STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action by:	AGREED ORDER
Duwamish Shipyard, Inc.	No. DE 6735

TO: POTENTIALLY LIABLE PERSON

Duwamish Shipyard, Inc.
P. O. Box 13368
Des Moines, WA 98198

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I. INTRODUCTION

The mutual objective of the State of Washington, Department of Ecology (Ecology) and Duwamish Shipyard, Inc. (DSI) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires Duwamish Shipyard, Inc. to perform an analysis of data gaps and complete a Remedial Investigation/Feasibility Study (RI/FS) for the Site. Ecology believes the actions required by this Order are in the public interest.

II. JURISDICTION

This Agreed Order is issued pursuant to the Model Toxics Control Act (MTCA), RCW 70.105D.050(1).

III. PARTIES BOUND

This Agreed Order shall apply to and be binding upon the Parties to this Order and their successors and assigns. The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this Order and to execute and legally bind such party to comply with this Order. DSI agrees to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter DSI's responsibilities under this Order. DSI shall provide a copy of this Order to all agents, contractors, and subcontractors retained to perform work required by this Order, and shall ensure that all work undertaken by such agents, contractors, and subcontractors complies with this Order.

IV. DEFINITIONS

Unless otherwise specified herein, the definitions set forth in Chapter 70.105D RCW, Chapter 173-340 WAC, and Chapter 173-204 WAC shall control the meanings of the terms in this Order.

A. Site: The Site is referred to as the former Duwamish Shipyard and is generally located at 5658 West Marginal Way Southwest in Seattle, King County, Washington. The Site is defined by the extent of contamination caused by the release of hazardous substances at the Site.

Based upon factors currently known to Ecology, the Site is more particularly described in the Site Diagram (Exhibit A). The Site constitutes a Facility under RCW 70.105D.020(4).

B. Parties: Refers to the State of Washington, Department of Ecology and Duwamish Shipyard, Inc.

C. Potentially Liable Person (PLP): Refers to Duwamish Shipyard, Inc.

D. Agreed Order or Order: Refers to this Order and each of the exhibits to this Order. All exhibits are integral and enforceable parts of this Order. The terms "Agreed Order" or "Order" shall include all exhibits to this Order.

V. FINDINGS OF FACT

Ecology makes the following findings of fact, without any express or implied admissions of such facts by the PLP:

A. The Site, which is defined by the extent of contamination caused by the release of hazardous substances, includes land impacted by industrial practices at the former Duwamish Shipyard. The Site is located approximately 4 miles south of downtown Seattle and the property address is 5658 West Marginal Way Southwest. Exhibit A shows the approximate Site boundaries and the upland, bank, and sediment areas of the Site. The Site is on the west bank of the Lower Duwamish Waterway (LDW). The PLP operated a shipyard at the Site from 1941 until 2007. The Site is paved and buildings on the Site have concrete floors. Buildings on the Site have included the main building, the Wood and Machine Shop, the Valve Shop, and the Machine Shop. Shipyard operations ceased in early 2007 and the remaining buildings on the Site are to be decommissioned.

B. The Site has been the subject of several environmental investigations and cleanups beginning in the early 1990s. These investigations and cleanups are summarized in the following report:

- *Lower Duwamish Waterway Glacier Bay Source Control Area Summary of Existing Information and Identification of Data Gaps*, dated June 2007 by Science Applications International Corporation (SAIC).

- *Preliminary Investigation Data Report*, Duwamish Shipyard, Inc. (Site #1429) dated December 2006 by Anchor Environmental, L.L.C. (Anchor).

More detailed information on individual investigations and cleanups are available in the references listed in the reports noted above.

C. Environmental investigations and cleanups revealed releases of total petroleum hydrocarbons (TPH), polynuclear aromatic hydrocarbons (PAHs), semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), arsenic, cadmium, copper, lead, and zinc to soil; TPH, PAHs, VOCs, arsenic, chromium, and lead to groundwater; copper and zinc to storm water; PAHs, SVOCs, tributyltin, copper, mercury, and zinc to storm water sediments; PAHs, SVOCs, arsenic, copper, lead, and zinc to LDW sediments.

D. The U.S. Environmental Protection Agency (EPA) added the LDW to the federal Superfund list on September 13, 2001. EPA has entered into a Memorandum of Understanding with Ecology under which Ecology has been designated the Lead Agency to implement efforts to investigate and control sources of contamination to LDW sediments. Dioxins/furans, PCBs, PAHs, SVOCs, antimony, arsenic, copper, mercury, lead, tin, and zinc have been identified as contaminants of concern in sediments in the Glacier Bay Source Control Area, which includes the Site. The Glacier Bay Source Control Area has been identified as a Tier 2 site where long-term sediment cleanup actions might be necessary. Releases of PAHs, SVOCs, copper, mercury, and zinc have been identified to storm water sediment on the Site, and storm water from the Site discharged into LDW.

E. On November 9, 1988, the Site was identified as a confirmed hazardous waste site with confirmed soil and sediment contamination. Public Health – Seattle and King County conducted a Site Hazard Assessment of the Site in 2006 – 2007 and found confirmed releases of hazardous substances to soil, groundwater, and sediment, and suspected releases to surface water. On February 14, 2007, the Site was ranked "2" on the Washington State Hazardous Sites List as a result of the Site Hazard Assessment. This ranking is based on a scale of 1 to 5. According to this scale, "1" represents the highest relative risk and "5" represents the lowest

relative risk. This ranking is designed to estimate the potential threat to human health and/or the environment, relative to all other sites in Washington State.

F. On the basis of the facts set forth herein, Ecology has determined that a release or threatened release of hazardous substances on, at, or from the Site requires remedial actions to protect human health and the environment. This Order sets forth the measures that need to be taken to complete an RI/FS for the Site.

VI. ECOLOGY DETERMINATIONS

A. The PLP is an "owner or operator" as defined in RCW 70.105D.020(17) of a "facility" as defined in RCW 70.105D.020(5) because the PLP owned or operated facilities on property at which, and from which, hazardous substances were released into the environment during the PLP's ownership or operations.

B. Based upon all factors known to Ecology, a "release" or "threatened release" of "hazardous substance(s)" as defined in RCW 70.105D.020(20) and RCW 70.105D.020(7), respectively, has occurred at the Site.

C. Based upon credible evidence, Ecology issued a potentially liable person status letter to the PLP dated March 15, 2007, pursuant to RCW 70.105D.040, -.020(16), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing any comments submitted, and concluding that credible evidence supported a finding of potential liability, Ecology issued a determination that DSI is a PLP under RCW 70.105D.040 and notified the PLP of this determination by letter dated May 10, 2007. Without making an admission of liability, DSI waived its right to a 30-day notice and comment period to expedite further investigations at the DSI facility, including entering into an Agreed Order for an RI/FS.

D. Pursuant to RCW 70.105D.030(1) and -.050(1), Ecology may require PLP's to investigate or conduct other remedial actions with respect to any release or threatened release of hazardous substances, whenever it believes such action to be in the public interest. Based on the foregoing facts, Ecology believes the remedial actions required by this Order are in the public interest.

E. Under WAC 173-340-430, an interim action is a remedial action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance, that corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed, or that is needed to provide for completion of a site hazard assessment, RI/FS or design of a cleanup action. Cleanup of contaminated sediment in the LDW might be delayed because of the potential for sediment recontamination as a result of releases from the Glacier Bay Source Control Area. Investigation of the Site may reveal sources of contamination to the LDW that if addressed promptly will reduce potential LDW sediment remediation delays. The need to reduce or eliminate sources of contamination to the LDW might warrant an interim action consistent with WAC 173-340-430. Ecology will determine if interim actions are warranted and will give direction to the PLP regarding the scope and schedule for such interim actions as this Order is implemented.

VII. WORK TO BE PERFORMED

Based on the Findings of Fact and Ecology Determinations, it is hereby ordered that the PLP take the following remedial actions at the Site and that these actions be conducted in accordance with Chapter 173-340 WAC and Chapter 173-204 WAC, unless otherwise specifically provided for herein:

A. Provide a detailed summary of historical and recent Site environmental data, identify data gaps, and complete a Remedial Investigation/Feasibility Study (RI/FS) of the Site in accordance with WAC 173-304-350 that addresses any such identified data gaps. The scope of work for the environmental data summary, data gaps identification, and RI/FS is more particularly described in Exhibit B, "Work Plan: Remedial Investigation and Feasibility Study." Exhibit B is incorporated by reference and is an integral and enforceable part of this Order.

B. The schedule of performance and list of deliverables is described in Exhibit C, "Schedule for Performance and Deliverables." The Schedule of Performance and Deliverables is incorporated by reference and is an integral and enforceable part of this Order.

C. Execution of the RI/FS work plan shall commence no later than 30 days following the date of signature of this Order by Ecology and shall be conducted according to the schedule presented in Exhibit C. Monthly progress reports shall be submitted to Ecology by the 15th of the month following the reporting month. The first report shall be due on the 15th of the month following the first full reporting month period, and shall include any portion of the month between project commencement and the beginning of the first full reporting month. The monthly report will list work plan activities for which data were collected during the previous month. Data packages for which quality assurance/quality control validation were completed during the previous month shall be submitted with the monthly report to Ecology as hard copy and on computer disk and shall be submitted in accordance with Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements). Two copies of the monthly report shall be submitted.

D. If, at any time after the first exchange of comments on drafts, Ecology determines that insufficient progress is being made in the preparation of any of the deliverables required by this Section, Ecology may complete and issue the final deliverable.

VIII. TERMS AND CONDITIONS OF ORDER

A. Public Notice

RCW 70.105D.030(2)(a) requires that, at a minimum, this Order be subject to concurrent public notice. Ecology shall be responsible for providing such public notice and reserves the right to modify or withdraw any provisions of this Order should public comment disclose facts or considerations which indicate to Ecology that this Order is inadequate or improper in any respect.

B. Remedial Action Costs

The PLP shall pay to Ecology costs incurred by Ecology pursuant to this Order and consistent with WAC 173-340-550(2). These costs shall include work performed by Ecology or its contractors for, or on, the Site under Chapter 70.105D RCW, including remedial actions and Order preparation, negotiation, oversight, and administration. These costs shall include work

performed both prior to and subsequent to the issuance of this Order. Ecology's costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). The PLP shall pay the required amount within thirty (30) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general statement of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Pursuant to WAC 173-340-550(4), failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement of costs will result in interest charges at the rate of twelve percent (12%) per annum compounded monthly.

Pursuant to RCW 70.105D.055, Ecology has authority to recover unreimbursed remedial action costs by filing a lien against real property subject to the remedial actions.

C. Implementation of Remedial Action

If Ecology determines that the PLP has failed without good cause to implement the remedial action, in whole or in part, Ecology may, after notice to the PLP, perform any or all portions of the remedial action that remain incomplete. If Ecology performs all or portions of the remedial action because of the PLP's failure to comply with its obligations under this Order, the PLP shall reimburse Ecology for the costs of doing such work in accordance with Section VIII.B (Remedial Action Costs), provided that the PLP is not obligated under this Section to reimburse Ecology for costs incurred for work inconsistent with or beyond the scope of this Order.

Except where necessary to abate an emergency situation, the PLP shall not perform any remedial actions at the Site outside those remedial action required by this Order, unless Ecology concurs, in writing, with such additional remedial actions.

D. Designated Project Coordinators

The project coordinator for Ecology is:

Mark H. Edens
Washington State Department of Ecology
Northwest Regional Office
Toxics Cleanup Program

3190 – 160th Avenue S.E.
Bellevue, WA 98008-5452
Telephone: 425-649-7070
Facsimile: 425-649-7098
E-Mail: mede461@ecy.wa.gov

The project coordinator for DSI is:

David Templeton
Anchor QEA, LLC
1423 Third Avenue, Suite 300
Seattle, WA 98101
Telephone: 206-287-9130
Facsimile: 206-287-9131
E-Mail: dtempleton@anchorqea.com

Each project coordinator shall be responsible for overseeing the implementation of this Order. Ecology's project coordinator will be Ecology's designated representative for the Site. To the maximum extent possible, communications between Ecology and the PLP, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order shall be directed through the project coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the work to be performed required by this Order.

Any party may change its respective project coordinator. Written notification shall be given to the other party at least ten (10) calendar days prior to the change.

E. Performance

All geologic and hydrogeologic work performed pursuant to this Order shall be under the supervision and direction of a geologist licensed in the State of Washington or under the direct supervision of an engineer registered in the State of Washington, except as otherwise provided for by Chapters 18.220 and 18.43 RCW.

All engineering work performed pursuant to this Order shall be under the direct supervision of a professional engineer registered in the State of Washington, except as otherwise provided for by RCW 18.43.130.

All construction work performed pursuant to this Order shall be under the direct supervision of a professional engineer or a qualified technician under the direct supervision of a

professional engineer. The professional engineer must be registered in the State of Washington, except as otherwise provided for by RCW 18.43.130.

Any documents submitted containing geologic, hydrologic, or engineering work shall be under the seal of an appropriately licensed professional as required by Chapter 18.220 RCW or RCW 18.43.130.

The PLP shall notify Ecology in writing of the identity of any engineer(s) and geologist(s), contractor(s) and subcontractor(s), and others to be used in carrying out the terms of this Order, in advance of their involvement at the Site.

F. Access

Ecology or any Ecology authorized representative shall have the full authority to enter and freely move about all property at the Site that the PLP either owns, controls, or has access rights to at all reasonable times for the purposes of, *inter alia*: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing the PLP's progress in carrying out the terms of this Order; conducting such tests or collecting such samples as Ecology may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by the PLP. Ecology or any Ecology authorized representative shall have full authority to request access to, inspect and photocopy records, operation logs, and contracts relating to the work being performed pursuant to this Order, which are not kept on the DSI Property. The PLP shall make all reasonable efforts to secure access rights for those properties within the Site not owned or controlled by the PLP where remedial actions or investigations will be performed pursuant to this Order. Ecology or any Ecology authorized representative shall give reasonable notice before entering any Site property owned or controlled by the PLP unless an emergency prevents such notice. All persons who access the Site pursuant to this Section shall comply with any applicable Health and Safety Plan(s). Ecology employees and their representatives shall not be required to sign any liability release or waiver as a condition of Site property access.

G. Sampling, Data Submittal, and Availability

With respect to the implementation of this Order, the PLP shall make the results of all sampling, laboratory reports, and/or test results generated by it or on its behalf available to Ecology. Pursuant to WAC 173-340-840(5), all sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with Section VII (Work to be Performed), Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements), and/or any subsequent procedures specified by Ecology for data submittal.

If requested by Ecology, the PLP shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by the PLP pursuant to implementation of this Order. The PLP shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow the PLP and/or its authorized representatives to take split or duplicate samples of any samples collected by Ecology pursuant to the implementation of this Order, provided that doing so does not interfere with Ecology's sampling. Without limitation on Ecology's rights under Section VIII.F (Access), Ecology shall notify the PLP prior to any sample collection activity unless an emergency prevents such notice.

In accordance with WAC 173-340-830(2)(a), all hazardous substance analyses shall be conducted by a laboratory accredited under Chapter 173-50 WAC for the specific analyses to be conducted, unless otherwise approved by Ecology.

H. Public Participation

A Public Participation Plan is required for this Site. Ecology shall review any existing Public Participation Plan to determine its continued appropriateness and whether it requires amendment, or if no plan exists, Ecology shall develop a Public Participation Plan alone or in conjunction with the PLP.

Ecology shall maintain the responsibility for public participation at the Site. However, the PLP shall cooperate with Ecology, and shall:

1. If agreed to by Ecology, develop appropriate mailing list, prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, RI/FS reports, cleanup action plans, and engineering design reports. As appropriate, Ecology will edit, finalize, and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings.

2. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before major meetings with the interested public and local governments. Likewise, Ecology shall notify the PLP prior to the issuance of all press releases and fact sheets, and before major meetings with the interested public and local governments. For all press releases, fact sheets, meetings, and other outreach efforts by the PLP that do not receive prior Ecology approval, the PLP shall clearly indicate to its audience that the press release, fact sheet, meeting, or other outreach effort was not sponsored or endorsed by Ecology.

3. When requested by Ecology, participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions or as a presenter.

4. When requested by Ecology, arrange and/or continue information repositories to be located at the following locations:

a. Seattle Public Library - South Park Branch
8604 Eighth Ave. S., at S. Cloverdale St.
Seattle, WA 98108

b. Ecology's Northwest Regional Office
3190 – 160th Ave. SE
Bellevue, WA 98008-5452

At a minimum, copies of all public notices, fact sheets, and press releases; all quality assured monitoring data; remedial action plans and reports, and supplemental remedial planning documents; and all other similar documents relating to performance of the remedial action required by this Order shall be promptly placed in these repositories.

I. Retention of Records

During the pendency of this Order, and for ten (10) years from the date of completion of work performed pursuant to this Order, the PLP shall preserve all records, reports, documents, and underlying data in its possession relevant to the implementation of this Order and shall insert a similar record retention requirement into all contracts with project contractors and subcontractors. Upon request of Ecology, the PLP shall make all records available to Ecology and allow access for review within a reasonable time.

J. Resolution of Disputes

1. In the event a dispute arises as to an approval, disapproval, proposed change, or other decision or action by Ecology's project coordinator, or an itemized billing statement under Section VIII.B. of this Order (Remedial Action Costs), the Parties shall utilize the dispute resolution procedure set forth below.

a. Upon receipt of Ecology's project coordinator's written decision or the itemized billing statement, the PLP's shall have fourteen (14) days within which to notify Ecology's project coordinator in writing of its objection to the decision or itemized statement.

i. The PLP's shall include in the written objection sufficient detail to allow Ecology to evaluate the merits of the dispute.

ii. Such detail shall include the specific Ecology determination or direction or itemized statement in dispute and shall include specific argument(s) documenting the basis for invoking the dispute resolution procedure.

iii. Clarification of Ecology directions or determinations shall not be handled through the dispute resolution procedure. Ecology's project coordinator shall make such clarifications in a manner and time he or she deems appropriate to expedite to the maximum extent practicable the work to be performed under this Order.

b. The Parties' project coordinators shall then confer in good faith in an effort to resolve the dispute. If the project coordinators cannot resolve the dispute within fourteen (14) days, then Ecology's project coordinator shall issue a written decision.

c. The PLP's may then request regional management review of the decision. This request shall be submitted in writing to the Northwest Region Toxics Cleanup Section Manager within seven (7) days after receipt of Ecology's project coordinator's written decision.

d. The Section Manager shall conduct a review of the dispute and shall endeavor to issue a written decision regarding the dispute within thirty (30) days after the PLPs' request for review. The Section Manager's decision shall be Ecology's final decision on the disputed matter.

2. The Parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used.

3. Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Order, unless Ecology agrees in writing to a schedule extension.

K. Extension of Schedule

1. An extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) days prior to expiration of the deadline for which the extension is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify:

a. The deadline that is sought to be extended;

b. The length of the extension sought;

c. The reason(s) for the extension; and

d. Any related deadline or schedule that would be affected if the extension were granted.

2. The burden shall be on the PLP to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause may include, but may not be limited to:

a. Circumstances beyond the reasonable control and despite the due diligence of the PLP including delays caused by unrelated third parties or Ecology, such

as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by the PLP;

b. Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty; or

c. Endangerment as described in Section VIII.M (Endangerment).

However, neither increased costs of performance of the terms of this Order nor changed economic circumstances shall be considered circumstances beyond the reasonable control of the PLP.

3. Ecology shall act upon any written request for extension in a timely fashion. Ecology shall give the PLP written notification of any extensions granted pursuant to this Order. A requested extension shall not be effective until approved by Ecology. Unless the extension is a substantial change, it shall not be necessary to amend this Order pursuant to Section VIII.L (Amendment of Order) when a schedule extension is granted.

4. An extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. Ecology may grant schedule extensions exceeding ninety (90) days only as a result of:

a. Delays in the issuance of a necessary permit which was applied for in a timely manner;

b. Other circumstances deemed exceptional or extraordinary by Ecology; or

c. Endangerment as described in Section VIII.M (Endangerment).

L. Amendment of Order

The project coordinators may verbally agree to minor changes to the work to be performed without formally amending this Order. Minor changes will be documented in writing by Ecology within seven (7) days of verbal agreement.

Except as provided in Section VIII.N (Reservation of Rights), substantial changes to the work to be performed described in Section VII (Work to be Performed) shall require formal amendment of this Order. This Order may only be formally amended by the written consent of

both Ecology and the PLP. The PLP shall submit a written request for amendment to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely manner after the written request for amendment is received. If the amendment to this Order represents a substantial change, Ecology will provide public notice and opportunity to comment. Reasons for the disapproval of a proposed amendment to this Order shall be stated in writing. If Ecology does not agree to a proposed amendment, the disagreement may be addressed through the dispute resolution procedures described in Section VIII.J (Resolution of Disputes).

M. Endangerment

In the event Ecology determines that any activity being performed at the Site is creating or has the potential to create a danger to human health or the environment on or surrounding the Site, Ecology may direct the PLP to cease such activities for such period of time as it deems necessary to abate the danger. The PLP shall immediately comply with such direction.

In the event the PLP determines that any activity being performed at the Site is creating or has the potential to create a danger to human health or the environment, the PLP may cease such activities. The PLP shall notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after making such determination or ceasing such activities. Upon Ecology's direction the PLP shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with the PLP's cessation of activities, it may direct the PLP to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to Section VIII.M (Endangerment), the PLP's obligations with respect to the ceased activities shall be suspended until Ecology determines the danger is abated, and the time for performance of such activities, as well as the time for any other work dependent upon such activities, shall be extended in accordance with Section VIII.K (Extension of Schedule) for such period of time as Ecology determines is reasonable under the circumstances.

Nothing in this Order shall limit the authority of Ecology, its employees, agents, or contractors to take or require appropriate action in the event of an emergency.

N. Reservation of Rights

This Order is not a settlement under Chapter 70.105D RCW. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any of Ecology's rights or authority. Ecology will not, however, bring an action against the PLP to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against the PLP regarding remedial actions required by this Order, provided the PLP complies with this Order.

Ecology nevertheless reserves its rights under Chapter 70.105D RCW, including the right to require additional or different remedial actions at the Site should it deem such actions necessary to protect human health and the environment, and to issue orders requiring such remedial actions. Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances at the Site. By entering into this Agreed Order, the PLP does not admit any liability for the Site. Although the PLP is committing to performing the work required by this Order, the PLP expressly reserves all rights available under law, including but not limited to the right to seek cost recovery or contribution against third parties, and the right to assert any defenses to liability in the event of enforcement.

O. Transfer of Interest in Property

No voluntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by the PLP without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to the PLP's transfer of any interest in all or any portion of the Site, and during the effective period of this Order, the PLP shall provide a copy of this Order to any prospective purchaser, lessee, transferee, assignee, or other successor in said interest; and, at least thirty (30) days prior to any transfer, the PLP shall notify Ecology of said transfer. Upon transfer of any

interest, the PLP shall restrict uses and activities to those consistent with this Order and notify all transferees of the restrictions on the use of the property.

P. Compliance with Applicable Laws

1. All actions carried out by the PLP pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in RCW 70.105D.090. At this time, no federal, state, or local requirements have been identified as being applicable to the actions required by this Order.

2. Pursuant to RCW 70.105D.090(1), the PLP is exempt from the procedural requirements of Chapters 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals. However, the PLP shall comply with the substantive requirements of such permits or approvals. At this time, no state or local permits or approvals have been identified as being applicable but procedurally exempt under this Section.

3. The PLP has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order. In the event either Ecology or the PLP determines that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify the other party of its determination. Ecology shall determine whether Ecology or the PLP shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, the PLP shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by the PLP and on how the PLP must meet those requirements. Ecology shall inform the PLP in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. The PLP shall not

begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

4. Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency that is necessary for the State to administer any federal law, the exemption shall not apply and the PLP shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits.

Q. Indemnification

The PLP agrees to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action for death or injuries to persons or for loss or damage to property to the extent arising from or on account of acts or omissions of the PLP, its officers, employees, agents, or contractors in entering into and implementing this Order. However, the PLP shall not indemnify the State of Washington nor save nor hold its employees and agents harmless from any claims or causes of action to the extent arising out of the negligent acts or omissions of the State of Washington, or the employees or agents of the State, in entering into or implementing this Order.

IX. SATISFACTION OF ORDER

The provisions of this Order shall be deemed satisfied upon the PLP's receipt of written notification from Ecology that the PLP has completed the remedial action required by this Order, as amended by any modifications, and that the PLP has complied with all other provisions of this Agreed Order.

X. ENFORCEMENT

Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

A. The Attorney General may bring an action to enforce this Order in a state or federal court.

B. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.

C. In the event the PLP refuses, without sufficient cause, to comply with any term of this Order, the PLP will be liable for:

a. Up to three (3) times the amount of any costs incurred by the State of Washington as a result of its refusal to comply; and

b. Civil penalties of up to twenty-five thousand dollars ($25,000) per day for each day it refuses to comply.

D. This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under RCW 70.105D.060.

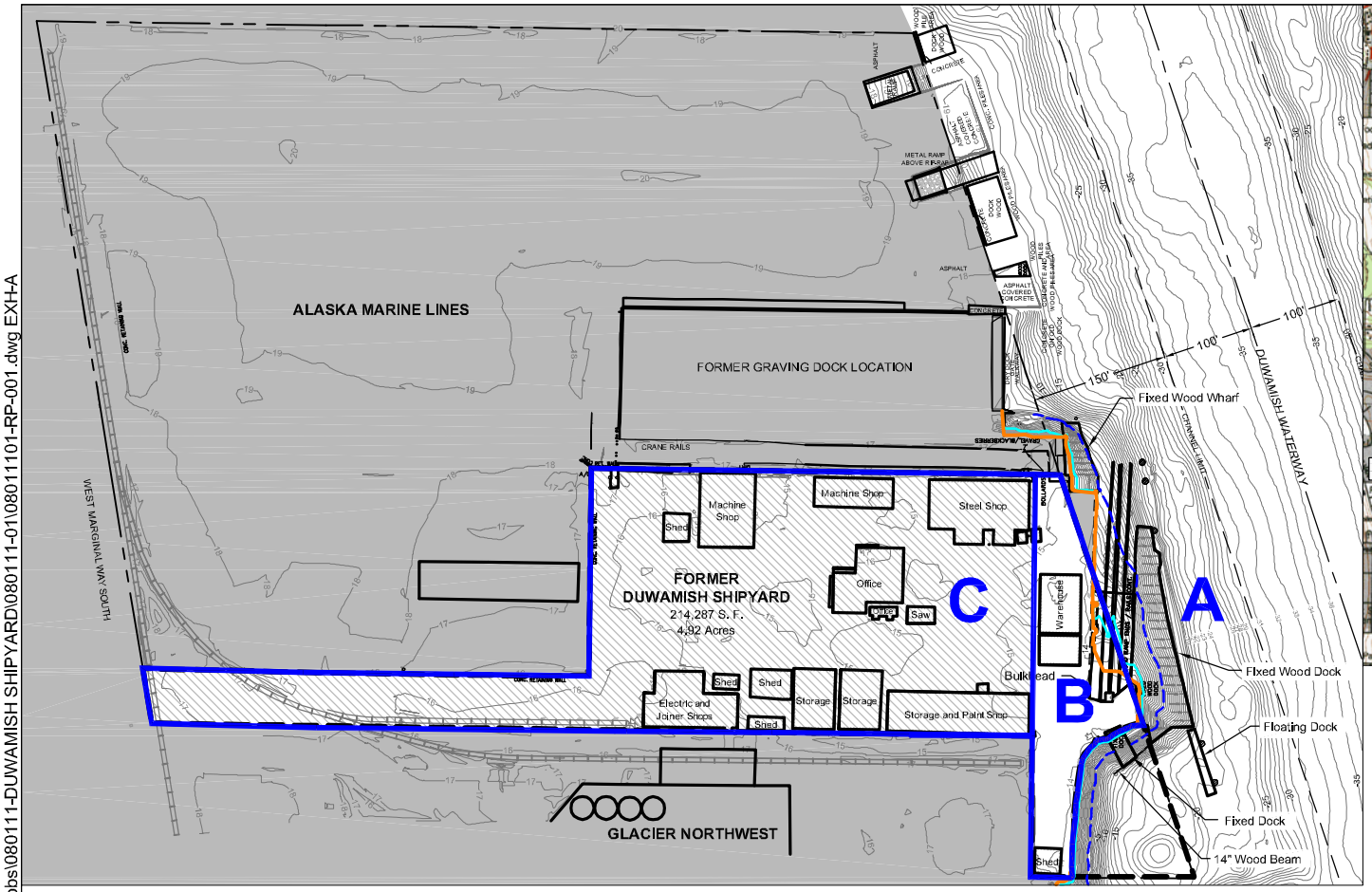
Effective date of this Order: SEPTEMBER 13, 2010

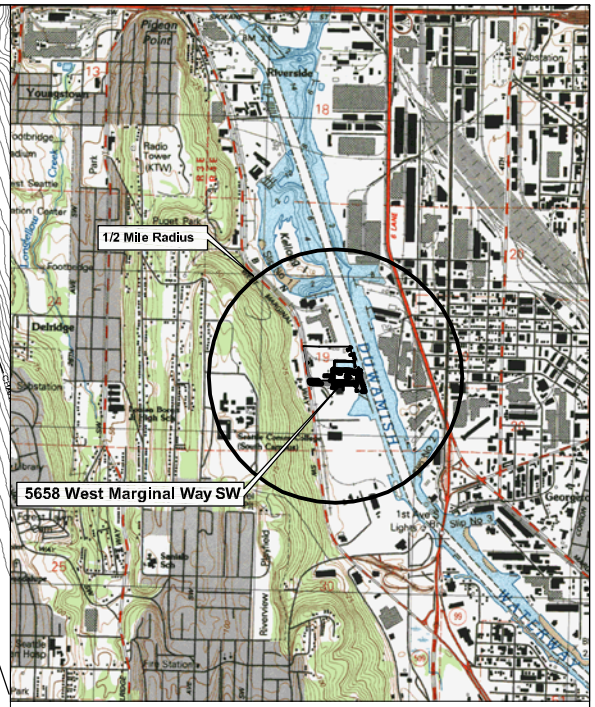
DUWAMISH SHIPYARD, INC.

Kyle McCleary
Secretary/Treasurer
Telephone: 206-767-4880

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY

Robert W. Warren, P. Hg. MBA
Section Manager
Toxics Cleanup Program
Northwest Regional Office
Telephone: 425-649-7054





Note: Base map prepared from Terrain Navigator Pro USGS 7.5 minute quadrangle map of Seattle South, Washington.

0 4000
Scale in Feet

Subject Property Boundary
10 Topographic and Bathymetric Contours in Feet (MLLW)
Top of Bank (TOB)
Mean Higher High Water (MHHW)
Mean Lower Low Water (MLLW)
Upland Area for Segregation
A Area

Notes:
1. Horizontal Datum: Washington State Plane, North, NAD-83 (Feet).
2. Vertical Datum: MLLW (Feet).

0 200
Scale in Feet

Apr 24, 2009 11:47am dholmer K:\Jobs\080111-DUWAMISH SHIPYARD\080111-01\080111101-RP-001.dwg EXH-A

Exhibit A - Site Diagram

ANCHOR QEA

WORK PLAN

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY

DUWAMISH SHIPYARD, INC.
SEATTLE, WASHINGTON

Prepared for

Duwamish Shipyard, Inc.
5658 W Marginal Way SW
Seattle, Washington 98106

Prepared by

Anchor Environmental, L.L.C.
1423 Third Avenue, Suite 300
Seattle, Washington 98101

June 2009

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µg/L	micrograms per liter
ACOE	U.S. Army Corps of Engineers
AML	Alaska Marine Lines
AO	Agreed Order
ARARs	applicable and relevant or appropriate requirements
bgs	below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylenes
COPCs	chemicals of potential concern
CSL	Cleanup Screening Levels
CSM	conceptual site model
cy	cubic yards
cy/s	cubic yards per second
DSI	Duwamish Shipyard, Inc.
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ERA	Ecological Risk Assessment
Glacier	Glacier Northwest
HASP	Health and Safety Plan
HCI	Hart Crowser, Inc.
HPAHs	high molecular weight PAHs
LDW	Lower Duwamish Waterway
LDWG	LDW Group
LPAHs	low molecular weight PAHs
MCUL	minimum cleanup level
mg/kg	milligrams per kilogram
mg/L	milligram per liter
MHHW	mean higher high water
MLLW	mean lower low water
MTCA	Model Toxics Control Act
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls

PCP	Pentachlorophenol
PDF	portable document format
Port	Port of Seattle
PSDDA	Puget Sound Dredge Disposal Analysis
QAPP	Quality Assurance Plan
RAO	remedial action objective
RI/FS	Remedial Investigation and Feasibility Study
RM	River Miles
SAP	Sampling and Analysis Plan
SMS	Sediment Management Standards
SOW	Statement of Work
SQS	Sediment Quality Standards
SVOCs	semivolatile organic compounds
TBT	tributyltin
the Property	5658 West Marginal Way SW
TPH	total petroleum hydrocarbon
TPH-Dx	TPH diesel range
TPH-G	TPH gasoline range
TPH-O	TPH lubricant oil range
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compounds
WAC	Washington Administrative Code

1 INTRODUCTION

The Duwamish Shipyard, Inc. (DSI) property is located at 5658 West Marginal Way SW in Seattle (the Property), along the western shoreline of the Lower Duwamish Waterway (LDW). The LDW was added to the National Priorities List (NPL) and is undergoing a Remedial Investigation and Feasibility Study (RI/FS) with oversight by the U.S. Environmental Protection Agency (EPA) and the Washington Department of Ecology (Ecology). Portions of the aquatic areas adjacent to the Property are located within the study area for the LDW.

The location of the Property is shown on Figure 1. Current and historical property boundaries are shown in Figures 2 and 3, respectively. The Property was used between the 1940s and April 2007 for operation of a commercial shipyard. Examples of the types of historical activities occurring at the Property are depicted in aerial photographs contained in Appendix A. Features of the Property during the period of shipyard activities are shown in Figures 2, 4, and 6. Shipyard activities were terminated in April 2007. The Property is currently being used solely for container storage and is being marketed for industrial reuse, consistent with the zoning of the Property.

Numerous investigations have been conducted at the Property and adjacent aquatic areas. These investigations have identified the presence of hazardous substances in on-property and adjacent off-property areas. Interim remedial actions have been conducted in certain upland portions of the Property to address certain areas of petroleum-contaminated soils (Figure 7). However, the full nature and extent of contamination at the Property and adjacent aquatic areas has not been determined.

1.1 Objective and Purpose

In support of the investigation and cleanup of the LDW, Ecology is leading sediment source control activities, consistent with a Memorandum of Agreement with EPA. Ecology has identified the Property and adjacent properties and aquatic areas as part of a source control study area known as the "Glacier Bay" area. The Glacier Bay study area includes the Property, the Alaska Marine Lines (AML) property to the north, and the Glacier Northwest (Glacier) property and the Terminal 115 property to the south. These properties surround a shallow embayment identified as Glacier Bay, within which numerous hazardous substances have been detected in surface and subsurface sediments at elevated

concentrations. Ecology has determined that additional investigation is required to assess whether there are ongoing sources that need to be controlled. Information is also required in order to assess whether and to what extent further remedial actions may be required under state or federal cleanup regulations at the properties surrounding the Glacier Bay study area.

This report describes the scope of upland and sediment investigations to be performed at the Property and in aquatic areas adjacent to the Property. These investigations are intended to satisfy Ecology requirements for an RI/FS of the Property, and requirements for assessment of the status of sediment source control. These requirements were defined in an Ecology letter dated January 5, 2007 and in subsequent agency discussions. The current Phase 1 remedial investigation activities and additional RI/FS tasks are being performed under an Agreed Order (AO) between DSI and Ecology. This RI/FS Work Plan is included as Exhibit B, "Statement of Work (SOW)," to the AO.

As part of its January 5, 2007 letter, Ecology requested that the stormwater system be cleaned out. This work was performed during July and August 2007. The Property stormwater system cleanout activities were reported in a January 4, 2008 letter report to Ecology.

1.2 Scope of Work

The current scope of work for Phase 1 remedial investigation activities includes collection of additional upland and aquatic investigation data in on-property and adjacent aquatic areas in order to support the development of a detailed conceptual site model (CSM) and the development of conclusions regarding the status of sediment source control. Development of a CSM is an important step in assessing the status of source control and the potential need for and scope of further remedial actions. Elements of a CSM include the following:

- **Contaminants and Potential Sources:** Hazardous substances detected at the Property and adjacent aquatic areas have included heavy metals, semivolatile organic compounds (SVOCs), petroleum hydrocarbons, volatile organic compounds (VOCs), organotin compounds, polychlorinated biphenyls (PCBs), and dioxin/furans. Further information is required to assess the potential sources of

these hazardous substances and assess whether such potential sources have been controlled.

- **Nature and Extent of Contamination:** The presence of contamination has been defined in limited areas of upland soils and groundwater. Additional data are required to define the nature and extent of groundwater contamination and its relationship to contaminant sources. Similarly, the presence of hazardous substances in surface and subsurface sediments located in on-property and adjacent off-property areas has been identified. Additional information is required to assess the area and volume of such hazardous substance impacts and to differentiate those impacts that are being potentially caused or contributed to by other off-site sources.
- **Fate and Transport Processes:** Upland contamination can potentially impact groundwater and sediments through stormwater migration, groundwater migration to surface waters, and through riverbank erosion. Further information is required to assess the extent to which these and other fate and transport processes are occurring. Fate and transport processes potentially affecting sediments include bank erosion, natural sediment scour, or anthropogenic sediment disturbance due to propwash, vessel wakes, or in-water construction activities. Further assessment is required to assess the impacts of these processes on contaminated sediments located on or adjacent to the Property.
- **Exposure Pathways and Receptors:** The final CSM will include an assessment of exposure pathways and potential receptors. Aquatic receptors and potentially applicable cleanup levels are being determined as part of the LDW RI/FS and risk assessment process. At a minimum, these cleanup levels will address the protection of benthic organisms in aquatic sediments, and will address human health protection by controlling direct contact and contaminant bioaccumulation risks. Upland cleanup levels that address human health protection as required under the Model Toxics Control Act (MTCA) and that ensure protection of surface water and sediment quality must be determined. The current investigations will include an assessment of potentially applicable cleanup levels for different media, and an assessment of potentially complete pathways that may result in exposures above applicable cleanup levels.

1.3 Organization of Work Plan

The remainder of the report provides the detailed rationale and scope for RI/FS tasks for the Property. The report is organized as follows:

- **Section 2 – Site Background:** The physical conditions and history of operations on and immediately adjoining the Property are described, including applicable information for the adjacent areas of Glacier Bay and the LDW.
- **Section 3 – Environmental Quality:** The results of previous on-site and off-site investigations are summarized, including the results of prior remedial actions and recent investigations within the adjacent portions of Glacier Bay and the LDW.
- **Section 4 – Preliminary Conceptual Site Model:** A preliminary CSM is defined, providing a basis for assessing data gaps and data quality objectives for completion of RI, FS, and source control assessment activities.
- **Section 5 – Assessment of Data Gaps**: Gaps in existing environmental information are identified, with an emphasis on defining the information necessary to complete the detailed CSM for hazardous substances requiring further action on or adjacent to the Property.
- **Section 6 – Remedial Investigation Tasks:** The scope of upland and aquatic Phase 1 remedial investigations is presented to fill the data gaps as defined in Section 5. This scope of work will be implemented as outlined in the AO and pursuant to an approved Sampling and Analysis Plan (SAP), Quality Assurance Plan (QAPP), and Health and Safety Plan (HASP). Phase 1 remedial investigation activities will be documented in a Phase 1 Data Memorandum, and the need for additional RI activities will be evaluated in a Phase 2 Technical Memorandum.
- **Section 7 – Feasibility Study Tasks:** The FS will identify and evaluate remedial alternatives that protect human health and the environment by eliminating, reducing, or otherwise controlling risks posed by environmental conditions at the Property. An Alternatives Screening Memorandum will first be prepared to evaluate potential cleanup technologies applicable to the Property and narrow the list of potential alternatives evaluated in detail. Additional FS tasks will be documented in the RI/FS report, including a detailed evaluation of remedial alternatives and concluding with a recommended remedial alternative.

- **Section 8 – Project Organization and Schedule:** This section describes the overall project organizational structure for carrying out the RI/FS activities consistent with the AO schedule and required deliverables.
- **Section 9 – References:** References cited in development of the current Work Plan are provided.

2 SITE BACKGROUND

2.1 Property Description

The Property includes approximately 5 acres of land owned by DSI and located on the west bank of the LDW. Current features and property boundaries are shown in Figure 2. Most of the Property consists of upland, but aquatic areas are also located in the southeast corner of the Property.

The berth and waterway areas adjacent to the Property are owned by the Port of Seattle (Port) as successor to Commercial Waterway District No. 1. The berth area is 150 feet wide. The waterway is 200 feet in width and has a project depth of -30 feet relative to mean lower low water (MLLW). The U.S. Army Corps of Engineers (ACOE) maintains the waterway channel for navigation in conjunction with the Port. As shown in Figure 2, portions of former shipyard activities extended into the berth area owned by the Port.

The Property is currently being used for container storage and truck access by AML. It is bordered to the north by the AML container facility and to the south by the Glacier Seattle Cement Facility and Terminal 115. DSI previously leased a graving dock from AML located directly adjacent to the northern DSI/AML property boundary. However, that lease has been terminated, and AML has filled the graving dock with clean fill for upland reuse. West Marginal Way is located immediately west of the Property, and AML owns additional property used for staging across this roadway.

The Property is located in a highly industrialized area and is currently zoned for General Industrial (IG1 U/85) use. The eastern property boundary abuts the LDW. The LDW was placed on the NPL by EPA in September 2001. The preliminary boundaries of the LDW extend from the Turning Basin downstream to Harbor Island. The Property is located within this initial delineation (approximately between River Miles [RM] 1.3 and 1.4). In addition, the Property is listed on Ecology's Contaminated Sediment Sites List, which was first published in 1996. That list documents sites potentially subject to investigation and cleanup requirements under MTCA.

2.2 Property Ownership History

Figure 3 provides a summary of the ownership history of the Property. DSI purchased the main portions of the Property (Parcels B and C) as a tax title purchase from King County in May 1941. Historical aerial photographs show that the property was vacant in the 1930s prior to its purchase by DSI.

When DSI purchased Parcels B and C, the property to the south was owned by the federal government. After retrofitting an existing lumber plant, the U.S. Army used the property to the south for production of charcoal filters and Whetlerite (a copper-impregnated carbon used in gas mask filters during World Wars I and II). This adjacent property was leased by the federal government to Reichhold Chemical, Inc. (Reichhold) between 1945 and 1958 for operation of a chemical manufacturing facility. The facility produced pentachlorophenol, plastic polymers for the automobile industry, various wood-preserving resins, adhesives and glues used in papermaking, and formaldehyde products. In 1958, Reichhold moved the manufacturing operations to Tacoma, but maintained offices and laboratories at this location until approximately 1961, when Reichhold's lease with the federal government was terminated. That property is now owned by Glacier.

In 1960, DSI purchased a submerged parcel previously used for log and vessel mooring (Parcels E and F) from Commercial Waterway District #1. That parcel extended south into the Glacier Bay area. Four years later, in 1964, DSI exchanged the submerged Glacier Bay parcel (Parcel F) with the Port for land adjacent to DSI's southern boundary (Parcel D). The Port had acquired Parcel D from the federal government that same year. The Port subsequently leased the former Reichhold property to Kaiser Cement for construction of a cement terminal.

In 1965, DSI purchased the parcel (Parcel A) to the west of DSI's original tract from General Construction Company. This was part of a larger parcel (Parcels A and B) later sold to AML in 1999.

From the 1940s through April 2007, DSI used portions of the waterway berth areas for shipyard operations. No existing leases or other property use agreements are available for these areas.

Since June 2007, the upland portion of the Property has been used for container storage and truck access by AML. The DSI-owned property is being marketed for sale for industrial use. Likely future uses include container storage and yard operations, equipment storage, or cargo transshipment operations. Future operation as a commercial shipyard is neither planned nor likely to occur.

2.3 Shipyard History

Prior to construction of the DSI facility, the Property consisted of vacant lowland property. King County plat maps and other historical maps show that the Property was located along the western shoreline of the Duwamish River prior to waterway development. An aerial photograph from 1936 (Appendix A) shows the conditions of the Property prior to shipyard construction.

DSI formerly engaged in the repair and maintenance of floating vessels and equipment, including tugboats, barges, dredges, fishing vessels, small passenger vessels, and other types of commercial vessels. The marine railway was constructed at the Property in the early 1940s. The majority of the vessels worked on at the shipyard in this period were wooden fishing boats. Boats would be pulled up on the railway and could be sidetracked onto timbers on the shore. DSI frequently sidetracked boats in the fall, worked on them over the winter, and launched them in the spring. The work consisted mainly of wooden hull repairs and painting. DSI ended the sidetracking process in the late 1950s.

Based on aerial photographs (Appendix A), the graving dock was originally constructed prior to 1946 and was expanded by 1956. DSI used the graving dock under agreements with General Construction, and then later with AML, between 1955 and January 2007. The completed graving dock was 410 feet long and 138 feet wide. Repairs in the graving dock took place below the surface level of the river. Vessels were floated into the graving dock, after which the tide gates were shut and the water was pumped out to create a dry work environment. Pumps were used to continuously keep the concrete floor of the graving dock dry due to leaking from the tide gates. DSI installed a containment system in the 1990s to separate pressure wash water from the water that seeps in through the tide gate.

DSI acquired its first floating, steel drydock in 1967. This floating drydock was a small, steel dock that was used until March 2007. It acquired a second, larger wooden drydock in approximately 1969. After this time, most of the vessel dockings were made on the drydocks. DSI sold the large wooden drydock in 1990 and replaced it with a 1,000-ton steel drydock that remained in use until March 2007. Drydock mooring areas were located within the Port-owned berth areas as shown in Figure 6. Both drydocks were updated to provide containment for pressure wash wastewater in the 1990s. Wastewater flowed to one end of the drydock, where it was captured in a collection sump and pumped onshore to a Delta Pollution Control flocculation pretreatment system prior to discharge to the King County sanitary sewer.

During recent operations, DSI provided services to approximately 60 to 65 vessels per year. The hulls of the vessels being repaired were generally constructed of steel and, infrequently, aluminum or fiberglass. DSI's ship repair services included machine and electrical work, carpentry, steel fabrication, pipe-fitting, sand blasting, pressure washing, and painting.

DSI ceased use of the Property for any industrial-related activity in April 2007. The two drydocks have been removed from the Property. The upland portion of the Property is currently being used by AML for container storage and truck access, with DSI marketing the Property for sale for industrial use.

2.4 History of Adjacent Facilities

Properties adjacent to DSI, including those owned by Glacier, MRI Corporation/Port of Seattle (Terminal 115), and AML, are also properties of interest and included within the Glacier Bay Source Control Area. An overview of the history of these nearby facilities is provided below and is consistent with information presented in the Summary of Existing Information and Identification of Data Gaps report (SAIC 2007) prepared for the Glacier Bay Source Control Area under the direction of Ecology.

2.4.1 Reichhold Chemical/Glacier

Glacier is the current owner of the property located immediately south of DSI. The property is currently operated by Glacier as a cement terminal, including cement production, storage, and transport. Bulk cement is transported by truck and by barge

from a dock and berthing area located on the west side of the waterway adjacent to the Glacier property. Historic property use included a lumber company, U.S. Army facility, the Reichhold facility, and cement terminals.

Prior to 1943, the Glacier property was owned by the Carlisle Lumber Company, which operated a lumber mill at the site. After retrofitting an existing lumber plant, the U.S. Army used the property to the south for production of charcoal filters and Whetlerite (a copper-impregnated carbon used in gas mask filters during World Wars I and II). Charcoal manufacturing continued through 1944.

The Glacier property was subsequently leased by the federal government to Reichhold between 1945 and 1958 for operation of a chemical manufacturing facility. The facility produced pentachlorophenol, plastic polymers for the automobile industry, various wood-preserving resins, adhesives, and glues used in papermaking, and formaldehyde products. Ammonia was also used in Reichhold's operations; however, its use could not be related to a specific product. Residues and wastewaters from pentachlorophenol manufacturing are typically contaminated with chlorinated dioxins and furans, compounds that have been detected at elevated concentrations in Glacier Bay sediments. Elevated pentachlorophenol, arsenic, and silver concentrations have been detected at the site in soils and groundwater.

Extensive Ecology file documentation exists for the former Reichhold facility, including wastewater permit files from the Washington State Pollution Control Commission, Ecology's predecessor. Those files indicate that the Reichhold facility discharged wastewaters into the Duwamish River at two locations, including the use of a ditch from the manufacturing area to the river, and later a deep water outfall located immediately upstream of the Property. An oblique aerial photograph from 1958 shows that a wooden wastewater accumulation tank used for management of phenol-containing wastewaters was located near the shoreline, just south of DSI parcels D and E. Historic wastewaters may also have been managed or disposed of in constructed lagoons or basins on the Glacier property (SAIC 2007).

Environmental complaints and inspection reports from the 1950s referenced at various times the discharge of colored, ammonia-containing, acidic and phenol-containing wastewaters to the river and attributed fish kills to these discharges. In 1958, Reichhold moved the manufacturing operations to Tacoma, but maintained offices and laboratories at the Seattle location until approximately 1961, when Reichhold's lease with the federal government was terminated.

The Glacier property was subsequently sold to the Port by the federal government. The Port leased the property to Kaiser for construction of a cement terminal. The facility construction included demolition of the former Reichhold facilities, construction of a loading dock along the waterway, and construction of the cement terminal facility presently located on the Glacier property.

Several environmental investigations have been performed in upland and aquatic portions of the Glacier property. Upland studies have documented the presence of pentachlorophenol, arsenic, chromium, and silver in site soils and groundwater. Elevated arsenic concentrations have been noted in a seep to the Duwamish River in the southern portion of Glacier Bay. Arsenic, cadmium, lead, mercury, silver, and zinc concentrations were reported in the seep samples. In April 2008, Glacier provided Ecology with a Remedial Activities Summary Report for the site. The report indicated that subsurface ozone injection (sparging) was performed for seven years at the site to treat pentachlorophenol (PCP) in soil and groundwater. Following treatment PCP concentrations initially decreased below MTCA cleanup levels. However PCP concentrations subsequently increased above MTCA cleanup levels in one groundwater monitoring well. Subsurface injection of hydrogen peroxide was performed twice in 2000 for treatment of arsenic in soil and groundwater. Arsenic concentrations initially decreased but subsequently rebounded above MTCA cleanup levels. Glacier is currently negotiating an agreed order with Ecology to complete an RI/FS for the site.

Aquatic studies have documented elevated concentrations of dioxins/furans in surface and subsurface sediments within the Glacier Bay area. Sediment samples collected in the waterway near the Glacier property in 2005 and 2007 contained arsenic, zinc, phthalates (butyl benzyl phthalate), and PCBs at concentrations above the Sediment

Quality Standards (SQS). High levels of dioxins and furans were also detected in the areas offshore of the Glacier property.

Maintenance dredging of the in-water berthing area adjacent to the Glacier property has been conducted by Glacier or its predecessors in 1986, 1993, and 2005. The sediments dredged from the northern portion of the in-water berthing area, which is located closest to the Property, contained elevated concentrations of arsenic, copper, tributyltin (TBT), and other heavy metals.

2.4.2 MRI Corporation/Port of Seattle (Terminal 115)

The Port-owned Terminal 115 property is located immediately south of the Glacier property. The Terminal 115 property was developed by filling a former bend in the Duwamish River with dredged sediments and other fill materials. Development of the terminal property was completed during the mid-1960s.

A tin reclamation facility was located in the northwest corner of the Terminal 115 property between 1963 and 1998. The facility operated under several company names, including Mandt Chemicals, MRI Corporation, Proler International Corporation, and Schnitzer Steel Industries. Operations included the reclamation of tin from steel cans and glass sludge, with smelting of the reclaimed tin and production of ingots for sale. Wastes produced at the plant included spent plating solution, "black mud" containing tin residue, and alkaline lacquer sludge containing vinyls, epoxys, tin, and lead.

Before 1972, certain wastewaters were managed in two lagoons located in the eastern portion of the MRI property, adjacent to Glacier Bay. The unlined lagoons reportedly operated by settling and evaporation, with no direct discharges to the Duwamish River noted in site documents. The lagoons are visible in the aerial photograph taken in 1966 (Appendix A). Sludges accumulating in the lagoons were reportedly excavated and sold for reclamation. The lagoons were filled and paved in 1972.

After 1972, wastewaters were managed by discharge to the sanitary sewer. Elevated levels of zinc and lead were noted in wastewater monitoring reports filed between the

1970s and 1990s. Solid wastes were reportedly managed by off-site shipment to reclamation facilities or waste treatment/disposal sites.

2.4.3 Alaska Marine Lines (AML)

The AML property is located immediately to the north of the Property owned by DSI. AML operates a containerized freight barge terminal and warehouse, which includes a dock and berthing area. A graving dock was formerly located in the southeast corner of the AML property and was leased to DSI until January 2007. The graving dock has been filled by AML for upland use. That work included installation of a new stormwater treatment system consisting of two underground vaults.

AML began operations at the property in 1993 and developed the barge terminal. At that time, the property was regraded and paved, and a concrete dock replaced a former timber dock. AML leased a portion of the former DSI property, which it subsequently purchased from DSI in 1999 (Figure 3).

Environmental conditions at the AML property have been characterized during previous soil and groundwater sampling. Two remedial actions have been conducted at the property, including two underground storage tank (UST) removals in 1990 and an independent remedial action in 1993 at the portion of the AML property that had been leased from DSI. Hazardous substances detected in soil and groundwater primarily consist of petroleum-related compounds and polycyclic aromatic hydrocarbons (PAHs).

2.5 Property Topography and Bathymetry

The topography of the Property is relatively flat, ranging from elevation 14 feet above MLLW elevation to 17 feet MLLW (Figure 2). Topography and bathymetry are shown on Figures 2 and 7. Figure 5 presents the current top of bank and shoreline features. The shoreline along the western side of the marine railway has been bulkheaded. Armoring has been placed along other portions of the shoreline in the northern and southern areas of the Property (Figure 6).

In-water and overwater structures are located along the shoreline of the waterway, including the shipyard pier, several mooring dolphins, and a float. DSI ceased using the

drydocks formerly moored at the Property in March 2007, and the drydocks were subsequently sold and removed.

2.6 Property Geology and Hydrogeology

The geology and hydrology of the Property and surrounding vicinity are described below. The information set forth below is based on information presented in existing environmental reports.

2.6.1 Geologic Conditions

The Property is located in the southern part of the Puget Sound Lowland, a broad, relatively level glacial drift plain dissected by a network of deep marine embayments. The Property is located within the floodplain of the Duwamish Valley. The Duwamish Valley is a former marine embayment that has been filled with sediment since the most recent period of glaciation, the Pleistocene Age Vashon Glaciation (Luzier 1969). The Duwamish Valley is bounded to the east and west by glacial drift uplands.

Up to approximately 360 feet of alluvium, consisting of clay, silt, and sand, fills the Duwamish Valley. The alluvial deposits generally overlie the Pleistocene Age Vashon Drift, which ranges in thickness from 0 feet to approximately 200 feet in the Duwamish Valley. The Vashon Drift is composed of sand and gravel glacial outwash deposits overlying a compact silt, clay, sand, and gravel till. In some areas of the Duwamish Valley, the Vashon Drift is absent, and Pre-Tertiary and Tertiary bedrock (undifferentiated sedimentary, metamorphic, and igneous rock) directly underlies the recent alluvial deposits (Richardson et al. 1968).

The portion of the Duwamish Valley in which the Property is located has undergone extensive excavation and filling since the early 1900s. The extent of excavation and filling varies from property to property. The Property is located along and consistent with the original shoreline of the Duwamish River, such that the extent of fill activity is less than at other nearby properties (i.e., fill thicknesses are greater at properties located in former river bends and side channels).

The Property is underlain by a relatively thin layer of fill. The fill consists of gray and brown sand that ranges from very fine to coarse sub-rounded grains. The fill extends from 2 to 10 feet below ground surface (bgs) in upland areas. Boring logs identify a pervasive silt layer at the base of the fill, which may represent the uppermost native soil (i.e., no geological information currently exists below 10 bgs). Organic material (plant roots, etc.) is also present in this silt layer.

Along the western portion of the Property, a silt layer that ranges from 0.5 feet to 2 feet thick is present at depths of 1 to 6 feet bgs. Along the eastern portion of the Property near the shoreline, the sand content increases in the silt layer. The shoreline in the eastern portion of the Property has been modified by armoring and bulkheading.

2.6.2 Groundwater

Groundwater in the Duwamish Valley occurs in unconfined conditions in a shallow aquifer and under confined conditions in some areas within a deeper aquifer (Washington Division of Geology and Earth Resources 1989). Recharge to the water table aquifer is primarily by direct infiltration of precipitation and periodic contributions from streams during high-stage periods (Richardson et al. 1968). Regional groundwater flow in the unconfined aquifer is typically toward the LDW.

Site-specific groundwater gradients have not been defined. However, based on topography and regional geologic conditions, groundwater gradients are expected to be generally easterly, toward the LDW. Tidal fluctuation of groundwater elevations is likely to occur along the eastern edge of the Property (i.e., within 100 to 200 feet of the shoreline), resulting in tidally-influenced mixing of groundwater prior to discharge into the LDW.

2.6.3 Surface Water

The LDW flows generally north to Elliott Bay, though the river flow is subject to periodic reversal due to tidal influences. The waterway receives the majority of its flow from the Green River, which originates at the crest of the Cascade Mountains near Stampede Pass and flows through Howard Hanson Dam (RM 65) and Tacoma Headworks Dam (RM 61). Annual average discharge from the Duwamish Waterway is

65.2 to 66.7 cubic yards per second (cy/s), measured at the U.S. Geological Survey (USGS) Tukwila gauging station, with flow rates varying from 5.6 to 430 cy/s at the Auburn gauging station from 1962 to 1994 (NOAA 1998).

Most of the LDW discharge (i.e., 80 percent) enters Elliott Bay via the West Waterway due to the presence of a sill on the East Waterway (Weston 1999). Flow rates are greatest in the winter because of seasonal precipitation and lowest throughout the late summer dry season. Streamflow can be increased by surface water sources, such as storm drains, CSOs, industrial effluents, and nonpoint source inputs, although these sources of flow are expected to be less than 1 percent of total discharge, even during peak flow events (Windward 2003).

Surface water runoff from paved surfaces of the Property is captured in a stormwater conveyance system that discharges to the LDW. One ditch is located along the southern edge of the Property. Storm drains at the Property discharge to the LDW via a stormwater outfall (Figure 4 and Figure 7).

The stormwater system servicing the Property consists of 10 catch basins that convey water from the paved parking areas and industrial areas to a 10-inch-diameter trunk line. This line then discharges to a sump located adjacent to the former marine railway. Stormwater enters the sump and is pumped through a centrifugal separator to remove grit prior to discharge via the stormwater outfall (Figure 4). Incidental rainfall is the only source of stormwater to the Property, as surface drainages are not allowed to enter the Property. The catch basins that receive runoff have been fitted with catch basin inserts and oil absorbent pillows. The system was constructed in the mid-1970s and was operated under National Pollutant Discharge Elimination System (NPDES) Permit No. WA-003093-7 until active shipyard operations ceased.

Consistent with the Ecology letter dated January 5, 2007, DSI completed the cleanout of the stormwater system and documented these activities in a January 8, 2008 letter report. This work included initial catch basin TBT sampling, jetting of the stormwater system piping, collection and disposal of generated solids and water, and video documentation of resultant piping conditions. In addition, a sweeper was used to clean the paved areas

of the Property to limit the potential for dirt or other materials to enter the cleaned-out stormwater system.

2.7 LDW Characteristics

The physical characteristics of the LDW are described below. The information presented below is based on information developed during the LDW RI/FS.

2.7.1 Estuarine Features

The LDW is a well-stratified, salt wedge-type estuary influenced by freshwater flow and tidal effects. The relative influence of each of these processes is highly seasonally dependent. Freshwater moving downstream overlies the tidally driven saltwater wedge. Typical of salt-wedge estuaries, the LDW has a sharp interface between the freshwater outflow at the surface and saltwater inflow at depth. The 25-part-per-thousand salinity layer near the river mouth occupies most of the water depth, but tapers toward the upriver portion of the estuary. Freshwater inflow exerts a strong influence on the relative thicknesses of the two layers. The thickness of the freshwater layer increases with increasing river flow rates throughout the LDW.

Saltwater enters the LDW principally through the lower water column of the West Waterway. The salt wedge discharges into the flowing surficial freshwater lens as a result of upward entrainment of saline water across the interface separating the two layers. To replace the entrained saltwater, the net transport of the salt wedge is in the upstream direction, even if the salt wedge is stationary. Dye studies indicate that downward vertical mixing over the length of the salt wedge is almost non-existent (Schock et al. 1998). Tidal forcing superimposes an additional velocity component associated with the migration of the salt wedge upstream and downstream in response to tidal cycles. Santos and Stoner (1972) described how the upstream location or "toe" of the salt wedge, which is typically located between Slip 4 and Turning Basin 3 (approximately 1.5 to 3.3 miles upstream of the Property, respectively), is determined by both tidal elevation and freshwater inflow.

2.7.2 Bathymetry and Shoreline Conditions

Common shoreline features within the LDW include constructed bulkheads, piers, wharves, buildings extending over the water, and steeply sloped banks armored with riprap or other fill materials (Weston 1999). Intertidal habitats are dispersed in relatively small patches (i.e., generally less than 1 acre in size), with the exception of Kellogg Island, which represents the largest contiguous area of intertidal habitat remaining in the Duwamish River (Tanner 1991).

As shown in Figure 6, the majority of the shoreline abutting the Property is steep and covered with riprap with limited vegetation along the top of slope. An overwater dock is present in this area and attaches to a 14-inch wood beam that extends to the southwest corner of the larger pile-supported wood dock (known as the east dock) that extends north along the eastern edge of the Property. A wooden float is moored to two seven-pile dolphins just south of the east dock. The marine railway is situated shoreward of the east dock along the majority of the eastern shoreline of the Property. The western boundary of the marine railway is supported by a bulkhead wall. A third pile-supported dock structure (known as the west dock) covers the majority of the northeast corner of the Property.

The graving dock formerly leased from AML was located along the AML property shoreline just north/downstream from the Property as shown in Figure 6. The graving dock has since been filled by AML for upland reuse.

Current bathymetry is shown in Figure 2 and Figure 7. This bathymetry has been affected by historical dredging and shoreline modifications. During the early 1980s, DSI performed limited dredging and armor stone placement along a portion of the waterway and in the southeastern portion of the Property. Bathymetry along the eastern side of the Glacier property has been modified by maintenance dredging of Glacier's in-water berthing area in 1986, 1993, and 2005. Dredging may also have been conducted during original facility construction in the 1960s.

2.7.3 Sediment Physical Characteristics

Bottom sediment composition is variable throughout the LDW, ranging from sands to mud depending on the sediment source and current velocity. The sediment typically consists of slightly sandy silt with varying amounts of organic detritus. Coarser sediments are present in nearshore areas adjacent to outfalls and storm drain discharges (Weston 1999). Finer-grain sediments are typically located in remnant mudflats, along channel side slopes, and within portions of the navigation channel. Main channel sediments near Turning Basin 3 are predominantly sands, whereas sediments toward the mouth are predominantly fine-grained silts. Sediments upstream of Turning Basin 3 are generally coarser than in the remaining downstream portion of the LDW.

Based on evaluation of the physical characteristics identified during the river-wide sediment sampling in the vicinity of the Property (Section 3), sediment composition in the nearshore areas adjacent to the Property is typically a sandy-silty material with a low percentage of coarse materials. The coarse fraction likely increases near the upper reaches of the shoreline, where wave energy and shoreline armoring increase.

2.7.4 Sediment Fate and Transport

Sediment transport within the LDW is influenced by many variables, including hydrodynamic forces attributable to the salt wedge, sediment loading from upstream and upland sources, channel morphology, and resuspension processes, such as propeller scour, bioturbation, bed shear stress, and dredging. Sediment deposition and resuspension have been assessed in the LDW during various previous investigations. The LDW Group (LDWG) Phase I RI Report (Windward 2003) and subsequent Draft Phase 2 RI Report (Windward 2007d) compiled and summarized these assessments.

The following sections summarize the LDWG findings with respect to sediment transport properties river-wide and in the vicinity of the Property.

2.7.4.1 River Currents and Propwash

Several organizations have independently measured current velocities within the LDW as part of a wide range of environmental investigations (Santos and Stoner

1972; Stevens Thompson and Runyan 1972; Stoner et al. 1975; Prych et al. 1976; Harper-Owes 1983; Weston 1993, Dail 1996; King County 1999).

The most extensive current velocity measurements within the LDW were collected by King County for a 3-month period beginning August 1996, recording currents at approximately 3 feet above the mudline at 15-minute intervals at two stations (King County 1999) using acoustic Doppler methods. The net flow velocities and short-term velocity fluctuations within the upper (freshwater) and lower (saltwater) layers were characterized. The velocity profiles showed a net seaward flow (positive values) in the upper freshwater half of the water column and net upstream flow in the lower saline half of the water column. No bottom water speed greater than 60 cm/s (the upper range of assumed threshold current for sediment bed movement) was observed during the recording interval. The 50th, 90th, and 95th percentile speeds were 17, 33, and 37 cm/s, respectively, for station SBW. Measured currents exceeded 40 cm/s (the bottom range of assumed threshold current for sediment bed movement) less than 3 percent of the time at station SBW.

LDW RI/FS studies have demonstrated that under all tidal conditions and design flood events (i.e., 2-year, 10-year, and 100-year storms), the salt wedge in the Duwamish Waterway extends upstream from the Property. Sediment deposition is facilitated by the interaction of the salt wedge with the overlying freshwater (Windward 2003). Freshwater moving downstream overlies the tidally driven saltwater wedge. When fresh river water encounters the salt wedge, the freshwater no longer applies a shear stress to the riverbed, but instead applies a stress to the top of the salt wedge, causing the bed load to deposit. This results in sediment movement (with associated chemicals) upstream during flood tide conditions, and potential deposition adjacent to the Property under the appropriate hydraulic and tidal conditions discussed above. The salinity also increases sediment deposition by increasing particle flocculation (Windward 2003).

Analysis of vessel-induced sediment resuspension potential (i.e., propwash) has not been performed at or adjacent to the Property.

2.7.4.2 Sediment Transport Evaluations

The LDWG Phase I RI evaluated previous sediment transport investigations conducted in the LDW to determine which parameters contribute to sediment transport. The results of the evaluation indicate that the sources of sediment in the reach of the LDW in the vicinity of the Property potentially originate from both upstream and downstream locations depending on the tidal cycle and the hydraulic characteristics.

The most long-term sediment mobility study was conducted by Harper-Owes (1983), which compiled and synthesized the available flow and suspended sediment loading data collected within the LDW from 1960 to 1980 to assess river-wide sediment sources. During this period, the Green River upstream of the Property was the predominant source of sediment loading, contributing approximately 99 percent of the total sediment load entering the LDW. The remaining 1 percent was contributed from local sources along the LDW (e.g., upland runoff and a variety of discharges). The study determined that the majority of the sediment input to the LDW occurred during peak flow events (i.e., sediment solids loading increased significantly during peak discharges).

As reported by Harper-Owes (1983), the LDW has been a net sink for sediments (i.e., a depositional environment) during all river flow conditions from 1960 to 1980. On average, the LDW retained approximately 90 percent of the total incoming sediment load. Sediments deposited within the LDW have either contributed to steady accretion of the bed or have been removed from the system (disposed of off site) through routine channel maintenance and berth dredging operations (Windward 2003). These results are consistent with the findings of the current monitoring studies.

More recently, in 2004, the LDWG conducted a sediment transport characterization study. The results were summarized and evaluated in a draft (Windward 2005a) and final report (Windward 2005b). The draft report provided an evaluation of the data, but the final report was limited to a summary of the collected data. The investigation included the collection of two geochronology cores (i.e., stations Sg-3

and Sg-4) on the east bank of the LDW across from the Property in a shallow bench area. These cores demonstrated that sediments in the test area were depositional, with net sedimentation rates of 1.6 cm/year to greater than 2.0 cm/year. However, these results may or may not be applicable to the Property due to differences in bathymetry, land use and shoreline geometry.

A sediment transport evaluation is currently being conducted as part of the LDW RI/FS process. That evaluation builds on previous studies to estimate potential areas of erosion and deposition, and to estimate the transport of suspended sediments and sediment bed load. Results of the transport evaluation are discussed in the Draft Sediment Transport Modeling Report (Quantitative Environmental Analysis 2007).

2.7.4.3 Navigation Channel Dredging

The navigation channel in the LDW is actively maintained by the ACOE. Waterway maintenance has been performed since completion of the channel in 1916 to maintain the appropriate depths in the federal navigation channel for commercial vessel traffic (Weston 1999). The current project dimensions for the Duwamish Waterway in the vicinity of the Property (and south as far as the First Avenue South Bridge) include a depth of 30 feet below MLLW and a width of 200 feet. The waterway is narrower and shallower in upstream areas south of the First Avenue South Bridge. A turning basin is located at the upstream end of the LDW. Much of the sediment removed during routine navigation dredging occurs in the turning basin and in the upper portions of the waterway. Dredging is less common in the federal channel areas near the Property.

Berth areas are not dredged by the ACOE as part of waterway maintenance. Berth areas are typically dredged by the Port or by adjacent property owners when additional navigation depth is required for docking or other waterway uses. Dredging of a portion of the Property was conducted by DSI in the early 1980s. Maintenance dredging has also been conducted at the adjacent Glacier in-water berthing area in 1986, 1993, and 2005, as well as potentially during the 1960s when the cement dock was originally constructed.

The current stability of berth side slopes has not been evaluated in areas near the Property.

2.8 Natural Resources/Sensitive Receptors

The Property is located in an industrial area, is zoned for industrial use, and is surrounded by industrial properties. No residential or recreational areas are located adjacent to the Property. The Property is currently being used by AML for container storage and truck access and is being marketed by DSI for industrial use.

Other than on-site industrial workers employed by AML, the principal receptors at the Property include the human users and aquatic organisms utilizing the LDW. These receptors include benthic (i.e., sediment-dwelling) organisms, fish, and other wildlife using the Duwamish River, and human consumers of seafood harvested from the LDW. These receptors are relevant to evaluation of sediment and surface water contamination. An analysis of natural resources and sensitive receptors within the LDW is contained in the LDW RI/FS (Windward 2003 and 2007d). Final cleanup levels and risk assessment conclusions have not been defined.

3 ENVIRONMENTAL QUALITY

The Property has been the subject of numerous rounds of environmental investigation, including testing of soils, groundwater, and sediments. That work has included testing of on-property and off-property areas. This section discusses current environmental conditions at the Property based on existing information from these prior studies. This discussion addresses environmental conditions at the Property owned by DSI, as well as relevant information for adjacent berth areas and nearby portions of the LDW and the Glacier Bay source control study area.

Environmental sampling data have also been collected historically for stormwater at the Property that came in contact with industrial activities during active shipyard operations. A discussion of historic stormwater sampling results is presented in the Glacier Bay Source Control Area report, *Summary of Existing Information and Identification of Data Gaps* (SAIC 2007). These studies were performed not as part of remedial investigations, but rather were performed as required by the shipyard's NPDES permit. These data are useful in documenting stormwater management practices during the period of active shipyard operations, but do not provide information useful to the analysis of current conditions or sediment source control subsequent to shipyard closure. For this reason, historical stormwater monitoring data are not discussed in this section.

Previous on-site remedial actions are discussed in Section 3.1 to provide necessary context for interpretation of current soil and groundwater conditions. Current environmental conditions at the Property are then summarized in Section 3.2 for soil and groundwater, in Section 3.3 for shoreline seeps to surface water, and in Section 3.4 for sediments. Preliminary reference values are presented to compare against existing data, however cleanup levels will be developed during preparation of the RI/FS.

3.1 Previous Remedial Actions

Remedial actions have been performed in upland portions of the Property, including the decommissioning of underground storage tanks (USTs) in two areas and the completion of an independent remedial action in the Parcel B portion of the Property. The locations of these previous remedial actions are shown on Figure 7.

3.1.1 1986 Leaded Gasoline UST Closure

In 1986, prior to the enactment of the UST regulations (Chapter 173-360 Washington Administrative Code [WAC]), a 500-gallon UST holding leaded gasoline was closed in place. Based on available information, that UST was first installed in the 1960s. This tank is located within close proximity to a 26 kilovolt, 100-foot-tall power pole and an adjacent building foundation. At the time of the UST closure, a representative from Seattle City Light visited the Property to assess the threat to the power pole. The representative concurred with DSI's concerns and recommended to the Seattle Fire Department that the UST be filled in place. At the time of closure, no subsurface samples were collected. Although closed in place, the UST does appear on a recent UST list update that was issued by Ecology on August 10, 2006.

3.1.2 1993 Remedial Action

During the development of the parcel previously leased to and subsequently purchased by AML (shown as Areas A and B on Figure 3), soil affected by an unknown release of petroleum product was discovered. Historically, this area of the property now owned by AML and formerly owned by DSI was leased by DSI to various entities for storage of used machinery, parking of trucks and trailers, and storage and distribution of lumber.

In August 1993, Environmental Services Limited performed a preliminary site assessment consisting of five soil borings, five test pits, and four monitoring wells (the remaining wells, MW4 and MW5, are shown on Figure 7). The results indicated total petroleum hydrocarbon (TPH) constituents in soil and groundwater exceeding MTCA industrial cleanup levels. In response, DSI contracted with Hart Crowser, Inc. (HCI) in October 1993 to oversee the excavation of approximately 650 cubic yards (cy) of contaminated soil.

During excavation of the affected soil, several restrictions (a 26 kilovolt buried powerline, a pad-supported power transformer foundation, the graving dock foundation, and the shallow groundwater table) were encountered, limiting the extent of excavation in some areas. After soil removal, 12 confirmation soil samples were collected from the excavation sidewalls. All of these samples met MTCA industrial cleanup levels for SVOCs and eight were below MTCA industrial cleanup levels for TPH

gasoline range (TPH-G), TPH diesel range (TPH-Dx), and TPH lubricant oil range (TPH-O). The four samples above MTCA industrial cleanup levels for TPH (Method 418.1) ranged in concentration from 480 milligrams per kilogram (mg/kg) to 13,000 mg/kg. The MTCA industrial cleanup level at the time of the remedial action was 200 mg/kg. The excavation area was backfilled and capped with asphalt, and an additional monitoring well (shown as MW5 on Figure 7) was installed to assess downgradient groundwater quality.

Groundwater samples were collected from MW4 and MW5 over four events in 1994 (two wet and two dry) and one event in February of 1999. Analysis of the MW4 data, reported by HCI, indicated a 25 percent reduction in TPH concentrations. For all five sampling events, MW5 met MTCA groundwater cleanup levels for TPH. Benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected.

3.1.3 2000 Diesel and Gasoline UST Excavations

In 2000, four USTs containing diesel fuel and unleaded gasoline were excavated and removed. Those four USTs were installed between 1968 and 1979. The excavation was performed by Quality Tank Service, Inc., a certified UST decommissioning contractor. The excavation was also supervised by Roy Kuroiwa, a professional engineer registered in the State of Washington.

During the initial excavation, 60 cy of soil were excavated with the USTs, prior to collection of bottom and sidewall soil samples. Seven of the initial confirmation samples contained concentrations of total petroleum hydrocarbons (TPH-Dx and TPH-G) and benzene above MTCA Method A industrial cleanup levels for soil. An additional 20 cy of soil were excavated from these locations and samples were recollected.

Five of the second round of confirmation samples exceeded MTCA industrial cleanup levels. Four of the samples exceeded the TPH-G cleanup level and one slightly exceeded the benzene cleanup level. These data are summarized in Table 1. No groundwater samples were collected as part of the confirmation sampling program.

3.2 Current Soil and Groundwater Quality

Extensive soil and groundwater sampling information is available for the Property. Available data are summarized below.

3.2.1 Recent Upland Investigations

The most recent evaluation of soil and groundwater quality was conducted in 2006, in response to data requests from Ecology. As required by Ecology in its letters dated July 10, 2006 (Ecology 2006a) and August 3, 2006 (Ecology 2006b), DSI conducted an investigation to assess the nature and extent of soil and groundwater contamination at the Property. The investigation, which was conducted in accordance with the Ecology-approved Preliminary Investigation Work Plan (Work Plan: Anchor 2006a), commenced on September 27, 2006. Sampling locations from the 2006 investigation are shown on Figure 8 and included the following:

- **Temporary Soil Borings:** Sampling of soils and groundwater from 12 temporary soil borings was completed. Two soil samples and one groundwater sample were collected at each location (for a total of 24 soil samples and 12 groundwater samples).
- **Resampling of Existing Wells:** The wells installed as part of the 1993 Independent Remedial Action (MW5 and MW4 shown on Figure 7) were redeveloped and sampled, producing two additional groundwater samples.
- **Catch Basin Sampling:** Solids from the catch basin adjacent to the stormwater system sump were collected.

The results of the 2006 investigation were summarized in a Preliminary Investigation Data Report (Data Report; Anchor 2006b). Table 2 includes a list of all stations and sample identifiers.

3.2.2 Upland Conditions by Property Area

The analytical results from the 2006 study are summarized by area below. For this purpose, the data for the Property have been discussed in the following areas:

- **Northwestern Area:** The Northwestern Area includes the two monitoring wells (MW4 and MW5) placed in locations expected to be downgradient of the 1993

Remedial Action Area. Two soil borings (DSI-02 and DSI-03) are also located in this area. Boring DSI-03 is located near the UST closed in place in 1986.

