amount billed. Payment shall be made in accordance with ¶ 37.c (Payments). Upon receipt of payment, EPA may deposit all or any portion thereof in the B1a Disbursement Special Account, the RD Special Account, the Portland Harbor Special Account, or the EPA Hazardous Substance Superfund. The determination of where to deposit or how to use the funds shall not be subject to challenge by Respondents pursuant to the dispute resolution provisions of this Settlement or in any other forum. Respondents may dispute EPA's determination as to recapture of funds pursuant to Section XVI (Dispute Resolution).

49. **Balance of Special Account Funds.** After EPA completes all disbursement to Respondents in accordance with this Section, if any funds remain in the B1a Disbursement Special Account, EPA will transfer such funds to the RD Special Account for use by the EPA for RD work at or in connection with the Site. If EPA determines such funds are no longer needed for RD work at or in connection with the Site, EPA may transfer such funds to the RD Special Account, the Portland Harbor Special Account, or to the EPA Hazardous Substance Superfund. Any transfer of funds to the RD Special Account, the Portland Harbor Special Account, or the EPA Hazardous Substance Superfund shall not be subject to challenge by Respondents pursuant to the dispute resolution provisions of this Settlement or in any other forum.

XVI. DISPUTE RESOLUTION

50. Unless otherwise expressly provided for in this Settlement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement. The Parties shall attempt to resolve any disagreements concerning this Settlement expeditiously and informally.

51. **Informal Dispute Resolution.** If Respondents object to any EPA action taken pursuant to this Settlement, including billings for Future Response Costs pursuant to ¶ 37.b they shall send EPA a written Notice of Dispute describing the objection(s) within 20 days after such action, unless the objection(s) has/have been resolved informally. EPA and Respondents shall have 30 days from EPA's receipt of Respondents' Notice of Dispute to resolve the dispute through informal negotiations (the Negotiation Period). The Negotiation Period may be extended at the sole discretion of EPA for an additional 30 days. Any party may supplement the dispute record during the Negotiation Period. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by the Parties, be incorporated into and become an enforceable part of this Settlement.

52. **Formal Dispute Resolution.** If the Parties are unable to reach an agreement within the Negotiation Period, Respondents shall, within 20 days after the end of the Negotiation Period, submit a statement of position to EPA. EPA may, within 20 days thereafter, submit a statement of position. Thereafter, the Regional Administrator, EPA Region 10 or, in the event that the Regional Administrator is not available, the Deputy Regional Administrator, will issue a written decision on the dispute to Respondents. EPA's decision shall be incorporated into and become an enforceable part of this Settlement. Following resolution of the dispute, as provided by this Section, Respondents shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs.

53. The invocation of formal dispute resolution procedures under this Section does not extend, postpone, or affect in any way any obligation of Respondents under this Settlement, except as provided by ¶ 39 (Contesting Future Response Costs), unless as agreed by EPA.

54. Except as provided in ¶ 64, stipulated penalties with respect to the disputed matter shall continue to accrue, but payment shall be stayed pending resolution of the dispute. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Settlement. In the event that Respondents do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XVIII (Stipulated Penalties).

XVII. FORCE MAJEURE

55. "Force Majeure" for purposes of this Settlement is defined as any event arising from causes beyond the control of Respondents, of any entity controlled by Respondents, or of Respondents' contractors or subcontractors that delays or prevents the performance of any obligation under this Settlement despite Respondents' best efforts to fulfill the obligation. The requirement that Respondents exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any

potential force majeure (a) as it is occurring and (b) following the potential force majeure such that the delay and any adverse effects of the delay are minimized to the greatest extent possible. “Force majeure” does not include financial inability to complete the Work or increased cost of performance.

56. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement for which Respondents intend or may intend to assert a claim of force majeure, Respondents shall notify the EPA Project Coordinator orally or, in his or her absence, EPA’s Alternate Project Coordinator or, in the event both of EPA’s designated representatives are unavailable, the Director of the Superfund and Emergency Management Division, EPA Region 10, within 48 hours of when Respondents first knew that the event might cause a delay. Within 10 days thereafter, Respondents shall provide in writing to EPA an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondents’ rationale for attributing such delay to a force majeure; and a statement as to whether, in the opinion of Respondents, such event may cause or contribute to an endangerment to public health or welfare, or the environment. Respondents shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure. Respondents shall be deemed to know of any circumstance of which Respondents, any entity controlled by Respondents, or Respondents’ contractors knew or should have known. Failure to comply with the above requirements regarding an event shall preclude Respondents from asserting any claim of force majeure regarding that event; provided, however, that if EPA, despite the late or incomplete notice, is able to assess to its satisfaction whether the event is a force majeure under ¶ 55 and whether Respondents have exercised their best efforts under ¶ 55, EPA may, in its unreviewable discretion, excuse in writing Respondents’ failure to submit timely or complete notices under this Paragraph.

57. If EPA agrees that the delay or anticipated delay is attributable to a force majeure, the time for performance of the obligations under this Settlement that are affected by the force majeure will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure shall not, of itself, extend the time for performance of any other obligation. If EPA agrees that the delay is attributable to a force majeure, EPA will notify Respondents in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure, EPA will notify Respondents in writing of its decision.

58. If Respondents elect to invoke the dispute resolution procedures set forth in Section XVI (Dispute Resolution), they shall do so no later than 15 days after receipt of EPA’s notice. In any such proceeding, Respondents shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Respondents complied with the requirements of ¶¶ 55 and 56. If Respondents carry this burden, the delay at issue shall be deemed not to be a violation by Respondents of the affected obligation of this Settlement identified to EPA.

59. The failure by EPA to timely complete any obligation under the Settlement is not a violation of the Settlement, provided, however, that if such failure prevents Respondents from meeting one or more deadlines under the Settlement, Respondents may seek relief under this Section.

XVIII. STIPULATED PENALTIES

60. Respondents shall be liable to EPA for stipulated penalties in the amounts set forth in ¶¶ 61.a and 62 for failure to comply with the obligations specified in ¶¶ 61.b and 62, unless excused under Section XVII (Force Majeure). “Comply” as used in the previous sentence includes compliance by Respondents with all applicable requirements of this Settlement, within the deadlines established under this Settlement. If (i) an initially submitted or resubmitted deliverable contains a material defect and the conditions are met for modifying the deliverable under ¶ 5.5(a)(2) of the SOW; or (ii) a resubmitted deliverable contains a material defect; then the material defect constitutes a lack of compliance for purposes of this Paragraph.

61. Stipulated Penalty Amounts: Payments, Financial Assurance, Major Deliverables, and Other Milestones.

a. The following stipulated penalties shall accrue per violation per day for any noncompliance with any obligation identified in ¶ 61.b:

Penalty Per Violation Per Day	Period of Noncompliance
\$ 500	1st through 7th day
\$ 1,000	8th through 14th day
\$ 2,500	15th through 30th day
\$ 5,000	31st day and beyond

b. Obligations

(1) Payment of any amount due under Section XIV (Payment of Response Costs).

(2) Establishment and maintenance of financial assurance in accordance with Section XXVI (Financial Assurance).

(3) Establishment of an escrow account to hold any disputed Future Response Costs under ¶ 39 (Contesting Future Response Costs).

(4) Submission of timely and quality deliverables or tasks 1a, 1b, 2a, 2b, 3a, 3b, 4a, 4b, 5a, 5b, 6a, 6b, 7a, 7b, 8a, 8b, 9a, 9b, 10, 11, 12, 13 and 14 listed under ¶ 6.2 of the SOW.

62. **Stipulated Penalty Amounts: Other Deliverables.** The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate deliverables required by this Settlement, other than those specified in ¶ 61.b:

Penalty Per Violation Per Day	Period of Noncompliance
\$ 250	1st through 7th day
\$ 500	8th through 14th day
\$ 1,000	15th through 30th day
\$ 2,500	31st day and beyond

63. In the event that EPA assumes performance of a portion or all of the Work pursuant to ¶ 74 (Work Takeover), Respondents shall be liable for a stipulated penalty in the amount of \$75,000 or 25% of the cost of the Work EPA performs, whichever is less. Stipulated penalties under this Paragraph are in addition to the remedies available to EPA under ¶¶ 74 (Work Takeover) and 98 (Access to Financial Assurance).

64. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. Penalties shall continue to accrue during any dispute resolution period, and shall be paid within 15 days after the agreement or the receipt of EPA's decision. However, stipulated penalties shall not accrue: (a) with respect to a deficient submission under ¶ 5.5 (Approval of Deliverables) of the SOW, during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondents of any deficiency; and (b) with respect to a decision by Regional Administrator, EPA Region 10 or the Deputy Regional Administrator under Section XVI (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the Regional Administrator or the Deputy Regional Administrator issues a final decision regarding such dispute. Nothing in this Settlement shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement.

65. Following EPA's determination that Respondents have failed to comply with a requirement of this Settlement, EPA may give Respondents written notification of the failure and describe the noncompliance. EPA may send Respondents a written demand for payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Respondents of a violation.

66. All penalties accruing under this Section shall be due and payable to EPA within 30 days after Respondents' receipt from EPA of a demand for payment of the penalties, unless Respondents invoke the Dispute Resolution procedures under Section XVI (Dispute Resolution) within the 30-day period. All payments to EPA under this Section shall indicate that the payment is for stipulated penalties and shall be made in accordance with ¶ 37 (Payments by Respondents for Future Response Costs).

67. If Respondents fail to pay stipulated penalties when due, Respondents shall pay Interest on the unpaid stipulated penalties as follows: (a) if Respondents have timely invoked dispute resolution such that the obligation to pay stipulated penalties has been stayed pending the outcome of dispute resolution, Interest shall accrue from the date stipulated penalties are due pursuant to ¶ 64 until the date of payment; and (b) if Respondents fail to timely invoke dispute resolution, Interest shall accrue from the date of demand under ¶ 66 until the date of payment. If Respondents fail to pay stipulated penalties and Interest when due, the United States may institute proceedings to collect the penalties and Interest.

68. The payment of penalties and Interest, if any, shall not alter in any way Respondents' obligation to complete performance of the Work required under this Settlement.

69. Nothing in this Settlement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondents' violation of this Settlement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, 42 U.S.C. § 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3); provided, however, that EPA shall not seek civil penalties pursuant to Section 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided in this Settlement, except in the case of a willful violation of this Settlement or in the event that EPA assumes performance of a portion or all of the Work pursuant to ¶ 74 (Work Takeover).

70. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement.

XIX. COVENANTS BY EPA

71. **Covenants for Respondents by EPA.** Except as provided in Section XX (Reservation of Rights by EPA), EPA covenants not to sue or to take administrative action against Respondents pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work performed. These covenants shall take effect upon the Effective Date. These covenants are conditioned upon the complete and satisfactory performance by Respondents of their obligations under this Settlement. These covenants extend only to Respondents and do not extend to any other person.

XX. RESERVATIONS OF RIGHTS BY EPA

72. Except as specifically provided in this Settlement, nothing in this Settlement shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste on, at, or from the Site. Further, unless specifically provided in this Settlement, nothing in this Settlement shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Settlement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondents in the future to perform additional

activities pursuant to CERCLA or any other applicable law under a separate order or consent decree.

73. The covenants set forth in Section XIX (Covenants by EPA) above do not pertain to any matters other than those expressly identified therein. Unless otherwise specifically provided in this Settlement, EPA reserves, and this Settlement is without prejudice to, all rights against Respondents with respect to all other matters, including, but not limited to:

- a. liability for failure by Respondents to meet a requirement of this Settlement;
- b. liability for costs not included within the definition of EPA Future Response Costs;
- c. liability for performance of response action other than the Work;
- d. criminal liability;
- e. liability for violations of federal or state law that occur during or after implementation of the Work;
- f. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- g. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and
- h. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site not paid as Future Response Costs under this Settlement.

74. Work Takeover

a. In the event EPA determines that Respondents: (1) have ceased implementation of any portion of the Work; (2) are repeatedly deficient or late in their performance of the Work; or (3) are implementing the Work in a manner that may cause an endangerment to human health or the environment, EPA may issue a written notice (Work Takeover Notice) to Respondents. Any Work Takeover Notices issued by EPA (which writing may be electronic) will specify the grounds upon which such notice was issued and will provide Respondents a period of 10 days within which to remedy the circumstances giving rise to EPA's issuance of such notice.

b. If, after expiration of the 10-day notice period specified in ¶ 74.a Respondents have not remedied to EPA's satisfaction the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, EPA may at any time thereafter assume the performance of all or any portion(s) of the Work as EPA deems necessary (Work Takeover). EPA will notify Respondents in writing (which writing may be electronic) if EPA determines

that implementation of a Work Takeover is warranted under this ¶ 74.b. Funding of Work Takeover costs is addressed under ¶ 98 (Access to Financial Assurance).

c. Respondents may invoke the procedures set forth in ¶ 52 (Formal Dispute Resolution) to dispute EPA's implementation of a Work Takeover under ¶ 74.b. However, notwithstanding Respondents' invocation of such dispute resolution procedures, and during the pendency of any such dispute, EPA may in its sole discretion commence and continue a Work Takeover under ¶ 74.b until the earlier of (1) the date that Respondents remedy, to EPA's satisfaction, the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, or (2) the date that a written decision terminating such Work Takeover is rendered in accordance with ¶ 52 (Formal Dispute Resolution).

d. Notwithstanding any other provision of this Settlement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

XXI. COVENANTS BY RESPONDENTS

75. **Covenants by Respondents.** Except as provided in Section 76 below, Respondents covenant not to sue and agree not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, EPA's Future Response Costs, and this Settlement, including, but not limited to:

a. any direct or indirect claim for reimbursement from the EPA Hazardous Substance Superfund through Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;

b. any claim under Sections 107 and 113 of CERCLA, Section 7002(a) of RCRA, 42 U.S.C. § 6972(a), or state law; or

c. any claim arising out of response actions at or in connection with the Site, including any claim under the United States Constitution, the Oregon Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, or at common law.

76. This Settlement Agreement shall not have any effect on claims or causes of action that any Respondent has or may have pursuant to Sections 107(a) or 113(f) of CERCLA, 42 U.S.C. §§ 9607(a) or 9613(f), against the United States on behalf of various federal agencies, based upon a claim that the United States is a potentially responsible party pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), relating to the Work, EPA Future Response Costs, ODEQ Response Costs and Tribal Response Costs paid under Section XIV (Payment of Response Costs) of this Settlement Agreement. However, the United States acknowledges the reservation of Section 107 claims without any concession that, even if such a claim exists, it is cognizable under Section 107.

77. These covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to any of the reservations set forth in Section XX (Reservations of Rights by EPA), other than in ¶ 73.a (liability for failure to meet a requirement of the Settlement), 73.d (criminal liability), or 73.e (violations of federal/state law during or after implementation of the Work), but only to the extent that Respondents' claims arise from the

same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

78. Nothing in this Settlement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

79. Respondents reserve, and this Settlement is without prejudice to, claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, and brought pursuant to any statute other than CERCLA or RCRA and for which the waiver of sovereign immunity is found in a statute other than CERCLA or RCRA, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States, as that term is defined in 28 U.S.C. § 2671, while acting within the scope of his or her office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, the foregoing shall not include any claim based on EPA's selection of response actions, or the oversight or approval of Respondents' deliverables or activities.

80. **Covenants by Performing Parties to Settling Funding Parties.** Subject to EPA's receipt of the funds from Settling Funding Parties as required by the Settlement Agreement for Funding Remedial Design, Performing Parties covenant not to sue and agree not to assert any claims or causes of action in any forum, judicial or otherwise, against the Settling Funding Parties, or their contractors or employees, with respect to the work under this Settlement or the RD Payments provided under the Settlement Agreement for Funding Remedial Design. For purposes of this paragraph "work" shall mean all activities and obligations Performing Parties are required to perform under this Settlement, except those required by Section XII (Record Retention). Performing Parties agree that Settling Funding Parties have the right to enforce this covenant.

XXII. OTHER CLAIMS

81. By issuance of this Settlement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondents. The United States or EPA shall not be deemed a party to any contract entered into by Respondents or their directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Settlement.

82. Except as expressly provided in Section XXI (Covenants by Respondents) and Section XIX (Covenants by EPA), nothing in this Settlement constitutes a satisfaction of or release from any claim or cause of action against Respondents or any person not a party to this Settlement for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages, and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

83. No action or decision by EPA pursuant to this Settlement shall give rise to any right to judicial review, except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXIII. EFFECT OF SETTLEMENT/CONTRIBUTION

84. Nothing in this Settlement shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Settlement. Except as expressly provided in Section XXI (Covenants by Respondents), each of the Parties expressly reserves any and all rights (including, but not limited to, pursuant to Section 113 of CERCLA, 42 U.S.C. § 9613), defenses, claims, demands, and causes of action that each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto. Nothing in this Settlement diminishes the right of the United States, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

85. The Parties agree that this Settlement constitutes an administrative settlement pursuant to which each Respondent has, as of the Effective Date, resolved liability to the EPA within the meaning of Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), and is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, or as may be otherwise provided by law, for the “matters addressed” in this Settlement. The “matters addressed” in this Settlement are solely the Work and Future Response Costs paid.

86. The Parties further agree that this Settlement constitutes an administrative settlement pursuant to which each Respondent has, as of the Effective Date, resolved liability to the United States on behalf of EPA within the meaning of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B).

87. Respondents shall, with respect to any suit or claim brought by them for matters related to this Settlement, notify EPA in writing no later than 60 days prior to the initiation of such suit or claim. Respondents also shall, with respect to any suit or claim brought against them for matters addressed in this Settlement, notify EPA in writing within 10 days after service of the complaint or claim upon them. In addition, Respondents shall notify EPA within 10 days after service or receipt of any Motion for Summary Judgment and within 10 days after receipt of any order from a court setting a case for trial, for matters related to this Settlement.

88. In any subsequent administrative or judicial proceeding initiated by EPA, or by the United States on behalf of EPA, for injunctive relief, recovery of response costs, or other relief relating to the Site, Respondents shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenant by EPA set forth in Section XIX (Covenants by EPA).

XXIV. INDEMNIFICATION

89. The United States does not assume any liability by entering into this Settlement or by virtue of any designation of Respondents as EPA’s authorized representative under Section

104(e) of CERCLA, 42 U.S.C. § 9604(e), and 40 C.F.R. § 300.400(d)(3). Respondents shall indemnify, save, and hold harmless the United States, its officials, agents, employees, contractors, subcontractors, employees, and representatives for or from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, or subcontractors, and any persons acting on Respondents' behalf or under their control, in carrying out activities pursuant to this Settlement. Further, Respondents agree to pay the United States all costs they incur, including, but not limited to attorneys' fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States based on negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Settlement. The United States shall not be held out as a party to any contract entered into, by, or on behalf of Respondents in carrying out activities pursuant to this Settlement. Neither Respondents nor any such contractor shall be considered an agent of the United States.

90. The United States shall give Respondents notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondents prior to settling such claim.

91. Except as provided in ¶ 76 above, Respondents covenant not to sue and agree not to assert any claims or causes of action against the United States for damages or reimbursement or for set-off of any payments made, or to be made, to the United States, arising from or on account of any contract, agreement, or arrangement between Respondents and any person for performance of Work on or relating to the B1a Project Area, including, but not limited to, claims on account of construction delays. In addition, Respondents shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of, any contract, agreement, or arrangement between Respondents and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

XXV. INSURANCE

92. No later than 15 days before commencing any on-site Work, Respondents shall secure and maintain, or shall ensure their contractors or subcontractors while performing on-site Work secure and maintain, commercial general liability insurance with limits of liability of \$1 million per occurrence, and automobile insurance with limits of liability of \$1 million per occurrence, and umbrella liability insurance with limits of liability of \$5 million in excess of the required commercial general liability and automobile liability limits, naming EPA as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Respondents pursuant to this Settlement. In addition, for the duration of the Settlement, Respondents shall provide EPA with certificates of such insurance and a copy of each insurance policy for EPA's approval. Respondents shall resubmit, or shall ensure their contractors or subcontractors resubmit, such certificates and copies of policies each year on the anniversary of the Effective Date for EPA's approval. EPA shall notify Respondents in writing within 30 days of receipt whether EPA finds the policies submitted to be satisfactory. In addition, for the duration of the Settlement, Respondents shall satisfy, or shall ensure that their

contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondents in furtherance of this Settlement. If Respondents demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in a lesser amount, Respondents need provide only that portion of the insurance described above that is not maintained by the contractor or subcontractor. Respondents shall ensure that all submittals to EPA under this Paragraph identify the Site name, City, State and the EPA docket number for this action.

