UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 10

IN THE MATTER OF:	)	U.S. EPA Region 10
	)	CERCLA Docket No. 10-2001-0055
Lower Duwamish Waterway	)	
Seattle, WA	)	
	)	
Port of Seattle, City of Seattle,	)	
King County, The Boeing Company	)	
	)	
Respondents	)	
	)	
Proceeding Under Sections 104, 122(a)	)	THIRD AMENDMENT
and 122(d)(3) of the Comprehensive	)	
Environmental Response, Compensation,	)	
and Liability Act, 42 U.S.C. §§ 9604,	)	
9622(a) and 122(d)(3)	)	
	)	

Introduction

The City of Seattle, King County, the Port of Seattle, and the Boeing Company ("Respondents") entered into an *Administrative Order on Consent for Remedial Investigation/Feasibility Study*, U.S. EPA, Region 10 Docket No. CERCLA 10-2001-0055, Ecology Docket No 00TCPNR-1895 (12/20/2000) with the United States Environmental Protection Agency ("EPA") and the Washington State Department of Ecology (the "AOC"). Respondents performed a remedial investigation and feasibility study for the Site under the oversight of EPA and Ecology pursuant to the AOC. The AOC has been amended twice to provide for the performance of additional studies related to the Site. Respondents continue to perform these studies under the oversight of EPA and Ecology.

The EPA issued a record of decision for the Lower Duwamish Waterway Superfund Site on November 21, 2014 (the "Lower Duwamish Waterway ROD"). The Lower Duwamish Waterway ROD selected remedial actions for the in-waterway portion of the Lower Duwamish Waterway Superfund Site. In addition, the Lower Duwamish Waterway ROD identifies pre-remedial design activities, including baseline sampling of a variety of environmental media and a survey of waterway users that may be conducted before remedial design.

Third Amendment

EPA, Ecology, and Respondents agree to amend the RI/FS AOC as follows:

1. The work performed pursuant to this Third Amendment shall comply with CERCLA and its implementing regulations, the National Contingency Plan, 40 C.F.R. Part 300 and shall be subject to the review and approval of the EPA. With the exceptions of the authority to review (except as a support agency) and approve work, resolve disputes (excluding Ecology's ability to resolve disputes related to its cost recovery), or enforce work performed under this Third Amendment, Ecology shall retain all rights and obligations it has under the RI/FS AOC, including those rights of access and cost recovery conferred to it by Sections XIV and XXII of the RI/FS AOC.

2. The objectives of this Third Amendment are identified in **Paragraphs numbered 1 through 5 of** Section 1 of the attached Statement of Work for Third Amendment to the AOC.

3. For the purposes of this Amendment, Paragraph 3 of Section X (Modification of the Work Plan) of the AOC shall be deleted and replaced by the following:

   EPA may identify gaps in the work required under the Third Amendment that prevent the accomplishment of the objectives of the Third Amendment **as defined above**. In that event, EPA may request in writing that LDWG perform additional work under this Third Amendment, as necessary for the accomplishment of these objectives. Respondents shall confirm their willingness to perform such additional work, in writing, to EPA within twenty-one (21) days of receipt of the EPA request, or Respondents shall invoke dispute resolution. Subject to EPA resolution of any dispute, Respondents shall implement the additional work requested by EPA. The additional work shall be completed according to the standards, specifications, and schedule set forth or approved by EPA in a written modification to a plan or written work plan supplement. EPA reserves the right to conduct the work at any point, to seek reimbursement from Respondents, and/or seek any other appropriate relief. If EPA determines that conditions at the Site are creating or have the potential to create a danger to human health or welfare on-site or in the surrounding area or to the environment, EPA may order Respondent to stop further implementation of this Order for such period of time in the judgement of EPA is needed to abate the danger.

