LOWER DUWAMISH WATERWAY SITE

MEMORANDUM OF UNDERSTANDING BETWEEN

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

AND THE WASHINGTON DEPARTMENT OF ECOLOGY

Updated April 2004

I. PURPOSE

On September 13, 2001, the Lower Duwamish Waterway Site (Site) was placed on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priorities List (NPL), (65 Fed. Reg. 75179-01). A Memorandum of Understanding (MOU) was entered into between the United States Environmental Protection Agency (EPA) and the Washington Department of Ecology (Ecology), (collectively, "the Parties") in April 2002. This revision of the MOU updates and supercedes the April 2002 version. Through this MOU, the Parties intend to provide a framework for coordination and cooperation in the management of the Site to optimize federal and state available resources to:

A. Implement the Site Administrative Order on Consent (AOC) and attached Remedial Investigation/Feasibility Study (RI/FS) Statement of Work (SOW) (signed December 20, 2000), and future administrative orders or consent decrees for the Site, consistent with the requirements of CERCLA, 42 U.S.C. §§ 9601 et. seq., the National Contingency Plan (NCP), 40 C.F.R. Part 300, and the Washington State Model Toxics Control Act (MTCA) (Chapter 173-340 WAC), and/or other federal and state laws as applicable. Due to the joint nature of the CERCLA/MTCA AOC, activities under the AOC must meet requirements of both CERCLA and MTCA.

B. Identify sources of contamination to the Lower Duwamish Waterway and implement source control measures as necessary.

C. Integrate and coordinate efforts by the Parties with Natural Resource Trustees and affected Native American Tribes to achieve protective cleanups and minimize residual ecological risks at the Site to ensure viable restoration activities.

D. Inform and seek input from the affected community on the remedial investigation, human health and ecological risk assessments, and potential remedies for the site or portions of the site.

E. Provide procedures for resolving disputes between the Parties regarding work at the Site, including implementation of respective Lead and Support Agency roles for the upland source control and sediment portions of the Site.

F. Clarify for all concerned, including the public, Natural Resource Trustees, and Potentially Responsible Parties (PRPs)/Potentially Liable Parties (PLPs), the Lead and Support Agency roles of EPA and Ecology.

This MOU is consistent with the March 2, 2000 "Ecology/EPA Agreement on Roles and Responsibilities at NPL Sites", and subsequent updates to that agreement. The Lower Duwamish Waterway site is an enhanced involvement site, and this MOU serves the purpose of a site-specific scope of work for an enhanced involvement site, as defined by the Ecology/EPA agreement.

II. GENERAL AGREEMENTS

The Parties agree to:

A. Work together, communicate frequently, and resolve disagreements as quickly as possible.

B. Speak with one voice to outside parties to the extent possible.

C. Keep the public informed.

D. Coordinate with Natural Resource Trustees and affected Native American Tribes.

E. Keep to schedules in this MOU, the AOC, SOW, the Phase 2 RI Work Plan (April 2004), and Source Control Strategy (January 2004) to the extent possible.

F. Keep each other informed of latest scientific information related to the project, and decisions being made on other sites which may be relevant to the project.

G. Coordinate with other programs in their agencies (such as Resource Conservation and Recovery Act [RCRA] and Water Quality) that are responsible for cleanup, source control, or Total Maximum Daily Load (TMDL) policy and implementation relevant to the Site.

III. SOURCE CONTROL ACTIVITIES

A. Ecology is designated Lead Agency for Source Control Activities. EPA will be the Support Agency.

B. Ecology and EPA agree that the general dividing line for source control vs. sediment work is mean higher high water (MHHW; +12 feet) in the Lower Duwamish. Above MHHW, Ecology and the Source Control Work Group will be responsible for addressing source control issues. Below MHHW, EPA and the Lower Duwamish Waterway Group (or the appropriate PRP) will be responsible for addressing sediment issues. Both agencies recognize that there may be site specific exceptions to the MHHW agreement.