XXVI. FINANCIAL ASSURANCE

93. In order to ensure the completion of the Work, Respondents shall secure financial assurance, initially in the amount of \$7,000,000 ("Estimated Cost of the Work"), for the benefit of EPA. Within 90 days of approval of the Final Basis of Design Report by EPA, and on the anniversary of the Effective Date every year thereafter until Notice of Completion of the Work in accordance with Section XXIX below is received from EPA, Respondents shall establish and maintain financial security for the benefit of EPA in an amount to be approved in writing by EPA based on Respondents' estimated cost to complete the RD Work remaining at that time as EPA may approve in writing. Portions of the financial assurance may be provided by different Respondents using different mechanisms as long as the total amount of financial assurance provided by Respondents equals the Estimated Cost of Work. Notwithstanding the potential separate financial assurance mechanisms, Respondents are jointly and severally responsible for securing financial assurance equal to the total Estimated Cost of Work. All financial assurance under this Settlement must be provided through one or more of the mechanisms listed below, in a form substantially identical to the relevant sample documents available from EPA or under the "Financial Assurance - Settlements" category on the Cleanup Enforcement Model Language and Sample Documents Database at <https://cfpub.epa.gov/compliance/models/>, and satisfactory to EPA. Respondents may use multiple mechanisms, including but not limited to, surety bonds guaranteeing payment, letters of credit, trust funds, and/or insurance policies.

a. A surety bond guaranteeing payment and/or performance of the Work that is issued by a surety company among those listed as acceptable sureties on federal bonds as set forth in Circular 570 of the U.S. Department of the Treasury;

b. An irrevocable letter of credit, payable to or at the direction of EPA, that is issued by an entity that has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency;

c. a trust fund established for the benefit of EPA that is administered by a trustee that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency;

d. A policy of insurance that provides EPA with acceptable rights as a beneficiary thereof and that is issued by an insurance carrier that is eligible to issue insurance policies in the applicable jurisdiction(s) and whose insurance operations are regulated and examined by a federal or state agency;

e. A demonstration by a Respondent that it meets the financial test criteria of ¶ 95, accompanied by a standby funding commitment, which obligates the affected Respondent to pay funds to or at the direction of EPA, up to the amount financially assured through the use of this demonstration in the event of a Work Takeover; or

f. A guarantee to fund or perform the Work executed in favor of EPA by a company: (1) that is a direct or indirect parent company of a Respondent or has a “substantial business relationship” (as defined in 40 C.F.R. § 264.141(h)) with a Respondent; and (2) can demonstrate to EPA’s satisfaction that it meets the financial test criteria of ¶ 95.

94. Each Respondent shall individually, within 30 days of the Effective Date, obtain EPA’s approval of the form of Respondent’s financial assurance. Within 30 days after the Effective Date, each Respondent shall secure all executed and/or otherwise finalized mechanisms or other documents consistent with the EPA-approved form of financial assurance and shall submit such mechanisms and documents to the EPA Region 10, Office of Regional Counsel, 1200 Sixth Avenue, Suite 155, M/S 11-C07, Seattle, WA 98101.

95. Respondents seeking to provide financial assurance by means of a demonstration or guarantee under ¶ 93.e or 93.f, must, within 90 days of the Effective Date:

a. Demonstrate that:

(1) The affected Respondent or guarantor has:

- i. Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and
- ii. Net working capital and tangible net worth each at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and
- iii. Tangible net worth of at least \$10 million; and
- iv. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; or

(2) The affected Respondent or guarantor has:

- i. A current rating for its senior unsecured debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's; and
- ii. Tangible net worth at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and
- iii. Tangible net worth of at least \$10 million; and
- iv. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

b. Submit to EPA for the affected Respondent or guarantor: (1) a copy of an independent certified public accountant's report of the entity's financial statements for the latest completed fiscal year, which must not express an adverse opinion or disclaimer of opinion; and (2) a letter from its chief financial officer and a report from an independent certified public accountant substantially identical to the sample letter and reports available from EPA or under the "Financial Assurance - Settlements" subject list category on the Cleanup Enforcement Model Language and Sample Documents Database at <https://cfpub.epa.gov/compliance/models/>.

96. Respondents providing financial assurance by means of a demonstration or guarantee under ¶ 93.e or 93.f must also:

- a. Annually resubmit the documents described in ¶ 95.b within 90 days after the close of the affected Respondent's or guarantor's fiscal year;
- b. Notify EPA within 30 days after the affected Respondent or guarantor determines that it no longer satisfies the relevant financial test criteria and requirements set forth in this Section; and
- c. Provide to EPA, within 30 days of EPA's request, reports of the financial condition of the affected Respondent or guarantor in addition to those specified in ¶ 95.b; EPA may make such a request at any time based on a belief that the affected Respondent or guarantor may no longer meet the financial test requirements of this Section.

97. Respondents shall diligently monitor the adequacy of the financial assurance. If Respondents become aware of any credible information indicating that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, Respondents shall notify EPA of such information within 14 days. If EPA determines that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, EPA will notify the Respondents of such

determination. Respondents shall, within 30 days after notifying EPA or receiving notice from EPA under this Paragraph, secure and submit to EPA for approval a proposal for a revised or alternative financial assurance mechanism that satisfies the requirements of this Section. EPA may extend this deadline for such time as is reasonably necessary for the Respondents, in the exercise of due diligence, to secure and submit to EPA a proposal for a revised or alternative financial assurance mechanism, not to exceed 60 days. Respondents shall follow the procedures of ¶ 99 (Modification of Amount, Form, or Terms of Financial Assurance) in seeking approval of, and submitting documentation for, the revised or alternative financial assurance mechanism. Respondents' inability to secure financial assurance in accordance with this Section does not excuse performance of any other obligation under this Settlement.

98. Access to Financial Assurance

a. If EPA issues a notice of implementation of a Work Takeover under ¶ 74.b, then, in accordance with any applicable financial assurance mechanism and/or related standby funding commitment, EPA is entitled to: (1) the performance of the Work; and/or (2) require that any funds guaranteed be paid in accordance with ¶ 98.d.

b. If EPA is notified by the issuer of a financial assurance mechanism that it intends to cancel such mechanism, and the Respondents fail to provide an alternative financial assurance mechanism in accordance with this Section at least 30 days prior to the cancellation date, the funds guaranteed under such mechanism must be paid prior to cancellation in accordance with ¶ 98.d.

c. If, upon issuance of a notice of implementation of a Work Takeover under ¶ 74.b, either: (1) EPA is unable for any reason to promptly secure the resources guaranteed under any applicable financial assurance mechanism and/or related standby funding commitment, whether in cash or in kind, to continue and complete the Work; or (2) the financial assurance is a demonstration or guarantee under ¶ 93.e or 93.f, then EPA is entitled to demand an amount, as determined by EPA, sufficient to cover the cost of the remaining Work to be performed. Respondents shall, within 30 days of such demand, pay the amount demanded as directed by EPA.

d. Any amounts required to be paid under this ¶ 98 shall be, as directed by EPA: (i) paid to EPA in order to facilitate the completion of the Work by EPA or by another person; or (ii) deposited into an interest-bearing account, established at a duly chartered bank or trust company that is insured by the FDIC, in order to facilitate the completion of the Work by another person. If payment is made to EPA, EPA may deposit the payment into the EPA Hazardous Substance Superfund or into the Portland Harbor Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

e. All EPA Work Takeover costs not paid under this ¶ 98 must be reimbursed as Future Response Costs under Section XIV (Payment of Response Costs).

99. Modification of Amount, Form, or Terms of Financial Assurance.

Respondents may submit, on any anniversary of the Effective Date or at any other time agreed to by the Parties, a request to reduce the amount, or change the form or terms, of the financial assurance mechanism. Any such request must be submitted to EPA in accordance with ¶ 94, and must include an estimate of the cost of the remaining Work, an explanation of the bases for the cost calculation, and a description of the proposed changes, if any, to the form or terms of the financial assurance. EPA will notify Respondents of its decision to approve or disapprove a requested reduction or change pursuant to this Paragraph within 60 days of receipt of the request. Respondents may reduce the amount of the financial assurance mechanism only in accordance with: (a) EPA's approval; or (b) if there is a dispute, the agreement or written decision resolving such dispute under Section XVI (Dispute Resolution). Respondents may change the form or terms of the financial assurance mechanism only in accordance with EPA's approval. Any decision made by EPA on a request submitted under this Paragraph to change the form or terms of a financial assurance mechanism shall not be subject to challenge by Respondents pursuant to the dispute resolution provisions of this Settlement or in any other forum. Within 30 days after receipt of EPA's approval of, or the agreement or decision resolving a dispute relating to, the requested modifications pursuant to this Paragraph, Respondents shall submit to EPA documentation of the reduced, revised, or alternative financial assurance mechanism in accordance with ¶ 94.

100. Release, Cancellation, or Discontinuation of Financial Assurance.

Respondents may release, cancel, or discontinue any financial assurance provided under this Section only: (a) in accordance with EPA's approval of such release, cancellation, or discontinuation upon issuance of the Notice of Work Completion; or (b) if there is a dispute regarding the release, cancellation, or discontinuance of any financial assurance, in accordance with the agreement or final decision resolving such dispute under Section XVI (Dispute Resolution). EPA will notify Respondents of its decision to approve or disapprove a request to release, cancel, or discontinue any financial assurance within 60 days of receipt of the request.

XXVII. INTEGRATION/APPENDICES

101. This Settlement and its appendices constitute the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement. The parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Settlement. The following appendices are attached to and incorporated into this Settlement:

- a. Appendix A is the SOW.
- b. Appendix B is a map of the B1a Project Area
- c. Appendix C is the Draft Amendment for Phase 2 Disbursement

XXVIII. MODIFICATION

102. As provided in ¶ 19, the EPA Project Coordinator may modify any plan, schedule, or SOW in writing. The EPA Project Coordinator can make modifications to work being performed in the field by oral direction in order to address immediate issues or unforeseen

circumstances that arise. Any oral modification will be memorialized in writing by EPA promptly, but shall have as its effective date the date of the EPA Project Coordinator's oral direction. Any other requirements of this Settlement may be modified in writing by mutual agreement of the parties.

103. If Respondents seek permission to deviate from any approved work plan, schedule, or SOW, Respondents' Project Coordinator shall submit a written request to EPA for approval outlining the proposed modification and its basis. Respondents may not proceed with the requested deviation until receiving oral or written approval from the EPA Project Coordinator pursuant to ¶ 102. Any dispute relating to a request for deviation from an approved work plan, schedule, or SOW shall be resolved as provided in Section XVI (Dispute Resolution).

104. No informal advice, guidance, suggestion, or comment by the EPA Project Coordinator or other EPA representatives regarding any deliverable submitted by Respondents shall relieve Respondents of their obligation to obtain any formal approval required by this Settlement, or to comply with all requirements of this Settlement, unless it is formally modified.

XXIX. NOTICE OF WORK COMPLETION

105. When EPA determines that all Work has been fully performed in accordance with this Settlement, with the exception of any continuing obligations as provided in ¶ 107, EPA will provide written notice to Respondents. Respondents may request that EPA make this determination.

106. If EPA determines that any such Work has not been completed in accordance with this Settlement, EPA will notify Respondents, provide a list of the deficiencies, and require that Respondents correct the deficiencies or modify the RD Work Plan if appropriate to correct such deficiencies. Respondents shall correct the deficiencies, or, if appropriate, implement the modified and approved RD Work Plan and shall submit a modified 100% Final Design Report for EPA approval in accordance with the EPA notice. If approved, EPA will issue the Notice of Work Completion.

107. 106. Issuance of the Notice of Work Completion does not affect Respondents' continuing obligations: (1) obligations under Sections X (Property Requirements), and XI (Access to Information), and XII (Record Retention); and (2) reimbursement of EPA's Future Response Costs under Section XIV (Payment of Response Costs) of the Settlement.

XXX. EFFECTIVE DATE

108. This Settlement shall be effective upon signature by the Superfund and Emergency Management Division, EPA Region 10.

Signature Page for Settlement regarding the Portland Harbor Superfund Site

IT IS SO AGREED AND ORDERED;

**U.S. ENVIRONMENTAL PROTECTION
AGENCY:**

1/31/2020
Dated



Sheila Fleming, Acting Director
Superfund and Emergency Management Division
EPA Region 10

Signature Page for Settlement regarding the Portland Harbor Superfund Site

FOR Atlantic Richfield Company:

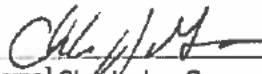
28 JAN 2020
Dated

Patricia Gallery
[Name] PATRICIA GALLERY
[Title] VICE PRESIDENT
[Company] ATLANTIC RICHFIELD COMPANY
[Address] HOUSTON, TX 77079

Signature Page for Settlement regarding the Portland Harbor Superfund Site

**FOR BP Products North America Inc.
(successor-by-merger to BP West Coast Products
LLC):**

29-Jan-2020
Dated

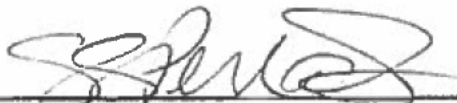


[Name] Christopher Greco
[Title] Vice President
[Company] BP Products North America Inc.
[Address] 150 W Warrenville Rd
Naperville, IL 60137

Signature Page for Settlement regarding the Portland Harbor Superfund Site

FOR Brix Maritime Co.:

1-29-2020
Dated


Sloane Ferras
Vice President
450 Alaskan Way South, Suite 706
Seattle, WA 98104

Signature Page for Settlement regarding the Portland Harbor Superfund Site

FOR Exxon Mobil Corporation:

29 Jan 2020

Dated

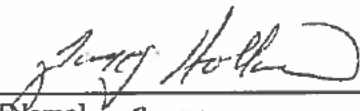
A handwritten signature in black ink, appearing to read "LM Racioppi", is written over a horizontal line.

Len M Racioppi
Area Manager / Agent and Attorney-in Fact
ExxonMobil Corporation
22777 Springwoods Village Pkwy
Spring, TX 77389

Signature Page for Settlement regarding the Portland Harbor Superfund Site

FOR Kinder Morgan Liquids Terminals, LLC:

01/29/2020
Dated



[Name] President
[Title] President
[Company] Kinder Morgan
[Address] 1001 Louisiana St, Suite 1000
Houston, TX 77002

Appendix A

Statement of Work

**REMEDIAL DESIGN STATEMENT OF WORK
PORTLAND HARBOR SUPERFUND SITE**

B1a Project Area

Portland, Multnomah County, State of Oregon

EPA Region 10

January 2020

TABLE OF CONTENTS

1.	INTRODUCTION	3
2.	COMMUNITY INVOLVEMENT.....	4
3.	REMEDIAL DESIGN	5
4.	REPORTING	15
5.	DELIVERABLES	16
6.	SCHEDULES	24
7.	STATE AND TRIBAL PARTICIPATION	26
8.	REFERENCES	27

Attachments

Figure 1. Optimized Remedial Design Timeline

Attachment 1. Program Data Management Plan for Portland Harbor

Attachment 2. Template Sufficiency Assessment Summary Table

1. INTRODUCTION

- 1.1 Purpose of the Statement of Work.** The U.S. Environmental Protection Agency (EPA) signed a Record of Decision (ROD) for the Portland Harbor Superfund Site (Site) on January 3, 2017 that selected Remedial Actions (RA) for the in-river portion of the Site from approximately river miles (RMs) 1.9 to 11.8. The ROD provides information about how Site data will influence Remedial Design (RD), remedial construction, and future maintenance of remediated areas. The ROD states that the actual technologies assigned to a specific area of the river during RD will be dependent on a number of area-specific characteristics and environmental conditions to ensure that the final constructed remedy is appropriate for actual area-specific conditions within, e.g., Sediment Management Areas (SMAs). The ROD also identifies post- ROD / RD sampling activities that will support and refine the Site's Conceptual Site Model (CSM) to implement RD and RA.

This Statement of Work (SOW) sets forth the procedures and requirements for implementing the RD Work at the B1a Project Area (hereinafter identified as the Project Area), as defined in the Administrative Settlement Agreement and Order on Consent as the active cleanup area specifically designated as depicted on the map attached as Appendix B to the Settlement. The Project Area includes certain river banks from top of the bank to the river.

As described in the ROD, soils/sediment of river banks identified in the ROD with known contaminated river banks and/or those that are contiguous with an SMA (as determined from RD Work) will be evaluated to determine if they are contaminated and pose design considerations. If a river bank poses a recontamination concern and should be remediated in conjunction with the sediment RA, it will undergo RD utilizing remedial technologies consistent with contiguous contaminated sediment. Further upland and river bank source control assessments, if needed, will be addressed as upland source issues by the Oregon Department of Environmental Quality (ODEQ) and individual property owners or as necessary through EPA's authorities.

1.2 Structure of the SOW

- Section 2 (Community Involvement) sets forth EPA's and Respondents' responsibilities for community involvement.
- Section 3 (Remedial Design) sets forth the process for developing the RD, which includes the submission of specified primary deliverables.
- Section 4 (Reporting) sets forth Respondents' reporting obligations.
- Section 5 (Deliverables) describes the content of the supporting deliverables and the general requirements regarding Respondents' submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section 6 (Schedules) sets forth the schedule for submitting the primary deliverables, specifies the supporting deliverables that must accompany each primary deliverable, and sets forth the schedule of milestones regarding the completion of the RD.

- Section 7 (State and Tribal Participation) addresses State and Tribal participation.
 - Section 8 (References) provides a list of references, including Uniform Resource Locations (URLs).
- 1.3** The terms used in this SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Settlement, have the meanings assigned to them in CERCLA, in such regulations, or in the Settlement, except that the term “Paragraph” or “¶” means a paragraph of the SOW, and the term “Section” means a section of the SOW, unless otherwise stated.
- 1.4 Relationship to other work at the Portland Harbor Superfund Site.** While all approved data, including baseline data will be considered, all final decisions regarding RD at the Project Area, including delineation of SMAs, implementation of any sampling necessary for design, and application of the ROD’s technology matrix, will be made under this Settlement and this SOW.

2. COMMUNITY INVOLVEMENT

2.1 Community Involvement (CI) Responsibilities

- (a) EPA has the lead responsibility for developing and implementing CI activities at the Site. Previously (during the Remedial Investigation/Feasibility Study (RI/FS) phase), EPA developed a Community Involvement Plan (CIP) for the Site. Pursuant to 40 C.F.R. § 300.435(c), EPA shall review the existing CIP and determine whether it should be revised to describe further public involvement activities specific to the Work or the Project Area that are not already addressed or provided for in the existing CIP, including, if applicable, any Technical Assistance Grant (TAG), any use of the Technical Assistance Services for Communities (TASC) contract, and/or any Technical Assistance Plan (TAP).
 - (b) If requested by EPA, Respondents shall participate in CI activities with respect to the Work, including participation in: (1) the preparation of information regarding the Work for dissemination to the public, with consideration given to including mass media and/or Internet notification; and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. Respondents’ support of EPA’s CI activities may include providing online access to approved deliverables to: (1) any Community Advisory Groups, (2) any TAG recipients and their advisors; and (3) other entities to provide them with a reasonable opportunity to stay informed of Respondents’ Project Area activities and provide feedback when requested by EPA. EPA may describe in its CIP Respondents’ responsibilities for CI activities. All CI activities conducted by Respondents at EPA’s request are subject to EPA’s oversight. Upon EPA’s request, Respondents shall make Project Area-related validated data and general information available to the public. EPA plans to coordinate its community outreach efforts with ODEQ.
 - (c) Respondents will explore the possibility of participating in EPA’s Superfund Job
- B1a Project Area Remedial Design
Statement of Work**

Training Initiative Program (SuperJTI) as it may relate to the Work or the Project Area. This program provides job training to communities affected by Superfund sites.

- (d) Respondents' CI Coordinator. If requested by EPA, Respondents shall, within 90 days of the effective date of the Settlement, designate and notify EPA of Respondents' CI Coordinator. Respondents may hire a contractor for this purpose. Respondents' notice must include the name, title, and qualifications of the Respondents' CI Coordinator. Respondents' CI Coordinator is responsible for providing support regarding EPA's CI activities with respect to the Work, including coordinating with EPA's CI Coordinator regarding responses to the public's inquiries about the Work or the Project Area.

3. REMEDIAL DESIGN

3.1 Sufficiency Assessment.

- (a) The Portland Harbor ROD Section 14.2.11 states that implementation of the Selected Remedy may need to be conducted in phases and/or work sequenced based on consideration of a range of factors including source control actions and recontamination potential. To evaluate source control actions and recontamination potential, a Sufficiency Assessment Report for the Project Area shall be submitted to EPA for comment and approval.

The objective of the Sufficiency Assessment is to evaluate upland (direct discharges, groundwater, river bank, and overwater) and in-water sources of contaminants to determine whether they have been adequately investigated and sufficiently controlled or considered such that the RA can proceed. The Sufficiency Assessment will consider whether upland (direct discharges, groundwater, river bank, overwater) and in-water sources will adversely impact the short- or long-term effectiveness of the proposed RA. The Sufficiency Assessment should be completed following the schedule deadlines in Section 6.2.

- (b) The Sufficiency Assessment shall consider potential impacts from a range of potential sources, including but not limited to:
 - (1) Upland pathways (direct discharges, groundwater, river bank, and overwater);
 - (2) In-water sources of recontamination, including upriver sources;
 - (3) Resuspension of sediments from natural and anthropogenic activities;
 - (4) Factors that may impact sediment cap effectiveness;
 - (5) Potential future use for near shore land and in-water uses; and
 - (6) Other future conditions (e.g., climate change impacts) that may impact

recontamination potential.

