

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 10

_____)	
IN THE MATTER OF:)	
)	
Portland Harbor Superfund Site)	
Portland, Multnomah County, Oregon)	
)	CERCLA Docket No. 10-2019-0142
State of Oregon, acting by and through the)	
Oregon Department of State Lands; City of)	
Portland; Port of Portland)	
)	
Respondents)	
)	ADMINISTRATIVE SETTLEMENT
and the United States Maritime)	AGREEMENT AND ORDER ON
Administration; the United States Coast)	CONSENT FOR REMEDIAL DESIGN
Guard; the United States General Services)	AT WILLAMETTE COVE PROJECT
Administration; the United States)	AREA
Bonneville Power Administration; the)	
United States Department of Treasury; and)	
the United States Department of Defense)	
with respect to the Department of Navy)	
and the Army Corps of Engineers)	
)	
Settling Federal Agencies)	
)	
Proceeding Under Sections 104, 107, and)	
122 of the Comprehensive, Environmental)	
Response, Compensation, and Liability Act,)	
42 U.S.C. §§ 9604, 9607 and 9622)	
_____)	

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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 the State of Oregon, acting by and through the Department of State Lands (Department of State Lands or DSL), the City of Portland, and the Port of Portland (Respondents) as well as the United States Maritime Administration, the United States Coast Guard, the United States General Services Administration, the United States Bonneville Power Administration, the United States Department of Treasury, and the United States Department of Defense with respect to the Department of Navy and the Army Corps of Engineers (Settling Federal Agencies or SFAs) (collectively, EPA, Respondents and Settling Federal Agencies are “the Parties”). This Settlement provides for the performance of 100% Remedial Design (RD) of the Willamette Cove Project Area and the payment by Respondents and the United States on behalf of the SFAs of EPA Future Response Costs, ODEQ Response Costs, and Tribal Response Costs incurred at or in connection with the Work conducted under this Settlement related to the selected remedy for the in-river portion of the Portland Harbor Superfund Site (the Site) as defined in Section IV below.

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. 14-14C (Administrative Actions Through Consent Orders, Jan. 18, 2017) and 14-14D (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 Program Managers thereunder by EPA Delegation R10 14-14C 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 Superfund 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 trustee(s) to participate in the negotiation of this Settlement consistent with the process agreed to in the 2001 Memorandum of Understanding related to the Portland Harbor Superfund Site.

4. The Parties recognize that this Settlement has been negotiated in good faith and that the actions undertaken by Respondents and the payments made by the United States on behalf of the SFAs in accordance with this Settlement do not constitute an admission of any liability. Respondents and SFAs 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 and SFAs 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. Respondents and SFAs have agreed to share the costs of the RD to be conducted under this Settlement solely to facilitate the prompt initiation of that work. This cost-sharing does not represent an assessment by any Respondent or SFA of their liability, if any, for releases of hazardous substances within the Portland Harbor Superfund Site or the Willamette Cove Project Area or the equitable allocation of response costs associated therewith, as between Respondents and SFAs or otherwise.

II. PARTIES BOUND

5. This Settlement is binding upon EPA, the United States on behalf of the SFAs, 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 Respondents' responsibilities under this Settlement.

6. Respondents are jointly and severally liable for carrying out all activities required of Respondents by this Settlement. In the event of the insolvency or other failure of any Respondent to implement the requirements of Respondents under this Settlement, the remaining Respondents shall complete all such requirements. Respondents are not jointly and severally liable for the SFAs' requirements under this Settlement.

7. Each undersigned representative of Respondents and SFAs certifies that he or she is fully authorized to enter into the terms and conditions of this Settlement and to execute and legally bind Respondents and SFAs 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 Respondents 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 (a) to implement 100% remedial design (RD) at the Willamette Cove Project Area and (b) to complete a Sufficiency Assessment at the Crawford Street Area. The U.S. Environmental Protection Agency (EPA) signed a Record of Decision for the Portland Harbor Superfund Site (Site) on January 3, 2017 (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 information about how Site data will influence RD, remedial construction, and future maintenance of remediated areas. The ROD states that the actual technologies assigned during RD will be dependent on a number of characteristics and environmental conditions to ensure that the final constructed remedy is appropriate for 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) to implement RD and RA.

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:

“Adjacent Upland Site” is the area more particularly described as such in Appendix B.

“Affected Property” shall mean all real property at the Willamette Cove Project Area 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 within the Willamette Cove Project Area under this Settlement.

“City” shall mean the City of Portland, a municipal corporation.

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

“Crawford Street Area” shall mean for purposes of this Settlement, the uplands area including the river bank (which is defined as from top of the bank to the river) on that portion of the property located at 8424 N. Crawford Street in Portland, Oregon immediately adjacent to the Willamette Cove Project Area as described in Appendix B.

“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 XXVIII.

“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 March 20, 2018 through the date of the Notice of Completion pursuant to Section XXIX (Notice of Completion) reviewing or developing deliverables submitted pursuant to this Settlement, in overseeing implementation of the Work, or otherwise implementing, overseeing, or enforcing this Settlement. EPA Future

Response Costs may include but are not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Section IX (Property Requirements) (including, but not limited to, cost of attorney time and any monies paid to secure or enforce access or land, water, or other resource use restrictions, including, but not limited to, the amount of just compensation), ¶ 68 (Work Takeover), ¶ 18 (Emergencies and Releases), ¶ 91 (Access to Financial Assurance), ¶ 19 (Community Involvement Plan (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 ATSDR related to the Site, 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 XIV (Dispute Resolution) and all reasonable 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 10QR beginning March 20, 2018. Future Response Costs shall not include costs incurred by SFAs or costs incurred by any department, instrumentality or agency of the United States that are not related to overseeing the Work.

“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>.

“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 a Respondent, 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. ODEQ Response Costs are only those costs incurred by ODEQ to fulfill the requirements of this Settlement and pertaining to the Willamette Cove Project Area, including review of plans, reports, and assessments prepared pursuant to this Settlement; consulting and coordinating with EPA as needed to integrate work on the Adjacent Upland Site; and scoping, planning, and negotiating this Settlement, but excluding any costs related to natural resource damages assessments, liability or restoration. ODEQ 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.

Except as noted with respect to coordination and integration of the Work with remedial work on the Adjacent Upland Site, ODEQ Response Costs shall not include the costs of oversight or data gathered by ODEQ concerning any other response action, source control activity or Settlement associated with the Portland Harbor Superfund Site or the Adjacent Upland Site.

“Owner Respondent” shall mean any Respondent that owns or controls any 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, Respondents, and the Settling Federal Agencies.

“Port” shall mean the Port of Portland, a special district of the State of Oregon.

“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, and all attachments, amendments or modifications thereto. 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 in the area depicted as the Willamette Cove Project Area on the map attached as Appendix B.

“Respondents” shall mean the State of Oregon, acting by and through the Department of State Lands, the City of Portland including Prosper Portland, its urban renewal agency, and the Port of Portland.

“Respondents’ Future Response Costs” shall mean those necessary costs of response incurred by Respondents after the Effective Date that are consistent with the National Contingency Plan, as defined in 42 U.S.C. § 9601(25), and that arise out of or in connection with the Work, including without limitation EPA Future Response Costs, ODEQ Response Costs, and Tribal Response Costs.

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

“Settling Federal Agencies” or “SFAs” shall mean the United States Maritime Administration; the United States Coast Guard; the United States General Services Administration; the United States Bonneville Power Administration; the United States Department of Treasury; and the United States Department of Defense with respect to the Department of Navy and the Army Corps of Engineers, including their successor departments, agencies, or instrumentalities. The Department of Defense (DOD) shall mean the United States Department of Defense as described in 10 U.S.C. § 111 and its successor departments, agencies, or instrumentalities. If, after the Effective Date of this Settlement Agreement, EPA has sufficient evidence to consider additional federal agencies as Potentially Responsible Parties at the Site and finalizes another RD ASAO in which it includes such additional federal agencies, the Parties agree to amend Section IV (Definitions) and Section V (Findings of Fact) of this Settlement, to add those additional federal agencies to the definition of SFA under this Settlement and to add EPA’s factual findings regarding each additional federal agency’s liability at the Site.

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

“State” shall mean the State of Oregon, acting by and through the Department of State Lands.

“Statement of Work” or “SOW” shall mean the document describing the activities Respondents have agreed to 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 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. Tribal Response Costs are only those costs incurred to fulfill the requirements of this Settlement and pertaining to the Willamette Cove Project Area, including review of plans, reports, and assessments prepared pursuant to this Settlement; development of common positions and coordination among the Tribes; briefings to tribal leaders and tribal communities; and scoping and planning, and negotiating this Settlement and budgets, 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 associated with the Portland Harbor Superfund Site.

“United States” shall mean the United States of America and each department, agency, and instrumentality of the United States, including EPA, SFAs, 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.

“Willamette Cove Project Area” shall mean for purposes of this Settlement the active cleanup area designated on Figure 31c of the ROD between approximately River Mile 6 and River Mile 7 on the east side of the Willamette River, and more specifically depicted on the map attached as Appendix B. The Willamette Cove Project Area includes the river bank from top of the bank to the river. The Willamette Cove Project Area does not include the Crawford Street Area.

“Work” shall mean all activities and obligations Respondents are required to perform under this Settlement, except those required by Section XI (Record Retention).

V. FINDINGS OF FACT

11. Based on available information and investigation, EPA has found:

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 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 Superfund Site (the MOU) with the Oregon Department of Environmental Quality (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, resources or 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, 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 Willamette Cove Project Area. 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 area-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 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. The ROD allows approximately 1,774 acres of sediment to recover naturally. The ROD estimated the remedy would take 13 years to construct.

o. The Willamette Cove Project Area was historically used for a myriad of commercial and industrial operations, including ship dismantling and repair and wood product facility operations. There have been documented releases of COCs to the Site, including the Willamette Cove Project Area that have discharged or migrated to the Willamette River via contaminated groundwater, soils, riverbanks and storm water. In the 1990s, Metro, a Non-Settling Owner, purchased the Adjacent Upland Site and the portion of the area above Ordinary Low Water (OLW) for the purpose of creating a natural area. Although the upland area is currently vacant and not managed for human use, trespassers are known to enter the area.

p. The ROD requires active cleanup at the Willamette Cove Project Area, including dredging and capping. The main COCs found in the Willamette Cove Project Area include PCBs, PAHs, metals, and dioxins.

q. Respondent, the State of Oregon, acting by and through the Department of State Lands, currently owns or manages, and has owned or managed at the time of disposal of a hazardous substance at the Site, certain submerged lands held in trust by the State of Oregon within the Portland Harbor Superfund Site, including within the Willamette Cove Project Area.

r. Respondent, the City of Portland currently owns property, including city stormdrains and outfalls within the Portland Harbor Superfund Site. The City also, through its urban renewal agency, Prosper Portland (formerly Portland Development Commission) formerly owned upland property in or adjacent to the Willamette Cove Project Area and at the time of disposal of hazardous substances at the Site.

s. Respondent, the Port of Portland owned or managed property within the Portland Harbor Superfund Site and at the time of disposal of a hazardous substance at the Site. Specifically, from 1903 to 1953, the Port of Portland owned a portion of upland property adjacent to the Willamette Cove Project Area, known as the Central Parcel. It also owned dry docks that were located in the Willamette Cove Project Area adjacent to the Central Parcel. The Port developed the Central Parcel in 1903 in conjunction with construction of the St. Johns Dry

Docks and related infrastructure, which served as a public, common-use ship repair yard until the Port sold the Central Parcel and relocated the dry docks to Swan Island in 1953.

t. The Maritime Administration and its predecessor agencies arranged for disposal of hazardous substances at the Portland Harbor Superfund Site by contracting for the repair and dismantling of Maritime Administration-owned ships within the Site, including the repair of ships within the Willamette Cove Project Area.

u. The United States Coast Guard owns or operates on several properties within the Portland Harbor Superfund Site and has owned or operated on such properties at the time of disposal of a hazardous substance at the Site. Current and past operations on the property include ship repair and docking.

v. The United States General Services Administration, through its predecessor agencies, owned or operated on properties within the Site at the time of disposal of a hazardous substance at the Site.

w. The United States Bonneville Power Administration owns or operates on several properties within the Portland Harbor Superfund Site and has owned or operated on such properties at the time of disposal of a hazardous substance at the Site.

x. The United States Department of Treasury, through a predecessor agency, the United States Reconstruction Finance Corporation, owned or operated on several properties within the Portland Harbor Superfund Site at the time of disposal of a hazardous substance at the Site.

y. The DOD, through its Department of the Navy, currently owns or operates a naval reserve facility at the Portland Harbor Superfund Site. Additionally, the DOD through its Department of the Navy arranged for disposal of hazardous substances at the Site by contracting for the repair and dismantling of Navy-owned ships within the Site, including the repair of ships within the Willamette Cove Project Area.

z. The DOD, through the Army Corps of Engineers, owns or operates on several properties within the Portland Harbor Superfund Site and has owned or operated on such properties at the time of disposal of a hazardous substance at the Site. Specifically, the Army Corps of Engineers currently owns and operates on property known as the United States Government Moorings, a shipyard facility, located at 8010 Northwest St. Helens Road within the Site. Operations at the property include ship repair operations and fueling of ships.

12. Respondents and SFAs enter into this Agreement without admitting liability for releases to or within the Portland Harbor Superfund Site or the Willamette Cove Project Area.

VI. CONCLUSIONS OF LAW AND DETERMINATIONS

13. 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. Each Respondent and SFA is a “person” as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).
- d. Respondents and SFAs are alleged by EPA to be responsible parties under Section 107(a)(1), (2) and/or (3) of CERCLA, 42 U.S.C. § 9607(a)(1), (2), and/or (3).
- 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 RD required by 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.

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 for the Site, 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. The United States on behalf of the SFAs agrees to comply with those provisions that establish requirements for the SFAs.

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 shall designate and notify Respondents of EPA's Project Coordinator and Alternate Project Coordinator. EPA may designate other representatives, which may include its employees, contractors and/or consultants, to oversee the Work. EPA's Project Coordinator/Alternate 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 Willamette Cove Project Area 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 Coordinators shall meet with EPA's Project Coordinator at least quarterly.

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 10 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. **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 Willamette Cove 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 the attached SOW.