4. The amounts paid by Respondents to the EPA Hazardous Superfund pursuant to the requirements of Section XXII (Payment of EPA Oversight Costs) of the AOC shall be deposited by EPA into the Lower Duwamish Waterway Superfund Site Special Account pursuant to Section XXI (Reservations of Rights and Reimbursement of Costs) of the AOC to be retained and used to conduct or finance response actions at or in connection with the Lower Duwamish Waterway Superfund Site. In addition, EPA has several other site-specific accounts related to the Lower Duwamish Waterway Superfund Site

within the EPA Hazardous Superfund. Funds held in such site specific accounts may be transferred to the Lower Duwamish Waterway Superfund Site Special Account if EPA determines that the funds are no longer needed to finance or otherwise support the implementation of response actions related to response action for which such site specific account was created. After completion of response actions at or in connection with the Lower Duwamish Waterway Superfund Site, any funds remaining in the Lower Duwamish Waterway Site Specific Account may be transferred by EPA to the EPA Hazardous Substance Superfund.

5. The list of deliverables identified in Paragraph 4 of Section XIX (Delay in Performance, EPA Stipulated Penalties, Enforcement) of the AOC is amended to delete deliverables (3) through (6) ;and to include the original and any revised Quality Assurance Project Plan, Data Evaluation Report, Report for Waterway Survey and Assessment of In-Water Structures, Recovery Category Recommendations Report, and Design Strategy Recommendations Report identified in the attached SOW.

6. The list of deliverables identified in Paragraph 5 of Section XIX (Delay in Performance, EPA Stipulated Penalties, Enforcment) is amended to delete deliverables (1) through (9) and include any final data report and any final technical memorandum identified in the attached SOW.

7. Respondents shall, subject to and conditioned upon the prior approval of EPA, implement the activities required by the attached SOW, which is incorporated into and enforceable under the terms of the AOC as amended by this Third Amendment.

It is so ORDERED AND AGREED this _____ day of _____, 2_____.

BY:_____ DATE:_____
Shawn Blocker
Unit Manager Office of Environmental Cleanup
Region 10
United States Environmental Protection Agency

By: _____ DATE:_____
James J. Pendowski
Program Manager
Toxics Cleanup Program
Washington Department of Ecology

EFFECTIVE DATE: _____

Agreed this ___ day of _____, 2015
For Respondent Port of Seattle

By: _____
Name
Title

Agreed this ___ day of _____, 2015
For Respondent City of Seattle

By: _____
Name
Title

Agreed this ___ day of _____, 2015
For Respondent King County

By: _____
Name
Title

Agreed this ___ day of _____, 2015
For Respondent The Boeing Company

By: _____
Name
Title

Appendix A: Statement of Work for Third Amendment of the LDW AOC

Pre-Design Studies

This Statement of Work (SOW) for the Third Amendment of the Lower Duwamish Waterway Superfund Site (LDW) administrative order on consent (AOC) provides an overview of remedial design phase pre-design work to be performed (Pre-Design Studies), a list of tasks, and a schedule of deliverables. The requirements of the Selected Remedy are summarized in the Record of Decision (ROD) issued in November 2014, including Section 13.

I. Objectives of Pre-Design Studies

The overall objective of the Pre-Design Studies is to advance the implementation of the Selected Remedy for the LDW. More specifically, the Lower Duwamish Waterway Group, referred to herein as LDWG or Respondents, shall perform work, as described in Section II below, to:

1. consistent with Section 13.2.3 of the ROD, to establish post-Early Action Area (EAA) cleanup baseline conditions in environmental media (sediments, surface water, porewater, tissue), to evaluate the effectiveness of EAA cleanups and the degree to which natural recovery has occurred since the Remedial Investigation/Feasibility Study (RI/FS), to serve as a baseline for comparison to post-remedial action data, and to aid in the evaluation of source-control,
2. perform a survey of waterway users and an assessment of in-water structures to inform recovery category recommendations and technology assignments,
3. support development of appropriate and effective institutional controls for consumption of LDW resident seafood,
4. identify other site-wide and area-specific remedial design and remedial action information needs, and
5. develop a strategy for remedial design phasing.

To help EPA ensure that all remedial design data needs are addressed in the appropriate sequence and without delay, LDWG shall describe the environmental data types and other information needed in order to complete remedial design, including baseline data, site-wide data, area-specific data, and remedial design data needs specifically identified in the ROD. LDWG is not required to fill area-specific pre-design data needs under this AOC amendment except as described below.

This SOW does not require LDWG to duplicate characterization required pursuant to a Model Toxics Control Act (MTCA) order. The design strategy developed in Task 10 will further specify and facilitate the implementation of remaining pre-design investigations and remedial design work.