C. Ecology has produced the Lower Duwamish Waterway Source Control Strategy (Ecology 2004) that provides the strategy and approach for site source control. The strategy also outlines goals and priorities, regulatory framework, source control effectiveness and completeness procedures, and tracking and reporting steps.

D. Based on the Strategy, Ecology, with support from EPA and other relevant agencies, will develop a series of Source Control Action Plans that will provide details and schedules for source control activities in specific areas of the waterway. The source control schedule will be coordinated with the schedule for the RI/FS and early actions to the extent feasible. Ecology, in consultation with EPA, will update the Source Control Action Plan schedules in semi-annual Source Control Status Updates. The four early action cleanups listed below are in priority order for Action Plan development and source control work, based on projected cleanup schedules:

1. Area 1: Duwamish/Diagonal Way Combined Sewer Overflow/Storm Drain – Cleanup completed March 2004. Estimated Action Plan completion in April 2004.

2. Area 5: Terminal 117/Malarkey – Work being performed by the Port of Seattle. Projected cleanup in the summer of 2005. Estimated Action Plan completion in September 2004.

3. Area 3: Slip 4 – Work to be performed by the City of Seattle. Projected cleanup in 2005/2006. Estimated Action Plan completion in December 2004.

4. Area 4: Boeing Plant 2 – Projected cleanup in 2006+. Action Plan schedule will be developed by Ecology in consultation with EPA.

Schedules for the three remaining early action candidates: Area 2: RM 2.2, Area 6: RM 3.8 and Area 7: Norfolk Combined Sewer Overflow, and any other cleanup areas identified during the RI/FS will be developed by Ecology in consultation with EPA.

E. Ecology is the lead for tracking, documenting and reporting the status of source control to EPA, in accordance with the "Documentation, Tracking, and Reporting" section of the Source Control Strategy (Attachment A). Ecology will submit the following documents for EPA review and concurrence:

- Initial Source Control Status Report,
- Semi-annual Source Control Status Updates, and
- Source Control Effectiveness and Completeness Determinations.

F. Ecology will coordinate with the Source Control Work Group and other agencies and groups as appropriate in order to integrate ongoing activities relevant to source control. County, City and Port source control actions may include inspections, cleanup agreements, modeling, and other activities. Ecology will review relevant source control activities to determine their sufficiency, and work with the appropriate agency in order to take additional source control actions where needed. Ecology will include appropriate agency actions in status reports to EPA.

G. Ecology will implement source control activities using appropriate state authority, including but not limited to MTCA, Washington State Sediment Management Standards, the contaminated site voluntary cleanup program, Water Quality enforcement orders, NPDES permit modifications, and appropriate interagency agreements. Ecology will provide draft agreements or orders to EPA for review. EPA agrees to review documents in the timeframe requested by Ecology, or provide a timely request for an extension.

H. Ecology and EPA will coordinate in order to ensure that any EPA-led actions (such as RCRA Corrective Actions) meet source control objectives for the Site.

I. Ecology or EPA may propose that EPA provide enhanced technical support or assume the Lead Agency role for any discrete facility(s) or portion(s) of Source Control activities at any time. Such decisions would be made by EPA, with concurrence by Ecology.

IV. SEDIMENT RI/FS ACTIVITIES

A. EPA is designated Lead Agency. Ecology will be the Support Agency.

B. Ecology will review documents produced by the Lower Duwamish Waterway Group under the AOC in the timeframe requested by EPA, or will provide a timely request for an extension. Ecology may choose not to review, or provide a cursory review, of certain documents. A list of RI/FS documents that Ecology will review, and the focus of Ecology's review, is provided in Attachment B. In its review, Ecology will identify comments critical for compliance with MTCA or the Washington State Sediment Management Standards. EPA will discuss any proposed omission or modification of "critical" comments with Ecology. EPA will use its discretion to incorporate Ecology's other comments in their comment letter, and will discuss modifications or omissions to the extent possible. EPA will provide a draft comment letter for a brief review by Ecology prior to submitting comments to the Lower Duwamish Waterway Group.