18. **Emergencies and Releases.** Respondents shall comply with the emergency and release response and reporting requirements under ¶ 3.13 (Emergency Response and Reporting) of the SOW. Subject to Section XVII (Covenants by EPA), nothing in this Settlement, including ¶ 3.13 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 Willamette Cove Project Area, 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 Willamette Cove Project Area. If, due to Respondents' failure to take appropriate response action under ¶ 3.13 of the SOW, EPA takes such action instead, Respondents shall reimburse EPA under Section XIII (Payment of Response Costs) for all costs of the response action that are not inconsistent with the National Contingency Plan as defined in 42 U.S.C. 9601.

19. **Community Involvement.** If requested by EPA, Respondents shall conduct community involvement activities regarding the Work under EPA's oversight 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 constitute EPA Future Response Costs to be reimbursed under Section XIII (Payments for Response Costs).

20. **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 consistent with the Statement of Purpose in Section III, then EPA may 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 XIV (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.

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. 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 from such Non-Settling Owner an agreement, enforceable by Respondents and the EPA, providing that such Non-Settling Owner, and Owner Respondent shall, with respect to the Affected Property: (i) provide EPA, the State, 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. 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 EPA;
- (3) Conducting investigations regarding contamination at or near the Willamette Cove Project Area;
- (4) Obtaining samples;
- (5) Assessing the need for, planning, implementing, or monitoring response actions;
- (6) Assessing implementation of quality assurance and quality control practices as defined in the approved quality assurance quality control plan as provided in the SOW;
- (7) Implementing the Work pursuant to the conditions set forth in ¶ 68 (Work Takeover);

(8) Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Respondents or their agents, consistent with Section X (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 needed to accomplish the Work.

22. **Best Efforts.** As used in this Section, "best efforts" means the efforts that a reasonable person in the position of Respondents would use 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 EPA and the United States Department of Justice 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 XIII (Payment of Response Costs).

23. 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.

24. **Notice to Successors-in-Title.** Owner Respondent shall, at least 60 days prior to Transferring its Affected Property: (a) Notify the proposed transferee that EPA has determined that RD must be performed at the Willamette Cove Project Area, that potentially responsible parties have entered into an Administrative Settlement and Order on Consent requiring completion of such RD (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. The Department of State Lands may satisfy the requirements in ¶ 24 (a) and (b) by providing transferee with notice in or with a DSL-issued use authorization that constitutes a "Transfer" under this provision and by providing EPA both the name and address of the transferee and a copy of the above notice.

25. 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.

X. ACCESS TO INFORMATION

26. 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 this Settlement, 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. Respondents will provide to the U.S. Department of Justice on behalf of the SFAs upon request any documents described in this paragraph.

27. Privileged and Protected Claims

a. Respondents or SFAs may assert that 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 ¶ 27.b, and except as provided in ¶ 27.c.

b. If Respondents or SFAs 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 or SFAs 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 or SFAs may make no claim of privilege or protection regarding: (1) any data regarding the Willamette Cove Project Area, including, but not limited to, all sampling, analytical, monitoring, hydrogeological, scientific, chemical, radiological, or engineering data, or the portion of any other Record that evidences conditions at or around the Willamette Cove Project Area; or (2) the portion of any Record that Respondents are required to create or generate pursuant to this Settlement.

28. **Business Confidential Claims.** Respondents may assert that all or part of a Record provided to EPA under this Section or Section XI (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.

29. 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.

XI. RECORD RETENTION

30. 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 their liability under CERCLA with respect to the Site, provided, however, that Respondents who are potentially liable as owners or operators of the Willamette Cove Project Area and upland source properties must retain, in addition, all Records that relate to the liability of any other person under CERCLA with respect to the Willamette Cove Project Area and upland source properties. 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 their possession or control or that come into their 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.

31. 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 ¶ 27 (Privileged and Protected Claims), Respondents shall deliver any such Records to EPA.

32. 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.

33. The United States on behalf of the SFAs acknowledges that each SFA (1) is subject to all applicable federal record retention laws, regulations and policies; and (2) has certified that it has fully complied with those record retention policies and any and all EPA requests for information regarding the Site pursuant to Section 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 applicable state law.

XII. 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 XV (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.

XIII. PAYMENT OF RESPONSE COSTS

37. Payments by the United States on behalf of the SFAs

a. **Payment to Respondents.** As soon as reasonably practicable after the Effective Date, the United States, on behalf of the SFAs, shall deposit \$1,512,175 ("Initial Payment"), which represents 25% of 75% of the current estimated cost of the Work into an escrow account established by Respondents, in partial payment of Respondents' Future Response Costs, by Automated Clearing House (ACH) Electronic Funds Transfer in accordance with instructions provided by Respondents.

b. Additional Payments to Respondents

(1) If the cost of the Work exceeds \$6,048,699 (75% of the current estimated cost of the Work), then the United States, on behalf of the SFAs, shall pay, as soon as reasonably practicable, 25% of the costs incurred to complete the Work ("Additional Response Costs") that are consistent with the NCP, less any disputed amounts as described below.

(2) Respondents shall submit a claim for reimbursement of Additional Response Costs ("Invoice") no more than quarterly to the Section Chief of the Environmental Defense Section of the United States Department of Justice for 25% of Additional Response Costs.

Respondents shall include with the Invoice a statement of costs incurred by Respondents during the period covered by the Invoice and sufficient documentation to allow verification of the accuracy of the costs claimed (for example, paid contractor invoices and copies of any other deliverables), as well as proof of payment of all of the costs included in the Invoice and certification under penalty of law that such costs were properly incurred and consistent with Section 107(a)(4)(B) of CERCLA, 42 U.S.C. § 9607(a)(4)(B), and this Settlement. Respondents' final Invoice shall be submitted within 120 days of Respondents' receipt of the final statement of EPA Future Costs, ODEQ Response Costs, or Tribal Response Costs under this Settlement (as delivered or after resolution of any contested Response Costs through dispute resolution under Paragraph 40 or under Respondents' separate agreement as provided in Paragraphs 41 or 42, whichever is later.

(3) Upon receipt of the Invoice sent pursuant to Paragraph 37.b.(2) above, the United States, on behalf of the Settling Federal Agencies, shall have sixty (60) days to review the Invoice. Within sixty (60) days of receipt of the Invoice and accompanying documentation, the United States, on behalf of the SFAs, may object, in writing, and said objection shall be sent to the Respondents pursuant to Paragraph 37.e. below. Any such objection shall identify the contested costs and the basis for objection. In the event of an objection, the United States, on behalf of Settling Federal Agencies shall, within sixty (60) days of transmitting the objection, reimburse the Respondents for Settling Federal Agencies' share of any uncontested Invoice or uncontested costs that are identified on an Invoice. If the United States, on behalf of the SFAs, does not object to an Invoice or certain costs identified in an invoice within sixty (60) days, then payment is due to Respondents within one hundred twenty (120) days after receipt of the Invoice.

c. **Effect of Payment.** Payment by the SFAs, of 25% of Respondents' Future Response Costs, does not reflect the United States' assessment of Settling Federal Agencies' liability, if any, for releases of hazardous substances within the Portland Harbor Superfund Site or the Willamette Cove Project Area, but instead is intended to completely resolve any liability of Settling Federal Agencies with regard to the Work. The SFAs have agreed to this allocation solely to allow for prompt implementation of the RD pursuant to this Settlement. The allocation of costs to the SFAs, for the purpose of this Settlement is without prejudice to any issue of liability of the SFAs for such further response action(s) for releases at or within the Portland Harbor Superfund Site or the Willamette Cove Project Area as may be required or to the allocation of costs among the Parties (and other parties) in a future agreement or proceeding.

d. **Resolution of Disputes Between Respondents and Settling Federal Agencies.** In the event the SFAs object to any Invoice as described in Paragraph 37.b.(3) above,

Respondents and the SFAs agree to participate in informal negotiations to resolve the dispute. The period for informal negotiations shall be sixty (60) days from the date SFAs transmit its written objection pursuant to Paragraph 37.b.(3) above, and may be extended upon the mutual consent of Respondents and the SFAs. If informal negotiations are successful, the United States, on behalf of the SFAs, shall make any payment due within ninety (90) days of the agreement reached in those negotiations. If informal negotiations are unsuccessful, Respondents and the SFAs may agree to non-binding mediation to resolve the matter. The reasonable costs and expenses of mediation shall be borne equally by the parties involved in the dispute, and each party shall bear its own attorneys' fees, expert fees, and other costs of its participation in such mediation. Paragraph 40 and Section XIV (Dispute Resolution) of this Settlement do not apply to disputes raised pursuant to this Paragraph 37. Any such dispute shall not excuse performance by the Respondent and Settling Federal Agencies of their obligations under this Settlement except for the SFAs payment for disputed Invoices to the extent that the SFAs prevail in a dispute.

e. Whenever, under the terms of this Paragraph 37, written notice is required to be given or a report or other document is required to be sent, it shall be directed to the individuals at the addresses specified below, unless those individuals or their successors have given notice of a change to the other Parties in writing. Any notice may be given by electronic mail, courier, overnight mail, hand delivery, or by U.S. Mail. All notices and submissions shall be considered effective upon receipt, unless otherwise provided.

As to Settling Federal Agencies:

Austin D. Saylor
United States Department of Justice
Environmental & Natural Resources Division
Environmental Defense Section
P.O. Box 7611
Washington, DC 20044
(202) 598-7867
austin.saylor@usdoj.gov

Laura J. Brown
United States Department of Justice
Environmental & Natural Resources Division
Environmental Defense Section
P.O. Box 7611
Washington, DC 20044
(202) 514-3376
laura.j.s.brown@usdoj.gov

As to Respondents:

City of Portland

Nanci Klinger
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1221 SW Fourth Avenue
Room 430
Portland, OR 97204
(503) 823-4047
nanci.klinger@portlandoregon.gov

Tina Richards
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State of Oregon

Lynne Perry
Natural Resources Section
Oregon Department of Justice
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Port of Portland

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f. The Parties to this Settlement recognize and acknowledge that the payment obligations of the United States by and on behalf of the SFAs under this Settlement can only be paid from appropriated funds legally available for such purpose. Nothing in this Settlement shall be interpreted or construed as a commitment or requirement that the United States or any SFA obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. § 1341, or any other applicable provision of law.

g. **Interest.** In the event that any payment required by Paragraph 37.a is not made within 120 days after the Effective Date, or within 120 days of an undisputed Invoice submitted pursuant to Paragraph 37.b., or within 120 days after resolution of a disputed Invoice as described in Paragraph 37.d., the United States by or on behalf of the SFAs shall pay Interest on the unpaid balance at the rate established pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), with such Interest commencing on the 121st day and continuing through the date of the payment.

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

a. **Periodic Bills.** On a periodic 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 on behalf of EPA. Respondents shall make all payments within 60 days after Respondents' receipt of each bill requiring payment, except as otherwise provided in ¶ 40 (Contesting EPA Future Response Costs).

b. **Payments.** Payments made pursuant to this Paragraph 38 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 name, the EPA Region, the account number 10QR, 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-C2-GL
St. Louis, MO 63101-1229

c. **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.

d. **Deposit of EPA Future Response Costs Payments.** The total amount to be paid by Respondents pursuant to ¶ 38.a (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 Portland Harbor Superfund Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund, provided, however, that EPA may deposit an EPA 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 Portland Harbor Superfund Site. Any decision by EPA to deposit an EPA 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.

39. **Interest.** In the event that any payment for EPA Future Response Costs is not made by the date required, Respondents shall pay Interest on the unpaid balance. The Interest on EPA 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 XVI (Stipulated Penalties).

40. **Contesting EPA Future Response Costs.** Respondents may initiate the procedures of Section XIV (Dispute Resolution) regarding payment of any EPA Future Response Costs billed under ¶ 38 (Payments for EPA Future Response Costs) if they determine that EPA has made a mathematical error or included a cost item that is not within the definition of EPA Future Response Costs, or if they believe 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 EPA 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 EPA Future Response Costs to EPA in the manner described in ¶ 38, 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 EPA Future Response Costs. Respondents shall send to the EPA Project Coordinator a copy of the transmittal letter and check paying the uncontested EPA 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 15 days after the resolution of the dispute, Respondents shall pay the sums due (with accrued interest) to EPA in the manner described in ¶ 38. 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 ¶ 38. 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 XIV (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondents' obligation to reimburse EPA for its EPA Future Response Costs.

41. 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").

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.

42. Payment of Tribal Response Costs

a. Respondents shall be responsible under this Settlement for funding Tribal Response Costs incurred pursuant to this Settlement that are not inconsistent with the NCP under the terms of one or more separate agreement(s) to be executed by Respondents and the Tribal Governments.

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 Paragraph shall be construed to limit the Tribal Governments' authority under any source other than this Settlement to seek funding from Respondents or any other party of any costs that the Tribal Governments may incur or may have incurred.

XIV. DISPUTE RESOLUTION

43. 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.

44. **Informal Dispute Resolution.** If Respondents object to any EPA action taken pursuant to this Settlement, including billings for EPA Future Response Costs, 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. 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.

45. **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 his/her designee 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.

46. 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 ¶ 40 (Contesting EPA Future Response Costs), as agreed by EPA.

47. Except as provided in ¶ 57, 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 XVI (Stipulated Penalties).

XV. FORCE MAJEURE

48. "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 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

49. 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 ¶ 48 and whether Respondents have exercised their best efforts under ¶ 48, EPA may, in its unreviewable discretion, excuse in writing Respondents’ failure to submit timely or complete notices under this Paragraph.

50. 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 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. 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.

51. If Respondents elect to invoke the dispute resolution procedures set forth in Section XIV (Dispute Resolution), they shall do so no later than 20 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 ¶¶ 48 and 49. 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.

52. 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.

XVI. STIPULATED PENALTIES

53. Respondents agree to be liable to EPA for stipulated penalties in the amounts set forth in ¶ 54.a and 55 for failure to comply with the requirements of this Settlement, unless excused under Section XV (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 or as otherwise agreed to by EPA pursuant to the terms of 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.

54. 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 ¶ 54.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 XIII (Payment of Response Costs).

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

(3) Establishment of an escrow account to hold any disputed Future Response Costs under ¶ 40 (Contesting Future Response Costs).

(4) Deliverables for 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.

55. **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 ¶ 54.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

56. In the event that EPA assumes performance of a portion or all of the Work pursuant to ¶ 68 (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 ¶¶ 68 (Work Takeover) and 91 (Access to Financial Assurance).

57. 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 45 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 in writing of any deficiency; (b) with respect to a decision by Regional Administrator, EPA Region 10 or his/her designee under SectionXIV XIV (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 his/her designee 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.

58. 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.