- **Rail Spur Area:** This area consists of the end of the rail spur, and is located along the southern property boundary adjacent to the Glacier property. One boring (DSI-01) was located in the Rail Spur area. The Rail Spur area is located over 500 feet from the shoreline.
- **Central Area:** This area is located in the center of the Property (Parcel C). This area is over 200 feet from the shoreline. This area is presumed to be downgradient of the 1993 Remedial Action Area and the Rail Spur Area. Three soil borings were placed in the Central Area, including DSI-04, DSI-05, and DSI-08.
- **2000 UST Removal Area**: This area includes the soils and groundwater in the vicinity of the 2000 UST removal. Two soil borings (DSI-06 and DSI-07) were located in this area. This area is presumed to be located downgradient of the Central Area and upgradient of the Shipyard Nearshore Area.
- **Shipyard Nearshore Area:** The Shipyard Nearshore Area includes the upland areas at the top of the marine railway. This area is bordered on one side by a bulkhead and is located within approximately 150 feet of the shoreline. These areas are presumed to be downgradient of the Central Area and the 2000 UST Removal Area. Three borings (DSI-09, DSI-10, and DSI-11) were located in the Shipyard Nearshore Area.
- **Parcel D Nearshore Area:** This area is located in the southeastern corner of the Property, in an area potentially downgradient of former Reichhold Chemical operations that were performed on the Glacier property. Boring DSI-12 was located in the Parcel D Nearshore Area.

Summaries of existing soil and groundwater data are presented in Tables 3, 4, 5, and 6. Tables 3 and 4 present soil and groundwater data in comparison to MTCA Method A cleanup levels for industrial soil and groundwater, respectively. Tables 5 and 6 evaluate soil and groundwater data from the nearshore areas against Sediment Management Standards (SMS) criteria and against surface water quality criteria, respectively.

Groundwater data are provided both for total metals and for dissolved metals. Due to turbidity in tested groundwater samples, the groundwater data for dissolved metals are used for comparison to groundwater cleanup levels. Total metals data are provided for information purposes, but are not considered representative of groundwater quality.

3.2.2.1 Northwestern Area

Soil and groundwater quality in the Northwestern Area comply with MTCA cleanup levels, with the exception of soil gasoline concentrations and groundwater diesel concentrations at location DSI-03.

Wells MW4 and MW5 are located downgradient of the 1993 Remedial Action Area. No exceedances of MTCA groundwater cleanup levels for petroleum, dissolved metals, VOCs, SVOCs, PCBs, or pesticides were noted for these wells. Results indicate that groundwater quality downgradient of the 1993 Remedial Action Area was below MTCA cleanup levels.

Current soil quality in the Northwestern Area was assessed using data from borings DSI-02 and DSI-03. No exceedances of MTCA cleanup levels were noted in DSI-02. However, in DSI-03, low levels of gasoline hydrocarbons were detected in surface (0 to 3 feet bgs) and shallow subsurface (3 to 5 feet bgs) soils. The measured gasoline concentrations were 92 and 110 milligrams per kilogram (mg/kg), and no benzene was detected. The concentration of gasoline in the deeper soil sample was only slightly above the MTCA Method A cleanup level for gasoline in soils. No petroleum fractionation testing was performed to assess site-specific soil cleanup levels for this hydrocarbon-impacted soil.

Low levels of diesel hydrocarbons were detected at station DSI-03 in groundwater. The measured concentrations (0.93 milligram per liter [mg/L]) were slightly greater than the default MTCA Method A cleanup level for diesel hydrocarbons (0.5 mg/L). No gasoline or motor oil hydrocarbons were detected.

Other than petroleum hydrocarbons at DSI-03, no exceedances of MTCA groundwater cleanup levels were noted at DSI-02 or DSI-03. Concentrations of

dissolved metals, VOCs, SVOCs, PCBs, or pesticides were non-detect or were below applicable cleanup levels. Neither PCBs nor pesticides were detected in groundwater. Results indicate that groundwater quality in the Northwestern Area was below MTCA cleanup levels.

3.2.2.2 Rail Spur Area

The current soil and groundwater quality in the Rail Spur Area, which is located over 500 feet from the shoreline, complies with MTCA cleanup levels, with the exception of arsenic in soil and groundwater. A concentration of 48 mg/kg of arsenic was measured in shallow soil (0 to 3 feet bgs) from boring DSI-01. This concentration exceeds the MTCA Method A cleanup level of 20 mg/kg. Arsenic concentrations in subsurface soils (4 to 6 feet bgs) at this same location were 3.5 mg/kg, well below the MTCA Method A cleanup level.

Dissolved arsenic groundwater concentrations at boring DSI-01 were elevated, with a dissolved arsenic concentration of 68.4 micrograms per liter (μg/L), compared to a Method A groundwater cleanup level of 5 μg/L. Results suggest a localized on-property or off-property source of arsenic contamination in this area.

No other hazardous substances were present at elevated concentrations at boring DSI-01, either in soils or in groundwater. Groundwater concentrations of pesticides and PCBs were all below reporting limits.

3.2.2.3 Central Area

Soil and groundwater quality in the Central Area, which is located over 200 feet from the shoreline, complies with MTCA cleanup levels, with the exception of groundwater vinyl chloride concentrations. Vinyl chloride was detected in groundwater collected from each of these borings at concentrations slightly above the MTCA Method A cleanup level (0.2 μg/L) for groundwater. Vinyl chloride concentrations were measured at 0.6, 0.3, and 0.4 μg/L in groundwater collected from borings DSI-04, DSI-05, and DSI-08, respectively. The detected concentrations were well below the MTCA Method B surface water cleanup level for vinyl chloride.

Vinyl chloride can be produced from the degradation of tetrachloroethylene or trichloroethylene in groundwater; however, these compounds were not detected in these borings. The specific source of the vinyl chloride detections has not been determined.

No other hazardous substances were present at elevated concentrations in the Central Area soils or groundwater. Neither petroleum, pesticides, nor PCBs were detected in groundwater. Dissolved arsenic concentrations were below MTCA Method A cleanup levels.

3.2.2.4 2000 UST Removal Area

Soil and groundwater quality in the 2000 UST Removal Area generally comply with MTCA cleanup levels, with the exception of petroleum hydrocarbons. At boring DSI-06, gasoline (120 mg/kg) and diesel (2,700 and 2,200 mg/kg) hydrocarbons were noted in soils, but no petroleum impacts to groundwater was detected. At boring DSI-07, soils were impacted by gasoline (74 and 36 mg/kg), and groundwater had elevated concentrations of gasoline (2.0 mg/L), diesel (1.9 mg/L), and benzene (180 µg/L).

No other hazardous substances were present at elevated concentrations at borings DSI-06 or DSI-07, either in soils or in groundwater. Groundwater concentrations of pesticides and PCBs were all non-detect. Groundwater concentrations of dissolved arsenic were below MTCA Method A cleanup levels, and vinyl chloride was not detected.

3.2.2.5 Shipyard Nearshore Area

Areas of subsurface soil impacts were noted in the Shipyard Nearshore Area. Hazardous substances noted in the two borings located closest to the shoreline (DSI-09 and DSI-11), but not in the boring located 150 feet back from the shoreline (DSI-10). Results suggest that soil and groundwater quality in the immediate vicinity of the shoreline may require further evaluation, but the impacts are largely limited to shoreline areas.

At boring DSI-09, elevated concentrations of metals (i.e., arsenic, cadmium, copper, lead, and zinc) were detected at depths of 3 to 5 feet bgs. These concentrations exceed MTCA Method A industrial and/or SMS sediment cleanup levels (see Table 3 and Table 5). PCBs, pesticides, VOCs, chlorinated benzenes, and phenols were not detected in soils or groundwater at this location. No exceedances of groundwater cleanup levels or surface water criteria were noted at boring DSI-09.

At boring DSI-11, there were no chemicals exceeding cleanup levels in soil. No exceedances of soil cleanup levels for petroleum were noted, though groundwater diesel concentrations exceeded the MTCA Method A cleanup level. No exceedances of cleanup levels for any other parameters were noted for soil or groundwater at boring DSI-11. PCB and pesticides were not detected in groundwater.

3.2.2.6 Parcel D Nearshore Area

The soils in the Parcel D Nearshore Area (boring DSI-12) contained elevated concentrations of PAH compounds in surface soil (0 to 3 feet bgs) and in subsurface soil (3 to 5 feet bgs). Elevated concentrations of PAH in groundwater were also detected. Groundwater diesel hydrocarbon concentrations (0.63 mg/L) slightly exceeded the MTCA Method A cleanup level (0.5 mg/L).

No heavy metals were detected at elevated concentrations in boring DSI-12. PCBs, chlorinated benzenes/phenols, and pesticides were not detected in soils or groundwater. The sources of the PAH and petroleum impacts in the Parcel D nearshore area have not been determined.

3.2.2.7 Catch Basin Solids

Stormwater catch basin solids (sample DSI-22) were sampled as part of the 2006 upland investigation. The catch basin solids data are summarized in Table 5. That table includes comparisons against SMS numeric criteria (SQS and Cleanup Screening Levels [CSL]). These comparisons are not directly relevant, as the catch basin solids do not represent marine sediments. However, the comparisons provide a basis for screening hazardous substances at the Property.

As shown in Table 5, the catch basin solids contained elevated concentrations of copper, mercury, and zinc. Other heavy metals did not exceed SMS criteria. As part of the stormwater system cleanout activities during July 2007, a solids sample was collected at the outfall catch basin (as collected during the 2006 upland investigation) and analyzed for TBT. TBT was detected at a concentration of 0.74 μg/kg.

The only organic compounds that exceeded SMS criteria were PAH compound acenaphthene (the concentration of which slightly exceeded the SQS), and two phthalate compounds (butylbenzylphthalate exceeded the SQS but not the CSL, and bis(2-ethylhexyl)phthalate exceeded both the SQS and the CSL). PCBs and chlorinated hydrocarbons were not detected. Other organic compounds were not detected or were below the SMS criteria.

3.3 Shoreline Seep Water Quality

As part of the Phase 2 RI, LDWG conducted a reconnaissance survey of all LDW seeps and collected water from a subset of these seeps for chemical analysis. The data collection was designed to provide the following information:

- Evaluate whether seep discharges below mean higher high water (MHHW) and above MLLW may significantly contribute to impacts to the LDW, either through dissolved phase, colloidal phase, or product phase inputs.
- Determine if additional seeps should be selected for sampling in the future either as part of the Phase 2 RI, site-specific source evaluations, or as part of the source control work being conducted by the Lower Duwamish Source Control Work Group.
- Determine if additional surface sediment samples are needed from seep areas.

The results of the seep investigation are provided in the following LDWG submittal: *Data Report: Survey and Sampling of LDW Seeps – Final* (Windward 2004a).

No seeps were identified at the Property. However, two seeps were identified and sampled along the shoreline of the cove adjacent to the Glacier facility (Figure 8). A single sample from each seep was collected on July 2, 2004. The rationale for the collection of chemical samples from these seeps was described as follows:

- Seep 61 – Adjacent to Glacier (near former Reichhold Plant); discolored seep water and sulfide odor observed during reconnaissance survey.
- Seep 62 – Adjacent to Glacier (near former Reichhold Plant); dioxin/furans detected in sediment.

The water samples collected from Seeps 61 and 62 were analyzed both unfiltered and after filtering. Seep 61 was analyzed for VOCs, metals, mercury, SVOCs, PCBs, organochlorine pesticides, total organic carbon (TOC), total suspended solids (TSS), TPH-D, and TPH-G in the unfiltered samples, and for metals, mercury, SVOCs, PCBs, organochlorine pesticides, dissolved organic carbon (DOC), and TPH-D in the filtered samples.

The filtered arsenic concentration in Seep 61 was greater than both the chronic and acute arsenic water quality criteria for the State of Washington (WAC 173-201). No exceedances of these criteria were noted for Seep 62. Previous testing performed in upland portions of the Glacier property has confirmed the presence of pentachlorophenol and dissolved arsenic in groundwater at concentrations exceeding MTCA cleanup levels. Results of seep sampling indicate that arsenic present in impacted groundwater at the Glacier property may be discharging to surface water within the southern portion of Glacier Bay.

3.4 Current Sediment Quality

A brief description of the surface and subsurface physical and chemical results are provided below.

3.4.1 Recent Sediment Studies

Although no sediment samples collected by DSI as part of the 2006 investigation, numerous other studies have characterized sediment quality in the vicinity of the Property as part of the LDWG river-wide investigations. The most recent relevant LDWG studies include the following Phase 2 investigations:

- Surface Sediment Round 1 Data Report (Windward 2005c)
- Surface Sediment Round 2 Data Report (Windward 2005d)
- Surface Sediment Round 3 Data Report (Windward 2007b)
- Subsurface Sediment Data Report (Windward 2007a)
- Draft Baseline Ecological Risk Assessment (Windward 2007c)

- Draft Phase 2 Remedial Investigation Report (Windward 2007d)

A summary of the physical and chemical analytical results for surface and subsurface sediment collected as part of the above studies was obtained from the LDWG database (last updated in April 2006). The surface and subsurface sediment data within the LDW from just south of the upstream Glacier property and just north of the downstream AML property are provided in Appendix B. The sampling data in Appendix B are grouped geographically in Tables B-1 through B-5.

Cleanup levels for the LDW have not been developed yet as part of the RI/FS process. Site-specific cleanup levels for PCBs, arsenic, and some other compounds are being evaluated as part of the LDW RI/FS and risk assessment process, and may ultimately consider risk assessment and/or background concentrations in setting final cleanup levels. Pending development of future cleanup levels, the data for heavy metals, PCBs, and SVOCs have been compared to the Ecology SMS SQS and CSL criteria (WAC 173-204).

Interpretation of biological testing data is performed using SQS and CSL interpretive criteria established under SMS regulations. A discussion of these interpretive criteria is presented in the LDW Draft Baseline Ecological Risk Assessment (Windward 2007c).

3.4.2 Surface Sediment Data

Nine surface sediment stations (either 0 to 10 cm or 0 to 1 foot below mudline sampling intervals) were sampled west of the navigation channel adjacent to the Property. One station (i.e., WST354) was sampled in 1997, two stations (i.e., DR120 and DR121) were sampled in 1998, four stations (i.e., LDW-SS48, LDW-SS49, LDW-SS50, and LDW-SS53) were sampled in 2005, and two stations (i.e., LDW-SC26 and LDW-SC28) were sampled in 2006. One additional station (i.e., LDW-SS51) was sampled in the navigation channel adjacent to the Property in 2005, and seven stations were sampled on the east side of the navigation channel from 1997 to 2006.

South or upstream of the Property adjacent to the Glacier property, a total of 19 stations were sampled within the LDW. North or downstream from the Property adjacent to the

AML property, a total of 12 stations were sampled within the LDW. The sampling locations are shown on Figure 8. The physical and chemical results collected from each of these areas are summarized below.

3.4.2.1 Physical Characteristics

The sediments sampled west of the navigation channel adjacent to the Property exhibited the following physical characteristics:

- Total solids ranged from 44 percent to 63 percent
- Percent fines (silt and clay fraction) ranged from 16 percent to 94 percent
- TOC content ranged from 1.3 percent to 2.7 percent

The physical characteristics further east of the navigation channel in the LDW and upstream and downstream from the Property are provided in Appendix B.

3.4.2.2 Chemical Characteristics

A brief summary of the identified chemical characteristics for each analyte group is provided below.

Metals

Arsenic, copper, and TBT were the heavy metals that were present most often at concentrations exceeding the SMS and DMMP reference values.

Surface sediment concentrations of arsenic, copper, and TBT are summarized in Figures 9, 10, and 11, respectively. Exceedances of reference values for these compounds were noted in the marine railway area, in the vicinity of the two former floating drydocks, and adjacent to the graving dock.

- Arsenic: Exceedances of the arsenic SMS CSL criteria were identified at stations LDW-SS48, LDW-SS49, and LDW-SC28 adjacent to the Property and LDW-SS56 adjacent to the pier structure of the Glacier property (Figure 9).
- Copper: CSL criteria exceedances for copper were identified at LDW-SS46 and LDW-SS47 adjacent to the former graving dock on the AML property and at LDW-SS48 and LDW-SS49 adjacent to the Property (Figure 10)

- TBT: Exceedances of the former Puget Sound Dredge Disposal Analysis (PSDDA) screening level for TBT were identified at stations LDW-SS45, LSDSS46, LSW-SS47, and LDW-SC25 adjacent to the former graving dock on the AML property; stations LDW-SS49, LDW-SC26, LDW-SC28, DR121, and B4b adjacent to the Property; and station LDW-SS56 adjacent to the pier structure of the Glacier property (Figure 11).
- Other heavy metals: CSL criteria exceedances for lead, mercury, and zinc were also identified at station LDW-SS48, and a CSL criteria exceedance for zinc was identified at station LDW-SS49. These stations are in the immediate vicinity of the marine railway. No other metals exceedances were identified within the general vicinity of the Property.

Polycyclic Aromatic Hydrocarbons (PAHs)

SQS and/or CSL criteria exceedances for PAH were identified at most of the sampling stations sampled throughout the LDW, including in the vicinity of the Property (Appendix B). Preliminary evaluation of the data did not reveal any spatial or temporal trends in the identified PAH concentrations. In most samples, a higher percentage of the samples contained exceedances of high molecular weight PAHs (HPAHs) relative to the low molecular weight PAHs (LPAHs).

Polychlorinated Biphenyls (PCBs)

Most stations sampled throughout the LDW, including in the general vicinity of the Property, exhibited exceedances of the PCB SMS criteria (Appendix B). The majority of the stations exhibited CSL criteria exceedances. The PCB results did not appear to correlate with proximity to the Property.

Chlorinated Benzenes

Hexachlorobenze was detected at concentrations exceeding the SMS criteria in areas of Glacier Bay located to the south and upgradient of the Property. Hexachlorobenzene was not detected in shipyard soil, groundwater, or catch basin sediments, nor was it detected above screenings levels in sediments with elevated concentrations of arsenic, copper, and TBT.

The compound 1,4-dichlorobenzene was detected above the SQS criteria at two stations (i.e., LDW-SC26 and LDW-SC28) adjacent to the Property (Figure 8).

Phthalate Esters

Butyl benzyl phthalate and bis(2-ethylexyl)phthalate concentrations were identified above the SQS and/or CSL criteria throughout the LDW, including in the vicinity of the Property (Appendix B). The phthalate results did not appear to correlate with proximity to the Property.

Dioxins/Furans

Dioxin/furan concentrations were substantially elevated in the Glacier Bay sediments located south and upgradient of the Property. The highest dioxin/furan concentrations were measured at stations LDW-SC29, LDW-SS58, and LDW-SS59. Much lower dioxin/furan concentrations were measured at LDW-SC26 and LDW-SC28, located adjacent to the Property. The distribution of dioxin/furan compounds in surface sediments suggests that these compounds are not associated with proximity to the Property.

3.4.2.3 Sediment Bioassay Testing

LDWG performed a Phase 2 (baseline) Ecological Risk Assessment (ERA) within the LDW to determine the risk estimates for benthic invertebrate, fish, and wildlife species that may be exposed to chemicals of potential concern (COPCs) found in sediment, water, and aquatic biota. The data set used in the baseline ERA consists of historical data and sediment and tissue chemistry data collected from the LDW during Phase 2 to supplement the historical data that were used in the Phase 1 ERA (Windward 2003).

To generate more specific information about the nature and extent of effects on benthic invertebrates exposed to sediments with at least one chemical concentration exceeding the SMS SQS sediment criteria, three toxicity tests were conducted with surface sediments (0 to 10 cm) collected at 48 locations (see Map A.3-5 of Windward 2007c). The toxicity tests included the following:

- Acute 10-day amphipod (*Eohaustorius estuarius*) mortality test

- Acute 48-hr bivalve larvae (*Mytilus galloprovincialis*) normal survival test
- Chronic 20-day juvenile polychaete (*Neanthes arenaceodentata*) survival and growth test

The results from the three sediment toxicity tests were evaluated using the SMS interpretive criteria for marine toxicity tests (Ecology 2003). Co-located surface sediment samples were collected for chemical and biological toxicity testing in the vicinity of the Property at the following locations depicted on Figure 8:

- Northern Area Bioassay (LDW-SS40): This station was located in the LDW federal navigation channel north of the AML property. A toxicity CSL exceedance was noted at this location.
- Shipyard Area Bioassay (LDW-SS49): One sampling station was located within the Port-owned berth area offshore of the marine railway. This station contained elevated concentrations of arsenic and copper. A CSL toxicity exceedance was noted at this location.
- Eastern Area Bioassay (LDW-SS50): This station was located across the LDW, within the eastern Port-owned berth area. A toxicity CSL exceedance was noted at this location.
- Glacier Bay Bioassays (LDW-SS56, LDW-SS57, and LDW-SS58): These three stations were located within Glacier Bay. Station LDW-SS56 contained elevated dioxin, arsenic, and PCBs concentrations, and exhibited a toxicity SQS exceedance. Stations LDW-SS57 and LDW-SS58 contained elevated PCB and dioxin concentrations, and both exhibited toxicity CSL exceedances.

3.4.3 Subsurface Sediment Data

Several subsurface sediment cores were sampled in areas near the Property during 2006 as part of the LDW RI/FS process. The LDW core locations are shown on Figure 8. The cores are discussed below in the following four groups:

- **Northern Core (LDW-SC24):** This core is located within the Port-owned berth area north of the AML property.
- **Shipyard-Area Cores (LDW-SC25, LDW-SC26, and LDW-SC28):** These cores were located in front of the graving dock, near the marine railway, and near the southern floating drydock, respectively.

- **Southern Core (LDW-SC29):** This core was collected within the Glacier Bay area south of the Property, near the Glacier dock.
- **Eastern Cores (LDW-SC23, LDW-SC27, and LDW-SC30):** These three cores were located in the Port-owned berth areas along the east side of the navigation channel of the LDW.

The physical and chemical results collected from each of these areas are summarized below.

3.4.3.1 Physical Characteristics

The subsurface sediments sampled west of the navigation channel adjacent to the Property exhibited the following physical characteristics:

- Total solids ranged from 47 percent to 77 percent
- Percent fines (silt and clay fraction) ranged from 74 percent to 90 percent
- TOC content ranged from 0.9 percent to 3.1 percent

The physical characteristics for the remaining cores located in the vicinity of the Property are provided in Appendix B.

3.4.3.2 Chemical Characteristics

A brief summary of the identified chemical characteristics for each analyte group is provided below.

Metals

Elevated concentrations of heavy metals and TBT were detected in all three of the Shipyard Area Cores. As shown in Figure 12, concentrations generally increased with depth below the sediment mudline, suggesting that these impacts are historical, rather than of recent origin. Elevated concentrations of arsenic, copper and TBT were correlated with one another. Elevated concentrations were also noted for lead, mercury, and zinc in selected samples.

Heavy metals concentrations did not exceed reference values in either the Northern Core (LDW-SC24) or the Southern Core (LDW-SC29). With the exception of one

shallow SQS exceedance of mercury in core LDW-SC27 (measured concentration 0.52 mg/kg at the 0 to 2 foot sampling interval, slightly exceeding the SQS of 0.41 mg/kg), no exceedances of reference values were noted for heavy metals in any of the Eastern Cores (LDW-SC23, LDW-SC27, and LDS-SC30).

Polycyclic Aromatic Hydrocarbons (PAHs)

Elevated PAH concentrations were noted in most cores at most sampling depths. In contrast to heavy metals, elevated PAH concentrations were noted in the Northern Core, the Southern Core, and in the Eastern Cores. Concentrations of HPAH compounds were generally greater than those of LPAH compounds.

Phthalate Esters

Elevated concentrations of butyl benzyl phthalate and bis(2-ethylexyl)phthalate were noted in most cores at most sampling depths. Concentrations of these phthalates correlated generally with PAH concentrations, and did not necessarily correlate with concentrations of arsenic, copper, or TBT.

Polychlorinated Biphenyls (PCBs)

Elevated PCB concentrations were noted in most LDW cores at most sampling depths. PCB concentrations in subsurface sediments were generally greater than those in surface sediments.

The PCB concentrations measured in subsurface sediments of the Shipyard Area Cores were comparable with PCB concentrations measured in the Northern Core, the Southern Core, and in the Eastern Area Cores. PCB contamination is known to be widespread within the LDW and does not appear to correlate to proximity to the Property. As noted in Section 3.2, there were no exceedances of upland PCB cleanup levels in soils or groundwater at the Property, nor were PCBs detected in catch basin solids sampled at the Property.

Chlorinated Benzenes and Pentachlorophenol

The Shipyard Area Cores contained elevated concentrations of 1,2-dichlorobenzene in subsurface sediments. Peak concentrations were noted at the following sampling depths:

- LDW-SC25: 2 to 4 foot interval
- LDW-SC26: 6 to 8 foot interval
- LDW-SC28: 5.5 to 7.5 foot interval

Other chlorinated benzene or phenolic compounds were also present in these samples, including 1,4-dichlorobenzene, pentachlorophenol, and 1,2,4-dichlorobenzene.

Dioxins/Furans

Testing for dioxins/furans has been performed more selectively than for other parameters. The highest measured dioxin/furan concentrations were detected in the Southern Core located within Glacier Bay and in the 6-8 foot interval of LDW-SC26. The elevated dioxin/furan concentration in this latter core correlated with elevated concentrations of chlorinated benzenes and pentachlorophenol. Dioxin/furan concentrations were also elevated in core LDW-SC28, although the interval with the highest pentachlorophenol concentration (5.5 to 7.5 feet) was not tested for dioxins/furans. All of these concentrations were lower than the dioxin/furan concentration measurements reported farther south in Glacier Bay.

4 PRELIMINARY CONCEPTUAL SITE MODEL

This section summarizes a preliminary CSM for the Property. The preliminary CSM is based on the existing information summarized in Sections 2 and 3 of this Work Plan.

As described in Section 1.2, the development of a CSM is an important step in assessing the status of source control, as well as for assessing the potential need for future remedial actions. The CSM integrates investigation data at a site to develop a framework for assessing contaminants and their impact on environmental receptors. The preliminary CSM described in this section is used to identify existing data gaps in Section 5, and to develop the scope of Phase 1 RI activities described in Section 6.

4.1 Contaminants and Potential Sources

The first part of the CSM is the definition of contaminants and potential sources. This step is important in order to assess whether known or potential sources of contamination have been controlled. This step includes both contaminants originating on-site, as well as contaminants that may have originated from off-site sources.

4.1.1 Upland Contaminants

Contaminants identified in the four upland areas (those not located adjacent to the Duwamish Waterway) described in Section 3.2 consists of petroleum hydrocarbons (two areas), arsenic (one area), and vinyl chloride (one area). Groundwater impacts are present in all four of these upland areas, but there is no evidence that they are migrating to the shoreline.

The petroleum impacts appear to be associated with historical on-site sources. Impacts to the Rail Spur area are likely associated with both on-site and off-site sources. The source of the low-level vinyl chloride contamination in the groundwater of the Central Area has not been determined.

Impacts to the Shipyard Nearshore Area appear to be associated with historic shipyard activities. The contamination in this area is present beneath pavement, suggesting that it is historical in nature. The specific source of low-level diesel contamination in

groundwater in the southern portion of this area (boring DSI-11) has not been determined.

Impacts to the Parcel D Nearshore Area includes elevated PAH concentrations in soil and groundwater, and low-level diesel concentrations in groundwater. The source of these impacts has not been determined.

4.1.2 Sediment Contaminants

Contaminants that correlate with proximity to the Property include several of the heavy metals and TBT. Heavy metals include arsenic, cadmium, copper, lead, mercury, and zinc. The concentrations of these sediment contaminants generally increase with depth in subsurface sediment samples collected nearest the Property, suggesting that the contamination is historical in nature and has been buried by natural deposition of cleaner sediments. Arsenic was not detected above sediment screening levels in recent sampling of catch basin solids, although it was present at elevated concentrations in surface and subsurface sediments. The presence of elevated arsenic concentrations in deeper sediments suggests that the contamination occurred predominantly during the earlier period of operations at the Property, rather than during its more recent history.

Concentrations of dioxin/furan compounds are highest in sediments within Glacier Bay, with lower concentrations present in the deepest intervals of sediments adjacent to the Property. Chlorinated benzenes and pentachlorophenol have been detected in subsurface sediments adjacent to the Property in areas downstream from the former Reichhold Chemical operations. Recent seep testing performed during the LDW RI/FS process did not identify ongoing surface water discharges of these compounds. However, sediment contamination is known to remain within the Glacier Bay area.

Phthalates, PAH compounds, and PCB compounds have been detected broadly throughout the LDW surface and subsurface sediments. These contaminants are known to have numerous confirmed and suspected sources within the LDW.

Bioassays have been used during previous studies to assess potential toxicity of sediment contaminants to benthic organisms. Results of these tests are often difficult to

correlate with specific contaminants, especially when multiple contaminants are present within the sediment. Results indicated that areas of sediment toxicity are present both adjacent to the Property, as well as in areas of the LDW upstream and downstream.

4.2 Nature and Extent of Contamination

As described in Sections 2 and 3 of this Work Plan, the boundaries of contamination at and adjacent to the Property have been generally defined. Upland contamination has been delineated for the general areas of the Property as described above. Sediment contamination has been generally evaluated, providing an assessment of the potential boundaries of sediment impacts potentially associated with the Property and its historical uses. However, questions remain about the full extent and significance of the detected contaminants, within these general boundaries.

4.2.1 Upland Contaminants

A description of the general nature and extent of contamination is provided in Section 3.2. Soil and groundwater quality are described for six upland and nearshore areas. The impacts to each of the areas appear to be localized and bounded to the specific area. There is no evidence of contamination affecting multiple areas.

Additional work to assess the nature, extent, and potential sources of contamination in the Rail Spur Area, 2000 UST removal Area, nearshore area, and the Parcel D Nearshore Area is discussed in Sections 5 and 6 of the Work Plan.

4.2.2 Sediment Contaminants

The area of sediment impacts potentially associated with the Property and its historical uses has been generally delineated, and is bounded by sediment surface and subsurface sampling to the north, east, and south. The contamination generally increases with depth below the sediment mudline, with the base of contamination influenced by the overall depth of recent sediments and historical patterns of dredging and channel maintenance.

Significant uncertainty remains regarding the areas and potential volumes of impacted sediments within the vicinity of the Property. Additional information is required in

order to refine the lateral and vertical boundaries of such impacts and to assess the stability of sediments within these areas as described in Section 4.3.

4.3 Fate and Transport

Multiple processes can affect the fate and transport of contaminants. Table 7 provides a summary of these potential processes. For upland and shoreline/sediment areas, processes that may transport contamination are listed, along with those that may attenuate contaminant migration, terminate exposure pathways, and/or destroy/neutralize the contamination prior to reaching the receptor.

4.3.1 Upland Processes

Most of the impacts to the upland portion of the Property are limited to subsurface soils. Exposure of these soils is limited in nearly all cases by pavement or foundations overlying the contaminated soil. Potential transport pathways that could result in transport of soil or groundwater contamination include the following:

- Stormwater entrainment
- Soil leaching
- Groundwater migration
- Groundwater extraction
- Vapor migration

The notes in Table 7 provide a description of how these potential processes may affect conditions at the Property. The table also includes a description of processes that can limit the transport of upland contaminants or that can result in destruction or neutralization of these contaminants, including the following:

- Biodegradation
- Geochemical stabilization
- Tidally-influenced groundwater mixing

As discussed in Sections 5 and 6, additional information is required in order to assess the impact of the fate and transport processes on contaminants in the upland portion of the Property, and to determine whether additional remedial actions are required to ensure protection of human health or environmental receptors.

4.3.2 Shoreline and Sediment Processes

Table 7 summarizes natural and anthropogenic (i.e., human caused) processes that may affect the fate or transport of contaminated sediments. The notes in Table 7 provide a description of potential applicability of these processes to the Property. Processes that may result in exposure of contaminated materials to benthic or aquatic receptors include the following:

- Wind and wave erosion
- River scour
- Seismic disturbances
- Propwash or anchor drag
- Construction disturbances

Table 7 also summarizes natural processes that may result in containment or detoxification of sediment contaminants. These processes include the following:

- Sediment deposition (i.e., burial)
- Contaminant degradation and weathering

Additional information is required in order to assess the potential stability and future fate of contaminated sediments located at and adjacent to the Property. These data gaps and the plan for collection of additional information are described in Sections 5 and 6 of this Work Plan.

4.4 Potential Receptors

In Section 3 of this Work Plan, existing environmental data were compared against preliminary screening levels based on default MTCA and SMS cleanup levels, and preliminary screening levels for sediment contaminants regulated under SMS as "other deleterious substances." These comparisons are preliminary, pending further evaluation of exposure pathways and potentially applicable cleanup levels. Generally, the principal receptors at the Property include the following:

- **Protection of Industrial Workers:** The main potential on-site receptor is a future industrial worker. Direct contact risks for industrial workers can be assessed using MTCA industrial soil cleanup levels. Indoor air exposure risks may require

evaluation for areas where VOCs (benzene and vinyl chloride) are present (i.e., the Central Area and the 2000 UST Removal Area).

- **Protection of LDW Aquatic Receptors:** Aquatic receptors in the LDW include fish and shellfish potentially exposed to surface water contaminants. Protection of these receptors can be ensured by preventing adverse impacts of groundwater on surface water quality. Potentially applicable cleanup levels include state and federal water quality criteria protective of human health and ecological receptors. MTCA Method B surface water cleanup levels may also apply as part of the assessment of human health risks associated with the consumption of seafood.
- **Protection of Benthic Receptors:** Exposure risks for sediment-dwelling organisms and for human consumers of seafood harvested from the LDW will determine applicable cleanup levels for contaminated sediments. These cleanup levels will likely include the numeric SMS sediment criteria and bioassay interpretive criteria. Cleanup levels for TBT will likely be based on a weight-of-evidence approach incorporating multiple lines of evidence such as bulk TBT concentrations, porewater TBT concentrations, and/or bioassay testing data. Cleanup levels for PCBs and dioxin/furan compounds, and potentially for arsenic, are likely to be determined through the LDW risk assessment and RI/FS process.

Section 5 of this Work Plan describes the data gaps affecting the analysis of receptor protection and the development of cleanup levels applicable to the Property. Section 6 describes how these gaps will be filled as part of the proposed scope of work.

5 ASSESSMENT OF DATA GAPS

This section uses the preliminary CSM presented in Section 4 to assess the need for additional investigation at the Property. Data gaps are assessed relevant to the evaluation of sediment source control status, and to the evaluation of whether further remedial actions may be necessary to protect human health and the environment. The data gaps discussed in this section form the basis for the investigation scope of work described in Section 6.

5.1 Nature and Extent of Contamination

Upland data gaps associated with delineation of the nature and extent of contamination are very limited. Specific upland data gaps that warrant additional investigation are limited to the following:

- **Rail Spur Area:** The source and lateral extent of arsenic contamination in soils and groundwater. This should include a review of data available for the adjacent Glacier property, as well as additional investigation at the Property.
- **2000 UST Removal Area:** The lateral and vertical extent of soil petroleum impacts in this area should be further delineated. Information for this area should be coordinated with evaluation of the adjacent Shipyard Nearshore Area.
- **Shipyard Nearshore Area:** Given the proximity of this area to the shoreline, additional information is required to assess the significance of groundwater petroleum contamination in the southern area of the property and soil metals contamination in the northern area of the property noted during 2006.
- **Parcel D Nearshore Area:** The source and extent of PAH contamination of soil and groundwater, and the significance of petroleum contamination detected in groundwater in this area, have not been determined. These factors should be assessed, given the proximity of this area to the shoreline.

Patterns of sediment contamination have been generally defined, but data gaps exist that warrant collection of additional sediment quality information:

- **Surface and Subsurface Sediment Quality:** Additional surface and subsurface sediment sampling data are required to reduce the uncertainty of the extent of sediment contaminants to the north, east, and south of the Property. Specific testing parameters will be identified in the SAP. The collection of this information should

be coordinated with gathering information applicable to sediment fate and transport processes and the evaluation of sediment cleanup levels.

5.2 Fate and Transport Processes

Data gaps affecting the analysis of fate and transport properties for upland soils and groundwater include the following:

- **Future Land Uses:** Future land uses will affect the potential for contaminant transport by stormwater or release of contaminants through construction activities at the Property. Information should be compiled regarding future land use plans as part of the current RI.
- **Groundwater Gradients and Aquifer Properties:** Additional information is required to verify presumed groundwater gradients, and to assess aquifer properties relevant to groundwater fate and transport. Gradient information must take into account potential influences of tidal fluctuations.
- **Groundwater Geochemical Properties:** Groundwater geochemical parameters may affect processes of contaminant biodegradation or geochemical transformations. These processes may be relevant to the fate and transport or destruction/immobilization of arsenic, petroleum, and/or vinyl chloride in groundwater.

Data gaps affecting the analysis of fate and transport properties for shoreline soils and aquatic sediments include the following:

- **Wind, Wave and River Scour Erosion Processes:** An assessment of the stability of sediments is required to assess whether shoreline soils or subsurface sediments may be subject to erosion. Some evaluations are being conducted as part of the LDW RI/FS process. Other information will require site-specific evaluation.
- **Shoreline Stability:** The geotechnical stability of the current shoreline (above and below the water line) will affect the potential for any contaminated soils and subsurface sediments in this area to be exposed to environmental receptors. Shoreline stability should be evaluated, including an assessment of the extent and stability of current shoreline armoring, and the stability of the bulkhead currently located in the northeastern portion of the Property

- **Anthropogenic disturbances:** The stability of subsurface contaminated soils and sediments may also be affected by navigation uses (e.g., propwash) or potential future construction activities. Insufficient information currently exists regarding the nature and extent of these potential future disturbances. Evaluation of these processes should be coordinated with the assessment of potential future land uses, and should address potential issues associated with Port ownership of the berth areas.

5.3 Cleanup Levels and Exposure Assessment

Data gaps relevant to the analysis of cleanup levels and exposure risks in upland areas of the Property include the following:

- **Petroleum Fractionation:** Information on petroleum fractionation may be important for the impacted soils in the Northwest Area and in the 2000 UST Removal Area in order to determine site-specific cleanup levels for these media.
- **VOC Vapor Intrusion Risks:** Two areas of the Property are affected by VOCs, including benzene (2000 UST Removal Area) and vinyl chloride (Central Area). A preliminary assessment of potential vapor intrusion risks should be conducted to assess such risks, if any, and to determine applicable cleanup levels for these compounds.

Data gaps relevant to the development of cleanup levels in sediment areas of the Property include the following:

- **Review of LDW Risk Assessment Information:** Sediment cleanup levels for contaminants present at or in the vicinity of the Property will be affected by the outputs of the ongoing LDW RI/FS and Risk Assessment. Analysis of the nature and extent of contamination in sediments at or adjacent to the Property should be coordinated with the LDW evaluation. This is particularly true for arsenic, PCBs, and dioxin/furans. This will also include development of protective cleanup levels for TBT.

6 REMEDIAL INVESTIGATION TASKS

This section describes the RI tasks, including the Phase 1 RI upland and sediment activities presented as part of the current Work Plan. Table 8 presents a summary of the RI data objectives and RI design components to fill data needs. These investigations will be implemented after finalization of the AO, and after subsequent development and approval of project plans including a SAP, QAPP, and HASP. Development of these three plans will be conducted as initial deliverables under the AO.

6.1 Phase 1 Remedial Investigation Upland Activities

Upland investigations will be performed at the Property to fill the data gaps discussed in Section 5.

6.1.1 Review of Glacier Property Data

Upland soil and groundwater quality data for the Glacier property will be obtained and reviewed. Relevant data will be integrated with information collected from the Property as part of DSI's project reports. For this purpose, relevant information includes groundwater gradient information, and the nature and extent of heavy metals, PAHs, TBT, or petroleum concentrations in soils and groundwater.

6.1.2 Assessment of Potential Future Land Uses

Future land uses will affect the evaluation of upland and shoreline/sediment conditions. Information on future land use will be developed. This evaluation of future land uses will address both the Property owned by DSI, as well as the Port-owned berth areas adjacent to the Property.

6.1.3 Former Stormwater Vault, Piping, and UST Survey

During the stormwater system cleanout activities performed in July and August of 2007, a former stormwater vault and potential UST were identified. A survey will be completed to determine the presence and size of the former stormwater vault and areas where a potential UST may have been located during historic operations on the Property. In addition, the former stormwater vault piping and the current status of piping identified on City of Seattle public utility maps will be investigated.

6.1.4 Geoprobe Investigation

A focused investigation will be conducted using temporary soil borings installed by a geoprobe. This study will provide data on the following:

- **Delineation of Rail Spur Area Arsenic Impacts:** The lateral extent of arsenic-impacted soil and groundwater in the Rail Spur Area will be defined. At least three soil borings will be installed in this area, with sampling of soils for total arsenic and groundwater sampling for dissolved arsenic.
- **TPH Fractionation in Northwestern Area Soil:** One soil boring will be placed in the vicinity of boring DSI-03 to collect a sample of gasoline-impacted soil for petroleum fractionation testing. This sample will be submitted for TPH fractionation testing for development of site-specific petroleum cleanup levels applicable to this area. Up to three additional borings will be placed to delineate petroleum-related impacts to soil and groundwater in this area.
- **Delineation of 2000 UST Removal Area Petroleum Impacts:** Four soil borings will be placed in areas adjacent to the 2000 UST Removal Area to delineate areas of soil and groundwater impacted by petroleum hydrocarbons and benzene. Soil samples will be tested for petroleum hydrocarbons and BTEX compounds. Two representative soil samples will be used for TPH fractionation testing for development of site-specific petroleum cleanup levels for these compounds.
- **Delineation of Nearshore Impacts:** Approximately seven soil borings will be placed in areas adjacent to former borings DSI-09, DSI-11, and DSI-12 in the areas where elevated soil and groundwater chemical concentrations were detected. These borings will be used to assess the extent and potential source of this contamination. Soils will be sampled for metals, SVOCs, and petroleum hydrocarbons.

6.1.5 Monitoring Well Installation and Geologic/Hydrogeologic Testing

Groundwater gradients at the Property are presumed to be toward the shoreline, with tidal influences on groundwater elevations occurring within 100 to 200 feet of the shoreline. Testing will be performed to confirm groundwater gradients and hydrogeologic properties. Wells installed as part of this work will also be used for focused groundwater quality testing and for assessment of groundwater geochemical

properties as described below. One to two geotechnical borings will be completed in nearshore areas at depth to characterize geologic conditions and test for physical parameters.

- **Well and Piezometer Installation:** Ten groundwater monitoring wells, including three deeper monitoring well screens, and one piezometer will be installed. Monitoring well locations and testing parameters will be detailed in the SAP. One well will be located in the Rail Spur Area. One well will be located in the 2000 UST Removal Area. Three wells will be located in the Shipyard Nearshore Area, between DSI-09 and DSI-11, and another will be located in the Parcel D Nearshore Area near DSI-12 (Figure 8). One of these wells in the area of DSI-10 will include an additional deeper well to determine chemical concentrations and gradient characteristics deeper in the aquifer. A piezometer will be installed located in the Central Area near boring DSI-08. The wells and piezometer will be installed and developed to permit monitoring of groundwater gradients and aquifer properties. Soil samples will be selectively collected at the time of well and piezometer installation.
- **Measurement of Gradients and Tidal Influences:** The six new wells, one existing well (MW5) (if located), and the new piezometer will be surveyed. Initial groundwater elevations will be measured using a water level indicator. Recording pressure transducers will then be installed in selected wells and groundwater elevations will be measured over a 96-hour period. A transducer will also be installed in a stilling gauge placed in the Duwamish River. The measurements from the pressure transducers will be processed to determine tidal efficiencies and lags in each well, and to assess the mean groundwater gradients over a 72-hour tidal cycle. Results will be processed to estimate aquifer conductivity, discharge rates, and groundwater/surface water mixing factors near the shoreline.
- **Geotechnical Testing:** Approximately three geotechnical borings will be preformed in nearshore areas to evaluate subsurface geologic conditions. Soil sampling for physical testing will be completed at approximately 2.5-foot intervals in the top 10 feet and continue at approximately 5-foot intervals to a depth of 60 feet. Physical testing will selectively include grain size, atterberg limits, specific gravity and moisture content.

- **Groundwater Geochemistry Testing:** Groundwater geochemical parameters will be tested in each of the monitoring wells and in the piezometer. These parameters will include dissolved oxygen, redox potential, conductivity, and pH. Samples from four wells (two upland and two nearshore) will also be analyzed for nitrates, sulfate, hydrogen sulfide, total dissolved solids, and alkalinity. Well headspace measurements will be made for oxygen, carbon dioxide, carbon monoxide, and methane.
- **Groundwater Sampling:** Several of the groundwater wells will be used for groundwater sampling. Groundwater sampling will be performed following low-flow methodology. Groundwater testing parameters will be detailed in the SAP.

6.1.6 Evaluation of Applicable Cleanup Levels

Results of the testing and analysis described above will be used to develop soil and groundwater cleanup levels protective of receptors at the Property. These cleanup levels will take into account the elements of the Preliminary CSM described in Section 4, and will address future land uses anticipated for the Property.

6.2 Phase 1 Remedial Investigation Sediment Activities

Sediment data gaps will be filled through a series of field investigation tasks, and through review of work conducted as part of the LDW RI/FS process.

6.2.1 Review of Channel and Berth Area Dredging Histories

Information from the ACOE and other available sources will be compiled to document the history of dredging and shoreline modifications in the immediate vicinity of the Property. The information will be used, along with the subsurface sediment data, to assist in interpretation of sediment contamination patterns and sediment stability.

6.2.2 Evaluation of Sediment Stability

The physical stability of sediments adjacent to the Property will be evaluated using a combination of LDW RI/FS information, and new information compiled as part of the current study:

- **Armored Slope Evaluation:** The extent and properties of shoreline armoring will be assessed using chemical and physical testing, direct inspection, available records, and potentially a diver survey (if required). This information will be combined with the bathymetric and soil information from upland geologic observations to assess potential stability of the armored portions of the shoreline under static and seismically active conditions. This analysis will be used as a screening-level assessment for shoreline stability. A full geotechnical or seismic analysis will not be performed.
- **Bulkhead Assessment:** A preliminary evaluation of the bulkhead on the Property will be performed. Areas of impacted soil are known to exist behind the bulkhead. The current integrity of the bulkhead will be assessed by a structural engineer and areas of potential instability will be defined.
- **Wave Erosion Assessment:** Data on wind waves and vessel wakes will be compiled from available sources, including work being performed for the LDW RI/FS. These data will be used in conjunction with sediment physical and bathymetric data to assess potential sediment stability in intertidal and shallow subtidal areas.
- **River Scour Assessment:** Outputs from the LDW fate and transport modeling will be used to assess potential river scour and/or deposition in areas near the Property. Completion of a separate river scour assessment is not anticipated. Results will be compared against observations from subsurface sediment cores placed at or adjacent to the Property.
- **Propwash Evaluation**: A limited evaluation of propwash and related navigation impacts will be performed based on the anticipated land uses at the Property and associated or nearby berth areas. The evaluation will include simulation of potential prop-induced scour and associated sediment resuspension.

6.2.3 Surface and Subsurface Sediment Testing

Surface and subsurface sediment testing will be performed at approximately 15 locations in the vicinity of the Property. The purpose of testing will be to delineate the lateral and vertical boundaries of sediment impacts. Testing will be performed at locations between those previously shown to contain heavy metals and TBT impacts, and those locations bounding samples previously collected to the north, east, and south. Testing may

include areas of the federal navigation channel and berth areas on either side of the channel. Final sampling locations will be defined in the SAP after review of historic dredging information for the LDW and associated berth areas.

A surface (0 to 10 cm) grab sample will be collected at each sampling location, using a Van Veen grab sampler. Subsurface sediment samples will then be collected using a vibracore sampler. The surface sample and up to three subsurface sediment samples will be selectively analyzed for SMS testing parameters. Sediment testing parameters will be detailed in the SAP.

The surface samples will also be analyzed for porewater TBT. These analyses will not be performed on subsurface samples. Surface and subsurface samples will be archived frozen for potential future analysis.

6.2.4 Review of LDW RI/FS Data

As part of data analysis and reporting, applicable information from the LDW RI/FS and risk assessment will be compiled and reviewed. Potentially relevant information shall include the following:

- Risk-analysis outputs and sediment cleanup levels proposed for the LDW
- Results of surface and subsurface sediment testing near the Property
- Results of sediment transport evaluations
- Plans or potential plans for remediation within the LDW that may impact the Property
- Relevant land use or navigation information
- Information on the status of LDW source control efforts

6.3 Phase 1 Remedial Investigation Data Analysis and Reporting

All of the data developed under the current study shall be compiled in a Phase 1RI Data Memorandum. The Phase 1 RI Data Memorandum shall summarize data with appropriate figures and cross sections. All analytical data collected during the study shall be validated and submitted to Ecology in electronic format.

A Phase 2 Technical Memorandum will then be prepared that includes an updated version of the CSM and identifies potential data gaps and additional field data collection efforts, if warranted. Conclusions of the Phase 1 RI activities shall assess the status of sediment source control at the Property. Applicable cleanup levels shall be presented for different media. If areas are defined where additional actions are required to comply with applicable cleanup levels or to protect human health and the environment, these areas of concern shall be identified in the conclusion section of the Phase 2 Technical Memorandum and in a summary figure.

6.4 Phase 2 Remedial Investigation Activities (If Warranted)

Phase 2 RI activities will be performed at the Property, if determined to be warranted after Phase 1 RI data analysis and the data gaps assessment presented in the Phase 2 Technical Memorandum. If Phase 2 RI activities are determined to be warranted, the project plans (SAP, QAPP, and HASP) will be updated as applicable, and field data collection activities will be initiated.

7 FEASIBILITY STUDY TASKS

The FS will identify and evaluate remedial alternatives that protect human health and the environment by eliminating, reducing, or otherwise controlling risks posed by environmental conditions at the Property. Remedial alternatives will be developed consistent with ongoing LDW cleanup and source control activities and property use planning and development. The FS is intended to provide sufficient data, analysis, and engineering evaluations to enable the selection of a cleanup action alternative, which is protective of human health and the environment and considers local development plans. A phased approach will be taken, whereby remedial alternatives are developed and screened, followed by a detailed analysis of remedial alternatives in accordance with the MTCA cleanup regulations, WAC 173-340-360 (Ecology 2007).

7.1 Alternative Screening Memorandum

The first step in developing potentially practicable remedial alternatives for the Property will be the screening of alternatives, following the conceptual development of alternatives, and preceding the detailed analysis of alternatives. Prior to screening, technologies will be identified for each cleanup component and combined into potential alternatives. During the screening, the extent of remedial action (e.g., quantities of media to be affected), the sizes and capacities of treatment areas, and other details of each alternative will be further defined, as needed, so that screening evaluations can be conducted.

The objective of remedial alternatives screening is to narrow the list of potential alternatives that will be evaluated in detail. In some circumstances, the number of viable alternatives to address cleanup components may be limited, such that screening may be unnecessary or minimized. Screening is used as a tool throughout the alternative selection process to narrow the options being considered. When alternatives are being developed, individual remedial technologies should be screened primarily on their ability to meet the remedial action objective (RAO) for the Property. Preliminary RAOs will be developed as part of the screening process. Because the purpose of the screening evaluation is to reduce the number of alternatives that will undergo a more thorough and extensive analysis, alternatives should be evaluated more generally in this phase than during the detailed analysis. The result of the screening process will be to develop and present the shortlisted remedial alternatives that will be carried forward as part of the detailed evaluation of alternatives in

the FS Report. Additional testing may be necessary during the screening of cleanup technologies during the FS process to evaluate the implementability of remedial technologies.

The alternatives screening process will be documented in the Alternatives Screening Memorandum. Conceptual estimates of areas and volumes of contaminated media will be used to guide screening of potential remedial alternatives. The screening will broadly consider effectiveness, implementability, and cost, with modifying factors including agency and community acceptance. Each alternative carried forward will meet the threshold requirement of protection of human health and the environment, unless these levels are below background. The development and screening of alternatives will provide enough detail to differentiate between the alternatives, and the level of detail will be sufficient to ensure the cost estimates for each will be comparable. The most promising alternatives will be carried forward to the more detailed evaluation in the FS Report, while those that cannot be implemented will be discarded from further evaluation.

7.2 Feasibility Study Report

The FS Report will contain the primary elements described in the following sections.

7.2.1 Introduction and Objectives

The first section of the FS Report will include an introduction and describe the objectives of the document. Reference will be made to previous work done at the Property. Additional work done to support the FS Report will also be described in this section.

7.2.2 Remedial Action Objectives

The purpose of this section will be to identify site-specific RAOs that will impact remedial alternatives evaluation. The section will begin with a discussion of land use planning and ongoing cleanup and source control considerations for the LDW, which will influence screening of potential remedial alternatives. The RAO section will then describe the applicable and relevant or appropriate requirements (ARARs) that will be used in determining appropriate RAOs and the selected remedial alternative. RAOs will be consistent with the LDW, where appropriate. The preliminary RAOs for the Property are:

- Control or eliminate sources (e.g., groundwater) of COPCs to the surface water and sediment of the LDW
- Reduce or eliminate human and ecological exposure to any contaminated media that may lead to potential current or future unacceptable risk
- Implement remedial actions in coordination with land use planning, property development, and LDW cleanup and source control activities.

7.2.3 Determination of Cleanup Standards and Applicable Laws

This section will present and identify cleanup standards and applicable laws to be carried forward to the remedial alternatives development. Cleanup standards selected under MTCA will generally apply to the upland portion and will consist of two components: cleanup levels and points of compliance. MTCA (WAC 173-340-350) states that the purpose of the FS is to develop and evaluate cleanup alternatives to enable a cleanup action to be selected.

The SMS specifies a process for developing cleanup standards for sediment. The SMS (WAC 173-204-570) provide for cleanup standards that may range from SQS to minimum cleanup level (MCUL) concentrations. The potential for natural recovery over a 10-year time frame may also be considered, if appropriate. Site units may be defined for different areas of the Property, if physical, chemical or biological differences (e.g. navigation lanes, intertidal areas) in these areas create requirements for using different remediation levels or technologies. Development of sediment cleanup standards will also take into consideration ongoing cleanup activities related to the LDW.

7.2.4 Summary of Alternatives Screening of Cleanup Technologies

This section of the FS Report will identify and provide an executive summary of the Alternatives Screening Memorandum and present the shortlisted alternatives carried forward. Further analysis of the alternatives carried forward from this memorandum will occur as part of the detailed evaluation of alternatives in the FS Report.

7.2.5 Detailed Evaluation of Remedial Alternatives

This section in the FS Report will evaluate shortlisted alternatives. The detailed evaluation will further define the alternatives, as necessary, analyze the alternatives

against MTCA and other evaluation criteria, and compare the alternatives against one another. The remedial alternatives will be evaluated for compliance with the requirements of WAC 173-340-360, "Selection of Cleanup Actions." The following 13 evaluation criteria will be considered in the detailed evaluation of remedial alternatives:

- Compliance with Cleanup Standards and Applicable Laws
- Protection of Human Health
- Protection of the Environment
- Provision for a Reasonable Restoration Time Frame
- Use of Permanent Solutions to the Maximum Extent Practicable
- Degree to which Recycling, Reuse, and Waste Minimization are Employed
- Short-Term Effectiveness
- Long-Term Effectiveness
- Net Environmental Benefits
- Implementability
- Provision for Compliance Monitoring
- Cost-Effectiveness
- Prospective Community Acceptance

7.2.6 Cost Estimates

Detailed costs will be prepared for each alternative with consideration of daily labor and equipment costs, material costs, production rates, transportation costs, and disposal fees. The detailed cost estimates will be prepared as a unit price style cost estimate, and will break down major construction elements into individual unit prices (e.g., mobilization/demobilization, dredging, capping, and disposal) to facilitate comparison between alternatives. Detailed cost tables will be included as an appendix to the FS Report, and summary tables will be included in the body of the text.

7.2.7 Comparative Analysis of Alternatives

The comparative analysis will be prepared to assist in identifying the preferred alternative. The comparative analysis will describe the strengths and weaknesses of each alternative and associated uncertainties. The alternative evaluation criteria will be considered individually, and each alternative will be presented in order from the highest to the lowest ranking alternative for each criterion. The alternatives will be listed in a

summary matrix and the costs developed for the alternatives will be included with the matrix. The intent of the matrix is to provide a quick summary of the comparative analysis for the reader.

7.2.8 Recommended Remedial Alternative

The remedial alternative that is determined to best satisfy the evaluation criteria in Section 7.2.5 will be identified. Justification for the selection will be provided, and the recommended remedial alternative will be further developed, either in the FS Report or in the ensuing Draft Cleanup Action Plan.

8 PROJECT ORGANIZATION AND SCHEDULE

This section describes the overall project organizational structure to carry out the RI/FS activities consistent with the AO schedule and deliverables. DSI has the primary responsibility for managing the work completed at the Property. Anchor Environmental L.L.C. (Anchor) is the primary consultant for DSI and is responsible for the activities associated with implementing the RI/FS work. Project work includes the activities of various subcontractors.

Anchor is responsible for performing the RI/FS work under the direction of DSI. These responsibilities include preparing necessary project plans and reports for submittal to Ecology and other involved parties, as well as attending project meetings, performing field work, evaluating data generated during the RI, and overseeing subcontractors as necessary to complete the RI/FS in accordance with the AO SOW.

8.1 Project Schedule

The project schedule for all RI/FS tasks in this Work Plan is presented in the AO. If, at any time during the RI/FS process, unanticipated or changed circumstances are discovered that may result in a schedule delay, DSI shall bring such information to the attention of Ecology. Ecology will then determine whether a schedule extension is warranted under the AO.

8.2 Project Deliverables

The following is a summary of the major deliverables for this project, with interim technical memoranda prepared as appropriate during development of the work. In addition to these documents, supporting reports may need to be prepared for technical investigations that will be necessary to complete the FS (e.g., geotechnical evaluations, structural surveys).

1. **Project Plans to Complete Remedial Investigation Tasks (SAP, QAPP, and HASP):** A SAP, QAPP, and HASP will be prepared consistent with the Phase 1 RI tasks outlined in Section 6 of this Work Plan.
2. **Phase 1 Data Memorandum:** The purpose of the Phase 1 Data Memorandum will be to present the methodology and results of the Phase 1 RI tasks as described in this Work Plan (Section 6). The memorandum will include supporting data summary tables and figures to report key findings of the study tasks.
3. **Phase 2 Technical Memorandum:** In conjunction with the Phase 1 Data Memorandum, the Phase 2 Technical Memorandum will be prepared to evaluate the

results of the Phase 1 RI tasks and identify the need for additional data collection to complete RI tasks. This memorandum will include the preparation of the streamlined risk assessment and identify the need for Phase 2 RI activities and detail additional work activities, if determined to be warranted. If necessary, the project plans prepared for the Phase 1 RI tasks will be updated to complete the identified Phase 2 RI tasks.

4. **Alternatives Screening Memorandum:** An Alternatives Screening Memorandum will be prepared following RI data collection to evaluate potential cleanup technologies to be carried forward to the FS.
5. **Remedial Investigation and Feasibility Study Report:** At the conclusion of the RI/FS tasks, a RI/FS report will be prepared that summarizes the work performed under this Work Plan and related plans.

Ecology will receive a draft and final version of each deliverable, unless otherwise specified. Comments from Ecology will be addressed in the final documents. All drafts will be submitted electronically in portable document format (PDF) as well as in other software formats (e.g., Microsoft Word and Excel), as appropriate. Hard copy submittals for draft versions of documents will determined on a case-by-case basis in consultation with Ecology. The final version of each document will be delivered in electronic and hard copy format to Ecology.

8.3 RI/FS Public Comment

The RI/FS report under this Work Plan will be prepared as a draft for review and comment. The draft RI/FS report will be submitted to Ecology for review under the current AO. Anchor expects that Ecology will provide written comments on the Draft RI/FS Report and Anchor will provide written responses to those comments. In addition, project meetings will be held with Ecology to discuss the comments and responses, if requested by DSI or Ecology.

After the comments from Ecology have been addressed, a revised RI/FS document will be prepared and submitted to Ecology. At this time, the RI/FS document will be available for public comment and review consistent with the MTCA regulations. A public meeting may be held to summarize the information presented in the RI/FS document.

Upon completion of the public comment period, a responsiveness summary will be prepared by Ecology (with review and input from DSI and Anchor), and the RI/FS document will be revised as necessary to address issues identified during the public comment process.

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TABLES

FIGURES

APPENDIX A

AERIAL PHOTOGRAPHS

APPENDIX B

SUMMARY OF AVAILABLE LOWER DUWAMISH WATERWAY SEDIMENT CONCENTRATIONS


1936 Walker & Associates


1946 Walker & Associates


1956 Walker & Associates


1960 Walker & Associates


1969 Walker & Associates


1974 Walker & Associates

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0030 CH09-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1033 CH10-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1034 CH10-02 10/17/1997 0-10 cm Nav. Channel - Lafarge	EIT085 EIT12-01 9/19/1997 0-10 cm East Nav. Channel - Lafarge	EIT086 EIT12-02 11/12/1997 0-10 cm East Nav. Channel - Lafarge	EST203 EST19-02 9/17/1997 0-10 cm East Nav. Channel - Lafarge	EST204 EST19-03 10/23/1997 0-10 cm East Nav. Channel - Lafarge	EST215 EST20-05 10/14/1997 0-10 cm East Nav. Channel - Lafarge	EST216 EST20-06 9/17/1997 0-10 cm East Nav. Channel - Lafarge	WQABRAN L10535-1 3/6/1997 0-2 cm East Nav. Channel - Lafarge
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand (total calc'd)	--	--	--	--	5.2	4.4	18	79	84	4	5.4	13	13	10.1
Silt (total calc'd)	--	--	--	--	67	60	41	2.5	2	61	64	54	49	67
Clay (total calc'd)	--	--	--	--	28	35	37	1.8	1.9	35	31	31	37	22.8
Fines (percent silt+clay)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	1.94	2.08	1.61	0.79	0.34	2.23	2.15	1.71	2.21	2.67
Total solids	--	--	--	--	--	--	--	--	--	--	--	--	--	49.1
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--	38.7
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--	27900
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	4.9 J
Arsenic	57	93	--	--	--	--	--	--	--	--	--	--	--	14
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	0.37
Cadmium	5.1	6.7	--	--	--	--	--	--	--	--	--	--	--	0.31 J
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	8920
Chromium	260	270	--	--	--	--	--	--	--	--	--	--	--	34.4
Cobalt	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	390	390	--	--	--	--	--	--	--	--	--	--	--	64.2
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	36000 J
Lead	450	530	--	--	--	--	--	--	--	--	--	--	--	29.5
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	9630
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	--	--	--	--	--	--	--	--	--	0.18
Molybdenum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	--	--	--	--	--	--	--	--	--	31.2
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	3220
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	5.3 U
Silver	6.1	6.1	--	--	--	--	--	--	--	--	--	--	--	0.41 U
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	11600
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	20 U
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	410	960	--	--	--	--	--	--	--	--	--	--	--	110
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	--	--	--	--	--	--	--	--	--	3.3 U
Acenaphthylene	66	66	--	--	--	--	--	--	--	--	--	--	--	1.2 U
Acenaphthene	16	57	--	--	--	--	--	--	--	--	--	--	--	3.06

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0030 CH09-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1033 CH10-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1034 CH10-02 10/17/1997 0-10 cm Nav. Channel - Lafarge	EIT085 EIT12-01 9/19/1997 0-10 cm East Nav. Channel - Lafarge	EIT086 EIT12-02 11/12/1997 0-10 cm East Nav. Channel - Lafarge	EST203 EST19-02 9/17/1997 0-10 cm East Nav. Channel - Lafarge	EST204 EST19-03 10/23/1997 0-10 cm East Nav. Channel - Lafarge	EST215 EST20-05 10/14/1997 0-10 cm East Nav. Channel - Lafarge	EST216 EST20-06 9/17/1997 0-10 cm East Nav. Channel - Lafarge	WQABRAN L10535-1 3/6/1997 0-2 cm East Nav. Channel - Lafarge
Anthracene	220	1200	--	--	--	--	--	--	--	--	--	--	--	4.1 J
Benzo(a)anthracene	110	270	--	--	--	--	--	--	--	--	--	--	--	12 J
Benzo(a)pyrene	99	210	--	--	--	--	--	--	--	--	--	--	--	10 J
Benzo(g,h,i)perylene	31	78	--	--	--	--	--	--	--	--	--	--	--	5.2 J
Chrysene	110	460	--	--	--	--	--	--	--	--	--	--	--	16.5
Dibenzo(a,h)anthracene	12	33	--	--	--	--	--	--	--	--	--	--	--	3.3 U
Fluoranthene	160	1200	--	--	--	--	--	--	--	--	--	--	--	29 J
Fluorene	23	79	--	--	--	--	--	--	--	--	--	--	--	3.4 J
Indeno(1,2,3-cd)pyrene	34	88	--	--	--	--	--	--	--	--	--	--	--	5.6 J
Naphthalene	99	170	--	--	--	--	--	--	--	--	--	--	--	3.3 UJ
Phenanthrene	100	480	--	--	--	--	--	--	--	--	--	--	--	15 J
Pyrene	1000	1400	--	--	--	--	--	--	--	--	--	--	--	27 J
Benzofluoranthenes (total-calc'd)	230	450	--	--	--	--	--	--	--	--	--	--	--	24.9
Total LPAH (calc'd)	370	780	--	--	--	--	--	--	--	--	--	--	--	25 J
Total HPAH (calc'd)	960	5300	--	--	--	--	--	--	--	--	--	--	--	130 J
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	--	--	--	--	--	--	--	--	--	88 U
Acenaphthylene	--	--	1300	1300	--	--	--	--	--	--	--	--	--	33 U
Acenaphthene	--	--	500	730	--	--	--	--	--	--	--	--	--	81.7
Anthracene	--	--	960	4400	--	--	--	--	--	--	--	--	--	110 J
Benzo(a)anthracene	--	--	1300	1600	--	--	--	--	--	--	--	--	--	320 J
Benzo(a)pyrene	--	--	1600	3000	--	--	--	--	--	--	--	--	--	270 J
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	464
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	200
Benzo(g,h,i)perylene	--	--	670	720	--	--	--	--	--	--	--	--	--	140 J
Chrysene	--	--	1400	2800	--	--	--	--	--	--	--	--	--	440
Dibenzo(a,h)anthracene	--	--	230	540	--	--	--	--	--	--	--	--	--	88 U
Fluoranthene	--	--	1700	2500	--	--	--	--	--	--	--	--	--	770 J
Fluorene	--	--	540	1000	--	--	--	--	--	--	--	--	--	92 J
Indeno(1,2,3-cd)pyrene	--	--	600	690	--	--	--	--	--	--	--	--	--	150 J
Naphthalene	--	--	2100	2400	--	--	--	--	--	--	--	--	--	88 UJ
Phenanthrene	--	--	1500	5400	--	--	--	--	--	--	--	--	--	390 J
Pyrene	--	--	2600	3300	--	--	--	--	--	--	--	--	--	710 J
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	--	--	--	--	--	--	--	--	--	664
Total LPAH (calc'd)	--	--	5200	13000	--	--	--	--	--	--	--	--	--	670 J
Total HPAH (calc'd)	--	--	12000	17000	--	--	--	--	--	--	--	--	--	3460 J
Total PAH (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	4140 J
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	--	--	--	--	--	--	--	--	--	0.052 UJ
1,4-Dichlorobenzene	3.1	9	--	--	--	--	--	--	--	--	--	--	--	0.13 J
1,2,4-Trichlorobenzene	0.81	1.8	--	--	--	--	--	--	--	--	--	--	--	0.052 UJ
Hexachlorobenzene	0.38	2.3	--	--	--	--	--	--	--	--	--	--	--	0.052 UJ
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	--	--	--	--	--	--	--	--	--	1.4 UJ
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4 UJ
1,4-Dichlorobenzene	--	--	110	120	--	--	--	--	--	--	--	--	--	3.5 J

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0030 CH09-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1033 CH10-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1034 CH10-02 10/17/1997 0-10 cm Nav. Channel - Lafarge	EIT085 EIT12-01 9/19/1997 0-10 cm East Nav. Channel - Lafarge	EIT086 EIT12-02 11/12/1997 0-10 cm East Nav. Channel - Lafarge	EST203 EST19-02 9/17/1997 0-10 cm East Nav. Channel - Lafarge	EST204 EST19-03 10/23/1997 0-10 cm East Nav. Channel - Lafarge	EST215 EST20-05 10/14/1997 0-10 cm East Nav. Channel - Lafarge	EST216 EST20-06 9/17/1997 0-10 cm East Nav. Channel - Lafarge	WQABRAN L10535-1 3/6/1997 0-2 cm East Nav. Channel - Lafarge
1,2,4-Trichlorobenzene	--	--	31	51	--	--	--	--	--	--	--	--	--	1.4 UJ
Hexachlorobenzene	--	--	22	70	--	--	--	--	--	--	--	--	--	1.4 UJ
Nitrobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	55 UJ
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	--	--	--	--	--	--	--	--	--	28.6
Butyl benzyl phthalate	4.9	64	--	--	--	--	--	--	--	--	--	--	--	1.6
Diethyl phthalate	61	110	--	--	--	--	--	--	--	--	--	--	--	2.1 U
Dimethyl phthalate	53	53	--	--	--	--	--	--	--	--	--	--	--	0.82 U
Di-n-butyl phthalate	220	1700	--	--	--	--	--	--	--	--	--	--	--	2.1 U
Di-n-octyl phthalate	58	4500	--	--	--	--	--	--	--	--	--	--	--	1.2 UJ
Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	--	--	--	--	--	--	--	--	--	764
Butyl benzyl phthalate	--	--	63	900	--	--	--	--	--	--	--	--	--	43
Diethyl phthalate	--	--	200	1200	--	--	--	--	--	--	--	--	--	55 U
Dimethyl phthalate	--	--	71	160	--	--	--	--	--	--	--	--	--	22 U
Di-n-butyl phthalate	--	--	1400	5100	--	--	--	--	--	--	--	--	--	55 U
Di-n-octyl phthalate	--	--	6200	--	--	--	--	--	--	--	--	--	--	33 UJ
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	110 UJ
4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--	--	--	--	--	110 U
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	55 U
2,4-Dimethylphenol	29	29	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	110 UJ
2-Methylphenol	63	63	--	--	--	--	--	--	--	--	--	--	--	55 UJ
4-Methylphenol	670	670	--	--	--	--	--	--	--	--	--	--	--	55 UJ
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	220 U
2,4,6-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	220 U
2-Nitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	55 U
4-Nitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	110 U
Pentachlorophenol	360	690	--	--	--	--	--	--	--	--	--	--	--	55 UJ
Phenol	420	1200	--	--	--	--	--	--	--	--	--	--	--	220 U
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	--	--	--	--	--	--	--	--	--	2.4
Hexachlorobutadiene	3.9	6.2	--	--	--	--	--	--	--	--	--	--	--	2.1 UJ
N-Nitrosodiphenylamine	11	11	--	--	--	--	--	--	--	--	--	--	--	2.1 U
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	220 U
3-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	220 UJ
3,3'-Dichlorobenzidine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	57	73	--	--	--	--	--	--	--	--	--	--	--	55 U
Benzoic acid	650	650	--	--	--	--	--	--	--	--	--	--	--	220 U
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	--	55 U
Dibenzofuran	--	--	540	700	--	--	--	--	--	--	--	--	--	65
Hexachlorobutadiene	--	--	11	120	--	--	--	--	--	--	--	--	--	55 UJ

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0030 CH09-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1033 CH10-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1034 CH10-02 10/17/1997 0-10 cm Nav. Channel - Lafarge	EIT085 EIT12-01 9/19/1997 0-10 cm East Nav. Channel - Lafarge	EIT086 EIT12-02 11/12/1997 0-10 cm East Nav. Channel - Lafarge	EST203 EST19-02 9/17/1997 0-10 cm East Nav. Channel - Lafarge	EST204 EST19-03 10/23/1997 0-10 cm East Nav. Channel - Lafarge	EST215 EST20-05 10/14/1997 0-10 cm East Nav. Channel - Lafarge	EST216 EST20-06 9/17/1997 0-10 cm East Nav. Channel - Lafarge	WQABRAN L10535-1 3/6/1997 0-2 cm East Nav. Channel - Lafarge
Hexachloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	55 UJ
Hexachlorocyclopentadiene	--	--	--	--	--	--	--	--	--	--	--	--	--	55 UJ
Isophorone	--	--	--	--	--	--	--	--	--	--	--	--	--	55 U
N-Nitroso-di-n-propylamine	--	--	--	--	--	--	--	--	--	--	--	--	--	55 U
N-Nitrosodimethylamine	--	--	--	--	--	--	--	--	--	--	--	--	--	220 UJ
N-Nitrosodiphenylamine	--	--	28	40	--	--	--	--	--	--	--	--	--	55 U
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	--	--	--	--	--	--	--	--	--	22 U
4-Chlorophenyl phenyl ether	--	--	--	--	--	--	--	--	--	--	--	--	--	33 U
bis(2-chloroethyl)ether	--	--	--	--	--	--	--	--	--	--	--	--	--	33 UJ
bis(2-chloroisopropyl)ether	--	--	--	--	--	--	--	--	--	--	--	--	--	110 UJ
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aldrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toxaphene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	4.3 J	4.8	3.2 J	0.51 J	--	3.7 J	5.6	6.4	**14**	5.1
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	--	--	--	--	--	--	--	--	--	26 U
Aroclor-1221	--	--	--	--	--	--	--	--	--	--	--	--	--	26 U
Aroclor-1232	--	--	--	--	--	--	--	--	--	--	--	--	--	26 U

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0030 CH09-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1033 CH10-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1034 CH10-02 10/17/1997 0-10 cm Nav. Channel - Lafarge	EIT085 EIT12-01 9/19/1997 0-10 cm East Nav. Channel - Lafarge	EIT086 EIT12-02 11/12/1997 0-10 cm East Nav. Channel - Lafarge	EST203 EST19-02 9/17/1997 0-10 cm East Nav. Channel - Lafarge	EST204 EST19-03 10/23/1997 0-10 cm East Nav. Channel - Lafarge	EST215 EST20-05 10/14/1997 0-10 cm East Nav. Channel - Lafarge	EST216 EST20-06 9/17/1997 0-10 cm East Nav. Channel - Lafarge	WQABRAN L10535-1 3/6/1997 0-2 cm East Nav. Channel - Lafarge
Aroclor-1242	--	--	--	--	--	--	--	--	--	--	--	--	--	26 U
Aroclor-1248	--	--	--	--	--	--	--	--	--	--	--	--	--	26 U
Aroclor-1254	--	--	--	--	--	--	--	--	--	--	--	--	--	85
Aroclor-1260	--	--	--	--	--	--	--	--	--	--	--	--	--	51
PCBs (total calc'd)	--	--	130	1000	83 J	100	51 J	4 J	14 J	83 J	120	110	300	136
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	310 U	330 U	280 U	190 U	180 U	270 U	260 U	240 U	280 U	--
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	23000 J	30000 J	16000 J	5800 J	5500 J	26000 J	34000 J	29000 J	85000 J	--
PCB-105	--	--	--	--	2900	3000	620	280 J	440 J	2500	3900	3500	230 U	--
PCB-110	--	--	--	--	5500	6700	4000	2000	1700	6500	9200	7700	29000	--
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	5100	6200	3800	1300 U	1700 U	6900	9400	8100	25000	--
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	280 U	290 U	250 U	170 U	160 U	240 U	240 U	220 U	260 U	--
PCB-128	--	--	--	--	4000 J	4900 J	2700 J	2900 J	1300 J	3700 U	4900 J	4300 J	12000 J	--
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	5100	7100	3100	1900	1600	5900	8000	6900	25000	--
PCB-153	--	--	--	--	18000 J	22000 J	11000 J	3200 J	3600 J	19000 J	26000 J	22000 J	57000 J	--
PCB-156	--	--	--	--	690	640	220 U	150 U	140 U	440 J	840	940	2900	--
PCB-157	--	--	--	--	220 U	230 U	200 U	130 U	130 U	180 U	190 U	410	2100	--
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	710 U	730 U	630 U	410 U	400 U	550 U	580 U	540 U	630 U	--
PCB-170	--	--	--	--	5300	5700	1100	1000	820	3200	5200	4900	10000	--
PCB-180	--	--	--	--	8300	7800	3100	2200	1400	5000	7600	6100	13000	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	320 U	330 U	290 U	190 U	180 U	250 U	270 U	240 U	290 U	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0030 CH09-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1033 CH10-01 10/16/1997 0-10 cm Nav. Channel - Lafarge	CH1034 CH10-02 10/17/1997 0-10 cm Nav. Channel - Lafarge	EIT085 EIT12-01 9/19/1997 0-10 cm East Nav. Channel - Lafarge	EIT086 EIT12-02 11/12/1997 0-10 cm East Nav. Channel - Lafarge	EST203 EST19-02 9/17/1997 0-10 cm East Nav. Channel - Lafarge	EST204 EST19-03 10/23/1997 0-10 cm East Nav. Channel - Lafarge	EST215 EST20-05 10/14/1997 0-10 cm East Nav. Channel - Lafarge	EST216 EST20-06 9/17/1997 0-10 cm East Nav. Channel - Lafarge	WQABRAN L10535-1 3/6/1997 0-2 cm East Nav. Channel - Lafarge
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

a The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Bold Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	WQABRAN L10601-1 3/12/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10623-1 3/27/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10785-1 4/3/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10786-1 4/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10787-1 4/17/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10788-1 4/24/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10930-1 5/1/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10931-1 5/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11124-1 5/15/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11178-1 5/20/1997 0-2 cm East Nav. Channel - Lafarge
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand (total calc'd)	--	--	--	--	10.3	9.3	8	10.9	9.4	11.4	7.4	8.2	6.2	11.3
Silt (total calc'd)	--	--	--	--	64.6	64.1	67.6	66.8	67.8	60.7	62	68.6	68.9	58.7
Clay (total calc'd)	--	--	--	--	26	25.6	24.5	22	23.6	28.9	30.4	23	23.7	29.2
Fines (percent silt+clay)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	2.72	2.54	2.56	2.53	2.53	2.54	2.57	2.65	2.54	2.77
Total solids	--	--	--	--	50.8	48.1	50.4	48.7	49	50.4	50.2	49	50	45.9
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	92.5	39.5	83.3	34.9	40.8	31.7	85.7	49	140	129
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	27800	26000 J	23000 J	26000 J	24000 J	23000 J	25000 J	24000 J	24000 J	25000 J
Antimony	--	--	--	--	--	--	3.2 UJ	--	--	--	--	--	--	--
Arsenic	57	93	--	--	15	18	15	15	18	14	18	20	22	22
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	0.35	0.42	0.38	0.39	0.37	0.36	0.36	0.57	0.56	0.59
Cadmium	5.1	6.7	--	--	0.3 J	0.5	0.36	0.43	0.35	0.42	0.42	0.35	0.36	0.39
Calcium	--	--	--	--	9070	8610	8020	8830	21600	7780	8450	--	--	--
Chromium	260	270	--	--	34.1	34.1	30.4	32.9	30.8	40.7	32.9	32.9	33	35.3
Cobalt	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	390	390	--	--	61	62.8	58.5	60.2	59.6	75.8	65.5	62.2	63.6	78
Iron	--	--	--	--	35000 J	34000 J	31000 J	34000 J	31000 J	29000 J	32000 J	32000 J	33000 J	34000 J
Lead	450	530	--	--	29.9	31.8	26.6	29.2	25.1	26.8	30.9	31.6	30.6	34
Magnesium	--	--	--	--	9210	9270	8510	9200	8820	8190	8920	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	0.22	0.18	0.17	0.15	0.18	0.28	0.18	0.24	0.18	0.26
Molybdenum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	30.3	30.4	28	30.4	28.6	28.2	30.5	32.4	29.2	33.3
Potassium	--	--	--	--	3210	3220	2960	3240	3060	2860	3090	--	--	--
Selenium	--	--	--	--	4.9 U	5.2 U	5.2 U	5.3 U	5.1 U	5 U	5.2 U	5.1 U	5.2 U	5.4 U
Silver	6.1	6.1	--	--	0.39 U	0.42 U	0.42 U	0.43 U	0.41 U	0.77	0.42 U	0.47	0.46	0.5
Sodium	--	--	--	--	10800	11900	11100	11600	11700	10200	11200	--	--	--
Thallium	--	--	--	--	20 U	21 U	20 U	21 U	20 U	20 U	20 U	20 U	20 U	22 U
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	410	960	--	--	107	105	104	115	100	99.6	112	111	112	126
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	3.1 U	--	3.3 U	--	3.5 U	--	3.3 U	3.3 U	--	3.4 U
Acenaphthylene	66	66	--	--	1.1 U	--	1.3 U	--	1.3 U	--	1.2 U	1.2 U	--	1.3 U
Acenaphthene	16	57	--	--	2	--	2.02	--	3.19	--	3.43	1.2	--	2.71