C. EPA and Ecology will sign all RI/FS deliverables that require an agency signature.

D. The overall cleanup plan for the site will be documented in a Record of Decision (ROD) pursuant to CERCLA and the NCP (40 CFR Part 300). In accordance with the procedures set forth in the Ecology/EPA agreement, EPA will brief Ecology and seek their input on the proposed plan. EPA will brief Ecology on any changes to the proposed remedy based on public comment and request Ecology's concurrence on the ROD.

V. EARLY ACTION ACTIVITIES

A. EPA is designated Lead Agency for Terminal 117 and Slip 4 early action sediment investigation and cleanup. Ecology will be the Support Agency. Ecology will review key documents relevant to these early actions in the timeframe requested by EPA, or will provide a timely request for an extension. A list of Early Action documents that Ecology will review, and the focus of Ecology's review, is provided in Attachment C.

B. Early Action sediment investigations are currently proceeding under the joint CERCLA/MTCA AOC. For investigations being performed under this AOC, EPA and Ecology will sign all deliverables that require an agency signature.

VI. COORDINATION

A. EPA and Ecology will assign Remedial Project Managers (RPM) to oversee the Remedial Investigation and Feasibility Study and early and long-term remedial actions in the Lower Duwamish Waterway. The EPA and Ecology RPMs will serve as designated project coordinators as described in Section XV.2. of the AOC. EPA and Ecology will assign Source Control Project Managers (SCPM) to oversee the investigation and remediation of upland contamination and other Source Control activities. The EPA RPMs will serve as the main point of contact for Ecology, the Tribes, and Natural Resource Trustees on matters related to the RI/FS and in-waterway remedial actions. The Ecology SCPM will serve as the main point of contact for EPA, the Tribes, and Natural Resource Trustees on matters related to Source Control. EPA and Ecology's present lead RPMs and SCPMs are listed below:

- EPA RI/FS RPM: Allison Hiltner
- Ecology RI/FS (and Early Action) RPM: Rick Huey
- EPA SCPM: Kris Flint
- Ecology SCPM: Dan Cargill
- EPA RPM for T-117 Early Action: Ravi Sanga
- EPA RPM for Slip 4 Early Action: Karen Keeley

B. The EPA and Ecology RPMs and SCPMs will meet frequently to discuss and keep each other informed of the status of RI/FS, early actions, and source control activities, respectively.

VII. TRIBAL CONSULTATION

A. EPA and other federal agencies have a unique legal relationship with tribal governments as set forth in the United States Constitution, treaties, statutes, executive orders, and court decisions. Federal policies instruct EPA to have regular and meaningful consultation with Indian tribal governments when developing policies and regulatory decisions on matters affecting their communities and resources, including Executive Order 13175 on Consultation and Coordination with Indian tribal Governments, effective January 6, 2001; President Clinton's memorandum of April 29, 1994 on Government-to-Government Relations with Native American tribal Governments; and the EPA Policy for the Administration of Environmental Programs on Indian Reservations, November 8, 1984.

B. Nothing in this MOU is intended to preclude separate government-to-government consultation between a signatory Tribe, the State, and EPA or other federal agencies pursuant either to federal Indian law and policies, or any separate government-to-

government consultation agreement(s) between EPA and a signatory Tribe.

VIII. COMMUNITY INVOLVEMENT

A. Community involvement will be a joint EPA/Ecology lead. Ecology and EPA will coordinate in-water and upland public outreach and involvement, and coordination with the Site community advisory group.

B. For all community involvement activities, the EPA Community Involvement Coordinator (CIC) and the Ecology Environmental Education Outreach Specialist (EEOS) will be the primary contacts. EPA's present lead CIC is Cindy Schuster, and Ecology's present lead EEOS is Rebekah Padgett.