- (c) The components of the Sufficiency Assessment Report shall include:
- (1) Description of the Project Area setting, the upland and in-water source areas being evaluated and an overview of the remainder of the report.
 - (2) A CSM that describes the geographically relevant upland (direct discharges, groundwater, river bank, and overwater) and in-water sources of contamination, contaminants of concern (COCs) and migration pathways into the Project Area.
 - (3) A summary of available information regarding the source control status of direct discharges, groundwater, river bank, and overwater sources of COCs into the Project Area that may affect achieving any of the remedial action objectives by comparing to ROD Table 17 cleanup levels and Table 21 RALs and PTW thresholds as one line of evidence; identification of any sources, COCs and pathways that have not been effectively addressed and could impact the RA; and identification of data gaps.
 - (4) A summary of in-water sources of COCs to the Project Area that may affect achieving any of the remedial action objectives. One line of evidence in this evaluation will be comparing to ROD Table 17 cleanup levels and Table 21 RALs and PTW Thresholds including a description of any proposed measures to address in-water sources including the timing and expected effectiveness of these measures.
 - (5) An assessment of the degree to which the proposed remedy will address upland (direct discharges, overwater, groundwater, and river bank) and in-water sources of COCs to the Project Area.
 - (6) An assessment of the degree to which changed future conditions (e.g., changes in land and waterway use and climate change) may affect recontamination potential at the Project Area.
 - (7) The results of the Sufficiency Assessment that includes evaluation of the sufficiency of upland and in-water source controls to reduce the potential for recontaminating the selected remedy following implementation. The assessment will consider the general magnitude of any potential recontamination effects and discuss implications to the selected remedy for the Project Area. The discussion will also present the limitations of the assessment approaches and any remaining data gaps.
 - (8) A sufficiency assessment summary table of upland sources (direct discharges, groundwater, overwater, and river bank) and in-water and upriver sources that explicitly identifies the potential sources and pathways at the Project Area and categorizes the status of each source using the outcome categories: (A) sources are sufficiently controlled; (B)

sources are conditionally controlled; and (C) sources are not sufficiently assessed or controlled. A template table is provided in Attachment 2 of the SOW. Completing the sufficiency assessment summary table is a valuable exercise to ensure that there is consensus on the status of potential sources at the Project Area. The goal of this table is to serve as the basis for EPA's sufficiency determination in informing respondents whether cleanup can go forward and, if potential sources remain, how those sources should be integrated into the in-water design. The sufficiency assessment summary table shall be updated and included in the Pre-Final (95%) RD as a check on whether remedial construction can be implemented.

- (9) Description of how data gaps, if any, will be addressed.
- (10) Conclusions and Recommendations. The Sufficiency Assessment Report shall present conclusions and recommendations. Recommendations will be expressed as one of three potential outcomes:
 - (i) Sources are sufficiently controlled: the report recommends the specified area of sediment cleanup proceed based on reasonable confidence that the relevant recontamination potential is as minimal as possible.
 - (ii) Sources are conditionally controlled: the report recommends the specified area of sediment cleanup proceed so long as certain additional controls or oversight are implemented in a reasonable timeframe or that any area information gaps are considered.
 - (iii) Sources are not sufficiently assessed or controlled: the report recommends that specified area of sediment cleanup not proceed until additional controls have been implemented and assessed for effectiveness.
- (11) References section listing each document cited in the report
- (d) The Sufficiency Assessment does not itself satisfy the requirements of the federal Clean Water Act, CERCLA or other authorities. For example, a site or area that has been evaluated for source control sufficiency for the in-water RA may still be required to take additional measures to meet water quality permit or upland cleanup requirements.

3.2 Pre-Design Investigation. The purpose of the Pre-Design Investigation (PDI) is to identify and address Project Area data gaps by conducting field investigations to develop the Basis of Design Report and RD Work Plan.

- (a) **PDI Work Plan.** Respondents shall submit a PDI Work Plan (PDIWP) for EPA comment and approval. The PDIWP for the Project Area must include:
 - (1) An evaluation and summary of all available existing data, including

baseline data within/near the B1a Project Area, and description of data gaps for: preliminary SMA delineation consistent with EPA's June 6, 2017 *Portland Harbor Superfund Site, Sampling Plan for Pre-Remedial Design, Baseline and Long-Term Monitoring*; CSM refinement consistent with Section 14.2 (*Post-ROD Data Gathering and Other Information Verification*) of the ROD; and application of ROD Figure 28 (*Technology Application Decision Tree*). This includes additional field investigations, that must be completed to support RD and to refine the CSM. Data gap analysis will include:

- (i) Surface and subsurface contaminant concentrations;
 - (ii) Surface water, sediment pore water and groundwater data;
 - (iii) Bathymetry; and
 - (iv) Non-aqueous phase liquid (NAPL) extent and mobility delineation, if applicable. NAPL, as consistent with the ROD, refers to "substantial presence of product" as defined in Section 3.6.2.1 of the Statement of Work to the 2009 ASAO for Removal Action at the GASCO Sediments Site.
- (2) A Project Area Field Sampling Plan, as described in ¶ 5.6(c) (Supporting Deliverables) of this SOW. The plan includes the details of the media to be sampled, contaminants or parameters for which sampling will be conducted, location (areal extent and depths), number of samples, and a project schedule;
 - (3) A Project Area Quality Assurance Project Plan (QAPP) as described in ¶ 5.6(d) (Supporting Deliverables) of this SOW;
 - (4) A Project Area Health and Safety Plan (HASP), as described in ¶ 5.6(a) (Supporting Deliverables) of this SOW;
 - (5) A Project Area Emergency Response Plan as described in ¶ 5.6(b) (Supporting Deliverables) of this SOW; and
 - (6) A description of all necessary actions to ensure compliance with ¶ 3.13 (Off-Site Shipments) of this SOW.
- (b) **PDI Evaluation Report.** Following implementation of the PDI scope in the approved PDIWP, Respondents shall submit a PDI Evaluation Report for EPA comment and approval. PDI Evaluation Report for the Project Area must include:
- (1) Summary of the investigations performed;
 - (2) Summary of investigation results;

- (3) Summary of validated data (i.e., tables and graphics);
- (4) Data validation reports and laboratory data reports;
- (5) Narrative interpretation of data and results;
- (6) Results of statistical and modeling analyses, if applicable;
- (7) Photographs documenting the work conducted; and
- (8) Conclusions and recommendations on whether the data are sufficient to complete the BODR.

3.3 Basis of Design Report (BODR). The purpose of the BODR is to refine the SMA, update the CSM, refine the technology assignments to the SMA consistent with the Decision Tree in Figure 28 of the ROD, and update existing site conditions site factors, and current and reasonably anticipated future land use and in-water activities within the Project Area. Respondents shall submit a BODR for EPA comment and approval. This document will describe the objectives, overall approach, schedule, milestone check in points and specific elements of the BODR. The BODR for the Project Area will:

- (a) Summarize the results of the Sufficiency Assessment and whether potential sources of recontamination have been adequately investigated and controlled or considered such that the RA can proceed.
- (b) Summarize existing site conditions and site factors which affect technology assignments including detailed reasonably anticipated future navigation and land use information and other data, as depicted in the Decision Tree, and refinement of the CSM pertaining to the Project Area;
- (c) Present more detailed SMA footprint(s) based on all available data;
- (d) Summarize design criteria applicable to the Project Area as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995) and consistent with Section 14.2.9 (*Design Requirements*) and Section 14.2.10 (*Performance Standards*) of the ROD;
- (e) Describe Decision Tree analysis and identify a preferred remedial approach based on consistency with the ROD for the Project Area, acknowledging limitations in application and flexibility so that actual technologies assigned to a specific area of the river during RD will be dependent on a number of area-specific characteristics and environmental conditions.
- (f) Identify long-term monitoring and maintenance considerations for the Project Area;
- (g) Identify design studies for RD, if any, such as subsurface and surface sediment sampling that may be needed to refine proposed remedial technology(ies) and

their means and methods, and gather other information necessary for RD for the Project Area; and

- (h) Describe a sequencing plan as well as an overall schedule to efficiently complete the design studies, RD, and RA for the Project Area. The sequencing plan and overall RA schedule will be general and conceptual during RD, with more detailed preliminary drafts to be prepared later during RA.

3.4 RD Work Plan (RDWP). Respondents shall submit a RDWP for EPA comment and approval. The RDWP must include:

- (a) Plans for implementing all RD activities identified in this SOW, in the BODR, in the RDWP, or as required by EPA to be conducted to develop the RD for the Project Area;
- (b) A description of the overall management strategy for performing the RD, including a conceptual proposal for phasing of design and construction activities for the Project Area to coordinate with other RD and RA activities, implemented and planned, for the Site, recognizing that such activities may need to be sequenced to efficiently implement RD and RA activities for the Project Area;
- (c) A conceptual description of the proposed general approach to contracting, construction, operation, maintenance, and monitoring of the RA as necessary to efficiently implement the Work;
- (d) A description of the responsibility and authority of all organizations and key personnel involved with the development of the RD;
- (e) Descriptions of any areas requiring clarification and/or anticipated problems, if any (e.g., data gaps), including the identity of upland parties required to fill data gaps as warranted;
- (f) Identification of any on-site transload facility to be used to transload dredged materials from the Project Area;
- (g) Description of any proposed supplemental PDI;
- (h) Description of any proposed treatability study;
- (i) Descriptions of any applicable permitting requirements and other regulatory requirements, if any;
- (j) Description of plans for obtaining access in connection with the Work, such as access agreements, property acquisition, property leases, and/or easements; and
- (k) Updates of all supporting deliverables required to accompany the PDIWP or supplemental PDIWP.

**B1a Project Area Remedial Design
Statement of Work**

- 3.5 Meetings.** Respondents shall meet regularly with EPA to discuss design issues as necessary, as directed or determined by EPA.
- 3.6 Supplemental PDI.** The purpose of the Supplemental PDI is to address data gaps identified in the RDWP by conducting additional field investigations in the Project Area.
- (a) **Supplemental PDI Work Plan.** If needed to address data gaps identified in the RDWP, Respondents shall submit a Supplemental PDI Work Plan (SPDIWP) for EPA comment and approval. The SPDIWP must include all elements as described in ¶ 3.2(a).
 - (b) **Supplemental PDI Evaluation Report.** Following completion of the Supplemental PDIWP, Respondents shall submit a Supplemental PDI Evaluation Report for EPA comment and approval. This report must include the same elements as described in ¶ 3.2(b).
- 3.7 Treatability Study.** If determined necessary by EPA, Respondents shall perform a Treatability Study (TS) to evaluate the effectiveness of a remedial technology (e.g., reactive cap).
- (a) Respondents shall submit a TS Work Plan (TSWP) for EPA comment and approval. Respondents shall prepare the TSWP in accordance with *EPA's Guide for Conducting Treatability Studies under CERCLA, Final* (Oct. 1992), as supplemented for RD by the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995).
 - (b) Following completion of the TS, Respondents shall submit a TS Evaluation Report for EPA comment and approval. Respondents shall address EPA comments, supplementing the TS Evaluation Report as necessary to fulfill the scope proposed in the TSWP.
- 3.8 Preliminary (30%) RD.** Respondents shall submit a Preliminary (30%) RD for the Project Area for EPA's comment. All information and activities to be performed under the Preliminary (30%) RD shall be included and updated, as needed, in subsequent RD submittals (i.e., 60%, 95%, and 100%). The Preliminary RD must include:
- (a) A design criteria report, as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);
 - (c) Preliminary drawings and specifications;
 - (d) Descriptions of permit requirements, if applicable;
 - (e) A description of how the RA will be implemented in a manner that minimizes environmental impacts in accordance with EPA's *Principles for Greener Cleanups* (Aug. 2009), and the information described in Appendix M of the Portland Harbor Feasibility Study (June 2016);

**B1a Project Area Remedial Design
Statement of Work**

- (f) A description of monitoring and control measures to protect human health and the environment, such as air monitoring and dust suppression, during the RA;
- (g) Updates of all supporting deliverables required to accompany the RDWP and as necessary the following additional supporting deliverables described in ¶ 5.6 (Supporting Deliverables): Institutional Controls Implementation and Assurance Plan; Waste Designation Memo; Biological Assessment; Clean Water Act Analysis; Project Area Monitoring Plan; Construction Quality Assurance/Quality Control Plan; Transportation and Off-Site Disposal Plan; and draft O&M Plan. These supporting deliverables will be prepared as described in the RDWP.
- (h) Respondents must demonstrate that any transload facility they intend to use is appropriate for handling and transloading contaminated sediments and other materials that might be dredged by Respondents. In the event Respondents wish to use a transload facility within the Site for transferring dredged materials from the Project Area, Respondents will provide the design specifications for that transload facility, whether prepared by Respondents or another owner or operator. If necessary, EPA shall assist Respondents in obtaining the required design specifications from the transload facility owner or operator. Such specifications shall include information for any transload-specific Applicable or Relevant and Appropriate Requirements that must be complied with to build and operate the transload facility. In addition, the transload facility's design specifications must address the following: (1) location of transload operations; (2) identification of contaminated groundwater and soil within the foot print of the transload operations; and (3) plans to remove or remediate these contaminated media during construction of the transload facility, or an analysis of how the presence and operation of the transload facility will not inhibit or prevent implementation of ongoing source control measures and potential remedial measures identified in ODEQ upland record of decision for the upland property, if applicable. If Respondents intend to use a transload facility outside of the Portland Harbor Superfund Site (see NCP definition of "on-site") for dredged materials from the Project Area, the design specifications provided by Respondents (which may be prepared by another owner or operator) must include Clean Water Act (CWA) Sections 404 and 401 permit application design information to minimize spillage, offsite tracking, worker exposure and ensure stormwater management for approval before submittal to the United States Army Corps of Engineers and ODEQ, respectively.
- (i) Respondents shall use best efforts to include in the RD information, from owners/operators of river banks and/or submerged lands within the Project Area, on their future reasonably anticipated river use that should be considered in the decision tree process and design, shipping schedules, and known buried infrastructure. The RD shall document in writing the landowners that were contacted and the information received for all properties in the Project Area. EPA and ODEQ assistance may be required to gain information from the property owner.

- 3.9 Intermediate (60%) RD.** Respondents shall submit the Intermediate (60%) RD for EPA's comment. The Intermediate RD must: (a) be a continuation and expansion of the Preliminary RD; (b) address EPA's comments regarding the Preliminary RD; and (c) include the same elements as are required for the Preliminary (30%) RD.
- 3.10 Pre-Final (95%) RD.** Respondents shall submit the Pre-final (95%) RD for EPA's comment. The Pre-final RD must be a continuation and expansion of the previous design submittal and must address EPA's comments regarding the Intermediate RD. The Pre-final RD will serve as the approved Final (100%) RD if EPA approves the Pre-final RD without comments. The Pre-final RD must include:
- (a) A complete set of construction drawings and specifications that are: (1) certified by a registered professional engineer; (2) suitable for procurement; and (3) follow the Construction Specifications Institute's MasterFormat 2016;
 - (b) Survey and engineering drawings showing existing Project Area features, such as elements, property borders, easements, and Project Area conditions;
 - (c) Pre-Final versions of the same elements and deliverables as are required for the Intermediate RD;
 - (d) A specification for photographic documentation of the RA; and
 - (e) Updates of all supporting deliverables required to accompany the Preliminary (30%) RD, including an updated sufficiency assessment summary table per ¶ 3.1(c)(8) as a check on whether remedial construction can be implemented.
- 3.11 Final (100%) RD.** Respondents shall submit the Final (100%) RD for EPA approval. The Final RD must address EPA's comments on the Pre-final RD and must include final versions of all Pre-final deliverables.
- 3.12 Emergency Response and Reporting**
- (a) **Emergency Response and Reporting.** If any event occurs during performance of the Work that causes or threatens to cause a release of Waste Material on, at, or from the Project Area and that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, Respondents shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the authorized EPA officer (as specified in ¶ 3.12(c)) orally; and (3) take such actions in consultation with the authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plan, the Emergency Response Plan, and any other deliverable approved by EPA under the SOW.
 - (b) **Release Reporting.** Upon the occurrence of any event during performance of the Work that Respondents are required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and

Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004, Respondents shall immediately notify the National Response Center (phone 1-800-424-8802) and authorized EPA officer orally.

- (c) The “authorized EPA officer” for purposes of immediate oral notifications and consultations under ¶ 3.12(a) and ¶ 3.12(b) is the EPA Project Coordinator, the EPA Alternate Project Coordinator (if the EPA Project Coordinator is unavailable), or the EPA Emergency Response Unit, Region 10 (if neither EPA Project Coordinator is available).
- (d) For any event covered by ¶ 3.12(a) and ¶ 3.12(b), Respondents shall: (1) within 14 days after the onset of such event, submit a report to EPA describing the actions or events that occurred and the measures taken, and to be taken, in response thereto; and (2) within 30 days after the conclusion of such event, submit a report to EPA describing all actions taken in response to such event.
- (e) The reporting requirements under ¶ 3.12 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

3.13 Off-Site Shipments of RD-generated Waste Material

- (a) Respondents may ship hazardous substances, pollutants, and contaminants from the Project Area (RD-generated Waste Materials) to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondents will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Respondents obtain a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).
- (b) Respondents may ship RD-generated Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide notice to the appropriate state environmental official in the receiving facility’s state and to the EPA Project Coordinator. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Respondents also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of- state facility. Respondents shall provide the notice as soon as practicable after the award of the contract and before the Waste Material is shipped.
- (c) Respondents may ship Investigation Derived Waste (IDW) from the Site to an

off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, EPA's *Guide to Management of Investigation Derived Waste*, OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the ROD. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

4. REPORTING

4.1 Progress Reports. Commencing with the quarter following the Effective Date of the Settlement and until issuance of Notice of Work Completion pursuant to Section XXVII of the Settlement, Respondents shall submit progress reports to EPA on a quarterly basis, or as otherwise requested by EPA. The reports must cover all activities that took place during the prior reporting period, including:

- (a) The actions that have been taken toward achieving compliance with the Settlement;
- (b) A summary of all results of validated sampling, tests, and all other validated data received or generated by Respondents;
- (c) A list of all deliverables that Respondents submitted to EPA;
- (d) A list of all activities scheduled for the next quarter;
- (e) Information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays;
- (f) A list of any modifications to the work plans or other schedules that Respondents have proposed or that have been approved by EPA; and
- (g) A list of all activities undertaken in support of the CIP during the reporting period and those to be undertaken in the next quarter.
- (h) A list of information pending from third party sites within the Project Area that may require EPA and/or ODEQ action to obtain.

4.2 Notice of Progress Report Schedule Changes. If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ 4.1(d), changes, Respondents shall notify EPA of such change at least seven days before performance of the activity.

5. DELIVERABLES

- 5.1 Applicability.** Respondents shall submit all deliverables for EPA approval or for EPA comment as specified in the SOW. In the event ODEQ is authorized as the Project Coordinator, Respondents shall submit deliverables to ODEQ with copies to EPA. If neither is specified, the deliverable does not require EPA's approval or comment. ¶ 5.2 (In Writing) through 5.4 (Formatting Specifications) apply to all deliverables. ¶ 5.5 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.
- 5.2 In Writing.** All deliverables under this SOW must be in writing unless otherwise specified.
- 5.3 General Requirements for Deliverables**
- (a) Except as otherwise provided in this SOW, Respondents shall direct all deliverables required by this SOW to the EPA Project Coordinator: Sean Sheldrake, Remedial Project Manager, Superfund and Emergency Management Division, U.S. Environmental Protection Agency, 1200 6th Ave., Ste. 155, M/S 12-D12-1, phone (206) 553-1220, email sheldrake.sean@epa.gov.
 - (b) All deliverables provided to the State and Tribal representatives in accordance with ¶ 7 (State and Tribal Participation) shall be directed to:
 - David Lacey and Sarah Greenfield, Department of Environmental Quality, Northwest Region Portland Office, 700 NE Multnomah St. Ste 600, Portland, OR 97232-4100, at (503) 229-5354 (David Lacey), david.j.lacey@state.or.us, and (503) 229-5445 (Sarah Greenfield), sarah.greenfield@state.or.us
 - The Five Tribes (individual tribal contacts may be updated as necessary):
 - c/o Gail French Fricano, IEc, Industrial Economics, Incorporated, 2067 Massachusetts Ave., Cambridge, MA 02140, (617) 354-0074, GFricano@indecon.com
 - c/o Courtney Johnson (for Nez Perce Tribe), Crag Law Center, 3141 E. Burnside St., Portland, OR 97214, (503) 525-2728, courtney@crag.org
 - Laura Shira, Yakama Nation Fisheries, Post Office Box 151, Toppenish, WA 98948, (509) 985-3561, shil@yakamafish-nsn.gov.
 - (c) All deliverables must be submitted by the deadlines in the RD Schedule and RDWP, as applicable. Respondents shall submit all deliverables to EPA in electronic form, e.g. email pdfs and/or maintain file transfer protocol (ftp) sites as requested by EPA. Formatting specifications for sampling and monitoring data and spatial data are addressed in ¶ 5.4. All other deliverables shall be submitted to

EPA in the electronic form specified by the EPA Project Coordinator. If any deliverable includes maps, drawings, or other exhibits that are larger than 11” by 17”, Respondents shall also provide EPA with paper copies of such exhibits.

5.4 Formatting Specifications

- (a) Sampling and monitoring data should be submitted in standard regional Electronic Data Deliverable (EDD) format (Attachment 1 of the SOW) or as specified by EPA. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes. All data must be formatted such that they can be easily uploaded to the Portland Harbor Superfund Site database (e.g., Scribe). Reports shall be submitted in a format approved by EPA, such as in pdf format with all metadata inserted, 508 tagging done to the extent practicable, in one file per deliverable (versus many), and include bookmarks to the extent practicable to enhance readability.
- (b) Spatial data, including spatially-referenced data and geospatial data, shall be submitted: (1) in the ESRI File Geodatabase format; and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum, consistent with the format used for such submissions in the RI/FS for the Portland Harbor Superfund Site or as approved by EPA. If applicable, submissions shall include the collection method(s). Projected coordinates may optionally be included but must be documented (four aspects include projection, zone, datum, and units). Spatial data shall be accompanied by metadata, and such metadata shall be compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at <https://www.epa.gov/geospatial/epa-metadata-editor>. Respondents are required to upload data collected to EPA’s Scribe environmental data management tool or other tool as prescribed by EPA.
- (c) Each file must include an attribute name for each Project Area unit or sub-unit submitted. Consult <https://www.epa.gov/geospatial/geospatial-policies-and-standards> for any further available guidance on attribute identification and naming.
- (d) Spatial data submitted by Respondents does not, and is not intended to, define the boundaries of the Project Area.