59. All penalties accruing under this Section shall be due and payable to EPA within 60 days after Respondents' receipt from EPA of a demand for payment of the penalties, unless

Respondents invoke the Dispute Resolution procedures under Section XIV (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 ¶ 38 (Payments for EPA Future Response Costs).

60. 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 ¶ 57 until the date of payment; and (b) if Respondents fail to timely invoke dispute resolution, Interest shall accrue from the date of demand under ¶ 59 until the date of payment. If Respondents fail to pay stipulated penalties and Interest when due, the United States on behalf of EPA may institute proceedings to collect the penalties and Interest.

61. 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.

62. 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 ¶ 68 (Work Takeover)..

63. 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.

XVII. COVENANTS BY EPA

64. **Covenants for Respondents by EPA.** Except as provided in Section XVIII (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 and EPA Future Response Costs paid. 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.

65. **Covenants for SFAs by EPA.** Except as provided in Section XVIII (Reservation of Rights by EPA), EPA covenants not to take administrative action against SFAs pursuant to Sections 106 and 107(a) of CERCLA for the Work performed and EPA Future Response Costs paid. This covenant shall take effect upon the Effective Date. This covenant is conditioned upon

the satisfactory performance by the United States on behalf of the SFAs of their obligations under this Settlement. EPA's covenant extends only to SFAs and does not extend to any other person.

XVIII. RESERVATIONS OF RIGHTS BY EPA

66. Except as specifically provided in this Settlement, nothing in this Settlement shall limit the power and authority of EPA or the United States on behalf of EPA 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 Portland Harbor Superfund Site. Further, 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 or SFAs in the future to perform additional activities pursuant to CERCLA or any other applicable law.

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

- a. liability for failure by Respondents or SFAs 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 EPA Future Response Costs under this Settlement.

68. Work Takeover

a. In the event EPA determines that Respondents: (1) have ceased implementation of any portion of the Work; (2) are seriously or 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 ¶ 68.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 ¶ 68.b. Funding of Work Takeover costs is addressed under ¶ 91 (Access to Financial Assurance).

c. Respondents may invoke the procedures set forth in ¶ 45 (Formal Dispute Resolution) to dispute EPA's implementation of a Work Takeover under ¶ 68.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 ¶ 68.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 ¶ 45 (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.

XIX. COVENANTS BY RESPONDENTS AND SFAS

69. **Covenants by Respondents.** Except for any claims that may arise if SFAs fail to complete their obligations under this Settlement Agreement, 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, Respondents' 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 relating to the Work, Future Response Costs, and this Settlement; or

c. any claim arising out of response actions at or in connection with the Willamette Cove Project Area, 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.

70. **Covenants by SFAs.** SFAs agree not to assert any direct or indirect claim for reimbursement from the EPA Hazardous Substance Superfund through CERCLA Sections 106(b)(2), 107, 111, 112, 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613 or any other provision of law with respect to the Work, Respondents' Future Response Costs, and this Settlement. This covenant does not preclude demand for reimbursement from the Superfund of costs incurred by a SFA in the performance of its duties (other than pursuant to this Settlement) as lead or support agency under the National Contingency Plan (40 C.F.R. Part 300).

71. 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 XVIII (Reservations of Rights by EPA) other than in ¶ 67.a (liability for failure to meet a requirement of the Settlement), ¶ 67.d (criminal liability), or ¶ 67.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.

72. 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).

73. 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.

XX. OTHER CLAIMS

74. 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.

75. Except as expressly provided in Section XIX (Covenants by Respondents and SFAs) and Section XVII (Covenants by EPA), nothing in this Settlement constitutes a satisfaction of or release from any claim or cause of action against Respondents, the United States, SFAs 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.

76. 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).

XXI. EFFECT OF SETTLEMENT/CONTRIBUTION

77. 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 provided in Section XIX (Covenants by Respondents and SFAs), 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 Portland Harbor Superfund 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).

78. The Parties agree that this Settlement constitutes an administrative settlement pursuant to which each Respondent and each SFA has, as of the Effective Date, resolved its obligations to conduct the Work and/or other 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 the Work.

79. The Parties further agree that this Settlement constitutes an administrative settlement pursuant to which each Respondent and each SFA 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).

80. Each Respondent shall, with respect to any suit or claim brought by it for matters related to this Settlement, notify EPA in writing no later than 60 days prior to the initiation of such suit or claim. Each Respondent also shall, with respect to any suit or claim brought against it for matters related to this Settlement, notify EPA in writing within 10 days after service of the complaint or claim upon it. In addition, each Respondent 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. This paragraph shall not apply to a suit or claim between a Respondent and its insurers or alleged insurers.

81. 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 XVII (Covenants by EPA).

XXII. INDEMNIFICATION

82. 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 representatives under Section 104(e) of CERCLA, 42 U.S.C. § 9604(e), and 40 C.F.R. 300.400(d)(3). Respondents, to the extent permitted by Article XI, § 7 of the Oregon Constitution and the Oregon Tort Claims Act (ORS 30.260 through 30.300), and their contractor(s) shall indemnify, save and hold harmless the United States, and its officials, agents, contractors, subcontractors, employees and representatives from any and all claims, causes of action, or costs incurred by the United States, including but not limited to attorney fees and other expenses of litigation and settlement, arising from or on account of, negligent or other wrongful acts or omissions of Respondents, or their commissioners, officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions 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 any Respondent in carrying out activities pursuant to this Settlement. No Respondent or any such contractor shall be considered an agent of the United States.

83. 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.

84. With the exception of any claims that may arise if SFAs fail to complete their obligations under this Settlement Agreement, 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 any one or more of Respondents and any person for performance of Work on or relating to the Willamette Cove 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 any one or more of Respondents and any person for performance of Work on or relating to the

Willamette Cove Project Area, including, but not limited to, claims on account of construction delays.

XXIII. INSURANCE

85. No later than 15 days before commencing any on-site Work, Respondents or their contractors or subcontractors shall secure, and shall maintain until so notified by EPA, commercial general liability insurance with limits of liability of \$1 million per occurrence, and automobile insurance with limits of liability of \$1 million per accident, 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. Respondents shall resubmit such certificates and copies of policies each year on the anniversary of the Effective Date. 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 (Willamette Cove Project Area), City, State and the EPA docket number for this action.

XXIV. FINANCIAL ASSURANCE

86. In order to ensure the completion of the Work, Respondents shall secure financial assurance, initially in the amount of \$8.1 million ("Estimated Cost of the Work"), for the benefit of EPA. The financial assurance must be 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 if they are 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 demonstration by a Respondent that it meets the financial test criteria of ¶ 88, 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

e. 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 ¶ 88.

87. Respondents shall, within 30 days of the Effective Date, obtain EPA’s approval of the form of Respondents’ financial assurance. Within 30 days of such approval, Respondents 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’s Project Coordinator.

88. Respondents seeking to provide financial assurance by means of a demonstration or guarantee under ¶ 86.d or 86.e, must, within 30 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/>.

89. Respondents providing financial assurance by means of a demonstration or guarantee under ¶ 86.d or 86.e must also:

a. Annually resubmit the documents described in ¶ 88.b within 90 days after the close of the affected Respondents' 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 ¶ 88.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.

90. Respondents shall diligently monitor the adequacy of the financial assurance. If any Respondent becomes aware of any information indicating that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, such Respondent shall notify EPA of such information within 7 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 affected Respondent 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 affected Respondent, 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 ¶ 92 (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.

91. Access to Financial Assurance

a. If EPA issues a notice of implementation of a Work Takeover under ¶ 68.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 ¶ 91.d.

b. If EPA is notified by the issuer of a financial assurance mechanism that it intends to cancel such mechanism, and the affected Respondent fails 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 ¶ 91.d.

c. If, upon issuance of a notice of implementation of a Work Takeover under ¶ 68.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 ¶ 86.d or 86.e, 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 ¶ 91 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 Portland Harbor Superfund Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

e. All EPA Work Takeover costs not paid under this ¶ 91 must be reimbursed as Future Response Costs under Section XIII (Payments for Response Costs).

92. 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 ¶ 87 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 45 days of receipt of Respondents' 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 XIV (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 ¶ 87.

93. 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; (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 XIV (Dispute Resolution).

XXV. INTEGRATION/APPENDICES

94. 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 Willamette Cove Project Area.

XXVI. MODIFICATION

95. The EPA Project Coordinator may modify any plan, schedule, or deliverable 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.

96. 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 ¶ 95.

97. 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.

XXVII. RESPONDENT STATE OF OREGON

98. Notwithstanding anything in this Settlement to the contrary, nothing in this Settlement is to be construed to permit or require Respondent State of Oregon to take any action that exceeds the scope of its authority, or to violate Article XI, § 7 of the Oregon Constitution or any other law regulating liabilities or monetary obligations.

XXVIII. EFFECTIVE DATE

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

XXIX. NOTICE OF COMPLETION

100. 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 ¶ 102, EPA will provide written notice to Respondents. Respondents may request that EPA make this determination.

101. 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 modify the RD Work Plan if appropriate to correct such deficiencies. Respondents

shall implement the modified and approved RD Work Plan and shall submit a modified Final 100% Report for EPA approval in accordance with the EPA notice. If approved, EPA will issue the Notice of Work Completion.

102. Issuance of the Notice of Work Completion does not affect the following continuing obligations: (1) obligations under Sections IX (Property Requirements), X (Access to Information), and XI (Record Retention); and (3) reimbursement of EPA's Future Response Costs under Section XIII (Payment of Response Costs) of the Settlement.

IT IS SO AGREED AND ORDERED;

U.S. ENVIRONMENTAL PROTECTION AGENCY:

12/13/19

Dated

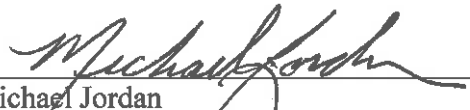
A handwritten signature in blue ink, appearing to read "R. David Allnutt", is written over a horizontal line.

R. David Allnutt, Acting Division Director
Superfund and Emergency Management Division
EPA Region 10

Signature Page for Settlement regarding the Willamette Cove Project Area within the Portland Harbor Superfund Site

FOR City of Portland:

9/23/19
Dated



Michael Jordan
Director
City of Portland
Bureau of Environmental Services
888 SW Fifth Avenue, Suite 400
Portland, OR 97204

Signature Page for Settlement regarding the Willamette Cove Project Area within the Portland
Harbor Superfund Site

FOR Port of Portland:

9/19/19
Dated



Curtis Robinhold
Executive Director
Port of Portland
7200 NE Airport Way
Portland, OR 97218

Signature Page for Settlement regarding the Willamette Cove Project Area within the Portland Harbor Superfund Site

FOR State of Oregon:

10/4/19
Dated


Vicki L. Walker

Director

Oregon Department of State Lands


775 Summer St. NE

Salem, OR 97301-1279

Signature Page for Settlement regarding the Willamette Cove Project Area within the Portland Harbor Superfund Site

FOR Settling Federal Agencies:

December 11, 2019
Dated


Austin D. Saylor
United States Department of Justice
Environmental & Natural Resources Division
Environmental Defense Section
P.O. Box 7611
Washington, DC 20044

Appendix A

Statement of Work

REMEDIAL DESIGN STATEMENT OF WORK

PORTLAND HARBOR SUPERFUND SITE

Willamette Cove Project Area

Portland, Multnomah County, State of Oregon

EPA Region 10

August 2019

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Attachments

Figure 1. Optimized Remedial Design Timeline

Attachment 1. Program Data Management Plan for Portland Harbor

Attachment 2. Example 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 for the Portland Harbor Superfund Site (Site) on January 3, 2017 (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 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 during RD will be dependent on a number of characteristics and environmental conditions to ensure that the final constructed remedy is appropriate for 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) to implement RD and RA.

This Statement of Work (SOW) sets forth the procedures and requirements for implementing the RD Work at the Willamette Cove Project Area (hereinafter identified as the Project Area), as defined in the Administrative Settlement Agreement and Order on Consent as the active cleanup area designated on Figure 31c of the ROD between approximately River Mile 6 and River Mile 7 on the east side of the Willamette River, and more specifically depicted on the map attached as Appendix B to the Settlement. The Project Area includes all riverbanks from top of the bank to the river. The Project Area does not include the Crawford Street Area. The Crawford Street Area is included in the area evaluated as part of the Sufficiency Assessment.

As specified in Part 1: Declaration for the ROD (EPA, 2017), contaminated river banks will be addressed using the same remedial technologies that will be used for the adjacent contaminated sediment, if it is determined that those river banks should be remediated in conjunction with the sediment action. Accordingly, river bank designs associated with the Willamette Cove Project Area must be coordinated and not conflict with the in-river design to ensure actions on river banks are consistent and work together with actions in-river. Further upland source control assessments, if needed, will be addressed as upland source issues by the Oregon Department of Environmental Quality (DEQ) 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 Locators (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.

2. COMMUNITY INVOLVEMENT

2.1 Community Involvement (CI) Responsibilities

- (a) EPA has the lead responsibility for developing and implementing CI activities at the Portland Harbor Superfund 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 RD Work at 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, including participation in: (1) the preparation of information regarding the RD 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 Project Area. Respondents’ support of EPA’s CI activities may include providing online access to initial submissions and updates of 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 for review and comment. 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 data and information available to the public. EPA plans to coordinate its community outreach efforts with DEQ.
- (c) Respondents will explore the possibility of participating in EPA’s Superfund Job Training Initiative Program (SuperJTI) as it may relate to the RD 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 30 days, 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, including coordinating with EPA's CI Coordinator regarding responses to the public's inquiries about the RD 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 shall be submitted to EPA for comment and approval.

The objective of the Sufficiency Assessment is to evaluate upland (direct discharges, groundwater, river bank, 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;
 - (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 and Crawford Street 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, overwater, river bank) that explicitly identifies the potential

sources and pathways at the Project Area and Crawford Street 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. An example 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 final check to ensure remedial construction can commence.

- (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.

Following remedy implementation, post-construction monitoring will be performed to evaluate remedy effectiveness. Post-construction monitoring will be designed to distinguish between recontamination and assessing whether the

remedy is functioning as intended to demonstrate long-term performance of the remedy across appropriate temporal and spatial scales.

3.2 Scope of Project Area for Remedial Design. Project Area is defined by the Administrative Settlement Agreement and Order on Consent and includes all river banks from top of the bank to the river except the Crawford Street Area. However, EPA expects Respondents to include consideration of the Crawford Street Area in the sufficiency assessment as described in ¶ 3.1 of this SOW.