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	WQABRAN L10601-1 3/12/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10623-1 3/27/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10785-1 4/3/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10786-1 4/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10787-1 4/17/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10788-1 4/24/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10930-1 5/1/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10931-1 5/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11124-1 5/15/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11178-1 5/20/1997 0-2 cm East Nav. Channel - Lafarge
Anthracene	220	1200	--	--	5.1 J	--	4.7 J	--	4.7 J	--	4.7 J	3 J	--	3.5 J
Benzo(a)anthracene	110	270	--	--	11 J	--	11 J	--	11 J	--	12 J	9.4 J	--	12 J
Benzo(a)pyrene	99	210	--	--	9.6 J	--	9.4 J	--	8.3 J	--	8.2 J	7.2 J	--	7.9 J
Benzo(g,h,i)perylene	31	78	--	--	5.5 J	--	4.7 J	--	13 J	--	6.2 J	5.7 J	--	6.1 J
Chrysene	110	460	--	--	16.1	--	16.7	--	17.2	--	17.3	14.8	--	15.7
Dibenzo(a,h)anthracene	12	33	--	--	3.1 U	--	3.3 U	--	3.5 U	--	3.3 U	3.3 U	--	3.4 U
Fluoranthene	160	1200	--	--	28 J	--	33 J	--	35 J	--	43 J	27 J	--	36 J
Fluorene	23	79	--	--	2.7 J	--	2.1 J	--	4.3 J	--	5.1 J	1.9 J	--	3.4 J
Indeno(1,2,3-cd)pyrene	34	88	--	--	5.9 J	--	5.9 J	--	7.5 J	--	6.6 J	6 J	--	6.5 J
Naphthalene	99	170	--	--	3.1 UJ	--	3.3 UJ	--	3.5 UJ	--	3.3 UJ	3.3 UJ	--	3.4 UJ
Phenanthrene	100	480	--	--	14 J	--	11 J	--	18 J	--	25 J	9.4 J	--	17 J
Pyrene	1000	1400	--	--	26 J	--	23 J	--	26 J	--	32 J	23 J	--	26 J
Benzofluoranthenes (total-calc'd)	230	450	--	--	24.3	--	23 J	--	28 J	--	26 J	24 J	--	27 J
Total LPAH (calc'd)	370	780	--	--	24 J	--	20 J	--	30 J	--	39 J	15 J	--	27 J
Total HPAH (calc'd)	960	5300	--	--	130 J	--	130 J	--	150 J	--	150 J	120 J	--	140 J
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	85 U	--	85 U	--	88 U	--	86 U	88 U	--	94 U
Acenaphthylene	--	--	1300	1300	31 U	--	32 U	--	33 U	--	32 U	33 U	--	35 U
Acenaphthene	--	--	500	730	54.5	--	51.6	--	80.6	--	88.2	31	--	75.2
Anthracene	--	--	960	4400	140 J	--	120 J	--	120 J	--	120 J	79 J	--	97 J
Benzo(a)anthracene	--	--	1300	1600	300 J	--	290 J	--	280 J	--	320 J	250 J	--	330 J
Benzo(a)pyrene	--	--	1600	3000	260 J	--	240 J	--	210 J	--	210 J	190 J	--	220 J
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	470	--	440	--	514	--	498	449	--	519
Benzo(k)fluoranthene	--	--	--	--	191	--	160 J	--	190 J	--	180 J	180 J	--	240 J
Benzo(g,h,i)perylene	--	--	670	720	150 J	--	120 J	--	320 J	--	160 J	150 J	--	170 J
Chrysene	--	--	1400	2800	437	--	427	--	435	--	444	392	--	436
Dibenzo(a,h)anthracene	--	--	230	540	85 U	--	85 U	--	88 U	--	86 U	88 U	--	94 U
Fluoranthene	--	--	1700	2500	750 J	--	850 J	--	880 J	--	1100 J	710 J	--	1000 J
Fluorene	--	--	540	1000	74 J	--	55 J	--	110 J	--	130 J	51 J	--	95 J
Indeno(1,2,3-cd)pyrene	--	--	600	690	160 J	--	150 J	--	190 J	--	170 J	160 J	--	180 J
Naphthalene	--	--	2100	2400	85 UJ	--	85 UJ	--	88 UJ	--	86 UJ	88 UJ	--	94 UJ
Phenanthrene	--	--	1500	5400	370 J	--	280 J	--	450 J	--	650 J	250 J	--	480 J
Pyrene	--	--	2600	3300	710 J	--	600 J	--	670 J	--	820 J	610 J	--	720 J
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	661	--	600 J	--	700 J	--	680 J	630 J	--	760 J
Total LPAH (calc'd)	--	--	5200	13000	640 J	--	510 J	--	760 J	--	990 J	410 J	--	750 J
Total HPAH (calc'd)	--	--	12000	17000	3430 J	--	3280 J	--	3690 J	--	3900 J	3090 J	--	3800 J
Total PAH (calc'd)	--	--	--	--	4070 J	--	3780 J	--	4450 J	--	4900 J	3500 J	--	4600 J
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	0.051 UJ	--	0.055 UJ	--	0.055 UJ	--	0.054 UJ	0.053 UJ	--	0.054 UJ
1,4-Dichlorobenzene	3.1	9	--	--	0.11 J	--	0.086 J	--	0.13 J	--	0.086 J	0.14 J	--	0.1 J
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.051 UJ	--	0.055 UJ	--	0.055 UJ	--	0.054 UJ	0.053 UJ	--	0.054 UJ
Hexachlorobenzene	0.38	2.3	--	--	0.051 UJ	--	0.055 UJ	--	0.055 UJ	--	0.054 UJ	0.053 UJ	--	0.054 UJ
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	1.4 UJ	--	1.4 UJ	--	1.4 UJ	--	1.4 UJ	1.4 UJ	--	1.5 UJ
1,3-Dichlorobenzene	--	--	--	--	1.4 UJ	--	1.4 UJ	--	1.4 UJ	--	1.4 UJ	1.4 UJ	--	1.5 UJ
1,4-Dichlorobenzene	--	--	110	120	3.1 J	--	2.2 J	--	3.2 J	--	2.2 J	3.7 J	--	2.8 J

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	WQABRAN L10601-1 3/12/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10623-1 3/27/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10785-1 4/3/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10786-1 4/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10787-1 4/17/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10788-1 4/24/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10930-1 5/1/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10931-1 5/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11124-1 5/15/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11178-1 5/20/1997 0-2 cm East Nav. Channel - Lafarge
1,2,4-Trichlorobenzene	--	--	31	51	1.4 UJ	--	1.4 UJ	--	1.4 UJ	--	1.4 UJ	1.4 UJ	--	1.5 UJ
Hexachlorobenzene	--	--	22	70	1.4 UJ	--	1.4 UJ	--	1.4 UJ	--	1.4 UJ	1.4 UJ	--	1.5 UJ
Nitrobenzene	--	--	--	--	53 UJ	--	54 U	--	55 U	--	54 U	55 U	--	59 U
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	27.7	--	24	--	18.6	--	23.1	21.4	--	26.8
Butyl benzyl phthalate	4.9	64	--	--	1.7	--	1.7	--	1.5	--	1.3	1.3	--	1.4
Diethyl phthalate	61	110	--	--	1.9 U	--	2.1 U	--	2.2 U	--	2.1 U	2.1 U	--	2.1 U
Dimethyl phthalate	53	53	--	--	0.81 U	--	0.86 U	--	0.87 U	--	0.86 U	0.83 U	--	0.87 U
Di-n-butyl phthalate	220	1700	--	--	1.9 U	--	2.1 U	--	2.2 U	--	2.1 U	2.1 U	--	2.1 U
Di-n-octyl phthalate	58	4500	--	--	1.1 UJ	--	1.3 U	--	1.3 U	--	1.2 U	1.2 U	--	1.3 U
Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	754	--	610	--	471	--	594	567	--	741
Butyl benzyl phthalate	--	--	63	900	47	--	44	--	37	--	34	35	--	39
Diethyl phthalate	--	--	200	1200	53 U	--	54 U	--	55 U	--	54 U	55 U	--	59 U
Dimethyl phthalate	--	--	71	160	22 U	--	22 U	--	22 U	--	22 U	22 U	--	24 U
Di-n-butyl phthalate	--	--	1400	5100	53 U	--	54 U	--	55 U	--	54 U	55 U	--	59 U
Di-n-octyl phthalate	--	--	6200	--	31 UJ	--	32 U	--	33 U	--	32 U	33 U	--	35 U
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	100 UJ	--	110 UJ	--	110 UJ	--	110 UJ	110 UJ	--	120 UJ
4-Chloro-3-methylphenol	--	--	--	--	100 U	--	110 U	--	110 UJ	--	110 UJ	110 UJ	--	120 UJ
2,4-Dichlorophenol	--	--	--	--	53 U	--	54 U	--	55 UJ	--	54 UJ	55 UJ	--	59 UJ
2,4-Dimethylphenol	29	29	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	--	--	--	--	100 UJ	--	110 UJ	--	110 UJ	--	110 UJ	110 UJ	--	120 UJ
2-Methylphenol	63	63	--	--	53 UJ	--	54 UJ	--	55 UJ	--	54 UJ	55 UJ	--	59 UJ
4-Methylphenol	670	670	--	--	53 UJ	--	54 UJ	--	55 UJ	--	54 UJ	55 UJ	--	59 UJ
2,4,5-Trichlorophenol	--	--	--	--	220 U	--	220 U	--	220 UJ	--	220 UJ	220 UJ	--	240 UJ
2,4,6-Trichlorophenol	--	--	--	--	220 U	--	220 U	--	220 UJ	--	220 UJ	220 UJ	--	240 UJ
2-Nitrophenol	--	--	--	--	53 U	--	54 U	--	55 UJ	--	54 UJ	55 UJ	--	59 UJ
4-Nitrophenol	--	--	--	--	100 U	--	110 U	--	110 UJ	--	110 UJ	110 UJ	--	120 UJ
Pentachlorophenol	360	690	--	--	53 UJ	--	54 UJ	--	55 UJ	--	54 UJ	55 UJ	--	59 UJ
Phenol	420	1200	--	--	220 U	--	220 UJ	--	220 UJ	--	220 UJ	220 UJ	--	240 UJ
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	2	--	2.1 U	--	2.2 U	--	2.1 U	2.1 U	--	2.5
Hexachlorobutadiene	3.9	6.2	--	--	1.9 UJ	--	2.1 U	--	2.2 U	--	2.1 U	2.1 U	--	2.1 U
N-Nitrosodiphenylamine	11	11	--	--	1.9 U	--	2.1 U	--	2.2 U	--	2.1 U	2.1 U	--	2.1 U
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	220 U	--	220 U	--	220 U	--	220 U	220 U	--	240 U
3-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	--	--	--	220 UJ	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	57	73	--	--	53 U	--	54 UJ	--	55 UJ	--	54 UJ	55 UJ	--	**59 UJ**
Benzoic acid	650	650	--	--	220 U	--	220	--	220 UJ	--	220 UJ	220 UJ	--	240 UJ
Carbazole	--	--	--	--	53 U	--	54 U	--	55 U	--	54 U	55 U	--	59 U
Dibenzofuran	--	--	540	700	55	--	54 U	--	55 U	--	54 U	55 U	--	68
Hexachlorobutadiene	--	--	11	120	53 UJ	--	54 U	--	55 U	--	54 U	55 U	--	59 U

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	WQABRAN L10601-1 3/12/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10623-1 3/27/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10785-1 4/3/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10786-1 4/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10787-1 4/17/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10788-1 4/24/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10930-1 5/1/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10931-1 5/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11124-1 5/15/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11178-1 5/20/1997 0-2 cm East Nav. Channel - Lafarge
Hexachloroethane	--	--	--	--	53 UJ	--	54 UJ	--	55 UJ	--	54 UJ	55 UJ	--	59 UJ
Hexachlorocyclopentadiene	--	--	--	--	53 UJ	--	54 UJ	--	55 UJ	--	54 UJ	55 UJ	--	59 UJ
Isophorone	--	--	--	--	53 U	--	54 UJ	--	55 UJ	--	54 UJ	55 UJ	--	59 UJ
N-Nitroso-di-n-propylamine	--	--	--	--	53 U	--	54 UJ	--	55 UJ	--	54 UJ	55 UJ	--	59 UJ
N-Nitrosodimethylamine	--	--	--	--	220 UJ	--	220 UJ	--	220 UJ	--	220 UJ	220 UJ	--	240 UJ
N-Nitrosodiphenylamine	--	--	28	40	53 U	--	54 U	--	55 U	--	54 U	55 U	--	59 U
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	22 U	--	22 U	--	22 U	--	22 U	22 U	--	24 U
4-Chlorophenyl phenyl ether	--	--	--	--	31 U	--	32 U	--	33 U	--	32 U	33 U	--	35 U
bis(2-chloroethyl)ether	--	--	--	--	31 UJ	--	32 UJ	--	33 UJ	--	32 UJ	33 UJ	--	35 UJ
bis(2-chloroisopropyl)ether	--	--	--	--	100 UJ	--	110 UJ	--	110 UJ	--	110 UJ	110 UJ	--	120 UJ
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aldrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toxaphene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	3.8	--	4.7	--	5.7	--	4.8	2.4	--	6.9
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	26 U	--	26 U	--	27 U	--	26 U	27 U	--	28 U
Aroclor-1221	--	--	--	--	26 U	--	26 U	--	27 U	--	26 U	27 U	--	28 U
Aroclor-1232	--	--	--	--	26 U	--	26 U	--	27 U	--	26 U	27 U	--	28 U

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	WQABRAN L10601-1 3/12/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10623-1 3/27/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10785-1 4/3/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10786-1 4/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10787-1 4/17/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10788-1 4/24/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10930-1 5/1/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10931-1 5/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11124-1 5/15/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11178-1 5/20/1997 0-2 cm East Nav. Channel - Lafarge
Aroclor-1242	--	--	--	--	26 U	--	26 U	--	27 U	--	26 U	27 U	--	28 U
Aroclor-1248	--	--	--	--	26 U	--	26 U	--	27 U	--	26 U	27 U	--	28 U
Aroclor-1254	--	--	--	--	62	--	64	--	76	--	66	63	--	100
Aroclor-1260	--	--	--	--	41	--	56	--	67	--	57	27 U	--	91
PCBs (total calc'd)	--	--	130	1000	103	--	120	--	143	--	123	63	--	190
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-156	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-157	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	WQABRAN L10601-1 3/12/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10623-1 3/27/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10785-1 4/3/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10786-1 4/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10787-1 4/17/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10788-1 4/24/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10930-1 5/1/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L10931-1 5/8/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11124-1 5/15/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11178-1 5/20/1997 0-2 cm East Nav. Channel - Lafarge
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

a The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Bold Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	WQABRAN L11188-1 5/28/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11248-1 6/3/1997 0-2 cm East Nav. Channel - Lafarge	B3b LDW-B3b-S 8/17/2004 0-10 cm East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-0-1 2/23/2006 0-1 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-1-2 2/23/2006 1-2 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-2-4 2/23/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-6-8.2 2/23/2006 6-8.6 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-0-1 2/16/2006 0-1 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-1-2 2/16/2006 1-2 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-2-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	--	--	23	19	20.2	28.5	--	30.9	2.1	0.4
Sand (total calc'd)	--	--	--	--	9.3	7.2	36.2	19.1	24.1	29.5	--	51.5	77	68.3
Silt (total calc'd)	--	--	--	--	66.7	68	24.19	43.9	36.5	25.3	--	12	16.2	27.3
Clay (total calc'd)	--	--	--	--	24	24.7	10.36	17.9	19.2	16.6	--	5.6	4.6	4.1
Fines (percent silt+clay)	--	--	--	--	--	--	34.55	61.8	55.7	41.9	--	17.6	20.8	31.4
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	2.57	2.58	1.82	3.06	3.25	6.35	3.24	1.77	0.963	1.63
Total solids	--	--	--	--	50.6	48.5	66.4	47	48.1	38.5	55.5	72.7	77.9	76.5
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	178	169	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	23000 J	22000 J	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	--	122 J	20 J	40 J	60 J	13 J	6 UJ	6 UJ	6 UJ
Arsenic	57	93	--	--	20	19	***725 J***	***110***	***170***	**60**	**76**	11	6 U	6 U
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	0.55	0.52	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	0.34	0.31 U	1.67	4.5	***7.6***	***15***	***20.4***	0.3	0.2 U	0.2 U
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	30.2	29.7	42.5	47	47	***386***	50.3	22	14.3	10.5
Cobalt	--	--	--	--	--	--	31.5	12.6	15.6	20	11.9	6	5.1	3.9
Copper	390	390	--	--	61.1	57.9	***495***	187	224	219	235	37.9	18.5	12.7
Iron	--	--	--	--	31000 J	30000 J	--	--	--	--	--	--	--	--
Lead	450	530	--	--	31.4	29.1	437 J	173	286	***1740***	**470**	22	7	2 U
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	0.19	0.18	0.059	**0.5**	***0.6***	***1.29***	***0.75***	0.11	0.05 U	0.05 U
Molybdenum	--	--	--	--	--	--	62	11	16	9	7.7	0.9	0.6 U	0.6 U
Nickel	--	--	--	--	29.1	28.2	22.9	36	38	226	69	14	10	7
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	5.1 U	5.2 U	1.4	10 U	10 U	30 U	9 U	6 U	6 U	6 U
Silver	6.1	6.1	--	--	0.42	0.43	0.891	1	1.4	2	2.2	0.4 U	0.4 U	0.4 U
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	20 U	21 U	0.236	10 U	10 U	30 U	9 U	6 U	6 U	6 U
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	47.8	83	84.3	223	112	49.9	44.7	38.7
Zinc	410	960	--	--	105	115	***2080***	***1260***	***2050***	***3840***	***4550***	79	34.3	20.3
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	--	--	120	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	360	--	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	320	--	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	3.8 J	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	--	3.4 U	1.9	2.3	3 U	--	19	3.3 U	2.1 U	1.2 U
Acenaphthylene	66	66	--	--	--	1.3 U	4.4	2.2	2.8 J	--	3	3.3 U	2.1 U	1.2 U
Acenaphthene	16	57	--	--	--	1.5	1.9	2.1	12	--	**37**	2.7 J	2.1 U	1.2 U

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	WQABRAN L11188-1 5/28/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11248-1 6/3/1997 0-2 cm East Nav. Channel - Lafarge	B3b LDW-B3b-S 8/17/2004 0-10 cm East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-0-1 2/23/2006 0-1 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-1-2 2/23/2006 1-2 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-2-4 2/23/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-6-8.2 2/23/2006 6-8.6 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-0-1 2/16/2006 0-1 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-1-2 2/16/2006 1-2 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-2-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge
Anthracene	220	1200	--	--	--	5 J	60	17	49	--	52	8.5	2.1 U	1.2 U
Benzo(a)anthracene	110	270	--	--	--	14 J	**150**	36	46 J	--	65	28	1.7 J	1.2 U
Benzo(a)pyrene	99	210	--	--	--	9.7 J	77	42	43	--	49	19	2.8	1.2 U
Benzo(g,h,i)perylene	31	78	--	--	--	5.8 J	**33**	8.2	15	--	11	4.6	2.1 U	1.2 U
Chrysene	110	460	--	--	--	20.2	**300**	59	74 J	--	80	42	1.8 J	1.2 U
Dibenzo(a,h)anthracene	12	33	--	--	--	3.4 U	**13**	2.6	4.3	--	8	3.3 U	2.1 U	1.2 U
Fluoranthene	160	1200	--	--	--	37 J	**200**	65	**170**	--	**220**	150	3.7	1.2 U
Fluorene	23	79	--	--	--	2.7 J	8.2	3.6	10	--	**43**	2 J	2.1 U	1.2 U
Indeno(1,2,3-cd)pyrene	34	88	--	--	--	7.8 J	**36**	10	18 J	--	9.9	5.3	2.1 U	1.2 U
Naphthalene	99	170	--	--	--	3.4 UJ	2	3.9	4.6	--	37	2 J	2.1 U	1.2 U
Phenanthrene	100	480	--	--	--	16 J	42	18	37	--	**130**	16	2.1 U	1.2 U
Pyrene	1000	1400	--	--	--	30 J	130	78	110 J	--	230	96	7.9	1.2 U
Benzofluoranthenes (total-calc'd)	230	450	--	--	--	30 J	160	110	98	--	120	55	7.3	1.2 U
Total LPAH (calc'd)	370	780	--	--	--	25 J	120	47	120 J	--	300	32 J	2.1 U	1.2 U
Total HPAH (calc'd)	960	5300	--	--	--	150 J	**1100**	420	580 J	--	790	400	25 J	1.2 U
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	--	--	14	62 U	99 U	2600	400	59 U	20 U	20 U
2-Methylnaphthalene	--	--	670	1400	--	89 U	34	69	99 U	***4500***	610	59 U	20 U	20 U
Acenaphthylene	--	--	1300	1300	--	33 U	80	67	90 J	93 J	98	59 U	20 U	20 U
Acenaphthene	--	--	500	730	--	39	35	65	380	***4600***	1200	48 J	20 U	20 U
Anthracene	--	--	960	4400	--	130 J	1100	520	1600	***1900***	1700	150	20 U	20 U
Benzo(a)anthracene	--	--	1300	1600	--	350 J	2800	1100	1500 J	***1500***	2100	490	16 J	20 U
Benzo(a)pyrene	--	--	1600	3000	--	250 J	1400	1300	1400	940	1600	340	27	20 U
Benzo(e)pyrene	--	--	--	--	--	--	1300	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	538	1700	2200	1800	1700	2500	500	40	20 U
Benzo(k)fluoranthene	--	--	--	--	--	240 J	1200	1300	1400	990	1300	470	30	20 U
Benzo(g,h,i)perylene	--	--	670	720	--	150 J	600	250	490	140 J	350	82	20 U	20 U
Chrysene	--	--	1400	2800	--	520	5400	1800	2400 J	***1800***	2600	740	17 J	20 U
Dibenzo(a,h)anthracene	--	--	230	540	--	89 U	240	80	140	140 U	260	59 U	20 U	20 U
Fluoranthene	--	--	1700	2500	--	960 J	3600	2000	5600	***7400***	7100	2600	36	20 U
Fluorene	--	--	540	1000	--	69 J	150	110	340	***4300***	1400	36 J	20 U	20 U
Indeno(1,2,3-cd)pyrene	--	--	600	690	--	200 J	660	320	570 J	180	320	94	20 U	20 U
Naphthalene	--	--	2100	2400	--	89 UJ	36	120	150	***3400***	1200	35 J	20 U	20 U
Phenanthrene	--	--	1500	5400	--	410 J	760	560	1200	***13000***	4200	290	20 U	20 U
Pyrene	--	--	2600	3300	--	770 J	2300	2400	3700 J	***5700***	7600	1700	76	20 U
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	--	780 J	2900	3500	3200	2700	3800	970	70	20 U
Total LPAH (calc'd)	--	--	5200	13000	--	650 J	2200	1440	3800 J	***27000 J***	9800	560 J	20 U	20 U
Total HPAH (calc'd)	--	--	12000	17000	--	3980 J	19900	12800	19000 J	***20400 J***	25700	7000	242 J	20 U
Total PAH (calc'd)	--	--	--	--	--	4630 J	22100	14200	22800 J	48000 J	35500	7600 J	242 J	20 U
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	--	0.054 UJ	***2.7 U***	0.2 U	0.18 U		0.2 U	0.33 U	0.61 U	0.36 U
1,4-Dichlorobenzene	3.1	9	--	--	--	0.16 J	2.7 U	0.52	0.13 J		0.12 J	0.33 U	0.61 U	0.36 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	--	0.054 UJ	***2.7 U***	0.3 J	0.52 J		0.2 U	0.33 U	0.61 U	0.36 U
Hexachlorobenzene	0.38	2.3	--	--	--	0.054 UJ	0.055 U	0.2 U	0.18 UJ		0.2 U	0.33 U	**0.61 U**	0.36 U
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	--	1.4 UJ	50 U	6.2 U	6 U	42 U	6.6 U	5.9 U	5.9 U	5.9 U
1,3-Dichlorobenzene	--	--	--	--	--	1.4 UJ	50 U	62 U	99 U	140 U	6.6 U	59 U	20 U	20 U
1,4-Dichlorobenzene	--	--	110	120	--	4 J	50 U	16	4.2 J	42 U	4 J	5.9 U	5.9 U	5.9 U

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	WQABRAN L11188-1 5/28/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11248-1 6/3/1997 0-2 cm East Nav. Channel - Lafarge	B3b LDW-B3b-S 8/17/2004 0-10 cm East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-0-1 2/23/2006 0-1 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-1-2 2/23/2006 1-2 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-2-4 2/23/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-6-8.2 2/23/2006 6-8.6 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-0-1 2/16/2006 0-1 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-1-2 2/16/2006 1-2 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-2-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge
1,2,4-Trichlorobenzene	--	--	31	51	--	1.4 UJ	50 U	9.3 J	17 J	***110 J***	6.6 U	5.9 U	5.9 U	5.9 U
Hexachlorobenzene	--	--	22	70	--	1.4 UJ	1 U	6.2 U	6 UJ	**42 U**	6.6 U	5.9 U	5.9 U	5.9 U
Nitrobenzene	--	--	--	--	--	56 U	50 U	62 U	99 U	140 U	66 U	59 U	20 U	20 U
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	--	23	14 J	19	14 J	--	31	4.9	1.9 J	1.2 U
Butyl benzyl phthalate	4.9	64	--	--	--	1.8	1.5 J	1.3	1.4	--	0.46 J	0.33 U	0.61 U	0.36 U
Diethyl phthalate	61	110	--	--	--	2.2 U	2.7 U	2 U	3 U	--	2 U	3.3 U	2.1 U	1.2 U
Dimethyl phthalate	53	53	--	--	--	0.89 U	2.7 U	2 U	3 U	--	2.1 J	3.3 U	2.1 U	1.2 U
Di-n-butyl phthalate	220	1700	--	--	--	2.2 U	2.7 U	2 U	3 U	--	2 U	3.3 U	6.4	0.86 J
Di-n-octyl phthalate	58	4500	--	--	--	1.3 U	5.5 U	2 U	3 U	--	2 U	3.3 U	2.1 U	1.2 U
Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	--	594	260 J	570	440 J	***2300***	1000	87	18 J	20 U
Butyl benzyl phthalate	--	--	63	900	--	47	27 J	40	44	42 U	15 J	5.9 U	5.9 U	5.9 U
Diethyl phthalate	--	--	200	1200	--	56 U	50 U	62 U	99 U	140 U	66 U	59 U	20 U	20 U
Dimethyl phthalate	--	--	71	160	--	23 U	50 U	62 U	99 U	**140 U**	69 J	59 U	20 U	20 U
Di-n-butyl phthalate	--	--	1400	5100	--	56 U	50 U	62 U	99 U	140 U	66 U	59 U	62	14 J
Di-n-octyl phthalate	--	--	6200	--	--	33 U	100 U	62 U	99 U	140 U	66 U	59 U	20 U	20 U
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	--	110 UJ	50 U	62 U	99 U	140 U	66 U	59 U	20 U	20 U
4-Chloro-3-methylphenol	--	--	--	--	--	110 UJ	50 U	310 U	500 U	700 U	330 U	290 U	99 U	98 U
2,4-Dichlorophenol	--	--	--	--	--	56 UJ	50 U	310 U	500 U	700 U	330 U	290 U	99 U	98 U
2,4-Dimethylphenol	29	29	--	--	--	--	***250 UJ***	6.2 UJ	14 J	***42 UJ***	24 J	5.9 U	5.9 U	5.9 U
2,4-Dinitrophenol	--	--	--	--	--	110 UJ	1000 U	620 UJ	990 UJ	1400 UJ	660 U	590 UJ	200 UJ	200 UJ
2-Methylphenol	63	63	--	--	--	56 UJ	50 U	5 J	16	42 U	6.6	5.9 U	5.9 U	5.9 U
4-Methylphenol	670	670	--	--	--	56 UJ	50 U	62 U	99 U	140 U	66 U	59 U	20 U	20 U
2,4,5-Trichlorophenol	--	--	--	--	--	230 UJ	50 U	310 U	500 U	700 U	330 U	290 U	99 U	98 U
2,4,6-Trichlorophenol	--	--	--	--	--	230 UJ	50 U	310 U	500 U	700 U	330 U	290 U	99 U	98 U
2-Nitrophenol	--	--	--	--	--	56 UJ	50 U	310 U	500 U	700 U	330 U	290 U	99 U	98 U
4-Nitrophenol	--	--	--	--	--	110 UJ	500 U	310 U	500 UJ	700 U	330 U	290 UJ	99 UJ	98 UJ
Pentachlorophenol	360	690	--	--	--	56 UJ	92 J	64	120 J	150 J	120	29 U	30 U	29 U
Phenol	420	1200	--	--	--	230 UJ	52 U	62 U	69 J	140 U	66 U	59 U	20 U	20 U
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	--	2.2 U	2	2.5	6.5	--	***22***	3.3 U	2.1 U	1.2 U
Hexachlorobutadiene	3.9	6.2	--	--	--	2.2 U	2.7 U	0.2 U	0.18 U	--	0.2 U	0.33 U	0.61 U	0.36 U
N-Nitrosodiphenylamine	11	11	--	--	--	2.2 U	2.7 U	5.9 UJ	***19 UJ***	--	***80 U***	1.8 U	0.61 U	0.36 U
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	--	230 U	100 U	310 U	500 U	700 U	330 U	290 U	99 U	98 U
3-Nitroaniline	--	--	--	--	--	--	100 U	310 U	500 U	700 U	330 U	290 U	99 U	98 U
4-Nitroaniline	--	--	--	--	--	--	100 U	310 U	500 U	700 U	330 U	290 U	99 U	98 U
3,3'-Dichlorobenzidine	--	--	--	--	--	--	500 U	310 UJ	500 UJ	700 UJ	330 U	290 UJ	99 UJ	98 UJ
4-Chloroaniline	--	--	--	--	--	--	50 U	310 UJ	500 UJ	700 UJ	330 U	290 UJ	99 UJ	98 UJ
Aniline	--	--	--	--	--	--	100 U	62 UJ	99 UJ	140 UJ	66 U	59 UJ	20 UJ	20 UJ
Benzyl alcohol	57	73	--	--	--	56 UJ	50 U	***140***	38	***210 U***	33 U	29 U	30 U	29 U
Benzoic acid	650	650	--	--	--	230 UJ	***1000 U***	320	320	***3000 J***	590 U	78 J	54 J	59 U
Carbazole	--	--	--	--	--	56 U	54	--	--	--	--	--	--	--
Dibenzofuran	--	--	540	700	--	56 U	36	77	210	1700	710	59 U	20 U	20 U
Hexachlorobutadiene	--	--	11	120	--	56 U	50 U	6.2 U	6 U	***42 UJ***	6.6 U	5.9 U	5.9 U	5.9 U

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Hexachloroethane	--	--	--	--	--	56 UJ	50 U	62 U	99 U	140 U	66 U	59 U	20 U	20 U
Hexachlorocyclopentadiene	--	--	--	--	--	56 UJ	250 U	310 U	500 UJ	700 U	330 U	290 UJ	99 UJ	98 UJ
Isophorone	--	--	--	--	--	56 UJ	50 U	62 U	99 U	140 U	66 U	59 U	20 U	20 U
N-Nitroso-di-n-propylamine	--	--	--	--	--	56 UJ	50 U	31 U	30 U	210 U	33 U	29 U	30 U	29 U
N-Nitrosodimethylamine	--	--	--	--	--	230 UJ	250 U	31 U	30 U	210 U	33 U	29 U	30 U	29 U
N-Nitrosodiphenylamine	--	--	28	40	--	56 U	50 U	180 UJ	620 UJ	7300 U	2600 U	32 U	5.9 U	5.9 U
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	--	23 U	50 U	62 U	99 U	140 U	66 U	59 U	20 U	20 U
4-Chlorophenyl phenyl ether	--	--	--	--	--	33 U	50 U	62 U	99 U	140 U	66 U	59 U	20 U	20 U
bis(2-chloroethyl)ether	--	--	--	--	--	33 UJ	50 U	62 U	99 U	140 U	66 U	59 U	20 U	20 U
bis(2-chloroisopropyl)ether	--	--	--	--	--	110 UJ	50 U	62 U	99 U	140 U	66 U	59 U	20 U	20 U
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	--	--	2.3 U	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	8.5	--	--	--	--	--	--	--
4,4'-DDD	--	--	--	--	--	--	1.9	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	1.2 U	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	11	--	--	--	--	--	--	--
Aldrin	--	--	--	--	--	--	1.6	--	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	--	6.2 U	--	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
Endrin	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	--	1.6 U	--	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
Toxaphene	--	--	--	--	--	--	130 U	--	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	1.6	--	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	21	--	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	6.2 U	--	--	--	--	--	--	--
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	--	6.1	**19**	**40**	**32**	--	**59**	10	2	0.24 U
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	--	27 U	10 U	220 U	85 U	900 U	180 U	27 U	3.9 U	3.9 U
Aroclor-1221	--	--	--	--	--	27 U	20 U	220 U	85 U	900 U	180 U	27 U	3.9 U	3.9 U
Aroclor-1232	--	--	--	--	--	27 U	10 U	220 U	85 U	900 U	180 U	27 U	3.9 U	3.9 U

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	WQABRAN L11188-1 5/28/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11248-1 6/3/1997 0-2 cm East Nav. Channel - Lafarge	B3b LDW-B3b-S 8/17/2004 0-10 cm East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-0-1 2/23/2006 0-1 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-1-2 2/23/2006 1-2 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-2-4 2/23/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-6-8.2 2/23/2006 6-8.6 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-0-1 2/16/2006 0-1 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-1-2 2/16/2006 1-2 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-2-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge
Aroclor-1242	--	--	--	--	--	27 U	10 U	220 U	85 U	900 U	480	27 U	3.9 U	3.9 U
Aroclor-1248	--	--	--	--	--	27 U	10 U	390	320	1700	180 U	38	5	3.9 U
Aroclor-1254	--	--	--	--	--	68	180	510	500	2700	1000	80	9	3.9 U
Aroclor-1260	--	--	--	--	--	90	170	320	220	5400	450	64	5.6	3.9 U
PCBs (total calc'd)	--	--	130	1000	--	158	350	1220	1040	9800	1900	182	19.6	3.9 U
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	6200	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	678	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	--	27.7 J	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	13900 C	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	C90	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	5270	--	--	--	--	--	--	--
PCB-110	--	--	--	--	--	--	18900 C	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	229	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	13700	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	--	234	--	--	--	--	--	--	--
PCB-126	--	--	--	--	--	--	41.2	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	20400 C	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	C129	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	16300 C	--	--	--	--	--	--	--
PCB-156	--	--	--	--	--	--	2100 C	--	--	--	--	--	--	--
PCB-157	--	--	--	--	--	--	C156	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	--	772	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	8.31 U	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	8400 C	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	169	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	41.7 J	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	7.34 J	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	WQABRAN L11188-1 5/28/1997 0-2 cm East Nav. Channel - Lafarge	WQABRAN L11248-1 6/3/1997 0-2 cm East Nav. Channel - Lafarge	B3b LDW-B3b-S 8/17/2004 0-10 cm East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-0-1 2/23/2006 0-1 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-1-2 2/23/2006 1-2 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-2-4 2/23/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC17 LDW-SC17-6-8.2 2/23/2006 6-8.6 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-0-1 2/16/2006 0-1 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-1-2 2/16/2006 1-2 FT East Nav. Channel - Lafarge	LDW-SC18 LDW-SC18-2-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

a The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Bold Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC19 LDW-SC19-0-1 2/24/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-1-2 2/24/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-2-4 2/24/2006 2-4 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-4-6 2/24/2006 4-6 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-6-7 2/24/2006 6-7 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-9-11.9 2/24/2006 9-11.9 FT West Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-0-2 2/15/2006 0-2 FT Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-2-4 2/15/2006 0-61 cm Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-4-6 2/15/2006 2-4 FT Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-8-10 2/15/2006 4-6 FT Nav. Channel - Lafarge
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	0.1	0.2	0.1	--	--	--	1	--	--	--
Sand (total calc'd)	--	--	--	--	13	6.6	18.2	--	--	--	13.5	6	--	--
Silt (total calc'd)	--	--	--	--	59.3	61.2	55.3	--	--	--	63.6	61.2	--	--
Clay (total calc'd)	--	--	--	--	27.7	31.9	26.2	--	--	--	21.7	33	--	--
Fines (percent silt+clay)	--	--	--	--	87	93.1	81.5	--	--	--	85.3	94	--	--
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	2.28	1.7	1.56	1.26	1.54	0.19	1.49	1.5	2.22	1.85
Total solids	--	--	--	--	45.8	50.2	54.3	53.1	53.9	80.4	54.15	53.3	53.1	60.48
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	10 UJ	10 UJ	8 UJ	--	--	--	10 UJ	9 UJ	--	--
Arsenic	57	93	--	--	20	20	24	--	--	--	20	17	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	0.4 U	0.4 U	0.3 U	--	--	--	1.9	0.7	--	--
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	36	35	30.6	--	--	--	67	34.7	--	--
Cobalt	--	--	--	--	8.6	10.1	8.7	--	--	--	11.7	11	--	--
Copper	390	390	--	--	101	89.2	87.9	--	--	--	90.4	57	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	60	50	70	--	--	--	82	33	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	0.34	0.25	0.21	--	--	--	***0.65***	0.35	--	--
Molybdenum	--	--	--	--	1	1	1.3	--	--	--	2	0.9 U	--	--
Nickel	--	--	--	--	24	26	22	--	--	--	28	22	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	10 U	10 U	8 U	--	--	--	10 U	9 U	--	--
Silver	6.1	6.1	--	--	0.6 U	0.6 U	0.5 U	--	--	--	2.3	0.6	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	10 U	10 U	8 U	--	--	--	10 U	9 U	--	--
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	69.2	75.4	64.4	--	--	--	86.9	79.9	--	--
Zinc	410	960	--	--	162	148	150	--	--	--	173	104	--	--
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	3.9 U	4 UJ	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	--	--	5.6 U	5.7 U	--	--
Tributyltin as ion	--	--	--	--	--	--	--	--	--	--	3.7 U	3.8 U	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	2.6 U	3.5 U	3.8 U	--	--	--	1.3 U	1.3 UJ	--	--
Acenaphthylene	66	66	--	--	2 J	2.8 J	3.8 U	--	--	--	0.74 J	1.3 UJ	--	--
Acenaphthene	16	57	--	--	2.6 U	3.5 U	3.8 U	--	--	--	1.3 U	1.3 UJ	--	--

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Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC19 LDW-SC19-0-1 2/24/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-1-2 2/24/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-2-4 2/24/2006 2-4 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-4-6 2/24/2006 4-6 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-6-7 2/24/2006 6-7 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-9-11.9 2/24/2006 9-11.9 FT West Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-0-2 2/15/2006 0-2 FT Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-2-4 2/15/2006 0-61 cm Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-4-6 2/15/2006 2-4 FT Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-8-10 2/15/2006 4-6 FT Nav. Channel - Lafarge
Anthracene	220	1200	--	--	6.6	7.6	4	--	--	--	2.9	1.4 J	--	--
Benzo(a)anthracene	110	270	--	--	17	11	9.6	--	--	--	5.8	2.5 J	--	--
Benzo(a)pyrene	99	210	--	--	13	23	13	--	--	--	6.3	2.6 J	--	--
Benzo(g,h,i)perylene	31	78	--	--	3.6	4	4	--	--	--	1.3 J	1.3 UJ	--	--
Chrysene	110	460	--	--	31	26	15	--	--	--	8.1	3.3 J	--	--
Dibenzo(a,h)anthracene	12	33	--	--	1.7 J	2.4 J	3.8 U	--	--	--	1.3 U	1.3 UJ	--	--
Fluoranthene	160	1200	--	--	29	16	17	--	--	--	19	11 J	--	--
Fluorene	23	79	--	--	2 J	2.9 J	3.8 U	--	--	--	0.81 J	1.3 UJ	--	--
Indeno(1,2,3-cd)pyrene	34	88	--	--	4	5.4	4.4	--	--	--	1.2 J	1.3 UJ	--	--
Naphthalene	99	170	--	--	2.6 U	3.5 U	3.8 U	--	--	--	0.81 J	1.3 UJ	--	--
Phenanthrene	100	480	--	--	11	12	10	--	--	--	4.4	3.1 J	--	--
Pyrene	1000	1400	--	--	53 J	120 J	51 J	--	--	--	21	11 J	--	--
Benzofluoranthenes (total-calc'd)	230	450	--	--	49	84	50	--	--	--	18	8.4 J	--	--
Total LPAH (calc'd)	370	780	--	--	21 J	25 J	14	--	--	--	9.7 J	4.5 J	--	--
Total HPAH (calc'd)	960	5300	--	--	200 J	290 J	160 J	--	--	--	82 J	38 J	--	--
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
2-Methylnaphthalene	--	--	670	1400	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
Acenaphthylene	--	--	1300	1300	46 J	48 J	59 U	--	--	--	11 J	20 UJ	--	--
Acenaphthene	--	--	500	730	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
Anthracene	--	--	960	4400	150	130	63	--	--	--	43	21 J	--	--
Benzo(a)anthracene	--	--	1300	1600	380	180	150	--	--	--	86	38 J	--	--
Benzo(a)pyrene	--	--	1600	3000	300	390	200	--	--	--	94	39 J	--	--
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	610	860	450	--	--	--	150	77 J	--	--
Benzo(k)fluoranthene	--	--	--	--	510	560	330	--	--	--	120	49 J	--	--
Benzo(g,h,i)perylene	--	--	670	720	82	68	62	--	--	--	20 J	20 UJ	--	--
Chrysene	--	--	1400	2800	700	440	230	--	--	--	120	50 J	--	--
Dibenzo(a,h)anthracene	--	--	230	540	38 J	40 J	59 U	--	--	--	20 U	20 UJ	--	--
Fluoranthene	--	--	1700	2500	660	270	260	--	--	--	290	160 J	--	--
Fluorene	--	--	540	1000	46 J	49 J	59 U	--	--	--	12 J	20 UJ	--	--
Indeno(1,2,3-cd)pyrene	--	--	600	690	92	92	69	--	--	--	18 J	20 UJ	--	--
Naphthalene	--	--	2100	2400	60 U	59 U	59 U	--	--	--	12 J	20 UJ	--	--
Phenanthrene	--	--	1500	5400	250	200	160	--	--	--	66	46 J	--	--
Pyrene	--	--	2600	3300	1200 J	2100 J	800 J	--	--	--	320	160 J	--	--
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	1120	1420	780	--	--	--	270	126 J	--	--
Total LPAH (calc'd)	--	--	5200	13000	490 J	430 J	220	--	--	--	144 J	67 J	--	--
Total HPAH (calc'd)	--	--	12000	17000	4600 J	5000 J	2550 J	--	--	--	1220 J	570 J	--	--
Total PAH (calc'd)	--	--	--	--	5100 J	5400 J	2770 J	--	--	--	1360 J	640 J	--	--
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	0.26 U	0.35 U	0.38 U	--	--	--	0.4 U	0.4 U	--	--
1,4-Dichlorobenzene	3.1	9	--	--	0.26 U	0.35 U	0.38 U	--	--	--	0.4 U	1.3	--	--
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.26 U	0.35 U	0.38 U	--	--	--	0.4 U	0.4 U	--	--
Hexachlorobenzene	0.38	2.3	--	--	0.26 U	0.35 U	**0.38 U**	--	--	--	**0.4 U**	0.13 U	--	--
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	6 U	6 U	5.9 U	--	--	--	6 U	6 U	--	--
1,3-Dichlorobenzene	--	--	--	--	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
1,4-Dichlorobenzene	--	--	110	120	6 U	6 U	5.9 U	--	--	--	6 U	20	--	--

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC19 LDW-SC19-0-1 2/24/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-1-2 2/24/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-2-4 2/24/2006 2-4 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-4-6 2/24/2006 4-6 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-6-7 2/24/2006 6-7 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-9-11.9 2/24/2006 9-11.9 FT West Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-0-2 2/15/2006 0-2 FT Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-2-4 2/15/2006 0-61 cm Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-4-6 2/15/2006 2-4 FT Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-8-10 2/15/2006 4-6 FT Nav. Channel - Lafarge
1,2,4-Trichlorobenzene	--	--	31	51	6 U	6 U	5.9 U	--	--	--	6 U	6 U	--	--
Hexachlorobenzene	--	--	22	70	6 U	6 U	5.9 U	--	--	--	6 U	1.9 U	--	--
Nitrobenzene	--	--	--	--	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	9.6	8.2	17	--	--	--	42	4.7 J	--	--
Butyl benzyl phthalate	4.9	64	--	--	1.5	0.82	0.96	--	--	--	2.8	1.1	--	--
Diethyl phthalate	61	110	--	--	2.6 U	3.5 U	3.8 U	--	--	--	1.3 U	1.3 UJ	--	--
Dimethyl phthalate	53	53	--	--	2.6 U	3.5 U	3.8 U	--	--	--	1.3 U	1.3 UJ	--	--
Di-n-butyl phthalate	220	1700	--	--	2.6 U	3.5 U	1.9 J	--	--	--	1.6	1.5 J	--	--
Di-n-octyl phthalate	58	4500	--	--	2.6 U	3.5 U	3.8 U	--	--	--	1.3 U	1.3 UJ	--	--
Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	220	140	270	--	--	--	620	71 J	--	--
Butyl benzyl phthalate	--	--	63	900	34	14	15	--	--	--	41	17	--	--
Diethyl phthalate	--	--	200	1200	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
Dimethyl phthalate	--	--	71	160	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
Di-n-butyl phthalate	--	--	1400	5100	60 U	59 U	30 J	--	--	--	24	23 J	--	--
Di-n-octyl phthalate	--	--	6200	--	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	60 U	59 U	59 U	--	--	--	20 U	20 U	--	--
4-Chloro-3-methylphenol	--	--	--	--	300 U	300 U	300 U	--	--	--	100 U	100 U	--	--
2,4-Dichlorophenol	--	--	--	--	300 U	300 U	300 U	--	--	--	100 U	100 U	--	--
2,4-Dimethylphenol	29	29	--	--	6 U	6 U	5.9 U	--	--	--	6 U	6 U	--	--
2,4-Dinitrophenol	--	--	--	--	600 UJ	590 UJ	590 UJ	--	--	--	200 U	200 U	--	--
2-Methylphenol	63	63	--	--	4.8 J	6 U	5.9 U	--	--	--	6 U	6 U	--	--
4-Methylphenol	670	670	--	--	60 U	59 U	59 U	--	--	--	20 U	20 U	--	--
2,4,5-Trichlorophenol	--	--	--	--	300 U	300 U	300 U	--	--	--	100 U	100 U	--	--
2,4,6-Trichlorophenol	--	--	--	--	300 U	300 U	300 U	--	--	--	100 U	100 U	--	--
2-Nitrophenol	--	--	--	--	300 U	300 U	300 U	--	--	--	100 U	100 U	--	--
4-Nitrophenol	--	--	--	--	300 U	300 U	300 U	--	--	--	100 U	100 U	--	--
Pentachlorophenol	360	690	--	--	17 J	30 U	20 J	--	--	--	30 U	30 U	--	--
Phenol	420	1200	--	--	170	82	59 U	--	--	--	20 U	20 U	--	--
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	2.6 U	3.5 U	3.8 U	--	--	--	1.3 U	1.3 UJ	--	--
Hexachlorobutadiene	3.9	6.2	--	--	0.26 U	0.35 U	0.38 U	--	--	--	0.4 U	0.13 U	--	--
N-Nitrosodiphenylamine	11	11	--	--	1.3 UJ	1.3 UJ	1.7 UJ	--	--	--	2.6 U	2.1 U	--	--
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	300 U	300 U	300 U	--	--	--	100 U	100 UJ	--	--
3-Nitroaniline	--	--	--	--	300 UJ	300 UJ	300 UJ	--	--	--	100 U	100 UJ	--	--
4-Nitroaniline	--	--	--	--	300 UJ	300 UJ	300 UJ	--	--	--	100 U	100 UJ	--	--
3,3'-Dichlorobenzidine	--	--	--	--	300 UJ	300 UJ	300 UJ	--	--	--	100 UJ	100 UJ	--	--
4-Chloroaniline	--	--	--	--	300 UJ	300 UJ	300 UJ	--	--	--	100 UJ	100 UJ	--	--
Aniline	--	--	--	--	60 UJ	59 UJ	59 UJ	--	--	--	20 UJ	20 UJ	--	--
Benzyl alcohol	57	73	--	--	30 U	30 U	30 U	--	--	--	30 U	30 U	--	--
Benzoic acid	650	650	--	--	210 J	88 J	100 J	--	--	--	93	67	--	--
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	540	700	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
Hexachlorobutadiene	--	--	11	120	6 U	6 U	5.9 U	--	--	--	6 U	1.9 U	--	--

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC19 LDW-SC19-0-1 2/24/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-1-2 2/24/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-2-4 2/24/2006 2-4 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-4-6 2/24/2006 4-6 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-6-7 2/24/2006 6-7 FT West Nav. Channel - Lafarge	LDW-SC19 LDW-SC19-9-11.9 2/24/2006 9-11.9 FT West Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-0-2 2/15/2006 0-2 FT Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-2-4 2/15/2006 0-61 cm Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-4-6 2/15/2006 2-4 FT Nav. Channel - Lafarge	LDW-SC20 LDW-SC20-8-10 2/15/2006 4-6 FT Nav. Channel - Lafarge
Hexachloroethane	--	--	--	--	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
Hexachlorocyclopentadiene	--	--	--	--	300 U	300 U	300 U	--	--	--	100 U	100 UJ	--	--
Isophorone	--	--	--	--	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
N-Nitroso-di-n-propylamine	--	--	--	--	30 U	30 U	30 U	--	--	--	30 U	30 U	--	--
N-Nitrosodimethylamine	--	--	--	--	30 U	30 U	30 U	--	--	--	30 U	30 U	--	--
N-Nitrosodiphenylamine	--	--	28	40	29 UJ	22 UJ	27 UJ	--	--	--	38 U	32 U	--	--
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
4-Chlorophenyl phenyl ether	--	--	--	--	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
bis(2-chloroethyl)ether	--	--	--	--	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
bis(2-chloroisopropyl)ether	--	--	--	--	60 U	59 U	59 U	--	--	--	20 U	20 UJ	--	--
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	--	--	--	--	--	--	18 U	3.8 U	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	--	82 U	17 U	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	--	18 U	3.8 U	--	--
4,4'-DDD	--	--	--	--	--	--	--	--	--	--	18 U	14 U	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--	65 U	3.8 U	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--	150 U	32 U	--	--
Aldrin	--	--	--	--	--	--	--	--	--	--	9.1 U	1.9 U	--	--
alpha-Chlordane	--	--	--	--	--	--	--	--	--	--	9.1 U	1.9 U	--	--
alpha-BHC	--	--	--	--	--	--	--	--	--	--	9.1 U	1.9 U	--	--
beta-BHC	--	--	--	--	--	--	--	--	--	--	9.1 U	1.9 U	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	9.1 U	1.9 U	--	--
gamma-BHC	--	--	--	--	--	--	--	--	--	--	9.1 U	1.9 U	--	--
gamma-Chlordane	--	--	--	--	--	--	--	--	--	--	62 U	1.9 U	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	18 U	3.8 U	--	--
Dieldrin	--	--	--	--	--	--	--	--	--	--	28 UJ	10 UJ	--	--
alpha-Endosulfan	--	--	--	--	--	--	--	--	--	--	9.1 U	1.9 U	--	--
beta-Endosulfan	--	--	--	--	--	--	--	--	--	--	18 U	3.8 U	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	--	54 U	11 U	--	--
Endrin	--	--	--	--	--	--	--	--	--	--	120 U	18 U	--	--
Endrin aldehyde	--	--	--	--	--	--	--	--	--	--	18 UJ	3.8 UJ	--	--
Endrin ketone	--	--	--	--	--	--	--	--	--	--	18 UJ	3.8 UJ	--	--
Heptachlor	--	--	--	--	--	--	--	--	--	--	9.1 U	1.9 U	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	--	80 U	10 U	--	--
Toxaphene	--	--	--	--	--	--	--	--	--	--	910 U	190 U	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	--	--	--	28 UJ	10 UJ	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	--	--	--	--	150 U	32 U	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	--	--	--	--	62 U	3.8 U	--	--
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	--	--	--	--	--	--	91 UJ	19 UJ	--	--
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	**12**	**14**	**16**	**35**	***160***	--	***210***	**40**	**18**	5.1
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	40 U	40 U	20 U	3.9 U	39 U	3.9 U	180 U	37 U	48 U	3.8 UJ
Aroclor-1221	--	--	--	--	40 U	40 U	20 U	3.9 U	39 U	3.9 U	180 U	37 U	20 U	3.8 UJ
Aroclor-1232	--	--	--	--	40 U	40 U	20 U	3.9 U	39 U	3.9 U	180 U	37 U	60 U	3.8 UJ

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Aroclor-1242	--	--	--	--	40 U	40 U	20 U	54	39 U	3.9 U	180 U	37 U	44	3.8 UJ
Aroclor-1248	--	--	--	--	65	59	43	3.9 U	710	3.9 U	1200	76	83 U	3.8 UJ
Aroclor-1254	--	--	--	--	100	79	92	200	1100	3.9 U	1300	250	170	7.7 UJ
Aroclor-1260	--	--	--	--	110	95	110	190	610	3.9 U	730	270	190	95
PCBs (total calc'd)	--	--	130	1000	280	233	250	440	2400	3.9 U	3200	600	400	95
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-156	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-157	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	700	740	671	--	--	--	924	729	4930	72.4
1,2,3,4,6,7,8-HpCDF	--	--	--	--	129	110	115	--	--	--	273	314	2490	65
1,2,3,4,7,8,9-HpCDF	--	--	--	--	11.7	8.85	10.1	--	--	--	24.8	33	299	1.88
1,2,3,4,7,8-HxCDD	--	--	--	--	4.14	3.68	3.65	--	--	--	6.08	1.53	7.19 J	0.7 J
1,2,3,4,7,8-HxCDF	--	--	--	--	18.8	13	13.9	--	--	--	39.3	52.1	467	2.88
1,2,3,6,7,8-HxCDD	--	--	--	--	24.2	19.9	22.6	--	--	--	37.7	23.4	169	4.62
1,2,3,6,7,8-HxCDF	--	--	--	--	5.25	3.81	4.24	--	--	--	12.1	9.78	76	2.71
1,2,3,7,8,9-HxCDD	--	--	--	--	14.9	14	13.2	--	--	--	18.6	6.53	23.7	2.24
1,2,3,7,8,9-HxCDF	--	--	--	--	0.421 J	0.342 J	0.341 J	--	--	--	0.545 J	3.02 U	8.02	0.128 J

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1,2,3,7,8-PeCDD	--	--	--	--	2.8	2.01	2.64	--	--	--	3.78	1.15	3.61	1.07
1,2,3,7,8-PeCDF	--	--	--	--	1.76	1.28	1.35	--	--	--	4.4	2.47	18.1	1.19
2,3,4,6,7,8-HxCDF	--	--	--	--	3.86	2.57	3.26	--	--	--	6.29	4.87	28.2	2.99
2,3,4,7,8-PeCDF	--	--	--	--	4.59	2.8	3.3	--	--	--	17.6	7.65	61.8	2.74
2,3,7,8-TCDD	--	--	--	--	0.725	0.521	0.696	--	--	--	1.88	0.496	0.89 J	0.324
2,3,7,8-TCDF	--	--	--	--	2.21	1.41	1.58	--	--	--	6.09	1.26 U	4.02	1.44
OCDD	--	--	--	--	6420	6840	6040	--	--	--	8220	6090	36300	453
OCDF	--	--	--	--	388	444	421	--	--	--	1050	1410	13500	148
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	18.1 J	13.3 J	14.8 J	--	--	--	43 J	22.9	172 J	7.67 J
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	15.7 J	11.9 J	13 J	--	--	--	32.1 J	26.6	214 J	4.74 J
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	14.1 J	10.9 J	12.1 J	--	--	--	29.2 J	18.5	138 J	4.99 J
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	22.4 J	19.2 J	19.9 J	--	--	--	40.5 J	27.1	197 J	6.05 J
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	22.8 J	20.1 J	20.5 J	--	--	--	38.7 J	27.1	194 J	5.6 J

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

a The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Bold Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC21 LDW-SC21-0-1 2/14/2006 8-10 FT West Nav. Channel - Lafarge	LDW-SC21 DW-SC21-10-11. 2/14/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-1-2 2/14/2006 10-11.3 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-2-4 2/14/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-4-6.2 2/14/2006 2-4 FT West Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-0-1.1 2/13/2006 4-6.2 FT East Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-1.1-2 2/13/2006 0-1.1 FT East Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-2-4 2/13/2006 1.1-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-0.5-1 2/16/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-0-0.5 2/16/2006 0.5-1 FT East Nav. Channel - Lafarge
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	0.8	--	0.2	0.3	--	4	3.3	1	--	--
Sand (total calc'd)	--	--	--	--	16.3	--	5.8	19.6	--	82.8	87.9	91	--	--
Silt (total calc'd)	--	--	--	--	59.9	--	62.1	54.9	--	10	7	6.9	--	--
Clay (total calc'd)	--	--	--	--	22.9	--	31.9	25.3	--	2.9	1.9	1.4	--	--
Fines (percent silt+clay)	--	--	--	--	82.8	--	94	80.2	--	12.9	8.9	8.3	--	--
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	1.98	1.33	1.49	1.64	1.94	2.3	2.18	1.44	2.17	2.05
Total solids	--	--	--	--	47.2	71.7	52.3	58	55.8	70.7	77.5	75.5	53.3	49.7
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	10 UJ	--	9 UJ	8 UJ	--	7 UJ	6 UJ	6 UJ	--	--
Arsenic	57	93	--	--	20	--	19	34	--	12	8	7	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	0.7	--	0.4 U	0.6	--	0.3	0.3	0.3 U	--	--
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	36	--	34	32.6	--	19.4	18.9	13	--	--
Cobalt	--	--	--	--	10	--	11	9.9	--	6.6	5.6	4.3	--	--
Copper	390	390	--	--	95.5	--	85.7	114	--	52.9 J	28.1 J	17.7 J	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	55	--	46	107	--	46	36	25	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	0.3	--	0.2	0.26	--	0.14	0.14	0.06 U	--	--
Molybdenum	--	--	--	--	1	--	1	1.8	--	2.3	2.8	1.1	--	--
Nickel	--	--	--	--	25	--	27	21	--	17 J	15 J	9 J	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	10 U	--	9 U	8 U	--	7 U	6 U	6 U	--	--
Silver	6.1	6.1	--	--	0.6 U	--	0.6 U	0.5 U	--	0.4 U	0.4 U	0.4 U	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	10 U	--	9 U	8 U	--	7 U	6 U	6 U	--	--
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	75.4	--	81.5	69.1	--	49.8	47.4	43.9	--	--
Zinc	410	960	--	--	155	--	133	189	--	76	67.9	47.9	--	--
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	3 U	--	4 U	3.6 U	--	1.3	0.92 U	1.4 U	2.9 U	3 U
Acenaphthylene	66	66	--	--	3 U	--	4 U	3.6 U	--	0.52 J	0.83 J	1.4 U	2.9 U	1.6 J
Acenaphthene	16	57	--	--	3 U	--	4 U	3.6 U	--	8.7	1.1	1.4 U	2.9 U	3 U

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC21 LDW-SC21-0-1 2/14/2006 8-10 FT West Nav. Channel - Lafarge	LDW-SC21 DW-SC21-10-11. 2/14/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-1-2 2/14/2006 10-11.3 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-2-4 2/14/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-4-6.2 2/14/2006 2-4 FT West Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-0-1.1 2/13/2006 4-6.2 FT East Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-1.1-2 2/13/2006 0-1.1 FT East Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-2-4 2/13/2006 1.1-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-0.5-1 2/16/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-0-0.5 2/16/2006 0.5-1 FT East Nav. Channel - Lafarge
Anthracene	220	1200	--	--	4.7	--	3.6 J	4.5	--	13	1.6	1.4 U	4	6.8
Benzo(a)anthracene	110	270	--	--	12	--	10	14	--	5.7	2.3	1.4 U	13	21
Benzo(a)pyrene	99	210	--	--	14	--	15	22	--	4	4.1	1.4 U	15	20
Benzo(g,h,i)perylene	31	78	--	--	2.9 J	--	5.9	5.9	--	1.7	1.8	1.4 U	8.3	11
Chrysene	110	460	--	--	23	--	15	20	--	7	3.1	1.4 U	22	34
Dibenzo(a,h)anthracene	12	33	--	--	3 U	--	4 U	1.8 J	--	0.87 U	0.92 U	1.4 U	1.1 J	1.6 J
Fluoranthene	160	1200	--	--	27	--	20	37	--	25	6.9	0.83 J	19	45
Fluorene	23	79	--	--	3 U	--	4 U	3.6 U	--	7.8	0.92	1.4 U	2.9 U	3 U
Indeno(1,2,3-cd)pyrene	34	88	--	--	2.9 J	--	5.5	6.1	--	1.8	2	1.4 U	8.3	11
Naphthalene	99	170	--	--	3 U	--	4 U	3.6 U	--	2.1	1.4	1.4 U	2.9 U	3 U
Phenanthrene	100	480	--	--	9.1	--	8.1	13	--	25	4.6	1.4 U	6.5	10
Pyrene	1000	1400	--	--	28	--	27	57	--	24	7.3	1 J	30	45
Benzofluoranthenes (total-calc'd)	230	450	--	--	47	--	36	54	--	9.1	7.2	1.4 U	37	49
Total LPAH (calc'd)	370	780	--	--	14	--	11 J	17	--	57 J	11 J	1.4 U	11	19 J
Total HPAH (calc'd)	960	5300	--	--	160 J	--	130	220 J	--	78	35	1.9 J	150 J	240 J
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	60 U	--	59 U	59 U	--	46	20 U	20 U	62 U	61 U
2-Methylnaphthalene	--	--	670	1400	60 U	--	59 U	59 U	--	30	20 U	20 U	62 U	61 U
Acenaphthylene	--	--	1300	1300	60 U	--	59 U	59 U	--	12 J	18 J	20 U	62 U	33 J
Acenaphthene	--	--	500	730	60 U	--	59 U	59 U	--	200	25	20 U	62 U	61 U
Anthracene	--	--	960	4400	94	--	53 J	74	--	290	34	20 U	86	140
Benzo(a)anthracene	--	--	1300	1600	230	--	150	230	--	130	51	20 U	280	440
Benzo(a)pyrene	--	--	1600	3000	280	--	220	360	--	91	90	20 U	320	400
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	590	--	310	480	--	120	91	20 U	530	600
Benzo(k)fluoranthene	--	--	--	--	350	--	230	400	--	91	65	20 U	270	400
Benzo(g,h,i)perylene	--	--	670	720	58 J	--	88	97	--	40	39	20 U	180	220
Chrysene	--	--	1400	2800	460	--	220	320	--	160	67	20 U	480	690
Dibenzo(a,h)anthracene	--	--	230	540	60 U	--	59 U	29 J	--	20 U	20 U	20 U	24 J	32 J
Fluoranthene	--	--	1700	2500	540	--	300	610	--	580	150	12 J	410	920
Fluorene	--	--	540	1000	60 U	--	59 U	59 U	--	180	20	20 U	62 U	61 U
Indeno(1,2,3-cd)pyrene	--	--	600	690	57 J	--	82	100	--	42	44	20 U	180	220
Naphthalene	--	--	2100	2400	60 U	--	59 U	59 U	--	48	30	20 U	62 U	61 U
Phenanthrene	--	--	1500	5400	180	--	120	210	--	570	100	20 U	140	210
Pyrene	--	--	2600	3300	560	--	400	930	--	550	160	15 J	660	920
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	940	--	540	880	--	210	156	20 U	800	1000
Total LPAH (calc'd)	--	--	5200	13000	270	--	170 J	280	--	1300 J	230 J	20 U	230	380 J
Total HPAH (calc'd)	--	--	12000	17000	3130 J	--	2000	3560 J	--	1800	760	27 J	3330 J	4840 J
Total PAH (calc'd)	--	--	--	--	3400 J	--	2170 J	3840 J	--	3100 J	980 J	27 J	3560 J	5230 J
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	0.3 U	--	0.4 U	0.36 U	--	0.26 U	0.27 U	0.41 U	0.29 U	0.3 U
1,4-Dichlorobenzene	3.1	9	--	--	0.3 U	--	0.4 U	0.36 U	--	0.13 J	0.27 U	0.41 U	0.29 U	0.18 J
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.3 U	--	0.4 U	0.36 U	--	0.26 U	0.27 U	0.41 U	0.29 U	0.3 U
Hexachlorobenzene	0.38	2.3	--	--	0.3 U	--	**0.4 U**	0.36 U	--	0.26 U	0.27 U	**0.41 U**	0.29 U	0.3 U
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	6 U	--	5.9 U	5.9 U	--	5.9 U	5.9 U	5.9 U	6.2 U	6.1 U
1,3-Dichlorobenzene	--	--	--	--	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
1,4-Dichlorobenzene	--	--	110	120	6 U	--	5.9 U	5.9 U	--	3 J	5.9 U	5.9 U	6.2 U	3.7 J

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1,2,4-Trichlorobenzene	--	--	31	51	6 U	--	5.9 U	5.9 U	--	5.9 U	5.9 U	5.9 U	6.2 U	6.1 U
Hexachlorobenzene	--	--	22	70	6 U	--	5.9 U	5.9 U	--	5.9 U	5.9 U	5.9 U	6.2 U	6.1 U
Nitrobenzene	--	--	--	--	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	18	--	23	37	--	2.4	0.92 U	1.4 U	19	17
Butyl benzyl phthalate	4.9	64	--	--	2.2	--	2.8	2.8	--	0.26 UJ	0.27 UJ	0.41 UJ	1.8 J	2 J
Diethyl phthalate	61	110	--	--	3 U	--	4 U	3.6 U	--	0.87 U	0.92 U	1.4 U	2.9 U	3 U
Dimethyl phthalate	53	53	--	--	3 U	--	4 U	3.6 U	--	0.87 U	0.92 U	1.4 U	2.9 U	3 U
Di-n-butyl phthalate	220	1700	--	--	1.5 J	--	4 U	3.6 U	--	1.3 U	1.7 U	1.4 U	2.9 U	3 U
Di-n-octyl phthalate	58	4500	--	--	3 U	--	4 U	3.6 U	--	0.87 U	0.92 U	1.4 U	2.9 U	3 U
Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	360	--	340	600	--	56	20 U	20 U	420	340
Butyl benzyl phthalate	--	--	63	900	44	--	41	46	--	5.9 UJ	5.9 UJ	5.9 UJ	38 J	40 J
Diethyl phthalate	--	--	200	1200	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
Dimethyl phthalate	--	--	71	160	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
Di-n-butyl phthalate	--	--	1400	5100	30 J	--	59 U	59 U	--	29 U	37 U	20 U	62 U	61 U
Di-n-octyl phthalate	--	--	6200	--	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
4-Chloro-3-methylphenol	--	--	--	--	300 U	--	300 U	290 U	--	98 U	98 U	99 U	310 U	310 U
2,4-Dichlorophenol	--	--	--	--	300 U	--	300 U	290 U	--	98 U	98 U	99 U	310 U	310 U
2,4-Dimethylphenol	29	29	--	--	6 U	--	5.9 U	5.9 U	--	18 UJ	18 UJ	18 UJ	6.2 U	6.1 U
2,4-Dinitrophenol	--	--	--	--	600 U	--	590 U	590 U	--	200 U	200 U	200 U	620 U	610 U
2-Methylphenol	63	63	--	--	6 U	--	5.9 U	5.9 U	--	5.9 UJ	5.9 UJ	5.9 UJ	6.2	6.1
4-Methylphenol	670	670	--	--	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
2,4,5-Trichlorophenol	--	--	--	--	300 U	--	300 U	290 U	--	98 U	98 U	99 U	310 U	310 U
2,4,6-Trichlorophenol	--	--	--	--	300 U	--	300 U	290 U	--	98 U	98 U	99 U	310 U	310 U
2-Nitrophenol	--	--	--	--	300 U	--	300 U	290 U	--	98 U	98 U	99 U	310 U	310 U
4-Nitrophenol	--	--	--	--	300 U	--	300 U	290 U	--	98 U	98 U	99 U	310 U	310 U
Pentachlorophenol	360	690	--	--	30 U	--	30 U	29 U	--	30 U	30 U	30 U	31 U	31 U
Phenol	420	1200	--	--	60 U	--	59 U	59 U	--	24	15 J	14 J	65 U	400 U
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	3 U	--	4 U	3.6 U	--	5.2	0.92 U	1.4 U	2.9 U	3 U
Hexachlorobutadiene	3.9	6.2	--	--	0.3 U	--	0.4 U	0.36 U	--	0.26 U	0.27 U	0.41 U	0.29 U	0.3 U
N-Nitrosodiphenylamine	11	11	--	--	1 U	--	1.6 U	1.7 U	--	1.7 U	0.78 U	0.41 U	0.29 U	0.3 U
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	300 U	--	300 U	290 U	--	98 U	98 U	99 U	310 U	310 U
3-Nitroaniline	--	--	--	--	300 U	--	300 U	290 U	--	98 UJ	98 UJ	99 UJ	310 U	310 U
4-Nitroaniline	--	--	--	--	300 U	--	300 U	290 U	--	98 U	98 U	99 U	310 U	310 U
3,3'-Dichlorobenzidine	--	--	--	--	300 UJ	--	300 UJ	290 UJ	--	98 UJ	98 UJ	99 UJ	310 U	310 U
4-Chloroaniline	--	--	--	--	300 UJ	--	300 UJ	290 UJ	--	98 UJ	98 UJ	99 UJ	310 UJ	310 UJ
Aniline	--	--	--	--	60 UJ	--	59 UJ	59 UJ	--	20 UJ	20 UJ	20 UJ	62 UJ	61 UJ
Benzyl alcohol	57	73	--	--	30 U	--	30 U	29 U	--	30 UJ	30 UJ	30 UJ	31 U	31 U
Benzoic acid	650	650	--	--	95	--	120	100	--	59 UJ	59 UJ	59 UJ	620 U	610 U
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	540	700	60 U	--	59 U	59 U	--	120	20 U	20 U	62 U	61 U
Hexachlorobutadiene	--	--	11	120	6 U	--	5.9 U	5.9 U	--	5.9 U	5.9 U	5.9 U	6.2 U	6.1 U

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Hexachloroethane	--	--	--	--	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
Hexachlorocyclopentadiene	--	--	--	--	300 U	--	300 U	290 U	--	98 U	98 U	99 U	310 U	310 U
Isophorone	--	--	--	--	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
N-Nitroso-di-n-propylamine	--	--	--	--	30 U	--	30 U	29 U	--	30 UJ	30 UJ	30 UJ	31 U	31 U
N-Nitrosodimethylamine	--	--	--	--	30 U	--	30 U	29 U	--	30 UJ	30 UJ	30 UJ	31 U	31 U
N-Nitrosodiphenylamine	--	--	28	40	20 U	--	24 U	28 U	--	40 U	17 U	5.9 U	6.2 U	6.1 U
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
4-Chlorophenyl phenyl ether	--	--	--	--	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
bis(2-chloroethyl)ether	--	--	--	--	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
bis(2-chloroisopropyl)ether	--	--	--	--	60 U	--	59 U	59 U	--	20 U	20 U	20 U	62 U	61 U
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aldrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toxaphene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	**13**	0.29 U	9.7	**23 J**	***87***	2.4	1.2 J	0.54 J	--	--
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	20 U	3.9 U	7.9 U	19 U	120 U	3.9 U	3.9 UJ	3.9 U	--	--
Aroclor-1221	--	--	--	--	20 U	3.9 U	7.9 U	19 U	120 U	3.9 U	3.9 UJ	3.9 U	--	--
Aroclor-1232	--	--	--	--	20 U	3.9 U	7.9 U	19 U	120 U	3.9 U	3.9 UJ	3.9 U	--	--

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC21 LDW-SC21-0-1 2/14/2006 8-10 FT West Nav. Channel - Lafarge	LDW-SC21 DW-SC21-10-11. 2/14/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-1-2 2/14/2006 10-11.3 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-2-4 2/14/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-4-6.2 2/14/2006 2-4 FT West Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-0-1.1 2/13/2006 4-6.2 FT East Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-1.1-2 2/13/2006 0-1.1 FT East Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-2-4 2/13/2006 1.1-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-0.5-1 2/16/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-0-0.5 2/16/2006 0.5-1 FT East Nav. Channel - Lafarge
Aroclor-1242	--	--	--	--	20 U	3.9 U	7.9 U	19 U	320	3.9 U	3.9 UJ	3.9 U	--	--
Aroclor-1248	--	--	--	--	50	3.9 U	28	90	120 U	5.1	3.9 UJ	3.9 U	--	--
Aroclor-1254	--	--	--	--	100	3.9 U	63	170	820	23	8.5 J	3.9 U	--	--
Aroclor-1260	--	--	--	--	99	3.9 U	54	120 J	540	28	17 J	7.8 J	--	--
PCBs (total calc'd)	--	--	130	1000	250	3.9 U	145	380 J	1680	56	26 J	7.8 J	--	--
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-156	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-157	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC21 LDW-SC21-0-1 2/14/2006 8-10 FT West Nav. Channel - Lafarge	LDW-SC21 DW-SC21-10-11. 2/14/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-1-2 2/14/2006 10-11.3 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-2-4 2/14/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SC21 LDW-SC21-4-6.2 2/14/2006 2-4 FT West Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-0-1.1 2/13/2006 4-6.2 FT East Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-1.1-2 2/13/2006 0-1.1 FT East Nav. Channel - Lafarge	LDW-SC22 LDW-SC22-2-4 2/13/2006 1.1-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-0.5-1 2/16/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-0-0.5 2/16/2006 0.5-1 FT East Nav. Channel - Lafarge
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

a The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Bold Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC23 LDW-SC23-0-2 2/16/2006 0-0.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-1.5-2 2/16/2006 0-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-1-1.5 2/16/2006 1.5-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2.5-3 2/16/2006 1-1.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2-2.5 2/16/2006 2.5-3 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2-4 2/16/2006 2-2.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-3.5-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-3-3.5 2/16/2006 3.5-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-4-6 2/16/2006 3-3.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-6-8 2/16/2006 4-6 FT East Nav. Channel - Lafarge
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	7.2	--	--	--	--	5.6	--	--	--	--
Sand (total calc'd)	--	--	--	--	26.3	--	--	--	--	17.7	--	--	--	--
Silt (total calc'd)	--	--	--	--	46	--	--	--	--	54.3	--	--	--	--
Clay (total calc'd)	--	--	--	--	20.9	--	--	--	--	22.3	--	--	--	--
Fines (percent silt+clay)	--	--	--	--	67	--	--	--	--	76.6	--	--	--	--
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	2.12	1.6	1.76	1.39	1.78	2.14	2.29	1.3	1.46	2.25
Total solids	--	--	--	--	62.7	62.2	54.8	51.1	55.3	49.5	51.4	51.7	52.1	55.6
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	8 UJ	--	--	--	--	9 UJ	--	--	--	--
Arsenic	57	93	--	--	18	--	--	--	--	20	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	0.5	--	--	--	--	0.4 U	--	--	--	--
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	29.5	--	--	--	--	33.4	--	--	--	--
Cobalt	--	--	--	--	9	--	--	--	--	10.9	--	--	--	--
Copper	390	390	--	--	67.7	--	--	--	--	73.3	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	56 J	--	--	--	--	46 J	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	0.2	--	--	--	--	0.2	--	--	--	--
Molybdenum	--	--	--	--	0.8 U	--	--	--	--	1.1	--	--	--	--
Nickel	--	--	--	--	22	--	--	--	--	28	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	8 U	--	--	--	--	9 U	--	--	--	--
Silver	6.1	6.1	--	--	0.5 U	--	--	--	--	0.6 U	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	8 U	--	--	--	--	9 U	--	--	--	--
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	65	--	--	--	--	71.5	--	--	--	--
Zinc	410	960	--	--	122 J	--	--	--	--	159 J	--	--	--	--
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	8	--	--	--	--	4 U	--	--	7.8 U	--
Dibutyltin as ion	--	--	--	--	12	--	--	--	--	5.7 U	--	--	11 U	--
Tributyltin as ion	--	--	--	--	55	--	--	--	--	47	--	--	27	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	2.8 U	3.9 U	3.5 U	4.5 U	5	2.8 U	2.7 U	9.2	4.5 U	--
Acenaphthylene	66	66	--	--	2.8 U	3.9 U	3.5 U	4.5 U	2.3 J	4.4	3.3	10	4.5 U	--
Acenaphthene	16	57	--	--	2.8 U	3 J	2.3 J	**41**	8.4	**16**	***66***	***160***	4.5 U	--