5.5 Approval of Deliverables

(a) Initial Submissions

- (1) After review of any deliverable that is required to be submitted for EPA approval under the SOW, EPA shall: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove, in whole or in part, the submission; or (iv) any combination of the foregoing.
- (2) EPA also may modify the initial submission to cure deficiencies in the submission if: (i) EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the Work that cannot be remedied by modifying the schedule for the Work; or (ii) previous submission(s) have been disapproved due to material defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

(b) **Resubmissions.** Upon receipt of a notice of disapproval under ¶ 5.5(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under ¶ 5.5(a) Respondents shall, within 45 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, EPA may: (1) approve, in whole or in part, the resubmission; (2) approve the resubmission upon specified conditions; (3) modify the resubmission; (4) disapprove, in whole or in part, the resubmission, requiring Respondents to correct the deficiencies; or (5) any combination of the foregoing. EPA modifications to a deliverable will show they were made by EPA.

(c) **Implementation.** Upon approval, approval upon conditions, or modification by EPA under ¶ 5.5(a) (Initial Submissions) or ¶ 5.5(b) (Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the Settlement; and (2) Respondents shall take any action required by such deliverable, or portion thereof. The implementation of any non-deficient portion of a deliverable submitted or resubmitted under ¶ 5.5(a) or ¶ 5.5(b) does not relieve Respondents of any liability for stipulated penalties under Section XVI (Stipulated Penalties) of the Settlement.

5.6 Supporting Deliverables. Respondents shall submit each of the following supporting deliverables for EPA comment and approval, except as specifically provided. Respondents shall develop the deliverables in accordance with all applicable regulations, guidance, and policies (see ¶ 8 (References)). Respondents shall update each of these supporting deliverables as necessary or appropriate during the Work, and/or as requested by EPA. Supporting deliverables to each deliverable are specified in the schedule of ¶ 6.2.

- (a) **Health and Safety Plan.** The Health and Safety Plan (HASP) describes all activities to be performed to protect on site personnel and area residents from physical, chemical, and all other hazards posed by implementing the Work. Respondents shall develop the HASP in accordance with EPA's Emergency Responder Health and Safety and Occupational Safety and Health Administration (OSHA) requirements under 29 C.F.R. §§ 1910 and 1926. The HASP required by this RD SOW will cover RD activities only. EPA does not approve the HASP but will review it to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment.
- (b) **Emergency Response Plan.** The Emergency Response Plan (ERP) must describe procedures to be used in the event of an accident or emergency at the Project Area (for example, power outages, water impoundment failure, treatment plant failure, slope failure, etc.). The ERP must include:
- (1) Name of the person or entity responsible for responding in the event of an emergency incident;
 - (2) Plan and date(s) for meeting(s) with the local community, including local, State, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals;
 - (3) Spill Prevention, Control, and Countermeasures (SPCC) Plan (if applicable), consistent with the regulations under 40 C.F.R. Part 112, describing measures to prevent, and contingency plans for, spills and discharges;
 - (4) Notification activities in accordance with ¶ 3.12(b) (Release Reporting) in the event of a release of hazardous substances requiring reporting under Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004; and
 - (5) A description of all necessary actions to ensure compliance with ¶ 3.12a (Emergency Response and Reporting) of the SOW in the event of an occurrence during the performance of the Work that causes or threatens a release of Waste Material from the Project Area that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.
- (c) **Field Sampling Plan.** The Field Sampling Plan (FSP) addresses all sample collection activities. The FSP must be written so that a field sampling team unfamiliar with the Work would be able to gather the samples and field information required. Respondents shall develop the FSP in accordance with *Guidance for Conducting Remedial Investigations and Feasibility Studies*, EPA/540/G 89/004 (Oct. 1988) and the Site's *Remedial Design Guidelines and Considerations* document (Dec 2019), and as may be modified from time to time. The description of data gaps as required in Section 3.2(a)(1) will serve as the basis for the sample

collection activities in the FSP. The lateral and vertical extent of contamination exceeding RALs and PTW thresholds (i.e., SMAs) will be delineated within and up to the following boundaries, as needed to fill data gaps: (i) for SMAs within that portion of the B1a Project Area extending from the St. John's Bridge to RM 5 (i.e., that area bounded by the B1b Project Area), delineation shall extend up to the B1a Project Area boundary; and (ii) for SMAs within that portion of the B1a Project Area downstream of RM 5, delineation shall extend beyond the B1a Project Area into the Navigational Channel but no further than half the distance across the Navigational Channel. The starting points for the SMAs are those SMAs identified under this ASAO within the B1a Project Area boundary as depicted on Appendix B, but as modified based on the evaluation and summary of all existing data set forth in Section 3.2(a)(1).

- (d) **Quality Assurance Project Plan.** The Quality Assurance Project Plan (QAPP) augments the FSP and addresses sample analysis and data handling regarding the Work. The QAPP must include a detailed explanation of Respondents' quality assurance, quality control, and chain of custody procedures for all investigations, treatability, design, compliance, and monitoring samples. Respondents shall develop the QAPP in accordance with *EPA Requirements for Quality Assurance Project Plans*, QA/R- 5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006); *Guidance for Quality Assurance Project Plans*, QA/G-5, EPA/240/R-02/009 (Dec. 2002); and *Uniform Federal Policy for Quality Assurance Project Plans*, Parts 1-3, EPA/505/B- 04/900A through 900C (Mar. 2005). The QAPP also must include procedures:
- (1) To ensure that EPA and its authorized representative have reasonable access to laboratories used by Respondents in implementing the Settlement (Respondents' Labs);
 - (2) To ensure that Respondents' Labs analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring;
 - (3) To ensure that Respondents' Labs perform all analyses using EPA-accepted methods (i.e., the methods documented in *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis*, ILM05.4 (Dec. 2006); *USEPA Contract Laboratory Program Statement of Work for Organic Analysis*, SOM01.2 (amended Apr. 2007); and *USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration)*, ISM01.2 (Jan. 2010) or other methods acceptable to EPA;
 - (4) To ensure that Respondents' Labs participate in an EPA-accepted QA/QC program or other QA/QC program acceptable to EPA;
 - (5) For Respondents to provide EPA with notice at least 14 days prior to any sample collection activity;
 - (6) For Respondents to provide split samples and/or duplicate samples to

EPA upon request;

- (7) For EPA to take any additional samples that it deems necessary;
- (8) For EPA to provide to Respondents, upon request, split samples and/or duplicate samples in connection with EPA's oversight sampling; and
- (9) For Respondents to submit to EPA all sampling and tests results and other data in connection with the implementation of the Settlement.

- (e) **Institutional Controls Implementation and Assurance Plan.** Institutional controls (ICs) at the Project Area will be designed to: (1) protect human health and the environment by limiting exposure to contamination left in place; and (2) protect the long-term integrity of the engineered components of the RA. The City of Portland and State of Oregon will develop a site-wide Institutional Control Implementation and Assurance Plan (ICIAP). In coordination with EPA, Respondents will develop a Project Area-specific ICIAP during RD which will, at a minimum, identify the specific and necessary Project Area ICs that will be implemented during RA; plans to implement, maintain, and enforce the ICs; and the parties responsible for implementing and monitoring each IC necessary at the Project Area, consistent with Section 14.2.6. (*Institutional Controls*) of the ROD. Upon approval by EPA, Respondents will provide its Project Area ICIAP to the City and State for incorporation into the site-wide ICIAP. The ICIAP shall be developed in accordance with *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*, OSWER 9355.0-89, and EPA/540/R-09/001 (Dec. 2012) and *Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites*, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012) or as amended or superseded. The ICIAP must include the following additional requirements:

- (1) Locations of recorded real property interests (e.g., easements, liens) and resource interests in the property that may affect ICs (e.g., surface, mineral, and water rights) including accurate mapping and geographic information system (GIS) coordinates of such interests; and
- (2) As necessary and appropriate, legal descriptions and survey maps that are prepared according to current American Land Title Association (ALTA) Survey guidelines and certified by a licensed surveyor.

Among others, three types of ICs have been proposed for the Site that may be used at the Project Area: (1) Fish Advisories and Educational Outreach; (2) Waterway Use Restrictions or Regulated Navigation Areas (RNAs); and (3) Land Use/Access Restrictions.

- (f) **Waste Designation Memo.** The waste designation memo, if appropriate, will describe the characterization of any RCRA wastes (evaluated as part of the RD) and present the data needs necessary to arrange for the offsite disposal of the wastes at an appropriate facility.

- (g) **Biological Assessment (BA).** The Respondents shall include a Project Area BA or a supplement to EPA's programmatic Site-wide BA for the preferred alternative as needed to help facilitate National Oceanic and Atmospheric Administration (NOAA) consultation on substantive requirements for the project, as well as a Clean Water Act (CWA) memorandum, to include time for EPA reviews and any necessary revision. Based on a review of available documentation, the BA shall identify the presence of threatened, endangered, and proposed or candidate species, or their habitat, within the vicinity of the Project Area and shall comply with the substantive requirements of the Endangered Species Act. The BA shall describe baseline conditions of existing habitat; address potential project impacts that the remedy may have on these species, their habitat, and their food stocks; and describe best management practices and conservation measures designed to avoid or minimize any negative impacts.
- (h) **Clean Water Act Analysis.** Respondents shall submit a memorandum that provides sufficient information to demonstrate compliance of the proposed RA at the Project Area with the substantive requirements of Section 404(b)(1) and other applicable sections of the CWA. The memorandum shall supplement the information gathered from the Feasibility Study regarding, long- and short-term impacts from the RA at the Project Area, minimization of adverse effects, compliance with the ROD, and an analysis of the need for any mitigation.
- (i) **Project Area Monitoring Plan.** The purpose of the Project Area Monitoring Plan (PAMP) is to obtain baseline information regarding the extent of contamination in affected media at the Project Area; to obtain information, through short- and long-term monitoring, about the movement of and changes in contamination throughout the Project Area, before and during implementation of the RA; to obtain information regarding contamination levels to determine whether Performance Standards (PS) are achieved; and to obtain information to determine whether to perform additional actions, including further Project Area monitoring. As appropriate, approved data from Project Area Pre-RD and RD sampling and Site-wide baseline data may be used in the PAMP. The PAMP must include:
- (1) Description of the environmental and other media to be monitored;
 - (2) Description of the data collection parameters, including existing and proposed monitoring devices and locations, schedule and frequency of monitoring, analytical parameters to be monitored, and analytical methods employed;
 - (3) Description of how performance data will be analyzed, interpreted, and reported, and/or other Project Area-related requirements;
 - (4) Description of verification sampling procedures;
 - (5) Description of deliverables that will be generated in connection with

monitoring, including sampling schedules, laboratory records, monitoring reports, and monthly and annual reports to EPA and State agencies; and

- (6) Description of proposed additional monitoring and data collection actions (such as increases in frequency of monitoring, and/or installation of additional monitoring devices in the affected areas) in the event that results from monitoring devices indicate changed conditions (such as higher than expected concentrations of the contaminants of concern or groundwater contaminant plume movement).
- (j) **Construction Quality Assurance/Quality Control Plan (CQA/QCP).** The purpose of the Construction Quality Assurance/Quality Control Plan (CQA/QCP) is to describe planned and systemic activities that provide confidence and that verify that the RA construction will and do satisfy all plans, specifications, and related requirements, including quality objectives. The CQA/QCP must:
 - (1) Describe the responsibilities of the organizations and personnel implementing the CQA/QCP;
 - (2) Describe the PS required to be met to achieve Completion of the RA;
 - (3) Describe the activities to be performed: (i) to provide confidence that PS will be met; and (ii) to determine whether PS have been met;
 - (4) Describe verification activities, such as inspections, sampling, testing, monitoring, and production controls, under the CQA/QCP;
 - (5) Describe industry standards and technical specifications used in implementing the CQA/QCP;
 - (6) Describe procedures for tracking construction deficiencies from identification through corrective action;
 - (7) Describe procedures for documenting all CQA/QCP activities; and
 - (8) Describe procedures for retention of documents and for final storage of documents.
- (k) **Transportation and Off-Site Disposal Plan.** The Transportation and Off-Site Disposal Plan (TODP) describes plans to ensure compliance with ¶ 3.13 (Off-Site Shipments). The TODP must include:
 - (1) Proposed routes for off-site shipment of Waste Material;
 - (2) Identification of communities affected by shipment of Waste Material; and
 - (3) Description of plans to minimize impacts on affected communities.
- (l) **O&M Plan.** The O&M Plan describes the requirements that will be included in

the O&M manual for the Project Area RA for inspecting, operating, and maintaining the RA. Respondents shall develop the O&M Plan in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017). The O&M Plan must include a description of the following additional requirements that may be included in the O&M manual:

- (1) Description of PS required to be met to implement the ROD;
- (2) Description of activities to be performed: (i) to provide confidence that PS will be met; and (ii) to determine whether PS have been met;
- (3) **O&M Reporting.** Description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and monthly and annual reports to EPA and State agencies;
- (4) Description of corrective action in case of systems failure, including:
(i) alternative procedures to prevent the release or threatened release of Waste Material which may endanger public health and the environment or may cause a failure to achieve PS; (ii) analysis of vulnerability and additional resource requirements should a failure occur; (iii) notification and reporting requirements should O&M systems fail or be in danger of imminent failure; and (iv) community notification requirements; and
- (5) Description of corrective action to be implemented in the event that PS are not achieved; and a schedule for implementing these corrective actions.

6. SCHEDULES

6.1 Applicability and Revisions. The following schedule provides an RD timeline under which all deliverables and tasks required under this SOW must be submitted or completed by the deadlines or within the time durations listed in the schedule set forth below.¹ The schedule identifies deliverables that may be developed concurrently for efficiency. An example of an optimized RD timeline, which shows concurrent work on deliverables, is presented in **Figure 1**. Respondents may submit proposed revised schedules for EPA approval. Upon EPA's approval, the revised schedules supersede the schedule set forth below, and any previously-approved schedule.

¹ All deadlines calculated by calendar days. In computing any period of time under this SOW, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the next working day.

6.2 Schedule

	Description of Deliverable	Included Supporting Deliverable	¶ Ref.	Deadline²
	Notification of Respondents' CI Coordinator		2.1(d)	90 days after Effective Date of the Settlement
1a	Draft Sufficiency Assessment Report		3.1	120 days after Effective Date of the Settlement
1b	Final Sufficiency Assessment Report		3.1	45 days after EPA's comments on the Draft Sufficiency Assessment Report
2a	Draft PDI Work Plan	FSP, QAPP, HASP, ERP	3.2(a)	180 days after Effective Date of the Settlement
2b	Final PDI Work Plan	Same as above	3.2(a)	45 days after EPA's comments on the Draft PDI Work Plan
3a	Draft PDI Evaluation Report		3.2(b)	As set forth in the approved PDI Work Plan
3b	Final PDI Evaluation Report		3.2(b)	As set forth in the approved PDI Work Plan
4a	Draft BODR		3.3	120 days after EPA approval of the Final PDI Evaluation Report
4b	Final BODR	Same as above	3.3	45 days after EPA's comments on the Draft BODR
5a	Draft RDWP	Updates to FSP, QAPP, HASP, ERP	3.4	90 days after EPA's approval on the Final BODR
5b	Final RDWP	Same as above	3.4	45 days after EPA's comments on the Draft RDWP
6a	Draft Supplemental PDI Work Plan (if needed)	Updates to FSP, QAPP, HASP, ERP	3.6(a)	As set forth in the draft RDWP
6b	Final Supplemental PDI Work Plan (if needed)	Same as above	3.6(a)	As set forth in the draft RDWP
7a	Draft Supplemental PDI Evaluation Report (if needed)		3.6(b)	As set forth in the approved Final RDWP
7b	Final Supplemental PDI Evaluation Report (if needed)		3.6(b)	As set forth in the approved Final RDWP
8a	Draft Treatability Study Work Plan (if required)		3.7(a)	As set forth in the draft RDWP

B1a Project Area Remedial Design Statement of Work

	Description of Deliverable	Included Supporting Deliverable	¶ Ref.	Deadline²
8b	Final Treatability Study Work Plan (if required)		3.7(a)	As set forth in the draft RDWP
9a	Draft Treatability Study Evaluation Report (if required)		3.7(b)	As set forth in the approved Final RDWP
9b	Final Treatability Study Evaluation Report (if required)		3.7(b)	As set forth in the approved Final RDWP
10	Preliminary (30%) RD	All supporting deliverables described in ¶ 5.6	3.8	As set forth in the approved Final RDWP ¹ Work on the 30% design will begin prior to completion of the Supplemental PDI Investigation Report but will not be completed until after the report is completed.
11	Intermediate (60%) RD	Same as above	3.9	As set forth in the approved Final RDWP
12	Pre-final (95%) RD	Same as above	3.10	As set forth in the approved Final RDWP
13	Final (100%) RD	Same as above and updated sufficiency assessment summary table	3.11	As set forth in the approved Final RDWP
14	Progress Reports		4.1	Quarterly

Notes:

² To the extent practicable, preparation of many of these deliverables can occur concurrently for an efficient RD schedule. An example showing EPA's expectations for an optimized RD timeline is shown in **Figure 1**.

7. STATE AND TRIBAL PARTICIPATION

7.1 Copies. Respondents shall, at any time they send a deliverable to EPA, send a copy of such deliverable to ODEQ and Tribal Governments identified in the Settlement. EPA shall be responsible for coordinating comments with the State and Tribes to meet the review schedule. Written comments on the deliverables provided to EPA from the State or Tribes shall be provided to the Respondents when EPA provides comments to Respondents. Respondents shall copy other agency Memorandum of Understanding partners (Oregon Department of Fish and Wildlife, NOAA, and U.S. Department of the Interior). EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to Respondents, send a copy of such document to the State and Tribes and the agency partners.

**B1a Project Area Remedial Design
Statement of Work**

7.2 Review and Comment. The State and Tribes will have a reasonable opportunity for review and comment prior to:

- (a) Any EPA approval or disapproval under ¶ 5.5 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval, and
- (b) Any disapproval of or Notice of Work Completion under Section XXIX of the Settlement (Notice of Work Completion).
- (c) Any modifications of this SOW or related deliverables under ¶ 19 and Section XXVIII of the Settlement.

8. REFERENCES

8.1 The following regulations and guidance documents, among others, apply to the Work. Any item for which a specific URL is not provided below is available on one of the two EPA Web pages listed in ¶ 8.2:

- (a) Guidance for Conducting Remedial Investigations and Feasibility Studies, OSWER 9355.3-01, EPA/540/G 89/004 (Oct. 1988).
- (b) A Compendium of Superfund Field Operations Methods, OSWER 9355.0-14, EPA/540/P-87/001a (Aug. 1987).
- (c) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).
- (d) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).
- (e) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G-90/001 (Apr. 1990).
- (f) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).
- (g) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS (Jan. 1992).
- (h) Permits and Permit “Equivalency” Processes for CERCLA On-Site Response Actions, OSWER 9355.7-03 (Feb. 1992).
- (i) Guidance for Conducting Treatability Studies under CERCLA, OSWER 9380.3-10, EPA/540/R 92/071A (Nov. 1992).
- (j) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. Part 300 (Oct. 1994).

**B1a Project Area Remedial Design
Statement of Work**

- (k) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995). Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).
- (l) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).
- (m) Operation and Maintenance in the Superfund Program, OSWER 9200.1-37FS, EPA/540/F-01/004 (May 2001).
- (n) Guidance for Quality Assurance Project Plans, QA/G-5, EPA/240/R-02/009 (Dec. 2002).
- (o) Institutional Controls: Third Party Beneficiary Rights in Proprietary Controls (Apr. 2004).
- (p) Quality Systems for Environmental Data and Technology Programs -- Requirements with Guidance for Use, ANSI/ASQ E4-2004 (2004).
- (q) Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B-04/900A through 900C (Mar. 2005).
- (r) Superfund Community Involvement Handbook, EPA/540/K-05/003 (Apr. 2005).
- (s) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).
- (t) EPA Requirements for Quality Assurance Project Plans, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006).
- (u) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).
- (v) USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4 (Dec. 2006).
- (w) USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2 (amended Apr. 2007).
- (x) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2008), available at <https://www.epa.gov/geospatial/geospatial-policies-and-standards> and <https://www.epa.gov/geospatial/epa-national-geospatial-data-policy>.
- (y) Principles for Greener Cleanups (Aug. 2009), available at <https://www.epa.gov/greenercleanups/epa-principles-greener-cleanups>.

- (z) USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration), ISM01.2 (Jan. 2010).
- (aa) Clean Water Act Section 404(b)(1) Guidelines (40 CFR 230), (July 2010), <https://www.epa.gov/cwa-404/section-404b1-guidelines-40-cfr-230>.
- (bb) Recommended Evaluation of Institutional Controls: Supplement to the “Comprehensive Five-Year Review Guidance,” OSWER 9355.7-18 (Sep. 2011).
- (cc) Construction Specifications Institute's MasterFormat 2016, available from the Construction Specifications Institute, <https://www.csiresources.org/practice/standards/masterformat>.
- (dd) Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach, OSWER 9200.2-125 (Sep. 2012)
- (ee) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012).
- (ff) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012).
- (gg) EPA’s Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), <http://www.epaossc.org/HealthSafetyManual/manual-index.htm>
- (hh) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).
- (ii) Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017).
- (jj) USEPA Portland Harbor Superfund Site, Sampling Plan for Pre-Remedial Design, Baseline and Long-Term Monitoring (June. 2017).
- (kk) USEPA Region 10 Remedial Design Guidelines and Considerations, Portland Harbor Superfund Site, Portland, Oregon (Dec 2019).