3.3 Pre-Design Investigation. The purpose of the Pre-Design Investigation (PDI) is to identify and address 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 must include:
 - (1) An evaluation and summary of existing data, including baseline data within/near the 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.
 - (iv) Flood-rise analysis; and
 - (v) NAPL delineation, if applicable.
 - (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 ¶ 3.14 (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. This report 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.

3.4 Basis of Design Report (BODR). The purpose of the BODR is to refine the SMA, update the CSM and refine the technology assignments to the SMA consistent with the Decision Tree in Figure 28 of the ROD. 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 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) 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;

- (d) Describe Decision Tree analysis and identify a preferred remedial approach based on consistency with the ROD for the Project Area;
- (e) Identify long-term monitoring and maintenance considerations for the Project Area;
- (f) Identify design studies for RD, if any, such as subsurface and surface sediment sampling that may be needed to address proposed remedial technology means and methods, and gather other information necessary for RD for the Project Area; and
- (g) Describe a sequencing plan as well as an overall schedule to complete the design studies, RD and RA for the Project Area.

3.5 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 proposal for phasing of design and construction, if applicable;
- (c) A description of the proposed general approach to contracting, construction, operation, maintenance, and monitoring of the RA as necessary to implement the RD 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);
- (f) Description of studies and design phases for any on-site transload facility to be used to transload dredged materials from the Project Area or any other area of the Site;
- (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 RD 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.
- 3.6 Meetings.** Respondents shall meet regularly with EPA to discuss design issues as necessary, as directed or determined by EPA.
- 3.7 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 EPA requests, Respondents shall submit a Supplemental PDI Work Plan (SPDIWP) for EPA comment and approval. The SPDIWP must include all elements as described in ¶ 3.3(a).
 - (b) **Supplemental PDI Evaluation Report.** Following 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 ¶ 3.3(b).
- 3.8 Treatability Study.** If necessary, 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.
 - (c) EPA may require Respondents to supplement the TS Evaluation Report and/or to perform additional treatability studies.
- 3.9 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);
 - (b) Preliminary drawings and specifications;
 - (c) Descriptions of permit requirements, if applicable;
 - (d) 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);

- (e) A description of monitoring and control measures to protect human health and the environment, such as air monitoring and dust suppression, during the RA;
- (f) Updates of all supporting deliverables required to accompany the RDWP and 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; O&M Plan; and O&M Manual.
- (g) Respondent will include design specifications for any transload facility to be used on-site for transferring dredged materials from the Project Area, including specifications and 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 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 DEQ's pending upland Record of Decision for the Respondent's upland property. If an off-site transload facility will be used for dredged materials from the Project Area, Respondent must include permit application design information for approval.
- (h) Respondent shall coordinate with and obtain necessary information from owners of river banks and/or submerged lands that are within the Project Area and Crawford Street Area. Such information shall include, but not be limited to, the owner's future 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 and Crawford Street Area.

3.10 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.

3.11 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 as a final check to ensure remedial construction can commence.

3.12 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.

3.13 Emergency Response and Reporting

- (a) **Emergency Response and Reporting.** If any event occurs during performance of the RD Work that causes or threatens to cause a release of Waste Material on, at, or from the Site 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 ¶ 3.13(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 RD 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 ¶ 3.13(a) and ¶ 3.13(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 ¶ 3.13(a) and ¶ 3.13(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 ¶ 3.13 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

3.14 Off-Site Shipments

- (a) Respondents may ship hazardous substances, pollutants, and contaminants 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), 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 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 XXIX 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 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 RD 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.
- 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. 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: Eva DeMaria, Remedial Project Manager, Superfund and Emergency Management Division, U.S. Environmental Protection Agency, 1200 6th Ave., Ste. 155, M/S 12-D12-1, Seattle, WA, 98101, phone (206) 553-1970, email demaria.eva@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, (503) 229-5354 (David Lacey), david.j.lacey@state.or.us, (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, 917 SW Oak, Suite 417, Portland, OR 97205, (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. Technical 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 to 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 RD 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.
- (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 RD 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 RD 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 should cover RD activities and should be, as appropriate, updated to cover activities during the RA and updated to cover activities after RA completion. (Updates may be needed for RA activities and after RA completion.) 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 ¶ 3.13(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 ¶ 3.13 (Emergency Response and Reporting) of the SOW in the event of an occurrence during the performance of the RD Work that causes or threatens a release of Waste Material from the Site 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 project 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).
- (d) **Quality Assurance Project Plan.** The Quality Assurance Project Plan (QAPP) augments the FSP and addresses sample analysis and data handling regarding the RD Work. The QAPP must include a detailed explanation of Respondents' quality assurance, quality control, and chain of custody procedures for all investigation, 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 28 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;
 - (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 Site will be implemented 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 Selected Remedy. The City of Portland and State of Oregon will develop a site-wide Institutional Control Implementation and Assurance Plan (ICIAP). Respondents will develop a Project Area-specific ICIAP during RD which will, at a minimum, identify the specific and necessary Site-wide ICs and the Project Area ICs that will be implemented; 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. 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) 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. 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 characterize 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 Site monitoring. The PAMP must include:

- (1) Description of the environmental 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 Site-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 Plan (CQAP) and the Construction Quality Control Plan (CQCP) 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) Identify, and 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 ¶ 3.14 (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 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 the following additional requirements:
- (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.

(m) **O&M Manual.** The O&M Manual serves as a guide to the purpose and function of the equipment and systems that make up the remedy. Respondents shall develop the O&M Manual in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017).

6. SCHEDULES

6.1 Applicability and Revisions. 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. 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. EPA shall consider the extensive community involvement anticipated at this Project Area when considering approval of revised schedules.

6.2 Schedule¹

	Description of Deliverable	Included Supporting Deliverable	¶ Ref.	Deadline ²
	Notification of Respondents' CI Coordinator		2.1(d)	30 days after Effective Date
1a	Draft Sufficiency Assessment Report		3.1	120 days after the Effective Date
1b	Final Sufficiency Assessment Report		3.1	45 days after EPA's comments on the Draft Sufficiency Assessment Report ²
2a	Draft PDI Work Plan	FSP, QAPP, HASP, ERP	3.3(a)	120 days after Effective Date
2b	Final PDI Work Plan	Same as above	3.3(a)	45 days after EPA's comments on the Draft PDI Work Plan

¹ Respondents are all subject to procurement laws and must use a public procurement process. The Schedule in ¶ 6.2, specifically 1a and 2a, accounts for that public procurement process.

² Preparation of deliverables 1a through 9b can occur concurrently for an efficient RD schedule. An example showing EPA's expectations for an optimized RD timeline is shown in **Figure 1**.

	Description of Deliverable	Included Supporting Deliverable	¶ Ref.	Deadline²
3a	Draft PDI Evaluation Report		3.3(b)	As set forth in the approved PDI Work Plan
3b	Final PDI Evaluation Report		3.3(b)	As set forth in the approved PDI Work Plan
4a	Draft BODR	Sufficiency Assessment	3.4	90 days after EPA approval of Final PDI Evaluation Report
4b	Final BODR	Same as above	3.4	45 days after EPA's comments on the Draft BODR
5a	Draft RDWP	Updates to FSP, QAPP, HASP, ERP	3.5	90 days after EPA's approval on the Final BODR
5b	Final RDWP	Same as above	3.5	45 days after EPA's comments on the Draft RDWP
6a	Draft Supplemental PDI Work Plan (if needed)		3.7(a)	As set forth in the approved Final RDWP
6b	Final Supplemental PDI Work Plan (if needed)		3.7(a)	As set forth in the approved Final RDWP
7a	Draft Supplemental PDI Evaluation Report (if needed)		3.7(b)	As set forth in the approved Final RDWP
7b	Final Supplemental PDI Evaluation Report (if needed)		3.7(b)	As set forth in the approved Final RDWP
8a	Draft Treatability Study Work Plan (if required)		3.8(a)	As set forth in the approved Final RDWP
8b	Final Treatability Study Work Plan (if required)		3.8(a)	As set forth in the approved Final RDWP
9a	Draft Treatability Study Evaluation Report (if required)		3.8(b)	As set forth in the approved Final RDWP
9b	Final Treatability Study Evaluation Report (if required)		3.8(b)	As set forth in the approved Final RDWP
10	Preliminary (30%) RD	All supporting deliverables described in ¶ 5.6	3.9	As set forth in the approved Final RDWP
11	Intermediate (60%) RD	Same as above	3.10	As set forth in the approved Final RDWP

	Description of Deliverable	Included Supporting Deliverable	¶ Ref.	Deadline²
12	Pre-final (95%) RD	Same as above	3.11	As set forth in the approved Final RDWP
13	Final (100%) RD	Same as above	3.12	As set forth in the approved Final RDWP
14	Progress Reports		3.6	Quarterly

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 DEQ 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.
- 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 Completion under, Section XXIX (Notice of Work Completion) of the Settlement.
 - (c) Any modifications of this SOW or related deliverables under ¶ 20 and Section XXVI of the Settlement.

8. REFERENCES

- 8.1** The following regulations and guidance documents, among others, apply to the RD 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).
- (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).

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

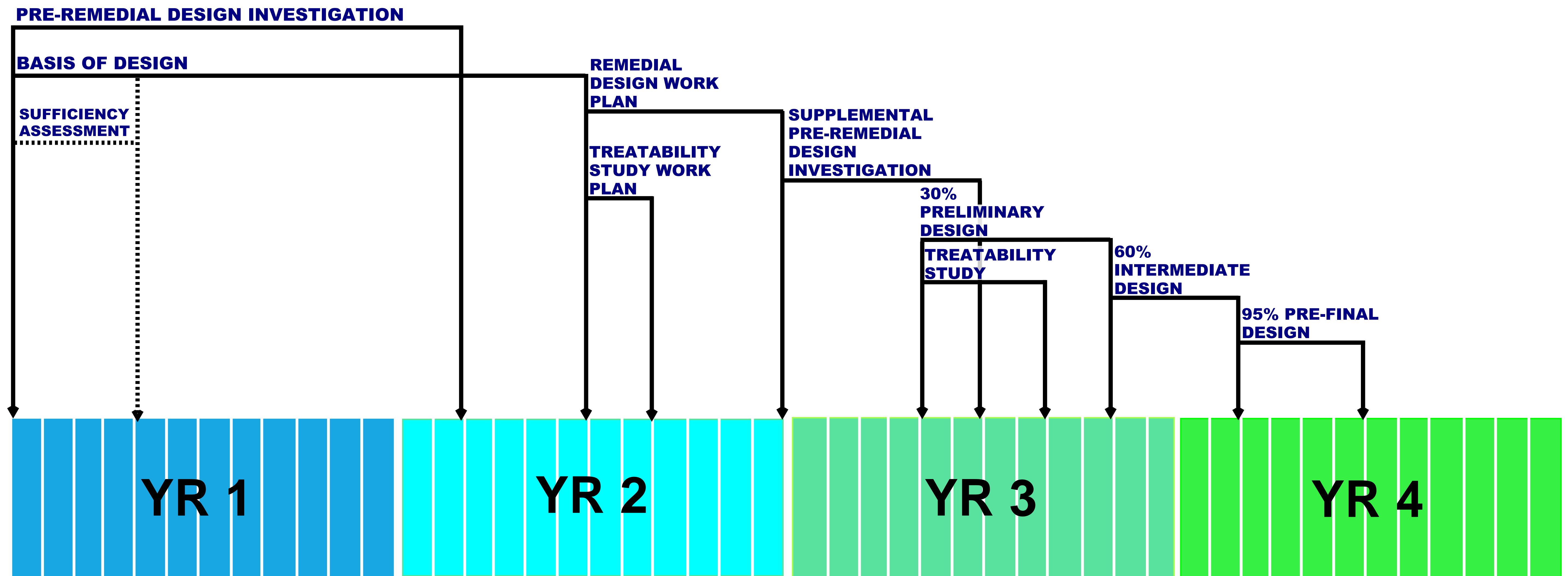
Laws, Policy, and Guidance <https://www.epa.gov/superfund/superfund-policy-guidance-and-laws>

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 regulation or guidance. Such modifications, amendments, or replacements apply to the RD 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



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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.

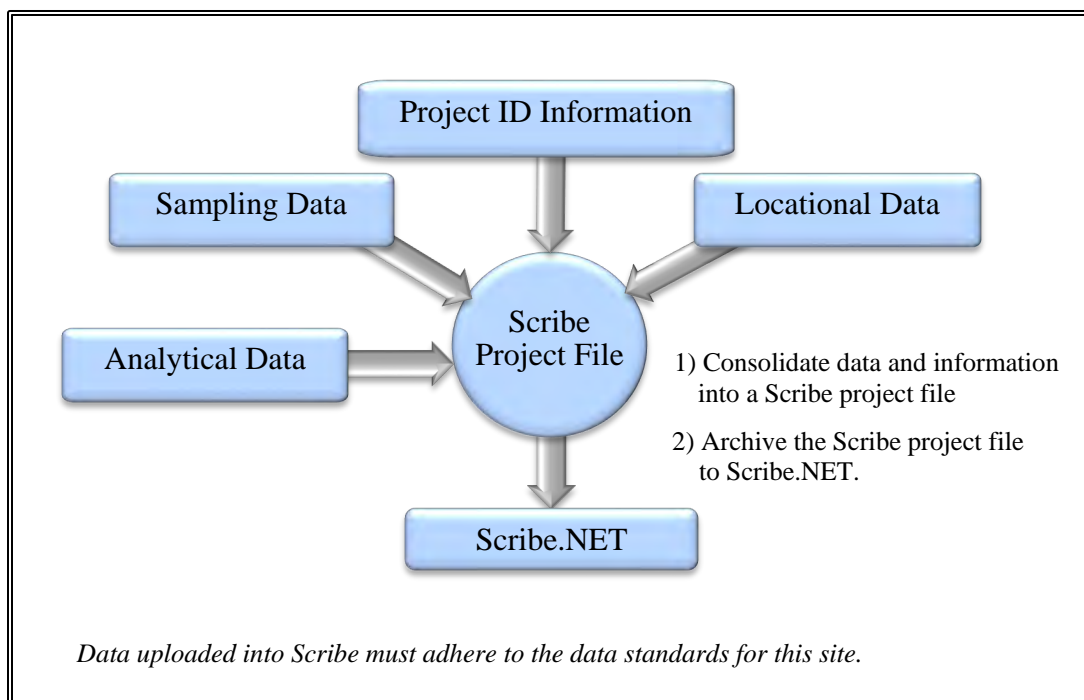
The following types of sample collection activities may be completed as specified in each respective EPA-approved sampling plan submitted by performing parties:

- 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.