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Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC23 LDW-SC23-0-2 2/16/2006 0-0.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-1.5-2 2/16/2006 0-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-1-1.5 2/16/2006 1.5-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2.5-3 2/16/2006 1-1.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2-2.5 2/16/2006 2.5-3 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2-4 2/16/2006 2-2.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-3.5-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-3-3.5 2/16/2006 3.5-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-4-6 2/16/2006 3-3.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-6-8 2/16/2006 4-6 FT East Nav. Channel - Lafarge
Anthracene	220	1200	--	--	3.1	5.4	6.8	12	27	75	48	**680**	3.6 J	--
Benzo(a)anthracene	110	270	--	--	9	21	18	16	62	**150**	**120**	***550***	12	--
Benzo(a)pyrene	99	210	--	--	11	23	23	7.9	46	**120**	52	***230***	14	--
Benzo(g,h,i)perylene	31	78	--	--	2.1 J	12	11	3.3 J	24	23	12	**56**	6.8	--
Chrysene	110	460	--	--	14	31	28	17	62	**340**	**140**	***600***	15	--
Dibenzo(a,h)anthracene	12	33	--	--	2.8 U	2 J	1.6 J	1	4.5	8.4	3.5	**14**	2.9	--
Fluoranthene	160	1200	--	--	21 J	47	33	86	130	**350 J**	**440**	***1800***	29	--
Fluorene	23	79	--	--	2.8 U	2.8 J	2.7 J	17	11	12	20	***140***	4.5 U	--
Indeno(1,2,3-cd)pyrene	34	88	--	--	2.5 J	13	12	3.5 J	22	32 J	16	**72**	5.7	--
Naphthalene	99	170	--	--	2.8 U	3.9 U	3.5 U	4.5 U	6.2	2.8 U	2.4 J	15	4.5 U	--
Phenanthrene	100	480	--	--	4.7	30	22	27	96	56	57	***920***	10	--
Pyrene	1000	1400	--	--	30	63	57	50	170	180	190	**1100**	51	--
Benzofluoranthenes (total-calc'd)	230	450	--	--	32	48	53	19	86	**280**	140	***490***	33	--
Total LPAH (calc'd)	370	780	--	--	8	41 J	34 J	97	150 J	160	200 J	***1900***	14 J	--
Total HPAH (calc'd)	960	5300	--	--	120 J	260 J	240 J	200 J	610	**1500 J**	**1100**	**4900**	170	--
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	59 U	62 U	61 U	62 U	70	59 U	150	170	66 U	--
2-Methylnaphthalene	--	--	670	1400	59 U	62 U	61 U	62 U	89	59 U	61 U	120	66 U	--
Acenaphthylene	--	--	1300	1300	59 U	62 U	61 U	62 U	41 J	95	76	130	66 U	--
Acenaphthene	--	--	500	730	59 U	48 J	40 J	570	150	340	1500	2100	66 U	--
Anthracene	--	--	960	4400	66	87	120	170	480	1600	1100	8800	53 J	--
Benzo(a)anthracene	--	--	1300	1600	190	340	310	220	1100	3200	2700	7100	180	--
Benzo(a)pyrene	--	--	1600	3000	230	360	410	110	820	2500	1200	3000	200	--
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	350	400	540	140	800	3800	1900	3900	300	--
Benzo(k)fluoranthene	--	--	--	--	320	370	390	120	730	2200	1200	2500	180	--
Benzo(g,h,i)perylene	--	--	670	720	44 J	190	200	46 J	420	490	270	730	100	--
Chrysene	--	--	1400	2800	290	500	500	230	1100	7200	3100	7800	220	--
Dibenzo(a,h)anthracene	--	--	230	540	59 U	32 J	29 J	14	80	180	80	180	43	--
Fluoranthene	--	--	1700	2500	450 J	750	580	1200	2400	7400 J	10000	24000	420	--
Fluorene	--	--	540	1000	59 U	44 J	47 J	230	190	260	460	1800	66 U	--
Indeno(1,2,3-cd)pyrene	--	--	600	690	52 J	210	210	49 J	400	680 J	370	930	83	--
Naphthalene	--	--	2100	2400	59 U	62 U	61 U	62 U	110	59 U	55 J	200	66 U	--
Phenanthrene	--	--	1500	5400	100	480	380	380	1700	1200	1300	12000	150	--
Pyrene	--	--	2600	3300	640	1000	1000	700	3000	3800	4400	14000	740	--
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	670	770	930	260	1530	6000	3100	6400	480	--
Total LPAH (calc'd)	--	--	5200	13000	170	660 J	590 J	1350	2700 J	3500	4500 J	25000	200 J	--
Total HPAH (calc'd)	--	--	12000	17000	2570 J	4200 J	4200 J	2800 J	10900	31500 J	25000	64000	2470	--
Total PAH (calc'd)	--	--	--	--	2730 J	4800 J	4800 J	4200 J	13500 J	34900 J	30000 J	89000	2670 J	--
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	0.28 U	0.39 UJ	0.35 U	0.45 U	0.35 U	0.28 U	0.27 U	0.48 U	0.45 U	--
1,4-Dichlorobenzene	3.1	9	--	--	0.28 U	0.39 UJ	0.35 U	0.45 U	0.35 U	0.28 U	0.27 U	0.48 U	0.27 J	--
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.28 U	0.39 UJ	0.35 U	0.45 UJ	0.35 UJ	0.28 U	0.27 UJ	0.48 UJ	0.45 U	--
Hexachlorobenzene	0.38	2.3	--	--	0.046 U	**0.39 UJ**	0.35 U	**0.45 U**	0.35 U	0.046 U	0.27 U	**0.48 U**	**0.45 U**	--
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	5.9 U	6.2 UJ	6.1 U	6.2 U	6.2 U	5.9 U	6.1 U	6.2 U	6.6 U	--
1,3-Dichlorobenzene	--	--	--	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	6.6 U	--
1,4-Dichlorobenzene	--	--	110	120	5.9 U	6.2 UJ	6.1 U	6.2 U	6.2 U	5.9 U	6.1 U	6.2 U	4 J	--

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC23 LDW-SC23-0-2 2/16/2006 0-0.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-1.5-2 2/16/2006 0-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-1-1.5 2/16/2006 1.5-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2.5-3 2/16/2006 1-1.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2-2.5 2/16/2006 2.5-3 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2-4 2/16/2006 2-2.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-3.5-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-3-3.5 2/16/2006 3.5-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-4-6 2/16/2006 3-3.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-6-8 2/16/2006 4-6 FT East Nav. Channel - Lafarge
1,2,4-Trichlorobenzene	--	--	31	51	5.9 U	6.2 UJ	6.1 U	6.2 UJ	6.2 UJ	5.9 U	6.1 UJ	6.2 UJ	6.6 U	--
Hexachlorobenzene	--	--	22	70	0.98 U	6.2 UJ	6.1 U	6.2 U	6.2 U	0.99 U	6.1 U	6.2 U	6.6 U	--
Nitrobenzene	--	--	--	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	8.5	6.9	18	4.9	6.2	**75**	17	**60**	27	--
Butyl benzyl phthalate	4.9	64	--	--	1.3	0.63 J	1.7 J	0.58	0.48	1.1	1.3	2.5	1.6	--
Diethyl phthalate	61	110	--	--	2.8 U	3.9 U	3.5 U	4.5 U	3.5 U	2.8 U	2.7 U	4.8 U	4.5 U	--
Dimethyl phthalate	53	53	--	--	2.8 U	3.9 U	3.5 U	4.5 U	3.5 U	2.8 U	2.7 U	4.8 U	0.45 U	--
Di-n-butyl phthalate	220	1700	--	--	2.8 U	3.9 U	3.5 U	4.5 U	3.5 U	2.8 U	2.7 U	4.8 U	4.5 U	--
Di-n-octyl phthalate	58	4500	--	--	2.8 U	3.9 U	3.5 U	4.5 U	3.5 U	2.8 U	2.7 U	4.8 U	4.5 U	--
Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	180	110	320	68	110	1600	380	780	390	--
Butyl benzyl phthalate	--	--	63	900	28	10 J	30 J	8	8.6	24	30	32	24	--
Diethyl phthalate	--	--	200	1200	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
Dimethyl phthalate	--	--	71	160	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	6.6 U	--
Di-n-butyl phthalate	--	--	1400	5100	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
Di-n-octyl phthalate	--	--	6200	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
4-Chloro-3-methylphenol	--	--	--	--	290 U	310 U	310 U	310 U	310 U	300 U	310 U	310 U	330 U	--
2,4-Dichlorophenol	--	--	--	--	290 U	310 U	310 U	310 U	310 U	300 U	310 U	310 U	330 U	--
2,4-Dimethylphenol	29	29	--	--	5.9 UJ	6.2 U	6.1 U	6.2 UJ	6.2 UJ	5.9 UJ	6.1 UJ	9.9 J	6.6 UJ	--
2,4-Dinitrophenol	--	--	--	--	590 UJ	620 U	610 U	620 U	620 U	590 UJ	610 U	620 U	660 U	--
2-Methylphenol	63	63	--	--	7.1	9.3	6.1 U	6.2 UJ	8.6 J	10	6.1 J	8.7 J	6.6 U	--
4-Methylphenol	670	670	--	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
2,4,5-Trichlorophenol	--	--	--	--	290 U	310 U	310 U	310 U	310 U	300 U	310 U	310 U	330 U	--
2,4,6-Trichlorophenol	--	--	--	--	290 U	310 U	310 U	310 U	310 U	300 U	310 U	310 U	330 U	--
2-Nitrophenol	--	--	--	--	290 U	310 U	310 U	310 U	310 U	300 U	310 U	310 U	330 U	--
4-Nitrophenol	--	--	--	--	290 U	310 U	310 U	310 U	310 U	300 UJ	310 U	310 U	330 U	--
Pentachlorophenol	360	690	--	--	29 U	31 U	31 U	31 U	31 U	30 U	31 U	31 U	40	--
Phenol	420	1200	--	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	2.8 U	3.9 U	3.5 U	7.9	6.7	5.1	14	**50**	4.5 U	--
Hexachlorobutadiene	3.9	6.2	--	--	0.046 U	0.39 UJ	0.35 U	0.45 U	0.35 U	0.046 U	0.27 U	0.48 U	0.45 U	--
N-Nitrosodiphenylamine	11	11	--	--	1 U	0.39 UJ	0.35 U	0.45 U	0.35 U	2.1 U	0.27 U	2.9 U	6.6 U	--
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	290 U	310 U	310 U	310 U	310 U	300 U	310 U	310 U	330 U	--
3-Nitroaniline	--	--	--	--	290 U	310 U	310 U	310 U	310 U	300 U	310 U	310 U	330 U	--
4-Nitroaniline	--	--	--	--	290 U	310 U	310 U	310 U	310 U	300 U	310 U	310 U	330 U	--
3,3'-Dichlorobenzidine	--	--	--	--	290 UJ	310 U	310 U	310 U	310 U	300 UJ	310 U	310 U	330 U	--
4-Chloroaniline	--	--	--	--	290 UJ	310 UJ	310 UJ	310 UJ	310 UJ	300 UJ	310 UJ	310 UJ	330 U	--
Aniline	--	--	--	--	59 UJ	62 UJ	61 UJ	62 UJ	62 UJ	59 UJ	61 UJ	62 UJ	66 U	--
Benzyl alcohol	57	73	--	--	29 U	31 UJ	31 U	31 U	31 U	30 U	31 U	34 U	33 U	--
Benzoic acid	650	650	--	--	250	620 U	610 U	620 U	620 U	240	610 U	620 U	590 U	--
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	540	700	59 U	62 U	61 U	110	120	110	320	650	66 U	--
Hexachlorobutadiene	--	--	11	120	0.98 U	6.2 UJ	6.1 U	6.2 U	6.2 U	0.99 U	6.1 U	6.2 U	6.6 U	--

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Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC23 LDW-SC23-0-2 2/16/2006 0-0.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-1.5-2 2/16/2006 0-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-1-1.5 2/16/2006 1.5-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2.5-3 2/16/2006 1-1.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2-2.5 2/16/2006 2.5-3 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2-4 2/16/2006 2-2.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-3.5-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-3-3.5 2/16/2006 3.5-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-4-6 2/16/2006 3-3.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-6-8 2/16/2006 4-6 FT East Nav. Channel - Lafarge
Hexachloroethane	--	--	--	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
Hexachlorocyclopentadiene	--	--	--	--	290 U	310 U	310 U	310 U	310 U	300 UJ	310 U	310 U	330 U	--
Isophorone	--	--	--	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
N-Nitroso-di-n-propylamine	--	--	--	--	29 U	31 UJ	31 U	31 U	31 U	30 U	31 U	31 U	33 U	--
N-Nitrosodimethylamine	--	--	--	--	29 U	31 UJ	31 U	31 U	31 U	30 U	31 U	31 U	33 U	--
N-Nitrosodiphenylamine	--	--	28	40	22 U	6.2 UJ	6.1 U	6.2 U	6.2 U	45 U	6.1 U	38 U	97 U	--
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
4-Chlorophenyl phenyl ether	--	--	--	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
bis(2-chloroethyl)ether	--	--	--	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
bis(2-chloroisopropyl)ether	--	--	--	--	59 U	62 U	61 U	62 U	62 U	59 U	61 U	62 U	66 U	--
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	2 U	--	--	--	--	2 U	--	--	--	--
2,4'-DDE	--	--	--	--	2 U	--	--	--	--	3.8 U	--	--	--	--
2,4'-DDT	--	--	--	--	2 U	--	--	--	--	2 U	--	--	--	--
4,4'-DDD	--	--	--	--	2 U	--	--	--	--	2 U	--	--	--	--
4,4'-DDE	--	--	--	--	2 U	--	--	--	--	2 U	--	--	--	--
4,4'-DDT	--	--	--	--	18 U	--	--	--	--	7.4 U	--	--	--	--
Aldrin	--	--	--	--	0.98 U	--	--	--	--	2.6 U	--	--	--	--
alpha-Chlordane	--	--	--	--	0.98 U	--	--	--	--	0.99 U	--	--	--	--
alpha-BHC	--	--	--	--	0.98 U	--	--	--	--	0.99 U	--	--	--	--
beta-BHC	--	--	--	--	0.98 U	--	--	--	--	0.99 U	--	--	--	--
delta-BHC	--	--	--	--	1100	--	--	--	--	8.3	--	--	--	--
gamma-BHC	--	--	--	--	2.6 U	--	--	--	--	0.99 U	--	--	--	--
gamma-Chlordane	--	--	--	--	4.7 U	--	--	--	--	2.1 U	--	--	--	--
Oxychlordane	--	--	--	--	2 U	--	--	--	--	2 U	--	--	--	--
Dieldrin	--	--	--	--	2 U	--	--	--	--	2.7 U	--	--	--	--
alpha-Endosulfan	--	--	--	--	0.98 U	--	--	--	--	0.99 U	--	--	--	--
beta-Endosulfan	--	--	--	--	2 U	--	--	--	--	2 U	--	--	--	--
Endosulfan sulfate	--	--	--	--	2 U	--	--	--	--	2 U	--	--	--	--
Endrin	--	--	--	--	8.9 U	--	--	--	--	9.3 U	--	--	--	--
Endrin aldehyde	--	--	--	--	2 U	--	--	--	--	2 U	--	--	--	--
Endrin ketone	--	--	--	--	2 U	--	--	--	--	2 U	--	--	--	--
Heptachlor	--	--	--	--	0.98 U	--	--	--	--	0.99 U	--	--	--	--
Heptachlor epoxide	--	--	--	--	0.98 U	--	--	--	--	2.9 U	--	--	--	--
Toxaphene	--	--	--	--	98 U	--	--	--	--	99 U	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	2 U	--	--	--	--	2.7 U	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	18 U	--	--	--	--	7.4 U	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	4.7 U	--	--	--	--	2.1 U	--	--	--	--
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	9.8 U	--	--	--	--	9.9 U	--	--	--	--
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	8.3	--	--	--	--	10	--	--	**60**	**18**
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	20 U	--	--	--	--	20 U	--	--	79 U	36 U
Aroclor-1221	--	--	--	--	20 U	--	--	--	--	20 U	--	--	20 U	36 U
Aroclor-1232	--	--	--	--	20 U	--	--	--	--	20 U	--	--	120 U	36 U

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Aroclor-1242	--	--	--	--	20 U	--	--	--	--	20 U	--	--	85	36 U
Aroclor-1248	--	--	--	--	36	--	--	--	--	60	--	--	160 U	90 U
Aroclor-1254	--	--	--	--	77	--	--	--	--	92	--	--	380	190
Aroclor-1260	--	--	--	--	64	--	--	--	--	67	--	--	410	210
PCBs (total calc'd)	--	--	130	1000	177	--	--	--	--	219	--	--	880	400
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-156	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-157	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC23 LDW-SC23-0-2 2/16/2006 0-0.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-1.5-2 2/16/2006 0-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-1-1.5 2/16/2006 1.5-2 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2.5-3 2/16/2006 1-1.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2-2.5 2/16/2006 2.5-3 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-2-4 2/16/2006 2-2.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-3.5-4 2/16/2006 2-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-3-3.5 2/16/2006 3.5-4 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-4-6 2/16/2006 3-3.5 FT East Nav. Channel - Lafarge	LDW-SC23 LDW-SC23-6-8 2/16/2006 4-6 FT East Nav. Channel - Lafarge
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

a The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Bold Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC23 LDW-SC23-8-10.2 2/16/2006 6-8 FT East Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-0-1 2/17/2006 8-10.2 FT West Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-1-2 2/17/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-2-4 2/17/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SS31 LDW-SS31-010 1/21/2005 2-4 FT East Nav. Channel - Lafarge	LDW-SS32 LDW-SS32-010 1/18/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS321 LDW-SS321-010 4/2006 10:39:00 0-10 cm Nav. Channel - Lafarge	LDW-SS322 LDW-SS322-010 /4/2006 9:33:00 0-10 cm West Nav. Channel - Lafarge	LDW-SS323 LDW-SS323-010 /4/2006 9:43:00 0-10 cm East Nav. Channel - Lafarge	LDW-SS324 LDW-SS324-010 4/2006 10:22:00 0-10 cm Nav. Channel - Lafarge
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	--	1.1	0.2	--	2.1	3.5	5	0.3	6.8	11.2
Sand (total calc'd)	--	--	--	--	--	10.8	60	71	21	28.5	58.2	23.2	34.5	52.2
Silt (total calc'd)	--	--	--	--	--	57.2	32.7	24.3	51.9	47	26.1	56	43.4	21.2
Clay (total calc'd)	--	--	--	--	--	31.1	6.6	4.7	25.1	21	10.8	20.5	15.5	15.5
Fines (percent silt+clay)	--	--	--	--	--	88.3	39.3	29	77	68	36.9	76.5	58.9	36.7
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	1.63	1.99	0.304	0.435	2.17	2.26	1.43	0.766	1.74	1.05
Total solids	--	--	--	--	61.5	53.5	72.7	72.8	45.2	48.7	69.1	48.3	59	68.3
Total solids (preserved)	--	--	--	--	--	--	--	--	44.2	47.9	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	12.7	8.98	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	820 J	390 J	--	--	--	--
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	9 UJ	7 UJ	7 UJ	2.2 J	0.4 UJ	0.3 UJ	0.4 UJ	0.3 UJ	0.3 UJ
Arsenic	57	93	--	--	--	30	11	7 U	***122***	15.7	12.9	13.3	9.5	17.7
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	--	0.4	0.3 U	0.3 U	3.2	1.8	0.5	0.5	0.4	0.5
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	--	34.1	13.7	11.1	55	40	21.1	35	27.7	21.7
Cobalt	--	--	--	--	--	11	5.1	4.3	17.3	12.5	7.3	9.5	8.5	7.6
Copper	390	390	--	--	--	142	40	15.4	245	124	53.6	96	75.9	71.9
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	--	69	8	3 U	172	77	49	56	37	32
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	--	0.26	0.05 U	0.05 U	0.33	0.34	0.13	0.3	0.19	0.2
Molybdenum	--	--	--	--	--	2.6	0.7 U	0.7 U	13	2	1.3	0.7	0.7	1.8
Nickel	--	--	--	--	--	24	9	7	35	304	20.5	29	24.9	20.3
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	9 U	7 U	7 U	10 U	10 UJ	0.7 U	1 U	0.8 U	0.7 U
Silver	6.1	6.1	--	--	--	0.5 U	0.4 U	0.4 U	1.2	0.8	0.4 J	0.5 J	0.5 J	0.5 J
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	9 U	7 U	7 U	0.4 U	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	71.2	46.4	41	84.9	70.5	44.5	61.6	57.2	45
Zinc	410	960	--	--	--	195	38.3	22.6	***997***	***414***	107	155	118	102
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	--	--	--	--	4.8 J	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	30	11	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	--	--	81	33	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	--	2.9 U	--	--	4.5 U	0.88 U	4.3 U	8.1 U	3.5 U	5.9 U
Acenaphthylene	66	66	--	--	--	2.9 U	--	--	4.5 U	0.88 U	4.3 U	8.1 U	3.5 U	5.9 U
Acenaphthene	16	57	--	--	--	2.9 U	--	--	4.5 U	1	4.3 U	8.1 U	3.5 U	5.9 U

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC23 LDW-SC23-8-10.2 2/16/2006 6-8 FT East Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-0-1 2/17/2006 8-10.2 FT West Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-1-2 2/17/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-2-4 2/17/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SS31 LDW-SS31-010 1/21/2005 2-4 FT East Nav. Channel - Lafarge	LDW-SS32 LDW-SS32-010 1/18/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS321 LDW-SS321-010 4/2006 10:39:00 0-10 cm Nav. Channel - Lafarge	LDW-SS322 LDW-SS322-010 /4/2006 9:33:00 0-10 cm West Nav. Channel - Lafarge	LDW-SS323 LDW-SS323-010 /4/2006 9:43:00 0-10 cm East Nav. Channel - Lafarge	LDW-SS324 LDW-SS324-010 4/2006 10:22:00 0-10 cm Nav. Channel - Lafarge
Anthracene	220	1200	--	--	--	4.1	--	--	7.8	2.6	4.1 J	17	3.9	5.9 U
Benzo(a)anthracene	110	270	--	--	--	11	--	--	13	8.4	11	56	10	4.7 J
Benzo(a)pyrene	99	210	--	--	--	18	--	--	19	11	11	50	13	5.9
Benzo(g,h,i)perylene	31	78	--	--	--	3.9	--	--	5.1	4.3 U	6.4	21	5.6	5.9 U
Chrysene	110	460	--	--	--	18	--	--	29	18	15	93	17	6.3
Dibenzo(a,h)anthracene	12	33	--	--	--	2.9 U	--	--	4.5 U	4.3 U	2.7	6.7 J	0.92 J	0.7 J
Fluoranthene	160	1200	--	--	--	24	--	--	31	26	26	94	21	11
Fluorene	23	79	--	--	--	2.9 U	--	--	4.5 U	0.93	4.3 U	6 J	3.5 U	5.9 U
Indeno(1,2,3-cd)pyrene	34	88	--	--	--	5	--	--	5.1	4.3 U	5.9	20	5.6	5.9 U
Naphthalene	99	170	--	--	--	2.9 U	--	--	4.5 U	0.88 U	4.3 U	8.1 U	3.5 U	5.9 U
Phenanthrene	100	480	--	--	--	7.5	--	--	11	8	9.1	38	6.9	5 J
Pyrene	1000	1400	--	--	--	34	--	--	32	20	26	81	23	16
Benzofluoranthenes (total-calc'd)	230	450	--	--	--	51	--	--	53	23	26	140	32	14
Total LPAH (calc'd)	370	780	--	--	--	12	--	--	19	12	13 J	61 J	11	5 J
Total HPAH (calc'd)	960	5300	--	--	--	160	--	--	190	110	130	560 J	130 J	59 J
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	--	58 U	20 U	20 U	--	--	62 U	62 U	61 U	62 U
2-Methylnaphthalene	--	--	670	1400	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
Acenaphthylene	--	--	1300	1300	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
Acenaphthene	--	--	500	730	--	58 U	20 U	20 U	97 U	23	62 U	62 U	61 U	62 U
Anthracene	--	--	960	4400	--	81	16 J	20 U	170	59	58 J	130	67	62 U
Benzo(a)anthracene	--	--	1300	1600	--	220	50	20 U	280	190	160	430	180	49 J
Benzo(a)pyrene	--	--	1600	3000	--	350	56	13 J	420	240	160	380	220	62
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	520	75	18 J	580	320	190	620	360	76
Benzo(k)fluoranthene	--	--	--	--	--	490	82	18 J	570	200	180	440	190	74
Benzo(g,h,i)perylene	--	--	670	720	--	78	12 J	20 U	110	98 U	92	160	98	62 U
Chrysene	--	--	1400	2800	--	360	59	20 U	630	410	220	710	300	66
Dibenzo(a,h)anthracene	--	--	230	540	--	58 U	20 U	20 U	97 U	98 U	39	51 J	16 J	7.4 J
Fluoranthene	--	--	1700	2500	--	470	140	20 U	670	590	370	720	360	120
Fluorene	--	--	540	1000	--	58 U	20 U	20 U	97 U	21	62 U	46 J	61 U	62 U
Indeno(1,2,3-cd)pyrene	--	--	600	690	--	99	13 J	20 U	110	98 U	84	150	97	62 U
Naphthalene	--	--	2100	2400	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
Phenanthrene	--	--	1500	5400	--	150	30	20 U	240	180	130	290	120	53 J
Pyrene	--	--	2600	3300	--	670	230	19 J	700	460	370	620	400	170
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	--	1010	157	36 J	1150	520	370	1060	550	150
Total LPAH (calc'd)	--	--	5200	13000	--	230	46 J	20 U	410	280	190 J	470 J	190	53 J
Total HPAH (calc'd)	--	--	12000	17000	--	3260	720 J	68 J	4070	2410	1870	4280 J	2220 J	620 J
Total PAH (calc'd)	--	--	--	--	--	3490	760 J	68 J	4480	2690	2050 J	4750 J	2410 J	680 J
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	--	0.3 U	--	--	***4.5 U***	0.88 U	0.43 U	0.81 U	0.35 U	0.59 U
1,4-Dichlorobenzene	3.1	9	--	--	--	0.3 U	--	--	**4.5 U**	0.88 U	0.43 U	0.81	0.35 U	0.59 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	--	0.3 U	--	--	***4.5 U***	**0.88 U**	0.43 U	**0.81 U**	0.35 U	0.59 U
Hexachlorobenzene	0.38	2.3	--	--	--	0.3 U	--	--	***4.5 U***	0.075 U	**0.43 U**	**0.81 U**	0.35 U	**0.59 U**
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	--	5.9 U	5.9 U	5.9 U	97 U	20 U	6.2 U	6.2 U	6.1 U	6.2 U
1,3-Dichlorobenzene	--	--	--	--	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
1,4-Dichlorobenzene	--	--	110	120	--	5.9 U	5.9 U	5.9 U	97 U	20 U	6.2 U	6.2	6.1 U	6.2 U

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1,2,4-Trichlorobenzene	--	--	31	51	--	5.9 U	5.9 UJ	5.9 UJ	97 U	20 U	6.2 U	6.2 U	6.1 U	6.2 U
Hexachlorobenzene	--	--	22	70	--	5.9 U	5.9 U	5.9 U	97 U	1.7 U	6.2 U	6.2 U	6.1 U	6.2 U
Nitrobenzene	--	--	--	--	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	--	20	--	--	7.4	4.1 U	14	**59**	19	13
Butyl benzyl phthalate	4.9	64	--	--	--	1.2	--	--	4.5 U	0.88 U	1.5	**5**	1.6	1.3
Diethyl phthalate	61	110	--	--	--	2.9 U	--	--	4.5 U	0.88 U	4.3 U	8.1 U	3.5 U	5.9 U
Dimethyl phthalate	53	53	--	--	--	2.9 U	--	--	4.5 U	0.88 U	1.7	1.1	0.42	0.59 U
Di-n-butyl phthalate	220	1700	--	--	--	2.9 U	--	--	4.5 U	0.88 U	4.3 U	8.1 U	3.5 U	5.9 U
Di-n-octyl phthalate	58	4500	--	--	--	2.9 U	--	--	4.5 U	0.88 U	4.3 U	8.1 U	3.5 U	5.9 U
Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	--	390	15 J	16 J	160	93 U	200	450	330	140
Butyl benzyl phthalate	--	--	63	900	--	23	5.9 U	5.9 U	97 U	20 U	21	38	27	14
Diethyl phthalate	--	--	200	1200	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
Dimethyl phthalate	--	--	71	160	--	58 U	20 U	20 U	97 U	20 U	25	8.7	7.3	6.2 U
Di-n-butyl phthalate	--	--	1400	5100	--	58 U	13 J	14 J	97 U	20 U	62 U	62 U	61 U	62 U
Di-n-octyl phthalate	--	--	6200	--	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
4-Chloro-3-methylphenol	--	--	--	--	--	290 U	98 U	98 U	480 U	98 U	310 U	310 U	300 U	310 U
2,4-Dichlorophenol	--	--	--	--	--	290 U	98 U	98 U	480 U	98 U	310 U	310 U	300 U	310 U
2,4-Dimethylphenol	29	29	--	--	--	5.9 U	5.9 U	5.9 U	***97 U***	20 U	6.2 U	6.2 U	6.1 U	6.2 U
2,4-Dinitrophenol	--	--	--	--	--	580 UJ	200 UJ	200 UJ	970 U	200 U	620 UJ	620 UJ	610 UJ	620 UJ
2-Methylphenol	63	63	--	--	--	5.9 U	5.9 U	5.9 U	***97 U***	20 U	6.2 U	6.2 U	6.1 U	6.2 U
4-Methylphenol	670	670	--	--	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
2,4,5-Trichlorophenol	--	--	--	--	--	290 U	98 U	98 U	480 U	98 U	310 U	310 U	300 U	310 U
2,4,6-Trichlorophenol	--	--	--	--	--	290 U	98 U	98 U	480 U	98 U	310 U	310 U	300 U	310 U
2-Nitrophenol	--	--	--	--	--	290 U	98 U	98 U	480 U	98 U	310 U	310 U	300 U	310 U
4-Nitrophenol	--	--	--	--	--	290 UJ	98 UJ	98 UJ	480 U	98 U	310 U	310 U	300 U	310 U
Pentachlorophenol	360	690	--	--	--	24 J	30 U	29 U	**480 U**	98 U	31 U	31 U	30 U	31 U
Phenol	420	1200	--	--	--	58 U	20 U	20 U	97 U	20 U	140	62 U	61 U	62 U
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	--	2.9 U	--	--	4.5 U	0.88 U	4.3 U	8.1 U	3.5 U	5.9 U
Hexachlorobutadiene	3.9	6.2	--	--	--	0.3 U	--	--	**4.5 U**	0.075 UJ	0.43 U	0.81 U	0.35 U	0.59 U
N-Nitrosodiphenylamine	11	11	--	--	--	1.7 U	--	--	4.5 U	0.88 U	0.43 U	0.81 U	0.35 U	0.59 U
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	--	290 U	98 U	98 U	480 U	98 U	310 U	310 U	300 U	310 U
3-Nitroaniline	--	--	--	--	--	290 U	98 U	98 U	480 U	98 U	310 U	310 U	300 U	310 U
4-Nitroaniline	--	--	--	--	--	290 U	98 U	98 U	480 U	98 U	310 U	310 U	300 U	310 U
3,3'-Dichlorobenzidine	--	--	--	--	--	290 UJ	98 UJ	98 UJ	480 U	98 U	310 U	310 U	300 U	310 U
4-Chloroaniline	--	--	--	--	--	290 UJ	98 UJ	98 UJ	480 U	98 U	310 U	310 U	300 U	310 U
Aniline	--	--	--	--	--	58 UJ	20 UJ	20 UJ	97 U	20 U	62 UJ	62 UJ	61 UJ	62 UJ
Benzyl alcohol	57	73	--	--	--	29 U	30 U	29 U	***97 U***	20 U	31 U	31 U	30 U	31 U
Benzoic acid	650	650	--	--	--	88 J	48 J	59 U	***970 U***	200 U	620 U	620 U	610 U	620 U
Carbazole	--	--	--	--	--	--	--	--	97 U	28	--	--	--	--
Dibenzofuran	--	--	540	700	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
Hexachlorobutadiene	--	--	11	120	--	5.9 U	5.9 U	5.9 U	97 U	1.7 UJ	6.2 U	6.2 U	6.1 U	6.2 U

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC23 LDW-SC23-8-10.2 2/16/2006 6-8 FT East Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-0-1 2/17/2006 8-10.2 FT West Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-1-2 2/17/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-2-4 2/17/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SS31 LDW-SS31-010 1/21/2005 2-4 FT East Nav. Channel - Lafarge	LDW-SS32 LDW-SS32-010 1/18/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS321 LDW-SS321-010 4/2006 10:39:00 0-10 cm Nav. Channel - Lafarge	LDW-SS322 LDW-SS322-010 /4/2006 9:33:00 0-10 cm West Nav. Channel - Lafarge	LDW-SS323 LDW-SS323-010 /4/2006 9:43:00 0-10 cm East Nav. Channel - Lafarge	LDW-SS324 LDW-SS324-010 4/2006 10:22:00 0-10 cm Nav. Channel - Lafarge
Hexachloroethane	--	--	--	--	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
Hexachlorocyclopentadiene	--	--	--	--	--	290 UJ	98 UJ	98 UJ	480 U	98 UJ	310 U	310 UJ	300 UJ	310 UJ
Isophorone	--	--	--	--	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
N-Nitroso-di-n-propylamine	--	--	--	--	--	29 U	30 U	29 U	480 U	98 U	31 U	31 U	30 U	31 U
N-Nitrosodimethylamine	--	--	--	--	--	29 U	30 U	29 U	480 U	98 U	31 U	31 U	30 U	31 U
N-Nitrosodiphenylamine	--	--	28	40	--	33 U	6.5 U	5.9 U	97 U	20 U	6.2 U	6.2 U	6.1 U	6.2 U
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
4-Chlorophenyl phenyl ether	--	--	--	--	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
bis(2-chloroethyl)ether	--	--	--	--	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
bis(2-chloroisopropyl)ether	--	--	--	--	--	58 U	20 U	20 U	97 U	20 U	62 U	62 U	61 U	62 U
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
4,4'-DDD	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
Aldrin	--	--	--	--	--	--	--	--	--	1.7 U	--	--	--	--
alpha-Chlordane	--	--	--	--	--	--	--	--	--	1.7 U	--	--	--	--
alpha-BHC	--	--	--	--	--	--	--	--	--	1.7 U	--	--	--	--
beta-BHC	--	--	--	--	--	--	--	--	--	1.7 U	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	1.7 U	--	--	--	--
gamma-BHC	--	--	--	--	--	--	--	--	--	1.7 UJ	--	--	--	--
gamma-Chlordane	--	--	--	--	--	--	--	--	--	1.7 U	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
Dieldrin	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	--	--	--	1.7 U	--	--	--	--
beta-Endosulfan	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
Endrin	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
Endrin aldehyde	--	--	--	--	--	--	--	--	--	3.3 UJ	--	--	--	--
Endrin ketone	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
Heptachlor	--	--	--	--	--	--	--	--	--	1.7 U	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	1.7 U	--	--	--	--
Toxaphene	--	--	--	--	--	--	--	--	--	170 U	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	--	--	--	--	--	17 U	--	--	--	--
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	2.5	**14**	--	--	4.4	5.4 J	**31 J**	**37 J**	9.5	**46**
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	6.5 U	20 U	4 U	3.9 U	20 U	19 UJ	29 U	40 U	18 U	33 U
Aroclor-1221	--	--	--	--	6.5 U	20 U	4 U	3.9 U	20 U	19 UJ	29 U	40 U	18 U	33 U
Aroclor-1232	--	--	--	--	6.5 U	20 U	4 U	3.9 U	20 U	19 UJ	29 U	40 U	18 U	33 U

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC23 LDW-SC23-8-10.2 2/16/2006 6-8 FT East Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-0-1 2/17/2006 8-10.2 FT West Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-1-2 2/17/2006 0-1 FT West Nav. Channel - Lafarge	LDW-SC24 LDW-SC24-2-4 2/17/2006 1-2 FT West Nav. Channel - Lafarge	LDW-SS31 LDW-SS31-010 1/21/2005 2-4 FT East Nav. Channel - Lafarge	LDW-SS32 LDW-SS32-010 1/18/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS321 LDW-SS321-010 4/2006 10:39:00 0-10 cm Nav. Channel - Lafarge	LDW-SS322 LDW-SS322-010 /4/2006 9:33:00 0-10 cm West Nav. Channel - Lafarge	LDW-SS323 LDW-SS323-010 /4/2006 9:43:00 0-10 cm East Nav. Channel - Lafarge	LDW-SS324 LDW-SS324-010 4/2006 10:22:00 0-10 cm Nav. Channel - Lafarge
Aroclor-1242	--	--	--	--	6.5 U	20 U	4 U	3.9 U	20 U	22 J	76 J	40 J	26	110
Aroclor-1248	--	--	--	--	6.5 U	47	6.1	3.9 U	39 U	19 UJ	29 U	40 U	18 U	33 U
Aroclor-1254	--	--	--	--	20 U	120	19	3.9 U	53	56	140 J	100	57	210
Aroclor-1260	--	--	--	--	41	110	11	3.9 U	43	44	230 J	140	83	160
PCBs (total calc'd)	--	--	130	1000	41	280	36	3.9 U	96	122 J	450 J	280 J	166	480
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-156	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-157	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	668	476	313	433
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	65.4	92.1	58.3	82.5
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	5.8 J	7.14 J	4.51 J	8.31 J
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	2.27 J	3.75 J	2.19 J	2.1 J
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	9.13 J	11.9 J	6.87 J	14.2
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	17.9 J	17.6	11.4 J	13
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	2.67 J	3.69 J	2.24 J	3.85 J
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	9.44 J	11.5 J	7.01 J	7 J
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	0.253 U	0.317 J	0.236 J	0.331 J

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1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	1.76 J	2.06 J	1.35 J	1.45 J
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	1.17 J	1.52 J	1.04 J	1.3 J
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	1.69 J	2.63 J	1.73 J	1.99 J
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	2.85 J	3.81 J	2.37 J	4.49 J
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	0.823 J	0.719 J	0.495 J	0.71 J
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	1.48 J	2.04 J	1.29 J	1.79 J
OCDD	--	--	--	--	--	--	--	--	--	--	4900	4110	2970	3750
OCDF	--	--	--	--	--	--	--	--	--	--	250	353	203	319
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	11.5 J	14.1 J	8.9 J	13.3 J
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	9.54 J	11.4 J	7.06 J	10.9 J
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	8.81 J	10.8 J	6.79 J	9.59 J
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	16.4 J	16.3 J	10.5 J	14.5 J
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	16.9 J	16.4 J	10.6 J	14.4 J

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

a The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Bold Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS35 LDW-SS35-010 3/8/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS36 LDW-SS36-010 1/24/2005 0-10 cm West Nav. Channel - Lafarge	LDW-SS37 LDW-SS37-010 1/18/2005 0-10 cm Nav. Channel - Lafarge	LDW-SS38 LDW-SS38-010 1/18/2005 0-10 cm West Nav. Channel - Lafarge	LDW-SS39 LDW-SS39-010 3/11/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS40 LDW-SS40-010 1/18/2005 0-10 cm Nav. Channel - Lafarge	LDW-SS41 LDW-SS41-010 3/8/2005 0-9 cm West Nav. Channel - Lafarge	LDW-SS42 LDW-SS42-010 1/24/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS43 LDW-SS43-010 1/21/2005 0-10 cm West Nav. Channel - Lafarge	DR023 SD-DR023-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	6.3	1.6	5.1	0.7	17	2.3	14.2	10.6	10.5	0.09 J
Sand (total calc'd)	--	--	--	--	61.6	23.6	31.2	25.5	61.2	39.9	35.6	15.7	19.2	11.3 J
Silt (total calc'd)	--	--	--	--	24	50.8	44.9	53.9	15.9	42.1	36.2	50.8	53.5	62
Clay (total calc'd)	--	--	--	--	8.1	24.1	18.8	19.9	5.8	15.9	14.1	23	16.8	26
Fines (percent silt+clay)	--	--	--	--	32.1	74.9	63.7	73.8	21.7	58	50.3	73.8	70.3	88
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	2.01	1.89	2.33	1.95	3.93	1.89	2.35	2.04	1.67	2.51
Total solids	--	--	--	--	68.1 J	43.3	58.3	47.1	57.9	56.1	54.7	47.1	50.55	--
Total solids (preserved)	--	--	--	--	58.4	42.4	53.3	40.5	61	39.3	44.6	37.8	48.33	--
Ammonia (total as nitrogen)	--	--	--	--	7.6	13.6	8.7	8.48	5.2	7.05	5.65	26.9	28.8	--
Sulfides (total)	--	--	--	--	510 J	910	650 J	38 J	490 J	46 J	110 J	37	1300 J	--
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--	23000
Antimony	--	--	--	--	0.3 UJ	0.4 UJ	0.3 UJ	0.4 UJ	0.3 UJ	0.3 UJ	0.4 UJ	0.4 UJ	0.6 J	10 UJ
Arsenic	57	93	--	--	12.6	18	13.6	14.5	30.5	16.7	45	17.1	23.5	12
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	82
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	0.51
Cadmium	5.1	6.7	--	--	1	0.5	3	0.6	1.1	0.8	0.5	0.7	0.4 U	0.47
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	8500
Chromium	260	270	--	--	35.1	38	89.2	39	40.4	36.4	30.5	36.6	32.9	32
Cobalt	--	--	--	--	8.3	9.8	9.6	10.9	6	9.5	9.3	10	11.2	11
Copper	390	390	--	--	180 J	104	108	107	55.2	84.2	103	107	121	75
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	31000 J
Lead	450	530	--	--	55	61	103	58	79	56	62	62	48	43
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	8300
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--	350
Mercury	0.41	0.59	--	--	**0.46 J**	0.24	***0.69***	0.3	***1.09***	0.35	0.18	0.31	0.17	0.22
Molybdenum	--	--	--	--	2.2	2	3.1	2	9.1	1.7	3.4	2.1	2	--
Nickel	--	--	--	--	22	24	27	27	16	23	19	23	26	24
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	2900
Selenium	--	--	--	--	8 U	10 U	8 UJ	10 U	9 U	8 UJ	8 U	9 U	9 U	9
Silver	6.1	6.1	--	--	0.8	0.7 U	3.9	0.7	0.6	0.7	0.5 U	0.6	0.6 U	0.45
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	12000
Thallium	--	--	--	--	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.4 U	0.4 U	0.4 U	0.13 J
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--	4.8 J
Vanadium	--	--	--	--	58.4	77.6	70.3	76.7	58.7	65.8	62	74.2	72.2	60
Zinc	410	960	--	--	159	256	220	155	117	141	175	157	165	130
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	7.9	--	--	3.6 J	--	26	--
Tributyltin as ion	--	--	--	--	--	--	--	23	--	--	18 J	--	99	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	***160***	5.3 U	0.86 U	1 U	2.3	1.1 U	0.81 U	4.9 U	1.2 U	0.8 U
Acenaphthylene	66	66	--	--	6.5	4.7 J	0.86 U	1 U	2 U	1.1 U	0.81 U	4.9 U	1.2 U	0.8 U
Acenaphthene	16	57	--	--	***260***	3.7 J	0.86 U	1 U	6.6	1.1 U	0.81 U	4.9 U	1.2 U	0.8

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS35 LDW-SS35-010 3/8/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS36 LDW-SS36-010 1/24/2005 0-10 cm West Nav. Channel - Lafarge	LDW-SS37 LDW-SS37-010 1/18/2005 0-10 cm Nav. Channel - Lafarge	LDW-SS38 LDW-SS38-010 1/18/2005 0-10 cm West Nav. Channel - Lafarge	LDW-SS39 LDW-SS39-010 3/11/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS40 LDW-SS40-010 1/18/2005 0-10 cm Nav. Channel - Lafarge	LDW-SS41 LDW-SS41-010 3/8/2005 0-9 cm West Nav. Channel - Lafarge	LDW-SS42 LDW-SS42-010 1/24/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS43 LDW-SS43-010 1/21/2005 0-10 cm West Nav. Channel - Lafarge	DR023 SD-DR023-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge
Anthracene	220	1200	--	--	170	7.4	1.2	1.9	6.4	1.1 U	2.1	4.9	1.3	5.2
Benzo(a)anthracene	110	270	--	--	**160**	21	6.9	9.7	9.9	3.5	13	11	7.2	16
Benzo(a)pyrene	99	210	--	--	**100**	15	6	14	12	3.5	17	11	9	15
Benzo(g,h,i)perylene	31	78	--	--	23	4.8 J	4.2 U	3.2	4.1	1.9	2.2	2.8 J	2.8	9.6
Chrysene	110	460	--	--	**180**	47	4.7	12	13	6.3	9.4	17	7.8	20
Dibenzo(a,h)anthracene	12	33	--	--	**15 U**	5.3 U	4.2 U	1 U	2 U	1.1 U	0.81 U	4.9 U	1.2 U	2.8
Fluoranthene	160	1200	--	--	**850**	120	9.9	9.7	31	9	14	23	9	40
Fluorene	23	79	--	--	***240***	5.1 J	0.86 U	1 U	3.1	1.1 U	0.81 U	4.9 U	1.2 U	1.6
Indeno(1,2,3-cd)pyrene	34	88	--	--	33	4.1	3.4	9.2	6.6	2	9.4	0.98	6.6	10
Naphthalene	99	170	--	--	***260***	5.3 U	0.86 U	1 U	2.5	1.1 U	0.81 U	4.9 U	1.2 U	0.8 U
Phenanthrene	100	480	--	--	***750***	95	2.2	3.8	24	2.9	5.5	8.3	4.1	10
Pyrene	1000	1400	--	--	500	90	12	9.2	31	7.4	13	24	11	33
Benzofluoranthenes (total-calc'd)	230	450	--	--	**250**	48	9.9	19	27	6.9	17	35	14	33
Total LPAH (calc'd)	370	780	--	--	***1700***	120 J	3.4	5.7	42	2.9	7.7	13	5.4	18
Total HPAH (calc'd)	960	5300	--	--	**2100**	350 J	52	86	130	41	94	120 J	68	180
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	3300	100 U	20 U	20 U	91	20 U	19 U	99 U	20 U	20 U
Acenaphthylene	--	--	1300	1300	130	88 J	20 U	20 U	80 U	20 U	19 U	99 U	20 U	20 U
Acenaphthene	--	--	500	730	5200	69 J	20 U	20 U	260	20 U	19 U	99 U	20 U	20
Anthracene	--	--	960	4400	3500	140	27	37	250	20 U	49	99	22	130
Benzo(a)anthracene	--	--	1300	1600	3200	400	160	190	390	67	310	220	120	410
Benzo(a)pyrene	--	--	1600	3000	2000	280	140	270	470	66	390	230	150	370
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	2700	460	230	290	450	77	280	330	140	460
Benzo(k)fluoranthene	--	--	--	--	2400	440	98 U	87	620	53	120	380	99	370
Benzo(g,h,i)perylene	--	--	670	720	470	90 J	98 U	62	160	36	51	58 J	46	240
Chrysene	--	--	1400	2800	3700	890	110	230	520	120	220	350	130	510
Dibenzo(a,h)anthracene	--	--	230	540	300 U	100 U	98 U	20 U	80 U	20 U	19 U	99 U	20 U	70
Fluoranthene	--	--	1700	2500	17000	2300	230	190	1200	170	330	470	150	1000
Fluorene	--	--	540	1000	4900	96 J	20 U	20 U	120	20 U	19 U	99 U	20 U	40
Indeno(1,2,3-cd)pyrene	--	--	600	690	660	77	80	180	260	38	220	20	110	260
Naphthalene	--	--	2100	2400	5300	100 U	20 U	20 U	100	20 U	19 U	99 U	20 U	20 U
Phenanthrene	--	--	1500	5400	15000	1800	52	75	930	55	130	170	68	260
Pyrene	--	--	2600	3300	10000	1700	270	180	1200	140	300	480	180	820
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	5100	900	230	380	1070	130	400	710	240	830
Total LPAH (calc'd)	--	--	5200	13000	34000	2200 J	79	112	1660	55	180	270	90	450
Total HPAH (calc'd)	--	--	12000	17000	42000	6600 J	1220	1680	5300	770	2220	2540 J	1130	4500
Total PAH (calc'd)	--	--	--	--	76000	8800 J	1300	1790	6900	820	2400	2810 J	1220	5000
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	0.33 U	0.35 U	0.86 U	0.72 U	1.4 U	1.1 U	0.28 U	0.32 U	0.4 U	0.8 U
1,4-Dichlorobenzene	3.1	9	--	--	0.33 U	0.35 U	0.86 U	0.72 U	1.4 U	1.1 U	0.28 U	0.32 U	0.4 U	0.8 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.33 U	0.35 U	**0.86 U**	0.72 U	0.69 UJ	**1.1 U**	0.28 U	0.32 U	0.4 U	0.8 U
Hexachlorobenzene	0.38	2.3	--	--	0.33 U	0.052 U	**0.86 U**	0.36 UJ	**1.4 U**	**1.1 U**	0.072 U	0.048 U	0.2 UJ	**0.8 U**
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	6.6 U	6.6 U	20 U	14 U	54 U	20 U	6.6 U	6.6 U	6.6 U	20 U
1,3-Dichlorobenzene	--	--	--	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	20 U
1,4-Dichlorobenzene	--	--	110	120	6.6 U	6.6 U	20 U	14 U	54 U	20 U	6.6 U	6.6 U	6.6 U	20 U

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS35 LDW-SS35-010 3/8/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS36 LDW-SS36-010 1/24/2005 0-10 cm West Nav. Channel - Lafarge	LDW-SS37 LDW-SS37-010 1/18/2005 0-10 cm Nav. Channel - Lafarge	LDW-SS38 LDW-SS38-010 1/18/2005 0-10 cm West Nav. Channel - Lafarge	LDW-SS39 LDW-SS39-010 3/11/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS40 LDW-SS40-010 1/18/2005 0-10 cm Nav. Channel - Lafarge	LDW-SS41 LDW-SS41-010 3/8/2005 0-9 cm West Nav. Channel - Lafarge	LDW-SS42 LDW-SS42-010 1/24/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS43 LDW-SS43-010 1/21/2005 0-10 cm West Nav. Channel - Lafarge	DR023 SD-DR023-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge
1,2,4-Trichlorobenzene	--	--	31	51	6.6 U	6.6 U	20 U	14 U	27 UJ	20 U	6.6 U	6.6 U	6.6 U	20 U
Hexachlorobenzene	--	--	22	70	6.6 U	0.99 U	20 U	7.1 UJ	54 U	20 U	1.7 U	0.98 U	3.3 UJ	20 U
Nitrobenzene	--	--	--	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	20 U
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	18	6.9	33	5.1 U	2.8 U	14	6 U	19	4.8	25
Butyl benzyl phthalate	4.9	64	--	--	0.33 U	0.35 U	0.86 U	1.4	1.4 U	1.1 U	0.6	0.32 U	0.4 U	0.8 U
Diethyl phthalate	61	110	--	--	0.33 U	0.35 U	0.86 U	0.72 U	3.1	1.1 U	0.31	0.69 U	0.4	0.8 U
Dimethyl phthalate	53	53	--	--	0.33 U	0.35 U	0.86 U	0.72 U	1.4 U	1.1 U	0.34	0.32 U	0.44	0.8
Di-n-butyl phthalate	220	1700	--	--	2.9 U	5.3 U	0.86 U	1 U	3.1 U	1.1 U	0.81 U	4.9 U	1.2 U	0.8
Di-n-octyl phthalate	58	4500	--	--	2.9 U	5.3 U	0.86 U	1 U	2 U	1.1 U	0.81 U	4.9 U	1.2 U	0.8 U
Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	370	130	760	100 U	110 U	270	140 U	380	80	630
Butyl benzyl phthalate	--	--	63	900	6.6 U	6.6 U	20 U	27	54 U	20 U	14	6.6 U	6.6 U	20 U
Diethyl phthalate	--	--	200	1200	6.6 U	6.6 U	20 U	14 U	120	20 U	7.3	14 U	6.6	20 U
Dimethyl phthalate	--	--	71	160	6.6 U	6.6 U	20 U	14 U	54 U	20 U	8	6.6 U	7.3	20
Di-n-butyl phthalate	--	--	1400	5100	59 U	100 U	20 U	20 U	120 U	20 U	19 U	99 U	20 U	20
Di-n-octyl phthalate	--	--	6200	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	20 U
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	20 U
4-Chloro-3-methylphenol	--	--	--	--	300 U	500 U	98 U	98 U	400 U	98 U	97 U	490 U	98 U	40 U
2,4-Dichlorophenol	--	--	--	--	300 U	500 U	98 U	98 U	400 U	98 U	97 U	490 U	98 U	60 U
2,4-Dimethylphenol	29	29	--	--	6.6 U	6.6 U	20 U	14 U	***31 UJ***	20 U	6.6 U	6.6 U	6.6 U	20 U
2,4-Dinitrophenol	--	--	--	--	590 U	1000 U	200 U	200 UJ	800 U	200 UJ	190 U	990 U	200 U	200 U
2-Methylphenol	63	63	--	--	6.6 U	6.6 U	20 U	14 U	54 U	20 U	6.6 U	6.6 U	6.6 U	20 U
4-Methylphenol	670	670	--	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	20 U
2,4,5-Trichlorophenol	--	--	--	--	300 U	500 U	98 U	98 U	400 U	98 U	97 U	490 U	98 U	200 U
2,4,6-Trichlorophenol	--	--	--	--	300 U	500 U	98 U	98 U	400 U	98 U	97 U	490 U	98 U	200 U
2-Nitrophenol	--	--	--	--	300 U	500 U	98 U	98 U	400 U	98 U	97 U	490 U	98 U	100 U
4-Nitrophenol	--	--	--	--	300 U	500 U	98 U	98 U	400 U	98 U	97 U	490 U	98 U	100 U
Pentachlorophenol	360	690	--	--	33 U	33 U	98 U	71 U	270 U	98 U	33 U	33 UJ	33 U	100 U
Phenol	420	1200	--	--	59 U	100 U	20 U	20 U	80 U	22	19 U	180	20 U	80
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	***170***	6.9	0.86 U	1 U	2 U	1.1 U	0.81 U	4.9 U	1.2 U	1.2
Hexachlorobutadiene	3.9	6.2	--	--	0.33 U	0.052 U	0.86 U	0.72 U	1.4 U	1.1 U	0.072 U	0.048 U	0.4 U	0.8 U
N-Nitrosodiphenylamine	11	11	--	--	0.33 U	0.35 U	0.86 U	0.72 U	1.4 U	1.1 U	0.28 U	0.32 U	0.4 U	1.6 U
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	300 U	500 U	98 U	98 U	400 U	98 U	97 U	490 U	98 U	100 U
3-Nitroaniline	--	--	--	--	300 U	500 U	98 U	98 U	400 U	98 U	97 U	490 U	98 U	200 U
4-Nitroaniline	--	--	--	--	300 U	500 U	98 U	98 U	400 U	98 U	97 U	490 U	98 U	100 U
3,3'-Dichlorobenzidine	--	--	--	--	300 U	500 U	98 U	98 U	400 U	98 U	97 U	490 U	98 U	200 U
4-Chloroaniline	--	--	--	--	300 U	500 U	98 U	98 U	400 U	98 U	97 U	490 U	98 U	60 U
Aniline	--	--	--	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	--
Benzyl alcohol	57	73	--	--	33 U	33 U	20 U	20 UJ	***80 U***	20 UJ	19 U	33 U	20 U	50 U
Benzoic acid	650	650	--	--	82	66 U	200 U	140 UJ	540 U	200 U	66 U	66 U	66 U	200 U
Carbazole	--	--	--	--	1300	170	20 U	20 U	88	20 U	19 U	99 U	20 U	40
Dibenzofuran	--	--	540	700	3500	130	20 U	20 U	80 U	20 U	19 U	99 U	20 U	30
Hexachlorobutadiene	--	--	11	120	6.6 U	0.99 U	20 U	14 U	54 U	20 U	1.7 U	0.98 U	6.6 U	20 U

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Hexachloroethane	--	--	--	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	20 U
Hexachlorocyclopentadiene	--	--	--	--	300 U	500 U	98 UJ	98 U	400 U	98 U	97 U	490 U	98 U	100 UJ
Isophorone	--	--	--	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	20 U
N-Nitroso-di-n-propylamine	--	--	--	--	33 U	33 U	98 U	71 U	270 U	98 U	33 U	33 U	33 U	40 U
N-Nitrosodimethylamine	--	--	--	--	33 U	33 U	98 U	71 U	270 U	98 U	33 U	33 U	33 U	--
N-Nitrosodiphenylamine	--	--	28	40	6.6 U	6.6 U	20 U	14 U	54 U	20 U	6.6 U	6.6 U	6.6 U	40 U
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	40 U
4-Chlorophenyl phenyl ether	--	--	--	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	20 U
bis(2-chloroethyl)ether	--	--	--	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	40 U
bis(2-chloroisopropyl)ether	--	--	--	--	59 U	100 U	20 U	20 U	80 U	20 U	19 U	99 U	20 U	40 U
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
2,4'-DDE	--	--	--	--	--	2 U	--	--	--	--	3.4 U	7.3 U	--	--
2,4'-DDT	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
4,4'-DDD	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
4,4'-DDE	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
4,4'-DDT	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
Aldrin	--	--	--	--	--	0.99 U	--	--	--	--	1.7 U	0.98 U	--	--
alpha-Chlordane	--	--	--	--	--	0.99 U	--	--	--	--	1.7 U	0.98 U	--	--
alpha-BHC	--	--	--	--	--	0.99 U	--	--	--	--	1.7 U	0.98 U	--	--
beta-BHC	--	--	--	--	--	0.99 U	--	--	--	--	1.7 U	0.98 U	--	--
delta-BHC	--	--	--	--	--	0.99 U	--	--	--	--	1.7 U	0.98 U	--	--
gamma-BHC	--	--	--	--	--	0.99 U	--	--	--	--	1.7 U	0.98 U	--	--
gamma-Chlordane	--	--	--	--	--	0.99 U	--	--	--	--	1.7 U	0.98 U	--	--
Oxychlordane	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
Dieldrin	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
alpha-Endosulfan	--	--	--	--	--	0.99 U	--	--	--	--	1.7 U	0.98 U	--	--
beta-Endosulfan	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
Endosulfan sulfate	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
Endrin	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
Endrin aldehyde	--	--	--	--	--	2 UJ	--	--	--	--	3.4 UJ	2.5 UJ	--	--
Endrin ketone	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
Heptachlor	--	--	--	--	--	0.99 U	--	--	--	--	1.7 U	1.5 U	--	--
Heptachlor epoxide	--	--	--	--	--	0.99 U	--	--	--	--	1.7 U	0.98 U	--	--
Toxaphene	--	--	--	--	--	99 U	--	--	--	--	170 U	98 U	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
DDTs (total-calc'd)	--	--	--	--	--	2 U	--	--	--	--	3.4 U	7.3 U	--	--
Total Chlordane (calc'd)	--	--	--	--	--	2 U	--	--	--	--	3.4 U	2 U	--	--
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	--	9.9 U	--	--	--	--	17 U	9.8 U	--	--
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	**32**	1.3	***220***	5.9	5.9	**27 J**	8.4	5.3	1.1 J	2.7 J
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	20 U	20 U	1100 U	20 U	110 U	39 UJ	20 U	20 U	20 U	20 UJ
Aroclor-1221	--	--	--	--	20 U	20 U	1100 U	20 U	110 U	39 UJ	20 U	20 U	20 U	40 U
Aroclor-1232	--	--	--	--	20 U	20 U	1100 U	20 U	110 U	39 UJ	20 U	20 U	20 U	20 U

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS35 LDW-SS35-010 3/8/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS36 LDW-SS36-010 1/24/2005 0-10 cm West Nav. Channel - Lafarge	LDW-SS37 LDW-SS37-010 1/18/2005 0-10 cm Nav. Channel - Lafarge	LDW-SS38 LDW-SS38-010 1/18/2005 0-10 cm West Nav. Channel - Lafarge	LDW-SS39 LDW-SS39-010 3/11/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS40 LDW-SS40-010 1/18/2005 0-10 cm Nav. Channel - Lafarge	LDW-SS41 LDW-SS41-010 3/8/2005 0-9 cm West Nav. Channel - Lafarge	LDW-SS42 LDW-SS42-010 1/24/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS43 LDW-SS43-010 1/21/2005 0-10 cm West Nav. Channel - Lafarge	DR023 SD-DR023-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge
Aroclor-1242	--	--	--	--	140	20 U	2100 U	23	110 U	170 J	39	20 U	20 U	20 U
Aroclor-1248	--	--	--	--	20 U	20 U	4300 U	20 U	110 U	39 UJ	20 U	28	20 U	20 U
Aroclor-1254	--	--	--	--	340	24	3300	50	230	220	99	42	18 J	26
Aroclor-1260	--	--	--	--	170	20 U	1800	42	110 U	120	60	38	20 U	41 J
PCBs (total calc'd)	--	--	130	1000	650	24	5100	115	230	510 J	198	108	18 J	67 J
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--	1000 UJ
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--	1000 UJ
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--	1000 UJ
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--	2000 UJ
PCB-066	--	--	--	--	--	--	221000	--	--	--	--	--	--	3000 UJ
PCB-077	--	--	--	--	--	--	19500	--	--	--	--	--	--	1000 UJ
PCB-081	--	--	--	--	--	--	976	--	--	--	--	--	--	1000 UJ
PCB-090	--	--	--	--	--	--	294000 C	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	C90	--	--	--	--	--	--	2000 J
PCB-105	--	--	--	--	--	--	107000	--	--	--	--	--	--	1000 UJ
PCB-110	--	--	--	--	--	--	293000 C	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	6140	--	--	--	--	--	--	1000 UJ
PCB-118	--	--	--	--	--	--	261000	--	--	--	--	--	--	2000 J
PCB-123	--	--	--	--	--	--	4290	--	--	--	--	--	--	1000 UJ
PCB-126	--	--	--	--	--	--	405	--	--	--	--	--	--	1000 UJ
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--	1000 UJ
PCB-129	--	--	--	--	--	--	290000 C	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	C129	--	--	--	--	--	--	4000 J
PCB-153	--	--	--	--	--	--	220000 C	--	--	--	--	--	--	5000 J
PCB-156	--	--	--	--	--	--	37500 C	--	--	--	--	--	--	1000 UJ
PCB-157	--	--	--	--	--	--	C156	--	--	--	--	--	--	1000 UJ
PCB-167	--	--	--	--	--	--	10500	--	--	--	--	--	--	1000 UJ
PCB-169	--	--	--	--	--	--	148 U	--	--	--	--	--	--	1000 UJ
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--	1000 J
PCB-180	--	--	--	--	--	--	112000 C	--	--	--	--	--	--	3000 J
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--	2000 J
PCB-189	--	--	--	--	--	--	2060	--	--	--	--	--	--	1000 UJ
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--	1000 UJ
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--	1000 UJ
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--	1000 UJ
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	1130	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	103	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	982	1800	--	--	--	--	--	639	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	123	411	--	--	--	--	--	110	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	10.3 J	42.8	--	--	--	--	--	9.85 J	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	5.9 J	12.7	--	--	--	--	--	2.77 J	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	15.4 J	97.1	--	--	--	--	--	14.4 J	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	24.3	71.9	--	--	--	--	--	17.5	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	4.2 J	22.6	--	--	--	--	--	3.44 J	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	19.6 J	40	--	--	--	--	--	10.9 J	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	0.55 J	1.2 J	--	--	--	--	--	0.364 J	--

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS35 LDW-SS35-010 3/8/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS36 LDW-SS36-010 1/24/2005 0-10 cm West Nav. Channel - Lafarge	LDW-SS37 LDW-SS37-010 1/18/2005 0-10 cm Nav. Channel - Lafarge	LDW-SS38 LDW-SS38-010 1/18/2005 0-10 cm West Nav. Channel - Lafarge	LDW-SS39 LDW-SS39-010 3/11/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS40 LDW-SS40-010 1/18/2005 0-10 cm Nav. Channel - Lafarge	LDW-SS41 LDW-SS41-010 3/8/2005 0-9 cm West Nav. Channel - Lafarge	LDW-SS42 LDW-SS42-010 1/24/2005 0-10 cm East Nav. Channel - Lafarge	LDW-SS43 LDW-SS43-010 1/21/2005 0-10 cm West Nav. Channel - Lafarge	DR023 SD-DR023-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge
1,2,3,7,8-PeCDD	--	--	--	--	--	3.26 J	8.33	--	--	--	--	--	1.82 J	--
1,2,3,7,8-PeCDF	--	--	--	--	--	1.9 J	13.8	--	--	--	--	--	1.22 J	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	3.31 J	11.9	--	--	--	--	--	2.38 J	--
2,3,4,7,8-PeCDF	--	--	--	--	--	4.25 J	62.5	--	--	--	--	--	2.44 J	--
2,3,7,8-TCDD	--	--	--	--	--	0.859 J	2.94	--	--	--	--	--	0.598 J	--
2,3,7,8-TCDF	--	--	--	--	--	2.2	397	--	--	--	--	--	1.2	--
OCDD	--	--	--	--	--	9230	18200	--	--	--	--	--	6620	--
OCDF	--	--	--	--	--	493	1360	--	--	--	--	--	324	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	18.9 J	499 J	--	--	--	--	--	12.2 J	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

a The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Bold Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR024 SD-DR024-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR025 SD-DR025-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR026 SD-DR026-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR049 SD-DR049-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR050 SD-DR050-0000 8/31/1998 0-10 cm West Nav. Channel - Lafarge	DR051 SD-DR051-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR052 SD-DR052-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR062 SD-DR062-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR063 SD-DR063-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR074 SD-DR074-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	0.4 J	0.87	5.5	0.43 J	3.1	4.1	0.57 J	0.15	0.09 J	0.17
Sand (total calc'd)	--	--	--	--	10.7 J	17.5	19.5	13.9 J	11.3	61	27.4 J	25.2	11.8 J	43
Silt (total calc'd)	--	--	--	--	63	57	52	56	60	21.9	50	52	62	36
Clay (total calc'd)	--	--	--	--	26	24	24	30	27	13.2	23	24	26	20.8
Fines (percent silt+clay)	--	--	--	--	89	81	76	86	87	35.1	73	75	88	57
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	2.51	2.83	3.24	2.64	4.12	2.77	2.56	2.18	2.62	2.46
Total solids	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	23000	20000	22000	17000	29000	22000	19000	19000	22000	21000
Antimony	--	--	--	--	10 UJ	10 UJ	10 UJ	10 UJ	5 J	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Arsenic	57	93	--	--	12	13	13	13 J	16	12 J	13 J	11	13	9.5 J
Barium	--	--	--	--	92	82	89	76	120	81	85	74	87	76
Beryllium	--	--	--	--	0.49	0.46	0.48	0.43	0.47	0.45	0.42	0.43	0.5	0.44
Cadmium	5.1	6.7	--	--	0.41	0.46	0.49	0.53	0.61	0.34	0.4	0.42	0.48	0.31
Calcium	--	--	--	--	12000	29000	11000	6700 J	15000	8300 J	9200 J	6400	8100	6700 J
Chromium	260	270	--	--	33	31	35	27 J	40	32 J	30 J	28	33	31 J
Cobalt	--	--	--	--	11	9	10	10	12	10	11	10	11	11
Copper	390	390	--	--	74	73	77	78	110	76	98	71	77	70
Iron	--	--	--	--	33000	30000	32000	28000 J	39000 J	31000 J	30000 J	28000 J	32000	30000 J
Lead	450	530	--	--	42	45	45	14 J	66 J	42 J	47 J	40	42	38 J
Magnesium	--	--	--	--	8600	7900	8500	8100	10000	9100	8800	7700	8600	9200
Manganese	--	--	--	--	370	350	360	320	430	330	360	320	340	300
Mercury	0.41	0.59	--	--	0.21	0.26	0.22	0.24	0.32	0.22	0.22	0.22	0.25	0.19
Molybdenum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	25	24	24	22	26 J	22	21	21	24	22
Potassium	--	--	--	--	3000	2700	2700	3000	3700	3200	3100	2400	3000	3300
Selenium	--	--	--	--	8	7	7	1 J	24 J	0.8 J	1	8	7	1
Silver	6.1	6.1	--	--	0.49	0.45	0.51	0.32	0.48	0.31	0.32	0.41	0.47	0.26
Sodium	--	--	--	--	12000	12000	12000	12000	14000	13000	12000	10000	13000	13000
Thallium	--	--	--	--	0.15	0.13	0.14	0.12	0.17 J	0.12	0.13	0.11 J	0.15	0.12
Tin	--	--	--	--	5	5	5	6 J	11	6 J	8 J	4 J	5	6 J
Vanadium	--	--	--	--	65	57	61	51	87	62	58	53	63	61
Zinc	410	960	--	--	140	140	140	130	170	130	140	120	140	120
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	--	56 J	--	41 J	--	26 J	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	35 J	--	36	--	49	--	--	--	--
Tributyltin as ion	--	--	--	--	--	130	--	170	--	160	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	20 UJ	--	5 U	--	10 U	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	0.8 U	0.71	0.62 U	0.76 U	--	0.72 U	0.78 U	0.92	0.76 U	0.81 U
Acenaphthylene	66	66	--	--	0.8 U	0.71 U	0.62 U	0.76 U	--	0.72 U	0.78 U	0.92 U	0.76 U	0.81 U
Acenaphthene	16	57	--	--	0.8 U	1.4	0.93	3.4	--	10	0.78	1.4	0.76 U	0.81 U

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR024 SD-DR024-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR025 SD-DR025-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR026 SD-DR026-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR049 SD-DR049-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR050 SD-DR050-0000 8/31/1998 0-10 cm West Nav. Channel - Lafarge	DR051 SD-DR051-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR052 SD-DR052-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR062 SD-DR062-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR063 SD-DR063-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR074 SD-DR074-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge
Anthracene	220	1200	--	--	4.4	7.1	3.4	8.7	--	5.4	4.3	17	3.4	3.7
Benzo(a)anthracene	110	270	--	--	14	17	11	19	--	13	13	28	11	11
Benzo(a)pyrene	99	210	--	--	11	13	9.9	14	--	10	11	20	9.9	11
Benzo(g,h,i)perylene	31	78	--	--	7.2	7.8	5.9	7.6	--	6.9	6.6	11	5.7	7.7
Chrysene	110	460	--	--	18	22	15	27	--	18	18	33	17	17
Dibenzo(a,h)anthracene	12	33	--	--	2	1.8	1.5	2.7	--	1.8	2.3	3.2	1.9	2.8
Fluoranthene	160	1200	--	--	35	42	25	68	--	43	39	78	27	26
Fluorene	23	79	--	--	1.2	1.8	1.2	3	--	3.2	1.6	3.2	1.5	1.2
Indeno(1,2,3-cd)pyrene	34	88	--	--	7.6	8.1	6.8	8.7	--	7.6	7.4	12	6.1	8.5
Naphthalene	99	170	--	--	0.8 U	1.8	0.62 U	0.76 U	--	0.72 U	0.78 U	1.4	0.76 U	0.81 U
Phenanthrene	100	480	--	--	8.8	13	9	22	--	21	8.2	18	9.2	8.5
Pyrene	1000	1400	--	--	25	32	23	37	--	26	25	60	22	20
Benzofluoranthenes (total-calc'd)	230	450	--	--	25	29	21	34	--	26	25	44	23	26
Total LPAH (calc'd)	370	780	--	--	14	25	15	37	--	40	15	40	14	13
Total HPAH (calc'd)	960	5300	--	--	150	170	120	220	--	150	150	290	120	130
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	20 U	20	20 U	20 U	120	20 U	20 U	20	20 U	20 U
Acenaphthylene	--	--	1300	1300	20 U	20 U	20 U	20 U	30	20 U	20 U	20 U	20 U	20 U
Acenaphthene	--	--	500	730	20 U	40	30	90	300	280	20	30	20 U	20 U
Anthracene	--	--	960	4400	110	200	110	230	910	150	110	360	90	90
Benzo(a)anthracene	--	--	1300	1600	350	470	370	490	1600	360	340	620	300	280
Benzo(a)pyrene	--	--	1600	3000	280	360	320	380	820	290	270	440	260	270
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	360	480	370	520	1100	420	370	570	370	350
Benzo(k)fluoranthene	--	--	--	--	280	340	300	390	750	290	280	400	230	280
Benzo(g,h,i)perylene	--	--	670	720	180	220	190	200	380	190	170	230	150	190
Chrysene	--	--	1400	2800	460	610	480	710	2100	500	470	730	450	410
Dibenzo(a,h)anthracene	--	--	230	540	50	50	50	70	120	50	60	70	50	70
Fluoranthene	--	--	1700	2500	870	1200	810	1800	6700	1200	990	1700	710	630
Fluorene	--	--	540	1000	30	50	40	80	330	90	40	70	40	30
Indeno(1,2,3-cd)pyrene	--	--	600	690	190	230	220	230	420	210	190	260	160	210
Naphthalene	--	--	2100	2400	20 U	50	20 U	20 U	100	20 U	20 U	30	20 U	20 U
Phenanthrene	--	--	1500	5400	220	370	290	570	1400	580	210	390	240	210
Pyrene	--	--	2600	3300	640	910	750	970	4200	730	630	1300	580	490
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	640	820	670	910	1900	710	650	970	600	630
Total LPAH (calc'd)	--	--	5200	13000	360	710	470	970	3100	1100	380	880	370	330
Total HPAH (calc'd)	--	--	12000	17000	3660	4900	3860	5800	18200	4200	3770	6300	3260	3180
Total PAH (calc'd)	--	--	--	--	4020	5600	4330	6700	21300	5300	4150	7200	3630	3510
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	0.8 U	0.081 U	0.62 U	0.76 U	--	0.72 U	0.78 U	0.92 U	0.76 U	0.81 U
1,4-Dichlorobenzene	3.1	9	--	--	0.8 U	0.081 U	0.62 U	0.76 U	--	0.72 U	0.78 U	0.92 U	0.76 U	0.81 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.8 U	0.16 U	0.62 U	0.76 U	--	0.72 U	0.78 U	**0.92 U**	0.76 U	**0.81 U**
Hexachlorobenzene	0.38	2.3	--	--	**0.8 U**	**0.71 U**	**0.62 U**	**0.76 U**	--	**0.72 U**	**0.78 U**	**0.92 U**	**0.76 U**	**0.81 U**
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	20 U	2.3 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
1,3-Dichlorobenzene	--	--	--	--	20 U	2.3 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
1,4-Dichlorobenzene	--	--	110	120	20 U	2.3 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR024 SD-DR024-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR025 SD-DR025-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR026 SD-DR026-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR049 SD-DR049-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR050 SD-DR050-0000 8/31/1998 0-10 cm West Nav. Channel - Lafarge	DR051 SD-DR051-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR052 SD-DR052-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR062 SD-DR062-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR063 SD-DR063-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR074 SD-DR074-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge
1,2,4-Trichlorobenzene	--	--	31	51	20 U	4.6 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Hexachlorobenzene	--	--	22	70	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Nitrobenzene	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	18	17	14	16	--	16	14 UJ	26	19	20
Butyl benzyl phthalate	4.9	64	--	--	1.6	0.71 U	0.62 U	1.5	--	1.4	1.6	0.92 U	1.5	1.6
Diethyl phthalate	61	110	--	--	0.8 U	0.71 U	0.62 U	0.76 U	--	0.72 U	0.78 U	0.92 U	0.76 U	0.81 U
Dimethyl phthalate	53	53	--	--	0.8 U	0.71 U	0.62 U	0.76 U	--	0.72 U	0.78 U	0.92 U	0.76 U	0.81 U
Di-n-butyl phthalate	220	1700	--	--	1.2	1.1	0.93	0.76 U	--	0.72 U	0.78 U	1.8	1.5	1.2
Di-n-octyl phthalate	58	4500	--	--	0.8 U	0.71 U	0.62 U	0.76 U	--	0.72 U	0.78 U	0.92 U	0.76 U	0.81 U
Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	450	490	460	420	510	440	370 UJ	570	510	480
Butyl benzyl phthalate	--	--	63	900	40	20 U	20 U	40	50	40	40	20 U	40	40
Diethyl phthalate	--	--	200	1200	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Dimethyl phthalate	--	--	71	160	20 U	20 U	20 U	20 U	20	20 U	20 U	20 U	20 U	20 U
Di-n-butyl phthalate	--	--	1400	5100	30	30	30	20 U	20 U	20 U	20 U	40	40	30
Di-n-octyl phthalate	--	--	6200	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Chloro-3-methylphenol	--	--	--	--	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U
2,4-Dichlorophenol	--	--	--	--	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
2,4-Dimethylphenol	29	29	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4-Dinitrophenol	--	--	--	--	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
2-Methylphenol	63	63	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Methylphenol	670	670	--	--	20 U	100	20 U	20 U	20 U	20 U	20 U	20	20 U	20 U
2,4,5-Trichlorophenol	--	--	--	--	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
2,4,6-Trichlorophenol	--	--	--	--	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
2-Nitrophenol	--	--	--	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
4-Nitrophenol	--	--	--	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Pentachlorophenol	360	690	--	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Phenol	420	1200	--	--	190	90	120	150	30	40	90	190	410	150
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	0.8	1.4	0.62	2.3	--	3.6	0.78 U	1.8	0.76	0.81 U
Hexachlorobutadiene	3.9	6.2	--	--	0.8 U	0.081 U	0.62 U	0.76 U	--	0.72 U	0.78 U	0.92 U	0.76 U	0.81 U
N-Nitrosodiphenylamine	11	11	--	--	1.6 U	1.4 U	1.2 U	1.5 U	--	1.4 U	1.6 U	1.8 U	1.5 U	1.6 U
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
3-Nitroaniline	--	--	--	--	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
4-Nitroaniline	--	--	--	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
3,3'-Dichlorobenzidine	--	--	--	--	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
4-Chloroaniline	--	--	--	--	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Aniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	57	73	--	--	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzoic acid	650	650	--	--	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Carbazole	--	--	--	--	30	30	30	60	260	40	30	70	30	30
Dibenzofuran	--	--	540	700	20	40	20	60	260	100	20 U	40	20	20 U
Hexachlorobutadiene	--	--	11	120	20 U	2.3 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR024 SD-DR024-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR025 SD-DR025-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR026 SD-DR026-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR049 SD-DR049-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR050 SD-DR050-0000 8/31/1998 0-10 cm West Nav. Channel - Lafarge	DR051 SD-DR051-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR052 SD-DR052-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR062 SD-DR062-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR063 SD-DR063-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR074 SD-DR074-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge
Hexachloroethane	--	--	--	--	20 U	4.6 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Hexachlorocyclopentadiene	--	--	--	--	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ
Isophorone	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
N-Nitroso-di-n-propylamine	--	--	--	--	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U
N-Nitrosodimethylamine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U
4-Chlorophenyl phenyl ether	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
bis(2-chloroethyl)ether	--	--	--	--	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U
bis(2-chloroisopropyl)ether	--	--	--	--	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDD	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	3 U	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	3 UJ	--	--	--	--	--	--	--	--
Aldrin	--	--	--	--	--	1 UJ	--	--	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	1 UJ	--	--	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	3 UJ	--	--	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	--	6 U	--	--	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--
Endrin	--	--	--	--	--	2 UJ	--	--	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	1 UJ	--	--	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	3 U	--	--	--	--	--	--	--	--
Toxaphene	--	--	--	--	--	180 U	--	--	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	3 UJ	--	--	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	3 UJ	--	--	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	7.2	7.4	8.6	4.5	--	1.8 UJ	5.4	5 J	**12**	5.2
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	20 U	20 U	20 U	20 UJ	20 UJ	50 UJ	20 UJ	20 UJ	20 U	20 UJ
Aroclor-1221	--	--	--	--	40 U	40 U	40 U	40 U	40 U	50 UJ	40 U	40 U	40 U	40 U
Aroclor-1232	--	--	--	--	20 U	20 U	20 U	20 U	20 U	50 UJ	20 U	20 U	20 U	20 U