8.2 A more complete list may be found on the following EPA Web pages:

Laws, Policy, and Guidance <https://www.epa.gov/superfund/superfund-policy-guidance-and-laws>

Test Methods Collections <https://www.epa.gov/measurements/collection-methods>

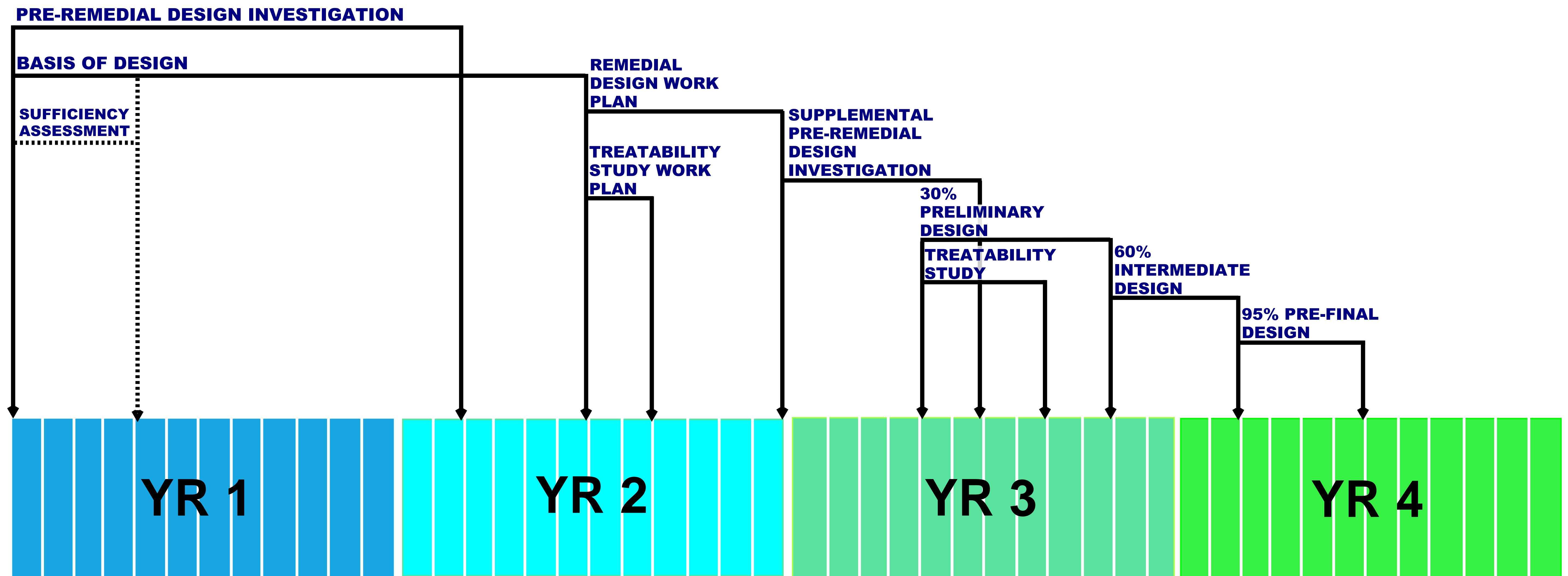
8.3 For any regulation or guidance referenced in the Settlement or SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such

**B1a Project Area Remedial Design
Statement of Work**

regulation or guidance. Such modifications, amendments, or replacements apply to the Work only after Respondents receive notification from EPA of the modification, amendment, or replacement.

Figure 1

Optimized Remedial Design Timeline



* Current schedule allows 2.5 months for PRPs to create initial draft of RDWP and 30% RD along with 3.5 months for EPA/partner review and comments. The 3.5 months includes a review/comment cycle of the initial draft document by EPA and TCT, development of the draft final document by PRP, and a final review by EPA. This review process will be shortened for the 60% RD and 95% RD as EPA expects the PRPs to have incorporated EPA comments from the 30% RD.

FIGURE 1. OPTIMIZED REMEDIAL DESIGN TIMELINE

Attachment 1

Program Data Management Plan for Portland Harbor Including Electronic Data Deliverable Format

Program Data Management Plan

Portland Harbor Remedial Design Investigation Portland Harbor Superfund Site

Prepared by
U.S. Environmental Protection Agency Region 10
August 2018



This page intentionally left blank.

TABLE OF CONTENTS

1.0 Introduction	3
1.1 Site Background	3
1.2.1 Data Categories	4
1.2.2 Major Stakeholder Groups	4
1.2.3 Remedial Design Sampling Activities	5
2.0 Data Management	5
2.1 Data Management Platform	6
2.2 Roles and Responsibilities	6
2.2.1 Performing Parties	7
2.2.2 Data Manager	7
2.2.3 EPA Remedial Project Managers	8
2.2.4 EPA Regional Scribe.NET Data Coordinator	8
2.3 Data Elements	9
2.3.1 Project Identification Information	9
2.3.2 Environmental Sampling Data	9
2.3.3 Locational Data	9
2.4 Data Repository	10
3.0 Data Verification	10
4.0 Data Reporting Procedures	10
5.0 Data Access	10

Figures

Figure 1. Data Consolidation and Archiving	6
Figure 2. Process Workflow	6

Appendices

Appendix A – Required Data Elements	
Appendix B – Data Element Valid Values	
Appendix C – Data Management Conceptual Model	

Definitions and Acronyms

ASASOC	Administrative Settlement Agreement and Order on Consent
DMP	data management plan
EDD	electronic data deliverables
EPA	U.S. Environmental Protection Agency
ERT	EPA Emergency Response Team located in Edison, NJ
HUC	hydrologic unit code
ID	identification
ODEQ	Oregon Department of Environmental Quality
PHSS	Portland Harbor Superfund Site
RPM	Remedial Project Manager (EPA Region 10)
Scribe	data management application (created for ERT)
Scribe.NET	web-based portal for archiving Scribe project files and data

1.0 Introduction

To ensure that environmental data collected at the Portland Harbor Superfund Site (PHSS) adhere to specific standards and practices, a programmatic level data management plan (DMP) was developed that provides guidance and data requirements for the various parties involved with the pre-design and design related data collection activities. While this DMP is a standalone document, it is to be used in concert with the Administrative Settlement Agreement and Order on Consent (ASAOC) statement of work, Region 10 data management plan, and the respective quality management plans developed for each performing party sampling effort.

1.1 Site Background

The site is located along the lower reach of the Willamette River in Portland, Oregon, and extends from approximately river mile 1.9 to 11.8. While the site is extensively industrialized, it is within a region characterized by commercial, residential, recreational, and agricultural uses. Land use along the lower Willamette River in the site includes marine terminals, manufacturing, other commercial operations, public facilities, parks, and open spaces. The State of Oregon owns certain submerged and submersible lands underlying navigable and tidally influenced waters. The ownership of submerged and submersible lands is complicated and has changed over time.

This lower reach was once a shallow, meandering portion of the Willamette River but has been redirected and channelized via filling and dredging. A federally maintained navigation channel, extending nearly bank-to-bank in some areas, doubles the natural depth of the river and allows transit of large ships into the active harbor. Much of the river bank contains overwater piers and berths, port terminals and slips, and other engineered features. While a series of dams in the upper Willamette River watershed moderate's fluctuations of flow in the lower portions of the river, flooding still occurs approximately every 20 years, with the last occurring in 1996.

Armoring to stabilize banks covers approximately half of the harbor shoreline, which is integral to the operation of activities that characterize Portland Harbor. Riprap is the most common bank-stabilization measure. However, upland bulkheads and rubble piles are also used to stabilize the banks. Seawalls are used to control periodic flooding as most of the original wetlands bordering the Willamette in the Portland Harbor area have been filled. Some river bank areas and adjacent parcels have been abandoned and allowed to revegetate, and beaches have formed along some modified shorelines due to relatively natural processes.

Development of the river has resulted in major modifications to the ecological function of the lower Willamette River. However, several species of invertebrates, fishes, birds, amphibians, and mammals, including some protected by the Endangered Species Act, use habitats that occur within and along the river. The river is also an important rearing site and pathway for migration of anadromous fishes, such as salmon and lamprey. Various recreational fisheries, including salmon, bass, sturgeon, crayfish, and others, are active within the lower Willamette River.

1.2 Objective and Scope

The objective of this DMP is to ensure that environmental data and supporting information are collected and managed in a manner that preserves, protects, and makes the information available to all stakeholders, performing parties, and other affected groups. This DMP applies to data and

information collected in support of the PHSS by the performing party's activities as related to the remedial design effort and per the individual ASAOC. While it does not cover all information (e.g., photos, field logs) that is managed for specific projects, it is intended to address those types of data deemed critical to decision making for the site. Appendix C provides a conceptual model depicting the comprehensive approach to the management of data derived from previous and future studies at the PHSS. The subsections below identify the general data categories, performing parties collecting environmental data, and major sampling activities.

1.2.1 Data Categories

This plan identifies standard data elements and data management processes for the following data categories:

- Project identification information
- Environmental sampling data
- Locational data

The individual data elements for each of these categories represent the minimal amount of information that is needed for project specific decision making and data sharing among stakeholders and performing parties. These are further identified in the Data Management section.

1.2.2 Major Stakeholder Groups

The major stakeholder groups have been identified as those groups who are actively involved in site-wide planning and environmental data collection and sharing for this site. The major stakeholders include signatories to the 2001 Memorandum of Understanding, performing parties, and community groups:

- Memorandum of understanding members
 - U.S. Environmental Protection Agency (EPA) Region 10
 - Oregon Department of Environmental Quality
 - Confederated Tribes and Bands of the Yakama Nation
 - Confederated Tribes of the Grand Ronde Community of Oregon
 - Confederated Tribes of Siletz Indians
 - Confederated Tribes of the Umatilla Indian Reservation
 - Confederated Tribes of the Warm Springs Reservation of Oregon
 - Nez Perce Tribe
 - National Oceanic and Atmospheric Administration
 - Oregon Department of Fish and Wildlife
 - U.S. Department of the Interior
- Performing Parties (these are typically potentially responsible parties)
- Primary community groups
 - Community Advisory Group
 - Willamette Riverkeeper
 - Portland Harbor Community Advisory Group

1.2.3 Remedial Design Sampling Activities

For the remedial design efforts, a performing party would implement an investigation to supplement existing site-wide data to inform and support remedial design.

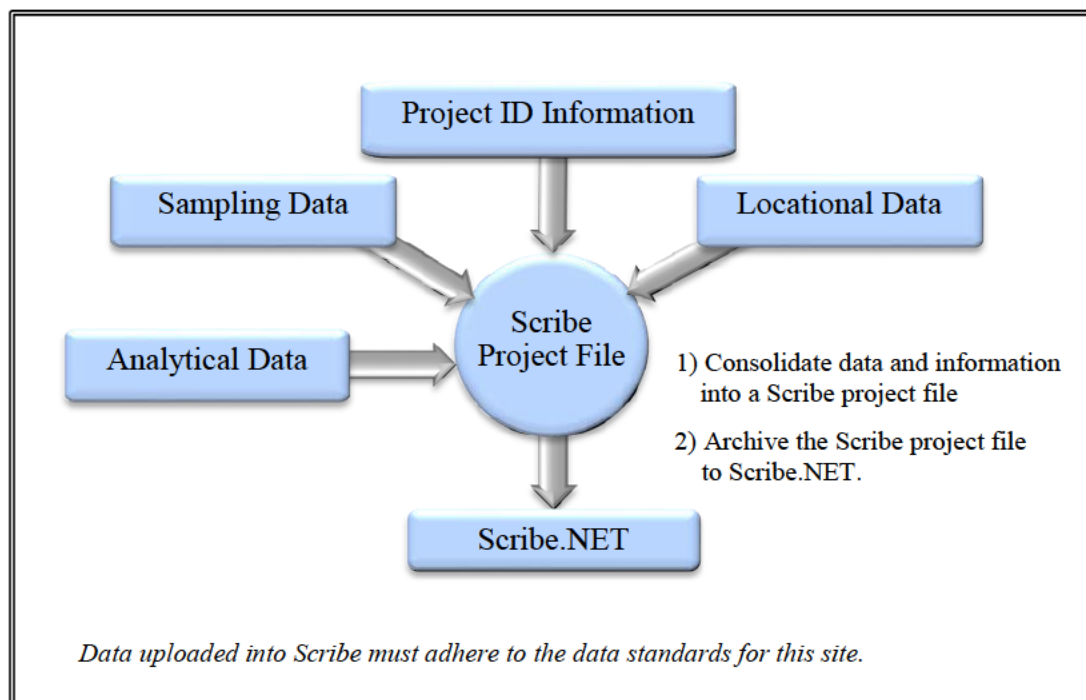
The following types of sample collection activities may be completed as specified in each respective EPA-approved sampling plan submitted by performing parties:

- Surface sediment sampling
- Fish tissue sampling
- Surface water sampling
- Sediment coring
- Soil sampling
- Porewater sampling

2.0 Data Management

Effective data management among the Portland Harbor performing parties relies upon delivery of data to a central repository using a common data management platform. The platform selected for the PHSS is Scribe, and the repository is the Region 10 subscription to Scribe.NET. Although individual performing parties may have diverse data management systems, the Scribe software and Scribe.NET repository is required for consolidation and access to project information, sampling data, and applicable locational data for each sampling activity. For many projects Scribe will already be in use for managing environmental samples. In those cases, the same Scribe project files can be used to document the project information, receive the sampling data, and publish the complete set of information to Scribe.NET. A simplified data flow for the Scribe data management process is illustrated on Figure 1. The Scribe Project ID is required for each data set and is provided by the EPA Scribe.NET Data Coordinator. Sampling Data comprises sample nomenclature identification, temporal data, and details specific to the sampling event. Locational Data comprise the spatial information for each sample.

Independent of the Scribe and Scribe.NET repository, a site-wide repository is being developed by the State of Oregon to capture and provide access to comprehensive Portland Harbor data. Appendix C provides a conceptual model depicting the comprehensive approach to the management of data derived from previous and future studies as a part of the PHSS.

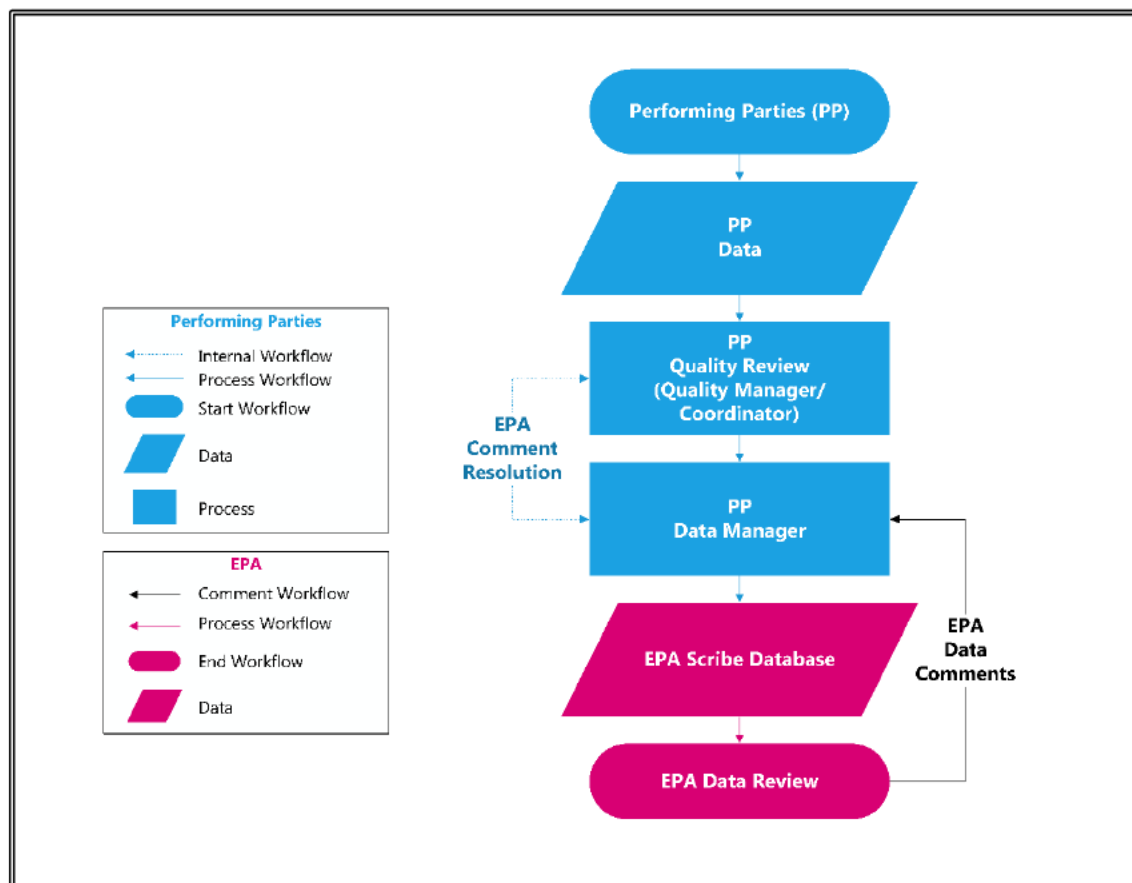
Figure 1. Data Flow and Archiving for Scribe

2.1 Data Management Platform

The data management platform selected for the PHSS is Scribe. This software is based on a Microsoft database and is available for download (www.ert.org). In addition to the Scribe software, an EPA Region 10 template, which contains the required data fields, data lists, and validation criteria, needs to be downloaded and installed. For each project, a Scribe project file is created. Here, the project-specific information is entered, which identifies both the performing party or group conducting the sampling and the type of sampling activity performed.

2.2 Roles and Responsibilities

The major roles and responsibilities for data management are identified for the performing parties in addition to the role of the data manager within each organization. The performing parties will be responsible for their own in-house data management but will designate a “data manager” who will fill the role as defined within this DMP. Figure 2 provides an overview of the workflow between EPA Region 10 and the performing parties.

Figure 2. Process Workflow

2.2.1 Performing Parties

EPA Region 10 has the primary responsibility for oversight of all sampling and monitoring activities. EPA has identified the minimal data elements and data delivery requirements that would allow it to achieve its oversight goals and share data among the other stakeholders, performing parties, and community groups. Each of the performing parties is responsible for collecting the necessary data elements covered under their respective sampling activity as approved by EPA, and providing that information to EPA by submitting electronic data deliverables (EDD's) or entering or uploading the information into a Scribe project file, and publishing (archiving) the complete file to Scribe.NET. Coordination with EPA and the Oregon Department of Environmental Quality (ODEQ) is required to ensure data requirements for a sampling event are met. To accomplish this task on a project-specific basis, the performing party will need:

- DMPs to cover their respective sampling activities
- A data manager designated to complete the Scribe project file or EDD's

Details regarding the roles and responsibilities of the data manager are provided in the following section.

2.2.2 Data Manager

Each of the performing parties will need to designate a data manager to create the EDD submittals or create and manage the Scribe project file and upload the file to Scribe.NET. Regardless of the

data management system each performing party utilizes, a Scribe EDD or Scribe project file is required for consolidation and archiving of the project data to a designated national server. The major responsibilities of the data manager are:

- Creation of EDD submittals or the Creation of the Scribe project file
- Coordination with EPA and/or ODEQ regarding all data matters.
- Participation in the Portland Harbor data management coordination calls for ongoing discussion and updates or suggested revisions to this DMP

Designation and training for the data manager can be coordinated with the EPA's Regional Scribe.NET Data Coordinator if direct use of Scribe project files is planned. Web training sessions are also available from the EPA Emergency Response Team (ERT) on a regular basis. To begin, the data manager will need to go to the ERT website (www.ert.org) and download on to their computer:

- Scribe (Version 3.9.4 or current)
- EPA Region 10 Scribe template

Once these have been installed, the EPA Region 10 template will need to be selected during the startup of Scribe after which it will become the default template for future projects. As a security measure, once a Scribe project file has been started, it stays locked to the originating computer until it has been relinquished by the data manager. Data and information can be uploaded into Scribe via an import wizard or hand entered through the user interface. During use, it is a recommended practice to regularly back up the Scribe project file to Scribe.NET to preserve the information in the event the originating computer is lost, stolen, or experiences a system failure.

It is anticipated that there will be no coordination with respect to the EPA regional laboratory program for any of the sampling events conducted by any performing party. Section 2.2.4 describes how contact may be made to discuss specific requirements regarding Scribe EDD submittals and/or Region 10 Scribe template.

2.2.3 EPA Remedial Project Managers

EPA's oversight of the performing parties at the Portland Harbor site resides with EPA's Superfund Remedial Project Managers (RPM). The RPM will work directly with the performing parties on the direction and type of environmental sampling activities conducted. This includes data quality objective development; approval of sampling plans; and acceptance of sampling reports, assessments, and data for entry into the agency's administrative record. Central to this role is the identification of critical data needs on each approved sampling activity at each sediment management area. In addition, the RPM will participate in the Portland Harbor data management calls and coordinate with the performing party's data manager for refinements to the DMP if needed.