II. Work to be Performed

LDWG shall implement the tasks below for planning, implementation, and reporting of the various Pre-Design Studies.

Task 1: Work Plan. LDWG shall submit a work plan and a schedule for phasing, sequencing, and implementing the tasks required to meet the objectives of this AOC amendment. The Work Plan shall include the RI/FS conceptual site model, updated as appropriate, and data quality objectives (DQOs) for analytical data collection. The Work Plan must include a data management plan for laboratory, Geographic Information System (GIS) locational point data, and spatial data deliverables that is consistent with the EPA Region 10 (January 2014 draft or later) Data Management Plan.

In advance of the initial Work Plan submittal LDWG shall provide a draft annotated outline along with tables and figures showing proposed phasing, sampling types, stratification approach, conceptual sample locations and numbers, and analytical methods, with a supporting memorandum detailing the rationale for the approach, to facilitate input from EPA and stakeholders.

Baseline Sampling: The baseline sampling shall establish a statistically-based LDW-wide baseline dataset of environmental media that is spatially consistent with anticipated future long term monitoring data collection efforts and that will provide a basis for comparison with future LDW-wide data collection to assess progress toward achieving Applicable, Relevant, and Appropriate Requirements (ARARs) and the cleanup levels for Remedial Action Objectives (RAOs) 1, 2, and 4, at the spatial scales indicated in the ROD, Table 19. While more intensive post-remedial action baseline characterization relative to RAO 3 will be developed during remedial design, surface sediment baseline samples obtained under this AOC amendment shall be analyzed for comparison to RAO 3 cleanup levels in Table 20 of the ROD and shall include locations representative of a range of conditions in the MNR areas (>SCO and <SCO) identified in Figure 18 of the ROD.

Baseline porewater samples from the biologically active zone will be collected in ENR and MNR areas identified in Figure 18 of the ROD, collocated with a subset of sediment samples. The porewater samples will be analyzed for cPAHs, PCBs, arsenic, and dioxins/furans, with relevant analyses (OC, AVS/SEM) and additional metals data reporting as determined necessary by EPA. EPA may approve use of passive sampling for organics and may approve reduced PCB and arsenic analysis if, based on existing porewater data for PCBs and arsenic (e.g. ongoing RARE, Activated Carbon Pilot, and MIT studies), additional PCBs and arsenic data are not necessary.

This AOC amendment does not include the comprehensive area-specific baseline characterization necessary in the future to assess remedy performance in remediated areas and to document progress towards natural recovery in Monitored Natural Recovery (MNR) and Enhanced Natural Recovery (ENR) areas. Data quality objectives for this future monitoring will be determined in remedial design.

Other Characterization: The Work Plan shall include targeted sampling for the following purposes, to the extent they are not addressed by baseline sampling:

- to help the Washington Department of Ecology assess the sufficiency of contaminant source control,
- to observe site-wide trends and changes in surface sediment quality and surface water quality over time,

- to support comparisons of actual to predicted natural recovery,
- to improve the understanding of the relationship between clam, porewater, and sediment.

To advance these objectives, subject to the limitations in Section I, the sampling design will include reoccupation of some sediment sampling locations sampled in the RI/FS, particularly MNR areas; sampling of surface water to assess variability on a sitewide scale, sufficient for use in future trend analyses; seep sampling in LDW near where existing data are insufficient to demonstrate that groundwater is not a significant ongoing source of contamination or contaminant remobilization above the RALs; and sediment sampling near outfalls and in intertidal eroding bank areas between plus 4-feet Mean Lower Low Water (MLLW) and Mean Higher High Water (MHHW).

Identification of other data needs: The Work Plan shall identify additional time-critical data needs for area-specific pre-design purposes and shall generally describe the data types, use and general sequence of engineering and planning information needed for the detailed engineering design phase. The Work Plan shall indicate the process and lead time for obtaining this information, so that EPA can ensure that the tasks will proceed in a timely fashion.