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR024 SD-DR024-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR025 SD-DR025-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR026 SD-DR026-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR049 SD-DR049-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR050 SD-DR050-0000 8/31/1998 0-10 cm West Nav. Channel - Lafarge	DR051 SD-DR051-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR052 SD-DR052-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge	DR062 SD-DR062-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR063 SD-DR063-0000 8/17/1998 0-10 cm East Nav. Channel - Lafarge	DR074 SD-DR074-0000 8/12/1998 0-10 cm West Nav. Channel - Lafarge
Aroclor-1242	--	--	--	--	20 U	20 U	20 U	20 U	20 U	50 UJ	20 U	20 U	20 U	20 U
Aroclor-1248	--	--	--	--	20 U	20 U	20 U	20 U	20 U	50 UJ	20 U	20 U	20 U	20 U
Aroclor-1254	--	--	--	--	100	110	160	56	130	50 UJ	63	56	130	62
Aroclor-1260	--	--	--	--	80	100	120	64	110 J	50 UJ	75	54 J	180	65
PCBs (total calc'd)	--	--	130	1000	180	210	280	120	240 J	50 UJ	138	110 J	310	127
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	1000 UJ	1000 J	2000 J	1000 U	2000	1000 U	1000 U	1000 UJ	1000 J	1000 U
PCB-028	--	--	--	--	2000 J	2000 J	3000 J	2000	3000	1000	2000	2000 UJ	3000 J	2000
PCB-044	--	--	--	--	2000 J	2000 J	3000 J	1000	3000	2000	1000	1000 J	2000 J	1000
PCB-055	--	--	--	--	3000 J	4000 J	5000 J	2000	6000	1000	3000	3000 UJ	4000 J	3000
PCB-066	--	--	--	--	9000 UJ	9000 J	11000 J	6000	16000 U	5000	8000	7000 UJ	11000 UJ	6000
PCB-077	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
PCB-081	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	5000 J	7000 J	8000 J	5000	9000	1000 U	3000	4000 J	7000 J	4000
PCB-105	--	--	--	--	2000 J	2000 J	3000 J	1000	4000	1000	2000	1000 J	3000 J	2000
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
PCB-118	--	--	--	--	5000 J	6000 J	7000 J	4000	8000	2000	5000	4000 J	7000 J	5000
PCB-123	--	--	--	--	1000 UJ	1000 UJ	2000 UJ	1000 U	1000 U	2000 U	1000 U	1000 UJ	1000 UJ	1000 U
PCB-126	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 U	1000	1000 U	1000 UJ	1000 UJ	1000 U
PCB-128	--	--	--	--	2000 J	2000 J	2000 J	1000	2000	1000 U	1000	1000 UJ	2000 J	1000
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	11000 J	12000 J	15000 J	9000 U	17000	5000	10000	8000 J	18000 UJ	9000
PCB-153	--	--	--	--	8000 J	10000 J	11000 J	8000	12000	4000	8000	7000 J	14000 J	8000
PCB-156	--	--	--	--	1000 J	1000 J	2000 J	1000 U	2000	1000 U	1000	1000 UJ	2000 J	1000
PCB-157	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
PCB-167	--	--	--	--	1000 UJ	2000 UJ	1000 UJ	1000 U	1000 U	1000 U	1000 U	1000 UJ	1000 J	1000 U
PCB-169	--	--	--	--	1000 U	1000 U	1000 U	1000 U	1000 U	2000 U	1000 U	1000 UJ	1000 U	1000 U
PCB-170	--	--	--	--	3000 J	4000 J	5000 J	3000	4000	2000	3000	3000 J	8000 J	3000
PCB-180	--	--	--	--	6000 J	7000 J	8000 J	5000	7000	3000	6000	5000 J	12000 J	5000
PCB-187	--	--	--	--	4000 J	5000 J	5000 J	4000	5000	1000	4000	3000 J	7000 J	4000
PCB-189	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 U	1000 U	1000 U	1000 UJ	1000 UJ	1000 U
PCB-195	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 U	1000 U	1000 U	1000 UJ	2000 J	1000 U
PCB-206	--	--	--	--	1000 UJ	1000 J	1000 UJ	1000 U	1000	1000 U	1000 U	1000 UJ	1000 J	1000 U
PCB-209	--	--	--	--	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 UJ	1000 U	1000 U
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	430	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	62	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	6.6 J	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	3.5 U	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	9.5 J	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	16	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	3.3 U	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	11	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	1.4 U	--	--	--	--

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1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	3 U	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	1.4 U	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	2.8 U	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	0.58 U	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	2.3	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	4500	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	220	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	9.8 J	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

a The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Bold Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR075 SD-DR075-0000 8/12/1998 0-10 cm Nav. Channel - Lafarge	DR086 SD-DR086-0000 8/31/1998 0-10 cm Nav. Channel - Lafarge	DR089 SD-DR089-0000 8/12/1998 0-10 cm Nav. Channel - Lafarge	WST352 WST18-01 9/16/1997 0-10 cm West Nav. Channel - Lafarge	WST353 WST18-02 9/16/1997 0-10 cm West Nav. Channel - Lafarge	WST365 WST19-06 9/18/1997 0-10 cm West Nav. Channel - Lafarge	WST368 WST20-03 9/16/1997 0-10 cm West Nav. Channel - Lafarge
Sediment Grain Size (Percent)											
Rocks (total calc'd)	--	--	--	--	1.6	0.34	7.3	--	--	--	--
Sand (total calc'd)	--	--	--	--	40	13.8	80	2.1	1.6	2.6	1.8
Silt (total calc'd)	--	--	--	--	38	63	4.2	62	64	60	62
Clay (total calc'd)	--	--	--	--	22.2	23	3.7	36	34	37	37
Fines (percent silt+clay)	--	--	--	--	61	86	7.9	--	--	--	--
Conventional Parameters											
Total Organic Carbon (TOC)	--	--	--	--	2.31	1.97	1.92	2.13	2.36	1.96	2.01
Total solids	--	--	--	--	--	--	--	--	--	--	--
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)											
Aluminum	--	--	--	--	21000	27000	22000	--	--	--	--
Antimony	--	--	--	--	10 UJ	10 UJ	10 UJ	--	--	--	--
Arsenic	57	93	--	--	10 J	9.1	16	--	--	--	--
Barium	--	--	--	--	82	91	120	--	--	--	--
Beryllium	--	--	--	--	0.45	0.47	0.39	--	--	--	--
Cadmium	5.1	6.7	--	--	0.35	0.42 UJ	0.77	--	--	--	--
Calcium	--	--	--	--	6600 J	6900	8400	--	--	--	--
Chromium	260	270	--	--	32 J	31	31	--	--	--	--
Cobalt	--	--	--	--	10	12	10	--	--	--	--
Copper	390	390	--	--	78	51	96	--	--	--	--
Iron	--	--	--	--	31000 J	33000 J	28000 J	--	--	--	--
Lead	450	530	--	--	43 J	25 J	130	--	--	--	--
Magnesium	--	--	--	--	9300	8900	7500	--	--	--	--
Manganese	--	--	--	--	320	380	310	--	--	--	--
Mercury	0.41	0.59	--	--	0.21	0.14	0.24	--	--	--	--
Molybdenum	--	--	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	22	22 J	17	--	--	--	--
Potassium	--	--	--	--	3300	3200	2900	--	--	--	--
Selenium	--	--	--	--	0.7 J	23 J	0.7 J	--	--	--	--
Silver	6.1	6.1	--	--	0.3	0.33	0.7	--	--	--	--
Sodium	--	--	--	--	13000	12000	9700	--	--	--	--
Thallium	--	--	--	--	0.13	0.13 J	0.12	--	--	--	--
Tin	--	--	--	--	6 J	4 UJ	6	--	--	--	--
Vanadium	--	--	--	--	63	79	58	--	--	--	--
Zinc	410	960	--	--	140	94	190	--	--	--	--
Organometallic Compounds (µg/kg dry weight)											
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)											
2-Methylnaphthalene	38	64	--	--	0.87 U	1 U	1 U	--	--	--	--
Acenaphthylene	66	66	--	--	0.87 U	1 U	1 U	--	--	--	--
Acenaphthene	16	57	--	--	1.3	4.6	1.6	--	--	--	--

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Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR075 SD-DR075-0000 8/12/1998 0-10 cm Nav. Channel - Lafarge	DR086 SD-DR086-0000 8/31/1998 0-10 cm Nav. Channel - Lafarge	DR089 SD-DR089-0000 8/12/1998 0-10 cm Nav. Channel - Lafarge	WST352 WST18-01 9/16/1997 0-10 cm West Nav. Channel - Lafarge	WST353 WST18-02 9/16/1997 0-10 cm West Nav. Channel - Lafarge	WST365 WST19-06 9/18/1997 0-10 cm West Nav. Channel - Lafarge	WST368 WST20-03 9/16/1997 0-10 cm West Nav. Channel - Lafarge
Anthracene	220	1200	--	--	3.9	8.1	3.6	--	--	--	--
Benzo(a)anthracene	110	270	--	--	13	19	15	--	--	--	--
Benzo(a)pyrene	99	210	--	--	11	11	20	--	--	--	--
Benzo(g,h,i)perylene	31	78	--	--	8.7	5.6	12	--	--	--	--
Chrysene	110	460	--	--	17	20	21	--	--	--	--
Dibenzo(a,h)anthracene	12	33	--	--	2.2	1.5	3.1	--	--	--	--
Fluoranthene	160	1200	--	--	29	66	36	--	--	--	--
Fluorene	23	79	--	--	1.7	13	1.6	--	--	--	--
Indeno(1,2,3-cd)pyrene	34	88	--	--	9.5	6.1	13	--	--	--	--
Naphthalene	99	170	--	--	0.87	1 U	1 U	--	--	--	--
Phenanthrene	100	480	--	--	13	76	16	--	--	--	--
Pyrene	1000	1400	--	--	25	45	47	--	--	--	--
Benzofluoranthenes (total-calc'd)	230	450	--	--	28	23	36	--	--	--	--
Total LPAH (calc'd)	370	780	--	--	21	100	22	--	--	--	--
Total HPAH (calc'd)	960	5300	--	--	140	200	200	--	--	--	--
PAHs (µg/kg dry weight)											
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	20 U	20 U	20 U	--	--	--	--
Acenaphthylene	--	--	1300	1300	20 U	20 U	20 U	--	--	--	--
Acenaphthene	--	--	500	730	30	90	30	--	--	--	--
Anthracene	--	--	960	4400	90	160	70	--	--	--	--
Benzo(a)anthracene	--	--	1300	1600	290	380	280	--	--	--	--
Benzo(a)pyrene	--	--	1600	3000	260	210	380	--	--	--	--
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	380	250	400	--	--	--	--
Benzo(k)fluoranthene	--	--	--	--	270	210	300	--	--	--	--
Benzo(g,h,i)perylene	--	--	670	720	200	110	230	--	--	--	--
Chrysene	--	--	1400	2800	400	400	400	--	--	--	--
Dibenzo(a,h)anthracene	--	--	230	540	50	30	60	--	--	--	--
Fluoranthene	--	--	1700	2500	660	1300	690	--	--	--	--
Fluorene	--	--	540	1000	40	260	30	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	600	690	220	120	250	--	--	--	--
Naphthalene	--	--	2100	2400	20	20 U	20 U	--	--	--	--
Phenanthrene	--	--	1500	5400	300	1500	300	--	--	--	--
Pyrene	--	--	2600	3300	570	880	910	--	--	--	--
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	650	460	700	--	--	--	--
Total LPAH (calc'd)	--	--	5200	13000	480	2000	430	--	--	--	--
Total HPAH (calc'd)	--	--	12000	17000	3300	3900	3900	--	--	--	--
Total PAH (calc'd)	--	--	--	--	3780	5900	4330	--	--	--	--
Benzenes (mg/kg organic carbon)											
1,2-Dichlorobenzene	2.3	2.3	--	--	0.87 U	1 U	1 U	--	--	--	--
1,4-Dichlorobenzene	3.1	9	--	--	0.87 U	1 U	1 U	--	--	--	--
1,2,4-Trichlorobenzene	0.81	1.8	--	--	**0.87 U**	**1 U**	**1 U**	--	--	--	--
Hexachlorobenzene	0.38	2.3	--	--	**0.87 U**	**1 U**	**1 U**	--	--	--	--
Benzenes (µg/kg dry weight)											
1,2-Dichlorobenzene	--	--	35	50	20 U	20 U	20 U	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	20 U	20 U	20 U	--	--	--	--
1,4-Dichlorobenzene	--	--	110	120	20 U	20 U	20 U	--	--	--	--

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1,2,4-Trichlorobenzene	--	--	31	51	20 U	20 U	20 U	--	--	--	--
Hexachlorobenzene	--	--	22	70	20 U	20 U	20 U	--	--	--	--
Nitrobenzene	--	--	--	--	20 U	20 U	20 U	--	--	--	--
Phthalates (mg/kg organic carbon)											
Bis(2-ethylhexyl)phthalate	47	78	--	--	23	12	**48**	--	--	--	--
Butyl benzyl phthalate	4.9	64	--	--	2.2	1	2.6	--	--	--	--
Diethyl phthalate	61	110	--	--	0.87 U	1 U	1 U	--	--	--	--
Dimethyl phthalate	53	53	--	--	0.87 U	1 U	1 U	--	--	--	--
Di-n-butyl phthalate	220	1700	--	--	0.87 U	1 U	1 U	--	--	--	--
Di-n-octyl phthalate	58	4500	--	--	0.87 U	1 U	1 U	--	--	--	--
Phthalates (µg/kg dry weight)											
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	530	240	930	--	--	--	--
Butyl benzyl phthalate	--	--	63	900	50	20	50	--	--	--	--
Diethyl phthalate	--	--	200	1200	20 U	20 U	20 U	--	--	--	--
Dimethyl phthalate	--	--	71	160	20 U	20 U	20 U	--	--	--	--
Di-n-butyl phthalate	--	--	1400	5100	20 U	20 U	20 U	--	--	--	--
Di-n-octyl phthalate	--	--	6200	--	20 U	20 U	20 U	--	--	--	--
Phenols (µg/kg dry weight)											
2-Chlorophenol	--	--	--	--	20 U	20 U	20 U	--	--	--	--
4-Chloro-3-methylphenol	--	--	--	--	40 U	40 U	40 U	--	--	--	--
2,4-Dichlorophenol	--	--	--	--	60 U	60 U	60 U	--	--	--	--
2,4-Dimethylphenol	29	29	--	--	20 U	20 U	20 U	--	--	--	--
2,4-Dinitrophenol	--	--	--	--	200 U	200 U	200 U	--	--	--	--
2-Methylphenol	63	63	--	--	20 U	20 U	20 U	--	--	--	--
4-Methylphenol	670	670	--	--	20 U	20 U	20 U	--	--	--	--
2,4,5-Trichlorophenol	--	--	--	--	200 U	200 U	200 U	--	--	--	--
2,4,6-Trichlorophenol	--	--	--	--	200 U	200 U	200 U	--	--	--	--
2-Nitrophenol	--	--	--	--	100 U	100 U	100 U	--	--	--	--
4-Nitrophenol	--	--	--	--	100 U	100 U	100 U	--	--	--	--
Pentachlorophenol	360	690	--	--	100 U	100 U	100 U	--	--	--	--
Phenol	420	1200	--	--	70	20 U	20 U	--	--	--	--
Misc Extractables (mg/kg organic carbon)											
Dibenzofuran	15	58	--	--	1.3	4.6	1 U	--	--	--	--
Hexachlorobutadiene	3.9	6.2	--	--	0.87 U	1 U	1 U	--	--	--	--
N-Nitrosodiphenylamine	11	11	--	--	1.7 U	2 U	2.1 U	--	--	--	--
Misc Extractables (µg/kg dry weight)											
2-Nitroaniline	--	--	--	--	100 U	100 U	100 U	--	--	--	--
3-Nitroaniline	--	--	--	--	200 U	200 U	200 U	--	--	--	--
4-Nitroaniline	--	--	--	--	100 U	100 U	100 U	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	200 U	200 U	200 U	--	--	--	--
4-Chloroaniline	--	--	--	--	60 U	60 U	60 U	--	--	--	--
Aniline	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	57	73	--	--	50 U	50 U	50 U	--	--	--	--
Benzoic acid	650	650	--	--	200 U	200 U	200 U	--	--	--	--
Carbazole	--	--	--	--	40	30	40	--	--	--	--
Dibenzofuran	--	--	540	700	30	90	20 U	--	--	--	--
Hexachlorobutadiene	--	--	11	120	20 U	20 U	20 U	--	--	--	--

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Hexachloroethane	--	--	--	--	20 U	20 U	20 U	--	--	--	--
Hexachlorocyclopentadiene	--	--	--	--	100 U	100 UJ	100 U	--	--	--	--
Isophorone	--	--	--	--	20 U	20 U	20 U	--	--	--	--
N-Nitroso-di-n-propylamine	--	--	--	--	40 U	40 U	40 U	--	--	--	--
N-Nitrosodimethylamine	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	40 U	40 U	40 U	--	--	--	--
Ethers (µg/kg dry weight)											
4-Bromophenyl phenyl ether	--	--	--	--	40 U	40 U	40 U	--	--	--	--
4-Chlorophenyl phenyl ether	--	--	--	--	20 U	20 U	20 U	--	--	--	--
bis(2-chloroethyl)ether	--	--	--	--	40 U	40 U	40 U	--	--	--	--
bis(2-chloroisopropyl)ether	--	--	--	--	40 U	40 U	40 U	--	--	--	--
Pesticides (µg/kg dry weight)											
2,4'-DDD	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDD	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--	--
Aldrin	--	--	--	--	--	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	--	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	--	--
Endrin	--	--	--	--	--	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	--	--
Toxaphene	--	--	--	--	--	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	--	--	--	--	--
Herbicides (µg/kg dry weight)											
Methoxychlor	--	--	--	--	--	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)											
PCBs (total calc'd)	12	65	--	--	5.1	5.9 J	**14**	3.1 J	3.1 J	4 J	4.3 J
PCB Aroclors (µg/kg dry weight)											
Aroclor-1016	--	--	--	--	20 UJ	20 UJ	20 UJ	--	--	--	--
Aroclor-1221	--	--	--	--	40 U	40 U	40 U	--	--	--	--
Aroclor-1232	--	--	--	--	20 U	20 U	20 U	--	--	--	--

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Aroclor-1242	--	--	--	--	20 U	20 U	33	--	--	--	--
Aroclor-1248	--	--	--	--	20 U	20 U	20 U	--	--	--	--
Aroclor-1254	--	--	--	--	55	62	140	--	--	--	--
Aroclor-1260	--	--	--	--	63	54 J	96	--	--	--	--
PCBs (total calc'd)	--	--	130	1000	118	116 J	270	65 J	72 J	78 J	87 J
PCBs Congeners (ng/kg dry weight)											
PCB-018	--	--	--	--	1000 U	1000 U	2000 J	--	--	--	--
PCB-028	--	--	--	--	1000	2000	4000 J	--	--	--	--
PCB-044	--	--	--	--	1000	1000	5000 J	--	--	--	--
PCB-055	--	--	--	--	2000	2000	7000 J	--	--	--	--
PCB-066	--	--	--	--	6000	5000 U	15000 U	--	--	--	--
PCB-077	--	--	--	--	1000 U	1000 U	1000 U	270 U	240 U	260 U	240 U
PCB-081	--	--	--	--	1000 U	1000 U	1000 UJ	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	3000	3000	10000 J	20000 J	22000 J	25000 J	26000 J
PCB-105	--	--	--	--	1000	1000	5000 J	2300	2400	3400	3000
PCB-110	--	--	--	--	--	--	--	4700	5000	5300	6800
PCB-114	--	--	--	--	1000 U	1000 U	1000 UJ	--	--	--	--
PCB-118	--	--	--	--	4000	3000	10000	4300	4700	4700	6000
PCB-123	--	--	--	--	1000 U	1000 U	2000 UJ	--	--	--	--
PCB-126	--	--	--	--	1000 U	1000 U	1000 U	250 U	220 U	240 U	210 U
PCB-128	--	--	--	--	1000 U	1000 U	3000 J	3700 J	3100 J	2000 J	3900 J
PCB-129	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	8000	5000	19000 UJ	4500	4800	4600	6100
PCB-153	--	--	--	--	7000	4000	12000 J	14000 J	15000 J	18000 J	19000 J
PCB-156	--	--	--	--	1000	1000 U	2000 J	650	540	480 J	690
PCB-157	--	--	--	--	1000 U	1000 U	1000 UJ	200 U	170 U	190 U	540
PCB-167	--	--	--	--	1000 U	1000 U	2000 J	--	--	--	--
PCB-169	--	--	--	--	1000 U	1000 U	1000 U	610 U	530 U	590 U	530 U
PCB-170	--	--	--	--	3000	1000	6000 J	3100	3300	4100	4300
PCB-180	--	--	--	--	5000	4000	9000 J	4900	5100	3900	6400
PCB-187	--	--	--	--	3000	3000	6000 J	--	--	--	--
PCB-189	--	--	--	--	1000 U	1000 U	1000 UJ	280 U	240 U	270 U	240 U
PCB-195	--	--	--	--	1000 U	1000 U	1000 J	--	--	--	--
PCB-206	--	--	--	--	1000 U	1000 U	1000	--	--	--	--
PCB-209	--	--	--	--	1000 U	1000 U	1000 U	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)											
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--

Table B-1
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Lafarge Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR075 SD-DR075-0000 8/12/1998 0-10 cm Nav. Channel - Lafarge	DR086 SD-DR086-0000 8/31/1998 0-10 cm Nav. Channel - Lafarge	DR089 SD-DR089-0000 8/12/1998 0-10 cm Nav. Channel - Lafarge	WST352 WST18-01 9/16/1997 0-10 cm West Nav. Channel - Lafarge	WST353 WST18-02 9/16/1997 0-10 cm West Nav. Channel - Lafarge	WST365 WST19-06 9/18/1997 0-10 cm West Nav. Channel - Lafarge	WST368 WST20-03 9/16/1997 0-10 cm West Nav. Channel - Lafarge
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

a The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Bold Detected concentration greater than or equal to the SMS 2LAET Dry Weight criteria.

Table B-2
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0031 CH09-02 10/16/1997 0-10 cm Nav. Channel - AML	LDW-SC25 LDW-SC25-0-1 2/17/2006 0-1 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-1-2 2/17/2006 1-2 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-2-4 2/17/2006 2-4 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-4-6 2/17/2006 4-6 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-8-9.1 2/17/2006 8-9.1 FT West Nav. Channel - AML	LDW-SS325 LDW-SS325-010 0/4/2006 1:52:00 PM 0-10 cm East Nav. Channel - AML	LDW-SS44 LDW-SS44-010 1/21/2005 0-10 cm West Nav. Channel - AML	LDW-SS45 LDW-SS45-010 3/10/2005 0-10 cm West Nav. Channel - AML
Sediment Grain Size (Percent)													
Rocks (total calc'd)	--	--	--	--	--	1.3	1.3	0.3	--	--	17.1	61.7	0.1 U
Sand (total calc'd)	--	--	--	--	5.2	20.5	17.3	19.4	--	--	20.3	16.5	26
Silt (total calc'd)	--	--	--	--	67	56.8	58.7	55.6	--	--	46.4	14.7	54.6
Clay (total calc'd)	--	--	--	--	28	21.5	22.7	24.5	--	--	16.2	7.1	19.4
Fines (percent silt+clay)	--	--	--	--	--	78.3	81.4	80.1	--	--	62.6	21.8	74
Conventional Parameters													
Total Organic Carbon (TOC)	--	--	--	--	2.21	1.94	1.47	1.69	1.63	0.11	2.11	1.53	2.81
Total solids	--	--	--	--	--	47.5	52.2	54.4	52.6	76.8	50.1	74.2	45.45
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	51.3	43.3
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	6.73	13.1
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	150 J	11 UJ
Metals (mg/kg dry weight)													
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	10 UJ	16 J	30 J	30 J	6 UJ	0.4 UJ	0.9 J	0.4 UJ
Arsenic	57	93	--	--	--	50	**91**	***170***	***250***	8	13	46.8	26.2
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	--	0.4	0.5	0.8 U	1.5	0.2 U	0.6	0.7	1
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	--	42	44.7	45	55	8.3	34	33.2	41
Cobalt	--	--	--	--	--	11.6	14.5	20	22	3.3	9.2	9.8	11.2
Copper	390	390	--	--	--	327	339	***541***	***663***	7.5	96	214	155
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	--	76	98	173	310	2 U	61	68	98
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	--	0.27	0.3	0.4	--	--	0.3	0.23	0.4
Molybdenum	--	--	--	--	--	4	6.5	10	16	0.7	0.9	4.5	3
Nickel	--	--	--	--	--	24	26	27	28	5	28	21	25
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	10 U	9 U	20 U	20 U	6 U	1 U	9 U	10 U
Silver	6.1	6.1	--	--	--	0.6 U	0.5 U	1 U	1 U	0.4 U	0.6 J	0.5 U	0.7 U
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	10 U	9 U	20 U	20 U	6 U	0.4 U	0.3 U	0.5
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	73.1	75.1	79	89	37.5	63.7	61	76.9
Zinc	410	960	--	--	--	263	**503**	**750**	***1420***	17.6	170	242	217
Organometallic Compounds (µg/kg dry weight)													
Monobutyltin as ion	--	--	--	--	--	12	13	18	7.8 U	3.8 U	--	--	3.9 UJ
Dibutyltin as ion	--	--	--	--	--	72	64	150	92	5.4 U	--	--	31
Tributyltin as ion	--	--	--	--	--	220	350	720	1000	3.6 U	--	--	260
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)													
2-Methylnaphthalene	38	64	--	--	--	3.5 U	4.1 U	3.6 U	--	--	2.9 U	3.8 U	2.1 U
Acenaphthylene	66	66	--	--	--	3.5 U	2.1 J	3.6 U	--	--	2.9 U	3.8 U	2.1 U
Acenaphthene	16	57	--	--	--	2 J	2.4 J	7.1	--	--	2.9 U	3.8 U	2.1 U
Anthracene	220	1200	--	--	--	8.8	10	13	--	--	4.7	13	3.1

Table B-2
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0031 CH09-02 10/16/1997 0-10 cm Nav. Channel - AML	LDW-SC25 LDW-SC25-0-1 2/17/2006 0-1 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-1-2 2/17/2006 1-2 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-2-4 2/17/2006 2-4 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-4-6 2/17/2006 4-6 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-8-9.1 2/17/2006 8-9.1 FT West Nav. Channel - AML	LDW-SS325 LDW-SS325-010 0/4/2006 1:52:00 PM 0-10 cm East Nav. Channel - AML	LDW-SS44 LDW-SS44-010 1/21/2005 0-10 cm West Nav. Channel - AML	LDW-SS45 LDW-SS45-010 3/10/2005 0-10 cm West Nav. Channel - AML
Benzo(a)anthracene	110	270	--	--	--	26	43	39	--	--	15	37	8.2
Benzo(a)pyrene	99	210	--	--	--	26	40	41	--	--	16	31	8.5
Benzo(g,h,i)perylene	31	78	--	--	--	6.7	9.5	9.5	--	--	6.2	11	3.6
Chrysene	110	460	--	--	--	47	67	54	--	--	25	42	14
Dibenzo(a,h)anthracene	12	33	--	--	--	3.5 U	3.3 J	3.1 J	--	--	1.8	3.8 U	2.1 U
Fluoranthene	160	1200	--	--	--	47	95	120	--	--	41	61	18
Fluorene	23	79	--	--	--	2.7 J	2.5 J	4.5	--	--	2.9 U	4.1	2.1 U
Indeno(1,2,3-cd)pyrene	34	88	--	--	--	9.3	14	12	--	--	6.2	11	4.3
Naphthalene	99	170	--	--	--	3.5 U	4.1 U	2.4 J	--	--	2.9 U	3.8 U	2.1 U
Phenanthrene	100	480	--	--	--	21	23	31	--	--	13	29	6.4
Pyrene	1000	1400	--	--	--	47	120	95	--	--	31	72	16
Benzofluoranthenes (total-calc'd)	230	450	--	--	--	64	110	96	--	--	45	69	21
Total LPAH (calc'd)	370	780	--	--	--	35 J	40 J	59 J	--	--	18	46	9.6
Total HPAH (calc'd)	960	5300	--	--	--	270	500 J	470 J	--	--	190	330	93
PAHs (µg/kg dry weight)													
1-Methylnaphthalene	--	--	--	--	--	68 U	60 U	60 U	--	--	62 U	--	--
2-Methylnaphthalene	--	--	670	1400	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
Acenaphthylene	--	--	1300	1300	--	68 U	31 J	60 U	--	--	62 U	58 U	59 U
Acenaphthene	--	--	500	730	--	38 J	35 J	120	--	--	62 U	58 U	59 U
Anthracene	--	--	960	4400	--	170	150	220	--	--	100	200	88
Benzo(a)anthracene	--	--	1300	1600	--	500	630	660	--	--	320	570	230
Benzo(a)pyrene	--	--	1600	3000	--	500	590	700	--	--	330	470	240
Benzo(b)fluoranthene	--	--	--	--	--	720	850	840	--	--	580	510	320
Benzo(k)fluoranthene	--	--	--	--	--	530	720	780	--	--	370	550	270
Benzo(g,h,i)perylene	--	--	670	720	--	130	140	160	--	--	130	170	100
Chrysene	--	--	1400	2800	--	920	990	910	--	--	530	650	390
Dibenzo(a,h)anthracene	--	--	230	540	--	68 U	48 J	53 J	--	--	38	58 U	59 U
Fluoranthene	--	--	1700	2500	--	910	1400	2100	--	--	860	940	500
Fluorene	--	--	540	1000	--	52 J	37 J	76	--	--	62 U	63	59 U
Indeno(1,2,3-cd)pyrene	--	--	600	690	--	180	200	210	--	--	130	170	120
Naphthalene	--	--	2100	2400	--	68 U	60 U	41 J	--	--	62 U	58 U	59 U
Phenanthrene	--	--	1500	5400	--	410	340	530	--	--	270	450	180
Pyrene	--	--	2600	3300	--	920	1800	1600	--	--	660	1100	440
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	--	1250	1570	1620	--	--	950	1060	590
Total LPAH (calc'd)	--	--	5200	13000	--	670 J	590 J	990 J	--	--	370	710	270
Total HPAH (calc'd)	--	--	12000	17000	--	5310	7400 J	8000 J	--	--	3950	5100	2610
Total PAH (calc'd)	--	--	--	--	--	5980 J	8000 J	9000 J	--	--	4320	5800	2880
Benzenes (mg/kg organic carbon)													
1,2-Dichlorobenzene	2.3	2.3	--	--	--	0.35 U	0.41 U	0.46	--	--	0.29 U	0.43 U	0.23 U
1,4-Dichlorobenzene	3.1	9	--	--	--	0.35 U	0.41 U	0.25 J	--	--	0.29 U	0.43 U	0.23 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	--	0.35 UJ	0.41 UJ	0.36 UJ	--	--	0.29 U	0.43 U	0.23 U
Hexachlorobenzene	0.38	2.3	--	--	--	0.35 U	**0.41 U**	0.36 U	--	--	0.29 U	0.22 UJ	0.23 U
Benzenes (µg/kg dry weight)													
1,2-Dichlorobenzene	--	--	35	50	--	6.8 U	6 U	7.8	--	--	6.2 U	6.6 U	6.6 U
1,3-Dichlorobenzene	--	--	--	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
1,4-Dichlorobenzene	--	--	110	120	--	6.8 U	6 U	4.2 J	--	--	6.2 U	6.6 U	6.6 U
1,2,4-Trichlorobenzene	--	--	31	51	--	6.8 UJ	6 UJ	6 UJ	--	--	6.2 U	6.6 U	6.6 U
Hexachlorobenzene	--	--	22	70	--	6.8 U	6 U	6 U	--	--	6.2 U	3.3 UJ	6.6 U
Nitrobenzene	--	--	--	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U

Table B-2
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0031 CH09-02 10/16/1997 0-10 cm Nav. Channel - AML	LDW-SC25 LDW-SC25-0-1 2/17/2006 0-1 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-1-2 2/17/2006 1-2 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-2-4 2/17/2006 2-4 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-4-6 2/17/2006 4-6 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-8-9.1 2/17/2006 8-9.1 FT West Nav. Channel - AML	LDW-SS325 LDW-SS325-010 0/4/2006 1:52:00 PM 0-10 cm East Nav. Channel - AML	LDW-SS44 LDW-SS44-010 1/21/2005 0-10 cm West Nav. Channel - AML	LDW-SS45 LDW-SS45-010 3/10/2005 0-10 cm West Nav. Channel - AML
Phthalates (mg/kg organic carbon)													
Bis(2-ethylhexyl)phthalate	47	78	--	--	--	18	22	44	--	--	17	7.8	11
Butyl benzyl phthalate	4.9	64	--	--	--	1.4	2.2	3.7	--	--	1.4	0.43 U	0.23 U
Diethyl phthalate	61	110	--	--	--	3.5 U	4.1 U	3.6 U	--	--	2.9 U	0.72 U	0.23 U
Dimethyl phthalate	53	53	--	--	--	3.5 U	4.1 U	3.6 U	--	--	0.29	0.43 U	0.23 U
Di-n-butyl phthalate	220	1700	--	--	--	3.5 U	5.6 U	3.6 U	--	--	2.9 U	3.8 U	2.1 U
Di-n-octyl phthalate	58	4500	--	--	--	3.5 U	4.1 U	3.6 U	--	--	2.9 U	3.8 U	2.1 U
Phthalates (µg/kg dry weight)													
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	--	350	320	740	--	--	360	120	300
Butyl benzyl phthalate	--	--	63	900	--	27	32	62	--	--	30	6.6 U	6.6 U
Diethyl phthalate	--	--	200	1200	--	68 U	60 U	60 U	--	--	62 U	11 U	6.6 U
Dimethyl phthalate	--	--	71	160	--	68 U	60 U	60 U	--	--	6.2	6.6 U	6.6 U
Di-n-butyl phthalate	--	--	1400	5100	--	68 U	83 U	60 U	--	--	62 U	58 U	59 U
Di-n-octyl phthalate	--	--	6200	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
Phenols (µg/kg dry weight)													
2-Chlorophenol	--	--	--	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
4-Chloro-3-methylphenol	--	--	--	--	--	340 U	300 U	300 U	--	--	310 U	290 U	300 U
2,4-Dichlorophenol	--	--	--	--	--	340 U	300 U	300 U	--	--	310 U	290 U	300 U
2,4-Dimethylphenol	29	29	--	--	--	6.8 UJ	6 UJ	7.8	--	--	6.2 U	6.6 U	6.6 U
2,4-Dinitrophenol	--	--	--	--	--	680 UJ	600 UJ	600 UJ	--	--	620 UJ	580 U	590 UJ
2-Methylphenol	63	63	--	--	--	4.1 J	6 U	8.4 J	--	--	6.2 U	6.6 U	6.6 U
4-Methylphenol	670	670	--	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
2,4,5-Trichlorophenol	--	--	--	--	--	340 U	300 U	300 U	--	--	310 U	290 U	300 U
2,4,6-Trichlorophenol	--	--	--	--	--	340 U	300 U	300 U	--	--	310 U	290 U	300 U
2-Nitrophenol	--	--	--	--	--	340 U	300 U	300 U	--	--	310 U	290 U	300 U
4-Nitrophenol	--	--	--	--	--	340 U	300 U	300 U	--	--	310 U	290 U	300 U
Pentachlorophenol	360	690	--	--	--	20 J	21 J	37 J	--	--	31 U	33 UJ	33 U
Phenol	420	1200	--	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
Misc Extractables (mg/kg organic carbon)													
Dibenzofuran	15	58	--	--	--	3.5 U	4.1 U	3.3 J	--	--	2.9 U	3.8 U	2.1 U
Hexachlorobutadiene	3.9	6.2	--	--	--	0.35 U	0.41 U	0.36 U	--	--	0.29 U	0.43 U	0.23 U
N-Nitrosodiphenylamine	11	11	--	--	--	1.7 U	2.2 U	3.4 U	--	--	0.29 U	0.43 U	0.23 U
Misc Extractables (µg/kg dry weight)													
2-Nitroaniline	--	--	--	--	--	340 U	300 U	300 U	--	--	310 U	290 U	300 U
3-Nitroaniline	--	--	--	--	--	340 UJ	300 UJ	300 UJ	--	--	310 U	290 U	300 U
4-Nitroaniline	--	--	--	--	--	340 U	300 U	300 U	--	--	310 U	290 U	300 U
3,3'-Dichlorobenzidine	--	--	--	--	--	340 UJ	300 UJ	300 UJ	--	--	310 U	290 U	300 U
4-Chloroaniline	--	--	--	--	--	340 UJ	300 UJ	300 UJ	--	--	310 U	290 U	300 U
Aniline	--	--	--	--	--	68 UJ	60 UJ	60 UJ	--	--	62 UJ	58 U	59 U
Benzyl alcohol	57	73	--	--	--	26 J	19 J	20 J	--	--	31 UJ	33 U	33 U
Benzoic acid	650	650	--	--	--	75 UJ	60 UJ	77 U	--	--	620 U	66 U	66 UJ
Carbazole	--	--	--	--	--	--	--	--	--	--	--	58 U	59 U
Dibenzofuran	--	--	540	700	--	68 U	60 U	56 J	--	--	62 U	58 U	59 U
Hexachlorobutadiene	--	--	11	120	--	6.8 U	6 U	6 U	--	--	6.2 U	6.6 U	6.6 U
Hexachloroethane	--	--	--	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
Hexachlorocyclopentadiene	--	--	--	--	--	340 UJ	300 UJ	300 UJ	--	--	310 UJ	290 U	300 UJ
Isophorone	--	--	--	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
N-Nitroso-di-n-propylamine	--	--	--	--	--	34 UJ	30 UJ	30 U	--	--	31 U	33 U	33 U

Table B-2
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0031 CH09-02 10/16/1997 0-10 cm Nav. Channel - AML	LDW-SC25 LDW-SC25-0-1 2/17/2006 0-1 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-1-2 2/17/2006 1-2 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-2-4 2/17/2006 2-4 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-4-6 2/17/2006 4-6 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-8-9.1 2/17/2006 8-9.1 FT West Nav. Channel - AML	LDW-SS325 LDW-SS325-010 0/4/2006 1:52:00 PM 0-10 cm East Nav. Channel - AML	LDW-SS44 LDW-SS44-010 1/21/2005 0-10 cm West Nav. Channel - AML	LDW-SS45 LDW-SS45-010 3/10/2005 0-10 cm West Nav. Channel - AML
N-Nitrosodimethylamine	--	--	--	--	--	34 U	30 U	30 U	--	--	31 U	33 U	33 U
N-Nitrosodiphenylamine	--	--	28	40	--	33 U	32 U	58 U	--	--	6.2 U	6.6 U	6.6 U
Ethers (µg/kg dry weight)													
4-Bromophenyl phenyl ether	--	--	--	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
4-Chlorophenyl phenyl ether	--	--	--	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
bis(2-chloroethyl)ether	--	--	--	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
bis(2-chloroisopropyl)ether	--	--	--	--	--	68 U	60 U	60 U	--	--	62 U	58 U	59 U
PCB Aroclors (mg/kg organic carbon)													
PCBs (total calc'd)	12	65	--	--	5	**16**	**24**	**25**	**49 J**	--	**13**	6.7 J	10
PCB Aroclors (µg/kg dry weight)													
Aroclor-1016	--	--	--	--	--	20 U	20 U	20 U	3.9 U	3.9 U	3.9 U	20 U	20 U
Aroclor-1221	--	--	--	--	--	20 U	20 U	20 U	3.9 U	3.9 U	3.9 U	20 U	20 U
Aroclor-1232	--	--	--	--	--	20 U	20 U	20 U	3.9 U	3.9 U	3.9 U	20 U	20 U
Aroclor-1242	--	--	--	--	--	20 U	20 U	20 U	78 J	3.9 U	3.9 U	24 J	20 U
Aroclor-1248	--	--	--	--	--	55	64	82	3.9 U	3.9 U	60	20 U	89
Aroclor-1254	--	--	--	--	--	140	170	200	470	3.9 U	100	45	110
Aroclor-1260	--	--	--	--	--	110	130	150	250	3.9 U	110	34	94
PCBs (total calc'd)	--	--	130	1000	110	310	360	430	800 J	3.9 U	270	103 J	290
PCBs Congeners (ng/kg dry weight)													
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	320 U	--	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	33000 J	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	5100	--	--	--	--	--	--	--	--
PCB-110	--	--	--	--	8200	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	8300	--	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	290 U	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	4800 J	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	7000	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	23000 J	--	--	--	--	--	--	--	--
PCB-156	--	--	--	--	700	--	--	--	--	--	--	--	--
PCB-157	--	--	--	--	230 U	--	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	730 U	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	5200	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	7400	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	330 U	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B-2
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0031 CH09-02 10/16/1997 0-10 cm Nav. Channel - AML	LDW-SC25 LDW-SC25-0-1 2/17/2006 0-1 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-1-2 2/17/2006 1-2 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-2-4 2/17/2006 2-4 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-4-6 2/17/2006 4-6 FT West Nav. Channel - AML	LDW-SC25 LDW-SC25-8-9.1 2/17/2006 8-9.1 FT West Nav. Channel - AML	LDW-SS325 LDW-SS325-010 0/4/2006 1:52:00 PM 0-10 cm East Nav. Channel - AML	LDW-SS44 LDW-SS44-010 1/21/2005 0-10 cm West Nav. Channel - AML	LDW-SS45 LDW-SS45-010 3/10/2005 0-10 cm West Nav. Channel - AML
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-2
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS46 LDW-SS46-010 3/10/2005 0-10 cm West Nav. Channel - AML	LDW-SS47 LDW-SS47-010 3/10/2005 0-10 cm West Nav. Channel - AML	DR027 SD-DR027-0000 8/17/1998 0-10 cm East Nav. Channel - AML	DR054 SD-DR054-0000 8/12/1998 0-10 cm West Nav. Channel - AML	DR064 SD-DR064-0000 8/17/1998 0-10 cm East Nav. Channel - AML	DR090 SD-DR090-0000 8/12/1998 0-10 cm Nav. Channel - AML	SS-1 SS-1 8/17/1993 0-8 cm West Nav. Channel - AML
Sediment Grain Size (Percent)											
Rocks (total calc'd)	--	--	--	--	1.5	7.7	0.4	5.7 J	0.01 U	1.3 J	
Sand (total calc'd)	--	--	--	--	64.5	84.8	10.7	19.1 J	15.9	11.3 J	29
Silt (total calc'd)	--	--	--	--	22.1	5.1	63	45	57	56	55
Clay (total calc'd)	--	--	--	--	11.7	2.3	26	26	27	31	16
Fines (percent silt+clay)	--	--	--	--	33.8	7.4	89	71	84	87	
Conventional Parameters											
Total Organic Carbon (TOC)	--	--	--	--	2.07	1.45	2.49	2.36	2.58	2.13	1.9
Total solids	--	--	--	--	63.3	75.8	--	--	--	--	47.3
Total solids (preserved)	--	--	--	--	69.5	71.7	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	4.77	2.2	--	--	--	--	--
Sulfides (total)	--	--	--	--	170 J	5.2 UJ	--	--	--	--	--
Metals (mg/kg dry weight)											
Aluminum	--	--	--	--	--	--	19000	25000	20000	21000	--
Antimony	--	--	--	--	0.7 J	1.8 J	10 UJ	10 UJ	10 UJ	10 UJ	3.1 J
Arsenic	57	93	--	--	**71.1**	***161***	13	24	14	9	41
Barium	--	--	--	--	--	--	7400	110	83	82	--
Beryllium	--	--	--	--	--	--	0.45	0.49	0.52	0.46	0.4
Cadmium	5.1	6.7	--	--	0.8	1 U	0.44	0.37	0.45	0.25	0.7
Calcium	--	--	--	--	--	--	7400	8400	6300	5700	--
Chromium	260	270	--	--	56	53	29	34	30	27	44
Cobalt	--	--	--	--	28	30	9	12	10	12	--
Copper	390	390	--	--	***1230***	***1340***	70	140	72	53	361 J
Iron	--	--	--	--	--	--	28000	35000 J	30000	28000 J	--
Lead	450	530	--	--	125	130	44	49	40	21	109 J
Magnesium	--	--	--	--	--	--	7300	9400	8200	8000	--
Manganese	--	--	--	--	--	--	320	440	340	370	--
Mercury	0.41	0.59	--	--	0.33	0.09	0.21	0.17	0.23	0.15	0.27
Molybdenum	--	--	--	--	11	20	--	--	--	--	--
Nickel	--	--	--	--	27	30	21	28	23	23	31
Potassium	--	--	--	--	--	--	2500	3200	3000	2600	--
Selenium	--	--	--	--	20 U	30 U	7	0.5 J	10	0.6 J	0.2 U
Silver	6.1	6.1	--	--	1 U	2 U	0.43	0.28	0.42	0.2	0.6 U
Sodium	--	--	--	--	--	--	11000	12000	13000	9800	--
Thallium	--	--	--	--	0.3 U	0.2 U	0.1	0.13	0.12	0.11	1 U
Tin	--	--	--	--	--	--	5	10	5	2	--
Vanadium	--	--	--	--	86	77	54	70	57	57	--
Zinc	410	960	--	--	**794**	**878**	130	170	130	93	335 J
Organometallic Compounds (µg/kg dry weight)											
Monobutyltin as ion	--	--	--	--	15	16 J	--	40 J	--	10 J	6 UJ
Dibutyltin as ion	--	--	--	--	560	150 J	--	21 J	--	14	58.3 J
Tributyltin as ion	--	--	--	--	3000	230 J	--	190	--	54	226 J
Tetrabutyltin as ion	--	--	--	--	--	--	--	6	--	5 U	--
PAHs (mg/kg organic carbon)											
2-Methylnaphthalene	38	64	--	--	2.8 U	2.3	0.8 U	0.85 U	0.78 U	0.94 U	4.2
Acenaphthylene	66	66	--	--	2.8 U	1.9	0.8 U	0.85 U	0.78 U	0.94 U	2.6 J
Acenaphthene	16	57	--	--	5.3	8.3	1.6	0.85	1.2	0.94 U	14
Anthracene	220	1200	--	--	15	14	5.6	4.7	4.7	3.3	11

Table B-2
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS46 LDW-SS46-010 3/10/2005 0-10 cm West Nav. Channel - AML	LDW-SS47 LDW-SS47-010 3/10/2005 0-10 cm West Nav. Channel - AML	DR027 SD-DR027-0000 8/17/1998 0-10 cm East Nav. Channel - AML	DR054 SD-DR054-0000 8/12/1998 0-10 cm West Nav. Channel - AML	DR064 SD-DR064-0000 8/17/1998 0-10 cm East Nav. Channel - AML	DR090 SD-DR090-0000 8/12/1998 0-10 cm Nav. Channel - AML	SS-1 SS-1 8/17/1993 0-8 cm West Nav. Channel - AML
Benzo(a)anthracene	110	270	--	--	44	34	14	14	12	8.9	58
Benzo(a)pyrene	99	210	--	--	53	33	13	12	12	8.5	41
Benzo(g,h,i)perylene	31	78	--	--	15	16	7.6	8.1	7.8	5.2	24
Chrysene	110	460	--	--	68	41	22	21	18	13	84
Dibenzo(a,h)anthracene	12	33	--	--	2.8 J	4 U	2	2.1	1.9	1.4	8.9
Fluoranthene	160	1200	--	--	92	83	34	38	35	21	2.1 J
Fluorene	23	79	--	--	5.8	9.7	2.4	1.7	2.3	1.4	22 U
Indeno(1,2,3-cd)pyrene	34	88	--	--	33	21	8.8	8.9	8.1	5.2	32
Naphthalene	99	170	--	--	4.3	4.9	0.8 U	0.85 U	0.78 U	0.94 U	3.6 J
Phenanthrene	100	480	--	--	44	69	14	10	15	7	**100**
Pyrene	1000	1400	--	--	120	68	26	29	27	17	110
Benzofluoranthenes (total-calc'd)	230	450	--	--	140	63	27	28	25	18	110
Total LPAH (calc'd)	370	780	--	--	74	110	24	17	23	12	130 J
Total HPAH (calc'd)	960	5300	--	--	570 J	360	150	160	150	98	470 J
PAHs (µg/kg dry weight)											
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	58 U	33	20 U	20 U	20 U	20 U	79
Acenaphthylene	--	--	1300	1300	58 U	28	20 U	20 U	20 U	20 U	49 J
Acenaphthene	--	--	500	730	110	120	40	20	30	20 U	270
Anthracene	--	--	960	4400	310	200	140	110	120	70	200
Benzo(a)anthracene	--	--	1300	1600	920	490	350	330	320	190	1100
Benzo(a)pyrene	--	--	1600	3000	1100	480	320	290	300	180	780
Benzo(b)fluoranthene	--	--	--	--	1800	460	360	360	390	200	1000
Benzo(k)fluoranthene	--	--	--	--	1200	460	320	300	260	190	1100
Benzo(g,h,i)perylene	--	--	670	720	320	230	190	190	200	110	450
Chrysene	--	--	1400	2800	1400	590	540	490	470	280	1600
Dibenzo(a,h)anthracene	--	--	230	540	58 J	58 U	50	50	50	30	170
Fluoranthene	--	--	1700	2500	1900	1200	850	890	910	440	40 J
Fluorene	--	--	540	1000	120	140	60	40	60	30	420 U
Indeno(1,2,3-cd)pyrene	--	--	600	690	680	300	220	210	210	110	610
Naphthalene	--	--	2100	2400	90	71	20 U	20 U	20 U	20 U	69 J
Phenanthrene	--	--	1500	5400	910	1000	350	240	380	150	1900
Pyrene	--	--	2600	3300	2400	980	640	690	690	360	2100
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	3000	920	680	660	650	390	2100
Total LPAH (calc'd)	--	--	5200	13000	1540	1600	590	410	590	250	2490 J
Total HPAH (calc'd)	--	--	12000	17000	11800 J	5200	3840	3800	3800	2090	8950 J
Total PAH (calc'd)	--	--	--	--	13300 J	6700	4430	4210	4390	2340	11440 J
Benzenes (mg/kg organic carbon)											
1,2-Dichlorobenzene	2.3	2.3	--	--	0.68 U	0.76 U	0.8 U	0.85 U	0.78 U	0.94 U	***4.1 U***
1,4-Dichlorobenzene	3.1	9	--	--	0.68 U	0.76 U	0.8 U	0.85 U	0.78 U	0.94 U	**4.1 U**
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.68 U	0.76 U	0.8 U	**0.85 U**	0.78 U	**0.94 U**	***4.1 U***
Hexachlorobenzene	0.38	2.3	--	--	0.33 UJ	0.37 UJ	**0.8 U**	**0.85 U**	**0.78 U**	**0.94 U**	***4.1 U***
Benzenes (µg/kg dry weight)											
1,2-Dichlorobenzene	--	--	35	50	14 U	11 U	20 U	20 U	20 U	20 U	77 U
1,3-Dichlorobenzene	--	--	--	--	58 U	19 U	20 U	20 U	20 U	20 U	77 U
1,4-Dichlorobenzene	--	--	110	120	14 U	11 U	20 U	20 U	20 U	20 U	77 U
1,2,4-Trichlorobenzene	--	--	31	51	14 U	11 U	20 U	20 U	20 U	20 U	77 U
Hexachlorobenzene	--	--	22	70	6.8 UJ	5.4 UJ	20 U	20 U	20 U	20 U	77 U
Nitrobenzene	--	--	--	--	58 U	19 U	20 U	20 U	20 U	20 U	77 U

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS46 LDW-SS46-010 3/10/2005 0-10 cm West Nav. Channel - AML	LDW-SS47 LDW-SS47-010 3/10/2005 0-10 cm West Nav. Channel - AML	DR027 SD-DR027-0000 8/17/1998 0-10 cm East Nav. Channel - AML	DR054 SD-DR054-0000 8/12/1998 0-10 cm West Nav. Channel - AML	DR064 SD-DR064-0000 8/17/1998 0-10 cm East Nav. Channel - AML	DR090 SD-DR090-0000 8/12/1998 0-10 cm Nav. Channel - AML	SS-1 SS-1 8/17/1993 0-8 cm West Nav. Channel - AML
Phthalates (mg/kg organic carbon)											
Bis(2-ethylhexyl)phthalate	47	78	--	--	**77**	14	21	19	18	15	**53**
Butyl benzyl phthalate	4.9	64	--	--	0.68 U	1.5	0.8 U	1.7	0.78 U	1.4	**5.1**
Diethyl phthalate	61	110	--	--	0.77	0.83	0.8 U	0.85 U	0.78 U	0.94 U	4.1 U
Dimethyl phthalate	53	53	--	--	0.68 U	0.83	0.8 U	0.85 U	0.78 U	0.94 U	2.5 J
Di-n-butyl phthalate	220	1700	--	--	2.8 U	3	1.2	0.85 U	1.2	0.94 U	44
Di-n-octyl phthalate	58	4500	--	--	2.8 U	1.3 U	0.8 U	0.85 U	0.78 U	0.94 U	4.1 U
Phthalates (µg/kg dry weight)											
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	1600	200	530	450	470	320	1000
Butyl benzyl phthalate	--	--	63	900	14 U	22	20 U	40	20 U	30	96
Diethyl phthalate	--	--	200	1200	16	12	20 U	20 U	20 U	20 U	77 U
Dimethyl phthalate	--	--	71	160	14 U	12	20 U	20 U	20 U	20 U	48 J
Di-n-butyl phthalate	--	--	1400	5100	58 U	43	30	20 U	30	20 U	830
Di-n-octyl phthalate	--	--	6200	--	58 U	19 U	20 U	20 U	20 U	20 U	77 U
Phenols (µg/kg dry weight)											
2-Chlorophenol	--	--	--	--	58 U	19 U	20 U	20 U	20 U	20 U	77 U
4-Chloro-3-methylphenol	--	--	--	--	290 U	96 U	40 U	40 U	40 U	40 U	150 U
2,4-Dichlorophenol	--	--	--	--	290 U	96 U	60 U	60 U	60 U	60 U	230 U
2,4-Dimethylphenol	29	29	--	--	14 U	11 U	20 U	20 U	20 U	20 U	***77 U***
2,4-Dinitrophenol	--	--	--	--	580 UJ	190 UJ	200 U	200 U	200 U	200 U	770 U
2-Methylphenol	63	63	--	--	14 U	11 U	20 U	20 U	20 U	20 U	***77 U***
4-Methylphenol	670	670	--	--	58 U	21	20 U	20 U	20 U	20 U	77 U
2,4,5-Trichlorophenol	--	--	--	--	290 U	96 U	200 U	200 U	200 U	200 U	380 U
2,4,6-Trichlorophenol	--	--	--	--	290 U	96 U	200 U	200 U	200 U	200 U	380 U
2-Nitrophenol	--	--	--	--	290 U	96 U	100 U	100 U	100 U	100 U	380 U
4-Nitrophenol	--	--	--	--	290 U	96 U	100 U	100 U	100 U	100 U	380 U
Pentachlorophenol	360	690	--	--	76	54 U	100 U	100 U	100 U	100 U	**380 U**
Phenol	420	1200	--	--	62	220	270	70	80	20 U	72 J
Misc Extractables (mg/kg organic carbon)											
Dibenzofuran	15	58	--	--	3.4	5.4	1.2	0.85	1.6	0.94 U	13
Hexachlorobutadiene	3.9	6.2	--	--	0.68 U	0.76 U	0.8 U	0.85 U	0.78 U	0.94 U	**4.1 U**
N-Nitrosodiphenylamine	11	11	--	--	0.68 U	1	1.6 U	1.7 U	1.6 U	1.9 U	4.1 U
Misc Extractables (µg/kg dry weight)											
2-Nitroaniline	--	--	--	--	290 U	96 U	100 U	100 U	100 U	100 U	380 U
3-Nitroaniline	--	--	--	--	290 U	96 U	200 U	200 U	200 U	200 U	380 U
4-Nitroaniline	--	--	--	--	290 U	96 U	100 U	100 U	100 U	100 U	380 U
3,3'-Dichlorobenzidine	--	--	--	--	290 U	96 U	200 U	200 U	200 U	200 U	380 U
4-Chloroaniline	--	--	--	--	290 U	96 U	60 U	60 U	60 U	60 U	230 U
Aniline	--	--	--	--	58 U	19 U	--	--	--	--	--
Benzyl alcohol	57	73	--	--	34 UJ	54 U	50 U	50 U	50 U	50 U	***77 U***
Benzoic acid	650	650	--	--	220 J	220 J	200 U	200 U	200 U	200 U	***770 U***
Carbazole	--	--	--	--	180	92	40	30	40	30	77 U
Dibenzofuran	--	--	540	700	71	78	30	20	40	20 U	250
Hexachlorobutadiene	--	--	11	120	14 U	11 U	20 U	20 U	20 U	20 U	77 U
Hexachloroethane	--	--	--	--	58 U	19 U	20 U	20 U	20 U	20 U	77 U
Hexachlorocyclopentadiene	--	--	--	--	290 UJ	96 UJ	100 UJ	100 U	100 UJ	100 U	380 U
Isophorone	--	--	--	--	58 U	19 U	20 U	20 U	20 U	20 U	77 U
N-Nitroso-di-n-propylamine	--	--	--	--	67 U	54 U	40 U	40 U	40 U	40 U	77 U

Table B-2
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS46 LDW-SS46-010 3/10/2005 0-10 cm West Nav. Channel - AML	LDW-SS47 LDW-SS47-010 3/10/2005 0-10 cm West Nav. Channel - AML	DR027 SD-DR027-0000 8/17/1998 0-10 cm East Nav. Channel - AML	DR054 SD-DR054-0000 8/12/1998 0-10 cm West Nav. Channel - AML	DR064 SD-DR064-0000 8/17/1998 0-10 cm East Nav. Channel - AML	DR090 SD-DR090-0000 8/12/1998 0-10 cm Nav. Channel - AML	SS-1 SS-1 8/17/1993 0-8 cm West Nav. Channel - AML
N-Nitrosodimethylamine	--	--	--	--	67 U	54 U	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	14 U	15	40 U	40 U	40 U	40 U	77 U
Ethers (µg/kg dry weight)											
4-Bromophenyl phenyl ether	--	--	--	--	58 U	19 U	40 U	40 U	40 U	40 U	77 U
4-Chlorophenyl phenyl ether	--	--	--	--	58 U	19 U	20 U	20 U	20 U	20 U	77 U
bis(2-chloroethyl)ether	--	--	--	--	58 U	19 U	40 U	40 U	40 U	40 U	77 U
bis(2-chloroisopropyl)ether	--	--	--	--	58 U	19 U	40 U	40 U	40 U	40 U	77 U
PCB Aroclors (mg/kg organic carbon)											
PCBs (total calc'd)	12	65	--	--	**12**	4.8	**12**	4.1	8.9	3.1	--
PCB Aroclors (µg/kg dry weight)											
Aroclor-1016	--	--	--	--	20 U	20 U	20 U	20 UJ	20 U	20 UJ	--
Aroclor-1221	--	--	--	--	20 U	20 U	40 U	40 U	40 U	40 U	--
Aroclor-1232	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	--
Aroclor-1242	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	--
Aroclor-1248	--	--	--	--	91 U	20 U	20 U	20 U	20 U	20 U	--
Aroclor-1254	--	--	--	--	170	45	170	50	130	39	--
Aroclor-1260	--	--	--	--	68	25	130	47	96	27	--
PCBs (total calc'd)	--	--	130	1000	240	70	300	97	230	66	--
PCBs Congeners (ng/kg dry weight)											
PCB-018	--	--	--	--	--	--	2000 J	1000 UJ	1000 J	1000 UJ	--
PCB-028	--	--	--	--	--	--	4000 J	2000 J	3000 J	1000 J	--
PCB-044	--	--	--	--	--	--	4000 J	1000 J	3000 J	1000 J	--
PCB-055	--	--	--	--	--	--	6000 J	2000 J	4000 J	2000 J	--
PCB-066	--	--	--	--	8700	--	14000 J	6000 U	11000 J	4000 U	--
PCB-077	--	--	--	--	573	--	1000 UJ	1000 U	1000 UJ	1000 U	--
PCB-081	--	--	--	--	72.3 J	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	--
PCB-090	--	--	--	--	44000 C	--	--	--	--	--	--
PCB-101	--	--	--	--	C90	--	8000 J	3000 J	6000 J	2000 J	--
PCB-105	--	--	--	--	13200	--	4000 J	2000 J	3000 J	1000 UJ	--
PCB-110	--	--	--	--	46700 C	--	--	--	--	--	--
PCB-114	--	--	--	--	823	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	--
PCB-118	--	--	--	--	34500	--	9000 J	3000	8000 J	2000	--
PCB-123	--	--	--	--	860	--	2000 UJ	1000 UJ	2000 UJ	1000 UJ	--
PCB-126	--	--	--	--	68.1 J	--	1000 UJ	1000 U	1000 UJ	1000 U	--
PCB-128	--	--	--	--	--	--	3000 J	1000 J	2000 J	1000 UJ	--
PCB-129	--	--	--	--	43400 C	--	--	--	--	--	--
PCB-138	--	--	--	--	C129	--	18000 J	8000 J	14000 J	5000 UJ	--
PCB-153	--	--	--	--	29500 C	--	13000 J	6000 J	11000 J	3000 J	--
PCB-156	--	--	--	--	5350 C	--	3000 UJ	1000 UJ	1000 J	1000 UJ	--
PCB-157	--	--	--	--	C156	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	--
PCB-167	--	--	--	--	1620	--	2000 UJ	1000 UJ	1000 J	1000 UJ	--
PCB-169	--	--	--	--	17.5 U	--	1000 U	1000 U	1000 U	1000 U	--
PCB-170	--	--	--	--	--	--	6000 J	3000 J	4000 J	1000 UJ	--
PCB-180	--	--	--	--	12000 C	--	9000 J	4000 J	7000 J	2000 J	--
PCB-187	--	--	--	--	--	--	6000 UJ	3000 J	5000 J	1000 J	--
PCB-189	--	--	--	--	248	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	--
PCB-195	--	--	--	--	--	--	1000 J	1000 UJ	1000 UJ	1000 UJ	--
PCB-206	--	--	--	--	--	--	1000 J	1000 U	1000 UJ	1000 U	--
PCB-209	--	--	--	--	--	--	1000 U	1000 U	1000 U	1000 U	--

Table B-2
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Alaska Marine Lines Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS46 LDW-SS46-010 3/10/2005 0-10 cm West Nav. Channel - AML	LDW-SS47 LDW-SS47-010 3/10/2005 0-10 cm West Nav. Channel - AML	DR027 SD-DR027-0000 8/17/1998 0-10 cm East Nav. Channel - AML	DR054 SD-DR054-0000 8/12/1998 0-10 cm West Nav. Channel - AML	DR064 SD-DR064-0000 8/17/1998 0-10 cm East Nav. Channel - AML	DR090 SD-DR090-0000 8/12/1998 0-10 cm Nav. Channel - AML	SS-1 SS-1 8/17/1993 0-8 cm West Nav. Channel - AML
PCB TEQ - Bird - Half DL	--	--	--	--	45 J	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	14.9 J	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	EST206 EST19-04 9/16/1997 0-10 cm East Nav. Channel - DSI	B4b LDW-B4b-S 8/28/2004 0-10 cm East Nav. Channel - DSI	LDW-SC26 LDW-SC26-0-1 2/22/2006 0-1 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-1-2 2/22/2006 1-2 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-2-4 2/22/2006 2-4 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-6-8 2/22/2006 6-8 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-11.1-12. 2/22/2006 11.1-12.1 FT West Nav. Channel - DSI	LDW-SC27 LDW-SC27-0-0.5 2/14/2006 0-0.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-0.5-1 2/14/2006 0.5-1 FT East Nav. Channel - DSI
Sediment Grain Size (Percent)													
Rocks (total calc'd)	--	--	--	--	--	1.37	0.8	0.6	0.1	--	--	--	--
Sand (total calc'd)	--	--	--	--	11	34.4	13.5	9.4	14.5	--	--	--	--
Silt (total calc'd)	--	--	--	--	59	51.3	61.9	64.2	60.6	--	--	--	--
Clay (total calc'd)	--	--	--	--	30	12.68	23.7	25.9	24.8	--	--	--	--
Fines (percent silt+clay)	--	--	--	--	--	63.9	85.6	90.1	85.4	--	--	--	--
Conventional Parameters													
Total Organic Carbon (TOC)	--	--	--	--	1.97	2.79	1.4	2.04	2.08	1.88	0.912	1.54	1.8
Total solids	--	--	--	--	--	45.9	47.7	53.1	54.3	62.25	77	55.8	54.2
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)													
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	1.04 J	10 UJ	9 UJ	10 J	280 J	6 UJ	--	--
Arsenic	57	93	--	--	--	10.3 J	40	36	**67**	***1890***	6 U	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	--	0.58	0.5	0.5	0.6	4	0.3 U	--	--
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	--	37.7	37	61.7	38.7	160	14	--	--
Cobalt	--	--	--	--	--	12	11.2	11.9	15.8	106	4.8	--	--
Copper	390	390	--	--	--	86.6	146	173	***544***	***1950***	23	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	--	79.4	58 J	57 J	91 J	***1350***	9	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	--	0.291	0.28 J	0.28 J	***0.69 J***	***4.34***	--	--	--
Molybdenum	--	--	--	--	--	1.01 J	3	3.1	5.9	166	1.2	--	--
Nickel	--	--	--	--	--	24.8	27	32	26	60	12	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	0.8 J	10 U	9 U	9 U	40 U	6 U	--	--
Silver	6.1	6.1	--	--	--	0.497 J	0.6 U	0.5 U	0.8	3	0.4 U	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	0.151	10 U	9 U	9 U	40 U	6 U	--	--
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	72.5	78.9	78.5	80.1	67	47.7	--	--
Zinc	410	960	--	--	--	155	198	191	319	***3700***	43.1	--	--
Organometallic Compounds (ug/kg dry weight)													
Monobutyltin as ion	--	--	--	--	--	48	3.9 U	4.5	6	9.1	--	--	--
Dibutyltin as ion	--	--	--	--	--	44	16	24	87	520	--	--	--
Tributyltin as ion	--	--	--	--	--	96	130	130	590	6200	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	2 J	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)													
2-Methylnaphthalene	38	64	--	--	--	0.5	7.1 U	2.9 U	4.8 U	5.9	--	--	--
Acenaphthylene	66	66	--	--	--	1	7.1 U	2.9 U	4.8 U	3.4 J	--	--	--
Acenaphthene	16	57	--	--	--	0.47	7.1 U	2.9 U	4.8 U	**48**	--	--	--
Anthracene	220	1200	--	--	--	2.9	5.6 J	2.5 J	3.6 J	69	--	--	--

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	EST206 EST19-04 9/16/1997 0-10 cm East Nav. Channel - DSI	B4b LDW-B4b-S 8/28/2004 0-10 cm East Nav. Channel - DSI	LDW-SC26 LDW-SC26-0-1 2/22/2006 0-1 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-1-2 2/22/2006 1-2 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-2-4 2/22/2006 2-4 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-6-8 2/22/2006 6-8 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-11.1-12. 2/22/2006 11.1-12.1 FT West Nav. Channel - DSI	LDW-SC27 LDW-SC27-0-0.5 2/14/2006 0-0.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-0.5-1 2/14/2006 0.5-1 FT East Nav. Channel - DSI
Benzo(a)anthracene	110	270	--	--	--	7.5	19	8.3	15	**200**	--	--	--
Benzo(a)pyrene	99	210	--	--	--	7.2	24	13	19	**150**	--	--	--
Benzo(g,h,i)perylene	31	78	--	--	--	5	5.8 J	4	5.8	**53**	--	--	--
Chrysene	110	460	--	--	--	15	28	14	20	**210**	--	--	--
Dibenzo(a,h)anthracene	12	33	--	--	--	0.93	7.1 U	2.9 U	4.8 U	**21 J**	--	--	--
Fluoranthene	160	1200	--	--	--	22	36	18	36	**530**	--	--	--
Fluorene	23	79	--	--	--	0.68	7.1 U	2.9 U	4.8 U	22	--	--	--
Indeno(1,2,3-cd)pyrene	34	88	--	--	--	5	7.9	5.4	7.7	**53**	--	--	--
Naphthalene	99	170	--	--	--	0.82	7.1 U	2.9 U	4.8 U	12	--	--	--
Phenanthrene	100	480	--	--	--	5.7	14	5.4	12	**300**	--	--	--
Pyrene	1000	1400	--	--	--	18	33	20	42	520	--	--	--
Benzofluoranthenes (total-calc'd)	230	450	--	--	--	18	64	32	45	**280**	--	--	--
Total LPAH (calc'd)	370	780	--	--	--	12	19 J	7.8 J	15 J	**450 J**	--	--	--
Total HPAH (calc'd)	960	5300	--	--	--	100	220 J	110	190	**2000 J**	--	--	--
PAHs (ug/kg dry weight)													
1-Methylnaphthalene	--	--	--	--	--	11	99 U	60 U	100 U	84	--	--	--
2-Methylnaphthalene	--	--	670	1400	--	14	99 U	60 U	100 U	110	--	--	--
Acenaphthylene	--	--	1300	1300	--	28	99 U	60 U	100 U	63 J	--	--	--
Acenaphthene	--	--	500	730	--	13	99 U	60 U	100 U	900	--	--	--
Anthracene	--	--	960	4400	--	82	79 J	51 J	74 J	1300	--	--	--
Benzo(a)anthracene	--	--	1300	1600	--	210	260	170	310	3700	--	--	--
Benzo(a)pyrene	--	--	1600	3000	--	200	340	260	400	2800	--	--	--
Benzo(e)pyrene	--	--	--	--	--	220	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	310	470	340	480	3500	--	--	--
Benzo(k)fluoranthene	--	--	--	--	--	200	430	320	460	1700	--	--	--
Benzo(g,h,i)perylene	--	--	670	720	--	140	81 J	82	120	1000	--	--	--
Chrysene	--	--	1400	2800	--	430	390	280	420	3900	--	--	--
Dibenzo(a,h)anthracene	--	--	230	540	--	26	99 U	60 U	100 U	400 J	--	--	--
Fluoranthene	--	--	1700	2500	--	620	500	370	750	10000	--	--	--
Fluorene	--	--	540	1000	--	19	99 U	60 U	100 U	420	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	600	690	--	140	110	110	160	1000	--	--	--
Naphthalene	--	--	2100	2400	--	23	99 U	60 U	100 U	220	--	--	--
Phenanthrene	--	--	1500	5400	--	160	190	110	240	5600	--	--	--
Pyrene	--	--	2600	3300	--	500	460	400	880	9700	--	--	--
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	--	510	900	660	940	5200	--	--	--
Total LPAH (calc'd)	--	--	5200	13000	--	330	270 J	160 J	310 J	8500 J	--	--	--
Total HPAH (calc'd)	--	--	12000	17000	--	2780	3040 J	2330	3980	38000 J	--	--	--
Total PAH (calc'd)	--	--	--	--	--	3100	3310 J	2490 J	4290 J	46000 J	--	--	--
Benzenes (mg/kg organic carbon)													
1,2-Dichlorobenzene	2.3	2.3	--	--	--	0.39 UJ	0.42 U	0.29 U	0.43	***3.9***	--	--	--
1,4-Dichlorobenzene	3.1	9	--	--	--	0.39 UJ	0.26 J	0.29 U	0.23 J	0.59	--	--	--
1,2,4-Trichlorobenzene	0.81	1.8	--	--	--	0.39 UJ	0.42 U	0.29 U	0.29 U	0.52	--	--	--
Hexachlorobenzene	0.38	2.3	--	--	--	0.036 U	**0.42 U**	0.29 U	0.29 U	0.35 U	--	--	--
Benzenes (ug/kg dry weight)													
1,2-Dichlorobenzene	--	--	35	50	--	11 UJ	5.9 U	6 U	9	73	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--	11 UJ	99 U	60 U	100 U	6.5 U	--	--	--
1,4-Dichlorobenzene	--	--	110	120	--	11 UJ	3.6 J	6 U	4.8 J	11	--	--	--
1,2,4-Trichlorobenzene	--	--	31	51	--	11 UJ	5.9 U	6 U	6 U	9.8	--	--	--
Hexachlorobenzene	--	--	22	70	--	1 U	5.9 U	6 U	6 U	6.5 U	--	--	--

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	EST206 EST19-04 9/16/1997 0-10 cm East Nav. Channel - DSI	B4b LDW-B4b-S 8/28/2004 0-10 cm East Nav. Channel - DSI	LDW-SC26 LDW-SC26-0-1 2/22/2006 0-1 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-1-2 2/22/2006 1-2 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-2-4 2/22/2006 2-4 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-6-8 2/22/2006 6-8 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-11.1-12. 2/22/2006 11.1-12.1 FT West Nav. Channel - DSI	LDW-SC27 LDW-SC27-0-0.5 2/14/2006 0-0.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-0.5-1 2/14/2006 0.5-1 FT East Nav. Channel - DSI
Nitrobenzene	--	--	--	--	--	11 UJ	99 U	60 U	100 U	65 U	--	--	--
Phthalates (mg/kg organic carbon)													
Bis(2-ethylhexyl)phthalate	47	78	--	--	--	5 J	24	16	28	***200***	--	--	--
Butyl benzyl phthalate	4.9	64	--	--	--	0.39 UJ	3.4	1.8	2	1.6 J	--	--	--
Diethyl phthalate	61	110	--	--	--	0.39 UJ	7.1 U	2.9 U	4.8 U	3.5 U	--	--	--
Dimethyl phthalate	53	53	--	--	--	0.39 UJ	7.1 U	2.9 U	4.8 U	1.1	--	--	--
Di-n-butyl phthalate	220	1700	--	--	--	0.33 J	7.1 U	2.9 U	4.8 U	3.5 U	--	--	--
Di-n-octyl phthalate	58	4500	--	--	--	0.39 UJ	7.1 U	2.9 U	4.8 U	3 J	--	--	--
Phthalates (ug/kg dry weight)													
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	--	140 J	330	320	590	3800	--	--	--
Butyl benzyl phthalate	--	--	63	900	--	11 UJ	48	36	41	30 J	--	--	--
Diethyl phthalate	--	--	200	1200	--	11 UJ	99 U	60 U	100 U	65 U	--	--	--
Dimethyl phthalate	--	--	71	160	--	11 UJ	99 U	60 U	100 U	20	--	--	--
Di-n-butyl phthalate	--	--	1400	5100	--	9.3 J	99 U	60 U	100 U	65 U	--	--	--
Di-n-octyl phthalate	--	--	6200	--	--	11 UJ	99 U	60 U	100 U	57 J	--	--	--
Phenols (ug/kg dry weight)													
2-Chlorophenol	--	--	--	--	--	11 U	99 U	60 U	100 U	65 U	--	--	--
4-Chloro-3-methylphenol	--	--	--	--	--	11 U	500 U	300 U	500 U	330 U	--	--	--
2,4-Dichlorophenol	--	--	--	--	--	11 U	500 U	300 U	500 U	330 U	--	--	--
2,4-Dimethylphenol	29	29	--	--	--	***55 UJ***	5.9 UJ	6 UJ	6 UJ	24 J	--	--	--
2,4-Dinitrophenol	--	--	--	--	--	220 U	990 UJ	600 UJ	1000 UJ	650 U	--	--	--
2-Methylphenol	63	63	--	--	--	11 U	5.9 UJ	6 UJ	6 UJ	12	--	--	--
4-Methylphenol	670	670	--	--	--	21	99 U	60 U	100 U	48 J	--	--	--
2,4,5-Trichlorophenol	--	--	--	--	--	11 U	500 U	300 U	500 U	330 U	--	--	--
2,4,6-Trichlorophenol	--	--	--	--	--	11 U	500 U	300 U	500 U	330 U	--	--	--
2-Nitrophenol	--	--	--	--	--	11 U	500 U	300 U	500 U	330 U	--	--	--
4-Nitrophenol	--	--	--	--	--	110 U	500 U	300 U	500 U	330 U	--	--	--
Pentachlorophenol	360	690	--	--	--	55 U	20 J	30 U	24 J	***800***	--	--	--
Phenol	420	1200	--	--	--	33 U	99 U	60 U	100 U	65 U	--	--	--
Misc Extractables (mg/kg organic carbon)													
Dibenzofuran	15	58	--	--	--	0.47	7.1 U	2.9 U	4.8 U	**19**	--	--	--
Hexachlorobutadiene	3.9	6.2	--	--	--	0.39 UJ	0.42 U	0.29 U	0.29 U	0.35 U	--	--	--
N-Nitrosodiphenylamine	11	11	--	--	--	0.39 UJ	2.1 U	1.2 U	1.8 U	***34 U***	--	--	--
Misc Extractables (ug/kg dry weight)													
2-Nitroaniline	--	--	--	--	--	22 UJ	500 U	300 U	500 U	330 U	--	--	--
3-Nitroaniline	--	--	--	--	--	22 UJ	500 UJ	300 UJ	500 UJ	330 U	--	--	--
4-Nitroaniline	--	--	--	--	--	22 UJ	500 U	300 U	500 U	330 U	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	110 UJ	500 UJ	300 UJ	500 UJ	330 U	--	--	--
4-Chloroaniline	--	--	--	--	--	11 UJ	500 UJ	300 UJ	500 UJ	330 U	--	--	--
Aniline	--	--	--	--	--	22 UJ	99 UJ	60 UJ	100 UJ	65 U	--	--	--
Benzyl alcohol	57	73	--	--	--	**70 J**	30 U	30 U	30 U	33 U	--	--	--
Benzoic acid	650	650	--	--	--	250	160	100	80	590 U	--	--	--
Carbazole	--	--	--	--	--	180 J	--	--	--	--	--	--	--
Dibenzofuran	--	--	540	700	--	13	99 U	60 U	100 U	360	--	--	--
Hexachlorobutadiene	--	--	11	120	--	11 UJ	5.9 U	6 U	6 U	6.5 U	--	--	--
Hexachloroethane	--	--	--	--	--	11 UJ	99 U	60 U	100 U	65 U	--	--	--
Hexachlorocyclopentadiene	--	--	--	--	--	55 UJ	500 U	300 U	500 U	330 U	--	--	--
Isophorone	--	--	--	--	--	11 UJ	99 U	60 U	100 U	65 U	--	--	--