2.2.4 EPA Regional Scribe.NET Data Coordinator

The EPA Scribe.NET Data Coordinator (to be determined) is the project's EPA Scribe data management point of contact and reviews all EPA Region 10 Scribe deliverables for adherence to the EPA Region 10 DMP.

As part of the Portland Harbor data management coordination calls, the EPA Scribe.NET Data Coordinator will communicate with all performing parties regarding all data issues related to the management of data, Scribe EDD submittals and/or Scribe templates. The coordinator will also be the central point of contact for all technical information and database requirements related to the publishing of data to Scribe.NET.

2.3 Data Elements

As stated in Section 1.2.1, the plan identifies standard data elements for project identification information, environmental sampling data, and locational data. A complete list of data elements is provided in Appendix A and the valid values in Appendix B. Valid values are also provided as drop-down entry items in the Region 10 Scribe template/Portland Harbor template (when available). The following sections summarize the information in these appendices as they relate to the major data categories.

2.3.1 Project Identification Information

Project identifiers provide the necessary descriptive information (metadata) about the project. This allows data users an efficient way of categorizing and searching archived Scribe project files. A complete list of these data elements is found in Appendix A under the Site and Event Categories. Critical among these is identification of the project, monitoring organization, and type of monitoring activity (see Appendix A; Events – Activity data element). The Activity data type is a Superfund identifier that distinguishes environmental data by its intended programmatic use (i.e., Performance Evaluation, Remedial Action). The EPA Region 10 template contains a list of valid values for the Activity data element. It is important for the data manager to verify with the EPA RPM on the agreed upon Activity type during the project planning.

2.3.2 Environmental Sampling Data

The data elements for environmental sampling data allow for a complete identification of the analytical results such that the data may be subject to interpretation. This includes the identification of the sample matrix, sample collection time, measurement parameter, units of measurement, limits of detection, dates of analysis, analytical method, and so on. A complete list of these data elements and their descriptors are in Appendix A under the Samples and Lab Results categories. For data being uploaded into the Lab Results table of Scribe, the sample numbers must match up against the sample numbers that are already loaded into the Samples table.

2.3.3 Locational Data

The locational data establish the spatial representativeness of the environmental sample and are critical for data analysis. These include latitude, longitude, datum, elevation, and geomethod for sample collection points. Additional spatial identifiers for water monitoring (e.g., hydrologic unit codes [HUCs]) have been added for this site as these were identified as required geospatial identifiers by EPA. Valid values for the HUCs have been incorporated into the Region 10 template. A complete list of the locational data elements is in Appendix A under the Location and Samples categories.

2.4 Data Repository

The repository for archiving and retrieving Scribe project files is Scribe.NET. This repository resides within a national server maintained by ERT and is accessed directly from Scribe. For each project file, a unique ID is assigned at the time the file is first published to Scribe.NET. Access to the archived Scribe project file can be granted to other stakeholders, performing parties, and groups upon submitting a request to ERT; however, the repository files can only be updated from the computer that originated the file (unless the Scribe project file is relinquished by the originator in Scribe). Independent of the Scribe.NET repository, a site-wide repository being developed by the State of Oregon, will capture and provide access to comprehensive Portland Harbor site data.

3.0 Data Verification

If the Scribe project is initiated by a performing party for Portland Harbor, Scribe is configured to undergo a self-inspection of information as part of the data generation or file upload process. The Region 10 template contains auditor rules for verification of Scribe project files as they are uploaded to Scribe.NET. Close observance of these rules is the responsibility of the data manager.

4.0 Data Reporting Procedures

Final project information, sampling, and locational data are delivered to EPA in the form of an EDD or Scribe project file that has been fully populated and published to Scribe.NET. Upon completion of Scribe project file and upload to Scribe.NET, the performing party data manager notifies the EPA RPM and the EPA Scribe.NET Data Coordinator and provides the Scribe project ID number (assigned at the time of publishing to Scribe.NET) associated with the project for identification and access by EPA Region 10. The concept for integrating the analytical and locational data of Scribe.NET with the comprehensive data management repository is provided in Appendix C.

5.0 Data Access

Major stakeholder groups have been identified as those groups who are actively involved in site-wide planning and environmental data collection and sharing for the PHSS. The major stakeholders include signatories to the 2001 Memorandum of Understanding, performing parties, and community groups. These stakeholders are provided access to the Portland Harbor subscription of Scribe.NET. Data access is performed through Scribe. For all the Portland Harbor Scribe project files, each stakeholder, performing party, or primary community groups has data access rights and can download the Scribe project file from Scribe. Only the originating performing party data manager can update files that have been published to Scribe.NET. Appendix C provides a conceptual model depicting the comprehensive approach to the site-wide management and sharing of data derived from previous and future studies at the PHSS.

6.0 References

U.S. EPA. *Memorandum: Superfund Site Data Definitions and Recommended Practices*.
29 Nov. 2017.

This page intentionally left blank.

Appendix A – Required Data Elements

This page intentionally left blank.

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
CASE_NUMBER	Conditional	Unique ID assigned to groups of samples scheduled for analysis. Required for the Contract Lab Program. Possible values are determined by the CLP Contract.		Numeric / 5	5	Scribe / Lab
SAMPLE_DELIVERY_GROUP	Conditional	A set of samples scheduled under a Case Number (max = 20). Required for the Contract Lab Program.	Possible values are determined by the CLP Contract.	Text / 30	30	Lab
SAMPLE_ID	Conditional	EPA Sample Number. Required if data are reported by the Contract Lab Program.	Possible values are determined by the CLP Contract.	Text	25	Lab
CAS_NUMBER	Required	Chemical Abstracts Service (CAS) Registry Number for the chemical compound or element reported.	Possible values are determined by the CAS Registry.	Text	50	Lab
ANALYTE	Required	Nam of the chemical compound or element that was measured.	Name comprised of any combination of alpha-numeric values which may also contain hyphens and commas.	Text	60	Lab
FINAL_RESULT	Required	The final validated result of the chemical compound or element that was measured.	Numeric value which may be integer or decimal.	Numeric	8	Lab / Data Reviewer
RESULT_UNITS	Required	The units of measurement for the "Final Result" and "Lab Result".	Possible values are determined by the CLP Contract or the lab. Examples: ug/kg, mg/kg, ug/L, mg/L, ug	Text	20	Lab
FINAL_VALIDATION_QUALIFIER	Required	National Functional Guidelines Data Validation Qualifiers.	Possible values assigned by the National Functional Guidelines.	Text	10	EDM / Data Reviewer
DATA_VAL_LABEL	Required	EPA Data Validation Label Code from the “Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use”.	Possible values assigned by the guidance document.	Text	250	EDM / Data Reviewer

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
SAMPLE_ADJUSTED_CRQL	Required	The Contract Required Quantitation Limit (CRQL) or lab's Reporting Limit that has been adjusted for sample weight, sample volume, dilution, percent solids, etc.	Numeric value which may be integer or decimal.	Numeric	8	Lab
SAMPLE_ADJUSTED_MDL	Required	The Method Detection Limit (MDL) that has been adjusted for sample weight, sample volume, dilution, percent solids, etc.	Numeric value which may be integer or decimal.	Numeric	8	Lab
LAB_RESULT	Required	The analytical result as reported by the testing laboratory.	Numeric value which may be integer or decimal.	Numeric	8	Lab
LAB_QUALIFIERS	Required	Lab Applied Data Qualifier(s). Qualifer codes which describe certain aspects of data utility or quality (e.g., non-detect, estimated value, etc.).	Possible value defined by either the CLP Statement of Work or the lab.	Text	10	Lab
METHOD_CRQL	Required	Un-adjusted CRQL or Reporting Limit	Numeric value which may be integer or decimal.	Numeric	8	Lab
NONMOISTURE_SAMPLE_ADJUSTED_CRQL	NA	Contract Required Quantitation Limit (CRQL) or Reporting Limit that is adjusted for sample weight, volume, dilution, BUT NOT percent solids. Created by the data review program used to validate CLP data.	Numeric value which may be integer or decimal.	Numeric	8	EDM
CRQL_UNITS	Required	Sample Adjusted Contract Required Quantitation Limit (CRQL) or Reporting Limit Units of Measurement.	Possible values are determined by the CLP Contract or the lab. Examples: ug/kg, mg/kg, ug/L, mg/L, ug	Text	20	Lab
INSTRUMENT_MDL	Optional	Instrument Detection Limit (MDL) that is not adjusted for sample mass/volume or percent moisture (solids).	Numeric value which may be integer or decimal.	Numeric	8	Lab
NONMOISTURE_SAMPLE_ADJUSTED_MDL	NA	Method Detection Limit (MDL) that is adjusted for sample weight, volume, dilution, BUT NOT percent solids. Created by the data review program used to validate CLP data.	Numeric value which may be integer or decimal.	Numeric	8	EDM
MDL_UNITS	Required	MDL Measurement Units	Possible values are determined by the CLP Contract or the lab. Examples: ug/kg, mg/kg, ug/L, mg/L, ug	Text	20	Lab

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
PERCENT_SOLIDS	Required	The Percent Solids for soils and sediments. Used to determine the dry weight basis of the chemical analyses.	Reported as a "Percent".	Numeric	8	Lab
PERCENT_MOISTURE	Required	The Percent Moisture content for soils or sediments. Used to determine the dry weight basis of the chemical analyses.	Reported as a "Percent".	Numeric	8	Lab
DILUTION_FACTOR	Required	Dilution Factor applied to the digest or extract. The dilution factor is only applied when the laboratory has diluted the extract or digest due to a high concentration of analyte(s).	Integer values e.g., 1, 2, 3, etc.	Numeric	8	Lab
ANALYSIS_FRACTION	Required	Identifies the type of analysis fraction or method category of the analysis.	Possible values determined by the CLP Contract or reporting Lab.	Text	100	Lab
ANALYSIS_LEVEL	Conditional	The concentration range or level performed by the lab for the analytical methods.	Possible values are determined by the CLP Contract. Examples: trace, low, med	Text	15	Lab
REPORTING_BASIS	Required	Indicates whether the results were adjusted due to the moisture content of the sample.	For Water samples = WET, For Soil and Sediment samples = DRY or WET depending upon whether moisture correction was applied.	Text	10	Lab
SAMPLE_DATE_TIME	Required	The Date & Time of Sample Collection	For all field samples (including Field Blank and Performance Evaluation samples) = MM/DD/YYYY HH:MM:SS	Date/Time	20	Scribe

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
DATE_SHIPPED	Required	Date of Sample Shipment.	<div>For all field samples (including Field Blank and Performance Evaluation samples) = MM/DD/YYYY</div> <div>For Matrix Spike, Post-Digestion Spike, Duplicates, Matrix Spike Duplicate = Ship Date of associated Parent Sample</div>	Date	20	Scribe
DATE_TIME_RECEIVED	Required	Date & Time of Sample Receipt at Lab.	<div>For all field samples (including Field Blank and Performance Evaluation samples) = MM/DD/YYYY HH:MM:SS</div> <div>For Matrix Spike, Post-Digestion Spike, Duplicate, Matrix Spike Duplicate = Sample Receipt Date and Time of associated Parent Sample</div>	Date/Time	20	Lab

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
PREP_DATE_TIME	Required	Date & Time of Sample Digestion/Extraction.	For all laboratory samples = MM/DD/YYYY HH:MM:SS For Matrix Spike, Post-Digestion Spike, Duplicate, Matrix Spike Duplicate = Sample Receipt Date and Time of associated Parent Sample	Date/Time	20	Lab
ANALYSIS_DATE_TIME	Required	The Date & Time of Analysis of the sample digest or extract.	For all laboratory samples = MM/DD/YYYY HH:MM:SS	Date/Time	20	Lab
LAB_SAMPLE_TYPE	Required	Identifies types of samples as either "field" or specific lab QCbut does not identify field QC types. Required by the Contract Lab Program.	Possible values are determined by the CLP Contract or Reporting Lab. Examples: Field_Sample, Method_Blank, Matrix_Spike, Serial_Dilution, etc.	Text	40	Lab
SAMPLE_MATRIX	Required	Identifies the matrix type of soil, water, etc. as reported by the lab. Required by the Contract Lab Program.	Possible values are determined by the CLP Contract or reporting Lab. Examples: Water, Soil, Sediment, Wipe, Filter	Text	20	Lab
RESULT_COMMENT	Conditional	Concatenated result information (can be from FORM I Comment Field)	Comments are recorded in the field. Required if passed from the Scribe XML to the Lab.	Text	250	Scribe

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
LAB_NAME	Required	Laboratory Name (long name)	Possible values are determined by the CLP Contract or reporting Lab.	Text	50	Lab
LAB_CODE	Conditional	An abbreviated form of the Lab Name.	Possible values are determined by the CLP Contract. The abbreviated lab name is a code used for reporting.	Text	30	Lab
CONTRACT_NUMBER	Conditional	Laboratory Contract Number assigned under the CLP.	Possible values are determined by the CLP Contract or reporting Lab.	Text	30	Lab
METHOD_NUMBER_OR_CLP_SOW	Required	Identifies the analytical method reference number or statement of work.	Valid EPA or other reference methods or CLP SOW editions. Examples: ISM01.3, 6010, 8270, etc.	Text	100	Lab
MA_NUMBER	Conditional	The Modified Analysis (MA) Number is a tracking number used by the CLP for non-standard or altered methods.	Possible values are determined by the CLP Contract or reporting Lab.	Text	30	Lab
TR_COC_NUMBER	Required	The Traffic Report (TR) /Chain of Custody Form Number is a unique tracking number assigned to the COC.	Long segmented number separated by hyphens.	Text	30	Scribe
LAB_SAMPLE_ID	Conditional	Laboratory Sample ID (internal ID#). Labs issue their own sample IDs for internal sample tracking and reporting purposes.	Possible values are determined by the CLP Contract or reporting Lab.	Text	25	Lab
LAB_FILE_ID	Conditional	Laboratory File ID (Internal to the lab only)	Possible values are determined by the CLP Contract or reporting Lab.	Text	25	Lab
INSTRUMENT_ID	Conditional	Unique Instrument Identification Number	Possible values are determined by the CLP Contract or reporting Lab.	Text	25	Lab

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
SAMPLE_ALIQUOT	Required	The mass or volume of sample that removed for extraction or digestion.	Numeric value may be an integer or decimal.	Numeric	8	Lab
SAMPLE_ALIQUOT_UNITS	Required	The units of measurement for the mass or volume of sample that removed for extraction or digestion.	Examples: "g" for grams, "mL" for milliliters.	Text	20	Lab
FINAL_VOLUME	Required	The final volume of the sample Digest or Extract.	Numeric value may be an integer or decimal.	Numeric	8	Lab
FINAL_VOLUME_UNITS	Required	Volume of Sample Digest /Extract Units	For Organic: uL For Inorganic: mL	Text	20	Lab
SOIL_EXTRACT_VOLUME	Conditional	The volume of extract used for a Medium Level VOC soils analysis.	Numeric value may be an integer or decimal.	Numeric	8	Lab
SOIL_EXTRACT_VOLUME_UNITS	Conditional	Soil Extract Volume Units (Medium VOA)	For Organic (VOA): uL	Text	20	Lab
SOIL_ALIQUOT_VOLUME	Conditional	The volume of aliquot removed from the extract used for a Medium Level VOC soils analysis.	Numeric value may be an integer or decimal.	Numeric	8	Lab
SOIL_ALIQUOT_VOLUME_UNITS	Conditional	Soil Aliquot Volume Units (Medium VOA)	For Organic (VOA): uL	Text	20	Lab
PURGE_VOLUME	Conditional	For analysis of Volatile Organic Compounds, the volume of an aqueous sample that is used to "purge" the VOCs.	Numeric value may be an integer or decimal.	Numeric	8	Lab
PURGE_VOLUME_UNITS	Conditional	Purge Volume Units (VOA)	For Organic (VOA only): mL	Text	20	Lab
SPIKE_ADDED	Conditional	Amount Added for Lab Matrix Spike or Spike Duplicate sample or Laboratory Control Sample	Numeric value may be an integer or decimal.	Numeric	8	Lab
CONCENTRATED_EXTRACT_VOLUME	Conditional	Concentrated Extract Volume (SVOA/PEST/PCB)	Numeric value may be an integer or decimal.	Numeric	8	Lab

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
CONCENTRATED_EXTRACT_VOLUME_UNITS	Conditional	Concentrated Extract Volume Units (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): uL	Text	20	Lab
INJECTION_VOLUME	Conditional	The volume of extrac injected into the instrument. (SVOA/PEST/PCB)	Numeric value may be an integer or decimal.	Numeric	8	Lab
INJECTION_VOLUME_UNITS	Conditional	Injection Volume Units (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): uL	Text	20	Lab
PREPARATION_METHOD	Required	Type of Extraction for Organics or Digestion for Inorganics. "SONC" for sonication etc. (SVOA/PEST/PCB) of Organics and most relevant method digestion numbers for Inorganic.	Possible values are determined by the CLP Contract or reporting Lab. For Organic: Sonication, Soxhlet, Pressurized_Fluid , Liq_Liq, Liq_Membrane For Inorganic: 200.7, 200.8, 3050B, 3015A, 3051A, 7300, 7470A, 7471B, Midi-distillation, Micro-distillation	Text	100	Lab
GPC_CLEANUP	Conditional	Cleanup Type (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): Y or N	Text	20	Lab
GPC_FACTOR	Conditional	1.0 if no GPC, 2.0 if GPC is performed (SVOA/PEST/PCB)	"1.0 if no GPC, 2.0 if GPC is performed" derived from presence or absence of GPC value in CLEANUP_TYPE field	Numeric	8	Lab

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
DECANTED	Conditional	Identifies if the Lab decanted the sample in a Yes or No response. (SVOA/PEST/PCB)	Possible values are determined by the CLP Contract or reporting Lab. For Organic (SVOA, Pesticides, PCBs): Decanted or Not_Decanted	Text	20	Lab
PH	Conditional	The pH Determination of a soil or water sample. Reported in pH Units (SVOA/PEST/PCB, and Inorganic water samples)	Numeric value may be an integer or decimal.	Numeric	8	Lab
COLOR_BEFORE	Optional	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text		Lab
COLOR_AFTER	Optional	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text		Lab
CLARITY_BEFORE	Optional	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text		Lab
CLARITY_AFTER	Optional	Description of sample before & after digestion. Used in CLP Metals analysis of waters.	Possible values are determined by the CLP Contract or reporting Lab.	Text		Lab
TEXTURE	Optional	Description of sample. Used in CLP Metals analysis of soil/sediments.	Possible values are determined by the CLP Contract or reporting Lab.	Text		Lab
ARTIFACTS	Optional	Description of sample. Used in CLP Metals analysis of soil/sediments.	Possible values are determined by the CLP Contract or reporting Lab.	Text		Lab
COOLER_TEMP	Required	Recorded temperature of the sample cooler upon Receipt at the Lab.	Recorded in Degrees Celcius.	Numeric	8	Lab

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
SAMPLE_FRACTION	Conditional	Identifies the representativeness of a water sample due to any pretreatment (e.g., filtration at 0.45 micron).	"D" for dissolved (filtered at 0.45 micron), "F" for other filtered, "T" for total (unfiltered). If "F" is used then the filter size/type should be entered in the Result_Comment field.	Text	1	Scribe
METHOD_SPECIATION	Conditional	Part of a chemical characteristic (Nitrogen "As" ...)	Determined by the analytical method.	Text	30	Lab
SAMPLE_SUBMATRIX	Required	Scribe Matrix, expanded to include surface water, surface sediment etc. Use a custom list in Scribe	Examples: Air, AirIndoor, Sediment, Sediment Subsurface, Sediment Surface, Soil, Soil Surface, Soil Subsurface, SoilGas, Tissue, Waste, Waste SolidWaste, Waste LiquidWaste, Water, Water SurfaceWater, Water GroundWater, Water Potable, Water SepticEffluent, Water Stormwater	Text	40	Scribe

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
SAMPLING_REASON	Required	General program or technical reason for the study. Program reasons are specific and tie the data collection to more prescribed data uses.	Examples: Emergency Response, Site Investigation, Preliminary Assessment, Site Assessment, Remedial Investigation, Remedial Action	Text	30	Scribe
SAMPLE_COLLECTION_METHOD	Required	Sample Collection Method (i.e., Grab, Composite, Discrete Interval)	Examples: Grab, Composite, Discrete Interval	Text	30	Scribe
EPA_REGION	Required	The EPA Regional designation number	Valid Values: 1 - 10	Text	10	Scribe
STATION_LOCATION	Required	Station Location Codes	Determined by the project.	Text	50	Scribe
LOCATION_DESCRIPTION	Required	Further describes the Station Location.	Determined by the project.	Text	100	Scribe
SCRIBE_SAMPLE_NUMBER	Required	The Scribe / field sample number. This may be Scribe generated or a Regionally assigned number.	Possible value determined by the Scribe Project Manager or the Regional Sample Control Coordinator.	Text	50	Scribe
LOCATION_ZONE	Required	The type of area that is impacted by the sample location.	Examples: Lake, Land, River/Stream, Well	Text	25	Scribe
LATITUDE	Required	The geographic latitude where the sample was collected or field measurement was taken.	12 character decimal degrees. Decimal places should be carried out to a minimum of 6 places in order to ensure minimal accuracy.	Numeric	12	Scribe