C. The CIC is responsible for community involvement activities required under CERCLA, and the Ecology EEOS is responsible for source control and MTCA activities. EPA is lead for managing the site Technical Assistance Grant (TAG). Ecology is lead for managing the site Public Participation Grant (PPG).

D. EPA and Ecology will coordinate with each other before initiating any press releases and before providing fact sheets or other materials for external review for community involvement purposes. EPA and Ecology will obtain the consent of the other agency before providing press releases to outside parties for review and comment.

E. EPA/Ecology sponsored public meetings will be joint activities.

F. The CIC and EEOS will coordinate their agencies' participation in community advisory group and other meetings. The CIC and EEOS will inform each other of all meeting requests.

G. EPA will maintain the mailing list for fact sheets and will mail the fact sheets, unless some other agreement is made in the future.

IX. PRP/PLP SEARCH

A. EPA will be the lead agency for identifying PRPs for the Lower Duwamish Waterway cleanup and any early actions for which EPA is designated the lead agency. Ecology will act in a support role.

B. Ecology will be the lead agency for identifying PLPs for source control actions and any early actions for which Ecology is designated the lead agency. EPA will act in a support role.

C. Both agencies will share any information that would be helpful in identifying PRPs/PLPs, including information gathered as part of the RI/FS and source control activities.

X. DISPUTE RESOLUTION

A. The Parties acknowledge that it is in their respective best interests and in the interest of advancing the remedial process to identify disputes between them as soon as possible and attempt to resolve them.

B. The Parties will make a good faith effort to resolve any conflict or disagreement informally by meeting to discuss and consider possible solutions. If the dispute cannot be resolved at the staff level, the dispute will be elevated up the appropriate management hierarchy of each of the respective Parties.

C. If the Parties continue to disagree, the matter will be elevated to the EPA Office of Environmental Cleanup Associate Director and the Ecology Toxics Cleanup Program Manager, who will resolve the matter or decide the appropriate forum or means of ultimate resolution.

XI. CONFIDENTIALITY

A. The Parties recognize that in order to effectively and efficiently exercise their authorities concerning the Site, their counsel, employees, and consultants may exchange documents and information subject to attorney-client privilege, attorney work product, and other forms of privilege. The Parties intend to keep confidential information shared under this MOU confidential to the extent permissible under applicable law. Also, to avoid interference with a potential enforcement proceeding in which the parties have a common interest, the parties will similarly protect from disclosure any law enforcement records exchanged in anticipation of litigation. The Parties further agree to protect these privileges, to the full extent permissible under applicable law. This provision shall remain in effect after this MOU terminates.

B. Whenever sharing information deemed confidential, the Party shall clearly mark any information to which it asserts a privilege as "Privileged and Confidential Information – Do Not Release Without Authorization." The Party receiving information so marked agrees not to release, or allow to be released, such information to a non-party, to the extent permitted by law. The Parties agree that failure to so mark information developed or shared under this MOU does not preclude the Parties from asserting the protections under the Freedom of Information Act or Washington State law, or from asserting privileges and exceptions in seeking to protect the information from discovery.

XI. GENERAL PROVISIONS

A. EPA and Ecology will provide each other advance notice of any contemplated response enforcement or cost recovery action concerning the Lower Duwamish Waterway, and coordinate with and assist each other in such actions as appropriate.

B. Ecology reserves the opportunity to request federal funds for state-lead removal actions

and to seek cost-share credit for state-financed remedial actions. Nothing in this MOU waives or supersedes any state right under CERCLA regarding applicable, or relevant and appropriate requirements (ARARs), ROD concurrence, and consent decree participation.

XII. AUTHORITY AND APPLICABILITY

A. Each Party has authority to enter into this MOU. EPA and Ecology have express statutory authority to respond to releases of hazardous substances related to the Site.