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	EST206 EST19-04 9/16/1997 0-10 cm East Nav. Channel - DSI	B4b LDW-B4b-S 8/28/2004 0-10 cm East Nav. Channel - DSI	LDW-SC26 LDW-SC26-0-1 2/22/2006 0-1 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-1-2 2/22/2006 1-2 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-2-4 2/22/2006 2-4 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-6-8 2/22/2006 6-8 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-11.1-12. 2/22/2006 11.1-12.1 FT West Nav. Channel - DSI	LDW-SC27 LDW-SC27-0-0.5 2/14/2006 0-0.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-0.5-1 2/14/2006 0.5-1 FT East Nav. Channel - DSI
N-Nitroso-di-n-propylamine	--	--	--	--	--	11 UJ	30 UJ	30 UJ	30 UJ	33 U	--	--	--
N-Nitrosodimethylamine	--	--	--	--	--	55 UJ	30 U	30 U	30 U	33 U	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	--	11 UJ	30 U	24 U	38 U	640 U	--	--	--
Ethers (ug/kg dry weight)													
4-Bromophenyl phenyl ether	--	--	--	--	--	11 UJ	99 U	60 U	100 U	65 U	--	--	--
4-Chlorophenyl phenyl ether	--	--	--	--	--	11 UJ	99 U	60 U	100 U	65 U	--	--	--
bis(2-chloroethyl)ether	--	--	--	--	--	11 UJ	99 U	60 U	100 U	65 U	--	--	--
bis(2-chloroisopropyl)ether	--	--	--	--	--	11 UJ	99 U	60 U	100 U	65 U	--	--	--
Pesticides (ug/kg dry weight)													
2,4'-DDD	--	--	--	--	--	19 U	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	1 U	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	5.2 U	--	--	--	--	--	--	--
4,4'-DDD	--	--	--	--	--	1.1	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	1.8	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	3.4 J	--	--	--	--	--	--	--
Aldrin	--	--	--	--	--	1 U	--	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	1 U	--	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	1 U	--	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	1 U	--	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	1 U	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	1 U	--	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	2.7 U	--	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	3.7 U	--	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	1 U	--	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	--	1 U	--	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	1 U	--	--	--	--	--	--	--
Endrin	--	--	--	--	--	14 U	--	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	12 UJ	--	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	5 U	--	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	2.4 U	--	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	1.2 U	--	--	--	--	--	--	--
Toxaphene	--	--	--	--	--	270 U	--	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	3.7 U	--	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	6.3 J	--	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	2.7 U	--	--	--	--	--	--	--
Herbicides (ug/kg dry weight)													
Methoxychlor	--	--	--	--	--	1.1 U	--	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)													
PCBs (total calc'd)	12	65	--	--	6.1	**14**	**20**	11	**15**	***120***	**15**	**16**	***110***
PCB Aroclors (ug/kg dry weight)													
Aroclor-1016	--	--	--	--	--	10 U	7.9 U	7.9 U	8 U	170 U	4 U	39 U	390 U
Aroclor-1221	--	--	--	--	--	20 U	7.9 U	7.9 U	8 U	170 U	4 U	39 U	390 U
Aroclor-1232	--	--	--	--	--	10 U	7.9 U	7.9 U	8 U	170 U	4 U	39 U	390 U
Aroclor-1242	--	--	--	--	--	100	7.9 U	7.9 U	8 U	370	31	39 U	390 U
Aroclor-1248	--	--	--	--	--	84 U	60	48	60	170 U	4 U	99 U	980 U
Aroclor-1254	--	--	--	--	--	150	110	81	140	1300	67	150	1400
Aroclor-1260	--	--	--	--	--	150	110	97	110	610	42	100	550

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	EST206 EST19-04 9/16/1997 0-10 cm East Nav. Channel - DSI	B4b LDW-B4b-S 8/28/2004 0-10 cm East Nav. Channel - DSI	LDW-SC26 LDW-SC26-0-1 2/22/2006 0-1 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-1-2 2/22/2006 1-2 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-2-4 2/22/2006 2-4 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-6-8 2/22/2006 6-8 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-11.1-12. 2/22/2006 11.1-12.1 FT West Nav. Channel - DSI	LDW-SC27 LDW-SC27-0-0.5 2/14/2006 0-0.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-0.5-1 2/14/2006 0.5-1 FT East Nav. Channel - DSI
PCBs (total calc'd)	--	--	130	1000	120	400	280	226	310	2300	140	250	2000
PCBs Congeners (ng/kg dry weight)													
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	6510	--	--	--	--	--	--	--
PCB-077	--	--	--	--	310 U	586	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	26.8 J	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	13000 C	--	--	--	--	--	--	--
PCB-101	--	--	--	--	34000 J	C90	--	--	--	--	--	--	--
PCB-105	--	--	--	--	3100	4740	--	--	--	--	--	--	--
PCB-110	--	--	--	--	8900	14800 C	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	226	--	--	--	--	--	--	--
PCB-118	--	--	--	--	8200	12100	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	174	--	--	--	--	--	--	--
PCB-126	--	--	--	--	280 U	23.6	--	--	--	--	--	--	--
PCB-128	--	--	--	--	4000 J	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	18100 C	--	--	--	--	--	--	--
PCB-138	--	--	--	--	7400	C129	--	--	--	--	--	--	--
PCB-153	--	--	--	--	23000 J	15000 C	--	--	--	--	--	--	--
PCB-156	--	--	--	--	1100	1780 C	--	--	--	--	--	--	--
PCB-157	--	--	--	--	660	C156	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	609	--	--	--	--	--	--	--
PCB-169	--	--	--	--	680 U	10.9 U	--	--	--	--	--	--	--
PCB-170	--	--	--	--	4200	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	6200	9130 C	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	310 U	166	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	35.2 J	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	5.2 J	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)													
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	486	393	732	5930	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	106	63.6	118	873	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	9.01	5.67	11	63.4	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	2.83	2.87	3.9	11.2	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	11.7	9.12	15.9	40.6	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	16.9	14.1	24.4	184	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	3.56	2.99	4.5	12.7	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	10.5	9.44	13.5	52.3	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	0.226 J	0.283 J	0.361 J	0.983 J	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	1.9	1.77	2.69	10.5	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	1.51	1.32	1.73	3.24	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	2.62	2.23	3.51	9.77	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	3.46	2.67	3.94	5.92	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	0.485	0.524	0.829	3.36	--	--	--

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	EST206 EST19-04 9/16/1997 0-10 cm East Nav. Channel - DSI	B4b LDW-B4b-S 8/28/2004 0-10 cm East Nav. Channel - DSI	LDW-SC26 LDW-SC26-0-1 2/22/2006 0-1 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-1-2 2/22/2006 1-2 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-2-4 2/22/2006 2-4 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-6-8 2/22/2006 6-8 FT West Nav. Channel - DSI	LDW-SC26 LDW-SC26-11.1-12. 2/22/2006 11.1-12.1 FT West Nav. Channel - DSI	LDW-SC27 LDW-SC27-0-0.5 2/14/2006 0-0.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-0.5-1 2/14/2006 0.5-1 FT East Nav. Channel - DSI
2,3,7,8-TCDF	--	--	--	--	--	--	1.6	1.16	1.66	3.32	--	--	--
OCDD	--	--	--	--	--	--	4540	3450	7140	62000	--	--	--
OCDF	--	--	--	--	--	--	347	176	393	4420	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	12.9 J	10.4 J	16.3 J	59.4 J	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	10.7 J	8.8 J	14.4 J	57.2 J	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	9.89 J	8.33 J	13.2 J	53.5 J	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	15.7 J	12.9 J	21.7 J	124 J	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	15.9 J	13.1 J	22.4 J	136 J	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC27 LDW-SC27-0-2 2/14/2006 0-2 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-1-1.5 2/14/2006 1-1.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-1.5-2 2/14/2006 1.5-2 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2-2.5 2/14/2006 2-2.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2.5-3 2/14/2006 2.5-3 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2-4.5 2/14/2006 2-4.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-3-3.5 2/14/2006 3-3.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-3.5-4 2/14/2006 3.5-4 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-4-4.5 2/14/2006 4-4.5 FT East Nav. Channel - DSI
Sediment Grain Size (Percent)													
Rocks (total calc'd)	--	--	--	--	3.5	--	--	--	--	6.2	--	--	--
Sand (total calc'd)	--	--	--	--	21.4	--	--	--	--	31.7	--	--	--
Silt (total calc'd)	--	--	--	--	54.8	--	--	--	--	46.9	--	--	--
Clay (total calc'd)	--	--	--	--	20.3	--	--	--	--	15.3	--	--	--
Fines (percent silt+clay)	--	--	--	--	75.1	--	--	--	--	62.2	--	--	--
Conventional Parameters													
Total Organic Carbon (TOC)	--	--	--	--	2.24	1.22	1.82	2.14	2.27	2.12	1.8	1.16	2
Total solids	--	--	--	--	53.1	52.8	50.7	55.6	54.7	60.5	61.8	61.8	68.1
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)													
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	9 UJ	--	--	--	--	8 UJ	--	--	--
Arsenic	57	93	--	--	19	--	--	--	--	17	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	1.5	--	--	--	--	0.9	--	--	--
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	56.9	--	--	--	--	35.3	--	--	--
Cobalt	--	--	--	--	9.6	--	--	--	--	8.1	--	--	--
Copper	390	390	--	--	85.2 J	--	--	--	--	46.7 J	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	108	--	--	--	--	43	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	**0.52**	--	--	--	--	**0.41**	--	--	--
Molybdenum	--	--	--	--	2.5	--	--	--	--	1.9	--	--	--
Nickel	--	--	--	--	27 J	--	--	--	--	19 J	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	9 U	--	--	--	--	8 U	--	--	--
Silver	6.1	6.1	--	--	1.9	--	--	--	--	0.9	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	9 U	--	--	--	--	8 U	--	--	--
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	73.4	--	--	--	--	67.5	--	--	--
Zinc	410	960	--	--	190	--	--	--	--	103	--	--	--
Organometallic Compounds (ug/kg dry weight)													
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)													
2-Methylnaphthalene	38	64	--	--	2.6 U	--	--	--	--	0.94 U	--	--	--
Acenaphthylene	66	66	--	--	2.6 U	--	--	--	--	0.94 U	--	--	--
Acenaphthene	16	57	--	--	2.6 U	--	--	--	--	0.94 U	--	--	--
Anthracene	220	1200	--	--	3	--	--	--	--	1.6	--	--	--

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC27 LDW-SC27-0-2 2/14/2006 0-2 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-1-1.5 2/14/2006 1-1.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-1.5-2 2/14/2006 1.5-2 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2-2.5 2/14/2006 2-2.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2.5-3 2/14/2006 2.5-3 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2-4.5 2/14/2006 2-4.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-3-3.5 2/14/2006 3-3.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-3.5-4 2/14/2006 3.5-4 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-4-4.5 2/14/2006 4-4.5 FT East Nav. Channel - DSI
Benzo(a)anthracene	110	270	--	--	6.7	--	--	--	--	2.5	--	--	--
Benzo(a)pyrene	99	210	--	--	10	--	--	--	--	3.9	--	--	--
Benzo(g,h,i)perylene	31	78	--	--	2.8	--	--	--	--	1.1	--	--	--
Chrysene	110	460	--	--	13	--	--	--	--	5.7	--	--	--
Dibenzo(a,h)anthracene	12	33	--	--	2.6 U	--	--	--	--	0.94 U	--	--	--
Fluoranthene	160	1200	--	--	13	--	--	--	--	4	--	--	--
Fluorene	23	79	--	--	2.6 U	--	--	--	--	0.94 U	--	--	--
Indeno(1,2,3-cd)pyrene	34	88	--	--	3.2	--	--	--	--	1.1	--	--	--
Naphthalene	99	170	--	--	2.6 U	--	--	--	--	0.57 J	--	--	--
Phenanthrene	100	480	--	--	7.1	--	--	--	--	2.8	--	--	--
Pyrene	1000	1400	--	--	34	--	--	--	--	9.9	--	--	--
Benzofluoranthenes (total-calc'd)	230	450	--	--	27	--	--	--	--	9	--	--	--
Total LPAH (calc'd)	370	780	--	--	10	--	--	--	--	5 J	--	--	--
Total HPAH (calc'd)	960	5300	--	--	110	--	--	--	--	37	--	--	--
PAHs (ug/kg dry weight)													
1-Methylnaphthalene	--	--	--	--	59 U	--	--	--	--	20 U	--	--	--
2-Methylnaphthalene	--	--	670	1400	59 U	--	--	--	--	20 U	--	--	--
Acenaphthylene	--	--	1300	1300	59 U	--	--	--	--	20 U	--	--	--
Acenaphthene	--	--	500	730	59 U	--	--	--	--	20 U	--	--	--
Anthracene	--	--	960	4400	68	--	--	--	--	34	--	--	--
Benzo(a)anthracene	--	--	1300	1600	150	--	--	--	--	54	--	--	--
Benzo(a)pyrene	--	--	1600	3000	230	--	--	--	--	83	--	--	--
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	350	--	--	--	--	110	--	--	--
Benzo(k)fluoranthene	--	--	--	--	260	--	--	--	--	82	--	--	--
Benzo(g,h,i)perylene	--	--	670	720	63	--	--	--	--	24	--	--	--
Chrysene	--	--	1400	2800	280	--	--	--	--	120	--	--	--
Dibenzo(a,h)anthracene	--	--	230	540	59 U	--	--	--	--	20 U	--	--	--
Fluoranthene	--	--	1700	2500	280	--	--	--	--	84	--	--	--
Fluorene	--	--	540	1000	59 U	--	--	--	--	20 U	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	600	690	71	--	--	--	--	24	--	--	--
Naphthalene	--	--	2100	2400	59 U	--	--	--	--	12 J	--	--	--
Phenanthrene	--	--	1500	5400	160	--	--	--	--	60	--	--	--
Pyrene	--	--	2600	3300	760	--	--	--	--	210	--	--	--
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	610	--	--	--	--	190	--	--	--
Total LPAH (calc'd)	--	--	5200	13000	230	--	--	--	--	106 J	--	--	--
Total HPAH (calc'd)	--	--	12000	17000	2440	--	--	--	--	790	--	--	--
Total PAH (calc'd)	--	--	--	--	2670	--	--	--	--	900 J	--	--	--
Benzenes (mg/kg organic carbon)													
1,2-Dichlorobenzene	2.3	2.3	--	--	0.19 J	--	--	--	--	0.28 U	--	--	--
1,4-Dichlorobenzene	3.1	9	--	--	0.19 J	--	--	--	--	0.28 U	--	--	--
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.26	--	--	--	--	0.28 U	--	--	--
Hexachlorobenzene	0.38	2.3	--	--	0.26 U	--	--	--	--	0.28 U	--	--	--
Benzenes (ug/kg dry weight)													
1,2-Dichlorobenzene	--	--	35	50	4.2 J	--	--	--	--	5.9 U	--	--	--
1,3-Dichlorobenzene	--	--	--	--	59 U	--	--	--	--	20 U	--	--	--
1,4-Dichlorobenzene	--	--	110	120	4.2 J	--	--	--	--	5.9 U	--	--	--
1,2,4-Trichlorobenzene	--	--	31	51	5.9	--	--	--	--	5.9 U	--	--	--
Hexachlorobenzene	--	--	22	70	5.9 U	--	--	--	--	5.9 U	--	--	--

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC27 LDW-SC27-0-2 2/14/2006 0-2 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-1-1.5 2/14/2006 1-1.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-1.5-2 2/14/2006 1.5-2 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2-2.5 2/14/2006 2-2.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2.5-3 2/14/2006 2.5-3 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2-4.5 2/14/2006 2-4.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-3-3.5 2/14/2006 3-3.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-3.5-4 2/14/2006 3.5-4 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-4-4.5 2/14/2006 4-4.5 FT East Nav. Channel - DSI
Nitrobenzene	--	--	--	--	59 U	--	--	--	--	20 U	--	--	--
Phthalates (mg/kg organic carbon)													
Bis(2-ethylhexyl)phthalate	47	78	--	--	41	--	--	--	--	2.6	--	--	--
Butyl benzyl phthalate	4.9	64	--	--	0.76 J	--	--	--	--	0.28 UJ	--	--	--
Diethyl phthalate	61	110	--	--	2.6 U	--	--	--	--	0.94 U	--	--	--
Dimethyl phthalate	53	53	--	--	2.6 U	--	--	--	--	0.94 U	--	--	--
Di-n-butyl phthalate	220	1700	--	--	2.6 U	--	--	--	--	1.2 U	--	--	--
Di-n-octyl phthalate	58	4500	--	--	2.6 U	--	--	--	--	0.94 U	--	--	--
Phthalates (ug/kg dry weight)													
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	910	--	--	--	--	55	--	--	--
Butyl benzyl phthalate	--	--	63	900	17 J	--	--	--	--	5.9 UJ	--	--	--
Diethyl phthalate	--	--	200	1200	59 U	--	--	--	--	20 U	--	--	--
Dimethyl phthalate	--	--	71	160	59 U	--	--	--	--	20 U	--	--	--
Di-n-butyl phthalate	--	--	1400	5100	59 U	--	--	--	--	26 U	--	--	--
Di-n-octyl phthalate	--	--	6200	--	59 U	--	--	--	--	20 U	--	--	--
Phenols (ug/kg dry weight)													
2-Chlorophenol	--	--	--	--	59 U	--	--	--	--	20 U	--	--	--
4-Chloro-3-methylphenol	--	--	--	--	300 U	--	--	--	--	98 U	--	--	--
2,4-Dichlorophenol	--	--	--	--	300 U	--	--	--	--	98 U	--	--	--
2,4-Dimethylphenol	29	29	--	--	18 UJ	--	--	--	--	17 UJ	--	--	--
2,4-Dinitrophenol	--	--	--	--	590 U	--	--	--	--	200 U	--	--	--
2-Methylphenol	63	63	--	--	3.6 J	--	--	--	--	5.9 UJ	--	--	--
4-Methylphenol	670	670	--	--	59 U	--	--	--	--	20 U	--	--	--
2,4,5-Trichlorophenol	--	--	--	--	300 U	--	--	--	--	98 U	--	--	--
2,4,6-Trichlorophenol	--	--	--	--	300 U	--	--	--	--	98 U	--	--	--
2-Nitrophenol	--	--	--	--	300 U	--	--	--	--	98 U	--	--	--
4-Nitrophenol	--	--	--	--	300 U	--	--	--	--	98 U	--	--	--
Pentachlorophenol	360	690	--	--	30 U	--	--	--	--	29 U	--	--	--
Phenol	420	1200	--	--	59 U	--	--	--	--	18 J	--	--	--
Misc Extractables (mg/kg organic carbon)													
Dibenzofuran	15	58	--	--	2.6 U	--	--	--	--	0.94 U	--	--	--
Hexachlorobutadiene	3.9	6.2	--	--	0.26 U	--	--	--	--	0.28 U	--	--	--
N-Nitrosodiphenylamine	11	11	--	--	1.9 U	--	--	--	--	0.9 U	--	--	--
Misc Extractables (ug/kg dry weight)													
2-Nitroaniline	--	--	--	--	300 U	--	--	--	--	98 U	--	--	--
3-Nitroaniline	--	--	--	--	300 UJ	--	--	--	--	98 UJ	--	--	--
4-Nitroaniline	--	--	--	--	300 U	--	--	--	--	98 U	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	300 UJ	--	--	--	--	98 UJ	--	--	--
4-Chloroaniline	--	--	--	--	300 UJ	--	--	--	--	98 UJ	--	--	--
Aniline	--	--	--	--	59 UJ	--	--	--	--	20 UJ	--	--	--
Benzyl alcohol	57	73	--	--	20 J	--	--	--	--	29 UJ	--	--	--
Benzoic acid	650	650	--	--	79 UJ	--	--	--	--	59 UJ	--	--	--
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	540	700	59 U	--	--	--	--	20 U	--	--	--
Hexachlorobutadiene	--	--	11	120	5.9 U	--	--	--	--	5.9 U	--	--	--
Hexachloroethane	--	--	--	--	59 U	--	--	--	--	20 U	--	--	--
Hexachlorocyclopentadiene	--	--	--	--	300 U	--	--	--	--	98 U	--	--	--
Isophorone	--	--	--	--	59 U	--	--	--	--	20 U	--	--	--

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC27 LDW-SC27-0-2 2/14/2006 0-2 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-1-1.5 2/14/2006 1-1.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-1.5-2 2/14/2006 1.5-2 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2-2.5 2/14/2006 2-2.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2.5-3 2/14/2006 2.5-3 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2-4.5 2/14/2006 2-4.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-3-3.5 2/14/2006 3-3.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-3.5-4 2/14/2006 3.5-4 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-4-4.5 2/14/2006 4-4.5 FT East Nav. Channel - DSI
N-Nitroso-di-n-propylamine	--	--	--	--	30 UJ	--	--	--	--	29 UJ	--	--	--
N-Nitrosodimethylamine	--	--	--	--	30 UJ	--	--	--	--	29 UJ	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	43 U	--	--	--	--	19 U	--	--	--
Ethers (ug/kg dry weight)													
4-Bromophenyl phenyl ether	--	--	--	--	59 U	--	--	--	--	20 U	--	--	--
4-Chlorophenyl phenyl ether	--	--	--	--	59 U	--	--	--	--	20 U	--	--	--
bis(2-chloroethyl)ether	--	--	--	--	59 U	--	--	--	--	20 U	--	--	--
bis(2-chloroisopropyl)ether	--	--	--	--	59 U	--	--	--	--	20 U	--	--	--
Pesticides (ug/kg dry weight)													
2,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--
Aldrin	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	--	--	--	--
Toxaphene	--	--	--	--	--	--	--	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--
Herbicides (ug/kg dry weight)													
Methoxychlor	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)													
PCBs (total calc'd)	12	65	--	--	***150***	***260***	***83***	**39**	**13**	**12 J**	3.3	0.34 U	0.2 U
PCB Aroclors (ug/kg dry weight)													
Aroclor-1016	--	--	--	--	4 UJ	390 U	200 U	200 U	79 U	20 UJ	7.7 U	3.9 U	3.9 U
Aroclor-1221	--	--	--	--	4 UJ	390 U	200 U	200 U	79 U	20 UJ	7.7 U	3.9 U	3.9 U
Aroclor-1232	--	--	--	--	4 UJ	390 U	200 U	200 U	79 U	20 UJ	7.7 U	3.9 U	3.9 U
Aroclor-1242	--	--	--	--	4 UJ	390 U	200 U	200 U	79 U	20 UJ	7.7 U	3.9 U	3.9 U
Aroclor-1248	--	--	--	--	1100	1200 U	590 U	200 U	79 U	28 J	7.7 U	3.9 U	3.9 U
Aroclor-1254	--	--	--	--	1500	2100	960	490	140	110 J	10	3.9 U	3.9 U
Aroclor-1260	--	--	--	--	660	1100	550	350	150	110 J	50	3.9 U	3.9 U

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PCBs (total calc'd)	--	--	130	1000	3300	3200	1510	840	290	250 J	60	3.9 U	3.9 U
PCBs Congeners (ng/kg dry weight)													
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-156	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-157	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)													
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC27 LDW-SC27-0-2 2/14/2006 0-2 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-1-1.5 2/14/2006 1-1.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-1.5-2 2/14/2006 1.5-2 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2-2.5 2/14/2006 2-2.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2.5-3 2/14/2006 2.5-3 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-2-4.5 2/14/2006 2-4.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-3-3.5 2/14/2006 3-3.5 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-3.5-4 2/14/2006 3.5-4 FT East Nav. Channel - DSI	LDW-SC27 LDW-SC27-4-4.5 2/14/2006 4-4.5 FT East Nav. Channel - DSI
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC28 LDW-SC28-0-1 2/24/2006 0-1 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-1-2 2/24/2006 1-2 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-2-4 2/24/2006 2-4 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-5.5-7.5 2/24/2006 5.5-7.5 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-12-12.6 2/24/2006 12-12.6 FT West Nav. Channel - DSI	LDW-SS50 LDW-SS202-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS326 LDW-SS326-010 0/4/2006 2:02:00 PI 0-10 cm East Nav. Channel - DSI	LDW-SS48 LDW-SS48-010 1/18/2005 0-10 cm West Nav. Channel - DSI	LDW-SS49 LDW-SS49-010 1/26/2005 0-10 cm West Nav. Channel - DSI
Sediment Grain Size (Percent)													
Rocks (total calc'd)	--	--	--	--	0.7	1.3	1	--	--	0.7	0.1 U	29.3	5.1
Sand (total calc'd)	--	--	--	--	24.9	16.7	13	--	--	31.6	28.8	54	37.1
Silt (total calc'd)	--	--	--	--	54.9	62.4	63	--	--	54.3	59.1	9	37.5
Clay (total calc'd)	--	--	--	--	19.5	19.6	23.1	--	--	13.5	12.1	7.8	20.3
Fines (percent silt+clay)	--	--	--	--	74.4	82	86	--	--	67.8	71.2	16.8	57.8
Conventional Parameters													
Total Organic Carbon (TOC)	--	--	--	--	2.59	2.07	3.14	1.61	1.31	1.94	2.33	1.36	2.47
Total solids	--	--	--	--	52.25	52.4	49.1	68.4	64.2	51.5	47.3	63.2	53.1
Total solids (preserved)	--	--	--	--	--	--	--	--	--	46.4	--	56.3	56.7
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	8.03	--	9.62	27.6
Sulfides (total)	--	--	--	--	--	--	--	--	--	770	--	90 J	73
Metals (mg/kg dry weight)													
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	25 J	9 UJ	10 J	130 J	7 UJ	0.4 UJ	0.4 UJ	6.8 J	1.8 J
Arsenic	57	93	--	--	***114***	18	30	***760***	17	15.8	14.7	***807***	***171***
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	0.6	0.6	0.4 U	1.4	0.6	1.3	0.4	3	1
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	37	32.4	33	65	28	45.5	32	153	53
Cobalt	--	--	--	--	13.7	9.4	11.4	50	7.6	9.2	9.2	50	24
Copper	390	390	--	--	212	173	197	***1480***	68.5	88.6	82	***1420***	***605***
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	114	40	65	***583***	37	92	45	***780***	210
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	0.37	0.2	0.24	***0.72***	0.3	0.4	0.25	***0.79***	0.36
Molybdenum	--	--	--	--	9.9 J	1 J	2 J	61	9.9	3.3	0.5	75	18
Nickel	--	--	--	--	23	23	25	37	17	26	28	82	30
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	9 U	9 U	10 U	20 U	7 U	9 U	1 U	40 U	20 U
Silver	6.1	6.1	--	--	0.5 U	0.5 U	0.6 U	2	0.5	1.4	0.5 J	2 U	1 U
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	9 U	9 U	10 U	20 U	7 U	0.4 U	0.4 U	0.4	0.4 U
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	67.5	68.9	71.1	92	59.2	69.6	61.9	76	79
Zinc	410	960	--	--	405	203	244	***1880***	97.5	179	138	***2830***	**768**
Organometallic Compounds (ug/kg dry weight)													
Monobutyltin as ion	--	--	--	--	4 U	3.9 U	3.9 U	46	3.9 U	--	--	--	8 J
Dibutyltin as ion	--	--	--	--	25 J	15	25	960	5.6 U	--	--	--	59
Tributyltin as ion	--	--	--	--	160	55	120	3400	4.8	--	--	--	140
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)													
2-Methylnaphthalene	38	64	--	--	2.3 U	2.9 U	1.9 U	4.1 U	4.7 U	8.2 U	2.6 U	4.3	4 U
Acenaphthylene	66	66	--	--	2.3 U	2.9 U	1.9 U	4.1 U	4.7 U	8.2 U	2.6 U	4	4 U
Acenaphthene	16	57	--	--	2.3 U	2.9 U	1.9 U	14	2.4 J	8.2 U	2.6 U	**17**	2 J
Anthracene	220	1200	--	--	3.9	2.3 J	1.5 J	28	2.4 J	7.7 J	3.8	39	6.1

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Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC28 LDW-SC28-0-1 2/24/2006 0-1 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-1-2 2/24/2006 1-2 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-2-4 2/24/2006 2-4 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-5.5-7.5 2/24/2006 5.5-7.5 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-12-12.6 2/24/2006 12-12.6 FT West Nav. Channel - DSI	LDW-SS50 LDW-SS202-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS326 LDW-SS326-010 0/4/2006 2:02:00 PI 0-10 cm East Nav. Channel - DSI	LDW-SS48 LDW-SS48-010 1/18/2005 0-10 cm West Nav. Channel - DSI	LDW-SS49 LDW-SS49-010 1/26/2005 0-10 cm West Nav. Channel - DSI
Benzo(a)anthracene	110	270	--	--	12	7.7	4.5	81	8.4	14	10	88	13
Benzo(a)pyrene	99	210	--	--	10	7.2	5.4	59	9.2	15	12	74	11
Benzo(g,h,i)perylene	31	78	--	--	4.6	4	2.4	27	4.7 J	4.5 J	4.2	21	6.1
Chrysene	110	460	--	--	27	12	8.6	87	8.4	24	16	**140**	23
Dibenzo(a,h)anthracene	12	33	--	--	1.3 J	2 J	1.2 J	**12**	3.3	8.2 U	1.6	**12**	4 U
Fluoranthene	160	1200	--	--	37	6.3	3.8	**250**	24	24	22	**210**	40
Fluorene	23	79	--	--	1.5 J	2.9 U	1.9 U	9.9	4.7 U	8.2 U	2.6 U	17	2.8 J
Indeno(1,2,3-cd)pyrene	34	88	--	--	5	4.3	2.7	25	5.3	7.2	4.2	26	5.7
Naphthalene	99	170	--	--	2.3 U	2.9 U	1.9 U	2.8 J	6.1	8.2 U	2.6 U	8.1	4 U
Phenanthrene	100	480	--	--	12	5.8	3.8	**110**	7	22	7.3	**130**	20
Pyrene	1000	1400	--	--	37	17 J	13 J	220	23	46	18	170	29
Benzofluoranthenes (total-calc'd)	230	450	--	--	31	19	15	110	18	43	30	150	21
Total LPAH (calc'd)	370	780	--	--	17 J	8.2 J	5.4 J	160 J	18 J	30 J	11	210	31 J
Total HPAH (calc'd)	960	5300	--	--	170 J	80 J	56 J	880	100 J	180 J	120	890	150
PAHs (ug/kg dry weight)													
1-Methylnaphthalene	--	--	--	--	60 U	60 U	60 U	66 U	61 U	--	61 U	--	--
2-Methylnaphthalene	--	--	670	1400	60 U	60 U	60 U	66 U	61 U	160 U	61 U	58	98 U
Acenaphthylene	--	--	1300	1300	60 U	60 U	60 U	66 U	61 U	160 U	61 U	54	98 U
Acenaphthene	--	--	500	730	60 U	60 U	60 U	220	32 J	160 U	61 U	230	50 J
Anthracene	--	--	960	4400	100	48 J	47 J	450	32 J	150 J	89	530	150
Benzo(a)anthracene	--	--	1300	1600	320	160	140	1300	110	280	240	1200	320
Benzo(a)pyrene	--	--	1600	3000	270	150	170	950	120	300	270	1000	280
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	470	250	250	1000	98	420	440	1000	320
Benzo(k)fluoranthene	--	--	--	--	340	150	210	830	140	410	260	950	200
Benzo(g,h,i)perylene	--	--	670	720	120	83	74	440	61 J	87 J	97	290	150
Chrysene	--	--	1400	2800	690	250	270	1400	110	460	380	1900	570
Dibenzo(a,h)anthracene	--	--	230	540	34 J	42 J	38 J	200	43	160 U	37	160	98 U
Fluoranthene	--	--	1700	2500	950	130	120	4100	310	470	520	2900	1000
Fluorene	--	--	540	1000	40 J	60 U	60 U	160	61 U	160 U	61 U	230	68 J
Indeno(1,2,3-cd)pyrene	--	--	600	690	130	89	85	400	69	140	98	360	140
Naphthalene	--	--	2100	2400	60 U	60 U	60 U	45 J	80	160 U	61 U	110	98 U
Phenanthrene	--	--	1500	5400	300	120	120	1700	92	430	170	1700	490
Pyrene	--	--	2600	3300	960	360 J	410 J	3600	300	890	420	2300	720
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	810	400	460	1800	240	830	700	2000	520
Total LPAH (calc'd)	--	--	5200	13000	440 J	170 J	170 J	2600 J	236 J	580 J	260	2900	760 J
Total HPAH (calc'd)	--	--	12000	17000	4280 J	1660 J	1770 J	14200	1360 J	3460 J	2760	12100	3700
Total PAH (calc'd)	--	--	--	--	4720 J	1830 J	1930 J	16800 J	1600 J	4040 J	3020	14900	4500 J
Benzenes (mg/kg organic carbon)													
1,2-Dichlorobenzene	2.3	2.3	--	--	0.23 U	0.29 U	0.19 U	***9.9***	0.47 U	1.6 U	0.26 U	1.4 U	***4 U***
1,4-Dichlorobenzene	3.1	9	--	--	0.14 J	0.29 U	0.19 U	1.5	0.47 U	1.6 U	0.26 U	1.4 U	**4 U**
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.23 U	0.29 UJ	0.19 UJ	0.68	0.47 UJ	**1.6 U**	0.26 U	**1.4 U**	***4 U***
Hexachlorobenzene	0.38	2.3	--	--	0.23 U	0.29 U	0.19 U	**0.41 U**	**0.47 U**	0.051 U	0.26 U	**1.4 U**	***4 U***
Benzenes (ug/kg dry weight)													
1,2-Dichlorobenzene	--	--	35	50	6 U	6 U	6 U	160	6.1 U	31 U	6.1 U	19 U	98 U
1,3-Dichlorobenzene	--	--	--	--	60 U	60 U	60 U	7.2	61 U	160 U	61 U	19 U	98 U
1,4-Dichlorobenzene	--	--	110	120	3.6 J	6 U	6 U	24	6.1 U	31 U	6.1 U	19 U	98 U
1,2,4-Trichlorobenzene	--	--	31	51	6 U	6 UJ	6 UJ	11	6.1 UJ	31 U	6.1 U	19 U	98 U
Hexachlorobenzene	--	--	22	70	6 U	6 U	6 U	6.6 U	6.1 U	0.98 U	6.1 U	19 U	98 U

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC28 LDW-SC28-0-1 2/24/2006 0-1 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-1-2 2/24/2006 1-2 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-2-4 2/24/2006 2-4 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-5.5-7.5 2/24/2006 5.5-7.5 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-12-12.6 2/24/2006 12-12.6 FT West Nav. Channel - DSI	LDW-SS50 LDW-SS202-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS326 LDW-SS326-010 0/4/2006 2:02:00 PI 0-10 cm East Nav. Channel - DSI	LDW-SS48 LDW-SS48-010 1/18/2005 0-10 cm West Nav. Channel - DSI	LDW-SS49 LDW-SS49-010 1/26/2005 0-10 cm West Nav. Channel - DSI
Nitrobenzene	--	--	--	--	60 U	60 U	60 U	66 U	61 U	160 U	61 U	19 U	98 U
Phthalates (mg/kg organic carbon)													
Bis(2-ethylhexyl)phthalate	47	78	--	--	20 U	15 U	8.9 U	**62**	7.3	29	20	**57**	6.5
Butyl benzyl phthalate	4.9	64	--	--	1.3	1.3	0.83	1.7	0.47 U	1.6 U	1.4	**5.2**	4 U
Diethyl phthalate	61	110	--	--	2.3 U	2.9 U	1.9 U	4.1 U	4.7 U	1.6 U	2.6 U	1.4 U	4 U
Dimethyl phthalate	53	53	--	--	2.3 U	2.9 U	1.9 U	0.99	4.7 U	1.6 U	0.37	1.4 U	4 U
Di-n-butyl phthalate	220	1700	--	--	2.3 U	2.9 U	1.9 U	4.1 U	2.4 J	8.2 U	2.6 U	6.8	4 U
Di-n-octyl phthalate	58	4500	--	--	2.3 U	2.9 U	1.9 U	3.5 J	4.7 U	8.2 U	2.6 U	1.4 U	4 U
Phthalates (ug/kg dry weight)													
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	510 U	310 U	280 U	1000	96	560	460	770	160
Butyl benzyl phthalate	--	--	63	900	34	27	26	28	6.1 U	31 U	33	71	98 U
Diethyl phthalate	--	--	200	1200	60 U	60 U	60 U	66 U	61 U	31 U	61 U	19 U	98 U
Dimethyl phthalate	--	--	71	160	60 U	60 U	60 U	16	61 U	31 U	8.6	19 U	98 U
Di-n-butyl phthalate	--	--	1400	5100	60 U	60 U	60 U	66 U	31 J	160 U	61 U	92	98 U
Di-n-octyl phthalate	--	--	6200	--	60 U	60 U	60 U	56 J	61 U	160 U	61 U	19 U	98 U
Phenols (ug/kg dry weight)													
2-Chlorophenol	--	--	--	--	60 U	60 U	60 U	66 U	61 U	160 U	61 U	19 U	98 U
4-Chloro-3-methylphenol	--	--	--	--	300 U	300 U	300 U	330 U	310 U	770 U	310 U	96 U	490 U
2,4-Dichlorophenol	--	--	--	--	300 U	300 U	300 U	330 U	310 U	770 U	310 U	96 U	490 U
2,4-Dimethylphenol	29	29	--	--	6 UJ	6 UJ	6 UJ	8.5 J	4.3 J	***31 U***	6.1 U	19 U	***98 U***
2,4-Dinitrophenol	--	--	--	--	600 UJ	600 UJ	600 UJ	660 U	610 UJ	1600 U	610 UJ	190 UJ	980 U
2-Methylphenol	63	63	--	--	6 U	6 UJ	4.2 J	6.6	6.1 U	31 U	6.1 U	21	***98 U***
4-Methylphenol	670	670	--	--	60 U	60 U	60 U	37 J	61 U	160 U	61 U	88	98 U
2,4,5-Trichlorophenol	--	--	--	--	300 U	300 U	300 U	330 U	310 U	770 U	310 U	96 U	490 U
2,4,6-Trichlorophenol	--	--	--	--	300 U	300 U	300 U	330 U	310 U	770 U	310 U	96 U	490 U
2-Nitrophenol	--	--	--	--	300 U	300 U	300 U	330 U	310 U	770 U	310 U	96 U	490 U
4-Nitrophenol	--	--	--	--	300 U	300 U	300 U	330 U	310 U	770 U	310 U	96 U	490 U
Pentachlorophenol	360	690	--	--	32	30 U	30 U	**410**	31 U	160 U	31 U	96 U	**490 U**
Phenol	420	1200	--	--	210	150	110	66 U	61 U	160 U	61 U	370	240
Misc Extractables (mg/kg organic carbon)													
Dibenzofuran	15	58	--	--	2.3 U	2.9 U	1.9 U	5	4.7 U	8.2 U	2.6 U	7.4	4 U
Hexachlorobutadiene	3.9	6.2	--	--	0.23 U	0.29 U	0.19 U	0.41 U	0.47 U	0.051 U	0.26 U	1.4 U	**4 U**
N-Nitrosodiphenylamine	11	11	--	--	1.4 U	1.1 U	0.73 U	***19 U***	2.3 UJ	1.6 U	0.29 U	1.4 U	4 U
Misc Extractables (ug/kg dry weight)													
2-Nitroaniline	--	--	--	--	300 U	300 U	300 U	330 U	310 U	770 U	310 U	96 U	490 U
3-Nitroaniline	--	--	--	--	300 U	300 U	300 U	330 U	310 U	770 U	310 U	96 U	490 U
4-Nitroaniline	--	--	--	--	300 U	300 U	300 U	330 U	310 U	770 U	310 U	96 U	490 U
3,3'-Dichlorobenzidine	--	--	--	--	300 UJ	300 UJ	300 UJ	330 U	310 U	770 U	310 U	96 U	490 U
4-Chloroaniline	--	--	--	--	300 UJ	300 UJ	300 UJ	330 U	310 U	770 U	310 U	96 U	490 U
Aniline	--	--	--	--	60 UJ	60 UJ	60 UJ	66 U	61 U	160 U	61 UJ	19 U	98 U
Benzyl alcohol	57	73	--	--	***110***	30 U	30 U	33 U	31 U	***160 U***	31 UJ	19 UJ	***98 U***
Benzoic acid	650	650	--	--	200 J	98 J	85 J	320 J	610 U	310 U	610 U	190 U	***980 U***
Carbazole	--	--	--	--	--	--	--	--	--	160 U	--	300	53 J
Dibenzofuran	--	--	540	700	60 U	60 U	60 U	80	61 U	160 U	61 U	100	98 U
Hexachlorobutadiene	--	--	11	120	6 U	6 U	6 U	6.6 U	6.1 U	0.98 U	6.1 U	19 U	98 U
Hexachloroethane	--	--	--	--	60 U	60 U	60 U	66 U	61 U	160 U	61 U	19 U	98 U
Hexachlorocyclopentadiene	--	--	--	--	300 UJ	300 UJ	300 UJ	330 U	310 UJ	770 U	310 UJ	96 U	490 U
Isophorone	--	--	--	--	60 U	60 U	60 U	66 U	61 U	160 U	61 U	19 U	98 U

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC28 LDW-SC28-0-1 2/24/2006 0-1 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-1-2 2/24/2006 1-2 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-2-4 2/24/2006 2-4 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-5.5-7.5 2/24/2006 5.5-7.5 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-12-12.6 2/24/2006 12-12.6 FT West Nav. Channel - DSI	LDW-SS50 LDW-SS202-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS326 LDW-SS326-010 0/4/2006 2:02:00 PI 0-10 cm East Nav. Channel - DSI	LDW-SS48 LDW-SS48-010 1/18/2005 0-10 cm West Nav. Channel - DSI	LDW-SS49 LDW-SS49-010 1/26/2005 0-10 cm West Nav. Channel - DSI
N-Nitroso-di-n-propylamine	--	--	--	--	30 U	30 UJ	30 UJ	33 U	31 UJ	160 U	49 U	96 U	490 U
N-Nitrosodimethylamine	--	--	--	--	30 U	30 U	30 U	33 U	31 U	160 U	31 U	96 U	98 U
N-Nitrosodiphenylamine	--	--	28	40	35 U	22 U	23 U	300 U	30 UJ	31 U	6.7 U	19 U	98 U
Ethers (ug/kg dry weight)													
4-Bromophenyl phenyl ether	--	--	--	--	60 U	60 U	60 U	66 U	61 U	160 U	61 U	19 U	98 U
4-Chlorophenyl phenyl ether	--	--	--	--	60 U	60 U	60 U	66 U	61 U	160 U	61 U	19 U	98 U
bis(2-chloroethyl)ether	--	--	--	--	60 U	60 U	60 U	66 U	61 U	160 U	61 U	19 U	98 U
bis(2-chloroisopropyl)ether	--	--	--	--	60 U	60 U	60 U	66 U	61 U	160 U	61 U	19 U	98 U
Pesticides (ug/kg dry weight)													
2,4'-DDD	--	--	--	--	--	--	--	--	--	2 U	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	15 U	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	2 U	--	--	--
4,4'-DDD	--	--	--	--	--	--	--	--	--	2 U	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	14 U	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	2 U	--	--	--
Aldrin	--	--	--	--	--	--	--	--	--	0.98 U	--	--	--
alpha-Chlordane	--	--	--	--	--	--	--	--	--	0.98 U	--	--	--
alpha-BHC	--	--	--	--	--	--	--	--	--	0.98 U	--	--	--
beta-BHC	--	--	--	--	--	--	--	--	--	0.98 U	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	0.98 U	--	--	--
gamma-BHC	--	--	--	--	--	--	--	--	--	0.98 U	--	--	--
gamma-Chlordane	--	--	--	--	--	--	--	--	--	0.98 U	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	2 U	--	--	--
Dieldrin	--	--	--	--	--	--	--	--	--	2 U	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	--	--	--	0.98 U	--	--	--
beta-Endosulfan	--	--	--	--	--	--	--	--	--	2 U	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	2 U	--	--	--
Endrin	--	--	--	--	--	--	--	--	--	2 U	--	--	--
Endrin aldehyde	--	--	--	--	--	--	--	--	--	4.4 UJ	--	--	--
Endrin ketone	--	--	--	--	--	--	--	--	--	2 U	--	--	--
Heptachlor	--	--	--	--	--	--	--	--	--	3.8 U	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	0.98 U	--	--	--
Toxaphene	--	--	--	--	--	--	--	--	--	98 U	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	--	--	2 U	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	--	--	--	15 U	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	--	--	--	2 U	--	--	--
Herbicides (ug/kg dry weight)													
Methoxychlor	--	--	--	--	--	--	--	--	--	9.8 U	--	--	--
PCB Aroclors (mg/kg organic carbon)													
PCBs (total calc'd)	12	65	--	--	**17**	**17 J**	9.2	***200***	**41**	**19**	9.2	9.6 J	2.8
PCB Aroclors (ug/kg dry weight)													
Aroclor-1016	--	--	--	--	39 U	77 U	40 U	310 U	25 U	20 U	3.9 U	20 UJ	20 U
Aroclor-1221	--	--	--	--	39 U	77 U	40 U	310 U	25 U	20 U	3.9 U	20 UJ	20 U
Aroclor-1232	--	--	--	--	39 U	77 U	40 U	310 U	25 U	20 U	3.9 U	20 UJ	20 U
Aroclor-1242	--	--	--	--	39 U	77 U	40 U	310 U	25 U	20 U	3.9 U	21 J	20 U
Aroclor-1248	--	--	--	--	99	65 J	55	310 U	190	160	60	20 UJ	40 U
Aroclor-1254	--	--	--	--	180	110	110	2600	220	150	76	61	39
Aroclor-1260	--	--	--	--	160	180	120	610	130	59	78	49	31

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC28 LDW-SC28-0-1 2/24/2006 0-1 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-1-2 2/24/2006 1-2 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-2-4 2/24/2006 2-4 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-5.5-7.5 2/24/2006 5.5-7.5 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-12-12.6 2/24/2006 12-12.6 FT West Nav. Channel - DSI	LDW-SS50 LDW-SS202-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS326 LDW-SS326-010 0/4/2006 2:02:00 PI 0-10 cm East Nav. Channel - DSI	LDW-SS48 LDW-SS48-010 1/18/2005 0-10 cm West Nav. Channel - DSI	LDW-SS49 LDW-SS49-010 1/26/2005 0-10 cm West Nav. Channel - DSI
PCBs (total calc'd)	--	--	130	1000	440	360 J	290	3200	540	370	214	131 J	70
PCBs Congeners (ng/kg dry weight)													
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-156	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-157	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)													
1,2,3,4,6,7,8-HpCDD	--	--	--	--	638	513	496	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	143	73.8	87.8	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	12.1	6.35	8.85	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	3.39	2.51	2.7	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	14.1	10.5	26.6	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	21.8	17.5	18.7	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	3.84	3.03	5.78	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	11.4	9.85	10.1	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	0.436 J	0.537 U	0.413 J	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	2.05	1.71	1.81	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	1.37	1.16	1.56	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	3.01	2.12	3.1	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	3.68	2.47	5.25	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	0.636	0.524	0.551	--	--	--	--	--	--

Table B-3
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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC28 LDW-SC28-0-1 2/24/2006 0-1 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-1-2 2/24/2006 1-2 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-2-4 2/24/2006 2-4 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-5.5-7.5 2/24/2006 5.5-7.5 FT West Nav. Channel - DSI	LDW-SC28 LDW-SC28-12-12.6 2/24/2006 12-12.6 FT West Nav. Channel - DSI	LDW-SS50 LDW-SS202-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS326 LDW-SS326-010 0/4/2006 2:02:00 PI 0-10 cm East Nav. Channel - DSI	LDW-SS48 LDW-SS48-010 1/18/2005 0-10 cm West Nav. Channel - DSI	LDW-SS49 LDW-SS49-010 1/26/2005 0-10 cm West Nav. Channel - DSI
2,3,7,8-TCDF	--	--	--	--	1.8	1.26	1.31	--	--	--	--	--	--
OCDD	--	--	--	--	6770	3710	5480	--	--	--	--	--	--
OCDF	--	--	--	--	517	237	219	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	14.9 J	10.7	16 J	--	--	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	12.8 J	9.39	15.6 J	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	11.8 J	8.42	12.4 J	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	19.2 J	14.6	18.4 J	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	19.9 J	14.8	18.5 J	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS50 LDW-SS50-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS51 LDW-SS51-010 1/18/2005 0-10 cm Nav. Channel - DSI	LDW-SS52 LDW-SS52-010 1/25/2005 0-10 cm Nav. Channel - DSI	LDW-SS53 LDW-SS53-010 2/2/2005 0-10 cm West Nav. Channel - DSI	LDW-SS54 LDW-SS54-010 1/24/2005 0-10 cm East Nav. Channel - DSI	DR120 SD-DR120-0000 8/12/1998 0-10 cm West Nav. Channel - DSI	DR121 SD-DR121-0000 8/31/1998 0-10 cm West Nav. Channel - DSI	WST354 WST18-03 9/16/1997 0-10 cm West Nav. Channel - DSI
Sediment Grain Size (Percent)												
Rocks (total calc'd)	--	--	--	--	0.8	0.5	0.1 U	0.1 U	6.2	1.8	0.01 U	--
Sand (total calc'd)	--	--	--	--	32.5	22.7	22.2	11.3	45.6	41	5 J	2.3
Silt (total calc'd)	--	--	--	--	50.4	54.1	57.9	64.7	34.7	42	68	66
Clay (total calc'd)	--	--	--	--	16.4	22.6	20.2	24	13.5	15	26	32
Fines (percent silt+clay)	--	--	--	--	66.8	76.7	78.1	88.7	48.2	57	94	--
Conventional Parameters												
Total Organic Carbon (TOC)	--	--	--	--	1.94	2.13	2.4	2.64	2.02	2.78	2.39	2.24
Total solids	--	--	--	--	50.9	47.9	44.23	44.7	58.4	--	--	--
Total solids (preserved)	--	--	--	--	46.2	39.6	35	42.8	63.4	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	8.22	8.06	13.9	5.99	4.3	--	--	--
Sulfides (total)	--	--	--	--	110	19 J	11	28	100	--	--	--
Metals (mg/kg dry weight)												
Aluminum	--	--	--	--	--	--	--	--	--	19000	27000	--
Antimony	--	--	--	--	0.4 UJ	0.4 UJ	0.4 UJ	0.4 U	0.3 UJ	10 UJ	10 UJ	--
Arsenic	57	93	--	--	16.8	16.9	15.5	39.7	8.8	19	18	--
Barium	--	--	--	--	--	--	--	--	--	89	97	--
Beryllium	--	--	--	--	--	--	--	--	--	0.42	0.48	--
Cadmium	5.1	6.7	--	--	1.2	0.6	0.7	0.7	0.5	0.54	0.42	--
Calcium	--	--	--	--	--	--	--	--	--	10000	8000	--
Chromium	260	270	--	--	44	38	39	42	25.6	28	39	--
Cobalt	--	--	--	--	8.7	10.5	10.8	12	7.6	10	11	--
Copper	390	390	--	--	89.4	127	106	163 J	66.2	180	110	--
Iron	--	--	--	--	--	--	--	--	--	32000 J	38000 J	--
Lead	450	530	--	--	87	64	64	74	38	53	47	--
Magnesium	--	--	--	--	--	--	--	--	--	8100	9800	--
Manganese	--	--	--	--	--	--	--	--	--	420	440	--
Mercury	0.41	0.59	--	--	**0.41**	0.3	0.3	0.31	0.19	0.21	0.27	--
Molybdenum	--	--	--	--	3	2	2	3	2.2	--	--	--
Nickel	--	--	--	--	26	24	26	26	18	21	24	--
Potassium	--	--	--	--	--	--	--	--	--	2700	3400	--
Selenium	--	--	--	--	10 U	10 UJ	10 U	10 U	8 U	1	18 J	--
Silver	6.1	6.1	--	--	1.2	0.8	0.7	0.7 U	0.5 U	0.39	0.35	--
Sodium	--	--	--	--	--	--	--	--	--	13000	13000	--
Thallium	--	--	--	--	0.4 U	0.4 U	0.4 U	0.4 U	0.3 U	0.12	0.1	--
Tin	--	--	--	--	--		--	--	--	9	19	--
Vanadium	--	--	--	--	68.3	73.2	76.3	81.1	58.7	54	83	--
Zinc	410	960	--	--	181	190	167	247 J	112	240	170	--
Organometallic Compounds (ug/kg dry weight)												
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	19 J	--
Dibutyltin as ion	--	--	--	--	--	7.8	--	5.6 U	--	--	29 J	--
Tributyltin as ion	--	--	--	--	--	28	--	6.3	--	--	120 J	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	5 UJ	--
PAHs (mg/kg organic carbon)												
2-Methylnaphthalene	38	64	--	--	5 U	0.94 U	0.83 U	0.76 U	4.8 U	3.2	0.84 U	--
Acenaphthylene	66	66	--	--	5 U	0.94 U	0.83 U	0.76 U	4.8 U	1.8	0.84 U	--
Acenaphthene	16	57	--	--	5 U	0.94 U	0.83 U	0.76 U	4.8 U	6.1	0.84	--
Anthracene	220	1200	--	--	5.7	1.8	1.5	3.4	5.9	17	2.9	--

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS50 LDW-SS50-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS51 LDW-SS51-010 1/18/2005 0-10 cm Nav. Channel - DSI	LDW-SS52 LDW-SS52-010 1/25/2005 0-10 cm Nav. Channel - DSI	LDW-SS53 LDW-SS53-010 2/2/2005 0-10 cm West Nav. Channel - DSI	LDW-SS54 LDW-SS54-010 1/24/2005 0-10 cm East Nav. Channel - DSI	DR120 SD-DR120-0000 8/12/1998 0-10 cm West Nav. Channel - DSI	DR121 SD-DR121-0000 8/31/1998 0-10 cm West Nav. Channel - DSI	WST354 WST18-03 9/16/1997 0-10 cm West Nav. Channel - DSI
Benzo(a)anthracene	110	270	--	--	8.8	6.1	5	42	12	86	10	--
Benzo(a)pyrene	99	210	--	--	13	5.6	4.6	16	13	22	9.6	--
Benzo(g,h,i)perylene	31	78	--	--	3.1 J	1.8	1.2	2.2	2.7 J	14	6.7	--
Chrysene	110	460	--	--	15	13	10	17	21	**120**	15	--
Dibenzo(a,h)anthracene	12	33	--	--	5 U	0.94 U	0.83 U	1.3	4.8 U	5.8	1.7	--
Fluoranthene	160	1200	--	--	14	15	10	28	21	**500**	25	--
Fluorene	23	79	--	--	5 U	0.94 U	0.83 U	1.1	4.8 U	6.8	1.3	--
Indeno(1,2,3-cd)pyrene	34	88	--	--	0.52	2.2	1.3	7.6	1.5	17	7.1	--
Naphthalene	99	170	--	--	5 U	0.94 U	0.83 U	0.76 U	4.8 U	3.6	0.84 U	--
Phenanthrene	100	480	--	--	8.2	5.2	3.1	6.8	9.9	**140**	7.1	--
Pyrene	1000	1400	--	--	35	11	6.3	16	41	180	19	--
Benzofluoranthenes (total-calc'd)	230	450	--	--	39	13	10	42	40	100	23	--
Total LPAH (calc'd)	370	780	--	--	14	7	4.6	11	16	180	12	--
Total HPAH (calc'd)	960	5300	--	--	130 J	68	49	170	150 J	**1000**	120	--
PAHs (ug/kg dry weight)												
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	97 U	20 U	20 U	20 U	97 U	90	20 U	--
Acenaphthylene	--	--	1300	1300	97 U	20 U	20 U	20 U	97 U	50	20 U	--
Acenaphthene	--	--	500	730	97 U	20 U	20 U	20 U	97 U	170	20	--
Anthracene	--	--	960	4400	110	39	36	91	120	480	70	--
Benzo(a)anthracene	--	--	1300	1600	170	130	120	1100	250	2400	250	--
Benzo(a)pyrene	--	--	1600	3000	260	120	110	410	270	620	230	--
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	400	170	140	780	400	2000	320	--
Benzo(k)fluoranthene	--	--	--	--	350	110	100	320	410	890	220	--
Benzo(g,h,i)perylene	--	--	670	720	61 J	38	28	59	55 J	380	160	--
Chrysene	--	--	1400	2800	300	270	240	460	430	3300	360	--
Dibenzo(a,h)anthracene	--	--	230	540	97 U	20 U	20 U	34	97 U	160	40	--
Fluoranthene	--	--	1700	2500	270	330	250	750	420	14000	600	--
Fluorene	--	--	540	1000	97 U	20 U	20 U	29	97 U	190	30	--
Indeno(1,2,3-cd)pyrene	--	--	600	690	10	46	32	200	30	470	170	--
Naphthalene	--	--	2100	2400	97 U	20 U	20 U	20 U	97 U	100	20 U	--
Phenanthrene	--	--	1500	5400	160	110	74	180	200	3900	170	--
Pyrene	--	--	2600	3300	670	240	150	420	830	4900	460	--
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	750	280	240	1100	810	2900	540	--
Total LPAH (calc'd)	--	--	5200	13000	270	150	110	300	320	4900	290	--
Total HPAH (calc'd)	--	--	12000	17000	2490 J	1450	1170	4500	3100 J	29000	2810	--
Total PAH (calc'd)	--	--	--	--	2760 J	1600	1280	4800	3420 J	34000	3100	--
Benzenes (mg/kg organic carbon)												
1,2-Dichlorobenzene	2.3	2.3	--	--	0.34 U	0.31 U	0.27 U	0.76 U	0.32 U	0.72 U	0.84 U	--
1,4-Dichlorobenzene	3.1	9	--	--	0.34 U	0.31 U	0.27 U	0.76 U	0.32 U	0.72 U	0.84 U	--
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.34 U	0.31 U	0.27 U	0.76 U	0.32 U	0.72 U	**0.84 U**	--
Hexachlorobenzene	0.38	2.3	--	--	0.05 U	0.31 U	0.27 U	0.038 U	0.049 U	**0.72 U**	**0.84 U**	--
Benzenes (ug/kg dry weight)												
1,2-Dichlorobenzene	--	--	35	50	6.5 U	6.6 U	6.5 U	20 U	6.5 U	20 U	20 U	--
1,3-Dichlorobenzene	--	--	--	--	97 U	20 U	20 U	20 U	97 U	20 U	20 U	--
1,4-Dichlorobenzene	--	--	110	120	6.5 U	6.6 U	6.5 U	20 U	6.5 U	20 U	20 U	--
1,2,4-Trichlorobenzene	--	--	31	51	6.5 U	6.6 U	6.5 U	20 U	6.5 U	20 U	20 U	--
Hexachlorobenzene	--	--	22	70	0.97 U	6.6 U	6.5 U	0.99 U	0.99 U	20 U	20 U	--

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS50 LDW-SS50-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS51 LDW-SS51-010 1/18/2005 0-10 cm Nav. Channel - DSI	LDW-SS52 LDW-SS52-010 1/25/2005 0-10 cm Nav. Channel - DSI	LDW-SS53 LDW-SS53-010 2/2/2005 0-10 cm West Nav. Channel - DSI	LDW-SS54 LDW-SS54-010 1/24/2005 0-10 cm East Nav. Channel - DSI	DR120 SD-DR120-0000 8/12/1998 0-10 cm West Nav. Channel - DSI	DR121 SD-DR121-0000 8/31/1998 0-10 cm West Nav. Channel - DSI	WST354 WST18-03 9/16/1997 0-10 cm West Nav. Channel - DSI
Nitrobenzene	--	--	--	--	97 U	20 U	20 U	20 U	97 U	20 U	20 U	--
Phthalates (mg/kg organic carbon)												
Bis(2-ethylhexyl)phthalate	47	78	--	--	29	5.6 U	4	7.6	9.9	16	14	--
Butyl benzyl phthalate	4.9	64	--	--	0.34 U	1.3	0.27 U	0.95	0.32 U	0.72 U	1.3	--
Diethyl phthalate	61	110	--	--	0.34 U	0.31 U	0.33 U	0.76 U	0.74 U	0.72 U	0.84 U	--
Dimethyl phthalate	53	53	--	--	0.34 U	0.31 U	0.27 U	0.76 U	0.32 U	0.72 U	0.84 U	--
Di-n-butyl phthalate	220	1700	--	--	5 U	0.94 U	0.83 U	0.76 U	4.8 U	1.1	0.84 U	--
Di-n-octyl phthalate	58	4500	--	--	5 U	0.94 U	0.83 U	0.76 U	4.8 U	0.72 U	0.84 U	--
Phthalates (ug/kg dry weight)												
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	560	120 U	95	200	200	440	340	--
Butyl benzyl phthalate	--	--	63	900	6.5 U	28	6.5 U	25	6.5 U	20 U	30	--
Diethyl phthalate	--	--	200	1200	6.5 U	6.6 U	7.8 U	20 U	15 U	20 U	20 U	--
Dimethyl phthalate	--	--	71	160	6.5 U	6.6 U	6.5 U	20 U	6.5 U	20 U	20 U	--
Di-n-butyl phthalate	--	--	1400	5100	97 U	20 U	20 U	20 U	97 U	30	20 U	--
Di-n-octyl phthalate	--	--	6200	--	97 U	20 U	20 U	20 U	97 U	20 U	20 U	--
Phenols (ug/kg dry weight)												
2-Chlorophenol	--	--	--	--	97 U	20 U	20 U	20 U	97 U	20 U	20 U	--
4-Chloro-3-methylphenol	--	--	--	--	480 U	98 U	99 U	99 U	480 U	40 U	40 U	--
2,4-Dichlorophenol	--	--	--	--	480 U	98 U	99 U	99 U	480 U	60 U	60 U	--
2,4-Dimethylphenol	29	29	--	--	6.5 U	6.6 U	6.5 U	20 U	6.5 U	20 U	20 U	--
2,4-Dinitrophenol	--	--	--	--	970 U	200 UJ	200 U	200 U	970 U	200 U	200 U	--
2-Methylphenol	63	63	--	--	6.5 U	6.6 U	6.5 U	20 U	6.5 U	20 U	20 U	--
4-Methylphenol	670	670	--	--	97 U	20 U	20 U	20 U	97 U	20 U	20 U	--
2,4,5-Trichlorophenol	--	--	--	--	480 U	98 U	99 U	99 U	480 U	200 U	200 U	--
2,4,6-Trichlorophenol	--	--	--	--	480 U	98 U	99 U	99 U	480 U	200 U	200 U	--
2-Nitrophenol	--	--	--	--	480 U	98 U	99 U	99 U	480 U	100 U	100 U	--
4-Nitrophenol	--	--	--	--	480 U	98 U	99 U	99 U	480 U	100 U	100 U	--
Pentachlorophenol	360	690	--	--	32 U	33 UJ	33 UJ	99 U	32 UJ	100 U	100 U	--
Phenol	420	1200	--	--	97 U	20 U	20 U	59 U	97 U	80	30	--
Misc Extractables (mg/kg organic carbon)												
Dibenzofuran	15	58	--	--	5 U	0.94 U	0.83 U	0.76 U	4.8 U	12	0.84	--
Hexachlorobutadiene	3.9	6.2	--	--	0.05 U	0.31 U	0.27 U	0.038 U	0.049 U	0.72 U	0.84 U	--
N-Nitrosodiphenylamine	11	11	--	--	0.34 U	0.31 U	0.27 U	0.76 U	0.32	1.4 U	1.7 U	--
Misc Extractables (ug/kg dry weight)												
2-Nitroaniline	--	--	--	--	480 U	98 U	99 U	99 U	480 U	100 U	100 U	--
3-Nitroaniline	--	--	--	--	480 U	98 U	99 U	99 U	480 U	200 U	200 U	--
4-Nitroaniline	--	--	--	--	480 U	98 U	99 U	99 U	480 U	100 U	100 U	--
3,3'-Dichlorobenzidine	--	--	--	--	480 U	98 U	99 U	99 U	480 U	200 U	200 U	--
4-Chloroaniline	--	--	--	--	480 U	98 U	99 U	99 U	480 U	60 U	60 U	--
Aniline	--	--	--	--	97 U	20 U	20 U	20 U	97 U	--	--	--
Benzyl alcohol	57	73	--	--	32 U	20 UJ	20 U	20 U	32 U	50 U	50 U	--
Benzoic acid	650	650	--	--	65 U	66 U	65 U	200 U	65 U	200 U	200 U	--
Carbazole	--	--	--	--	97 U	20 U	20 U	26	97 U	320	20	--
Dibenzofuran	--	--	540	700	97 U	20 U	20 U	20 U	97 U	320	20	--
Hexachlorobutadiene	--	--	11	120	0.97 U	6.6 U	6.5 U	0.99 U	0.99 U	20 U	20 U	--
Hexachloroethane	--	--	--	--	97 U	20 U	20 U	20 U	97 U	20 U	20 U	--
Hexachlorocyclopentadiene	--	--	--	--	480 U	98 U	99 U	99 U	480 U	100 UJ	100 UJ	--
Isophorone	--	--	--	--	97 U	20 U	20 U	20 U	97 U	20 U	20 U	--

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS50 LDW-SS50-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS51 LDW-SS51-010 1/18/2005 0-10 cm Nav. Channel - DSI	LDW-SS52 LDW-SS52-010 1/25/2005 0-10 cm Nav. Channel - DSI	LDW-SS53 LDW-SS53-010 2/2/2005 0-10 cm West Nav. Channel - DSI	LDW-SS54 LDW-SS54-010 1/24/2005 0-10 cm East Nav. Channel - DSI	DR120 SD-DR120-0000 8/12/1998 0-10 cm West Nav. Channel - DSI	DR121 SD-DR121-0000 8/31/1998 0-10 cm West Nav. Channel - DSI	WST354 WST18-03 9/16/1997 0-10 cm West Nav. Channel - DSI
N-Nitroso-di-n-propylamine	--	--	--	--	32 U	33 U	33 U	99 U	32 U	40 U	40 U	--
N-Nitrosodimethylamine	--	--	--	--	32 U	33 U	33 U	99 U	32 U	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	6.5 U	6.6 U	6.5 U	20 U	6.5	40 U	40 U	--
Ethers (ug/kg dry weight)												
4-Bromophenyl phenyl ether	--	--	--	--	97 U	20 U	20 U	20 U	97 U	40 U	40 U	--
4-Chlorophenyl phenyl ether	--	--	--	--	97 U	20 U	20 U	20 U	97 U	20 U	20 U	--
bis(2-chloroethyl)ether	--	--	--	--	97 U	20 U	20 U	20 U	97 U	40 U	40 U	--
bis(2-chloroisopropyl)ether	--	--	--	--	97 U	20 U	20 U	20 U	97 U	40 U	40 U	--
Pesticides (ug/kg dry weight)												
2,4'-DDD	--	--	--	--	1.9 U	--	--	--	2 U	--	--	--
2,4'-DDE	--	--	--	--	21 U	--	--	--	2 U	--	--	--
2,4'-DDT	--	--	--	--	17 U	--	--	--	2 U	--	--	--
4,4'-DDD	--	--	--	--	1.9 U	--	--	--	2 U	--	--	--
4,4'-DDE	--	--	--	--	21 U	--	--	--	2 U	--	--	--
4,4'-DDT	--	--	--	--	1.9 U	--	--	--	2 U	--	--	--
Aldrin	--	--	--	--	0.97 U	--	--	--	0.99 U	--	--	--
alpha-Chlordane	--	--	--	--	0.97 U	--	--	--	0.99 U	--	--	--
alpha-BHC	--	--	--	--	0.97 U	--	--	--	0.99 U	--	--	--
beta-BHC	--	--	--	--	3 U	--	--	--	0.99 U	--	--	--
delta-BHC	--	--	--	--	0.97 U	--	--	--	0.99 U	--	--	--
gamma-BHC	--	--	--	--	0.97 U	--	--	--	0.99 U	--	--	--
gamma-Chlordane	--	--	--	--	0.97 U	--	--	--	0.99 U	--	--	--
Oxychlordane	--	--	--	--	1.9 U	--	--	--	2 U	--	--	--
Dieldrin	--	--	--	--	1.9 U	--	--	--	2 U	--	--	--
alpha-Endosulfan	--	--	--	--	0.97 U	--	--	--	0.99 U	--	--	--
beta-Endosulfan	--	--	--	--	8.8 U	--	--	--	2 U	--	--	--
Endosulfan sulfate	--	--	--	--	1.9 U	--	--	--	2 U	--	--	--
Endrin	--	--	--	--	1.9 U	--	--	--	2 U	--	--	--
Endrin aldehyde	--	--	--	--	7 UJ	--	--	--	2 UJ	--	--	--
Endrin ketone	--	--	--	--	1.9 U	--	--	--	2 U	--	--	--
Heptachlor	--	--	--	--	5.2 U	--	--	--	0.99 U	--	--	--
Heptachlor epoxide	--	--	--	--	0.97 U	--	--	--	0.99 U	--	--	--
Toxaphene	--	--	--	--	97 U	--	--	--	99 U	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	1.9 U	--	--	--	2 U	--	--	--
DDTs (total-calc'd)	--	--	--	--	21 U	--	--	--	2 U	--	--	--
Total Chlordane (calc'd)	--	--	--	--	20 U	--	--	--	2 U	--	--	--
Herbicides (ug/kg dry weight)												
Methoxychlor	--	--	--	--	9.7 U	--	--	--	9.9 U	--	--	--
PCB Aroclors (mg/kg organic carbon)												
PCBs (total calc'd)	12	65	--	--	**41**	7.3 J	8.7	8.3	4.5	6.8	4.1	3.5 J
PCB Aroclors (ug/kg dry weight)												
Aroclor-1016	--	--	--	--	19 U	20 UJ	20 U	20 U	20 U	20 UJ	20 U	--
Aroclor-1221	--	--	--	--	19 U	20 UJ	20 U	20 U	20 U	40 U	40 U	--
Aroclor-1232	--	--	--	--	19 U	20 UJ	20 U	20 U	20 U	20 U	20 U	--
Aroclor-1242	--	--	--	--	19 U	25 J	20 U	60 U	20 U	20 U	20 U	--
Aroclor-1248	--	--	--	--	330	20 UJ	65	70 U	26	20 U	20 U	--
Aroclor-1254	--	--	--	--	320	72	84	120	38	92	46	--
Aroclor-1260	--	--	--	--	140	58	60	95	27	96	52	--

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Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS50 LDW-SS50-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS51 LDW-SS51-010 1/18/2005 0-10 cm Nav. Channel - DSI	LDW-SS52 LDW-SS52-010 1/25/2005 0-10 cm Nav. Channel - DSI	LDW-SS53 LDW-SS53-010 2/2/2005 0-10 cm West Nav. Channel - DSI	LDW-SS54 LDW-SS54-010 1/24/2005 0-10 cm East Nav. Channel - DSI	DR120 SD-DR120-0000 8/12/1998 0-10 cm West Nav. Channel - DSI	DR121 SD-DR121-0000 8/31/1998 0-10 cm West Nav. Channel - DSI	WST354 WST18-03 9/16/1997 0-10 cm West Nav. Channel - DSI
PCBs (total calc'd)	--	--	130	1000	790	155 J	209	220	91	188	98	78 J
PCBs Congeners (ng/kg dry weight)												
PCB-018	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	--
PCB-028	--	--	--	--	--	--	--	--	--	2000 J	1000 J	--
PCB-044	--	--	--	--	--	--	--	--	--	3000 J	1000 J	--
PCB-055	--	--	--	--	--	--	--	--	--	4000 J	2000 J	--
PCB-066	--	--	--	--	--	--	--	--	--	10000 U	2000 UJ	--
PCB-077	--	--	--	--	--	--	--	--	--	1000 U	1000 UJ	340 U
PCB-081	--	--	--	--	--	--	--	--	--	1000 UJ	1000 U	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--	5000 J	3000 J	26000 J
PCB-105	--	--	--	--	--	--	--	--	--	3000 J	1000 J	3300
PCB-110	--	--	--	--	--	--	--	--	--	--	--	6200
PCB-114	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	--
PCB-118	--	--	--	--	--	--	--	--	--	7000	3000 J	5500
PCB-123	--	--	--	--	--	--	--	--	--	2000 UJ	1000 UJ	--
PCB-126	--	--	--	--	--	--	--	--	--	1000 U	1000 UJ	310 U
PCB-128	--	--	--	--	--	--	--	--	--	2000 J	1000 UJ	3800 J
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--	13000 J	7000 J	5900
PCB-153	--	--	--	--	--	--	--	--	--	9000 J	5000 J	19000 J
PCB-156	--	--	--	--	--	--	--	--	--	2000 J	1000 UJ	990
PCB-157	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	250 U
PCB-167	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	--
PCB-169	--	--	--	--	--	--	--	--	--	1000 U	1000 U	770 U
PCB-170	--	--	--	--	--	--	--	--	--	4000 J	2000 J	3100
PCB-180	--	--	--	--	--	--	--	--	--	8000 J	4000 J	6200
PCB-187	--	--	--	--	--	--	--	--	--	5000 J	3000 J	--
PCB-189	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	350 U
PCB-195	--	--	--	--	--	--	--	--	--	1000 J	1000 UJ	--
PCB-206	--	--	--	--	--	--	--	--	--	1000	1000 UJ	--
PCB-209	--	--	--	--	--	--	--	--	--	1000 U	1000 UJ	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)												
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--	--

Table B-3
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Duwamish Shipyard Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS50 LDW-SS50-010 1/24/2005 0-10 cm East Nav. Channel - DSI	LDW-SS51 LDW-SS51-010 1/18/2005 0-10 cm Nav. Channel - DSI	LDW-SS52 LDW-SS52-010 1/25/2005 0-10 cm Nav. Channel - DSI	LDW-SS53 LDW-SS53-010 2/2/2005 0-10 cm West Nav. Channel - DSI	LDW-SS54 LDW-SS54-010 1/24/2005 0-10 cm East Nav. Channel - DSI	DR120 SD-DR120-0000 8/12/1998 0-10 cm West Nav. Channel - DSI	DR121 SD-DR121-0000 8/31/1998 0-10 cm West Nav. Channel - DSI	WST354 WST18-03 9/16/1997 0-10 cm West Nav. Channel - DSI
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-4
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	EIT082 EIT11-01 11/12/1997 0-10 cm East Nav. Channel - Glacier NW	EIT083 EIT11-02 9/19/1997 0-10 cm East Nav. Channel - Glacier NW	EST208 EST19-05 9/19/1997 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-05-0010 JHGSA-SD1-05-0010 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-06-0010 JHGSA-SD1-06-0010 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-COMP10-00 JHGSA-SD1-COMP10-00 7/3/2000 0-10 cm East Nav. Channel - Glacier NW
Sediment Grain Size (Percent)										
Rocks (total calc'd)	--	--	--	--	--	--	--	7.12	22.2	8.43
Sand (total calc'd)	--	--	--	--	52	86	9.5	90.6	70.4	72.9
Silt (total calc'd)	--	--	--	--	1.6	6.9	65	0.94	2.28	6.77
Clay (total calc'd)	--	--	--	--	1.4	5.4	26	0.49	0.77	2.21
Fines (percent silt+clay)	--	--	--	--	--	--	--	--	--	--
Conventional Parameters										
Total Organic Carbon (TOC)	--	--	--	--	0.3	1.11	1.88	0.34	0.98	1.18
Total solids	--	--	--	--	--	--	--	--	--	--
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)										
Aluminum	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	--	--	--	--	--
Arsenic	57	93	--	--	--	--	--	1.4	1.2	4.2
Barium	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	--	--	--	0.03 J	0.05 J	0.16
Calcium	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	--	--	--	7.2	4.8	14.5
Cobalt	--	--	--	--	--	--	--	--	--	--
Copper	390	390	--	--	--	--	--	11.5	18.8	21.4
Iron	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	--	--	--	10.2	13.7	29.2
Magnesium	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	--	--	--	--	--	--
Molybdenum	--	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--
Silver	6.1	6.1	--	--	--	--	--	0.02	0.07	0.15
Sodium	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--
Tin	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--	--	--
Zinc	410	960	--	--	--	--	--	19.2	25.6	54
Organometallic Compounds (µg/kg dry weight)										
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)										
2-Methylnaphthalene	38	64	--	--	--	--	--	--	0.51 J	0.25 J
Acenaphthylene	66	66	--	--	--	--	--	--	2 J	1.7 J
Acenaphthene	16	57	--	--	--	--	--	--	8.5	3
Anthracene	220	1200	--	--	--	--	--	--	14	4
Benzo(a)anthracene	110	270	--	--	--	--	--	--	11	7.1