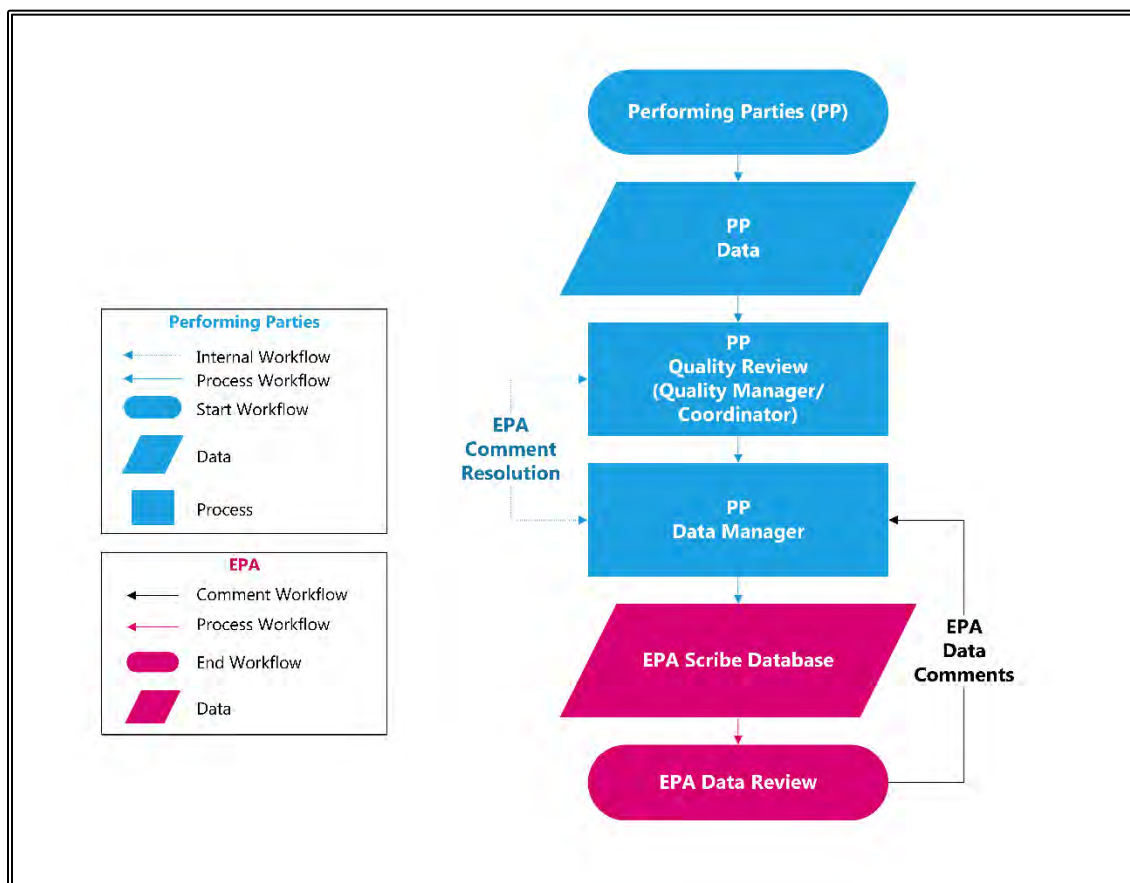
Figure 1. Data Flow and Archiving for Scribe

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.

Appendix A – Required Data Elements

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
CASE_NUMBER	C	Unique ID that identifies groups of sample batches under a specific project. Required for the Contract Lab Program. Valid values are determined by the CLP Contract.	Possible values are determined by the CLP Contract.	Text	5	Scribe / Lab	COC.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. There's no place for this in the Scribe LabResults Table.
SAMPLE_DELIVERY_GROUP	C	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	Lab	LabResults.Lab_Batch_No	Y	Generated by the Lab.
SAMPLE_ID	C	EPA Sample Number. Required if data are reported by the Contract Lab Program.	Possible values are determined by the CLP Contract.	Text	25	Lab	SamplesTags.CLP_Samp_No LabResults.CLP_Samp_No	Y	Originates in Scribe from the "SamplesTags.CLP_Sample_No" field and is also uploaded into the "LabResults.Sample_CLP_No" field. Generated by Lab in EDD.
CAS_NUMBER	R	Chemical Abstracts Service (CAS) Registry Number for the chemical compound or element reported.	Possible values are determined by the CAS Registry.	Text	50	Lab	LabResults.Cas_No	Y	Generated by the Lab.
ANALYTE	R	Name 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	LabResults.Analyte	Y	Generated by the Lab.
FINAL_RESULT	R	The final validated result of the chemical compound or element that was measured.	Numeric value which may be integer or decimal.	Text	8	Lab / Data Reviewer	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 is mandatory for MEL and other (sub-contracted, government, etc.) labs.
RESULT_UNITS	R	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	LabResults.Result_Units	Y	Generated by the Lab.
FINAL_VALIDATION_QUALIFIER	R	National Functional Guidelines Data Validation or MEL Data Qualifiers. These should be identified in the QAPP.	Possible values assigned by the National Functional Guidelines or QAPP.	Text	10	EDM / Data Reviewer	LabResults.Result_Qualifier	Y	Generated by the EDM or Data Reviewer.
DATA_VAL_LABEL	R	EPA Data Validation Label Code from the “Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use”. Identifies the rigor of the data validation or review.	Possible values assigned by the guidance document.	Text	250	EDM / Data Reviewer	LabResults.QA_Comment	Y	Generated by the EDM or Data Reviewer. The Scribe LabResults Table will utilize the QA Comment field in order to accommodate this critical data element.
SAMPLE_ADJUSTED_CRQL	R	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.	Text	8	Lab	LabResults.Quantitation_Limit	Y	Generated by the Lab.
SAMPLE_ADJUSTED_MDL	R	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.	Text	8	Lab	LabResults.MDL	Y	Generated by the Lab.
LAB_RESULT	C	The pre-validated analytical result as reported by the testing lab (CLP only).	Numeric value which may be integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The "Final_Result" data element which passes validation/lab verification will be uploaded into the Scribe lab results table.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
LAB_QUALIFIERS	C	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	LabResults.Lab_Result_Qualifier	Y	Generated by the Lab.
METHOD_CRQL	R	Un-adjusted CRQL or Reporting Limit	Numeric value which may be integer or decimal.	Text	8	Lab	LabResults.Reporting_Limit	Y	Generated by the 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.	Text	8	EDM		N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CRQL_UNITS	R	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	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.
INSTRUMENT_MDL	O	Instrument Detection Limit (MDL) that is not adjusted for sample mass/volume or percent moisture (solids).	Numeric value which may be integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. R10 Does not use this field.
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.	Text	8	EDM		N	There's no data field for this in the Scribe LabResults Table. R10 Does not use this field.
MDL_UNITS	R	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	LabResults.MDL_Units	Y	Generated by the Lab.
PERCENT_SOLIDS	R	The Percent Solids for soils and sediments. Used to determine the dry weight basis of the chemical analyses.	Reported as a "Percent".	Text	8	Lab	LabResults.Percent_Solids	Y	Generated by the Lab.
PERCENT_MOISTURE	R	The Percent Moisture content for soils or sediments. Used to determine the dry weight basis of the chemical analyses.	Reported as a "Percent".	Text	8	Lab	LabResults.Percent_Moisture	Y	Generated by the Lab.
DILUTION_FACTOR	R	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.	Text	8	Lab	LabResults.Dilution_Factor	Y	Generated by the Lab.
ANALYSIS_FRACTION	R	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	LabResults.Analysis	Y	Generated by the Lab.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
ANALYSIS_LEVEL	C	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		N	There's no data field for this in the Scribe LabResults Table.
REPORTING_BASIS	R	Indicates whether the results were adjusted due to the moisture content of the sample.	Sediment samples = DRY or WET depending upon whether moisture correction was applied.	Text	10	Lab	LabResults.Basis	Y	Generated by the Lab.
SAMPLE_DATE_TIME	R	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	Samples.Sampleddate LabResults.Date_Collected	Y	Originates in Scribe but is not overwritten in COC XML resubmittals. This is due to the ability to edit this information in EDM during data validation. To allow overwrite via COC XML resubmittal would violate a business rule against duel overwrite input pathways and introduce an vulnerability to the system. Sample Date & Time are concatenated from two Scribe COC XML fields.
DATE_SHIPPED	R	Date of Sample Shipment.	For all field samples (including Field Blank and Performance Evaluation samples) = MM/DD/YYYY. For Matrix Spike, Post-Digestion Spike, Duplicates, Matrix Spike Duplicate = Ship Date of associated Parent Sample	Date	20	Scribe	COC.DateShipped	N	There's no data field for this in the Scribe LabResults Table and it already appears in the COC Table.
DATE_TIME_RECEIVED	R	Date & Time of Sample Receipt at Lab.	For all field samples (including Field Blank and Performance Evaluation 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	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".
PREP_DATE_TIME	R	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	LabResults.Date_Extracted	Y	Generated by the Lab.
ANALYSIS_DATE_TIME	R	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	LabResults.Date_Analyzed	Y	Generated by the Lab.
LAB_SAMPLE_TYPE	R	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	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.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
SAMPLE_MATRIX	R	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	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.
RESULT_COMMENT	C	Concatenated result information (can be from FORM I Comment Field)	Comments are recorded in the Lab and reported.	Text	250	Lab	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.
LAB_NAME	R	Laboratory Name (long name)	Possible values are determined by the CLP Contract or reporting Lab.	Text	50	Lab	LabResults.Lab_Name	Y	Generated by the Lab.
LAB_CODE	C	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		N	There's no data field for this in the Scribe LabResults Table.
CONTRACT_NUMBER	C	Laboratory Contract Number assigned under the CLP.	Possible values are determined by the CLP Contract or reporting Lab.	Text	30	Lab		N	There's no data field for this in the Scribe LabResults Table.
METHOD_NUMBER_OR_CLP_SOW	R	CLP SOW Value or "Method Source:Method Number", e.g., SW:9060A	Valid EPA or other reference methods or CLP SOW editions. Examples: ISM01.3, 6010, 8270, etc.	Text	100	Lab	LabResults.Analytical_Method	Y	Generated by the Lab.
MA_NUMBER	C	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		N	There's no data field for this in the Scribe LabResults Table.
TR_COC_NUMBER	R	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	SamplesTags.COC LabResults.Lab_Coc_No	Y	Generated by the Lab.
LAB_SAMPLE_ID	C	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	LabResults.Lab_Samp_No	N	Generated by the Lab.
LAB_FILE_ID	C	Laboratory File ID (Internal to the lab only)	Possible values are determined by the CLP Contract or reporting Lab.	Text	25	Lab		N	There's no data field for this in the Scribe LabResults Table.
INSTRUMENT_ID	C	Unique Instrument Identification Number	Possible values are determined by the CLP Contract or reporting Lab.	Text	25	Lab		N	There's no data field for this in the Scribe LabResults Table.
SAMPLE_ALIQUOT	R	The mass or volume of sample that removed for extraction or digestion.	Numeric value may be an integer or decimal.	Text	8	Lab	LabResults.SubSample_Amount	Y	Generated by the Lab.
SAMPLE_ALIQUOT_UNITS	R	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	LabResults.SubSample_Amount_Unit	Y	Generated by the Lab.
FINAL_VOLUME	R	The final volume of the sample Digest or Extract.	Numeric value may be an integer or decimal.	Text	8	Lab	LabResults.Final_Volume	Y	Generated by the Lab.

Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
FINAL_VOLUME_UNITS	R	Volume of Sample Digest /Extract Units	For Organic: uL For Inorganic: mL	Text	20	Lab	LabResults.Final_Volume_Unit	Y	Generated by the Lab.
SOIL_EXTRACT_VOLUME	C	The volume of extract used for a Medium Level VOC soils analysis.	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
SOIL_EXTRACT_VOLUME_UNITS	C	Soil Extract Volume Units (Medium VOA)	For Organic (VOA): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
SOIL_ALIQUOT_VOLUME	C	The volume of aliquot removed from the extract used for a Medium Level VOC soils analysis.	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
SOIL_ALIQUOT_VOLUME_UNITS	C	Soil Aliquot Volume Units (Medium VOA)	For Organic (VOA): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
PURGE_VOLUME	C	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.	Text	8	Lab	LabResults.Final_Volume	Y	Generated by the Lab.
PURGE_VOLUME_UNITS	C	Purge Volume Units (VOA)	For Organic (VOA only): mL	Text	20	Lab	LabResults.Final_Volume_Unit	Y	Generated by the Lab.
SPIKE_ADDED	C	Amount Added for Lab Matrix Spike or Spike Duplicate sample or Laboratory Control Sample	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
CONCENTRATED_EXTRACT_VOLUME	C	Concentrated Extract Volume (SVOA/PEST/PCB)	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
CONCENTRATED_EXTRACT_VOLUME_UNITS	C	Concentrated Extract Volume Units (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table. The analysis requires the use of too many fields (e.g., final volume is already filled).
INJECTION_VOLUME	C	The volume of extrac injected into the instrument. (SVOA/PEST/PCB)	Numeric value may be an integer or decimal.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
INJECTION_VOLUME_UNITS	C	Injection Volume Units (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): uL	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table.
PREPARATION_METHOD	R	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	LabResults.Extraction_Method	Y	Generated by the Lab.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
GPC_CLEANUP	C	Cleanup Type (SVOA/PEST/PCB)	For Organic (SVOA, Pesticides, PCBs): Y or N	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table.
GPC_FACTOR	C	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	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
DECANTED	C	Identifies if the Lab decanted the sample in a Yes or No response. (SVOA/PEST/PCB)	Contract or reporting Lab. For Organic (SVOA, Pesticides, PCBs): Decanted or Not_Decanted	Text	20	Lab		N	There's no data field for this in the Scribe LabResults Table.
PH	C	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.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
COLOR_BEFORE	O	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	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
COLOR_AFTER	O	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	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
CLARITY_BEFORE	O	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	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
CLARITY_AFTER	O	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	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
TEXTURE	O	Description of sample. Used in CLP Metals analysis of soil/sediments.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
ARTIFACTS	O	Description of sample. Used in CLP Metals analysis of soil/sediments.	Possible values are determined by the CLP Contract or reporting Lab.	Text	100	Lab		N	There's no data field for this in the Scribe LabResults Table.
COOLER_TEMP	R	Recorded temperature of the sample cooler upon Receipt at the Lab.	Recorded in Degrees Celcius.	Text	8	Lab		N	There's no data field for this in the Scribe LabResults Table.
SAMPLE_FRACTION	C	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	LabResults.Total_Or_Dissolved	Y	Generated by the Lab.
METHOD_SPECIATION	C	Part of a chemical characteristic (Nitrogen "As" ...)	Detemined by the analytical method.	Text	30	Lab		N	Generated by the Lab. There's no data field for this in the Scribe LabResults Table.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
SAMPLE_SUBMATRIX	R	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	Samples.Matrix	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLING_REASON	R	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	Site.Site_Action	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLE_COLLECTION_METHOD	R	Sample Collection Method (i.e., Grab, Composite, Discrete Interval)	Examples: Grab, Composite, Discrete Interval	Text	30	Scribe	Samples.SampleCollection	N	Already in Scribe. No place for it in the Scribe LabResults Table.
EPA_REGION	R	"EPA Region" plus the Regional designation number (EPA Region 10)	Valid Values: "EPA Region" + 1 - 10	Text	15	Scribe	Site.EPARegionNumber	N	Already in Scribe. No place for it in the Scribe LabResults Table.
STATION_LOCATION	R	Station Location Codes	Determined by the project.	Text	50	Scribe	Location.Location	N	Originates in Scribe but is not overwritten in COC XML resubmittals. This is due to the ability to edit this information in EDM during data validation. To allow overwrite via COC XML resubmittal would violate a business rule against duel overwrite input pathways and introduce an vulnerability to the system.
LOCATION_DESCRIPTION	R	Further describes the Station Location.	Determined by the project.	Text	100	Scribe	Location.LocationDescription	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_SAMPLE_NUMBER	R	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	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.
LOCATION_ZONE	R	The type of area that is impacted by the sample location.	Examples: Lake, Land, River/Stream, Well	Text	25	Scribe	Location.LocationZone	N	Already in Scribe. No place for it in the Scribe LabResults Table.
LATITUDE	R	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.	Text	12	Scribe	Location.Latitude	N	Already in Scribe. No place for it in the Scribe LabResults Table.
LONGITUDE	R	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.	Text	12	Scribe	Location.Longitude	N	Already in Scribe. No place for it in the Scribe LabResults Table.
DATUM	R	The horizontal coordinate system reference Datum name.	WGS84	Text	50	Scribe	Location.Datum	N	Already in Scribe. No place for it in the Scribe LabResults Table.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
GEOMETHOD	R	The method used to determine latitude and longitude.	GPS, Survey	Text	30	Scribe	Location.GeoMethod	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION	C	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.	Text	8	Scribe	Location.Surf_Elev	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION_UNITS	C	The units of measurement for the surface elevation data. This is required when surface elevation measurements are reported.	meters, feet	Text	20	Scribe	Location.Surf_Units	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION_METHOD	C	The method used to determine the surface elevation. This is required when surface elevation measurements are reported.	GPS, Survey	Text	30	Scribe	Location.ElevMethod	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SURFACE_ELEVATION_DATUM	C	The vertical control datum for the surface elevation measurement. This is required when surface elevation measurements are reported.	NAVD88	Text	50	Scribe	Location.ElevDatum	N	Already in Scribe. No place for it in the Scribe LabResults Table.
TOP_DEPTH	C	Top depth of Sample Collection (for cores) or depth of sample collection for a monitoring well.	Numeric value may be an integer or decimal.	Text	8	Scribe	Samples.Samp_Depth	N	Already in Scribe. No place for it in the Scribe LabResults Table.
BOTTOM_DEPTH	C	Depth To bottom of sample collection for a core sample.	Numeric value may be an integer or decimal.	Text	8	Scribe	Samples.Samp_Depth_To	N	Already in Scribe. No place for it in the Scribe LabResults Table.
TOP_DEPTH_UNITS	C	Units of Sample Depth	Feet or meters	Text	20	Scribe	Samples.Samp_Depth_Units	N	Already in Scribe. No place for it in the Scribe LabResults Table.
BOTTOM_DEPTH_UNITS	C	Units of the Bottom Depth	Feet or meters	Text	20	Scribe	Samples.Samp_Depth_Units	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLER_NAME	R	Sampler Name	Full name of the sampler.	Text	30	Scribe	Samples.Sampler	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLING_COMPANY_CONTACT	R		Full name of the sampling contact. Person usually coordinates sample collection on behalf of the sampling company.	Text	50	Scribe	Site.CTRContact	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLING_COMPANY_NAME	R	Sampling Company Name	Full name of the sampling company.	Text	50	Scribe	Site.Contractor	N	Already in Scribe. No place for it in the Scribe LabResults Table.
PROJECT_NAME	R	Site Name / Project Name	Assigned by the Sample Control Coordinator.	Text	50	RSCC/EDM	Site.Site_Name	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling.

Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
SITE_PROJECT_CODE	R	Regional Project Code	Assigned by the Sample Control Coordinator.	Text	50	RSCC/EDM	COC.ProjectCode	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling. Also hand entered onto COC during COC generation and uploaded to lab in COC XML.
SITE_EVENT_ID	R	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	Site.Control_No	N	Already in Scribe. No place for it in the Scribe LabResults Table.
STATE	R	State where sample collection occurred. This field is populated in CLPSS during ASR entry	2 Character State Abbreviation	Text	20	RSCC/EDM	Stite.Site_State	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling.
CITY	R	City where sample collection occurred. This field is populated in CLPSS during ASR entry	Full City Name	Text	60	RSCC/EDM	Site.Area	N	Already in Scribe. No place for it in the Scribe LabResults Table. Originates from the laboratory request submitted during scheduling.
CERCLIS	R	CERLIS ID	The CERCLIS identification. Used only by the Superfund program.	Text	20	Scribe	Site.CERCLIS	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_SITE_NUMBER	R	Scribesite key (Primary Key)	A unique ID used by Scribe.	Text	12	Scribe	Site.Site_No	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_NET_PROJECT_ID	R	ScribeNetID Project ID	A unique ID used by Scribe.	Text	4	Scribe	Site.ScribeNetProjectID	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_SAMPLES_ID	NA	Scribe Database AutoGenerated Number	A unique ID used by Scribe.	Text	4	Scribe	Samples.SampleID	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SAMPLE_TAG	R	Container ID codes - autogenerated if left blank	A unique ID used by Scribe.	Text	15	Scribe	SamplesTags.Tag	N	Already in Scribe. No place for it in the Scribe LabResults Table.
SCRIBE_COMMENT	C	Comment field from Scribe	Filled in by sampler to denote special sample treatment or conditions. Required if the entry is filled in by Scribe.	Text	255	Scribe	Samples.Remarks	N	Already in Scribe. No place for it in the Scribe LabResults Table.
FIELD_SAMPLE_TYPE	R	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	Samples.SampleType	N	Already in Scribe. No place for it in the Scribe LabResults Table.
VERSION_CODE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
DATA_PROVIDER	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PARENT_SAMPLE_NAME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PARENT_SAMPLE_LOCATION	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LAB_REPLICATE_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_SOURCE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.

Required Data Elements									
Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
ORGANIC_YN	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PRESERVATIVE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TEST_BATCH_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PREP_BATCH_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYSIS_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_ANALYSIS_LOCATION	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COLUMN_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
RUN_BATCH_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYSIS_BATCH_ID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYST_NAME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
ANALYTE_TYPE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
REPORTABLE_RESULT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
DETECT_FLAG	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TIC_RETENTION_TIME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TIC_RETENTION_TIME_UNITS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
EXPECTED_VALUE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_ORIGINAL_CONC	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_MEASURED	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_RECOVERY	R	Percent Recovery of lab QC types (matrix spikes, surrogates, etc).	Numbers are represented as "%".	Text	8	Lab	LabResults.Percent_Recovery	Y	Generated by the Lab.
QC_DUP_ORIGINAL_CONC	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_DUP_SPIKE_ADDED	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_DUP_SPIKE_MEASURED	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.

Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
QC_DUP_SPIKE_RECOVERY	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_RPD	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_LCL	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_UCL	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_RPD_CL	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_SPIKE_STATUS_FLAG	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_DUP_SPIKE_STATUS_FLAG	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
QC_RPD_STATUS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_RUN	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PARAMID	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
PAR_VAL_UNCERT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
RESULT_ERROR_DELTA	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
INTERPRETED_QUALIFIERS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SYS_LOC_CODE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
TASK_CODE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COLLECTION_QUARTER	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
SAMPLE_CLASS	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COMPOSITE_DESC	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LEACH_LOT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LEACHATE_METHOD	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
LEACHATE_DATE	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.

Required Data Elements

Data Element Field Names	Required, Optional, Conditional, Not Applicable (R/O/C/NA)	Description or Preferred Values		Field Format/Length		Origin	Scribe Table.DataFieldName	Upload into Scribe from EDD?	Comments/Questions
LEACHATE_TIME	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
RESP	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CUSTOM_FIELD_1	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CUSTOM_FIELD_2	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
CUSTOM_FIELD_3	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.
COMMENT	NA	Reserved for use by another Region.						N	There's no data field for this in the Scribe LabResults Table. Not used by Region 10.

Appendix B – Data Element Valid Values

Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Events	Activity	Remedial Design
Events	Activity	Remedial Design Oversight
Events	QAPP_Approved	Y
Events	QAPP_Approved	N
Events	QAPP_ApprovedBy	US EPA Region 10
Events	QAPP_ApprovedBy	ODEQ
Location	CountryCode	US
Location	CountyCode	051
Location	Datum	NAD83
Location	Datum	UNKWN
Location	Datum	WGS84
Location	ElevDatum	NAVD88
Location	ElevDatum	NGVD29
Location	ElevDatum	OTHER
Location	ElevDatum	UNKWN
Location	ElevMethod	Altimetry
Location	ElevMethod	GPS
Location	ElevMethod	Interpolation
Location	ElevMethod	Other
Location	ElevMethod	Survey
Location	GeoMethod	GPS-Unspecified
Location	GeoMethod	Unknown
Location	GeoMethod	GPS
Location	GeoMethod	Interpolation
Location	GeoMethod	Survey
Location	HorizAccuracyMeasureUnit	Ft
Location	HorizAccuracyMeasureUnit	Meter
Location	HucEightDigitCode	17090012
Location	HucTwelveDigitCode	170900120201
Location	HucTwelveDigitCode	170900120202
Location	HucTwelveDigitCode	170900120301
Location	HucTwelveDigitCode	170900120305
Location	HucTwelveDigitCode	170900120304
Location	HucTwelveDigitCode	170900120302
Location	HucTwelveDigitCode	170900120303
Location	HucTwelveDigitCode	170900120102
Location	HucTwelveDigitCode	170900120104
Location	HucTwelveDigitCode	170900120101
Location	HucTwelveDigitCode	170900120103
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	Borehole
Location	LocationZone	Canal Transport

Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Location	LocationZone	Combined Sewer
Location	LocationZone	Estuary
Location	LocationZone	Facility Industrial
Location	LocationZone	Facility Other
Location	LocationZone	Lake
Location	LocationZone	Land
Location	LocationZone	Land Flood Plain
Location	LocationZone	Landfill
Location	LocationZone	Ocean
Location	LocationZone	Other-Ground Water
Location	LocationZone	Other-Seawater
Location	LocationZone	Other-Surface Water
Location	LocationZone	Other-Surface Water
Location	LocationZone	Pond-Stormwater
Location	LocationZone	Reservoir
Location	LocationZone	River/Stream
Location	LocationZone	River/Stream
Location	LocationZone	Seep
Location	LocationZone	Spring
Location	LocationZone	Storm Sewer
Location	LocationZone	Test Pit
Location	LocationZone	Waste Pit
Location	LocationZone	Waste Sewer
Location	LocationZone	Well
Location	LocationZone	Wetland Undifferentiated
Location	State Code	OR
Location	Sub_Basin	Lower Willamette
Samples	Activity	Pre-Design
Samples	Activity	Design
Samples	Matrix	Air
Samples	Matrix	Air Indoor
Samples	Matrix	Asbestos
Samples	Matrix	Biological
Samples	Matrix	Benthic
Samples	Matrix	Drinking Water
Samples	Matrix	Dust
Samples	Matrix	Filtered Water
Samples	Matrix	Ground Water Dissolved
Samples	Matrix	Ground Water Total
Samples	Matrix	Habitat
Samples	Matrix	Lab Sand
Samples	Matrix	Liquid Waste
Samples	Matrix	Porewater Dissolved
Samples	Matrix	Porewater Total
Samples	Matrix	Potable Water
Samples	Matrix	Saline Water Dissolved
Samples	Matrix	Saline Water Total

Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	Matrix	Sand
Samples	Matrix	Sediment
Samples	Matrix	Sediment <2mm
Samples	Matrix	Sediment <63um
Samples	Matrix	Sediment 125-250um
Samples	Matrix	Sediment 63-125um
Samples	Matrix	Sediment 63-250um
Samples	Matrix	Sediment Bulk
Samples	Matrix	Sediment Subsurface
Samples	Matrix	Sediment Surface
Samples	Matrix	Septic Effluent
Samples	Matrix	Soil
Samples	Matrix	Soil Gas
Samples	Matrix	Soil Subsurface
Samples	Matrix	Soil Surface
Samples	Matrix	Solid Waste
Samples	Matrix	Stormwater
Samples	Matrix	Surface Water
Samples	Matrix	Surface Water Dissolved
Samples	Matrix	Surface Water Total
Samples	Matrix	Tissue
Samples	Matrix	Waste
Samples	Matrix	Subsurface Soil/Sediment
Samples	Matrix	Surface Soil/Sediment
Samples	Samp_Depth_Units	Ft
Samples	SampleCollection	Activity Trap
Samples	SampleCollection	A-Frame Net
Samples	SampleCollection	Anchor Box Dredge
Samples	SampleCollection	Artificial Substrate
Samples	SampleCollection	Backpack Electroshock
Samples	SampleCollection	Beach Seine Net
Samples	SampleCollection	Beam Trawl
Samples	SampleCollection	Benthic Corer (Other)
Samples	SampleCollection	Benthic Dredge (Other)
Samples	SampleCollection	Benthic Grab (Other)
Samples	SampleCollection	Birge Closing Net
Samples	SampleCollection	Black Light Trap
Samples	SampleCollection	Block Net
Samples	SampleCollection	Boat-Mounted Electroshock
Samples	SampleCollection	Bod Dredge
Samples	SampleCollection	Bongo Net
Samples	SampleCollection	Boomerang Corer
Samples	SampleCollection	Boomerang Grab
Samples	SampleCollection	Box Corer
Samples	SampleCollection	Box Sampler
Samples	SampleCollection	Brail
Samples	SampleCollection	Bucket

Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Burrell Epibenthic Sled
Samples	SampleCollection	Campbell Grab
Samples	SampleCollection	Cast Net
Samples	SampleCollection	Center Bag
Samples	SampleCollection	Chain Dredge
Samples	SampleCollection	Clam-Shell Grab
Samples	SampleCollection	Clarke-Bumpus Net
Samples	SampleCollection	Concussion
Samples	SampleCollection	Creel Survey
Samples	SampleCollection	Danish Seine Net
Samples	SampleCollection	Dart Corer (Gravity)
Samples	SampleCollection	D-Frame Net
Samples	SampleCollection	DH-81
Samples	SampleCollection	DH-95
Samples	SampleCollection	Dietz-Lafond Grab
Samples	SampleCollection	Dip Net
Samples	SampleCollection	Draw Down
Samples	SampleCollection	Drift Gill Net
Samples	SampleCollection	Drilled Sampler
Samples	SampleCollection	Drive Sampler (Generic)
Samples	SampleCollection	Drop Net
Samples	SampleCollection	Ekman Grab
Samples	SampleCollection	Electric Seine
Samples	SampleCollection	Electroshock (Other)
Samples	SampleCollection	Emergence Trap
Samples	SampleCollection	English Umbrella Net
Samples	SampleCollection	Erwin Piston Corer
Samples	SampleCollection	Ewing Gravity Corer
Samples	SampleCollection	Experimental Brail
Samples	SampleCollection	Experimental Gill Net
Samples	SampleCollection	Fish Weir
Samples	SampleCollection	Free Fall Grab
Samples	SampleCollection	Fry Trap
Samples	SampleCollection	Funnel Trap
Samples	SampleCollection	Fyke Net
Samples	SampleCollection	Glass Slide
Samples	SampleCollection	Glass Slide Device
Samples	SampleCollection	Gravity Corer (Generic)
Samples	SampleCollection	Hand Corer
Samples	SampleCollection	Herring Trawl
Samples	SampleCollection	Hess Sampler
Samples	SampleCollection	Hester-Dendy
Samples	SampleCollection	Hook And Line
Samples	SampleCollection	Hydraulic Grab
Samples	SampleCollection	Hydroacoustics
Samples	SampleCollection	Hydroplastic (PVC) Corer
Samples	SampleCollection	Insect Trap

Data Element Valid Values

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

Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Pump/Piston
Samples	SampleCollection	Pump/Rotary
Samples	SampleCollection	Pump/Submersible
Samples	SampleCollection	Pump/Turbine
Samples	SampleCollection	Purse Seine Net
Samples	SampleCollection	Push Net
Samples	SampleCollection	Push Point Sampler
Samples	SampleCollection	Radiello
Samples	SampleCollection	Rectangular Net
Samples	SampleCollection	Remotely Operated Vehicle
Samples	SampleCollection	Rock Basket
Samples	SampleCollection	Roller Frame Trawl
Samples	SampleCollection	Rotenone
Samples	SampleCollection	Roving Drop Net
Samples	SampleCollection	Scoop Fish Grab
Samples	SampleCollection	Sediment Trap
Samples	SampleCollection	Seine Net
Samples	SampleCollection	Semipermeable Membrane Device
Samples	SampleCollection	Set (Passive) Gill Net
Samples	SampleCollection	Shelby Tube
Samples	SampleCollection	Ship Sea Chest
Samples	SampleCollection	Shipek Grab
Samples	SampleCollection	SHOVEL
Samples	SampleCollection	Shrimp Trawl
Samples	SampleCollection	Simple Conical Net
Samples	SampleCollection	Single-Vessel Operated Tow Net
Samples	SampleCollection	Smith-McIntire Grab
Samples	SampleCollection	Sodium Cyanide
Samples	SampleCollection	Spear/Gun
Samples	SampleCollection	Spear/Hand
Samples	SampleCollection	Spear/Hawaiian Sling
Samples	SampleCollection	Split Spoon
Samples	SampleCollection	Square-Mouth Net
Samples	SampleCollection	Stainless Steel Spoon
Samples	SampleCollection	Stationary Drop Net
Samples	SampleCollection	Still Camera
Samples	SampleCollection	Stop Net
Samples	SampleCollection	Storm Water Sampler
Samples	SampleCollection	Stovepipe Sampler
Samples	SampleCollection	Stream-Side Electroshock
Samples	SampleCollection	Suction Dredge
Samples	SampleCollection	Summa
Samples	SampleCollection	Surber Sampler
Samples	SampleCollection	Syringe
Samples	SampleCollection	Terminal Bag
Samples	SampleCollection	Tile Plate
Samples	SampleCollection	Tow Net

Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Towed Dredge
Samples	SampleCollection	Trammel Net
Samples	SampleCollection	Trap Net
Samples	SampleCollection	Trap Substrate (Other)
Samples	SampleCollection	Traveling Screen
Samples	SampleCollection	Trot Line
Samples	SampleCollection	T-Sampler
Samples	SampleCollection	Tucker Net
Samples	SampleCollection	Two-Vessel Operated Tow Net
Samples	SampleCollection	Van Dorn Bottle
Samples	SampleCollection	Van Veen Grab
Samples	SampleCollection	Variable Mesh Gill Net
Samples	SampleCollection	Vibrating Corer
Samples	SampleCollection	Video Camera
Samples	SampleCollection	Vinyl Tube
Samples	SampleCollection	Visual Sighting
Samples	SampleCollection	Water Bottle
Samples	SampleCollection	Water Sampler (Other)
Samples	SampleCollection	WBH-96
Samples	SampleCollection	Whirl-pak bag
Samples	SampleCollection	Wisconsin-Style Net
Samples	SampleCollection	Yankee Trawl
Samples	SampleCollection	Young Grab
Samples	Sampler	<Performing Parties> Will be added as they are defined and organized into groups
Samples	SampleType	Depth Integrated Sample
Samples	SampleType	Field Duplicate
Samples	SampleType	Field Msr/Obs
Samples	SampleType	Field Sample
Samples	SampleType	Incremental Sampling Horiz
Samples	SampleType	Incremental Sampling Vert
Samples	SampleType	QC Blank - Bottle/Preservative
Samples	SampleType	QC Blank - Field
Samples	SampleType	QC Blank - Filter
Samples	SampleType	QC Blank - Rinsate/Equipment
Samples	SampleType	QC Blank - Trip
Samples	SampleType	Sample-Composite Without Parents
LabResults	Analysis	<To be determined from performing party site specific sampling plan>
LabResults	Analyte	1,1-Dichloroethane
LabResults	Analyte	1,1-Dichloroethene
LabResults	Analyte	1,1-Dichloroethylene
LabResults	Analyte	1,1,1-Trichloroethane
LabResults	Analyte	1,1,1,-Trichloroethane
LabResults	Analyte	1,1,2-Trichloroethane
LabResults	Analyte	Trichloroethane
LabResults	Analyte	1,1,2,2-Tetrachloroethane

Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Tetrachloroethane
LabResults	Analyte	1,2-Dibromoethane
LabResults	Analyte	Dibromoethane
LabResults	Analyte	1,2-Dichloroethane
LabResults	Analyte	Ethylene dichloride
LabResults	Analyte	1,2-Dichloropropane
LabResults	Analyte	Propylene dichloride
LabResults	Analyte	1,2,3-Trichloropropane
LabResults	Analyte	1,2,3,4,7,8-HxCDF
LabResults	Analyte	1,2,3,7,8-PeCDD
LabResults	Analyte	1,2,4-Trichlorobenzene
LabResults	Analyte	1,2-Dichlorobenzene
LabResults	Analyte	1,3-Dichlorobenzene
LabResults	Analyte	1,4-Dichlorobenzene
LabResults	Analyte	2-Butanone
LabResults	Analyte	Methyl Ethyl Ketone
LabResults	Analyte	2-Hexanone
LabResults	Analyte	2-Chloroethylvinyl Ether
LabResults	Analyte	2,4,5-TP (Silvex)
LabResults	Analyte	2,2'-oxybis(1- Chloropropane)
LabResults	Analyte	2,3,4,6-Tetrachlorophenol
LabResults	Analyte	2,3,4,7,8-PeCDF
LabResults	Analyte	2,3,7,8-TCDF
LabResults	Analyte	2,3,7,8-TCDD-Dioxin
LabResults	Analyte	2,3,7,8-TCDD
LabResults	Analyte	2,4,5-Trichlorophenol
LabResults	Analyte	2,4,6-Trichlorophenol
LabResults	Analyte	2,4-Dichlorophenol
LabResults	Analyte	2,4-D
LabResults	Analyte	2,4-Dimethylphenol
LabResults	Analyte	Dinitrophenol
LabResults	Analyte	2,4-Dinitrophenol
LabResults	Analyte	2,4-Dinitrotoluene
LabResults	Analyte	2,6-Dinitrotoluene
LabResults	Analyte	2-Chloronaphthalene
LabResults	Analyte	2-Chlorophenol
LabResults	Analyte	2-Methylnaphthalene
LabResults	Analyte	o-Cresol
LabResults	Analyte	2-Methylphenol
LabResults	Analyte	2-Nitroaniline
LabResults	Analyte	2-Nitrophenol
LabResults	Analyte	3,3'-Dichlorobenzidine
LabResults	Analyte	3,3'- Dichlorobenzidine
LabResults	Analyte	3-Nitroaniline
LabResults	Analyte	Methyl isobutyl ketone
LabResults	Analyte	4-Methyl-2-Pentanone
LabResults	Analyte	4-Bromophenyl- phenylether

Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	4-Bromophenyl phenyl ether
LabResults	Analyte	3-Methyl-4-chlorophenol
LabResults	Analyte	4-Chloro-3-methylphenol
LabResults	Analyte	4-Chloro-3- methylphenol
LabResults	Analyte	4-Chloroaniline
LabResults	Analyte	4-Chlorophenyl phenyl ether
LabResults	Analyte	4-Chlorophenyl- phenyl ether
LabResults	Analyte	4-Methylphenol
LabResults	Analyte	p-Cresol
LabResults	Analyte	4-Nitroaniline
LabResults	Analyte	4-Nitrophenol
LabResults	Analyte	Acenaphthene
LabResults	Analyte	Acenaphthylene
LabResults	Analyte	Acrolein
LabResults	Analyte	Acrylonitrile
LabResults	Analyte	Aldrin
LabResults	Analyte	Aluminum
LabResults	Analyte	Aluminim
LabResults	Analyte	Anthracene
LabResults	Analyte	Antimony
LabResults	Analyte	Arsenic
LabResults	Analyte	Benzene
LabResults	Analyte	Benzo(a)anthracene
LabResults	Analyte	Benzo(a)pyrene
LabResults	Analyte	Benzo(b)fluoranthene
LabResults	Analyte	Benzo(ghi)perylene
LabResults	Analyte	Benzo(g,h,i)perylene
LabResults	Analyte	Benzo(k)fluoranthene
LabResults	Analyte	Benzoic Acid
LabResults	Analyte	Benzyl alcohol
LabResults	Analyte	bis(2-Chloroethoxy) methane
LabResults	Analyte	Bis(2-chloroethyl) ether
LabResults	Analyte	bis(2-Chloroethyl)ether
LabResults	Analyte	bis(2-Ethylhexyl) phthalate
LabResults	Analyte	Di(2-ethylhexyl)phthalate
LabResults	Analyte	Bromochloromethane
LabResults	Analyte	Bromodichloromethane
LabResults	Analyte	Dichlorobromomethane
LabResults	Analyte	Tribromomethane
LabResults	Analyte	Bromoform
LabResults	Analyte	Bromomethane
LabResults	Analyte	Methyl Bromide
LabResults	Analyte	Butylbenzylphthalate
LabResults	Analyte	Butyl benzyl phthalate
LabResults	Analyte	Cadmium
LabResults	Analyte	Carbazole
LabResults	Analyte	Carbon Disulfide

Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Tetrachloromethane
LabResults	Analyte	Carbon Tetrachloride
LabResults	Analyte	Chlorobenzene, total
LabResults	Analyte	Chlorobenzene
LabResults	Analyte	Chlorobenzene (each)
LabResults	Analyte	Chlorodibromomethane
LabResults	Analyte	Dibromochloromethane
LabResults	Analyte	Chloroethane
LabResults	Analyte	Chloroform
LabResults	Analyte	Methyl Chloride
LabResults	Analyte	Chloromethane
LabResults	Analyte	Chromium
LabResults	Analyte	Chrysene
LabResults	Analyte	cis-1,2-Dichloroethylene
LabResults	Analyte	cis-1,2-Dichloroethene
LabResults	Analyte	cis-1,3-Dichloropropene
LabResults	Analyte	Copper
LabResults	Analyte	Cyanide
LabResults	Analyte	Cyanide, free (total)
LabResults	Analyte	Dibenzo(a,h)anthracene
LabResults	Analyte	Dibenzo(a,h)- anthracene
LabResults	Analyte	Dibenzofuran
LabResults	Analyte	Dibromomethane
LabResults	Analyte	Dichlorodifluoromethane
LabResults	Analyte	DDD
LabResults	Analyte	4,4'-DDD
LabResults	Analyte	p,p'-DDD
LabResults	Analyte	p,p'-DDE
LabResults	Analyte	4,4'-DDE
LabResults	Analyte	EDDE
LabResults	Analyte	DDE
LabResults	Analyte	p,p'-DDT
LabResults	Analyte	Total DDT
LabResults	Analyte	4,4'-DDT
LabResults	Analyte	DDT
LabResults	Analyte	Dieldrin
LabResults	Analyte	Diethylphthalate
LabResults	Analyte	Dimethyl phthalate
LabResults	Analyte	Dimethylphthalate
LabResults	Analyte	Di-n-butyl phthalate
LabResults	Analyte	Di-n-butylphthalate
LabResults	Analyte	n-Butylphthalate
LabResults	Analyte	Di-n-octyl phthalate
LabResults	Analyte	Di-n-octylphthalate
LabResults	Analyte	Endosulfan I
LabResults	Analyte	a-Endosulfan
LabResults	Analyte	b-Endosulfan

Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Endosulfan II
LabResults	Analyte	Endosulfan sulfate
LabResults	Analyte	Endrin
LabResults	Analyte	Endrin aldehyde
LabResults	Analyte	Endrin ketone
LabResults	Analyte	Ethyl benzene
LabResults	Analyte	Ethylbenzene
LabResults	Analyte	Fluoranthene
LabResults	Analyte	Fluorene
LabResults	Analyte	Heptachlor
LabResults	Analyte	Heptachlor Epoxide
LabResults	Analyte	Hexachlorobenzene
LabResults	Analyte	Hexachlorobutadiene
LabResults	Analyte	Hexachlorocyclopentadiene
LabResults	Analyte	Hexachloroethane
LabResults	Analyte	Indeno(1,2,3-c,d)pyrene
LabResults	Analyte	Indeno(1,2,3-cd)- pyrene
LabResults	Analyte	Iodomethane
LabResults	Analyte	Isophorone
LabResults	Analyte	Isopropylbenzene
LabResults	Analyte	Manganese
LabResults	Analyte	Mercury
LabResults	Analyte	Mercury, Inorganic
LabResults	Analyte	Methoxychlor
LabResults	Analyte	Methylmercury
LabResults	Analyte	2-Methyl-4,6-Dinitrophenol
LabResults	Analyte	4,6-Dinitro-2- methylphenol
LabResults	Analyte	4,6-Dinitro-2-methylphenol
LabResults	Analyte	Methylene chloride
LabResults	Analyte	Dichloromethane
LabResults	Analyte	Methyl tert-Butyl Ether
LabResults	Analyte	Naphthalene
LabResults	Analyte	Nickel
LabResults	Analyte	Nitrobenzene
LabResults	Analyte	N-Nitroso-di-n propylamine
LabResults	Analyte	N-Nitrosodi-n-propylamine
LabResults	Analyte	N-Nitrosodiphenylamine
LabResults	Analyte	N-Nitroso diphenylamine
LabResults	Analyte	Pentachlorophenol
LabResults	Analyte	Phenanthrene
LabResults	Analyte	Phenol
LabResults	Analyte	Pyrene
LabResults	Analyte	Selenium
LabResults	Analyte	Silver
LabResults	Analyte	Styrene
LabResults	Analyte	Tetrachloroethylene
LabResults	Analyte	Tetrachloroethene

Data Element Valid Values

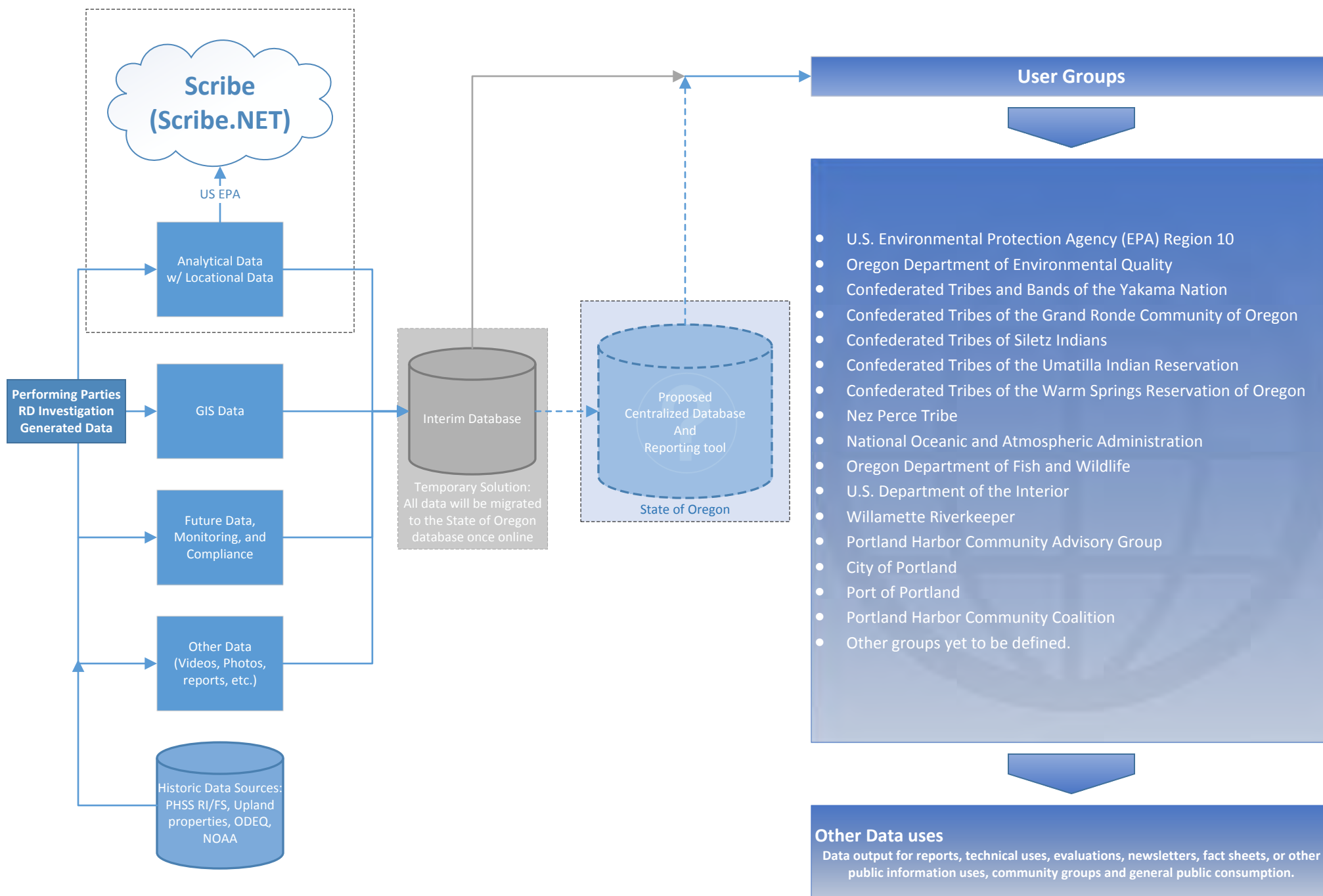
Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Toluene
LabResults	Analyte	Toxaphene
LabResults	Analyte	1,2-Trans-Dichloroethylene
LabResults	Analyte	trans-1,2-Dichloroethylene
LabResults	Analyte	trans-1,2-Dichloroethene
LabResults	Analyte	trans-1,3-Dichloropropene
LabResults	Analyte	trans-1,4-Dichloro-2-Butene
LabResults	Analyte	Tributyl tin
LabResults	Analyte	Trichloroethylene
LabResults	Analyte	Trichloroethene
LabResults	Analyte	Trichlorofluoromethane
LabResults	Analyte	Vanadium
LabResults	Analyte	Vinyl Acetate
LabResults	Analyte	Vinyl Chloride
LabResults	Analyte	Xylene
LabResults	Analyte	Xylene, total
LabResults	Analyte	Xylenes (total)
LabResults	Analyte	Zinc
LabResults	Analyte	alpha-BHC
LabResults	Analyte	a-BHC
LabResults	Analyte	beta-BHC
LabResults	Analyte	b-BHC
LabResults	Analyte	g-BHC
LabResults	Analyte	gamma-BHC (Lindane)
LabResults	Analyte	Lindane (g-BHC)
LabResults	Analyte	delta-BHC
LabResults	Analyte	d-BHC
LabResults	Result_Units	<To be determined from performing party site specific sampling plan>
LabResults	Total_or_Dissolved	Total
LabResults	Total_or_Dissolved	Dissolved
LabResults	Total_or_Dissolved	NA
LabResults	Total_or_Dissolved	DI Leach
LabResults	Total_or_Dissolved	MWM (Meteoric Water Mobility Ext)
LabResults	Total_or_Dissolved	SPLP
LabResults	Total_or_Dissolved	Suspended
LabResults	Total_or_Dissolved	TCLP
LabResults	Total_or_Dissolved	Acid Soluble
LabResults	Total_or_Dissolved	Bioavailable
LabResults	Total_or_Dissolved	Comb Available
LabResults	Total_or_Dissolved	Extractable
LabResults	Total_or_Dissolved	Filterable
LabResults	Total_or_Dissolved	Fixed
LabResults	Total_or_Dissolved	Free Available
LabResults	Total_or_Dissolved	Inorganic
LabResults	Total_or_Dissolved	Non-filterable
LabResults	Total_or_Dissolved	Non-settleable

Data Element Valid Values

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Total_or_Dissolved	Non-volatile
LabResults	Total_or_Dissolved	Organic
LabResults	Total_or_Dissolved	Pot. Dissolved
LabResults	Total_or_Dissolved	Settleable
LabResults	Total_or_Dissolved	Supernate
LabResults	Total_or_Dissolved	Total Recoverable
LabResults	Total_or_Dissolved	Total Residual
LabResults	Total_or_Dissolved	Vapor
LabResults	Total_or_Dissolved	Volatile
LabResults	Total_or_Dissolved	WAD
LabResults	Analytical_Method	<To be determined from performing party site specific sampling plan>
LabResults	Basis	Wet
LabResults	Basis	Dry
LabResults	Lab_Name	<To be determined from performing party site specific sampling plan>
LabResults	QA_Comment	Final
LabResults	QA_Comment	Accepted
LabResults	QA_Comment	Preliminary
LabResults	QA_Comment	Rejected
LabResults	QA_Comment	Validated
LabResults	Result_Qualifier	J
LabResults	Result_Qualifier	U
LabResults	Result_Qualifier	UJ
LabResults	Result_Qualifier	J-
LabResults	Result_Qualifier	J+
LabResults	Result_Qualifier	R
LabResults	Validated	Yes
LabResults	Validated	No
LabResults	ValidationLevel	S2BVEM
LabResults	ValidationLevel	S3VEM
LabResults	ValidationLevel	S4VEM
LabResults	ValidationLevel	NA
LabResults	ValueType	Actual
LabResults	ValueType	Calculated
LabResults	ValueType	Blank Corrected Calc
LabResults	ValueType	Control Adjusted
LabResults	ValueType	Estimated

Appendix C - Data Management Conceptual Model

Data Management Conceptual Model



Attachment 2

Example Sufficiency Assessment Summary Table

RM11E Sufficiency Assessment Summary
November 1, 2018

Site	ECSI #	Pathway(s)	Status	Sufficiency Assessment Contaminants	Milestone Document	Remedial Design/Source Control Task
Pacificorp-Albina Riverlots	5117	NA	A	NA	Source Control Decision, July 14 2017	NA
PacifiCorp-Knott Substation	5117	NA	A	NA	Source Control Decision, April 5 2013	NA
Tarr Inc.	1139	GW	B	Chlorinated VOCs	Record of Decision, July 17, 2017	DEQ ROD requires source area treatment and performance monitoring for groundwater pathway.
Glacier NW	5449	SW	B	BEHP	Source Control Measures Implementation Report, Nov 2016	Additional stormwater source control measures and performance monitoring for BEHP continues. Recent source tracing results presented in a September 2018 letter report available on ECSI. Source not yet fully controlled.
Westinghouse	4497	GW, SW	A	NA	Source Control Report, April 2010	Draft source control decision in review
Cargill-Irving Grain Elevator (Temco)	5561	SW	B	Metals	Source Control Evaluation, July 2014	Stormwater controls are being evaluated through monitoring. Most recent sampling results presented in February 2018 stormwater sampling report available on ECSI.
Tucker Building	3036	NA	A	NA	Source Control Decision, July 2017	NA
Valvoline Inc.	3215	NA	A	NA	NA	Excluded for SCE – no source or incomplete pathway.
Master Chemical	1302	NA	A	NA	NA	Excluded for SCE – no source or incomplete pathway.
Ross Island Sand & Gravel	5577	RB	B	NA	Source Control Evaluation Letter, June 6 2011	DEQ/EPA to confirm riverbank erosion pathway not a concern, DEQ issued a site inspection request October 8, 2018.
Vermiculite Northwest (former) (WR Grace)	2761	NA	A	NA	NA	Excluded for SCE – no source or incomplete pathway.
Cascade Brake Products	1019	NA	A	NA	NA	Excluded for SCE – no source or incomplete pathway.
Campbell Dry Cleaner	5680	NA	A	NA	NFA Determination July 2016	Excluded for SCE – no source or incomplete pathway.
Kenton Foundry	5758	GW, SW	A	PCBs, metals	ICP Report, April 2015. Source Control Evaluation pending	Site is adjacent to Westinghouse, and as with that site has been subject to contaminant removal and redevelopment by City of Portland. Stormwater issues have been resolved, and groundwater data for Westinghouse are applicable to Kenton Foundry (no downgradient impacts). SCE and DEQ SCD pending.
UPRR Albina Yard – Outfall 45	178	SW	B	NA	-	SW discharge to the RM11E SMA from the UPRR Albina Yard is limited to a small parking area that drains to Outfall 45. Assigned low priority given the limited size and historical low concentrations. SCE work pending.

Site	ECSI #	Pathway(s)	Status	Sufficiency Assessment Contaminants	Milestone Document	Remedial Design/Source Control Task
Riverstreet Warehouse Fire (a.k.a. Stan Herman Site)	6225	RB	B	NA	EPA October 22, 2018 letter	Riverbank and upland capped by rock following EPA emergency response. EPA and DEQ concur that riverbank does not pose a recontamination risk, while the limited site upland is either paved or capped by rock.
ODOT/Stan Herman/KF Jacobson Lease	--	RB	C	PAHs associated with asphalt grindings	NA	DEQ working with ODOT to remove/contain asphalt grindings in “ramp area” jointly owned by ODOT and Stan Herman, and with ODOT on leaseholder (KF Jacobson) management of asphaltic material on ODOT property beneath the Fremont Bridge.
2100 N. Albina	6287	SW, GW	B	TPH, metals	Phase 1 ESA; December 2017	PPA signed with DEQ, source control related investigation in progress.
ODOT Fremont Bridge	5437	SW	B	Metals, PAHs, BEHP, PCBs, DDx	NA	Additional stormwater source control measures needed for Fremont Bridge scuppers and areas draining to outfall WR-306 and performance monitoring.
City of Portland	2425	SW	A	NA	City of Portland Effectiveness Monitoring Report July 2018	Source control decision pending.
Upriver	--	SD	B	PH COCs	NA	Site-wide baseline and long-term monitoring.
In-Water SMA	--	SD, PW, OW	C	PH Focused COCs	NA	Addressed during design.

Legend

Highlighting indicates sites for which source control decisions have been completed by DEQ.

All milestone documents are available on DEQ’s ECSI website.

- (A) Sources are sufficiently controlled
 - (B) Sources are conditionally controlled
 - (C) Sources are not sufficiently assessed or controlled
- NA = Not applicable, all pathway(s) excluded.
GW = Groundwater
SW = Stormwater
RB = Riverbank erosion
SD = Sediment
PW = Porewater
OW = Overwater activities

Appendix B

Willamette Cove Project Area