B. This MOU is effective upon signature by both EPA and Ecology. Any Party may withdraw from this MOU upon thirty (30) days written notice. This MOU will be regularly reviewed by the Parties and may be modified by written agreement by the Parties.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

BY: Kathryn M. Davidson April 16, 2004
Kathryn M. Davidson Date
Office of Environmental Cleanup
Acting Associate Director

WASHINGTON STATE DEPARTMENT OF ECOLOGY

BY: James T. Pendowski 4/23/04
James J. Pendowski Date
Toxics Cleanup Program
Program Manager

Attachment A

Documentation, Tracking, and Reporting

Ecology is the lead for tracking, documenting and reporting the status of source control to EPA. In turn, all source control activities will be documented by the appropriate agency performing the source control work. The agencies will provide reports to Ecology, who will provide waterway-wide and basin-specific reports, as noted below.

This strategy divides the management of information and data into two levels. The first level is documentation and tracking, where information is organized so that Ecology can track and manage source control activities at a given source or within a given basin(s). The second level is reporting to EPA. EPA will review but not concur on the work listed under 'Documentation and Tracking'. EPA will review and concur on the work and deliverables listed under 'Reporting'.

Documentation and Tracking

The table below summarizes the documentation and tracking requirements in this strategy:

Table 1. Documentation and Tracking Requirements

Document & Scope	Purpose & Notes	Schedule Frequency	Prepared by	Reviewed by
Source Control Information Compilation Waterway-wide	*Organize, summarize & track* information from all programs for potential and identified sources. Will incorporate information from Action Plans. *Track target dates* for Action Plans, effectiveness/completion determinations.	Ongoing updates by SCWG members.	Maintained by Ecology.	SCWG Members.
Action Plans Basin/source specific	*Identify & document* specific source control authorities, tools and milestone accomplishments for the purpose of controlling a given basin or source. If SCWG or Ecology identifies significant changes to an Action Plan, an addendum will be prepared to document the change.	Report frequency required by Ecology for Action Plans will vary according to the sediment cleanup schedules, and the nature of the sources.	Finalized by Ecology.	SCWG Members.

Source Control Information Compilation

This is the waterway-wide summary of potential sources, and the status of source investigations and in-place or pending source control measures. The initial compilation will not be comprehensive. Instead, information on basins and other issues will be added as source identification and control proceeds. The document provides a way to organize and track source

information as it accumulates and as source control actions occur. Ecology will maintain this compilation, which will be updated by the SCWG members throughout the life of source control for the LDW site.

Information tracked in this document includes:

- Current names, addresses, and permit information.
- Summary notes from regulatory programs for investigations or actions taken on a site that may be relevant to contaminated media or pathways to sediments.
- Summary notes about past operations or activities that may be relevant to historic contamination.
- 'Tags' that identify early action candidate sites and their associated upland basin(s), locations of specific upland properties, or reference specific Action Plan information.
- Dates targeted for issuing source control effectiveness/completion determinations.
- Information generated by Action Plan-specific reporting.

Information identified in the Compilation will remain in program files or archives of the given SCWG agency. Ecology may cite and or copy information from these files to support decisions about whether sources do or do not impact sediments, and determinations of source control effectiveness and completeness (see below).

Action Plans

Ecology will provide Action Plans to EPA, the SCWG and stakeholders for sources associated with Tier 1 and 2 areas, and Tier 3 areas (if they are necessary). If Tier 4 actions are required, an amendment to an existing Action Plan will be provided. Action Plans serve as documentation to EPA and Ecology files for source control. Depending on the nature of the source control tools used to implement a given Action Plan, the types and timing of reports to the Compilation may vary. Action Plans will describe how elements of this strategy will be implemented for a given source(s) and will document the following:

- Status of contaminated media and pathways.
- Plan and authorities to be used for completing source identification and characterization, including collection of any additional environmental data.
- Actions/tools appropriate for controlling sources, including monitoring requirements for the occurrence of recontamination.