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
LONGITUDE	Required	The geographic longitude where the sample was collected or field measurement was taken.	12 character decimal degrees (preceded by a negative sign for North America, -). Decimal places should be carried out to a minimum of 6 places in order to ensure minimal accuracy.	Numeric	12	Scribe
DATUM	Required	The horizontal coordinate system reference Datum name.	WGS84	Text	50	Scribe
GEOMETHOD	Required	The method used to determine latitude and longitude.	GPS, Survey	Text	30	Scribe
SURFACE_ELEVATION	Conditional	The determined elevation of a geographic point where the sample was collected or field measurement was taken. This is required for groundwater monitoring wells and where surface elevation data is needed for a project.	In feet or meters, need to provide for GW Wells that have been surveyed and not just GPS.	Numeric	8	Scribe
SURFACE_ELEVATION_UNITS	Conditional	The units of measurement for the surface elevation data. This is required when surface elevation measurements are reported.	meters, feet	Text	20	Scribe
SURFACE_ELEVATION_METHOD	Conditional	The method used to determine the surface elevation. This is required when surface elevation measurements are reported.	GPS, Survey	Text	30	Scribe
SURFACE_ELEVATION_DATUM	Conditional	The vertical control datum for the surface elevation measurement. This is required when surface elevation measurements are reported.	NAVD88	Text	50	Scribe
TOP_DEPTH	Conditional	Top depth of Sample Collection (for cores) or depth of sample collection for a monitoring well.	Numeric value may be an integer or decimal.	Numeric	8	Scribe
BOTTOM_DEPTH	Conditional	Depth To bottom of sample collection for a core sample.	Numeric value may be an integer or decimal.	Numeric	8	Scribe
TOP_DEPTH_UNITS	Conditional	Units of Sample Depth	Feet or meters	Text	20	Scribe
BOTTOM_DEPTH_UNITS	Conditional	Units of the Bottom Depth	Feet or meters	Text	20	Scribe
SAMPLER_NAME	Required	Sampler Name	Full name of the sampler.	Text	30	Scribe

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
SAMPLING_COMPANY_CONTACT	Required	Sampling Company Contact Name	Full name of the sampling contact. Person usually coordinates sample collection on behalf of the sampling company.	Text	50	Scribe
SAMPLING_COMPANY_NAME	Required	Sampling Company Name	Full name of the sampling company.	Text	50	Scribe
PROJECT_NAME	Required	Site Name / Project Name	Assigned by the Sample Control Coordinator.	Text	50	RSCC/EDM
SITE_PROJECT_CODE	Required	Regional Project Code	Assigned by the Sample Control Coordinator.	Text	50	RSCC/EDM
SITE_EVENT_ID	Required	EventID. Use to group data by sampling/monitoring events (i.e. EOC, Site Assessment) (Primary Key)	A unique ID used by Scribe.	Text	50	Scribe
STATE	Required	State where sample collection occurred. This field is populated in CLPSS during ASR entry	2 Character State Abbreviation	Text	20	RSCC/EDM
CITY	Required	City where sample collection occurred. This field is populated in CLPSS during ASR entry	Full City Name	Text	60	RSCC/EDM
CERCLIS	Required	CERLIS ID	The CERCLIS identification. Used only by the Superfund program.	Text	20	Scribe
SCRIBE_SITE_NUMBER	Required	Scribesite key (Primary Key)	A unique ID used by Scribe.	Text	12	Scribe
SCRIBE_NET_PROJECT_ID	Required	ScribeNetID Project ID	A unique ID used by Scribe.	Long Integer	4	Scribe
SCRIBE_SAMPLES_ID	Required	Scribe Database AutoGenerated Number	A unique ID used by Scribe.	Long Integer	4	Scribe
SAMPLE_TAG	Required	Container ID codes - autogenerated if left blank	A unique ID used by Scribe.	Text	15	Scribe
SCRIBE_COMMENT	Conditional	Comment field from Scribe	Filled in by sampler to denote special sample treatment or conditions. Required if the entry is filled in by Scribe.	Memo	65K+	Scribe

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
FIELD_SAMPLE_TYPE	Required	Distinguishes field samples from lab QC, field QC and other associated sample types.	Possible values used in the Scribe template. Example: "Field Sample", etc.	Text	30	Scribe
VERSION_CODE	NA	Reserved for use by another Region.				
DATA_PROVIDER	NA	Reserved for use by another Region.				
PARENT_SAMPLE_NAME	NA	Reserved for use by another Region.				
PARENT_SAMPLE_LOCATION	NA	Reserved for use by another Region.				
LAB_REPLICATE_TYPE	NA	Reserved for use by another Region.				
SAMPLE_SOURCE	NA	Reserved for use by another Region.				
ORGANIC_YN	NA	Reserved for use by another Region.				
PRESERVATIVE	NA	Reserved for use by another Region.				
TEST_BATCH_TYPE	NA	Reserved for use by another Region.				
PREP_BATCH_ID	NA	Reserved for use by another Region.				
ANALYSIS_TYPE	NA	Reserved for use by another Region.				
SAMPLE_ANALYSIS_LOCATION	NA	Reserved for use by another Region.				
COLUMN_ID	NA	Reserved for use by another Region.				
RUN_BATCH_ID	NA	Reserved for use by another Region.				
ANALYSIS_BATCH_ID	NA	Reserved for use by another Region.				
ANALYST_NAME	NA	Reserved for use by another Region.				
ANALYTE_TYPE	NA	Reserved for use by another Region.				
REPORTABLE_RESULT	NA	Reserved for use by another Region.				

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
DETECT_FLAG	NA	Reserved for use by another Region.				
TIC_RETENTION_TIME	NA	Reserved for use by another Region.				
TIC_RETENTION_TIME_UNITS	NA	Reserved for use by another Region.				
EXPECTED_VALUE	NA	Reserved for use by another Region.				
QC_ORIGINAL_CONC	NA	Reserved for use by another Region.				
QC_SPIKE_MEASURED	NA	Reserved for use by another Region.				
QC_SPIKE_RECOVERY	Required	Percent Recovery of lab QC types (matrix spikes, surrogates, etc).	Numbers are represented as "%".	Numeric	8	Lab
QC_DUP_ORIGINAL_CONC	NA	Reserved for use by another Region.				
QC_DUP_SPIKE_ADDED	NA	Reserved for use by another Region.				
QC_DUP_SPIKE_MEASURED	NA	Reserved for use by another Region.				
QC_DUP_SPIKE_RECOVERY	NA	Reserved for use by another Region.				
QC_RPD	NA	Reserved for use by another Region.				
QC_SPIKE_LCL	NA	Reserved for use by another Region.				
QC_SPIKE_UCL	NA	Reserved for use by another Region.				
QC_RPD_CL	NA	Reserved for use by another Region.				
QC_SPIKE_STATUS_FLAG	NA	Reserved for use by another Region.				
QC_DUP_SPIKE_STATUS_FLAG	NA	Reserved for use by another Region.				
QC_RPD_STATUS	NA	Reserved for use by another Region.				
SAMPLE_RUN	NA	Reserved for use by another Region.				
PARAMID	NA	Reserved for use by another Region.				

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin
PAR_VAL_UNCERT	NA	Reserved for use by another Region.				
RESULT_ERROR_DELTA	NA	Reserved for use by another Region.				
INTERPRETED_QUALIFIERS	NA	Reserved for use by another Region.				
SYS_LOC_CODE	NA	Reserved for use by another Region.				
TASK_CODE	NA	Reserved for use by another Region.				
COLLECTION_QUARTER	NA	Reserved for use by another Region.				
SAMPLE_CLASS	NA	Reserved for use by another Region.				
COMPOSITE_DESC	NA	Reserved for use by another Region.				
LEACH_LOT	NA	Reserved for use by another Region.				
LEACHATE_METHOD	NA	Reserved for use by another Region.				
LEACHATE_DATE	NA	Reserved for use by another Region.				
LEACHATE_TIME	NA	Reserved for use by another Region.				
RESP	NA	Reserved for use by another Region.				
CUSTOM_FIELD_1	NA	Reserved for use by another Region.				
CUSTOM_FIELD_2	NA	Reserved for use by another Region.				
CUSTOM_FIELD_3	NA	Reserved for use by another Region.				
COMMENT	NA	Reserved for use by another Region.				

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
Site.CaseNumber	N	In Scribe this is found in the "COC.CaseNumber" and "Site.CaseNumber" fields. In the xml file it is the Site.CaseNumber element. If not uploading this to the Lab Results table then no need to upload, correct?
LabResults.Lab_Batch_No	Y	Generated by the Lab.
SamplesTags.CLP_Samp_No LabResults.Sample_CLP_No	Y	Originates in Scribe in the "SamplesTags.CLP_Sample_No" field but is also uploaded into the "LabResults.Sample_CLP_No" field. Correct?
LabResults.Cas_No	Y	Generated by the Lab.
LabResults.Analyte	Y	Generated by the Lab.
LabResults.Result	Y	Generated by the Lab & verified by Data Reviewer. May be edited in EDM whereas the "Lab_Result" field below cannot be edited during data validation. The Final_Result field needs to be the mandatory reporting field for MEL and other labs.
LabResults.Result_Units	Y	Generated by the Lab.
LabResults.Result_Qualifier	Y	Generated by the EDM or Data Reviewer.
LabResults.QA_Comment	Y	Generated by the EDM or Data Reviewer. The Scribe LabResults Table doesn't have a designated field for the Data Validation Label. Because this is a recently required data element, we should update the table to address it.

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
LabResults.Quantitation_Limit	Y	Generated by the Lab.
LabResults.MDL	Y	Generated by the Lab.
	N	There's no data field for this in the LabResults Table. The result that passes validation will be considered the final result.
LabResults.Lab_Result_Qualifier	Y	Generated by the Lab.
LabResults.Reporting_Limit	Y	Generated by the Lab.
	N	There's no data field for this in the LabResults Table. Region 10 does not use this field.
LabResults.Quantitation_Limit_Units LabResults.Reporting_Limit_Units	Y	Generated by the Lab. The Quantitation and Reporting Limit data elements as we're applying them use the same units of measurement so this data element needs to be uploaded into two different fields.
	N	There's no data field for this in the LabResults Table.
	N	There's no data field for this in the LabResults Table. Region 10 does not use this field.
LabResults.MDL_Units	Y	Generated by the Lab.

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
LabResults.Percent_Solids	Y	Generated by the Lab.
LabResults.Percent_Moisture	Y	Generated by the Lab.
LabResults.Dilution_Factor	Y	Generated by the Lab.
LabResults.Analysis	Y	Generated by the Lab.
	N	There's no data field for this in the LabResults Table.
LabResults.Basis	Y	Generated by the Lab.
Samples.Sampleddate LabResults.Date_Collected	Y	Originates in Scribe in the "Samples.Sampleddate" field but is also uploaded into the "LabResults.Date_Collected" field. Correct? Need to make sure this isn't populated when the Samples.Sampleddate field is filled in. You know, the whole differential integrity-database thing.

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
COC.DateShipped	N	There's no data field for this in the LabResults Table and it already appears in the COC Table.
LabResults.Date_Received	Y	Generated by the Lab. Need to double check the date/time fields in the LabResults Table. The Scribe Table Defn. file shows the length of these fields to be "8" but we need them to be "20".

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
LabResults.Extracted	Y	Generated by the Lab.
LabResults.Analyzed	Y	Generated by the Lab.
LabResults.QC_Type	Y	Generated by the Lab. This data type uses Lab QC long names (e.g., "Laboratory_Control_Sample) and perfectly matches the data definition of the QC_Type data field. The previously identified Sample_Type_Code was only 10 characters long.
Samples.Matrix LabResults.Matrix_ID	Y	Generated by the Lab. CLP has it's definitions but does it also need to match up with the Samples.Matrix Scribe data field? I thought these were populated separately.
LabResults.Comments	Y	Generated by the Lab. For the CLP this was concatenated from the Form I comment field to provide information such as size fraction.

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
LabResults.Lab_Name	Y	There's no data field for this in the LabResults Table.
	N	There's no data field for this in the LabResults Table.
	N	There's no data field for this in the LabResults Table.
LabResults.Analytical_Method	Y	Generated by the Lab.
	N	There's no data field for this in the LabResults Table.
SamplesTags.COC LabResults.Lab_Coc_No	Y	Generated by the Lab.
LabResults.Lab_Samp_No	Y	Generated by the Lab.
	N	There's no data field for this in the LabResults Table.
	N	There's no data field for this in the LabResults Table.

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
LabResults.SubSample_Amount	Y	Generated by the Lab.
LabResults.SubSample_Amount_Unit	Y	Generated by the Lab.
LabResults.Final_Volume	Y	Generated by the Lab.
LabResults.Final_Volume_Unit	Y	Generated by the Lab.
	N	There's no data field for this in the LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
	N	There's no data field for this in the LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
	N	There's no data field for this in the LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
	N	There's no data field for this in the LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
LabResults.Final_Volume	Y	Generated by the Lab.
LabResults.Final_Volume_Unit	Y	Generated by the Lab.
	N	There's no data field for this in the LabResults Table.
	N	There's no data field for this in the LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
	N	There's no data field for this in the LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
	N	There's no data field for this in the LabResults Table.
	N	There's no data field for this in the LabResults Table.
LabResults.Extraction_Method	Y	Generated by the Lab.
	N	There's no data field for this in the LabResults Table.
	N	There's no data field for this in the LabResults Table.

[illegible]

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
LabResults.Total_Or_Dissolved	Y	Generated by the Lab.
	N	Generated by the Lab. There's no data field for this in the LabResults Table.
Samples.Matrix	N	Already in Scribe. No place for it in the LabResults Table.

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
Site.Site_Action	N	Already in Scribe. No place for it in the LabResults Table.
Samples.SampleCollection	N	Already in Scribe. No place for it in the LabResults Table.
Site.EPARegionNumber	N	Already in Scribe. No place for it in the LabResults Table.
Location.Location	N	Already in Scribe. No place for it in the LabResults Table.
Location.LocationDescription	N	Already in Scribe. No place for it in the LabResults Table.
Samples.Samp_No LabResults.Samp_No	Y	Originates in Scribe in the "Samples.Samp_No" field but is also uploaded into the "LabResults.Sample_CLP_No" field. Correct?
Location.LocationZone	N	Already in Scribe. No place for it in the LabResults Table.
Location.Latitude	N	Already in Scribe. No place for it in the LabResults Table.

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
Location.Longitude	N	Already in Scribe. No place for it in the LabResults Table.
Location.Datum	N	Already in Scribe. No place for it in the LabResults Table.
Location.GeoMethod	N	Already in Scribe. No place for it in the LabResults Table.
Location.Surf_Elev	N	Already in Scribe. No place for it in the LabResults Table.
Location.Surf_Units	N	Already in Scribe. No place for it in the LabResults Table.
Location.ElevMethod	N	Already in Scribe. No place for it in the LabResults Table.
Location.ElevDatum	N	Already in Scribe. No place for it in the LabResults Table.
Samples.Samp_Depth	N	Already in Scribe. No place for it in the LabResults Table.
Samples.Samp_Depth_To	N	Already in Scribe. No place for it in the LabResults Table.
Samples.Samp_Depth_Units	N	Already in Scribe. No place for it in the LabResults Table.
Samples.Samp_Depth_Units	N	Already in Scribe. No place for it in the LabResults Table.
Samples.Sampler	N	Already in Scribe. No place for it in the LabResults Table.

Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments / Questions
Site.CTRContact	N	Already in Scribe. No place for it in the LabResults Table.
Site.Contractor	N	Already in Scribe. No place for it in the LabResults Table.
Site.Site_Name	N	Already in Scribe. No place for it in the LabResults Table.
COC.ProjectCode	N	Already in Scribe. No place for it in the LabResults Table.
Events.EventID	N	Already in Scribe. No place for it in the LabResults Table.
Site.Area	N	Already in Scribe. No place for it in the LabResults Table.
Site.Area	N	Already in Scribe. No place for it in the LabResults Table.
Site.CERCLIS	N	Already in Scribe. No place for it in the LabResults Table.
Site.Site_No	N	Already in Scribe. No place for it in the LabResults Table.
Site.ScribeNetProjectID	N	Already in Scribe. No place for it in the LabResults Table.
Samples.SamplesID	N	Already in Scribe. No place for it in the LabResults Table.
SamplesTags.Tag	N	Already in Scribe. No place for it in the LabResults Table.
Samples.Remarks	N	Already in Scribe. No place for it in the LabResults Table.

[illegible]

[illegible]

Appendix B – Data Element Valid Values

This page intentionally left blank.

R10 Bunker Hill Valid Values

Category (Database Table)	Data Element (Database Field)
Events	Activity
Events	Activity
Events	QAPP_Approved
Events	QAPP_Approved
Events	QAPP_ApprovedBy
Events	QAPP_ApprovedBy
Location	CountryCode
Location	CountyCode
Location	Datum
Location	Datum
Location	Datum
Location	ElevDatum
Location	ElevDatum
Location	ElevDatum
Location	ElevDatum
Location	ElevMethod
Location	ElevMethod
Location	ElevMethod
Location	ElevMethod
Location	ElevMethod
Location	GeoMethod
Location	GeoMethod
Location	GeoMethod
Location	GeoMethod
Location	GeoMethod
Location	HorizAccuracyMeasureUnit
Location	HorizAccuracyMeasureUnit
Location	HucEightDigitCode
Location	HucTwelveDigitCode
Location	HucTwelveDigitCode
Location	HucTwelveDigitCode
Location	HucTwelveDigitCode
Location	HucTwelveDigitCode
Location	HucTwelveDigitCode
Location	HucTwelveDigitCode
Location	HucTwelveDigitCode
Location	HucTwelveDigitCode
Location	HucTwelveDigitCode
Location	HucTwelveDigitCode
Location	<Structuring of location (Site, subsite[by river mile], and SMA) will be determined with the EPA RPM> Developed as a part of the Portland Harbor Scribe Template.
Location	LocationZone
Location	LocationZone
Location	LocationZone
Location	LocationZone

R10 Bunker Hill Valid Values

[illegible]

R10 Bunker Hill Valid Values

[illegible]

R10 Bunker Hill Valid Values

[illegible]

R10 Bunker Hill Valid Values

[illegible]

R10 Bunker Hill Valid Values

[illegible]

R10 Bunker Hill Valid Values

[illegible]

R10 Bunker Hill Valid Values

[illegible]

R10 Bunker Hill Valid Values

[illegible]

R10 Bunker Hill Valid Values

[illegible]

R10 Bunker Hill Valid Values

[illegible]

R10 Bunker Hill Valid Values

Category (Database Table)	Data Element (Database Field)
LabResults	Analyte
LabResults	Analyte
LabResults	Analyte
LabResults	Analyte
LabResults	Analyte
LabResults	Analyte
LabResults	Analyte
LabResults	Analyte
LabResults	Analyte
LabResults	Analyte
LabResults	Analyte
LabResults	Analyte
LabResults	Analyte
LabResults	Result_Units
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Total_or_Dissolved
LabResults	Analytical_Method
LabResults	Basis
LabResults	Basis
LabResults	Lab_Name
LabResults	QA_Comment

R10 Bunker Hill Valid Values

Category (Database Table)	Data Element (Database Field)
LabResults	QA_Comment
LabResults	QA_Comment
LabResults	QA_Comment
LabResults	QA_Comment
LabResults	Result_Qualifier
LabResults	Result_Qualifier
LabResults	Result_Qualifier
LabResults	Result_Qualifier
LabResults	Result_Qualifier
LabResults	Result_Qualifier
LabResults	Validated
LabResults	Validated
LabResults	ValidationLevel
LabResults	ValidationLevel
LabResults	ValidationLevel
LabResults	ValidationLevel
LabResults	ValueType
LabResults	ValueType
LabResults	ValueType
LabResults	ValueType
LabResults	ValueType

R10 Bunker Hill Valid Values

Valid Value
Remedial Design
Remedial Design Oversight
Y
N
US EPA Region 10
ODEQ
US
051
NAD83
UNKWN
WGS84
NAVD88
NGVD29
OTHER
UNKWN
Altimetry
GPS
Interpolation
Other
Survey
GPS-Unspecified
Unknown
GPS
Interpolation
Survey
Ft
Meter
17090012
170900120201
170900120202
170900120301
170900120305
170900120304
170900120302
170900120303
170900120102
170900120104
170900120101
170900120103
Borehole
Canal Transport
Combined Sewer
Estuary

R10 Bunker Hill Valid Values

Valid Value
Facility Industrial
Facility Other
Lake
Land
Land Flood Plain
Landfill
Ocean
Other-Ground Water
Other-Seawater
Other-Surface Water
Other-Surface Water
Pond-Stormwater
Reservoir
River/Stream
River/Stream
Seep
Spring
Storm Sewer
Test Pit
Waste Pit
Waste Sewer
Well
Wetland Undifferentiated
OR
Lower Willamette
Pre-Design
Design
Air
Air Indoor
Asbestos
Biological
Benthic
Drinking Water
Dust
Filtered Water
Ground Water Dissolved
Ground Water Total
Habitat
Lab Sand
Liquid Waste
Porewater Dissolved
Porewater Total
Potable Water
Saline Water Dissolved
Saline Water Total
Sand
Sediment
Sediment <2mm