Table B-4
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	EIT082 EIT11-01 11/12/1997 0-10 cm East Nav. Channel - Glacier NW	EIT083 EIT11-02 9/19/1997 0-10 cm East Nav. Channel - Glacier NW	EST208 EST19-05 9/19/1997 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-05-0010 JHGSA-SD1-05-0010 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-06-0010 JHGSA-SD1-06-0010 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-COMP10-00 JHGSA-SD1-COMP10-00 7/3/2000 0-10 cm East Nav. Channel - Glacier NW
Benzo(a)pyrene	99	210	--	--	--	--	--	--	10	6.6
Benzo(g,h,i)perylene	31	78	--	--	--	--	--	--	6.3	4.3
Chrysene	110	460	--	--	--	--	--	--	22	12
Dibenzo(a,h)anthracene	12	33	--	--	--	--	--	--	2 J	0.85 J
Fluoranthene	160	1200	--	--	--	--	--	--	98	14
Fluorene	23	79	--	--	--	--	--	--	6.5	0.85 J
Indeno(1,2,3-cd)pyrene	34	88	--	--	--	--	--	--	6.8	4.7
Naphthalene	99	170	--	--	--	--	--	--	1 J	0.51 J
Phenanthrene	100	480	--	--	--	--	--	--	37	4.1
Pyrene	1000	1400	--	--	--	--	--	--	71	13
Benzofluoranthenes (total-calc'd)	230	450	--	--	--	--	--	--	20	14
Total LPAH (calc'd)	370	780	--	--	--	--	--	--	69 J	14 J
Total HPAH (calc'd)	960	5300	--	--	--	--	--	--	250 J	77 J
PAHs (µg/kg dry weight)										
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	--	--	--	1 J	5 J	3 J
Acenaphthylene	--	--	1300	1300	--	--	--	2 U	20 J	20 J
Acenaphthene	--	--	500	730	--	--	--	10 J	83	35
Anthracene	--	--	960	4400	--	--	--	9 J	140	47
Benzo(a)anthracene	--	--	1300	1600	--	--	--	20 J	110	84
Benzo(a)pyrene	--	--	1600	3000	--	--	--	10 J	100	78
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	20 J	120	100
Benzo(k)fluoranthene	--	--	--	--	--	--	--	10 J	84	74
Benzo(g,h,i)perylene	--	--	670	720	--	--	--	8 J	62	51
Chrysene	--	--	1400	2800	--	--	--	56	220	140
Dibenzo(a,h)anthracene	--	--	230	540	--	--	--	2 J	20 J	10 J
Fluoranthene	--	--	1700	2500	--	--	--	53	960	170
Fluorene	--	--	540	1000	--	--	--	4 J	64	10 J
Indeno(1,2,3-cd)pyrene	--	--	600	690	--	--	--	7 J	67	55
Naphthalene	--	--	2100	2400	--	--	--	3 J	10 J	6 J
Phenanthrene	--	--	1500	5400	--	--	--	20 J	360	48
Pyrene	--	--	2600	3300	--	--	--	42	700	150
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	--	--	--	30 J	200	170
Total LPAH (calc'd)	--	--	5200	13000	--	--	--	46 J	680 J	166 J
Total HPAH (calc'd)	--	--	12000	17000	--	--	--	228 J	2440 J	910 J
Total PAH (calc'd)	--	--	--	--	--	--	--	274 J	3120 J	1080 J
Benzenes (mg/kg organic carbon)										
1,2-Dichlorobenzene	2.3	2.3	--	--	--	--	--	--	0.2 U	0.17 U
1,4-Dichlorobenzene	3.1	9	--	--	--	--	--	--	0.2 U	0.17 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	--	--	--	--	0.2 U	0.17 U
Hexachlorobenzene	0.38	2.3	--	--	--	--	--	--	0.2 U	0.17 U
Benzenes (µg/kg dry weight)										
1,2-Dichlorobenzene	--	--	35	50	--	--	--	2 U	2 U	2 U
1,3-Dichlorobenzene	--	--	--	--	--	--	--	3 U	3 U	3 U
1,4-Dichlorobenzene	--	--	110	120	--	--	--	2 U	2 U	2 U
1,2,4-Trichlorobenzene	--	--	31	51	--	--	--	2 U	2 U	2 U
Hexachlorobenzene	--	--	22	70	--	--	--	2 U	2 U	2 U
Nitrobenzene	--	--	--	--	--	--	--	--	--	--

Table B-4
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	EIT082 EIT11-01 11/12/1997 0-10 cm East Nav. Channel - Glacier NW	EIT083 EIT11-02 9/19/1997 0-10 cm East Nav. Channel - Glacier NW	EST208 EST19-05 9/19/1997 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-05-0010 JHGSA-SD1-05-0010 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-06-0010 JHGSA-SD1-06-0010 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-COMP10-00 JHGSA-SD1-COMP10-00 7/3/2000 0-10 cm East Nav. Channel - Glacier NW
Phthalates (mg/kg organic carbon)										
Bis(2-ethylhexyl)phthalate	47	78	--	--	--	--	--	--	2.3 J	5.9 J
Butyl benzyl phthalate	4.9	64	--	--	--	--	--	--	0.31 U	0.25 U
Diethyl phthalate	61	110	--	--	--	--	--	--	0.2 J	0.17 U
Dimethyl phthalate	53	53	--	--	--	--	--	--	0.2 U	0.17 U
Di-n-butyl phthalate	220	1700	--	--	--	--	--	--	0.31 J	3
Di-n-octyl phthalate	58	4500	--	--	--	--	--	--	0.2 U	0.17 U
Phthalates (µg/kg dry weight)										
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	--	--	--	10 J	23 J	70 J
Butyl benzyl phthalate	--	--	63	900	--	--	--	3 U	3 U	3 U
Diethyl phthalate	--	--	200	1200	--	--	--	2 U	2 J	2 U
Dimethyl phthalate	--	--	71	160	--	--	--	2 U	2 U	2 U
Di-n-butyl phthalate	--	--	1400	5100	--	--	--	3 U	3 J	35
Di-n-octyl phthalate	--	--	6200	--	--	--	--	2 U	2 U	2 U
Phenols (µg/kg dry weight)										
2-Chlorophenol	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	29	29	--	--	--	--	--	***50 U***	***50 U***	***50 U***
2,4-Dinitrophenol	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	63	63	--	--	--	--	--	30 U	30 U	30 U
4-Methylphenol	670	670	--	--	--	--	--	50 U	50 U	50 U
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	360	690	--	--	--	--	--	50 U	50 U	50 U
Phenol	420	1200	--	--	--	--	--	8 U	8 U	59
Misc Extractables (mg/kg organic carbon)										
Dibenzofuran	15	58	--	--	--	--	--	--	4.7	0.34 J
Hexachlorobutadiene	3.9	6.2	--	--	--	--	--	--	0.2 U	0.17 U
N-Nitrosodiphenylamine	11	11	--	--	--	--	--	--	0.31 U	0.25 U
Misc Extractables (µg/kg dry weight)										
2-Nitroaniline	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	--	--	--	--	--	--	--	--	--	--
Aniline	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	57	73	--	--	--	--	--	50 U	50 U	50 U
Benzoic acid	650	650	--	--	--	--	--	250 U	250 U	250 U
Carbazole	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	540	700	--	--	--	1 J	46	4 J
Hexachlorobutadiene	--	--	11	120	--	--	--	2 U	2 U	2 U
Hexachloroethane	--	--	--	--	--	--	--	8 U	8 U	8 U
Hexachlorocyclopentadiene	--	--	--	--	--	--	--	--	--	--
Isophorone	--	--	--	--	--	--	--	--	--	--
N-Nitroso-di-n-propylamine	--	--	--	--	--	--	--	--	--	--

Table B-4
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	EIT082 EIT11-01 11/12/1997 0-10 cm East Nav. Channel - Glacier NW	EIT083 EIT11-02 9/19/1997 0-10 cm East Nav. Channel - Glacier NW	EST208 EST19-05 9/19/1997 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-05-0010 JHGSA-SD1-05-0010 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-06-0010 JHGSA-SD1-06-0010 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-COMP10-00 JHGSA-SD1-COMP10-00 7/3/2000 0-10 cm East Nav. Channel - Glacier NW
N-Nitrosodimethylamine	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	--	--	--	3 U	3 U	3 U
Ethers (µg/kg dry weight)										
4-Bromophenyl phenyl ether	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	--	--	--	--	--	--	--	--	--	--
bis(2-chloroethyl)ether	--	--	--	--	--	--	--	--	--	--
bis(2-chloroisopropyl)ether	--	--	--	--	--	--	--	--	--	--
Pesticides (µg/kg dry weight)										
2,4'-DDD	--	--	--	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	--
4,4'-DDD	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--
Aldrin	--	--	--	--	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	--
Endrin	--	--	--	--	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	--
Toxaphene	--	--	--	--	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	--	--	--	--
Herbicides (µg/kg dry weight)										
Methoxychlor	--	--	--	--	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)										
PCBs (total calc'd)	12	65	--	--	--	4.4 J	4.9 J	--	2 U	**12 J**
PCB Aroclors (µg/kg dry weight)										
Aroclor-1016	--	--	--	--	--	--	--	20 U	20 U	20 U
Aroclor-1221	--	--	--	--	--	--	--	20 U	20 U	20 U
Aroclor-1232	--	--	--	--	--	--	--	20 U	20 U	20 U
Aroclor-1242	--	--	--	--	--	--	--	20 U	20 U	20 U
Aroclor-1248	--	--	--	--	--	--	--	20 U	20 U	20 U
Aroclor-1254	--	--	--	--	--	--	--	20 U	20 U	100
Aroclor-1260	--	--	--	--	--	--	--	20 U	20 U	40 J
PCBs (total calc'd)	--	--	130	1000	31 J	49 J	93 J	20 U	20 U	140 J

Table B-4
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	EIT082 EIT11-01 11/12/1997 0-10 cm East Nav. Channel - Glacier NW	EIT083 EIT11-02 9/19/1997 0-10 cm East Nav. Channel - Glacier NW	EST208 EST19-05 9/19/1997 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-05-0010 JHGSA-SD1-05-0010 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-06-0010 JHGSA-SD1-06-0010 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-COMP10-00 JHGSA-SD1-COMP10-00 7/3/2000 0-10 cm East Nav. Channel - Glacier NW
PCBs Congeners (ng/kg dry weight)										
PCB-018	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	220 U	200 U	310 U	--	--	--
PCB-081	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	9100 J	23000 J	27000 J	--	--	--
PCB-105	--	--	--	--	1000	1400	2800	--	--	--
PCB-110	--	--	--	--	2700	14000	7500	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	2100	5300	7300	--	--	--
PCB-123	--	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	200 U	180 U	280 U	--	--	--
PCB-128	--	--	--	--	1700 U	17000 J	4100 U	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	1400	8000	6100	--	--	--
PCB-153	--	--	--	--	5400 J	14000 J	19000 J	--	--	--
PCB-156	--	--	--	--	170 U	150 U	240 U	--	--	--
PCB-157	--	--	--	--	150 U	130 U	210 U	--	--	--
PCB-167	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	450 U	400 U	630 U	--	--	--
PCB-170	--	--	--	--	720	10000	4200	--	--	--
PCB-180	--	--	--	--	1000	14000	5600	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	210 U	190 U	290 U	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)										
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--

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OCDD	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

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Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	JHGSA-SD1-COMP16-00 JHGSA-SD1-COMP16-00 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-COMP22-00 JHGSA-SD1-COMP22-00 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	B4a LDW-B4a-S 8/15/2004 0-10 cm West Nav. Channel - Glacier NW	B5b LDW-B5b-S 9/28/2004 0-9 cm East Nav. Channel - Glacier NW	C4 LDW-C4-S 8/27/2004 0-10 cm West Nav. Channel - Glacier NW	LDW-SC29 LDW-SC29-0-1 2/21/2006 0-1 FT West Nav. Channel - Glacier NW	LDW-SC29 LDW-SC29-1-2 2/21/2006 1-2 FT West Nav. Channel - Glacier NW
Sediment Grain Size (Percent)											
Rocks (total calc'd)	--	--	--	--	23.5	24.4	10.7	2.11	16.2	0.6	0.3
Sand (total calc'd)	--	--	--	--	69.6	40	60.2	67.7	75.5	56.1	74
Silt (total calc'd)	--	--	--	--	7.64	34.6	26.77	23.2	7.82	32.8	20.7
Clay (total calc'd)	--	--	--	--	1.77	4.71	7.42	6.43	3.24	10.6	4.8
Fines (percent silt+clay)	--	--	--	--	--	--	34.19	29.63	11.06	43.4	25.5
Conventional Parameters											
Total Organic Carbon (TOC)	--	--	--	--	0.71	2.9	1.96	1.39	1.4	1.77	1.06
Total solids	--	--	--	--	--	--	53.7	57.8	67.5	70.2	75
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)											
Aluminum	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	--	20.3 J	0.59 J	20.2 J	7 UJ	6 UJ
Arsenic	57	93	--	--	2	6	46.5 J	6.74 J	49	14	11
Barium	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	0.07	0.24	0.323	0.257	0.2	0.3 U	0.2 U
Calcium	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	10.1	19.8	31.9	20.3	19.9	20.8	14.5
Cobalt	--	--	--	--	--	--	9.8	7.1	5.43	7	6.6
Copper	390	390	--	--	16.1	37.7	189	42	118	51.1	20.5
Iron	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	18.6	40.3	67.8 J	30.8	59.6 J	18	6
Magnesium	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	--	--	0.115	0.095	0.051	0.12	0.05 U
Molybdenum	--	--	--	--	--	--	5.21	1.08 J	3.71 J	1.2	1.7
Nickel	--	--	--	--	--	--	16.9	14	9.73	15	12
Potassium	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	0.7	0.8	0.5 J	7 U	6 U
Silver	6.1	6.1	--	--	0.05	0.27	0.545	0.236 J	0.485	0.4 U	0.4 U
Sodium	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	0.095	0.092	0.053	7 U	6 U
Tin	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	54.8	43.3	43.5	56.5	52.7
Zinc	410	960	--	--	47.1	62.1	291	93.9	236 J	77.9	38.4
Organometallic Compounds (µg/kg dry weight)											
Monobutyltin as ion	--	--	--	--	--	--	4.9	14	2	--	--
Dibutyltin as ion	--	--	--	--	--	--	15	18	3.1	--	--
Tributyltin as ion	--	--	--	--	--	--	32	30	3.4	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	0.74 J	0.74 J	1.5 U	--	--
PAHs (mg/kg organic carbon)											
2-Methylnaphthalene	38	64	--	--	0.14 U	0.31 J	2.7	0.67	1.2	3.3 U	1.9 U
Acenaphthylene	66	66	--	--	0.28 J	0.34 J	9.2	2.2	3.4	3.3 U	1 J
Acenaphthene	16	57	--	--	0.42 J	0.14 J	1.8	0.79	0.19 J	3.3 U	1.9 U
Anthracene	220	1200	--	--	0.85 J	0.93	17	7.2	2.4	3.3 U	2.5
Benzo(a)anthracene	110	270	--	--	2.8 J	1.7	51	23	10	1.8 J	10

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Benzo(a)pyrene	99	210	--	--	1.4 J	1.7	56	16	14	1.8 J	10
Benzo(g,h,i)perylene	31	78	--	--	1.4 J	1.3	**44**	8.6	10	3.3 U	2.5
Chrysene	110	460	--	--	3.8	3.4	**130**	37	16	2.4 J	12
Dibenzo(a,h)anthracene	12	33	--	--	0.42 J	0.034 U	6.6	1.7	1.9	3.3 U	1 J
Fluoranthene	160	1200	--	--	6.3	2.9	**470**	64	14	2.4 J	19
Fluorene	23	79	--	--	0.28 U	0.28 J	4.9	1.3	0.37	3.3 U	1.9 U
Indeno(1,2,3-cd)pyrene	34	88	--	--	1.4 J	0.69 J	**45**	9.4	10	3.3 U	2.7
Naphthalene	99	170	--	--	0.14 U	0.34 J	4.2	0.72	1.9	3.3 U	1.9 U
Phenanthrene	100	480	--	--	1.4 J	1.2	**120**	7.9	3.1	3.3 U	7.7
Pyrene	1000	1400	--	--	4.8	4.8	360	47	19	5.2 J	29 J
Benzofluoranthenes (total-calc'd)	230	450	--	--	5.6 J	2.7	150	41	20	5.7 J	22
Total LPAH (calc'd)	370	780	--	--	3 J	3.3 J	160	20	11 J	3.3 U	11 J
Total HPAH (calc'd)	960	5300	--	--	28 J	19 J	**1300**	250	110	19 J	110 J
PAHs (µg/kg dry weight)											
1-Methylnaphthalene	--	--	--	--	--	--	32	7	--	58 U	20 U
2-Methylnaphthalene	--	--	670	1400	1 U	9 J	53	9.3	17	58 U	20 U
Acenaphthylene	--	--	1300	1300	2 J	10 J	180	31	47	58 U	11 J
Acenaphthene	--	--	500	730	3 J	4 J	36	11	2.7 J	58 U	20 U
Anthracene	--	--	960	4400	6 J	27	340	100	33	58 U	26
Benzo(a)anthracene	--	--	1300	1600	20 J	49	1000	320	140	32 J	110
Benzo(a)pyrene	--	--	1600	3000	10 J	50	1100	220	190	32 J	110
Benzo(e)pyrene	--	--	--	--	--	--	1300	230	--	--	--
Benzo(b)fluoranthene	--	--	--	--	20 J	42	1900	340	140	58 J	100
Benzo(k)fluoranthene	--	--	--	--	20 J	37	1100	230	140	43 J	130
Benzo(g,h,i)perylene	--	--	670	720	10 J	38	870	120	140	58 U	26
Chrysene	--	--	1400	2800	27	100	2600	510	220	42 J	130
Dibenzo(a,h)anthracene	--	--	230	540	3 J	1 U	130	24	27	58 U	11 J
Fluoranthene	--	--	1700	2500	45	85	9300	890	190	42 J	200
Fluorene	--	--	540	1000	2 U	8 J	97	18	5.2	58 U	20 U
Indeno(1,2,3-cd)pyrene	--	--	600	690	10 J	20 J	890	130	140	58 U	29
Naphthalene	--	--	2100	2400	1 U	10 J	82	10	27	58 U	20 U
Phenanthrene	--	--	1500	5400	10 J	36	2400	110	43	58 U	82
Pyrene	--	--	2600	3300	34	140	7100	660	260	92 J	310 J
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	40 J	79	3000	570	280	101 J	230
Total LPAH (calc'd)	--	--	5200	13000	21 J	95 J	3100	280	158 J	58 U	119 J
Total HPAH (calc'd)	--	--	12000	17000	199 J	560 J	26000	3440	1590	341 J	1160 J
Total PAH (calc'd)	--	--	--	--	220 J	660 J	29100	3720	1740 J	341 J	1280 J
Benzenes (mg/kg organic carbon)											
1,2-Dichlorobenzene	2.3	2.3	--	--	0.28 U	0.069 U	1 U	0.72 U	0.47 U	0.33 U	0.56 U
1,4-Dichlorobenzene	3.1	9	--	--	0.28 U	0.069 U	1 U	0.72 U	0.47 U	0.33 U	0.56 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.28 U	0.069 U	**1 U**	0.72 U	0.47 U	0.33 U	0.56 U
Hexachlorobenzene	0.38	2.3	--	--	0.28 U	0.069 U	0.27 JN	0.072 U	0.31	0.33	**0.56 U**
Benzenes (µg/kg dry weight)											
1,2-Dichlorobenzene	--	--	35	50	2 U	2 U	20 U	10 U	6.6 U	5.9 U	5.9 U
1,3-Dichlorobenzene	--	--	--	--	3 U	3 U	20 U	10 U	100 U	58 U	20 U
1,4-Dichlorobenzene	--	--	110	120	2 U	2 U	20 U	10 U	6.6 U	5.9 U	5.9 U
1,2,4-Trichlorobenzene	--	--	31	51	2 U	2 U	20 U	10 U	6.6 U	5.9 U	5.9 U
Hexachlorobenzene	--	--	22	70	2 U	2 U	5.3 JN	1 U	4.3	5.9	5.9 U
Nitrobenzene	--	--	--	--	--	--	20 U	10 U	100 U	58 U	20 U

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Phthalates (mg/kg organic carbon)											
Bis(2-ethylhexyl)phthalate	47	78	--	--	3.1 J	2.4 J	7.1 J	7.9 J	6.4 J	2.3 J	1.9 U
Butyl benzyl phthalate	4.9	64	--	--	0.42 U	0.1 U	1.1	0.61 J	0.47 U	0.33	0.56 U
Diethyl phthalate	61	110	--	--	0.28 U	0.17 J	1 U	0.72 U	0.47 U	3.3 U	1.9 U
Dimethyl phthalate	53	53	--	--	0.28 U	0.069 U	1 U	0.26 J	0.47 U	3.3 U	1.9 U
Di-n-butyl phthalate	220	1700	--	--	0.56 J	0.31 J	0.82 J	0.62 J	7.1 U	3.5	2.6
Di-n-octyl phthalate	58	4500	--	--	0.28 U	0.069 U	2 U	1.4 U	7.1 U	3.3 U	1.9 U
Phthalates (µg/kg dry weight)											
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	22 J	70 J	140 J	110 J	90 J	40 J	20 U
Butyl benzyl phthalate	--	--	63	900	3 U	3 U	21	8.5 J	6.6 U	5.9	5.9 U
Diethyl phthalate	--	--	200	1200	2 U	5 J	20 U	10 U	6.6 U	58 U	20 U
Dimethyl phthalate	--	--	71	160	2 U	2 U	20 U	3.6 J	6.6 U	58 U	20 U
Di-n-butyl phthalate	--	--	1400	5100	4 J	9 J	16 J	8.6 J	100 U	62	28
Di-n-octyl phthalate	--	--	6200	--	2 U	2 U	40 U	20 U	100 U	58 U	20 U
Phenols (µg/kg dry weight)											
2-Chlorophenol	--	--	--	--	--	--	20 U	10 U	100 U	58 U	20 U
4-Chloro-3-methylphenol	--	--	--	--	--	--	20 U	10 U	100 U	290 U	98 U
2,4-Dichlorophenol	--	--	--	--	--	--	20 U	10 U	100 U	290 U	98 U
2,4-Dimethylphenol	29	29	--	--	***50 U***	***50 U***	***100 UJ***	***50 UJ***	6.6 U	5.9 U	5.9 U
2,4-Dinitrophenol	--	--	--	--	--	--	400 U	200 U	2000 U	580 UJ	200 UJ
2-Methylphenol	63	63	--	--	30 U	30 U	20 U	10 U	6.6 U	5.9 U	5.9 U
4-Methylphenol	670	670	--	--	50 U	50 U	20 U	10 U	100 U	58 U	20 U
2,4,5-Trichlorophenol	--	--	--	--	--	--	20 U	10 U	100 U	290 U	98 U
2,4,6-Trichlorophenol	--	--	--	--	--	--	20 U	10 U	100 U	290 U	98 U
2-Nitrophenol	--	--	--	--	--	--	20 U	10 U	100 U	290 U	98 U
4-Nitrophenol	--	--	--	--	--	--	200 U	100 U	1000 U	290 U	98 U
Pentachlorophenol	360	690	--	--	50 U	50 U	80 J	50 U	130	29 U	29 U
Phenol	420	1200	--	--	31	8 U	23 U	11 U	99 J	58 U	20 U
Misc Extractables (mg/kg organic carbon)											
Dibenzofuran	15	58	--	--	0.14 J	0.1 J	2	0.79	0.32 J	3.3 U	1.9 U
Hexachlorobutadiene	3.9	6.2	--	--	0.28 U	0.069 U	1 U	0.72 U	0.47 U	0.33 U	0.56 U
N-Nitrosodiphenylamine	11	11	--	--	0.42 U	0.1 U	1 U	0.72 U	0.47 U	0.85 UJ	1.4 UJ
Misc Extractables (µg/kg dry weight)											
2-Nitroaniline	--	--	--	--	--	--	40 U	20 U	200 U	290 U	98 U
3-Nitroaniline	--	--	--	--	--	--	40 U	20 U	200 U	290 UJ	98 UJ
4-Nitroaniline	--	--	--	--	--	--	40 U	20 U	200 U	290 UJ	98 UJ
3,3'-Dichlorobenzidine	--	--	--	--	--	--	200 U	100 U	1000 U	290 UJ	98 UJ
4-Chloroaniline	--	--	--	--	--	--	20 U	10 UJ	100 U	290 UJ	98 UJ
Aniline	--	--	--	--	--	--	40 U	20 UJ	200 U	58 UJ	20 UJ
Benzyl alcohol	57	73	--	--	50 U	50 U	20 U	10 U	33 U	29 U	29 U
Benzoic acid	650	650	--	--	250 U	250 U	400 U	200 U	100	73 J	64 J
Carbazole	--	--	--	--	--	--	25	20	82 J	--	--
Dibenzofuran	--	--	540	700	1 J	3 J	39	11	4.5 J	58 U	20 U
Hexachlorobutadiene	--	--	11	120	2 U	2 U	20 U	10 U	6.6 U	5.9 U	5.9 U
Hexachloroethane	--	--	--	--	8 U	8 U	20 U	10 U	100 U	58 U	20 U
Hexachlorocyclopentadiene	--	--	--	--	--	--	100 UJ	50 UJ	500 U	290 U	98 U
Isophorone	--	--	--	--	--	--	20 U	10 U	100 U	58 U	20 U
N-Nitroso-di-n-propylamine	--	--	--	--	--	--	20 U	10 U	33 U	29 U	29 U

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	JHGSA-SD1-COMP16-00 JHGSA-SD1-COMP16-00 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	JHGSA-SD1-COMP22-00 JHGSA-SD1-COMP22-00 7/3/2000 0-10 cm East Nav. Channel - Glacier NW	B4a LDW-B4a-S 8/15/2004 0-10 cm West Nav. Channel - Glacier NW	B5b LDW-B5b-S 9/28/2004 0-9 cm East Nav. Channel - Glacier NW	C4 LDW-C4-S 8/27/2004 0-10 cm West Nav. Channel - Glacier NW	LDW-SC29 LDW-SC29-0-1 2/21/2006 0-1 FT West Nav. Channel - Glacier NW	LDW-SC29 LDW-SC29-1-2 2/21/2006 1-2 FT West Nav. Channel - Glacier NW
N-Nitrosodimethylamine	--	--	--	--	--	--	100 U	50 U	33 U	29 U	29 U
N-Nitrosodiphenylamine	--	--	28	40	3 U	3 U	20 U	10 U	6.6 U	15 UJ	15 UJ
Ethers (µg/kg dry weight)											
4-Bromophenyl phenyl ether	--	--	--	--	--	--	20 U	10 U	100 U	58 U	20 U
4-Chlorophenyl phenyl ether	--	--	--	--	--	--	20 U	10 U	100 U	58 U	20 U
bis(2-chloroethyl)ether	--	--	--	--	--	--	20 U	10 U	100 U	58 U	20 U
bis(2-chloroisopropyl)ether	--	--	--	--	--	--	20 U	10 U	100 U	58 U	20 U
Pesticides (µg/kg dry weight)											
2,4'-DDD	--	--	--	--	--	--	1.9 U	7 J	1.9 U	--	--
2,4'-DDE	--	--	--	--	--	--	1 U	1 U	1.4 U	--	--
2,4'-DDT	--	--	--	--	--	--	8.8 JN	5.1	4	--	--
4,4'-DDD	--	--	--	--	--	--	1 U	0.86 J	0.98 U	--	--
4,4'-DDE	--	--	--	--	--	--	3.5 JN	1.4 J	1.6 J	--	--
4,4'-DDT	--	--	--	--	--	--	9.3 JN	6.5	4.8	--	--
Aldrin	--	--	--	--	--	--	1 U	1 U	0.81 J	--	--
alpha-Chlordane	--	--	--	--	--	--	1 U	1 U	0.98 U	--	--
alpha-BHC	--	--	--	--	--	--	1 U	1 U	0.98 U	--	--
beta-BHC	--	--	--	--	--	--	1 U	1 U	0.98 U	--	--
delta-BHC	--	--	--	--	--	--	1 U	1 U	0.98 U	--	--
gamma-BHC	--	--	--	--	--	--	1 JN	0.36 J	0.98 U	--	--
gamma-Chlordane	--	--	--	--	--	--	4.6 U	1 U	2.3 U	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	--	1 U	1 U	3.8 U	--	--
alpha-Endosulfan	--	--	--	--	--	--	1 U	1 U	0.98 U	--	--
beta-Endosulfan	--	--	--	--	--	--	3 U	1 U	0.98 U	--	--
Endosulfan sulfate	--	--	--	--	--	--	1 U	1 U	0.98 U	--	--
Endrin	--	--	--	--	--	--	1 U	1 U	0.98 U	--	--
Endrin aldehyde	--	--	--	--	--	--	1.7 U	1 U	0.98 U	--	--
Endrin ketone	--	--	--	--	--	--	1 U	1 U	0.98 U	--	--
Heptachlor	--	--	--	--	--	--	1 U	1 U	0.98 U	--	--
Heptachlor epoxide	--	--	--	--	--	--	1 U	4.9 J	0.98 U	--	--
Toxaphene	--	--	--	--	--	--	170 U	58 U	170 U	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	1 U	1 U	0.81 J	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	21.6 JN	20.9 J	10.4 J	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	4.6 U	1 U	2.3 U	--	--
Herbicides (µg/kg dry weight)											
Methoxychlor	--	--	--	--	--	--	1 U	1 U	0.98 U	--	--
PCB Aroclors (mg/kg organic carbon)											
PCBs (total calc'd)	12	65	--	--	5.6 J	3.4 J	**17**	**20**	4.9	1.9 J	0.37 UJ
PCB Aroclors (µg/kg dry weight)											
Aroclor-1016	--	--	--	--	20 U	20 U	10 U	10 U	9.8 U	3.9 U	3.9 UJ
Aroclor-1221	--	--	--	--	20 U	20 U	20 U	20 U	20 U	3.9 U	3.9 UJ
Aroclor-1232	--	--	--	--	20 U	20 U	10 U	10 U	9.8 U	3.9 U	3.9 UJ
Aroclor-1242	--	--	--	--	20 U	20 U	10 U	10 U	9.8 U	3.9 U	3.9 UJ
Aroclor-1248	--	--	--	--	20 U	20 U	10 U	68	9.8 U	8.6 J	3.9 UJ
Aroclor-1254	--	--	--	--	40 J	40 J	170	120	69	12	3.9 UJ
Aroclor-1260	--	--	--	--	20 U	60 J	160	90	57 U	12 J	3.9 UJ
PCBs (total calc'd)	--	--	130	1000	40 J	100 J	330	280	69	33 J	3.9 UJ

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PCBs Congeners (ng/kg dry weight)											
PCB-018	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	1180	--	--
PCB-077	--	--	--	--	--	--	--	--	120	--	--
PCB-081	--	--	--	--	--	--	--	--	4.7 J	--	--
PCB-090	--	--	--	--	--	--	--	--	5170 C	--	--
PCB-101	--	--	--	--	--	--	--	--	C90	--	--
PCB-105	--	--	--	--	--	--	--	--	1190	--	--
PCB-110	--	--	--	--	--	--	--	--	6150 C	--	--
PCB-114	--	--	--	--	--	--	--	--	54.3	--	--
PCB-118	--	--	--	--	--	--	--	--	3640	--	--
PCB-123	--	--	--	--	--	--	--	--	62.6	--	--
PCB-126	--	--	--	--	--	--	--	--	4.97	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	5340 C	--	--
PCB-138	--	--	--	--	--	--	--	--	C129	--	--
PCB-153	--	--	--	--	--	--	--	--	4060 C	--	--
PCB-156	--	--	--	--	--	--	--	--	544 C	--	--
PCB-157	--	--	--	--	--	--	--	--	C156	--	--
PCB-167	--	--	--	--	--	--	--	--	189	--	--
PCB-169	--	--	--	--	--	--	--	--	1.25 U	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	1620 C	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	--	--	33.2	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	7.19 J	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	1.31 J	--	--
Dioxin/Furans (ng/kg dry weight)											
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	1270	31.1
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	508	11.1
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	66.2	1.47
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	1.4	0.106 U
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	152	1.48
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	44.5	0.891
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	24.3	0.311 J
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	6.98	0.331 J
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	2.36	0.044 U
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	0.883 J	0.064 J
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	5.82	0.093 J
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	9.55	0.194 J
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	21.3	0.284 J
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	0.325	0.053 U
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	2.3 U	0.074 J

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OCDD	--	--	--	--	--	--	--	--	--	10700	207
OCDF	--	--	--	--	--	--	--	--	--	1640	65.5
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	52.5 J	0.887 J
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	65.1 J	0.884 J
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	40.5 J	0.664 J
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	56 J	1.04 J
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	54.1 J	1.03 J

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

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Sediment Grain Size (Percent)											
Rocks (total calc'd)	--	--	--	--	0.9	0.2	5.9	0.1	1	39.6	0.6
Sand (total calc'd)	--	--	--	--	95.7	36.9	72.8	30.8	32.8	28.4	57.3
Silt (total calc'd)	--	--	--	--	3.4	47.2	14.2	51.8	47	23.8	31
Clay (total calc'd)	--	--	--	--	--	15.6	7.1	17.2	19.2	8.3	11.2
Fines (percent silt+clay)	--	--	--	--	3.4	62.8	21.3	69	66.2	32.1	42
Conventional Parameters											
Total Organic Carbon (TOC)	--	--	--	--	0.48	1.53	1.13	1.73	1.78	2.07	1.82
Total solids	--	--	--	--	80	59.5	62.4	50	50.7	52.5	57.5
Total solids (preserved)	--	--	--	--	--	48.4	62	46.2	53.8	49	49.4
Ammonia (total as nitrogen)	--	--	--	--	--	5.91	1.83	5.63	2.82	8.53	3.94
Sulfides (total)	--	--	--	--	--	880	37	130	250	570	360
Metals (mg/kg dry weight)											
Aluminum	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	6 UJ	0.3 UJ	2.2 J	0.4 UJ	0.4 UJ	0.4 U	0.3
Arsenic	57	93	--	--	6 U	17.2	***161***	35.4	33.9	20.7	38.1
Barium	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	0.2 U	0.4	0.6	0.7	1	0.5	0.3
Calcium	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	10.6	25.4	41.2	43	45	43.5	34.3
Cobalt	--	--	--	--	5.5	9.7	18.7	11.3	11.4	11	9
Copper	390	390	--	--	11.3	137	365	179	146	102 J	226 J
Iron	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	4	53	160	138	287	60	75
Magnesium	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	0.06 U	0.15	0.14	0.31	0.29	0.19	0.23
Molybdenum	--	--	--	--	0.6 U	4.7	23	5	5.5	3.1	5.7
Nickel	--	--	--	--	9	20	16	23	28	33	14
Potassium	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	6 U	7 U	8 U	10 U	9 U	9 U	9 U
Silver	6.1	6.1	--	--	0.4 U	0.6	0.9	0.9	1.1	0.6 U	0.9
Sodium	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	6 U	0.3 U	0.3 U	0.4 U	0.4 U	0.4 U	0.3 U
Tin	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	44.6	63.5	59.3	72.6	68.7	67.4	54.9
Zinc	410	960	--	--	31.2	151	**607**	262	281	219 J	214 J
Organometallic Compounds (µg/kg dry weight)											
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	5.5 U	23	--	6.9	--	--
Tributyltin as ion	--	--	--	--	--	16	96	--	28	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)											
2-Methylnaphthalene	38	64	--	--	--	3.8 J	8.7 U	8.1 U	8.4 U	0.97 U	2.4 U
Acenaphthylene	66	66	--	--	--	6.4 U	6.8 J	8.1 U	8.4 U	0.97 U	4.5
Acenaphthene	16	57	--	--	--	13	8.7 U	8.1 U	8.4 U	0.97 U	2.4 U
Anthracene	220	1200	--	--	--	5.7 J	5 J	8.1 U	8.4 U	3.6	4.4
Benzo(a)anthracene	110	270	--	--	--	10	20	11	8.4	9.7	15

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Benzo(a)pyrene	99	210	--	--	--	7.2	29	13	10	14	24
Benzo(g,h,i)perylene	31	78	--	--	--	6.4 U	12	5.7 J	4.8 J	5.3	7.1
Chrysene	110	460	--	--	--	14	32	17	16	19	26
Dibenzo(a,h)anthracene	12	33	--	--	--	6.4 U	8.7 U	8.1 U	8.4 U	2.2	2.4 U
Fluoranthene	160	1200	--	--	--	42	35	24	18	25	31
Fluorene	23	79	--	--	--	16	8.7 U	8.1 U	8.4 U	0.97 U	2.4 U
Indeno(1,2,3-cd)pyrene	34	88	--	--	--	2.5	12	5.8 J	4.5 J	15	11
Naphthalene	99	170	--	--	--	9.2	8.7 U	8.1 U	8.4 U	0.97 U	2.5
Phenanthrene	100	480	--	--	--	31	14	11	9.6	8.2	12
Pyrene	1000	1400	--	--	--	39	47	34	22	17	30
Benzofluoranthenes (total-calc'd)	230	450	--	--	--	24	52	34	25	42	46
Total LPAH (calc'd)	370	780	--	--	--	75 J	26 J	11	9.6	12	24
Total HPAH (calc'd)	960	5300	--	--	--	140	240	140 J	110 J	150	190
PAHs (µg/kg dry weight)											
1-Methylnaphthalene	--	--	--	--	20 U	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	20 U	58 J	98 U	140 U	150 U	20 U	44 U
Acenaphthylene	--	--	1300	1300	20 U	98 U	77 J	140 U	150 U	20 U	81
Acenaphthene	--	--	500	730	20 U	200	98 U	140 U	150 U	20 U	44 U
Anthracene	--	--	960	4400	20 U	87 J	57 J	140 U	150 U	75	80
Benzo(a)anthracene	--	--	1300	1600	20 U	160	230	190	150	200	270
Benzo(a)pyrene	--	--	1600	3000	20 U	110	330	230	180	290	440
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	20 U	190	280	280	220	420	440
Benzo(k)fluoranthene	--	--	--	--	20 U	170	310	300	220	450	400
Benzo(g,h,i)perylene	--	--	670	720	20 U	98 U	130	99 J	86 J	110	130
Chrysene	--	--	1400	2800	20 U	220	360	290	290	400	470
Dibenzo(a,h)anthracene	--	--	230	540	20 U	98 U	98 U	140 U	150 U	45	44 U
Fluoranthene	--	--	1700	2500	20 U	640	400	420	320	520	570
Fluorene	--	--	540	1000	20 U	240	98 U	140 U	150 U	20 U	44 U
Indeno(1,2,3-cd)pyrene	--	--	600	690	20 U	39	130	100 J	80 J	310	200
Naphthalene	--	--	2100	2400	20 U	140	98 U	140 U	150 U	20 U	45
Phenanthrene	--	--	1500	5400	20 U	470	160	190	170	170	220
Pyrene	--	--	2600	3300	9.9 J	590	530	580	400	360	540
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	20 U	360	590	580	440	870	840
Total LPAH (calc'd)	--	--	5200	13000	20 U	1140 J	290 J	190	170	250	430
Total HPAH (calc'd)	--	--	12000	17000	9.9 J	2120	2700	2490 J	1950 J	3110	3460
Total PAH (calc'd)	--	--	--	--	9.9 J	3260 J	2990 J	2680 J	2120 J	3350	3890
Benzenes (mg/kg organic carbon)											
1,2-Dichlorobenzene	2.3	2.3	--	--	--	0.42 U	0.58 U	***8.1 U***	***8.4 U***	0.97 U	***2.3 U***
1,4-Dichlorobenzene	3.1	9	--	--	--	0.42 U	0.58 U	**8.1 U**	**8.4 U**	0.97 U	2.3 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	--	0.42 U	0.58 U	***8.1 U***	***8.4 U***	0.47 UJ	***2.3 U***
Hexachlorobenzene	0.38	2.3	--	--	--	0.064 U	**0.58 U**	***8.1 U***	0.055 U	0.047 U	0.12 JN
Benzenes (µg/kg dry weight)											
1,2-Dichlorobenzene	--	--	35	50	5.8 U	6.5 U	6.5 U	140 U	150 U	20 U	42 U
1,3-Dichlorobenzene	--	--	--	--	20 U	98 U	98 U	140 U	150 U	20 U	44 U
1,4-Dichlorobenzene	--	--	110	120	5.8 U	6.5 U	6.5 U	140 U	150 U	20 U	42 U
1,2,4-Trichlorobenzene	--	--	31	51	5.8 U	6.5 U	6.5 U	140 U	150 U	9.8 UJ	42 U
Hexachlorobenzene	--	--	22	70	5.8 U	0.98 U	6.5 U	140 U	0.98 U	0.98 U	2.1 JN
Nitrobenzene	--	--	--	--	20 U	98 U	98 U	140 U	150 U	20 U	44 U

Table B-4
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC29 LDW-SC29-2-3.6 2/21/2006 2-3.6 FT West Nav. Channel - Glacier NW	LDW-SS55 LDW-SS55-010 1/24/2005 0-10 cm West Nav. Channel - Glacier NW	LDW-SS56 LDW-SS56-010 1/24/2005 0-10 cm West Nav. Channel - Glacier NW	LDW-SS57 LDW-SS57-010 1/24/2005 0-10 cm West Nav. Channel - Glacier NW	LDW-SS58 LDW-SS58-010 1/24/2005 0-10 cm West Nav. Channel - Glacier NW	LDW-SS59 LDW-SS59R2-010 3/14/2005 0-10 cm West Nav. Channel - Glacier NW	LDW-SSB4a LDW-SSB4a-010 3/14/2005 0-10 cm West Nav. Channel - Glacier NW
Phthalates (mg/kg organic carbon)											
Bis(2-ethylhexyl)phthalate	47	78	--	--	--	6.4	19	17	16	26	9.3
Butyl benzyl phthalate	4.9	64	--	--	--	0.42 U	0.58 U	**8.1 U**	**8.4 U**	3.9	2.3 U
Diethyl phthalate	61	110	--	--	--	0.42 U	0.58 U	8.1 U	8.4 U	0.97 U	2.3 U
Dimethyl phthalate	53	53	--	--	--	0.42 U	0.58 U	8.1 U	8.4 U	0.97 U	2.3 U
Di-n-butyl phthalate	220	1700	--	--	--	6.4 U	8.7 U	8.1 U	8.4 U	0.97 U	2.4 U
Di-n-octyl phthalate	58	4500	--	--	--	6.4 U	8.7 U	8.1 U	8.4 U	0.97 U	2.4 U
Phthalates (µg/kg dry weight)											
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	20 U	98	210	290	280	530	170
Butyl benzyl phthalate	--	--	63	900	5.8 U	6.5 U	6.5 U	140 U	150 U	80	42 U
Diethyl phthalate	--	--	200	1200	20 U	6.5 U	6.5 U	140 U	150 U	20 U	42 U
Dimethyl phthalate	--	--	71	160	20 U	6.5 U	6.5 U	140 U	150 U	20 U	42 U
Di-n-butyl phthalate	--	--	1400	5100	22	98 U	98 U	140 U	150 U	20 U	44 U
Di-n-octyl phthalate	--	--	6200	--	20 U	98 U	98 U	140 U	150 U	20 U	44 U
Phenols (µg/kg dry weight)											
2-Chlorophenol	--	--	--	--	20 U	98 U	98 U	140 U	150 U	20 U	44 U
4-Chloro-3-methylphenol	--	--	--	--	97 U	490 U	490 U	720 U	740 U	99 U	220 U
2,4-Dichlorophenol	--	--	--	--	97 U	490 U	490 U	720 U	740 U	99 U	220 U
2,4-Dimethylphenol	29	29	--	--	5.8 U	6.5 U	6.5 U	***140 U***	***150 U***	20 U	24 UJ
2,4-Dinitrophenol	--	--	--	--	200 UJ	980 U	980 U	1400 U	1500 U	200 U	440 U
2-Methylphenol	63	63	--	--	5.8 U	6.5 U	6.5 U	***140 U***	***150 U***	20 U	42 U
4-Methylphenol	670	670	--	--	20 U	98 U	98 U	140 U	150 U	20 U	44 U
2,4,5-Trichlorophenol	--	--	--	--	97 U	490 U	490 U	720 U	740 U	99 U	220 U
2,4,6-Trichlorophenol	--	--	--	--	97 U	490 U	490 U	720 U	740 U	99 U	220 U
2-Nitrophenol	--	--	--	--	97 U	490 U	490 U	720 U	740 U	99 U	220 U
4-Nitrophenol	--	--	--	--	97 U	490 U	490 U	720 U	740 U	99 U	220 U
Pentachlorophenol	360	690	--	--	29 U	32 U	33 U	***720 U***	***740 U***	98 U	**410**
Phenol	420	1200	--	--	20 U	98 U	98 U	140 U	150 U	49 U	51 U
Misc Extractables (mg/kg organic carbon)											
Dibenzofuran	15	58	--	--	--	9.2	8.7 U	8.1 U	8.4 U	0.97 U	2.4 U
Hexachlorobutadiene	3.9	6.2	--	--	--	0.064 U	0.58 U	***8.1 U***	0.055 U	0.047 U	0.053 U
N-Nitrosodiphenylamine	11	11	--	--	--	0.42 U	0.58 U	8.1 U	8.4 U	0.97 U	2.3 U
Misc Extractables (µg/kg dry weight)											
2-Nitroaniline	--	--	--	--	97 U	490 U	490 U	720 U	740 U	99 U	220 U
3-Nitroaniline	--	--	--	--	97 UJ	490 U	490 U	720 U	740 U	99 U	220 U
4-Nitroaniline	--	--	--	--	97 UJ	490 U	490 U	720 U	740 U	99 U	220 U
3,3'-Dichlorobenzidine	--	--	--	--	97 UJ	490 U	490 U	720 U	740 U	99 U	220 U
4-Chloroaniline	--	--	--	--	97 UJ	490 U	490 U	720 U	740 U	99 U	220 U
Aniline	--	--	--	--	20 UJ	98 U	98 U	140 U	150 U	20 U	44 U
Benzyl alcohol	57	73	--	--	29 U	32 U	33 U	***140 U***	***150 U***	20 U	44 U
Benzoic acid	650	650	--	--	68 J	65 U	65 U	***1400 U***	***1500 U***	200 U	420 U
Carbazole	--	--	--	--	--	160	98 U	140 U	150 U	40	44 U
Dibenzofuran	--	--	540	700	20 U	140	98 U	140 U	150 U	20 U	44 U
Hexachlorobutadiene	--	--	11	120	5.8 U	0.98 U	6.5 U	140 U	0.98 U	0.98 U	0.97 U
Hexachloroethane	--	--	--	--	20 U	98 U	98 U	140 U	150 U	20 U	44 U
Hexachlorocyclopentadiene	--	--	--	--	97 U	490 U	490 U	720 U	740 U	99 U	220 U
Isophorone	--	--	--	--	20 U	98 U	98 U	140 U	150 U	20 U	44 U
N-Nitroso-di-n-propylamine	--	--	--	--	29 U	32 U	33 U	720 U	740 U	98 U	210 U

Table B-4
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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC29 LDW-SC29-2-3.6 2/21/2006 2-3.6 FT West Nav. Channel - Glacier NW	LDW-SS55 LDW-SS55-010 1/24/2005 0-10 cm West Nav. Channel - Glacier NW	LDW-SS56 LDW-SS56-010 1/24/2005 0-10 cm West Nav. Channel - Glacier NW	LDW-SS57 LDW-SS57-010 1/24/2005 0-10 cm West Nav. Channel - Glacier NW	LDW-SS58 LDW-SS58-010 1/24/2005 0-10 cm West Nav. Channel - Glacier NW	LDW-SS59 LDW-SS59R2-010 3/14/2005 0-10 cm West Nav. Channel - Glacier NW	LDW-SSB4a LDW-SSB4a-010 3/14/2005 0-10 cm West Nav. Channel - Glacier NW
N-Nitrosodimethylamine	--	--	--	--	29 U	32 U	33 U	720 U	740 U	98 U	210 U
N-Nitrosodiphenylamine	--	--	28	40	5.8 UJ	6.5 U	6.5 U	140 U	150 U	20 U	42 U
Ethers (µg/kg dry weight)											
4-Bromophenyl phenyl ether	--	--	--	--	20 U	98 U	98 U	140 U	150 U	20 U	44 U
4-Chlorophenyl phenyl ether	--	--	--	--	20 U	98 U	98 U	140 U	150 U	20 U	44 U
bis(2-chloroethyl)ether	--	--	--	--	20 U	98 U	98 U	140 U	150 U	20 U	44 U
bis(2-chloroisopropyl)ether	--	--	--	--	20 U	98 U	98 U	140 U	150 U	20 U	44 U
Pesticides (µg/kg dry weight)											
2,4'-DDD	--	--	--	--	--	2 U	--	--	2 U	2 U	1.9 U
2,4'-DDE	--	--	--	--	--	2 U	--	--	12 U	2 U	1.9 U
2,4'-DDT	--	--	--	--	--	2 U	--	--	2 U	2 U	1.9 U
4,4'-DDD	--	--	--	--	--	2 U	--	--	2 U	2 U	1.9 U
4,4'-DDE	--	--	--	--	--	2 U	--	--	8.7 U	4.1 U	1.9 U
4,4'-DDT	--	--	--	--	--	2 U	--	--	2 U	8.9 U	1.9 U
Aldrin	--	--	--	--	--	0.98 U	--	--	0.98 U	0.98 U	0.97 U
alpha-Chlordane	--	--	--	--	--	0.98 U	--	--	0.98 U	0.98 U	0.97 U
alpha-BHC	--	--	--	--	--	0.98 U	--	--	0.98 U	0.98 U	0.97 U
beta-BHC	--	--	--	--	--	0.98 U	--	--	0.98 U	0.98 U	0.97 U
delta-BHC	--	--	--	--	--	0.98 U	--	--	0.98 U	0.98 U	0.97 U
gamma-BHC	--	--	--	--	--	0.98 U	--	--	0.98 U	0.98 U	1.9 U
gamma-Chlordane	--	--	--	--	--	0.98 U	--	--	0.98 U	3.9 U	0.97 U
Oxychlordane	--	--	--	--	--	2 U	--	--	2 U	2 U	1.9 U
Dieldrin	--	--	--	--	--	2 U	--	--	2 U	2 U	1.9 U
alpha-Endosulfan	--	--	--	--	--	0.98 U	--	--	0.98 U	0.98 U	0.97 U
beta-Endosulfan	--	--	--	--	--	2 U	--	--	2 U	2 U	10 U
Endosulfan sulfate	--	--	--	--	--	2 U	--	--	2 U	2 U	1.9 U
Endrin	--	--	--	--	--	2 U	--	--	2 U	2 U	1.9 U
Endrin aldehyde	--	--	--	--	--	2 UJ	--	--	3.2 UJ	2 U	3.3 U
Endrin ketone	--	--	--	--	--	2 U	--	--	2 U	2 U	1.9 U
Heptachlor	--	--	--	--	--	0.98 U	--	--	1.7 U	1.9 U	0.97 U
Heptachlor epoxide	--	--	--	--	--	0.98 U	--	--	0.98 U	0.98 U	0.97 U
Toxaphene	--	--	--	--	--	98 U	--	--	98 U	98 U	97 U
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	2 U	--	--	2 U	2 U	1.9 U
DDTs (total-calc'd)	--	--	--	--	--	2 U	--	--	12 U	8.9 U	1.9 U
Total Chlordane (calc'd)	--	--	--	--	--	2 U	--	--	2 U	3.9 U	1.9 U
Herbicides (µg/kg dry weight)											
Methoxychlor	--	--	--	--	--	9.8 U	--	--	9.8 U	9.8 U	9.7 U
PCB Aroclors (mg/kg organic carbon)											
PCBs (total calc'd)	12	65	--	--	--	1.6 J	***66 J***	**43**	**15**	2.6	**45**
PCB Aroclors (µg/kg dry weight)											
Aroclor-1016	--	--	--	--	3.9 U	20 U	100 U	77 U	20 U	20 U	97 U
Aroclor-1221	--	--	--	--	3.9 U	20 U	100 U	77 U	20 U	20 U	97 U
Aroclor-1232	--	--	--	--	3.9 U	20 U	100 U	77 U	20 U	20 U	97 U
Aroclor-1242	--	--	--	--	3.9 U	20 U	100 U	77 U	20 U	20 U	97 U
Aroclor-1248	--	--	--	--	3.9 U	20 U	100 U	160	84	20 U	97 U
Aroclor-1254	--	--	--	--	3.9 U	24 J	500 J	350	120	27	490
Aroclor-1260	--	--	--	--	3.9 U	20 U	250 J	240	59	26	320
PCBs (total calc'd)	--	--	130	1000	3.9 U	24 J	750 J	750	260	53	810

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PCBs Congeners (ng/kg dry weight)											
PCB-018	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	10000	--	--	--	--
PCB-077	--	--	--	--	--	--	716	--	--	--	--
PCB-081	--	--	--	--	--	--	80.9 J	--	--	--	--
PCB-090	--	--	--	--	--	--	56800 C	--	--	--	--
PCB-101	--	--	--	--	--	--	C90	--	--	--	--
PCB-105	--	--	--	--	--	--	17600	--	--	--	--
PCB-110	--	--	--	--	--	--	60300 C	--	--	--	--
PCB-114	--	--	--	--	--	--	971	--	--	--	--
PCB-118	--	--	--	--	--	--	41800	--	--	--	--
PCB-123	--	--	--	--	--	--	938	--	--	--	--
PCB-126	--	--	--	--	--	--	91.7 J	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	54500 C	--	--	--	--
PCB-138	--	--	--	--	--	--	C129	--	--	--	--
PCB-153	--	--	--	--	--	--	37900 C	--	--	--	--
PCB-156	--	--	--	--	--	--	7290 C	--	--	--	--
PCB-157	--	--	--	--	--	--	C156	--	--	--	--
PCB-167	--	--	--	--	--	--	2180	--	--	--	--
PCB-169	--	--	--	--	--	--	28.5 U	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	16900 C	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	338	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	56.1 J	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	19.6 J	--	--	--	--
Dioxin/Furans (ng/kg dry weight)											
1,2,3,4,6,7,8-HpCDD	--	--	--	--	2.56	--	73700	14900	11300	1880	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	0.743 J	--	40300	4040	4710	288	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	0.093 U	--	3720	487	756	24.2 J	--
1,2,3,4,7,8-HxCDD	--	--	--	--	0.044 U	--	124	33.7 J	31.6 J	11.4 J	--
1,2,3,4,7,8-HxCDF	--	--	--	--	0.176 J	--	2530	895	1670	30.5	--
1,2,3,6,7,8-HxCDD	--	--	--	--	0.103 J	--	3400	350	480	65.3	--
1,2,3,6,7,8-HxCDF	--	--	--	--	0.044 U	--	365	151	284	7.2 J	--
1,2,3,7,8,9-HxCDD	--	--	--	--	0.066 U	--	315	95.2	99.6	26.4	--
1,2,3,7,8,9-HxCDF	--	--	--	--	0.044 U	--	33.8 J	10.6 J	21.7 J	0.568 J	--
1,2,3,7,8-PeCDD	--	--	--	--	0.044 U	--	34.5 J	16.7 J	19.9 J	5.24 J	--
1,2,3,7,8-PeCDF	--	--	--	--	0.044 U	--	69.3	27.8 J	56.9	1.08 J	--
2,3,4,6,7,8-HxCDF	--	--	--	--	0.044 U	--	302 J	62 J	121 J	5.38 J	--
2,3,4,7,8-PeCDF	--	--	--	--	0.067 J	--	230	95.9	181	4.71 J	--
2,3,7,8-TCDD	--	--	--	--	0.044 U	--	4.57 J	4.17 J	9.28	1.04 U	--
2,3,7,8-TCDF	--	--	--	--	0.044 U	--	14.8	8.64	13.6	1.9	--

Table B-4
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OCDD	--	--	--	--	20.9	--	241000	172000	124000	15600	--
OCDF	--	--	--	--	2.08	--	93700	18700	9630	1030	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	0.178 J	--	1230 J	334 J	535 J	27.4 J	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	0.142 J	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	0.129 J	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	0.157 J	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	0.147 J	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-4
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SSB5b LDW-SSB5b-010 3/14/2005 0-10 cm East Nav. Channel - Glacier NW	DR091 SD-DR091-0000 8/31/1998 0-10 cm East Nav. Channel - Glacier NW	DR122 SD-DR122-0000 9/14/1998 0-10 cm West Nav. Channel - Glacier NW	DR124 SD-DR124-0000 9/15/1998 0-10 cm West Nav. Channel - Glacier NW	DR126 SD-DR126-0000 8/12/1998 0-10 cm West Nav. Channel - Glacier NW	DR144 SD-DR144-0000 8/17/1998 0-10 cm East Nav. Channel - Glacier NW	DR161 SD-DR161-0000 8/31/1998 0-10 cm Nav. Channel - Glacier NW
Sediment Grain Size (Percent)											
Rocks (total calc'd)	--	--	--	--	3.6	2.4	0.01 U	61	2.1 J	1.1	0.01 U
Sand (total calc'd)	--	--	--	--	81.2	76	9.9	15.6	13.8 J	28	11.4 J
Silt (total calc'd)	--	--	--	--	10.9	15.8	65	16.8 J	54	54	63
Clay (total calc'd)	--	--	--	--	4.4	6.3	25	7.3 J	29	16.7	27
Fines (percent silt+clay)	--	--	--	--	15.3	22.1	90	24.1 J	84	70	90
Conventional Parameters											
Total Organic Carbon (TOC)	--	--	--	--	1.75	0.86	2.18	2.78	3.09	1.84	2.87
Total solids	--	--	--	--	70.1	--	--	--	--	--	--
Total solids (preserved)	--	--	--	--	70	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	3.91	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	32	--	--	--	--	--	--
Metals (mg/kg dry weight)											
Aluminum	--	--	--	--	--	10000	27000	20000	19000	18000	27000
Antimony	--	--	--	--	0.3 U	10 UJ	8 J	8 J	6 J	7 J	10 UJ
Arsenic	57	93	--	--	5.6	7.3	17	32	13	26	8.6
Barium	--	--	--	--	--	45	91	89	80	120	93
Beryllium	--	--	--	--	--	0.19	0.49 J	0.45	0.38	0.47	0.49
Cadmium	5.1	6.7	--	--	0.3 U	0.3	0.3	0.65	0.41	0.64	0.27
Calcium	--	--	--	--	--	15000 J	7400	15000	6300	12000	6400
Chromium	260	270	--	--	16	26 J	38	39	30	36	35
Cobalt	--	--	--	--	4.6	5	12	10	9	10	13
Copper	390	390	--	--	31.8 J	50 J	100	120	89	77	48
Iron	--	--	--	--	--	18000 J	37000	31000	29000 J	26000	33000 J
Lead	450	530	--	--	22	46 J	47 J	83	46	65	17
Magnesium	--	--	--	--	--	4300	10000	17000	8600	6800	9200
Manganese	--	--	--	--	--	190	390	360	310	270	520
Mercury	0.41	0.59	--	--	0.08	0.07	0.2	0.05 U	0.24	0.22	0.13
Molybdenum	--	--	--	--	1.4	--	--	--	--	--	--
Nickel	--	--	--	--	11	14	27	31	19	22	26
Potassium	--	--	--	--	--	1300	3300	2500	2900	2600	3000
Selenium	--	--	--	--	7 U	8 J	1 U	1 U	0.8 J	8	18 J
Silver	6.1	6.1	--	--	0.4 U	0.17	0.31	0.35 J	0.35	0.58	0.24
Sodium	--	--	--	--	--	5700	14000	13000	17000	11000	10000
Thallium	--	--	--	--	0.3 U	0.08	0.21 J	0.11	0.12	0.11	0.09
Tin	--	--	--	--	--	7	49 J	140 J	14	6	5
Vanadium	--	--	--	--	38.1	44	79	66	55	51	77
Zinc	410	960	--	--	63.3 J	81	160	280	140	180	86
Organometallic Compounds (µg/kg dry weight)											
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)											
2-Methylnaphthalene	38	64	--	--	1.1 U	2.3	0.92 U	0.72 U	0.65	1.6	0.7 U
Acenaphthylene	66	66	--	--	1.1 U	2.3 U	0.92 U	0.72 U	0.65 U	1.1 U	0.7 U
Acenaphthene	16	57	--	--	1.4	14	0.92	1.1	2.6	6	0.7 U
Anthracene	220	1200	--	--	5.1	15	4.1	4.3	5.8	4.9	0.7 U
Benzo(a)anthracene	110	270	--	--	15	35	16	17	16	17	1.4

Table B-4
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SSB5b LDW-SSB5b-010 3/14/2005 0-10 cm East Nav. Channel - Glacier NW	DR091 SD-DR091-0000 8/31/1998 0-10 cm East Nav. Channel - Glacier NW	DR122 SD-DR122-0000 9/14/1998 0-10 cm West Nav. Channel - Glacier NW	DR124 SD-DR124-0000 9/15/1998 0-10 cm West Nav. Channel - Glacier NW	DR126 SD-DR126-0000 8/12/1998 0-10 cm West Nav. Channel - Glacier NW	DR144 SD-DR144-0000 8/17/1998 0-10 cm East Nav. Channel - Glacier NW	DR161 SD-DR161-0000 8/31/1998 0-10 cm Nav. Channel - Glacier NW
Benzo(a)pyrene	99	210	--	--	13	22	17	28	14	16	1.4
Benzo(g,h,i)perylene	31	78	--	--	3.1	13	12	22	8.4	9.2	1.4
Chrysene	110	460	--	--	30	44	25	28	23	22	2.1
Dibenzo(a,h)anthracene	12	33	--	--	1.6	4.7	3.2	5	2.3	2.7	0.7 U
Fluoranthene	160	1200	--	--	42	130	34	40	42	43	3.5
Fluorene	23	79	--	--	1.6	10	1.8	1.4	2.6	5.4	0.7 U
Indeno(1,2,3-cd)pyrene	34	88	--	--	4.2	14	13	24	9.4	8.7	1.4
Naphthalene	99	170	--	--	1.1 U	2.3	0.92 U	0.72 U	0.65	3.8	0.7 U
Phenanthrene	100	480	--	--	10	65	11	15	15	22	1.4
Pyrene	1000	1400	--	--	24	95	32	36	28	53	3.1
Benzofluoranthenes (total-calc'd)	230	450	--	--	39	55	39	61	31	33	3.1
Total LPAH (calc'd)	370	780	--	--	18	110	18	22	27	42	1.4
Total HPAH (calc'd)	960	5300	--	--	170	410	190	260	170	210	17
PAHs (µg/kg dry weight)											
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	20 U	20	20 U	20 U	20	30	20 U
Acenaphthylene	--	--	1300	1300	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Acenaphthene	--	--	500	730	25	120	20	30	80	110	20 U
Anthracene	--	--	960	4400	90	130	90	120	180	90	20 U
Benzo(a)anthracene	--	--	1300	1600	260	300	350	480	490	310	40
Benzo(a)pyrene	--	--	1600	3000	220	190	360	770	420	300	40
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	460	260	460	1000	600	320	50
Benzo(k)fluoranthene	--	--	--	--	230	210	390	740	370	290	40
Benzo(g,h,i)perylene	--	--	670	720	54	110	260	600	260	170	40
Chrysene	--	--	1400	2800	520	380	550	790	720	410	60
Dibenzo(a,h)anthracene	--	--	230	540	28	40	70	140	70	50	20 U
Fluoranthene	--	--	1700	2500	740	1100	750	1100	1300	800	100
Fluorene	--	--	540	1000	28	90	40	40	80	100	20 U
Indeno(1,2,3-cd)pyrene	--	--	600	690	74	120	290	680	290	160	40
Naphthalene	--	--	2100	2400	20 U	20	20 U	20 U	20	70	20 U
Phenanthrene	--	--	1500	5400	180	560	240	430	460	400	40
Pyrene	--	--	2600	3300	420	820	700	1000	880	970	90
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	690	470	850	1700	970	610	90
Total LPAH (calc'd)	--	--	5200	13000	320	920	390	620	820	770	40
Total HPAH (calc'd)	--	--	12000	17000	3010	3500	4180	7300	5400	3780	500
Total PAH (calc'd)	--	--	--	--	3330	4500	4570	7900	6200	4550	540
Benzenes (mg/kg organic carbon)											
1,2-Dichlorobenzene	2.3	2.3	--	--	0.38 U	***2.3 U***	0.92 U	0.72 U	0.65 U	1.1 U	0.7 U
1,4-Dichlorobenzene	3.1	9	--	--	0.38 U	2.3 U	0.92 U	0.72 U	0.65 U	1.1 U	0.7 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.38 U	***2.3 U***	**0.92 U**	0.72 U	0.65 U	**1.1 U**	0.7 U
Hexachlorobenzene	0.38	2.3	--	--	0.055 U	***2.3 U***	**0.92 U**	**0.72 U**	**0.65 U**	**1.1 U**	**0.7 U**
Benzenes (µg/kg dry weight)											
1,2-Dichlorobenzene	--	--	35	50	6.6 U	20 U	20 U	20 U	20 U	20 U	20 U
1,3-Dichlorobenzene	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U
1,4-Dichlorobenzene	--	--	110	120	6.6 U	20 U	20 U	20 U	20 U	20 U	20 U
1,2,4-Trichlorobenzene	--	--	31	51	6.6 U	20 U	20 U	20 U	20 U	20 U	20 U
Hexachlorobenzene	--	--	22	70	0.97 U	20 U	20 U	20 U	20 U	20 U	20 U
Nitrobenzene	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U

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Phthalates (mg/kg organic carbon)											
Bis(2-ethylhexyl)phthalate	47	78	--	--	5.7	13	26	34	19	33	3.1
Butyl benzyl phthalate	4.9	64	--	--	0.38 U	2.3 U	3.2	3.6	**15**	1.1 U	0.7 U
Diethyl phthalate	61	110	--	--	0.38 U	2.3 U	0.92 U	0.72 U	0.65 U	1.1 U	0.7 U
Dimethyl phthalate	53	53	--	--	0.38 U	2.3 U	0.92	0.72 U	0.65	1.1 U	0.7 U
Di-n-butyl phthalate	220	1700	--	--	1.1 U	2.3 U	0.92 U	0.72	0.65	1.1	0.7 U
Di-n-octyl phthalate	58	4500	--	--	1.1 U	2.3 U	0.92 U	0.72 U	0.65 U	1.1 U	0.7 U
Phthalates (µg/kg dry weight)											
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	100	110	560	940	590	610	90
Butyl benzyl phthalate	--	--	63	900	6.6 U	20 U	70	100	460	20 U	20 U
Diethyl phthalate	--	--	200	1200	6.6 U	20 U	20 U	20 U	20 U	20 U	20 U
Dimethyl phthalate	--	--	71	160	6.6 U	20 U	20	20 U	20	20 U	20 U
Di-n-butyl phthalate	--	--	1400	5100	20 U	20 U	20 U	20	20	20	20 U
Di-n-octyl phthalate	--	--	6200	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Phenols (µg/kg dry weight)											
2-Chlorophenol	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Chloro-3-methylphenol	--	--	--	--	98 U	40 U	40 U	40 U	40 U	40 U	40 U
2,4-Dichlorophenol	--	--	--	--	98 U	60 U	60 U	60 U	60 U	60 U	60 U
2,4-Dimethylphenol	29	29	--	--	6.6 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4-Dinitrophenol	--	--	--	--	200 U	200 U	200 U	200 U	200 U	200 U	200 U
2-Methylphenol	63	63	--	--	6.6 U	20 U	20 U	20 U	20 U	20 U	20 U
4-Methylphenol	670	670	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,4,5-Trichlorophenol	--	--	--	--	98 U	200 U	200 U	200 U	200 U	200 U	200 U
2,4,6-Trichlorophenol	--	--	--	--	98 U	200 U	200 U	200 U	200 U	200 U	200 U
2-Nitrophenol	--	--	--	--	98 U	100 U	100 U	100 U	100 U	100 U	100 U
4-Nitrophenol	--	--	--	--	98 U	100 U	100 U	100 U	100 U	100 U	100 U
Pentachlorophenol	360	690	--	--	33 U	100 UJ	100 UJ	100 U	100 U	100 U	100 UJ
Phenol	420	1200	--	--	20 U	40	320	20 U	20	20 U	20 U
Misc Extractables (mg/kg organic carbon)											
Dibenzofuran	15	58	--	--	1.1 U	7	0.92	0.72	1.9	3.8	0.7 U
Hexachlorobutadiene	3.9	6.2	--	--	0.055 U	2.3 U	0.92 U	0.72 U	0.65 U	1.1 U	0.7 U
N-Nitrosodiphenylamine	11	11	--	--	0.38 U	4.7 U	1.8 U	1.4 U	1.3 U	2.2 U	1.4 U
Misc Extractables (µg/kg dry weight)											
2-Nitroaniline	--	--	--	--	98 U	100 U	100 U	100 U	100 U	100 U	100 U
3-Nitroaniline	--	--	--	--	98 U	200 U	200 U	200 U	200 U	200 U	200 U
4-Nitroaniline	--	--	--	--	98 U	100 U	100 U	100 U	100 U	100 U	100 U
3,3'-Dichlorobenzidine	--	--	--	--	98 U	200 U	200 U	200 U	200 U	200 U	200 U
4-Chloroaniline	--	--	--	--	98 U	60 U	60 U	60 U	60 U	60 U	60 U
Aniline	--	--	--	--	20 U	--	--	--	--	--	--
Benzyl alcohol	57	73	--	--	20 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzoic acid	650	650	--	--	66 U	200 U	200 U	200 U	200 U	200 U	200 U
Carbazole	--	--	--	--	38	30	40	80	50	50	20 U
Dibenzofuran	--	--	540	700	20 U	60	20	20	60	70	20 U
Hexachlorobutadiene	--	--	11	120	0.97 U	20 U	20 U	20 U	20 U	20 U	20 U
Hexachloroethane	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Hexachlorocyclopentadiene	--	--	--	--	98 U	100 UJ	100 U	100 U	100 UJ	100 UJ	100 UJ
Isophorone	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U
N-Nitroso-di-n-propylamine	--	--	--	--	33 U	40 U	40 U	40 U	40 U	40 U	40 U

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N-Nitrosodimethylamine	--	--	--	--	33 U	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	6.6 U	40 U	40 U	40 U	40 U	40 U	40 U
Ethers (µg/kg dry weight)											
4-Bromophenyl phenyl ether	--	--	--	--	20 U	40 U	40 U	40 U	40 U	40 U	40 U
4-Chlorophenyl phenyl ether	--	--	--	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U
bis(2-chloroethyl)ether	--	--	--	--	20 U	40 U	40 U	40 U	40 U	40 U	40 U
bis(2-chloroisopropyl)ether	--	--	--	--	20 U	40 U	40 U	40 U	40 U	40 U	40 U
Pesticides (µg/kg dry weight)											
2,4'-DDD	--	--	--	--	2 U	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	2 U	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	2 U	--	--	--	--	--	--
4,4'-DDD	--	--	--	--	2 U	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	2.6 U	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	2 U	--	--	--	--	--	--
Aldrin	--	--	--	--	0.97 U	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	0.97 U	--	--	--	--	--	--
alpha-BHC	--	--	--	--	0.97 U	--	--	--	--	--	--
beta-BHC	--	--	--	--	0.97 U	--	--	--	--	--	--
delta-BHC	--	--	--	--	0.97 U	--	--	--	--	--	--
gamma-BHC	--	--	--	--	0.97 U	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	0.97 U	--	--	--	--	--	--
Oxychlordane	--	--	--	--	2 U	--	--	--	--	--	--
Dieldrin	--	--	--	--	2 U	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	0.97 U	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	2 U	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	2 U	--	--	--	--	--	--
Endrin	--	--	--	--	2 U	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	2 U	--	--	--	--	--	--
Endrin ketone	--	--	--	--	2 U	--	--	--	--	--	--
Heptachlor	--	--	--	--	0.97 U	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	0.97 U	--	--	--	--	--	--
Toxaphene	--	--	--	--	97 U	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	2 U	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	2.6 U	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	3.3 U	--	--	--	--	--	--
Herbicides (µg/kg dry weight)											
Methoxychlor	--	--	--	--	9.7 U	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)											
PCBs (total calc'd)	12	65	--	--	6.1	5.2	5.6	5.8	5.8	**17**	0.84
PCB Aroclors (µg/kg dry weight)											
Aroclor-1016	--	--	--	--	19 U	20 U	20 UJ	20 U	20 UJ	20 U	20 U
Aroclor-1221	--	--	--	--	19 U	40 U	40 U	40 U	40 U	40 U	40 U
Aroclor-1232	--	--	--	--	19 U	20 U	20 U	20 U	20 U	20 U	20 U
Aroclor-1242	--	--	--	--	19 U	20 U	20 U	20 U	20 U	20 U	20 U
Aroclor-1248	--	--	--	--	28	20 U	20 U	20 U	20 U	20 U	20 U
Aroclor-1254	--	--	--	--	50	24	60	90	79	190	24
Aroclor-1260	--	--	--	--	29	21	63	71	100	120	20 U
PCBs (total calc'd)	--	--	130	1000	107	45	123	161	180	310	24

Table B-4
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SSB5b LDW-SSB5b-010 3/14/2005 0-10 cm East Nav. Channel - Glacier NW	DR091 SD-DR091-0000 8/31/1998 0-10 cm East Nav. Channel - Glacier NW	DR122 SD-DR122-0000 9/14/1998 0-10 cm West Nav. Channel - Glacier NW	DR124 SD-DR124-0000 9/15/1998 0-10 cm West Nav. Channel - Glacier NW	DR126 SD-DR126-0000 8/12/1998 0-10 cm West Nav. Channel - Glacier NW	DR144 SD-DR144-0000 8/17/1998 0-10 cm East Nav. Channel - Glacier NW	DR161 SD-DR161-0000 8/31/1998 0-10 cm Nav. Channel - Glacier NW
PCBs Congeners (ng/kg dry weight)											
PCB-018	--	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	2000 J	4000 J	1000 UJ
PCB-028	--	--	--	--	--	1000 UJ	1000 UJ	1000 J	3000 J	8000 UJ	1000 UJ
PCB-044	--	--	--	--	--	1000 UJ	1000 J	1000 J	2000 J	6000 J	1000 UJ
PCB-055	--	--	--	--	--	1000 J	3000 J	2000 J	4000 J	8000 J	1000 UJ
PCB-066	--	--	--	--	--	2000 UJ	5000	5000 J	9000 U	18000 UJ	1000 J
PCB-077	--	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 UJ	1000 UJ
PCB-081	--	--	--	--	--	1000 U	1000 U	1000 UJ	1000 UJ	1000 UJ	1000 U
PCB-090	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	2000 J	5000 J	4000 J	4000 J	11000 J	1000 J
PCB-105	--	--	--	--	--	1000 UJ	1000	1000 J	3000 J	4000 J	1000 UJ
PCB-110	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	1000 UJ	1000 U	1000 UJ	1000 UJ	1000 UJ	1000 UJ
PCB-118	--	--	--	--	--	2000 J	4000	3000 J	6000	10000 J	1000 J
PCB-123	--	--	--	--	--	1000 UJ	1000 U	1000 UJ	1000 UJ	2000 UJ	1000 UJ
PCB-126	--	--	--	--	--	1000 UJ	1000	1000 UJ	1000 U	1000 UJ	1000 UJ
PCB-128	--	--	--	--	--	1000 UJ	1000 J	1000 J	2000 J	3000 J	1000 UJ
PCB-129	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	3000 J	8000	8000 J	14000 UJ	17000 J	2000 J
PCB-153	--	--	--	--	--	2000 J	7000	5000 J	10000 J	12000 J	1000 J
PCB-156	--	--	--	--	--	1000 UJ	1000 U	1000 UJ	1000 J	2000 J	1000 UJ
PCB-157	--	--	--	--	--	1000 UJ	1000 U	1000 UJ	1000 UJ	1000 UJ	1000 UJ
PCB-167	--	--	--	--	--	1000 UJ	1000 U	1000 UJ	1000 UJ	1000 J	1000 UJ
PCB-169	--	--	--	--	--	1000 U	1000 U	1000 UJ	1000 U	1000 U	1000 U
PCB-170	--	--	--	--	--	1000 UJ	2000	3000 J	6000 J	5000 J	1000 UJ
PCB-180	--	--	--	--	--	2000 J	4000	4000 J	10000 J	9000 J	1000 J
PCB-187	--	--	--	--	--	1000 J	3000	3000 J	6000 J	5000 J	1000 UJ
PCB-189	--	--	--	--	--	1000 UJ	1000 U	1000 UJ	1000 UJ	1000 UJ	1000 UJ
PCB-195	--	--	--	--	--	1000 UJ	1000 U	1000 UJ	1000 J	1000 UJ	1000 UJ
PCB-206	--	--	--	--	--	1000 UJ	1000 U	1000 UJ	1000	1000 J	1000 UJ
PCB-209	--	--	--	--	--	1000 UJ	1000 U	1000 UJ	1000 U	1000 U	1000 UJ
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)											
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--