The description of data needs for area-specific pre-design purposes may be at a lower level of detail than Data Quality Objectives (DQOs) for characterization required under this AOC amendment, but shall be comprehensive and shall include estimated timelines for obtaining information or environmental data. In addition to information needed to define areas and volumes for application of remedial technologies, the data needs shall consider the EAAs and other ongoing or completed sediment cleanup projects, the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995), ongoing work (such as the Fisher Study, Pollutant Loading Assessment, RARE study, and activated carbon pilot study) and other anticipated remedial design decisions, information needs and criteria. This includes information that may be needed for determining operations areas, material and equipment storage areas, access roads, truck routes and vessel management planning, waterway access and staging areas, cap thicknesses (in accordance with EPA and USACE (1998), cover, habitat, and backfill material types and acceptance criteria (for habitat material, see Section 13.2.1.1), compliance with ARARs, criteria for selection of activated carbon or other carbon sequestering material (in ENR areas, if proposed, and as a component of caps), candidate material sources, sediment dredging and dewatering methods, dredged material disposal methods, environmental protection and monitoring.

Task 2. Existing data compilation technical memorandum. LDWG shall compile available data for sediments (including incoming suspended sediments from the Green/Duwamish River and storm drain and CSO solids), shoreline bank soils, surface water, porewater, groundwater, and fish tissue, including relevant data obtained or made available after April 2010 and/or associated with EAA monitoring. LDWG shall obtain data from EIM, LDWG parties, EPA/Ecology, and others as practicable.

LDWG shall review sampling data collected within the LDW Superfund site. Those which meet current Superfund data quality requirements shall be compiled and presented in tables and maps. Sources of data within the site that does not meet these requirements shall be referenced in the compilation, as was done for the RI/FS. LDWG shall compile and present data collected

upstream of the site also, providing an overview for each data set of the data quality assurance approach. The upstream data may be used in the future for Superfund decisions. LDWG shall update the groundwater data set for upland areas following the general approach used in the Phase I RI, compiling data for the COCs in the ROD (Tables 19 and 20) and for VOCs. At this time LDWG is not required to perform data quality reviews of groundwater, upstream, storm drain, and CSO solids data under this AOC amendment.

LDWG shall submit for EPA review and approval a draft technical memorandum summarizing the sources and types of data, sampling years, number of samples, and data quality reviews where conducted. Sample locations shall be presented in tabular form and plotted on GIS figures. The figures shall include outfall locations, in-water and over-water structures, and property lines. Compiled data shall be included in an appendix. The GIS figures shall include layers with RI/FS data.

The technical memorandum shall include an assessment of the ongoing RARE, Activated Carbon Pilot, and MIT study plans and, as available, results to determine if additional information is needed regarding the relationship between contaminants in tissue, sediment and porewater.

Task 3: Quality Assurance Project Plan (QAPP). LDWG shall prepare a Quality Assurance Project Plan (QAPP) for EPA review and approval. The QAPP shall address collection of data necessary based on a review of existing data to achieve the DQOs of the approved work plan.

The QAPP shall comply with current EPA guidance. For phased field efforts, QAPP addenda or multiple QAPPs may be necessary. The QAPP shall address surface sediment, intertidal subsurface sediment, surface water, fish and shellfish tissue, and porewater baseline samples, as required in the ROD. The QAPP will consider temporal variations in surface water and will provide for multiple rounds of surface water sampling. The QAPP will identify the appropriate times for sampling the different tissue types.

The QAPP shall include the DQOs refined and adjusted if necessary based on the compilation of existing data. It shall include all appropriate supporting documentation, such as a Field Sampling Plan and Health and Safety Plan. The QAPP shall include a statistically based rationale for the number of samples of each sampled medium, compositing schemes, and locations. Data gathering detailed in the QAPP shall meet the DQOs approved by EPA. The sampling approach below outlines a minimum sampling approach that will be revised as necessary based on the DQOs:

- Subtidal and intertidal sediment will be collected sitewide from the 0 to 10 cm interval and other depth intervals as required to meet the DQOs. The samples shall be analyzed for all COCs listed in the ROD, Tables 19 and 20, and associated conventional parameters (e.g., total organic carbon, grain size, percent solids). Polychlorinated bi-phenyl (PCB) congeners will be analyzed on a subset of samples. The congener data must be sufficient to assess the relationship between the PCB congener and Aroclor analytical results and must achieve detection limits to support establishment of baseline conditions

relative to the RAO 1 cleanup level. A subset of samples will be analyzed for the contaminants in ROD Tables 14 and 18.