R10 Bunker Hill Valid Values

Valid Value
Sediment <63um
Sediment 125-250um
Sediment 63-125um
Sediment 63-250um
Sediment Bulk
Sediment Subsurface
Sediment Surface
Septic Effluent
Soil
Soil Gas
Soil Subsurface
Soil Surface
Solid Waste
Stormwater
Surface Water
Surface Water Dissolved
Surface Water Total
Tissue
Waste
Subsurface Soil/Sediment
Surface Soil/Sediment
Ft
Activity Trap
A-Frame Net
Anchor Box Dredge
Artificial Substrate
Backpack Electroshock
Beach Seine Net
Beam Trawl
Benthic Corer (Other)
Benthic Dredge (Other)
Benthic Grab (Other)
Birge Closing Net
Black Light Trap
Block Net
Boat-Mounted Electroshock
Bod Dredge
Bongo Net
Boomerang Corer
Boomerang Grab
Box Corer
Box Sampler
Brail
Bucket
Burrell Epibenthic Sled
Campbell Grab
Cast Net
Center Bag

R10 Bunker Hill Valid Values

Valid Value
Chain Dredge
Clam-Shell Grab
Clarke-Bumpus Net
Concussion
Creel Survey
Danish Seine Net
Dart Corer (Gravity)
D-Frame Net
DH-81
DH-95
Dietz-Lafond Grab
Dip Net
Draw Down
Drift Gill Net
Drilled Sampler
Drive Sampler (Generic)
Drop Net
Ekman Grab
Electric Seine
Electroshock (Other)
Emergence Trap
English Umbrella Net
Erwin Piston Corer
Ewing Gravity Corer
Experimental Brail
Experimental Gill Net
Fish Weir
Free Fall Grab
Fry Trap
Funnel Trap
Fyke Net
Glass Slide
Glass Slide Device
Gravity Corer (Generic)
Hand Corer
Herring Trawl
Hess Sampler
Hester-Dendy
Hook And Line
Hydraulic Grab
Hydroacoustics
Hydroplastic (PVC) Corer
Insect Trap
Isaacs-Kidd Trawl
Juday Trap
Kemmerer Bottle
Kick Net
Kullenberg Gravity Corer

R10 Bunker Hill Valid Values

Valid Value
Larval Light Fish Trap
Long Line
Marmap Neuston Net
Minnow Seine Net
Miscellaneous (Other)
Mochness Net
Modified Surber Sampler
MTD Net
Nansen Bottle
Natural Substrate
Net Vertical Tow (Other)
Net/Horizontal Tow (Other)
Net/Non Tow (Other)
Niskin Bottle
Norpac Net
Orange-Peel Grab
Original Surber Sampler
Other Toxicant
Otter Trawl
Pair Trawl
Pamatmat Multiple Quartz Corer
Peterson Grab
Petite Ponar Grab
Phleger Corer (Gravity)
Pipe Dredge
Piston Corer (Generic)
Plankton Net
Plexiglass Slide Device
Plexiglass Trap
Plummet Net
Polar Orga. Chem. Integrative Sampler
Ponar Grab
Pound Net
Pram Electroshock
Probe/Sensor
Pull Sled
Pump/Air Lift
Pump/Bailer
Pump/Centrifugal
Pump/Jet
Pump/Non-Submersible
Pump/Peristaltic
Pump/Piston
Pump/Rotary
Pump/Submersible
Pump/Turbine
Purse Seine Net
Push Net

R10 Bunker Hill Valid Values

Valid Value
Push Point Sampler
Radiello
Rectangular Net
Remotely Operated Vehicle
Rock Basket
Roller Frame Trawl
Rotenone
Roving Drop Net
Scoop Fish Grab
Sediment Trap
Seine Net
Semipermeable Membrane Device
Set (Passive) Gill Net
Shelby Tube
Ship Sea Chest
Shipek Grab
SHOVEL
Shrimp Trawl
Simple Conical Net
Single-Vessel Operated Tow Net
Smith-McIntire Grab
Sodium Cyanide
Spear/Gun
Spear/Hand
Spear/Hawaiian Sling
Split Spoon
Square-Mouth Net
Stainless Steel Spoon
Stationary Drop Net
Still Camera
Stop Net
Storm Water Sampler
Stovepipe Sampler
Stream-Side Electroshock
Suction Dredge
Summa
Surber Sampler
Syringe
Terminal Bag
Tile Plate
Tow Net
Towed Dredge
Trammel Net
Trap Net
Trap Substrate (Other)
Traveling Screen
Trot Line
T-Sampler

R10 Bunker Hill Valid Values

Valid Value
Tucker Net
Two-Vessel Operated Tow Net
Van Dorn Bottle
Van Veen Grab
Variable Mesh Gill Net
Vibrating Corer
Video Camera
Vinyl Tube
Visual Sighting
Water Bottle
Water Sampler (Other)
WBH-96
Whirl-pak bag
Wisconsin-Style Net
Yankee Trawl
Young Grab
<Performing Parties> Will be added as they are defined and organized into groups
Depth Integrated Sample
Field Duplicate
Field Msr/Obs
Field Sample
Incremental Sampling Horiz
Incremental Sampling Vert
QC Blank - Bottle/Preservative
QC Blank - Field
QC Blank - Filter
QC Blank - Rinsate/Equipment
QC Blank - Trip
Sample-Composite Without Parents
<To be determined from performing party site specific sampling plan>
1,1-Dichloroethane
1,1-Dichloroethene
1,1-Dichloroethylene
1,1,1-Trichloroethane
1,1,1,-Trichloroethane
1,1,2-Trichloroethane
Trichloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethane
1,2-Dibromoethane
Dibromoethane
1,2-Dichloroethane
Ethylene dichloride
1,2-Dichloropropane
Propylene dichloride
1,2,3-Trichloropropane
1,2,3,4,7,8-HxCDF
1,2,3,7,8-PeCDD

R10 Bunker Hill Valid Values

Valid Value
1,2,4-Trichlorobenzene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2-Butanone
Methyl Ethyl Ketone
2-Hexanone
2-Chloroethylvinyl Ether
2,4,5-TP (Silvex)
2,2'-oxybis(1- Chloropropane)
2,3,4,6-Tetrachlorophenol
2,3,4,7,8-PeCDF
2,3,7,8-TCDF
2,3,7,8-TCDD-Dioxin
2,3,7,8-TCDD
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dichlorophenol
2,4-D
2,4-Dimethylphenol
Dinitrophenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
2-Chloronaphthalene
2-Chlorophenol
2-Methylnaphthalene
o-Cresol
2-Methylphenol
2-Nitroaniline
2-Nitrophenol
3,3'-Dichlorobenzidine
3,3'- Dichlorobenzidine
3-Nitroaniline
Methyl isobutyl ketone
4-Methyl-2-Pentanone
4-Bromophenyl- phenylether
4-Bromophenyl phenyl ether
3-Methyl-4-chlorophenol
4-Chloro-3-methylphenol
4-Chloro-3- methylphenol
4-Chloroaniline
4-Chlorophenyl phenyl ether
4-Chlorophenyl- phenyl ether
4-Methylphenol
p-Cresol
4-Nitroaniline
4-Nitrophenol

R10 Bunker Hill Valid Values

Valid Value
Acenaphthene
Acenaphthylene
Acrolein
Acrylonitrile
Aldrin
Aluminum
Aluminim
Anthracene
Antimony
Arsenic
Benzene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(ghi)perylene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Benzoic Acid
Benzyl alcohol
bis(2-Chloroethoxy) methane
Bis(2-chloroethyl) ether
bis(2-Chloroethyl)ether
bis(2-Ethylhexyl) phthalate
Di(2-ethylhexyl)phthalate
Bromochloromethane
Bromodichloromethane
Dichlorobromomethane
Tribromomethane
Bromoform
Bromomethane
Methyl Bromide
Butylbenzylphthalate
Butyl benzyl phthalate
Cadmium
Carbazole
Carbon Disulfide
Tetrachloromethane
Carbon Tetrachloride
Chlorobenzene, total
Chlorobenzene
Chlorobenzene (each)
Chlorodibromomethane
Dibromochloromethane
Chloroethane
Chloroform
Methyl Chloride
Chloromethane
Chromium

R10 Bunker Hill Valid Values

Valid Value
Chrysene
cis-1,2-Dichloroethylene
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Copper
Cyanide
Cyanide, free (total)
Dibenzo(a,h)anthracene
Dibenzo(a,h)- anthracene
Dibenzofuran
Dibromomethane
Dichlorodifluoromethane
DDD
4,4'-DDD
p,p'-DDD
p,p'-DDE
4,4'-DDE
EDDE
DDE
p,p'-DDT
Total DDT
4,4'-DDT
DDT
Dieldrin
Diethylphthalate
Dimethyl phthalate
Dimethylphthalate
Di-n-butyl phthalate
Di-n-butylphthalate
n-Butylphthalate
Di-n-octyl phthalate
Di-n-octylphthalate
Endosulfan I
a-Endosulfan
b-Endosulfan
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Endrin ketone
Ethyl benzene
Ethylbenzene
Fluoranthene
Fluorene
Heptachlor
Heptachlor Epoxide
Hexachlorobenzene
Hexachlorobutadiene

R10 Bunker Hill Valid Values

Valid Value
Hexachlorocyclopentadiene
Hexachloroethane
Indeno(1,2,3-c,d)pyrene
Indeno(1,2,3-cd)- pyrene
Iodomethane
Isophorone
Isopropylbenzene
Manganese
Mercury
Mercury, Inorganic
Methoxychlor
Methylmercury
2-Methyl-4,6-Dinitrophenol
4,6-Dinitro-2- methylphenol
4,6-Dinitro-2-methylphenol
Methylene chloride
Dichloromethane
Methyl tert-Butyl Ether
Naphthalene
Nickel
Nitrobenzene
N-Nitroso-di-n propylamine
N-Nitrosodi-n-propylamine
N-Nitrosodiphenylamine
N-Nitroso diphenylamine
Pentachlorophenol
Phenanthrene
Phenol
Pyrene
Selenium
Silver
Styrene
Tetrachloroethylene
Tetrachloroethene
Toluene
Toxaphene
1,2-Trans-Dichloroethylene
trans-1,2-Dichloroethylene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
trans-1,4-Dichloro-2-Butene
Tributyl tin
Trichloroethylene
Trichloroethene
Trichlorofluoromethane
Vanadium
Vinyl Acetate
Vinyl Chloride

R10 Bunker Hill Valid Values

Valid Value
Xylene
Xylene, total
Xylenes (total)
Zinc
alpha-BHC
a-BHC
beta-BHC
b-BHC
g-BHC
gamma-BHC (Lindane)
Lindane (g-BHC)
delta-BHC
d-BHC
<To be determined from performing party site specific sampling plan>
Total
Dissolved
NA
DI Leach
MWM (Meteoric Water Mobility Ext)
SPLP
Suspended
TCLP
Acid Soluble
Bioavailable
Comb Available
Extractable
Filterable
Fixed
Free Available
Inorganic
Non-filterable
Non-settleable
Non-volatile
Organic
Pot. Dissolved
Settleable
Supernate
Total Recoverable
Total Residual
Vapor
Volatile
WAD
<To be determined from performing party site specific sampling plan>
Wet
Dry
<To be determined from performing party site specific sampling plan>
Final

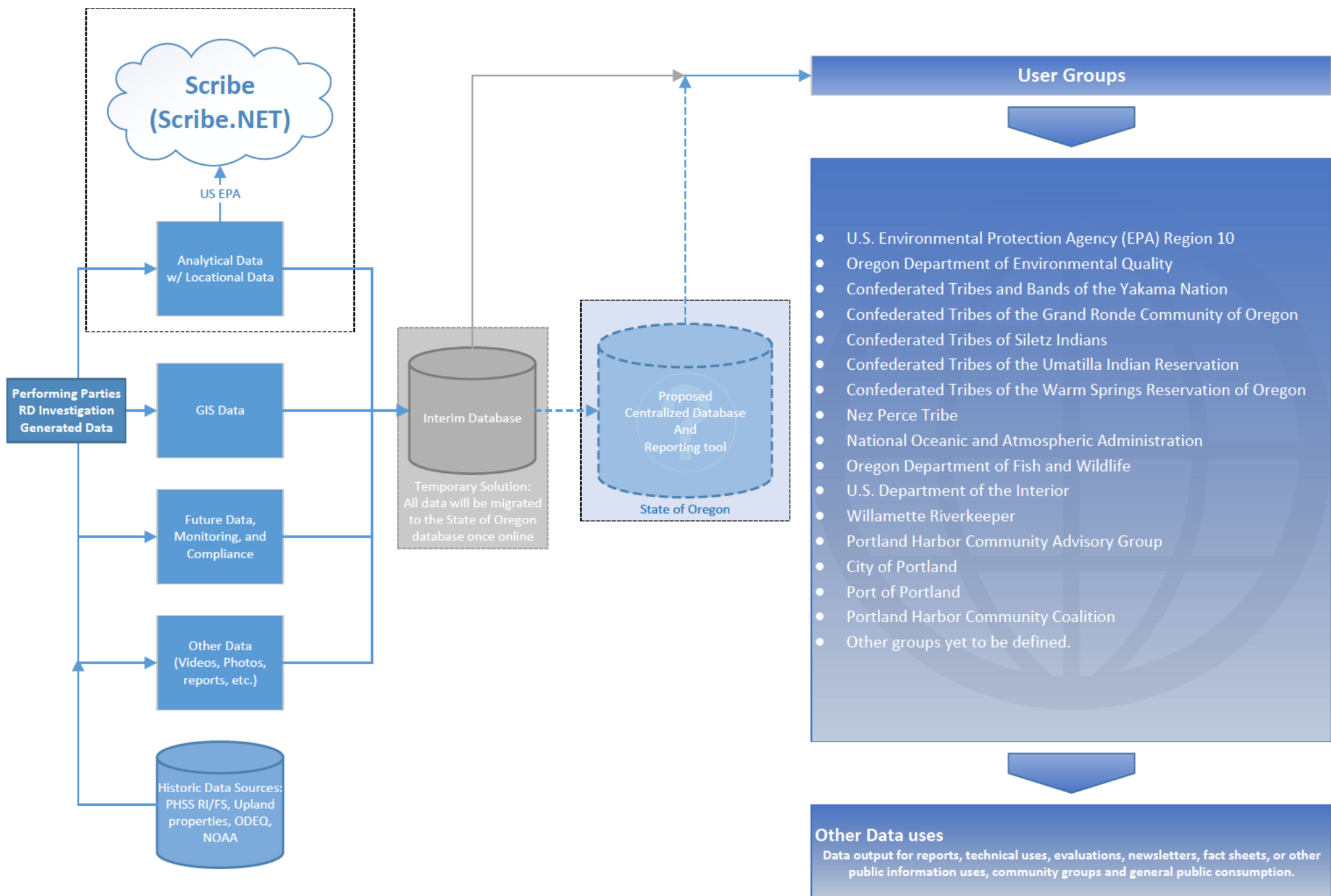
R10 Bunker Hill Valid Values

Valid Value
Accepted
Preliminary
Rejected
Validated
J
U
UJ
J-
J+
R
Yes
No
S2BVEM
S3VEM
S4VEM
NA
Actual
Calculated
Blank Corrected Calc
Control Adjusted
Estimated

Appendix C - Data Management Conceptual Model

This page intentionally left blank.

Data Management Conceptual Model



This page intentionally left blank.

Attachment 2

Template Sufficiency Assessment Summary Table

[Name] Project Area Sufficiency Assessment Summary

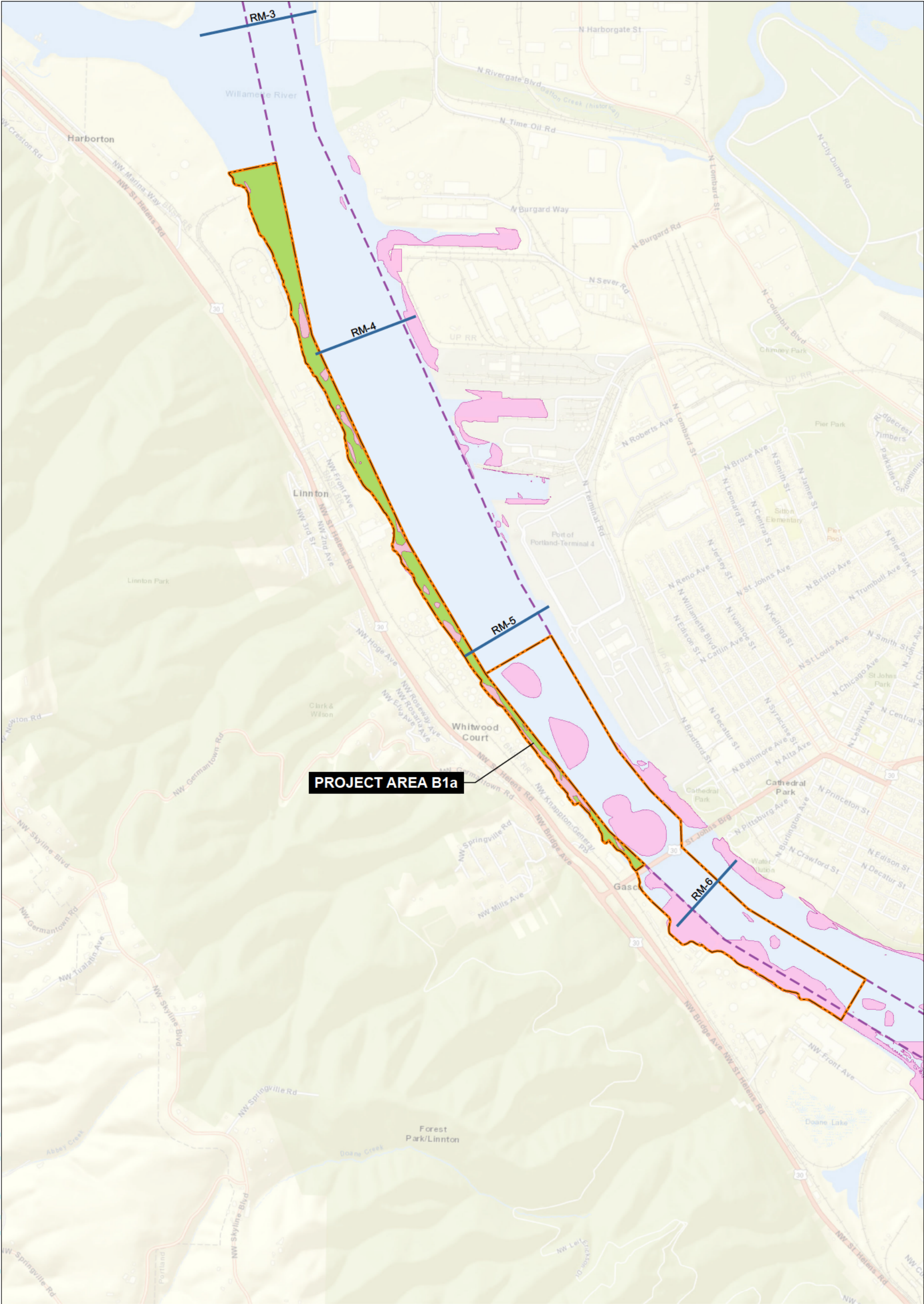
[date]

[illegible]






Appendix B

B1a Project Area Map

GIS FILE PATH: G:\34655_BP Portland Harbor\Global\GIS\MapProjects\2019_05\129769_003_0001_PROJECT_AREA_B1a.mxd — USER: dfm — LAST SAVED: 5/23/2019 12:52:50 PM

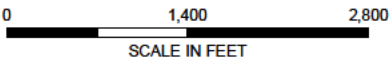


LEGEND

-  RIVER MILE
-  PROJECT AREA B1a
-  EPA PROJECT AREA B1
-  NAVIGATION CHANNEL
-  ROD SMA FOOTPRINT (RECORD OF DECISION, JAN 2017)

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. SMA = SEDIMENT MANAGEMENT AREA
3. BACKGROUND SOURCE: ESRI



**HALEY
ALDRICH**

PORTLAND HARBOR SUPERFUND SITE
PORTLAND, OREGON

PROJECT AREAS B1 AND B1a

JANUARY 2020

FIGURE 1

Appendix C

Phase 2 Disbursement Amendment Language

Pursuant to Paragraph 44 of this Settlement, following EPA's issuance of the Notice of Work Completion, Respondents may request that this Settlement be amended. If the conditions outlined in Paragraph 44 are met, EPA will agree to the amendment request, and the following will replace the current text of Paragraph 44:

43. Within 30 days after EPA's receipt of a Cost Summary and Certification, as defined by ¶ 45.b, or if EPA has requested additional information under ¶ 45.b or a revised Cost Summary and Certification under ¶ 45.c within 30 days after receipt of the additional information or revised Cost Summary and Certification, and subject to the conditions set forth in this Section, EPA shall disburse the funds from the B1a Disbursement Special Account at the completion of the following milestone, and in the amount set forth below:

Milestone	Disbursement of Funds
EPA issuance of Notice of Completion	\$440,000 ¹ from the B1a Disbursement Special Account, plus any Interest Earned on that amount

EPA shall disburse the funds for the Phase 2 Disbursement from the B1a Disbursement Special Account to Respondents in the following manner:

Bank Name: (b) (6)

ABA Number: (b) (6)

Account Name: (b) (6)

Account Number: (b) (6)

Reimbursement for Disbursement Phase 2 will only be provided for claims made on or before December 31, 2027.

If the Parties agree to amend the Settlement as provided above, the following language will also be added to the Settlement:

On (insert date) the Parties to this Settlement agreed to amend this Settlement, by replacing the original text of Paragraph XX with the agreed-upon revised text of Paragraph XX provided herein. The amendment shall be effective upon signature by the Superfund and Emergency Management Division, EPA Region 10.

¹ This amount is calculated by multiplying \$40,000 by the Eligible Acres as defined in this Settlement.