- Criteria or other goals to be met for Ecology to determine effectiveness and completeness of source control.

- Target dates for providing the items above.

Ecology will provide Action Plans to EPA for review with the understanding that target dates may be subject to change depending on the identification of new or additional contamination or pathways to sediments. Changes to target dates noted in Action Plans will be reported to EPA in the Source Control Status Updates (see below) and be tracked in the Compilation. Significant changes to Action Plans will be provided as amendments to existing documents.

Reporting

The table below summarizes the reporting requirements in this strategy:

Table 2. Reporting Requirements

Document & Scope	Purpose & Notes	Schedule Frequency	Prepared by	Reviewed by
Initial Source Control Status Report Waterway-wide	Based on information in the Compilation, summary information (see below for detail).	Prepared once as initial reference (targeted for June 2004).	Written report & management briefing prepared by Ecology.	EPA reviews and concurs.
Source Control Status Updates Waterway-wide	Semi-annual update of the Initial Source Control Status Report (see below for detail).	Semi-annual updates to the Compilation (updates targeted for February/August each year).	Written report & management briefing prepared by Ecology.	EPA reviews and concurs.
Source Control Effectiveness & Completeness Determinations Basin/source specific	Document evaluation of data, other information re source control contaminants, media, pathways with respect to implemented source control and recontamination potential for sediments.	Once per source or basin.	Ecology prepares memo, letter, or report (see below).	EPA reviews and concurs.

Initial Source Control Status Report

Ecology will provide an initial Status Report to EPA for review and concurrence, based on the information contained in the Compilation. The Status Report will be waterway-wide, and organized according to the tiered priority areas (see Goals and Priorities). This report will serve as documentation to EPA and Ecology files for progress on waterway-wide source control. In addition to the written report, Ecology will brief EPA program management on this report.

Summary information shall include the following as appropriate:

- Estimated number of known ongoing and historical sources:
  - Types of source controls in place (see Tools to Manage Sources).
  - Estimated number (list by name/address) where source control effectiveness and completeness can be assessed.
  - Estimated number (list by name/address) where source control effectiveness and completeness cannot be assessed, and the target dates for completing assessments.
  - Estimated number of Action Plans needed.
  - Schedules for developing and implementing Action Plans, meeting data/info needs to confirm sources, and achieving effectiveness and completeness determinations.

- Estimated number of suspected sources requiring further investigation, and additional information to make effectiveness/completeness determinations:
  - List by name and address for information and data gaps to be filled.
  - Identify the type of media/pathway involved and gaps in data and/or information (no program records, no confirmation sampling data).
  - Identify how to fill gap (programs/agencies/authorities, inspections, sampling).
  - Estimate times for completing further investigation or getting additional information, and determining effectiveness/completion.

- As appropriate, the agencies will collect information and/or make estimates of the volume/weight/cost/etc. of contaminants removed, contained, treated or otherwise controlled, in order to help communicate to stakeholders on the progress of source control work.

- As appropriate, maps will be revised and attached to Source Control Status Updates when significant changes are discovered and made.

Source Control Status Updates

Ecology will provide these semi-annual Status Updates to EPA for review and concurrence. These will be waterway-wide, organized according to the tiered priority areas, and will summarize the information tracked by the Compilation. In addition to tracking and summarizing the numbers of sources and source control accomplishments, Status Updates will also document issues that may affect the ability of Ecology or other agencies to perform source control. The report will serve as documentation of progress on waterway-wide source control. In addition to the written report, Ecology will brief EPA program management on the information in this report.