- Intertidal areas will also be sampled over the 0 to 45cm depth and analyzed for the COCs listed in Table 19 of the ROD. A subset of samples will be analyzed for the contaminants in the ROD, Table 14.

- Surface water sampling will be distributed across the LDW, including samples upstream and in each of the three LDW reaches [River Mile 0.0-2.2, 2.2-4.0, and 4.0-5.0]) to assess ambient conditions over time relative to surface water quality ARARs. Samples will include whole water grabs collected at appropriate depths at each location. The surface water sample design will be based on assessing CERCLA compliance with ARARs under various waterway conditions. Several rounds of sampling are anticipated as part of the baseline sampling as necessary to address variability. Samples will initially be analyzed for all analytes in Washington Water Quality Standards (WQS) (WAC173-201A), national recommended AWQC (CWA Section 304[a]), and NTR (40 CFR 131.36(b)(1) as applied to Washington, 40 CFR 131(d)(14)), and other parameters as necessary to meet the DQOs. The QAPP may propose a statistical basis for reducing the surface water analytes to the contaminants that exceeded Ambient Water Quality Criteria (AWQC), the National Toxics Rule (NTR), or Washington WQS values after initial sampling rounds, as noted in ROD Section 13.2.3.

- Tissue samples will be collected from various species of fish and shellfish and various tissue types (e.g. whole-body, fillet) selected based on a review of species sampled during the RI and of the Fisher Study results. Tissue results will be used to track progress of cleanup actions for RAO 1 (human health seafood consumption) and RAO 4 (ecological seafood consumption by river otter). Samples will be analyzed for PCBs as Aroclors, arsenic, Dioxin/Furans, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), lipids, and solids. A subset will also be analyzed for the contaminants in Tables 14 and 18 of the ROD, and for PCB congeners.

- Porewater and seeps will be sampled and analyzed as required by the data quality objectives. The QAPP will identify appropriate analyses of seep or porewater samples for contaminants.

Task 4: Sampling and Analysis. After approval of the QAPP (or QAPPs for each sampling event), LDWG shall collect and analyze samples per the approved QAPP schedule(s).

Task 5: Sampling Data Report. For each sampling event, LDWG shall submit a data report for review and approval by EPA. Each data report must include a description of the field effort, any deviations from the approved QAPP, and validated data in tabulated format, data validation reports, laboratory data reports, and photographs documenting the work conducted. LDWG shall submit the data in electronic data deliverables format to EPA and shall upload the data to both the Environmental Information Management (EIM) system and water quality exchange (WQX).

Task 6: Data Evaluation Report. LDWG shall submit a data evaluation report for EPA review and approval. The report must present a narrative interpretation of data and results, results of statistical analyses, the data and statistics in tabular and graphic format, including maps and clear

graphics. The report must present baseline characterization results and other analytical data, statistical evaluations, and supporting calculations. The report shall compare baseline data to the cleanup levels in the ROD, Tables 19 and 20, and target tissue concentrations in the ROD, Table 21.

To assess the effects of the EAA cleanups on risk-driver surface weighted average concentration (SWAC) reduction, LDWG shall compare the results of the baseline sediment sampling with the RI/FS pre-EAA SWACs and BCM post-EAA model predictions. LDWG shall also compare the bedload composition model (BCM) input parameters (bed replacement, upstream, and lateral chemistry values) against available measured results for these inputs, and make recommendations for revised input parameters that may be used in future modeling for refined natural recovery predictions.

The report must specify whether the data met the DQOs, identify data gaps and issues, and present recommendations to resolve them with additional field characterization or other work.

LDWG shall prepare a GIS map with layers for RI/FS data, data collected by LDWG for baseline and other purposes under this SOW, and sediment data compiled under Task 2. If requested by EPA, LDWG shall prepare or support EPA preparation to make the GIS map web-accessible.

Task 7: Work Plan for Waterway User Survey and Assessment of In-Water Structures. LDWG shall submit a work plan for the survey of waterway users and assessment of in-water structures, for EPA review and approval. The work plan shall describe the approach and rationale, a list of contacts to be surveyed, questions to be asked, participants and documentation methods, and a schedule. It shall include details of planned assessment and mapping of in-water structures.

The primary objective of the Waterway User Survey, described in Section 13.2.3 of the ROD, is to better understand ~~the~~ current and reasonably anticipated vessel operations, including those of tribal fishing, maneuvering and anchoring of ships, barges and tugs; use of spuds; and other activities such as berth and wharf maintenance. Information about activities that may disturb the sediment bed will inform EPA decisions regarding Recovery Categories and will support development of location-specific use restrictions that would prohibit activities that may damage caps, such as tug maneuvering and spudding. The survey shall also provide information to inform plans for vessel management during construction and to support EPA decisions about development of location-specific use restrictions and technology assignments that would allow for fewer restrictions on the use of certain areas, as described in Section 13.2.4 of the ROD.

The assessment of in-water structures will help interpret the user survey and identify areas where structural or access restrictions (e.g. under-pier areas and the vicinity of dolphins/pilings, bulkheads, and riprapped or engineered shorelines) may require adjustments to sampling, cleanup technology application, or remedial design, as described in Section 13.2.1.3 of the ROD.

Task 8: Report for Waterway User Survey and Assessment of In-Water Structures. Upon approval of the Waterway User Survey and Structures Assessment Work Plan, LDWG shall conduct the survey. Once the survey has been completed, LDWG shall update the GIS layer for structures and shall submit a report that summarizes activities and results. The report must include an updated map and updated GIS layer of in-waterway structures.

Task 9: Recovery Category Recommendations Report. Based on the waterway user survey and in-water structure assessment, LDWG shall submit a report providing any recommended modifications to assignment of Recovery Categories in the ROD, for EPA review and approval. The report shall include figures identifying current and reasonably anticipated uses and shall compare these to the physical criteria in ROD Table 23. The report shall include narrative, graphics, and GIS files with proposed adjustments to assignments of Recovery Category. Other information, such as refined sedimentation rates and contaminant trends based on new data, shall be included, if available, and further proposed adjustments to Recovery Categories provided for EPA to consider, as provided under Empirical Contaminant Trend Criteria in ROD Table 23.

The report shall also identify areas where adjustments may be necessary to the application of cleanup technologies, either to accommodate operational needs or to inform institutional controls on the use of such areas.

Task 10: Design Strategy Recommendations Report. LDWG shall submit for EPA review and approval a conceptual approach for completing the engineering design of the LDW Selected Remedy, based on the data needs identified in Task 1, the compilation of existing data, the other information and analyses generated in this SOW, and source control information available from Ecology. Conceptual strategies for acquiring the necessary pre-design information will be discussed, including types of data needing to be collected, phasing of investigations, remedial design sampling strategies, confirmation of technology assignments and boundaries, and acquisition of engineering data and planning information needed to complete the detailed designs.

Task 11: Support for Development of Seafood Consumption Institutional Controls. The ROD calls for minimizing reliance on seafood consumption advisories to the extent practicable, and the Selected Remedy includes waterway-wide institutional controls to reduce human exposure to contaminants. Section 13.2.8 of the ROD calls for convening an advisory group as a means for the affected community and local agencies to work together on mitigating the impacts of the cleanup on the affected community. Section 13.2.4 states: 'EPA anticipates relying on the existing Washington Department of Health (WDOH) fish and shellfish consumption advisories. Information obtained through the ongoing study of fishing and fish and shellfish consumption patterns, will be used to develop appropriate and effective institutional controls (ICs) for fishers and consumers of LDW resident seafood (such as outreach and education programs).' EPA believes that to be effective and appropriate the ICs must be tailored to the affected community and built with community input.

LDWG shall, as directed by EPA, support development and implementation of institutional controls for LDW seafood consumption by providing, funding, or participating in the following until completion of Tasks 1-10 of this amendment: (1) a planning group responsible for development and implementation of a plan for institutional controls; (2) incentives for participation on the planning group by community members who have relevant knowledge or experience, subject to public agencies' legal authority to provide such incentives; (3) technical materials to support the institutional controls; (4) pilot testing of potential institutional control tools, such as outreach campaigns developed using community based social marketing principles; (5) assessment of the pilot test and revisions to the plan, and (6) assessment of the plan's success and recommendations for future ICs on the LDW.