Status Update reports shall include the following information (as appropriate):

- List of sources discovered since the previous report.
- Changes to estimates made in the Status Report.
- List and description of issues affecting source identification, characterization, or source control work.
- Summary information for any source control effectiveness/completeness determinations made since last report, including:
  - Name/address of source.
  - Nature of contamination/pathway.
  - Source control tools applied.
  - Quantitative information regarding source control achieved, where possible (e.g., lbs pollutant removed from environment).
  - Outstanding issues (monitoring, institutional controls, etc.).
- List of target dates for effectiveness/completeness determinations that have changed and reasons why.
- Identify issues affecting ability to make source control effectiveness/completion determinations, for any step of the source control process (i.e., identification, characterization, implementation), and propose ways to resolve and target date/timeframe for resolution.
- As appropriate, the agencies will collect information and/or make estimates of the volume/weight/cost/etc. of contaminants removed, contained, treated or otherwise controlled, in order to help communicate to stakeholders on the progress of source control activities.

Source Control Effectiveness and Completeness Determinations

Ecology will provide Completeness Determinations to EPA for review and concurrence. These determinations may be developed in memo, letter or report format as appropriate for the amount of information supporting the determination.

Three types of Completeness Determinations will be made:

1. For a particular Action Plan or source, a final determination will be made when the Plan or source control action has been fully implemented, in order to document completion.

2. For Tier 3 basins or sources where an evaluation determines that no further source control action is needed, a final determination will be made to document the NFA decision.

3. A final determination will be made when all of the individual Action Plans are completed for the LDW site.

These determinations shall contain and address the following as appropriate:

- Description and discussion of the nature of contamination, and pathway(s) to waterway sediments.

- Regulatory or other tools used for source control including monitoring.

- Map(s) of the site or basin(s).

- Criteria relevant to determining source control effectiveness and completeness for the source/area including but not limited to:
  - Upland sites cleanup information.
  - Surface water or sediment quality information.
  - Other site-specific criteria as may be applicable (local limits in permits, pre-existing cleanup goals determined protective of waterway sediments, or Pollution Control Plans).

- Chronology of site to include:
  - Occupancy and operations conducted on the site.
  - Environmental actions taken to-date.
  - Steps taken for further source characterization and control.
  - Sampling events for data used to support this determination.

- Data used to support the effectiveness/completeness determination and noted on the site chronology, either as appendices to the report or summarized in tables.

- Full citations for data or other reports/information supporting determination of effectiveness/completeness.

- In addition, when appropriate the agencies will collect information and/or make estimates of the volume/weight/cost/etc. of contaminants removed, contained, treated or otherwise controlled, in order to help communicate to stakeholders on the progress of source control work.

Attachment B

LDWG proposed RI schedule – Agency review times and reviewers

Document	Review dates (first round)	Ecology review focus
Crab/shrimp Data Report	3/26/04 – 4/12/04 (R3) 6/18/04 – 7/7/04 (R4)	no
Juvenile Salmon Data Report	3/12/04 – 4/2/04	no
Historical data tech memo	3/19/04 – 4/16/04	QA and use of historic data
Seep Survey QAPP	4/16/04 – 5/14/04	Use source control (SC) information to inform sample locations and analytes.
Rockfish/sandpiper site use survey tech memo	4/23/04 – 5/21/04	no
Benthic invertebrate survey QAPP	4/23/04 – 5/28/04	Review study design (number, location of samples)
HHRA public shoreline access survey methods tech memo	4/23/04 – 5/21/04	no
Gastropod pilot Tech memo	6/4/04 – 6/18/04	Review study design
Fish and Shellfish tissue chemistry QAPP	5/28/04 – 7/12/04	no
Tech memo re: incorporation of crab, clam, shrimp data into the HHRA	7/16/04 – 8/13/04	Consistency with MTCA/SMS
HHRA public shoreline access survey methods data report	7/29/04 – 8/19/04	no
Sediment Transport QAPP	8/20/04 - 9/24/04	Consistency with MTCA/SMS
Rockfish/sandpiper Data Report	8/31/04 - 9/24/04	no
Seep Survey Data Report	9/27/04 - 10/25/04	Review data to inform SC activities
Surface sediment chemistry QAPP (includes tox testing)	10/1/04 – 11/12/04	Use source control (SC) information to inform sample locations and analytes; review toxicity testing plan for consistency with SMS
Benthic Invertebrate Data Report	11/19/04 - 12/17/04	Review data
FS Work Plan	11/19/04 – 1/7/05	Review for MTCA/SMS consistency
HHRA Probabalistic Risk Analysis Tech Memo	12/3/04 – 1/21/05	no
Fish/Shellfish Data Report	1/7/05 - 2/4/05	no
Porewater QAPP	1/28/05 - 3/4/05	Use source control (SC) information to inform sample locations and analytes
Sediment Transport Data Report	2/11/05 - 3/18/05	Consistency with MTCA/SMS