III. Community Involvement

EPA is updating its Community Involvement Plan (CIP). As requested by EPA, LDWG shall continue to support EPA's community involvement activities. This will include providing online access to initial submissions and updates of deliverables to (1) Community Advisory Groups, (2) Technical Assistance Grant recipients and their advisors, and (3) other entities to provide them with a reasonable opportunity for review and comment. All community involvement activities conducted by LDWG at EPA's request are subject to EPA's oversight.

IV. Technical Specifications

LDWG shall submit electronic data in accordance with the Region 10 Data Management Plan (May 2014) and associated guidance and templates. Sampling and monitoring data must be submitted in standard regional Electronic Data Deliverable (EDD) format. LDWG shall upload the data into EPA's WQX database and into Ecology's EIM database. LDWG shall provide EPA with a copy of the files created to load data into the WQX database.

Spatial data, including spatially-referenced data and geospatial data, must be submitted following the procedures in the "U.S. EPA Region 10 Geographic Information Systems (GIS) Data Deliverable Guidance for External Entities"; 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. If applicable, submissions should include the collection method(s). The GIS data must be submitted to EPA on discs at the same time as the final reports are submitted. If requested by EPA, LDWG shall provide GIS data used in sampling plans, Quality Assurance Project Plans, monitoring reports, studies, pre-remedial design sampling reports, or other submittals where GIS and mapping programs were used to generate maps, diagrams, and other visual aids. Discs containing this information shall be sent to the EPA Project Manager. Contact EPA with questions or to request assistance for GIS submission requirements.

Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should 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://edg.epa.gov/EME/.

Each file must include an attribute name for each site unit or sub-unit submitted. Consult http://www.epa.gov/geospatial/policies.html for any further available guidance on attribute identification and naming. Spatial data submitted by LDWG does not, and is not intended to, define the boundaries of the Site.

V. Schedule of Deliverables

In accordance with the schedule in Table 1 below and the AOC process, LDWG shall submit all project deliverables below to EPA for review and approval. Following initial draft, EPA comments shall be fully addressed in a revision due 30 working days from LDWG receipt of EPA comments, unless otherwise approved or directed by EPA.

Table 1. Schedule for Task Deliverables/Milestones

Task	Deliverable	Schedule in Calendar Days
Task 1: Work Plan	Outline	210 days from effective date of this AOC amendment (assumes 180 days for LDWG consultant contracting process. LDWG shall seek to complete the contracting as soon as possible. Contracting delays may be a basis for an extension request).
	Draft Work Plan	60 days from EPA comments on the Outline
Task 2: Existing data compilation and data gaps technical memorandum	Draft Technical Memorandum	255 days from effective date of this AOC amendment. A later submittal date for compiled groundwater may be proposed in the Task 1 work plan.
Task 3: QAPP and associated support documents	Draft QAPP and associated support documents	45 days after EPA approval of Task 1 Work Plan. A schedule for a QAPP addendum for seep sampling may be proposed in the Task 1 work plan.
Task 4: Sampling and Analysis	Conduct sampling	Initiate and complete sampling per approved QAPP schedule.
Task 5: Data Report.(for each sampling round)	Draft Data Report (and electronic data deliverable / upload to EIM and WQX)	21 days after receipt of validated data (for each round)
Task 6: Data Evaluation Report.	Draft Data Evaluation Report	60 days after submittal of Draft Data Report
Task 7: Work Plan - Waterway User Survey and Assessment of In-Water Structures.	Draft Work Plan	225 days after effective date of this AOC amendment
Task 8: Report - Waterway User Survey Report and Assessment of In-Water Structures.	Conduct Survey and Assessment	Initiate within 30 days of EPA approval of Task 7 Work Plan
	Draft Report	45 days from completion of Task 8 Survey
Task 9: Recovery Category Recommendations	Draft Recovery Category Recommendations	45 days after approval of Task 8 Draft Survey and Assessment Report
Task 10: Design Strategy Recommendations Report	Draft Design Strategy Recommendations Report	60 days after submittal of Task 8 Draft Survey and Assessment Report