ERA Probabilistic Risk Analysis Tech Memo	1/21/05 - 2/25/05	no
Sediment Transport Analysis Report	3/18/05 – 4/22/05	Consistency with MTCA/SMS
Food-web model tech memo	5/19/05 – 6/23/05	Review for general agreements/red flags
Residual Risk Analysis Tech memo	6/13/05 – 7/19/05	Consistency with MTCA/SMS
Surface Sediment Data Report	7/26/05 – 8/29/05	Review data
Subsurface Sediment QAPP	7/15/05 - 8/19/05	Use source control (SC) information to inform sample locations and analytes, consistency with MTCA/SMS
Porewater Data Report	8/26/05 - 9/19/05	Review data
ERA Report	2/17/06 – 4/14/06	Consistency with MTCA/SMS
HHRA Report	2/17/06 – 4/14/06	Consistency with MTCA/SMS
Subsurface Sediment Data Report	3/3/06 - 4/7/06	Review data
Phase 2 RI Report	10/3/06 – 11/30/06	Consistency with MTCA/SMS, information related to source control
Feasibility Study	4/6/07 – 6/1/07	Consistency with MTCA/SMS, ARARs, remedial alternatives

Attachment C

Early Actions under Joint Order – Ecology Involvement

Slip 4

Document	**Target/Completion Dates**	**Ecology Milestone Review**
Work Plan for Investigation Tasks	Completed October 2003.	No
Summary of Existing Information and Identification of Data Gaps Report;	Completed January 2004.	Ecology review (complete).
Sampling and Analysis Plan (and QAPP)	Completed March 2004.	Ecology review (complete).
Technical Memorandum with recommendations for supplemental sediment sampling locations and analyses.	Est. June 2004	Ecology review
Initial Data Validation Report	Est. Summer 2004.	No
Draft Cruise and Data Report. Includes data validation report and addenda as necessary for any supplemental sampling efforts.	Est. June 2004.	No
Draft Technical Memorandum on Proposed Boundaries of the Removal Action	Est. Fall 2004.	Ecology Review.
Draft Engineering Evaluation/Cost Analysis	Est. January 2005.	Ecology Review.

Terminal 117

Document	Target/Completion Dates	Ecology Milestone Review
Work Plan for Investigation Tasks	Completed May 2003.	No
Draft Summary of Existing Information Report and Data Gaps Report (includes Sampling and Analysis Plan)	Completed September 2003.	Ecology review (complete).
Sediment Data Validation Report	Completed March 2004.	No
Draft Sediment Field Sampling, Cruise and Data Report (includes sediment data validation report)	Completed March 2004.	Ecology review (complete)
QAPP	Completed December 2003.	Ecology review (complete)
Sediment and Soil QAPP Addendum	Completed March 2004.	No
Upland Data Evaluation Tech memo	Est. Spring 2004.	Yes - SC Team
Upland Data Validation Report	Est. Spring 2004.	No
Draft Upland Field Sampling, Cruise and Data Report	Est. Spring 2004.	Yes – SC Team
Draft Technical Memorandum on Proposed Boundaries of the Removal Action	Est. Spring 2004.	Ecology Review
Draft Engineering Evaluation/Cost Analysis	Est. Fall 2004.	Ecology Review