Table B-4
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Glacier Northwest Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SSB5b LDW-SSB5b-010 3/14/2005 0-10 cm East Nav. Channel - Glacier NW	DR091 SD-DR091-0000 8/31/1998 0-10 cm East Nav. Channel - Glacier NW	DR122 SD-DR122-0000 9/14/1998 0-10 cm West Nav. Channel - Glacier NW	DR124 SD-DR124-0000 9/15/1998 0-10 cm West Nav. Channel - Glacier NW	DR126 SD-DR126-0000 8/12/1998 0-10 cm West Nav. Channel - Glacier NW	DR144 SD-DR144-0000 8/17/1998 0-10 cm East Nav. Channel - Glacier NW	DR161 SD-DR161-0000 8/31/1998 0-10 cm Nav. Channel - Glacier NW
OCDD	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish Sheboygan - Half DL	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Fish WHO - Half DL	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 1998 - Half DL	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Mammal WHO 2005 - Half DL	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0028 CH08-01 10/16/1997 0-10 cm Nav. Channel - POS	CH0032 CH09-03 10/16/1997 0-10 cm Nav. Channel - POS	EIT079 EIT10-01 11/4/1997 0-10 cm East Nav. Channel - POS	EIT081 EIT10-02 10/17/1997 0-10 cm East Nav. Channel - POS	EIT084 EIT11-03 9/19/1997 0-10 cm East Nav. Channel - POS	EST197 EST18-01 10/7/1997 0-10 cm East Nav. Channel - POS	EST198 EST18-02 11/13/1997 0-10 cm East Nav. Channel - POS	EST199 EST18-03 10/7/1997 0-10 cm East Nav. Channel - POS	EST200 EST18-04 10/6/1997 0-10 cm East Nav. Channel - POS	EST209 EST19-06 10/7/1997 0-10 cm East Nav. Channel - POS
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand (total calc'd)	--	--	--	--	6.9	6.1	45	68	5.7	30	23	21	39	13
Silt (total calc'd)	--	--	--	--	68	70	6	5.1	65	43	44	54	37	64
Clay (total calc'd)	--	--	--	--	25	24	4.4	1.4	30	20	23	24	19	23
Fines (percent silt+clay)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	2.35	2.3	1.5	0.35	1.64	2.13	1.33	1.87	1.47	1.98
Total solids	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	57	93	--	--	--	--	--	--	--	--	--	--	--	--
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	--	--	--	--	--	--	--	--	--	--
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Copper	390	390	--	--	--	--	--	--	--	--	--	--	--	--
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Silver	6.1	6.1	--	--	--	--	--	--	--	--	--	--	--	--
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	410	960	--	--	--	--	--	--	--	--	--	--	--	--
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	66	66	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	16	57	--	--	--	--	--	--	--	--	--	--	--	--
Anthracene	220	1200	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	110	270	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	99	210	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	31	78	--	--	--	--	--	--	--	--	--	--	--	--
Chrysene	110	460	--	--	--	--	--	--	--	--	--	--	--	--

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0028 CH08-01 10/16/1997 0-10 cm Nav. Channel - POS	CH0032 CH09-03 10/16/1997 0-10 cm Nav. Channel - POS	EIT079 EIT10-01 11/4/1997 0-10 cm East Nav. Channel - POS	EIT081 EIT10-02 10/17/1997 0-10 cm East Nav. Channel - POS	EIT084 EIT11-03 9/19/1997 0-10 cm East Nav. Channel - POS	EST197 EST18-01 10/7/1997 0-10 cm East Nav. Channel - POS	EST198 EST18-02 11/13/1997 0-10 cm East Nav. Channel - POS	EST199 EST18-03 10/7/1997 0-10 cm East Nav. Channel - POS	EST200 EST18-04 10/6/1997 0-10 cm East Nav. Channel - POS	EST209 EST19-06 10/7/1997 0-10 cm East Nav. Channel - POS
Dibenzo(a,h)anthracene	12	33	--	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	160	1200	--	--	--	--	--	--	--	--	--	--	--	--
Fluorene	23	79	--	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	34	88	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	99	170	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	100	480	--	--	--	--	--	--	--	--	--	--	--	--
Pyrene	1000	1400	--	--	--	--	--	--	--	--	--	--	--	--
Benzofluoranthenes (total-calc'd)	230	450	--	--	--	--	--	--	--	--	--	--	--	--
Total LPAH (calc'd)	370	780	--	--	--	--	--	--	--	--	--	--	--	--
Total HPAH (calc'd)	960	5300	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	1300	1300	--	--	--	--	--	--	--	--	--	--
Acenaphthene	--	--	500	730	--	--	--	--	--	--	--	--	--	--
Anthracene	--	--	960	4400	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	1300	1600	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	--	--	1600	3000	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	670	720	--	--	--	--	--	--	--	--	--	--
Chrysene	--	--	1400	2800	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	--	--	230	540	--	--	--	--	--	--	--	--	--	--
Fluoranthene	--	--	1700	2500	--	--	--	--	--	--	--	--	--	--
Fluorene	--	--	540	1000	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	600	690	--	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	2100	2400	--	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	1500	5400	--	--	--	--	--	--	--	--	--	--
Pyrene	--	--	2600	3300	--	--	--	--	--	--	--	--	--	--
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	--	--	--	--	--	--	--	--	--	--
Total LPAH (calc'd)	--	--	5200	13000	--	--	--	--	--	--	--	--	--	--
Total HPAH (calc'd)	--	--	12000	17000	--	--	--	--	--	--	--	--	--	--
Total PAH (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	3.1	9	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	0.81	1.8	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	0.38	2.3	--	--	--	--	--	--	--	--	--	--	--	--
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	110	120	--	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	31	51	--	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	--	--	22	70	--	--	--	--	--	--	--	--	--	--
Nitrobenzene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	4.9	64	--	--	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	61	110	--	--	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	53	53	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	220	1700	--	--	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	58	4500	--	--	--	--	--	--	--	--	--	--	--	--

Table B-5
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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0028 CH08-01 10/16/1997 0-10 cm Nav. Channel - POS	CH0032 CH09-03 10/16/1997 0-10 cm Nav. Channel - POS	EIT079 EIT10-01 11/4/1997 0-10 cm East Nav. Channel - POS	EIT081 EIT10-02 10/17/1997 0-10 cm East Nav. Channel - POS	EIT084 EIT11-03 9/19/1997 0-10 cm East Nav. Channel - POS	EST197 EST18-01 10/7/1997 0-10 cm East Nav. Channel - POS	EST198 EST18-02 11/13/1997 0-10 cm East Nav. Channel - POS	EST199 EST18-03 10/7/1997 0-10 cm East Nav. Channel - POS	EST200 EST18-04 10/6/1997 0-10 cm East Nav. Channel - POS	EST209 EST19-06 10/7/1997 0-10 cm East Nav. Channel - POS
Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	--	--	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	--	--	63	900	--	--	--	--	--	--	--	--	--	--
Diethyl phthalate	--	--	200	1200	--	--	--	--	--	--	--	--	--	--
Dimethyl phthalate	--	--	71	160	--	--	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	--	--	1400	5100	--	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	--	--	6200	--	--	--	--	--	--	--	--	--	--	--
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	29	29	--	--	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylphenol	63	63	--	--	--	--	--	--	--	--	--	--	--	--
4-Methylphenol	670	670	--	--	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pentachlorophenol	360	690	--	--	--	--	--	--	--	--	--	--	--	--
Phenol	420	1200	--	--	--	--	--	--	--	--	--	--	--	--
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	3.9	6.2	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	11	11	--	--	--	--	--	--	--	--	--	--	--	--
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Nitroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chloroaniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	57	73	--	--	--	--	--	--	--	--	--	--	--	--
Benzoic acid	650	650	--	--	--	--	--	--	--	--	--	--	--	--
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	540	700	--	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene	--	--	11	120	--	--	--	--	--	--	--	--	--	--
Hexachloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isophorone	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitroso-di-n-propylamine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodimethylamine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	--	--	--	--	--	--	--	--	--	--
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-chloroethyl)ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--
bis(2-chloroisopropyl)ether	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0028 CH08-01 10/16/1997 0-10 cm Nav. Channel - POS	CH0032 CH09-03 10/16/1997 0-10 cm Nav. Channel - POS	EIT079 EIT10-01 11/4/1997 0-10 cm East Nav. Channel - POS	EIT081 EIT10-02 10/17/1997 0-10 cm East Nav. Channel - POS	EIT084 EIT11-03 9/19/1997 0-10 cm East Nav. Channel - POS	EST197 EST18-01 10/7/1997 0-10 cm East Nav. Channel - POS	EST198 EST18-02 11/13/1997 0-10 cm East Nav. Channel - POS	EST199 EST18-03 10/7/1997 0-10 cm East Nav. Channel - POS	EST200 EST18-04 10/6/1997 0-10 cm East Nav. Channel - POS	EST209 EST19-06 10/7/1997 0-10 cm East Nav. Channel - POS
4,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aldrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Toxaphene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	5.5	5.2	**16**	--	0.29 J	6.1	7.5	7.5	**12**	4.4 J
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1254	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1260	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCBs (total calc'd)	--	--	130	1000	130	120	240	45 J	4.7 J	130	100	140	180	88 J
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	320 U	270 U	1400	270 U	230 U	280 U	320 U	240 U	260 U	310 U
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	41000 J	36000 J	43000 J	17000 J	180 U	32000 J	30000 J	38000 J	47000 J	28000 J
PCB-105	--	--	--	--	4200	4000	8300	1400	180 U	4200	3300	3900	6400	2900
PCB-110	--	--	--	--	10000	9500	16000	5900	180 U	9900	7100	12000	14000	6900
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	8300	8200	14000	4100	180 U	8900	7300	9200	12000	7100
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	CH0028 CH08-01 10/16/1997 0-10 cm Nav. Channel - POS	CH0032 CH09-03 10/16/1997 0-10 cm Nav. Channel - POS	EIT079 EIT10-01 11/4/1997 0-10 cm East Nav. Channel - POS	EIT081 EIT10-02 10/17/1997 0-10 cm East Nav. Channel - POS	EIT084 EIT11-03 9/19/1997 0-10 cm East Nav. Channel - POS	EST197 EST18-01 10/7/1997 0-10 cm East Nav. Channel - POS	EST198 EST18-02 11/13/1997 0-10 cm East Nav. Channel - POS	EST199 EST18-03 10/7/1997 0-10 cm East Nav. Channel - POS	EST200 EST18-04 10/6/1997 0-10 cm East Nav. Channel - POS	EST209 EST19-06 10/7/1997 0-10 cm East Nav. Channel - POS
PCB-126	--	--	--	--	290 U	240 U	170 U	230 U	200 U	240 U	280 U	210 U	230 U	280 U
PCB-128	--	--	--	--	4900 J	4600 J	7700 J	3100 J	190 U	4500 J	4700 U	6200 U	6400 U	3000 J
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	7900	7300	11000	5200	200 U	8800	5800	9100	11000	5900
PCB-153	--	--	--	--	27000 J	24000 J	41000 J	12000 J	190 U	25000 J	20000 J	26000 J	35000 J	20000 J
PCB-156	--	--	--	--	900	920	1300	210 U	180 U	1200	250 U	1000	1400	790
PCB-157	--	--	--	--	230 U	190 U	1900	180 U	150 U	190 U	220 U	160 U	180 U	670
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	720 U	610 U	410 U	550 U	460 U	580 U	650 U	480 U	530 U	680 U
PCB-170	--	--	--	--	5200	4700	7400	2100	170 U	7100	4800	5800	6100	4100
PCB-180	--	--	--	--	7300	7100	12000	3100	160 U	7300	6100	8100	8600	6300
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	330 U	280 U	170 U	230 U	210 U	240 U	300 U	220 U	250 U	310 U
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	JHGSA-SD1-COMP27-00 JHGSA-SD1-COMP27-00 7/3/2000 0-10 cm East Nav. Channel - POS	JHGSA-SD1-COMP32-00 JHGSA-SD1-COMP32-00 7/3/2000 0-10 cm East Nav. Channel - POS	C5 LDW-C5-S 8/27/2004 0-10 cm East Nav. Channel - POS	LDW-SC203 LDW-SC203-0-1 2/17/2006 0-1 FT West Nav. Channel - POS	LDW-SC203 LDW-SC203-1-2 2/17/2006 1-2 FT West Nav. Channel - POS	LDW-SC203 LDW-SC203-2-4 2/17/2006 2-4 FT West Nav. Channel - POS	LDW-SC203 LDW-SC203-4-6 2/17/2006 4-6 FT West Nav. Channel - POS	LDW-SC30 LDW-SC30-0-2.5 2/14/2006 0-2.5 FT East Nav. Channel - POS	LDW-SC30 LDW-SC30-2.5-4 2/14/2006 2.5-4 FT East Nav. Channel - POS
Sediment Grain Size (Percent)													
Rocks (total calc'd)	--	--	--	--	32	35	1.72	3	2.7	4.3	--	0.9	0.1
Sand (total calc'd)	--	--	--	--	57.9	47.3	93.5	25.2	23.1	36.6	--	94.4	49.3
Silt (total calc'd)	--	--	--	--	4.92	5.2	3.64	53.7	61.3	47.4	--	3.4	45.5
Clay (total calc'd)	--	--	--	--	2.24	2.78	1.82	17.9	12.7	11.5	--	1.3	5.1
Fines (percent silt+clay)	--	--	--	--	--	--	5.46	71.6	74	58.9	--	4.7	50.6
Conventional Parameters													
Total Organic Carbon (TOC)	--	--	--	--	0.47	1.01	0.32	3.27	2.91	2.59	2.44	0.541	0.271
Total solids	--	--	--	--	--	--	73.8	45.5	47.3	52.9	58.8	79.1	77.5
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)													
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	--	0.67 J	9 UJ	10 UJ	9 UJ	--	6 UJ	7 UJ
Arsenic	57	93	--	--	7.5 J	27.3	4.72	20	20	15	--	6 U	7 U
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	0.23	0.49	0.07	0.6	0.7	0.4 U	--	0.2 U	0.3 U
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	23 J	24.5	10.4	39.5	41	32	--	11.4	10.6
Cobalt	--	--	--	--	--	--	3.92	8.9	9.8	8.9	--	4.3	3.9
Copper	390	390	--	--	40.9 J	62.9	17.4	102	88.1	66.9	--	11.1 J	16.4 J
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	18.4	101	22.5 J	78	68	58	--	3	3 U
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	--	--	0.021	0.23	0.2	0.17	--	0.06 U	0.06 U
Molybdenum	--	--	--	--	--	--	0.495 J	2.8	3	1.3	--	0.6 U	0.7 U
Nickel	--	--	--	--	--	--	11.3	29	28	27	--	7 J	6 J
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	--	--	0.3 J	9 U	10 U	9 U	--	6 U	7 U
Silver	6.1	6.1	--	--	0.08	0.12	0.077	0.6 U	0.7 U	0.5 U	--	0.4 U	0.4 U
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	--	--	0.044	9 U	10 U	9 U	--	6 U	7 U
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	41.5	67.1	73.1	61.8	--	45.6	43
Zinc	410	960	--	--	90.9 J	213	70.4 J	204	225	137	--	27.3	20.5
Organometallic Compounds (µg/kg dry weight)													
Monobutyltin as ion	--	--	--	--	--	--	0.85 J	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	2.9	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	6.5	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	1.4 U	--	--	--	--	--	--
PAHs (mg/kg organic carbon)													
2-Methylnaphthalene	38	64	--	--	--	0.59 J	--	4.9 U	3.8 U	2.7 U	2.7 U	3.5 U	
Acenaphthylene	66	66	--	--	--	7.6	--	4.9 U	3.8 U	2.7 U	2.7 U	3.5 U	
Acenaphthene	16	57	--	--	--	0.99 J	--	4.9 U	3.8 U	2.7 U	2.7 U	3.5 U	
Anthracene	220	1200	--	--	--	27	--	4.3 J	5.8	6.2	3	3.5 U	
Benzo(a)anthracene	110	270	--	--	--	51	--	11	16	9.7	9.8	3.1 J	
Benzo(a)pyrene	99	210	--	--	--	31	--	10	15	7.3	7.4	3.3 J	
Benzo(g,h,i)perylene	31	78	--	--	--	14	--	2.6 J	4.8	2.3 J	3.6	3.5 U	
Chrysene	110	460	--	--	--	80	--	16	23	14	13	4.6	

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Dibenzo(a,h)anthracene	12	33	--	--	--	4.7	--	4.9 U	3.8 U	2.7 U	1.6	3.5 U	
Fluoranthene	160	1200	--	--	--	80	--	34	45	27	31	7.8	
Fluorene	23	79	--	--	--	3.5	--	4.9 U	3.8 U	2.7 U	1.6 J	3.5 U	
Indeno(1,2,3-cd)pyrene	34	88	--	--	--	17	--	3.1 J	5.5	2.7	2.7	3.5 U	
Naphthalene	99	170	--	--	--	0.4 J	--	4.9 U	3.8 U	2.7 U	2.7 U	3.5 U	
Phenanthrene	100	480	--	--	--	14	--	5.5	15	6.6	7	2.8 J	
Pyrene	1000	1400	--	--	--	90	--	24	31	24	28	4.8	
Benzofluoranthenes (total-calc'd)	230	450	--	--	--	93	--	29	41	21	20	10	
Total LPAH (calc'd)	370	780	--	--	--	53 J	--	9.8 J	21	13	11 J	2.8 J	
Total HPAH (calc'd)	960	5300	--	--	--	460	--	130 J	180	110 J	120	34 J	
PAHs (µg/kg dry weight)													
1-Methylnaphthalene	--	--	--	--	--	--	--	160 U	110 U	69 U	66 U	19 U	19 U
2-Methylnaphthalene	--	--	670	1400	7 J	6 J	6.2	160 U	110 U	69 U	66 U	19 U	19 U
Acenaphthylene	--	--	1300	1300	10 J	77	12	160 U	110 U	69 U	66 U	19 U	19 U
Acenaphthene	--	--	500	730	36	10 J	41	160 U	110 U	69 U	66 U	19 U	19 U
Anthracene	--	--	960	4400	59	270	59	140 J	170	160	74	19 U	19 U
Benzo(a)anthracene	--	--	1300	1600	87	520	410	350	480	250	240	17 J	19 U
Benzo(a)pyrene	--	--	1600	3000	67	310	390	330	450	190	180	18 J	19 U
Benzo(b)fluoranthene	--	--	--	--	94	520	390	540	640	280	340	32	19 U
Benzo(k)fluoranthene	--	--	--	--	72	420	180	400	550	260	150	23	19 U
Benzo(g,h,i)perylene	--	--	670	720	40	140	110	84 J	140	60 J	89	19 U	19 U
Chrysene	--	--	1400	2800	140	810	290	530	680	370	310	25	19 U
Dibenzo(a,h)anthracene	--	--	230	540	10 J	47	28	160 U	110 U	69 U	39	19 U	19 U
Fluoranthene	--	--	1700	2500	210	810	440	1100	1300	700	760	42	19 U
Fluorene	--	--	540	1000	29	35	33	160 U	110 U	69 U	39 J	19 U	19 U
Indeno(1,2,3-cd)pyrene	--	--	600	690	44	170	200	100 J	160	71	66	19 U	19 U
Naphthalene	--	--	2100	2400	10 J	4 J	13	160 U	110 U	69 U	66 U	19 U	19 U
Phenanthrene	--	--	1500	5400	82	140	230	180	440	170	170	15 J	19 U
Pyrene	--	--	2600	3300	160	910	390	800	910	630	690	26	19 U
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	166	940	570	940	1190	540	490	55	19 U
Total LPAH (calc'd)	--	--	5200	13000	226 J	540 J	390	320 J	610	330	280 J	15 J	19 U
Total HPAH (calc'd)	--	--	12000	17000	920 J	4660	2830	4200 J	5300	2810 J	2860	183 J	19 U
Total PAH (calc'd)	--	--	--	--	1150 J	5190 J	3220	4600 J	5900	3140 J	3150 J	198 J	19 U
Benzenes (mg/kg organic carbon)													
1,2-Dichlorobenzene	2.3	2.3	--	--	--	0.2 U	--	0.28 U	0.38 U	0.27 U	0.27 U	1.1 U	--
1,4-Dichlorobenzene	3.1	9	--	--	--	0.2 U	--	0.17 J	0.22 J	0.27 U	0.27 U	1.1 U	--
1,2,4-Trichlorobenzene	0.81	1.8	--	--	--	0.2 U	--	0.28 UJ	0.38 UJ	0.27 UJ	0.27 U	**1.1 U**	--
Hexachlorobenzene	0.38	2.3	--	--	--	0.2 U	--	0.15 U	0.17 U	0.19 U	0.27 U	**1.1 U**	--
Benzenes (µg/kg dry weight)													
1,2-Dichlorobenzene	--	--	35	50	2 U	2 U	6.4 U	9.3 U	11 U	6.9 U	6.6 U	5.8 U	5.8 U
1,3-Dichlorobenzene	--	--	--	--	3 U	3 U	20 U	160 U	110 U	69 U	6.6 U	19 U	19 U
1,4-Dichlorobenzene	--	--	110	120	2 U	2 U	6.4 U	5.6 J	6.5 J	6.9 U	6.6 U	5.8 U	5.8 U
1,2,4-Trichlorobenzene	--	--	31	51	2 U	2 U	6.4 U	9.3 UJ	11 UJ	6.9 UJ	6.6 U	5.8 U	5.8 U
Hexachlorobenzene	--	--	22	70	2 U	2 U	0.98 U	4.9 U	4.9 U	4.9 U	6.6 U	5.8 U	5.8 U
Nitrobenzene	--	--	--	--	--	--	20 U	160 U	110 U	69 U	66 U	19 U	19 U
Phthalates (mg/kg organic carbon)													
Bis(2-ethylhexyl)phthalate	47	78	--	--	--	11 J	--	**55**	***89***	23	32	5.5	--
Butyl benzyl phthalate	4.9	64	--	--	--	0.69 J	--	**12**	**14**	**5.4**	2	1.1 U	--
Diethyl phthalate	61	110	--	--	--	0.2 U	--	4.9 U	3.8 U	2.7 U	2.7 U	3.5 U	--
Dimethyl phthalate	53	53	--	--	--	0.2 J	--	52	3.8 U	***340***	8.6	3.5 U	--
Di-n-butyl phthalate	220	1700	--	--	--	0.5 J	--	4.9 U	3.8 U	2.7 U	2.7 U	8.7	--
Di-n-octyl phthalate	58	4500	--	--	--	0.2 U	--	4.9 U	3.8 U	2.7 U	2.7 U	3.5 U	--

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	JHGSA-SD1-COMP27-00 JHGSA-SD1-COMP27-00 7/3/2000 0-10 cm East Nav. Channel - POS	JHGSA-SD1-COMP32-00 JHGSA-SD1-COMP32-00 7/3/2000 0-10 cm East Nav. Channel - POS	C5 LDW-C5-S 8/27/2004 0-10 cm East Nav. Channel - POS	LDW-SC203 LDW-SC203-0-1 2/17/2006 0-1 FT West Nav. Channel - POS	LDW-SC203 LDW-SC203-1-2 2/17/2006 1-2 FT West Nav. Channel - POS	LDW-SC203 LDW-SC203-2-4 2/17/2006 2-4 FT West Nav. Channel - POS	LDW-SC203 LDW-SC203-4-6 2/17/2006 4-6 FT West Nav. Channel - POS	LDW-SC30 LDW-SC30-0-2.5 2/14/2006 0-2.5 FT East Nav. Channel - POS	LDW-SC30 LDW-SC30-2.5-4 2/14/2006 2.5-4 FT East Nav. Channel - POS
Phthalates (µg/kg dry weight)													
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	39 J	110 J	41 J	1800	2600	590	770	30	19 U
Butyl benzyl phthalate	--	--	63	900	3 U	7 J	39	380	400	140	48	5.8 U	5.8 U
Diethyl phthalate	--	--	200	1200	2 U	2 U	6.4 U	160 U	110 U	69 U	66 U	19 U	19 U
Dimethyl phthalate	--	--	71	160	2 U	2 J	6.4 U	1700	110 U	8800	210	19 U	19 U
Di-n-butyl phthalate	--	--	1400	5100	5 J	5 J	29 J	160 U	110 U	69 U	66 U	47	19 U
Di-n-octyl phthalate	--	--	6200	--	2 U	2 U	20 U	160 U	110 U	69 U	66 U	19 U	19 U
Phenols (µg/kg dry weight)													
2-Chlorophenol	--	--	--	--	--	--	20 U	160 U	110 U	69 U	66 U	19 U	19 U
4-Chloro-3-methylphenol	--	--	--	--	--	--	20 U	780 U	540 U	350 U	330 U	97 U	97 U
2,4-Dichlorophenol	--	--	--	--	--	--	20 U	780 U	540 U	350 U	330 U	97 U	97 U
2,4-Dimethylphenol	29	29	--	--	***50 U***	***50 U***	6.4 U	9.3 U	11 U	6.9 U	6.6 U	5.8 U	5.8 U
2,4-Dinitrophenol	--	--	--	--	--	--	400 U	1600 UJ	1100 UJ	690 UJ	660 U	190 U	190 U
2-Methylphenol	63	63	--	--	30 U	30 U	6.4 U	20 J	11 U	6.9 U	6.6 U	5.8 U	5.8 U
4-Methylphenol	670	670	--	--	50 U	50 U	20 U	160 U	110 U	69 U	66 U	19 U	19 U
2,4,5-Trichlorophenol	--	--	--	--	--	--	20 U	780 U	540 U	350 U	330 U	97 U	97 U
2,4,6-Trichlorophenol	--	--	--	--	--	--	20 U	780 U	540 U	350 U	330 U	97 U	97 U
2-Nitrophenol	--	--	--	--	--	--	20 U	780 U	540 U	350 U	330 U	97 U	97 U
4-Nitrophenol	--	--	--	--	--	--	200 U	780 U	540 U	350 U	330 U	97 U	97 U
Pentachlorophenol	360	690	--	--	50 U	50 U	44	47 U	54 U	35 U	63	29 U	29 U
Phenol	420	1200	--	--	10 J	8 U	59	160 U	110 U	62 J	66 U	19 U	19 U
Misc Extractables (mg/kg organic carbon)													
Dibenzofuran	15	58	--	--	--	0.99 J	--	4.9 U	3.8 U	2.7 U	2.7 U	3.5 U	--
Hexachlorobutadiene	3.9	6.2	--	--	--	0.2 U	--	0.15 U	0.17 U	0.19 U	0.27 U	1.1 U	--
N-Nitrosodiphenylamine	11	11	--	--	--	0.3 U	--	3 U	6.9 U	1.1 U	2.5 U	1.1 U	--
Misc Extractables (µg/kg dry weight)													
2-Nitroaniline	--	--	--	--	--	--	40 U	780 U	540 U	350 U	330 U	97 U	97 U
3-Nitroaniline	--	--	--	--	--	--	40 U	780 UJ	540 UJ	350 UJ	330 U	97 U	97 U
4-Nitroaniline	--	--	--	--	--	--	40 U	780 U	540 U	350 U	330 U	97 U	97 U
3,3'-Dichlorobenzidine	--	--	--	--	--	--	200 U	780 UJ	540 UJ	350 UJ	330 U	97 UJ	97 UJ
4-Chloroaniline	--	--	--	--	--	--	20 U	780 UJ	540 UJ	350 UJ	330 U	97 UJ	97 UJ
Aniline	--	--	--	--	--	--	40 U	160 UJ	110 UJ	69 UJ	66 U	19 UJ	19 UJ
Benzyl alcohol	57	73	--	--	50 U	50 U	20 U	**66**	41 J	35 U	33 U	29 U	29 U
Benzoic acid	650	650	--	--	250 U	250 U	600	420	140 U	570	590 U	58 U	58 U
Carbazole	--	--	--	--	--	--	21 J	--	--	--	--	--	--
Dibenzofuran	--	--	540	700	23	10 J	21	160 U	110 U	69 U	66 U	19 U	19 U
Hexachlorobutadiene	--	--	11	120	2 U	2 U	6.4 U	4.9 U	4.9 U	4.9 U	6.6 U	5.8 U	5.8 U
Hexachloroethane	--	--	--	--	8 U	8 U	20 U	160 U	110 U	69 U	66 U	19 U	19 U
Hexachlorocyclopentadiene	--	--	--	--	--	--	100 U	780 UJ	540 UJ	350 UJ	330 U	97 U	97 U
Isophorone	--	--	--	--	--	--	20 U	160 U	110 U	69 U	66 U	19 U	19 U
N-Nitroso-di-n-propylamine	--	--	--	--	--	--	20 U	47 U	54 U	35 U	33 U	29 U	29 U
N-Nitrosodimethylamine	--	--	--	--	--	--	32 U	47 U	54 U	35 U	33 U	29 U	29 U
N-Nitrosodiphenylamine	--	--	28	40	3 U	3 U	6.4 U	98 U	200 U	28 U	62 U	5.8 U	5.8 U
Ethers (µg/kg dry weight)													
4-Bromophenyl phenyl ether	--	--	--	--	--	--	20 U	160 U	110 U	69 U	66 U	19 U	19 U
4-Chlorophenyl phenyl ether	--	--	--	--	--	--	20 U	160 U	110 U	69 U	66 U	19 U	19 U
bis(2-chloroethyl)ether	--	--	--	--	--	--	20 U	160 U	110 U	69 U	66 U	19 U	19 U
bis(2-chloroisopropyl)ether	--	--	--	--	--	--	20 U	160 U	110 U	69 U	66 U	19 U	19 U
Pesticides (µg/kg dry weight)													
2,4'-DDD	--	--	--	--	--	--	0.98 U	9.8 U	9.8 U	9.7 U	--	--	--
2,4'-DDE	--	--	--	--	--	--	0.98 U	9.8 U	9.8 U	9.7 U	--	--	--
2,4'-DDT	--	--	--	--	--	--	2	9.8 U	9.8 U	9.7 U	--	--	--

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4,4'-DDD	--	--	--	--	--	--	0.44 J	9.8 U	9.8 U	9.7 U	--	--	--
4,4'-DDE	--	--	--	--	--	--	0.98 U	9.8 U	9.8 U	9.7 U	--	--	--
4,4'-DDT	--	--	--	--	--	--	2.5	32 U	12 U	9.7 U	--	--	--
Aldrin	--	--	--	--	--	--	0.98 U	4.9 U	4.9 U	4.9 U	--	--	--
alpha-Chlordane	--	--	--	--	--	--	0.13 J	4.9 U	4.9 U	4.9 U	--	--	--
alpha-BHC	--	--	--	--	--	--	0.98 U	4.9 U	4.9 U	4.9 U	--	--	--
beta-BHC	--	--	--	--	--	--	0.98 U	4.9 U	4.9 U	4.9 U	--	--	--
delta-BHC	--	--	--	--	--	--	0.98 U	23	60	29	--	--	--
gamma-BHC	--	--	--	--	--	--	0.98 U	4.9 U	4.9 U	4.9 U	--	--	--
gamma-Chlordane	--	--	--	--	--	--	1.1 J	9.2 U	4.9 U	4.9 U	--	--	--
Oxychlordane	--	--	--	--	--	--	--	9.8 U	9.8 U	9.7 U	--	--	--
Dieldrin	--	--	--	--	--	--	0.98 U	9.8 U	9.8 U	9.7 U	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	0.33 J	4.9 U	4.9 U	4.9 U	--	--	--
beta-Endosulfan	--	--	--	--	--	--	0.98 U	9.8 U	9.8 U	9.7 U	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	0.98 U	9.8 U	9.8 U	9.7 U	--	--	--
Endrin	--	--	--	--	--	--	0.98 U	9.8 U	9.8 U	9.7 U	--	--	--
Endrin aldehyde	--	--	--	--	--	--	0.98 U	9.8 U	9.8 U	9.7 U	--	--	--
Endrin ketone	--	--	--	--	--	--	0.98 U	9.8 U	9.8 U	9.7 U	--	--	--
Heptachlor	--	--	--	--	--	--	0.98 U	4.9 U	4.9 U	4.9 U	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	0.98 U	4.9 U	4.9 U	4.9 U	--	--	--
Toxaphene	--	--	--	--	--	--	49 U	490 U	490 U	490 U	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	0.98 U	9.8 U	9.8 U	9.7 U	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	4.9 J	32 U	12 U	9.7 U	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	1.2 J	9.8 U	9.8 U	9.7 U	--	--	--
Herbicides (µg/kg dry weight)													
Methoxychlor	--	--	--	--	--	--	0.98 U	49 U	49 U	49 U	--	--	--
PCB Aroclors (mg/kg organic carbon)													
PCBs (total calc'd)	12	65	--	--	--	***68***	--	7.6	3.8	6.7	7.4	2.4	--
PCB Aroclors (µg/kg dry weight)													
Aroclor-1016	--	--	--	--	20 U	20 U	9.8 U	20 U	39 U	20 U	12 U	3.9 U	3.9 U
Aroclor-1221	--	--	--	--	20 U	20 U	20 U	20 U	39 U	20 U	12 U	3.9 U	3.9 U
Aroclor-1232	--	--	--	--	20 U	20 U	9.8 U	20 U	39 U	20 U	12 U	3.9 U	3.9 U
Aroclor-1242	--	--	--	--	20 U	20 U	9.8 U	20 U	39 U	20 U	41	3.9 U	3.9 U
Aroclor-1248	--	--	--	--	20 U	20 U	9.8 U	60	330 U	38	12 U	3.9 U	3.9 U
Aroclor-1254	--	--	--	--	30 J	690	25	110	110	81	80	6.8	3.9 U
Aroclor-1260	--	--	--	--	20 U	20 U	28	84	140 U	55	60	6.1	3.9 U
PCBs (total calc'd)	--	--	130	1000	30 J	690	53	250	110	174	181	12.9	3.9 U
PCBs Congeners (ng/kg dry weight)													
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--

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PCB-126	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-156	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-157	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)													
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC31 LDW-SC31-0-1 2/16/2006 0-1 FT East Nav. Channel - POS	LDW-SC31 LDW-SC31-1-2.8 2/16/2006 1-2.8 FT East Nav. Channel - POS	LDW-SC31 LDW-SC31-2.8-4 2/16/2006 2.8-4 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-0-1 2/10/2006 0-1 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-1-2 2/10/2006 1-2 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-2-4 2/10/2006 2-4 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-5.2-8 2/10/2006 5.2-8 FT East Nav. Channel - POS	LDW-SC34 LDW-SC34-0-1 2/17/2006 0-1 FT West Nav. Channel - POS	LDW-SC34 LDW-SC34-1-2 2/17/2006 1-2 FT West Nav. Channel - POS	LDW-SC34 LDW-SC34-2-4 2/17/2006 2-4 FT West Nav. Channel - POS
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	--	0.2	0.8	12.9	3.1	4.2	--	1.4	2.4	5.8
Sand (total calc'd)	--	--	--	--	16.1	18	97.3	38.5	29.4	51.7	--	27	21.8	44.1
Silt (total calc'd)	--	--	--	--	62.3	59.2	1.9	35	62	37.5	--	50.8	62	39.9
Clay (total calc'd)	--	--	--	--	21.6	22.9	--	13.3	5.6	6.7	--	20.8	13.7	10.2
Fines (percent silt+clay)	--	--	--	--	83.9	82.1	1.9	49	67.6	44.2	--	71.6	76	50.1
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	2.52	2.18	0.11	1.81	1.16	1.47	0.724	2.9	3.02	2.05
Total solids	--	--	--	--	44.8	50	82.1	42.6	37.4	45.8	75.7	46.1	50	59.9
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	10 UJ	9 UJ	6 UJ	8 UJ	10 UJ	10 UJ	--	10 UJ	10 UJ	8 UJ
Arsenic	57	93	--	--	20	17	6 U	20	40	30	--	20	20	15
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	0.5	0.5	0.3 U	0.6	1.7	1	--	0.4 U	0.9	0.3 U
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	35	31.1	8.9	33.5	46	37	--	34	50	30.9
Cobalt	--	--	--	--	9.7	9.2	3.6	8.4	9.6	7.9	--	9.6	8.9	8.6
Copper	390	390	--	--	88.4	72.9	9.3	58.2	90.2	60	--	78.4	91.4	51.3
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	49	43	3 U	59	87	51	--	60	87	78
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	0.33	0.22	0.04 U	0.2	0.3	0.22	--	0.26	0.25	0.12
Molybdenum	--	--	--	--	1 U	1	0.6 U	1.1	1 U	1 U	--	1	4	1.3
Nickel	--	--	--	--	22	21	6	22	30	23	--	26	29	33
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	10 U	9 U	6 U	8 U	10 U	10 U	--	10 U	10 U	8 U
Silver	6.1	6.1	--	--	0.6 U	0.6 U	0.4 U	0.5	1.1	1	--	0.6 U	0.6 U	0.5 U
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	10 U	9 U	6 U	8 U	10 U	10 U	--	10 U	10 U	8 U
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	75.2	68	36.1	68	76.7	71.5	--	67.5	65.7	60.4
Zinc	410	960	--	--	139	131	18.5	136	287	160	--	188	253	136
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	4 U	4 U	3.8 U	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	13	5.7 U	5.4 U	--	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	46	49	3.6 U	--	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	2.3 U	2.7 U	--	3.2 U	7.4	6	9.1 U	3.8 U	4.3 U	4.8 U
Acenaphthylene	66	66	--	--	2.3 U	2.7 U	--	3.2 U	5.1 U	1.4 U	9.1 U	3.8 U	4.3 U	4.8 U
Acenaphthene	16	57	--	--	2.3 U	2.7 U	--	3.2 U	***120***	**20**	9.1 U	3.8 U	4.3 U	4.8 U
Anthracene	220	1200	--	--	2.8	2.2 J	--	2.3 J	31	5.7	9.1 U	2.9 J	5.3 J	4.8 U
Benzo(a)anthracene	110	270	--	--	9.5	6.9	--	6.6	85	10	9.1 U	9	14	6.3
Benzo(a)pyrene	99	210	--	--	8.7	9.2	--	8.8	34	7.5	9.1 U	7.9	13	7.3
Benzo(g,h,i)perylene	31	78	--	--	3.1	2.3 J	--	3.2 U	3.7 J	1.4	9.1 U	2.2 J	6.6	4.8 U
Chrysene	110	460	--	--	13	11	--	9.4	77	14	9.1 U	12	24	9.3

Table B-5
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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC31 LDW-SC31-0-1 2/16/2006 0-1 FT East Nav. Channel - POS	LDW-SC31 LDW-SC31-1-2.8 2/16/2006 1-2.8 FT East Nav. Channel - POS	LDW-SC31 LDW-SC31-2.8-4 2/16/2006 2.8-4 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-0-1 2/10/2006 0-1 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-1-2 2/10/2006 1-2 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-2-4 2/10/2006 2-4 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-5.2-8 2/10/2006 5.2-8 FT East Nav. Channel - POS	LDW-SC34 LDW-SC34-0-1 2/17/2006 0-1 FT West Nav. Channel - POS	LDW-SC34 LDW-SC34-1-2 2/17/2006 1-2 FT West Nav. Channel - POS	LDW-SC34 LDW-SC34-2-4 2/17/2006 2-4 FT West Nav. Channel - POS
Dibenzo(a,h)anthracene	12	33	--	--	2.3 U	2.7 U	--	3.2 U	5.1 U	1.4 U	0.91 U	3.8 U	4.3 U	4.8 U
Fluoranthene	160	1200	--	--	24	15	--	12	**220**	40	9.1 U	28	43 J	15
Fluorene	23	79	--	--	2.3 U	2.7 U	--	3.2 U	***160***	18	9.1 U	3.8 U	4.3 U	4.8 U
Indeno(1,2,3-cd)pyrene	34	88	--	--	3.9	2.6 J	--	2 J	5.2	1.5	9.1 U	2.6 J	6.6	2.5 J
Naphthalene	99	170	--	--	2.3 U	2.7 U	--	3.2 U	12	9.5	9.1 U	3.8 U	4.3 U	4.8 U
Phenanthrene	100	480	--	--	5.6	4.6	--	4.9	**320**	31	9.1 U	9.7	11 J	5.4
Pyrene	1000	1400	--	--	16	20	--	23	100	25	9.1 U	19	30 J	22
Benzofluoranthenes (total-calc'd)	230	450	--	--	23	27	--	25	120	26	9.1 U	23	33	21
Total LPAH (calc'd)	370	780	--	--	8.3	6.9 J	--	7.2 J	**650**	84	9.1 U	12 J	17 J	5.4
Total HPAH (calc'd)	960	5300	--	--	100	94 J	--	87 J	640 J	130	9.1 U	100 J	170 J	83 J
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	59 U	58 U	20 U	58 U	160	87	66 U	110 U	130 U	99 U
2-Methylnaphthalene	--	--	670	1400	59 U	58 U	20 U	58 U	86	88	66 U	110 U	130 U	99 U
Acenaphthylene	--	--	1300	1300	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	130 U	99 U
Acenaphthene	--	--	500	730	59 U	58 U	20 U	58 U	1400	300	66 U	110 U	130 U	99 U
Anthracene	--	--	960	4400	71	48 J	20 U	42 J	360	84	66 U	84 J	160 J	99 U
Benzo(a)anthracene	--	--	1300	1600	240	150	20 U	120	990	150	66 U	260	430	130
Benzo(a)pyrene	--	--	1600	3000	220	200	20 U	160	400	110	66 U	230	400	150
Benzo(b)fluoranthene	--	--	--	--	290	320	20 U	270	850	210	66 U	380	530	220
Benzo(k)fluoranthene	--	--	--	--	280	270	20 U	180	510	170	66 U	280	470	210
Benzo(g,h,i)perylene	--	--	670	720	79	50 J	20 U	58 U	43 J	20	66 U	63 J	200	99 U
Chrysene	--	--	1400	2800	330	250	20 U	170	890	210	66 U	360	720	190
Dibenzo(a,h)anthracene	--	--	230	540	59 U	58 U	20 U	58 U	59 U	20 U	6.6 U	110 U	130 U	99 U
Fluoranthene	--	--	1700	2500	600	320	20 U	210	2500	590	66 U	810	1300 J	300
Fluorene	--	--	540	1000	59 U	58 U	20 U	58 U	1900	260	66 U	110 U	130 U	99 U
Indeno(1,2,3-cd)pyrene	--	--	600	690	98	56 J	20 U	36 J	60	22	66 U	75 J	200	52 J
Naphthalene	--	--	2100	2400	59 U	58 U	20 U	58 U	140	140	66 U	110 U	130 U	99 U
Phenanthrene	--	--	1500	5400	140	100	20 U	88	3700	460	66 U	280	340 J	110
Pyrene	--	--	2600	3300	410	430	20 U	420	1200	370	66 U	540	920 J	460
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	570	590	20 U	450	1360	380	66 U	660	1000	430
Total LPAH (calc'd)	--	--	5200	13000	210	150 J	20 U	130 J	7500	1240	66 U	360 J	500 J	110
Total HPAH (calc'd)	--	--	12000	17000	2550	2050 J	20 U	1570 J	7400 J	1850	66 U	3000 J	5200 J	1710 J
Total PAH (calc'd)	--	--	--	--	2760	2190 J	20 U	1700 J	14900 J	3100	66 U	3360 J	5700 J	1820 J
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	0.23 U	0.27 U	--	0.32 U	0.51 U	0.4 U	0.91 U	0.23 U	0.15 J	0.29 U
1,4-Dichlorobenzene	3.1	9	--	--	0.14 J	0.27 U	--	0.32 U	0.51 U	0.4 U	0.91 U	0.14 J	0.23 J	0.29 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.23 U	0.27 U	--	0.32 U	0.36 J	0.28 J	**0.91 U**	0.23 UJ	0.26 UJ	0.29 UJ
Hexachlorobenzene	0.38	2.3	--	--	0.19 U	0.22 U	--	0.32 U	**0.51 U**	**0.4 U**	**0.91 U**	0.034 U	0.16 U	0.047 U
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	5.9 U	5.9 U	5.8 U	5.8 U	5.9 U	5.9 U	6.6 U	6.7 U	4.6 J	6 U
1,3-Dichlorobenzene	--	--	--	--	59 U	58 U	20 U	58 U	59 U	20 U	6.6 U	110 U	130 U	99 U
1,4-Dichlorobenzene	--	--	110	120	3.5 J	5.9 U	5.8 U	5.8 U	5.9 U	5.9 U	6.6 U	4 J	7 J	6 U
1,2,4-Trichlorobenzene	--	--	31	51	5.9 U	5.9 U	5.8 U	5.8 U	4.2 J	4.1 J	6.6 U	6.7 UJ	7.8 UJ	6 UJ
Hexachlorobenzene	--	--	22	70	4.9 U	4.9 U	0.96 U	5.8 U	5.9 U	5.9 U	6.6 U	0.98 U	4.9 U	0.96 U
Nitrobenzene	--	--	--	--	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	130 U	99 U
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	11	12	--	11	**56**	31	9.1 U	32	***130***	33
Butyl benzyl phthalate	4.9	64	--	--	1.5	0.96	--	1.8	3.8	3.1	0.91 U	**15**	**13**	2.1
Diethyl phthalate	61	110	--	--	2.3 U	2.7 U	--	3.2 U	5.1 U	1.4 U	9.1 U	3.8 U	4.3 U	4.8 U
Dimethyl phthalate	53	53	--	--	2.3 U	2.7 U	--	3.2 U	5.1 U	1.4 U	0.91 U	3.8 U	4.3 U	4.8 U
Di-n-butyl phthalate	220	1700	--	--	1.3 J	2.7 U	--	3.2 U	5.1 U	1.4 U	9.1 U	3.8 U	6 UJ	4.8 U
Di-n-octyl phthalate	58	4500	--	--	2.3 U	2.7 U	--	3.2 U	5.1 U	1.4 U	9.1 U	3.8 U	7.3	3.1 J

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Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	270	260	20 U	200	650	460	66 U	920	3900	670
Butyl benzyl phthalate	--	--	63	900	38	21	5.8 U	32	44	45	6.6 U	440	400	44
Diethyl phthalate	--	--	200	1200	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	130 U	99 U
Dimethyl phthalate	--	--	71	160	59 U	58 U	20 U	58 U	59 U	20 U	6.6 U	110 U	130 U	99 U
Di-n-butyl phthalate	--	--	1400	5100	33 J	58 U	11 J	58 U	59 U	20 U	66 U	110 U	180 UJ	99 U
Di-n-octyl phthalate	--	--	6200	--	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	220	64 J
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	130 U	99 U
4-Chloro-3-methylphenol	--	--	--	--	290 U	290 U	97 U	290 U	300 U	98 U	330 U	560 U	650 U	500 U
2,4-Dichlorophenol	--	--	--	--	290 U	290 U	97 U	290 U	300 U	98 U	330 U	560 U	650 U	500 U
2,4-Dimethylphenol	29	29	--	--	5.9 U	5.9 U	5.8 U	5.8 UJ	5.9 UJ	11 J	6.6 UJ	6.7 U	7.8 U	6 U
2,4-Dinitrophenol	--	--	--	--	590 UJ	580 UJ	200 UJ	580 UJ	590 UJ	200 UJ	660 U	1100 UJ	1300 U	990 UJ
2-Methylphenol	63	63	--	--	5.9 U	5.9 U	5.8 U	5.8 U	5.9 U	5.9 U	6.6 U	6.7 J	9.3 J	6 U
4-Methylphenol	670	670	--	--	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	130 U	99 U
2,4,5-Trichlorophenol	--	--	--	--	290 U	290 U	97 U	290 U	300 U	98 U	330 U	560 U	650 U	500 U
2,4,6-Trichlorophenol	--	--	--	--	290 U	290 U	97 U	290 U	300 U	98 U	330 U	560 U	650 U	500 U
2-Nitrophenol	--	--	--	--	290 U	290 U	97 U	290 U	300 U	98 U	330 U	560 U	650 U	500 U
4-Nitrophenol	--	--	--	--	290 UJ	290 UJ	97 UJ	290 U	300 U	98 U	330 U	560 U	650 U	500 U
Pentachlorophenol	360	690	--	--	29 U	29 U	29 U	29 U	20 J	30 U	25 J	76	39 U	30 U
Phenol	420	1200	--	--	59 U	58 U	20 U	69	59 U	20 U	66 U	110 U	130 U	99 U
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	2.3 U	2.7 U	--	3.2 U	***100***	12	9.1 U	3.8 U	4.3 U	4.8 U
Hexachlorobutadiene	3.9	6.2	--	--	0.19 U	0.22 U	--	0.32 U	0.51 U	0.4 U	0.91 U	0.034 U	0.16 U	0.047 U
N-Nitrosodiphenylamine	11	11	--	--	1.1 U	1 U	--	1.8 U	10 U	6.8 U	0.91 U	1.7 U	9.6 U	1.6 U
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	290 U	290 U	97 U	290 U	300 U	98 U	330 U	560 U	650 U	500 U
3-Nitroaniline	--	--	--	--	290 U	290 U	97 U	290 U	300 U	98 U	330 U	560 UJ	650 UJ	500 UJ
4-Nitroaniline	--	--	--	--	290 U	290 U	97 U	290 U	300 U	98 U	330 U	560 U	650 U	500 U
3,3'-Dichlorobenzidine	--	--	--	--	290 UJ	290 UJ	97 UJ	290 UJ	300 UJ	98 UJ	330 U	560 UJ	650 UJ	500 UJ
4-Chloroaniline	--	--	--	--	290 UJ	290 UJ	97 UJ	290 UJ	300 UJ	98 UJ	330 U	560 UJ	650 UJ	500 UJ
Aniline	--	--	--	--	59 UJ	58 UJ	20 UJ	58 UJ	59 UJ	20 UJ	66 U	110 UJ	130 UJ	99 UJ
Benzyl alcohol	57	73	--	--	29 U	29 U	29 U	29 U	30 U	30 U	33 U	34	***210***	20 J
Benzoic acid	650	650	--	--	170 J	120 J	57 J	160	59 U	59 U	600 U	160 U	140 U	110 U
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	540	700	59 U	58 U	20 U	58 U	1200	170	66 U	110 U	130 U	99 U
Hexachlorobutadiene	--	--	11	120	4.9 U	4.9 U	0.96 U	5.8 U	5.9 U	5.9 U	6.6 U	0.98 U	4.9 U	0.96 U
Hexachloroethane	--	--	--	--	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	130 U	99 U
Hexachlorocyclopentadiene	--	--	--	--	290 UJ	290 UJ	97 UJ	290 U	300 U	98 U	330 U	560 UJ	650 UJ	500 UJ
Isophorone	--	--	--	--	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	130 U	99 U
N-Nitroso-di-n-propylamine	--	--	--	--	29 U	29 U	29 U	29 U	70	41	33 U	34 U	39 U	30 U
N-Nitrosodimethylamine	--	--	--	--	29 U	29 U	29 U	29 U	30 U	30 U	33 U	34 U	39 U	30 U
N-Nitrosodiphenylamine	--	--	28	40	27 U	22 U	5.8 U	33 U	120 U	100 U	6.6 U	48 U	290 U	32 U
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	130 UJ	99 U
4-Chlorophenyl phenyl ether	--	--	--	--	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	130 U	99 U
bis(2-chloroethyl)ether	--	--	--	--	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	130 U	99 U
bis(2-chloroisopropyl)ether	--	--	--	--	59 U	58 U	20 U	58 U	59 U	20 U	66 U	110 U	130 U	99 U
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	2 U	9.8 U	1.9 U
2,4'-DDE	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	5.7 U	9.8 U	1.9 U
2,4'-DDT	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	2 U	9.8 U	1.9 U

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC31 LDW-SC31-0-1 2/16/2006 0-1 FT East Nav. Channel - POS	LDW-SC31 LDW-SC31-1-2.8 2/16/2006 1-2.8 FT East Nav. Channel - POS	LDW-SC31 LDW-SC31-2.8-4 2/16/2006 2.8-4 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-0-1 2/10/2006 0-1 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-1-2 2/10/2006 1-2 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-2-4 2/10/2006 2-4 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-5.2-8 2/10/2006 5.2-8 FT East Nav. Channel - POS	LDW-SC34 LDW-SC34-0-1 2/17/2006 0-1 FT West Nav. Channel - POS	LDW-SC34 LDW-SC34-1-2 2/17/2006 1-2 FT West Nav. Channel - POS	LDW-SC34 LDW-SC34-2-4 2/17/2006 2-4 FT West Nav. Channel - POS
4,4'-DDD	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	2 U	9.8 U	3.6 U
4,4'-DDE	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	2 U	9.8 U	1.9 U
4,4'-DDT	--	--	--	--	32 U	22 U	1.9 U	--	--	--	--	13 U	41 U	8.3 U
Aldrin	--	--	--	--	4.9 U	4.9 U	0.96 U	--	--	--	--	0.98 U	4.9 U	0.96 U
alpha-Chlordane	--	--	--	--	4.9 U	4.9 U	0.96 U	--	--	--	--	0.98 U	9.2 U	2.3 U
alpha-BHC	--	--	--	--	4.9 U	4.9 U	0.96 U	--	--	--	--	0.98 U	4.9 U	0.96 U
beta-BHC	--	--	--	--	4.9 U	4.9 U	0.96 U	--	--	--	--	0.98 U	4.9 U	2 U
delta-BHC	--	--	--	--	4.9 U	4.9 U	0.96 U	--	--	--	--	7	19	0.96 U
gamma-BHC	--	--	--	--	4.9 U	4.9 U	0.96 U	--	--	--	--	3.1 U	4.9 U	0.96 U
gamma-Chlordane	--	--	--	--	4.9 U	4.9 U	0.96 U	--	--	--	--	3.2 U	14 U	1.7 U
Oxychlordane	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	2 U	9.8 U	1.9 U
Dieldrin	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	2 U	9.8 U	1.9 U
alpha-Endosulfan	--	--	--	--	4.9 U	4.9 U	0.96 U	--	--	--	--	0.98 U	4.9 U	0.96 U
beta-Endosulfan	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	2 U	9.8 U	1.9 U
Endosulfan sulfate	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	9.2 U	9.8 U	3.4 U
Endrin	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	11 U	9.8 U	1.9 U
Endrin aldehyde	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	2 U	23 U	1.9 U
Endrin ketone	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	2 U	9.8 U	1.9 U
Heptachlor	--	--	--	--	4.9 U	4.9 U	0.96 U	--	--	--	--	0.98 U	4.9 U	0.96 U
Heptachlor epoxide	--	--	--	--	4.9 U	4.9 U	0.96 U	--	--	--	--	2.5 U	4.9 U	4.1 U
Toxaphene	--	--	--	--	490 U	490 U	96 U	--	--	--	--	98 U	490 U	96 U
Total aldrin/dieldrin (calc'd)	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	2 U	9.8 U	1.9 U
DDTs (total-calc'd)	--	--	--	--	32 U	22 U	1.9 U	--	--	--	--	13 U	41 U	8.3 U
Total Chlordane (calc'd)	--	--	--	--	9.8 U	9.9 U	1.9 U	--	--	--	--	3.2 U	14 U	2.3 U
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	49 U	49 U	9.6 U	--	--	--	--	9.8 U	49 U	9.6 U
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	**15**	**15**	--	**56**	***150***	***170***	0.52 U	7.2	9.3	**12**
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	20 U	20 U	3.9 U	74 U	160 U	140 U	3.8 U	20 U	20 U	19 U
Aroclor-1221	--	--	--	--	20 U	20 U	3.9 U	74 U	160 U	140 U	3.8 U	20 U	20 U	19 U
Aroclor-1232	--	--	--	--	20 U	20 U	3.9 U	74 U	160 U	140 U	3.8 U	20 U	20 U	19 U
Aroclor-1242	--	--	--	--	20 U	20 U	3.9 U	74 U	160 U	140 U	3.8 U	20 U	20 U	19 U
Aroclor-1248	--	--	--	--	69	100	3.9 U	430	540	830	3.8 U	99 U	82	58
Aroclor-1254	--	--	--	--	160	140	2.7 J	380	850	950	3.8 U	110	120	110
Aroclor-1260	--	--	--	--	140	88	3.9 U	200	330	670	3.8 U	100	77	81
PCBs (total calc'd)	--	--	130	1000	370	330	2.7 J	1010	1720	2450	3.8 U	210	280	250
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-081	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-123	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SC31 LDW-SC31-0-1 2/16/2006 0-1 FT East Nav. Channel - POS	LDW-SC31 LDW-SC31-1-2.8 2/16/2006 1-2.8 FT East Nav. Channel - POS	LDW-SC31 LDW-SC31-2.8-4 2/16/2006 2.8-4 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-0-1 2/10/2006 0-1 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-1-2 2/10/2006 1-2 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-2-4 2/10/2006 2-4 FT East Nav. Channel - POS	LDW-SC32 LDW-SC32-5.2-8 2/10/2006 5.2-8 FT East Nav. Channel - POS	LDW-SC34 LDW-SC34-0-1 2/17/2006 0-1 FT West Nav. Channel - POS	LDW-SC34 LDW-SC34-1-2 2/17/2006 1-2 FT West Nav. Channel - POS	LDW-SC34 LDW-SC34-2-4 2/17/2006 2-4 FT West Nav. Channel - POS
PCB-126	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-156	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-157	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-167	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS62 LDW-SS207-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS327 LDW-SS327-010 10/2/2006 12:25:00 PM 0-10 cm East Nav. Channel - POS	LDW-SS60 LDW-SS60-010 1/19/2005 0-10 cm East Nav. Channel - POS	LDW-SS61 LDW-SS61-010 3/10/2005 0-10 cm East Nav. Channel - POS	LDW-SS62 LDW-SS62-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS63 LDW-SS63-010 1/21/2005 0-10 cm East Nav. Channel - POS	LDW-SS64 LDW-SS64-010 1/24/2005 0-9 cm East Nav. Channel - POS	LDW-SS65 LDW-SS65-010 3/8/2005 0-10 cm East Nav. Channel - POS	LDW-SS66 LDW-SS66-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS67 LDW-SS67-010 1/21/2005 0-10 cm East Nav. Channel - POS
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	0.1 U	0.8	3.5	52.6	0.1 U	2.7	38.6	3.2	0.1	0.3
Sand (total calc'd)	--	--	--	--	15.2	57.1	81.7	31.1	13.5	76.7	34.5	57.5	18.9	93.3
Silt (total calc'd)	--	--	--	--	63.2	30.3	10.4	10.7	63.2	14.4	18.9	27.6	61.8	4.6
Clay (total calc'd)	--	--	--	--	21.6	11.7	4.4	5.6	23.2	6.1	8.4	11.6	19.1	1.6
Fines (percent silt+clay)	--	--	--	--	84.8	42	14.8	16.3	86.4	20.5	27.3	39.2	80.9	6.2
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	2.84	1.84	1.08	1.68	2.92	2.39	1.69	2.44	2.63	0.62
Total solids	--	--	--	--	42.7	59.8	68	69.7	42.4	63.9	58.1	57.7	44.9	75.5
Total solids (preserved)	--	--	--	--	39.4	--	67.6	57.9	39.9	69.4	54.5	65.6	39.4	71
Ammonia (total as nitrogen)	--	--	--	--	21.8	--	2.53	3.48	22.1	13.2	9.68	8.38	26	3.46
Sulfides (total)	--	--	--	--	48 J	--	3.3 UJ	220 J	35 J	41 J	200	10 J	51 J	130 J
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	0.4 UJ	0.3 UJ	0.3 UJ	0.3 UJ	0.5 UJ	0.3 UJ	0.3 UJ	0.3 UJ	0.5 UJ	0.2 UJ
Arsenic	57	93	--	--	16.5	10.7	4.1	6.1	16.8	10.2	21.2	11.3	15.7	2.4
Barium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	5.1	6.7	--	--	0.8	0.4	0.3 U	0.3 U	0.8	0.3 U	0.5	0.4	1 U	0.3 U
Calcium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	260	270	--	--	39	21.7	12.1	20.9	38	24.7	27	25.2	85	12.4
Cobalt	--	--	--	--	10.9	6.8	4.4	6.6	10.9	6.1	10.8	7.8	12	4.5
Copper	390	390	--	--	107	52.5	18.4	38.4	109	48.3	107	58.9	171	16.9
Iron	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	450	530	--	--	58	34	9	19	58	28	50	34	50	11
Magnesium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0.41	0.59	--	--	0.28	0.14	0.07 U	0.08	**0.5**	0.08	0.15	0.12	0.4	0.06
Molybdenum	--	--	--	--	2	0.5	0.8	1.1	2	1.1	2.4	1.4	6	0.7
Nickel	--	--	--	--	24	18.7	9	15	24	21	20	17	44	10
Potassium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	--	--	--	--	10 U	0.7 U	7 U	7 U	10 U	7 U	9 U	8 U	30 U	6 U
Silver	6.1	6.1	--	--	0.7 U	0.4 J	0.4 U	0.4 U	0.7 U	0.4 U	0.5 U	0.5 U	2 U	0.4 U
Sodium	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	--	--	--	--	0.4 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.5 U	0.2 U
Tin	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	77.2	46.2	40.6	48.2	77.4	48.1	63.9	57	78	40.6
Zinc	410	960	--	--	160	143	38	70.4	159	93	195	101	154	41
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	5.5 U
Tributyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	3.7 U
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	2.1 U	3.4 U	1.8 U	1.1 U	2.1 U	4.1 U	5.9 U	0.82 U	2.2 U	3.1 U
Acenaphthylene	66	66	--	--	1.2 J	3.4 U	1.8 U	1.1 U	2.1 U	4.1 U	5.9 U	0.82 U	2.2 U	3.1 U
Acenaphthene	16	57	--	--	2.1 U	3.4 U	1.8 U	1.1 U	2.1 U	4.1 U	5.9 U	0.82 U	2.2 U	3.1 U
Anthracene	220	1200	--	--	4.9	2.1 J	1.8 U	1.1 U	4.1	2.6 J	7.1	1.8	3.5	3.1 U
Benzo(a)anthracene	110	270	--	--	11	5.3	4.3	2.4	9.2	5.9	19	4.9	11	1.9
Benzo(a)pyrene	99	210	--	--	12	6.5	2.4	3.6	9.9	4.6	17	4.5	8	1.6
Benzo(g,h,i)perylene	31	78	--	--	3.4	4.4	1.8 U	2.2	2.8	4.1 U	8.3	2	2.5	3.1 U
Chrysene	110	460	--	--	19	9.2	7.8	4.2	15	11	31	7.4	13	3.7

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS62 LDW-SS207-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS327 LDW-SS327-010 10/2/2006 12:25:00 PM 0-10 cm East Nav. Channel - POS	LDW-SS60 LDW-SS60-010 1/19/2005 0-10 cm East Nav. Channel - POS	LDW-SS61 LDW-SS61-010 3/10/2005 0-10 cm East Nav. Channel - POS	LDW-SS62 LDW-SS62-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS63 LDW-SS63-010 1/21/2005 0-10 cm East Nav. Channel - POS	LDW-SS64 LDW-SS64-010 1/24/2005 0-9 cm East Nav. Channel - POS	LDW-SS65 LDW-SS65-010 3/8/2005 0-10 cm East Nav. Channel - POS	LDW-SS66 LDW-SS66-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS67 LDW-SS67-010 1/21/2005 0-10 cm East Nav. Channel - POS
Dibenzo(a,h)anthracene	12	33	--	--	2.1 U	1.7	1.8 U	1.1 U	2.1 U	4.1 U	5.9 U	0.82 U	2.2 U	3.1 U
Fluoranthene	160	1200	--	--	26	13	17	4	24	20	49	11	20	5.3
Fluorene	23	79	--	--	1.3 J	3.4 U	1.8 U	1.1 U	1.3 J	4.1 U	5.9 U	0.82 U	1.1 J	3.1 U
Indeno(1,2,3-cd)pyrene	34	88	--	--	4.2	3.8	0.6 U	2.2	3.8	0.63	7.7	2.6	4.6	1.2
Naphthalene	99	170	--	--	4.2	3.4 U	1.8 U	1.1 U	2.1 U	4.1 U	5.9 U	0.82 U	2.2 U	3.1 U
Phenanthrene	100	480	--	--	8.5	4.2	2.8	1.7	7.2	7.9	12	3	6.1	3.1 U
Pyrene	1000	1400	--	--	17	13	9.2	7.7	15	13	37	7.4	14	4.5
Benzofluoranthenes (total-calc'd)	230	450	--	--	31	17	5.7	8.3	26	16	45	11	25	7.6
Total LPAH (calc'd)	370	780	--	--	20 J	6.4 J	2.8	1.7	13 J	10 J	20	4.8	11 J	3.1 U
Total HPAH (calc'd)	960	5300	--	--	120	74	46	35	110	71	210	51	98	26
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	--	62 U	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
Acenaphthylene	--	--	1300	1300	34 J	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
Acenaphthene	--	--	500	730	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
Anthracene	--	--	960	4400	140	39 J	19 U	19 U	120	62 J	120	45	91	19 U
Benzo(a)anthracene	--	--	1300	1600	320	97	46	40	270	140	320	120	300	12
Benzo(a)pyrene	--	--	1600	3000	330	120	26	60	290	110	280	110	210	9.9
Benzo(b)fluoranthene	--	--	--	--	390	200	38	74	390	180	380	160	450	23
Benzo(k)fluoranthene	--	--	--	--	500	110	24	66	380	210	380	110	220	24
Benzo(g,h,i)perylene	--	--	670	720	97	81	19 U	37	82	98 U	140	50	65	19 U
Chrysene	--	--	1400	2800	530	170	84	71	440	260	530	180	330	23
Dibenzo(a,h)anthracene	--	--	230	540	59 U	31	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
Fluoranthene	--	--	1700	2500	730	240	180	68	700	470	820	280	520	33
Fluorene	--	--	540	1000	36 J	62 U	19 U	19 U	38 J	98 U	100 U	20 U	29 J	19 U
Indeno(1,2,3-cd)pyrene	--	--	600	690	120	70	6.5 U	37	110	15	130	63	120	7.3
Naphthalene	--	--	2100	2400	120	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
Phenanthrene	--	--	1500	5400	240	78	30	28	210	190	210	73	160	19 U
Pyrene	--	--	2600	3300	490	240	99	130	450	310	620	180	360	28
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	890	310	62	140	770	390	760	270	670	47
Total LPAH (calc'd)	--	--	5200	13000	570 J	117 J	30	28	370 J	250 J	330	118	280 J	19 U
Total HPAH (calc'd)	--	--	12000	17000	3510	1360	500	580	3110	1700	3600	1250	2580	160
Total PAH (calc'd)	--	--	--	--	4080 J	1480 J	530	610	3480 J	1950 J	3930	1370	2860 J	160
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	0.23 U	0.34 U	0.6 U	0.39 U	0.22 U	0.27 U	0.39 U	0.27 U	0.25 U	1.1 U
1,4-Dichlorobenzene	3.1	9	--	--	0.23 U	0.34 U	0.6 U	0.39 U	0.22 U	0.27 U	0.39 U	0.27 U	0.25 U	1.1 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.23 U	0.34 U	0.6 U	0.39 U	0.22 U	0.27 U	0.39 U	0.27 U	0.25 U	0.53 UJ
Hexachlorobenzene	0.38	2.3	--	--	0.23 U	0.34 U	**0.6 U**	0.2 UJ	0.22 U	0.041 U	0.059 U	0.27 U	0.25 U	0.15 U
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	6.6 U	6.2 U	6.5 U	6.5 U	6.5 U	6.5 U	6.6 U	6.6 U	6.5 U	6.6 U
1,3-Dichlorobenzene	--	--	--	--	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
1,4-Dichlorobenzene	--	--	110	120	6.6 U	6.2 U	6.5 U	6.5 U	6.5 U	6.5 U	6.6 U	6.6 U	6.5 U	6.6 U
1,2,4-Trichlorobenzene	--	--	31	51	6.6 U	6.2 U	6.5 U	6.5 U	6.5 U	6.5 U	6.6 U	6.6 U	6.5 U	3.3 UJ
Hexachlorobenzene	--	--	22	70	6.6 U	6.2 U	6.5 U	3.3 UJ	6.5 U	0.97 U	0.99 U	6.6 U	6.5 U	0.96 U
Nitrobenzene	--	--	--	--	59 U	62 U	19 U	19 UJ	60 U	98 U	100 U	20 U	59 U	19 U
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	19 U	11	1.9	4.4	16 U	6.3	14	7.4 U	14 U	3.5
Butyl benzyl phthalate	4.9	64	--	--	0.35	0.98	0.6 U	0.39 U	1.6 J	0.27 U	0.39 U	0.27 U	0.46	1.1 U
Diethyl phthalate	61	110	--	--	0.23 U	3.4 U	0.6 U	0.43 U	0.22 U	0.42	0.39 U	0.27 U	0.25 U	1.9 U
Dimethyl phthalate	53	53	--	--	0.23 U	0.34 UJ	0.6 U	0.39 U	0.22 U	0.27 U	0.39 U	0.27 U	0.25 U	1.1 U
Di-n-butyl phthalate	220	1700	--	--	2.1 U	3.4 U	1.8 U	1.1 U	2.1 U	4.1 U	5.9 U	0.86 U	2.2 U	3.1 U
Di-n-octyl phthalate	58	4500	--	--	2.1 U	3.4 U	1.8 U	1.1 U	2.1 U	4.1 U	5.9 U	0.82 U	2.2 U	3.1 U

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS62 LDW-SS207-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS327 LDW-SS327-010 10/2/2006 12:25:00 PM 0-10 cm East Nav. Channel - POS	LDW-SS60 LDW-SS60-010 1/19/2005 0-10 cm East Nav. Channel - POS	LDW-SS61 LDW-SS61-010 3/10/2005 0-10 cm East Nav. Channel - POS	LDW-SS62 LDW-SS62-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS63 LDW-SS63-010 1/21/2005 0-10 cm East Nav. Channel - POS	LDW-SS64 LDW-SS64-010 1/24/2005 0-9 cm East Nav. Channel - POS	LDW-SS65 LDW-SS65-010 3/8/2005 0-10 cm East Nav. Channel - POS	LDW-SS66 LDW-SS66-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS67 LDW-SS67-010 1/21/2005 0-10 cm East Nav. Channel - POS
Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	550 U	210	20	74	470 U	150	240	180 U	360 U	22
Butyl benzyl phthalate	--	--	63	900	9.8	18	6.5 U	6.5 U	46 J	6.5 U	6.6 U	6.6 U	12	6.6 U
Diethyl phthalate	--	--	200	1200	6.6 U	62 U	6.5 U	7.2 U	6.5 U	10	6.6 U	6.6 U	6.5 U	12 U
Dimethyl phthalate	--	--	71	160	6.6 U	6.2 UJ	6.5 U	6.5 U	6.5 U	6.5 U	6.6 U	6.6 U	6.5 U	6.6 U
Di-n-butyl phthalate	--	--	1400	5100	59 U	62 U	19 U	19 U	60 U	98 U	100 U	21 U	59 U	19 U
Di-n-octyl phthalate	--	--	6200	--	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
4-Chloro-3-methylphenol	--	--	--	--	300 U	310 U	97 U	97 U	300 U	490 U	500 U	97 U	290 U	96 U
2,4-Dichlorophenol	--	--	--	--	300 U	310 U	97 U	97 U	300 U	490 U	500 U	97 U	290 U	96 U
2,4-Dimethylphenol	29	29	--	--	6.6 U	6.2 UJ	6.5 U	6.5 U	6.5 U	6.5 U	6.6 U	6.6 U	6.5 U	6.6 U
2,4-Dinitrophenol	--	--	--	--	590 U	620 UJ	190 U	190 UJ	600 U	980 U	1000 U	200 U	590 U	190 U
2-Methylphenol	63	63	--	--	6.6 U	6.2 U	6.5 U	6.5 U	6.5 U	6.5 U	6.6 U	6.6 U	6.5 U	6.6 U
4-Methylphenol	670	670	--	--	59 U	86	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
2,4,5-Trichlorophenol	--	--	--	--	300 U	310 U	97 U	97 U	300 U	490 U	500 U	97 U	290 U	96 U
2,4,6-Trichlorophenol	--	--	--	--	300 U	310 U	97 U	97 U	300 U	490 U	500 U	97 U	290 U	96 U
2-Nitrophenol	--	--	--	--	300 U	310 U	97 U	97 U	300 U	490 U	500 U	97 U	290 U	96 U
4-Nitrophenol	--	--	--	--	300 U	310 U	97 U	97 UJ	300 U	490 U	500 U	97 U	290 U	96 U
Pentachlorophenol	360	690	--	--	33 U	31 U	33 U	33 U	32 U	33 U	33 U	33 U	33 U	33 UJ
Phenol	420	1200	--	--	59 U	80	19 U	19 U	60 U	98 U	100 U	280	59 U	19 U
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	2.1 U	3.4 U	1.8 U	1.1 U	2.1 U	4.1 U	5.9 U	0.82 U	2.2 U	3.1 U
Hexachlorobutadiene	3.9	6.2	--	--	0.23 U	0.34 U	0.6 U	0.39 U	0.22 U	0.041 U	0.059 U	0.27 U	0.25 U	0.15 U
N-Nitrosodiphenylamine	11	11	--	--	0.23 U	0.34 UJ	0.6 U	0.39 U	0.22 U	0.27 U	0.39 U	0.27 U	0.25 U	1.1 U
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	300 U	310 U	97 U	97 U	300 U	490 U	500 U	97 U	290 U	96 U
3-Nitroaniline	--	--	--	--	300 U	310 U	97 U	97 U	300 U	490 U	500 U	97 U	290 U	96 U
4-Nitroaniline	--	--	--	--	300 U	310 U	97 U	97 U	300 U	490 U	500 U	97 U	290 U	96 U
3,3'-Dichlorobenzidine	--	--	--	--	300 U	310 UJ	97 U	97 U	300 U	490 U	500 U	97 U	290 U	96 U
4-Chloroaniline	--	--	--	--	300 U	310 UJ	97 U	97 U	300 U	490 U	500 U	97 U	290 U	96 U
Aniline	--	--	--	--	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
Benzyl alcohol	57	73	--	--	33 U	31 U	19 U	19 U	32 U	33 U	33 U	20 U	33 U	19 U
Benzoic acid	650	650	--	--	66 U	620 U	65 U	65 UJ	65 U	65 U	66 U	66 U	71	66 U
Carbazole	--	--	--	--	45 J	--	19 U	19 U	39 J	98 U	100 U	20 U	36 J	19 U
Dibenzofuran	--	--	540	700	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
Hexachlorobutadiene	--	--	11	120	6.6 U	6.2 U	6.5 U	6.5 U	6.5 U	0.97 U	0.99 U	6.6 U	6.5 U	0.96 U
Hexachloroethane	--	--	--	--	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
Hexachlorocyclopentadiene	--	--	--	--	300 U	310 U	97 U	97 UJ	300 U	490 U	500 U	97 U	290 U	96 U
Isophorone	--	--	--	--	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
N-Nitroso-di-n-propylamine	--	--	--	--	33 U	31 U	33 U	33 U	32 U	33 U	33 U	33 U	33 U	33 U
N-Nitrosodimethylamine	--	--	--	--	33 U	31 U	33 U	33 UJ	32 U	33 U	33 U	33 U	33 U	33 U
N-Nitrosodiphenylamine	--	--	28	40	6.6 U	6.2 UJ	6.5 U	6.5 U	6.5 U	6.5 U	6.6 U	6.6 U	6.5 U	6.6 U
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
4-Chlorophenyl phenyl ether	--	--	--	--	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
bis(2-chloroethyl)ether	--	--	--	--	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
bis(2-chloroisopropyl)ether	--	--	--	--	59 U	62 U	19 U	19 U	60 U	98 U	100 U	20 U	59 U	19 U
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
2,4'-DDE	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
2,4'-DDT	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U

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4,4'-DDD	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
4,4'-DDE	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
4,4'-DDT	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
Aldrin	--	--	--	--	--	--	--	--	--	0.97 U	0.99 U	--	--	0.96 U
alpha-Chlordane	--	--	--	--	--	--	--	--	--	0.97 U	0.99 U	--	--	0.96 U
alpha-BHC	--	--	--	--	--	--	--	--	--	0.97 U	0.99 U	--	--	0.96 U
beta-BHC	--	--	--	--	--	--	--	--	--	0.97 U	0.99 U	--	--	0.96 U
delta-BHC	--	--	--	--	--	--	--	--	--	0.97 U	0.99 U	--	--	0.96 U
gamma-BHC	--	--	--	--	--	--	--	--	--	0.97 U	0.99 U	--	--	0.96 U
gamma-Chlordane	--	--	--	--	--	--	--	--	--	0.97 U	0.99 U	--	--	0.96 U
Oxychlordane	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
Dieldrin	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
alpha-Endosulfan	--	--	--	--	--	--	--	--	--	0.97 U	0.99 U	--	--	0.96 U
beta-Endosulfan	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
Endosulfan sulfate	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
Endrin	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
Endrin aldehyde	--	--	--	--	--	--	--	--	--	1.9 UJ	2 UJ	--	--	1.9 UJ
Endrin ketone	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
Heptachlor	--	--	--	--	--	--	--	--	--	0.97 U	0.99 U	--	--	0.96 U
Heptachlor epoxide	--	--	--	--	--	--	--	--	--	0.97 U	0.99 U	--	--	0.96 U
Toxaphene	--	--	--	--	--	--	--	--	--	97 U	99 U	--	--	96 U
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
DDTs (total-calc'd)	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
Total Chlordane (calc'd)	--	--	--	--	--	--	--	--	--	1.9 U	2 U	--	--	1.9 U
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	--	--	--	--	--	9.7 U	9.9 U	--	--	9.6 U
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	11	11	**23 J**	3.7	**12**	4	7.5	5.8 J	10	5.8
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	20 U	31 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	19 U
Aroclor-1221	--	--	--	--	20 U	31 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	19 U
Aroclor-1232	--	--	--	--	20 U	31 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	19 U
Aroclor-1242	--	--	--	--	20 U	31 U	20 U	19 U	20 U	20 U	20 U	20 J	20 U	19 U
Aroclor-1248	--	--	--	--	76	73	55 J	19 U	82	39 U	29	20 U	64	19 U
Aroclor-1254	--	--	--	--	130	74	110 J	30	140	53	56	69	110	36
Aroclor-1260	--	--	--	--	110	64	80 J	32	120	42	42	52	94	19 U
PCBs (total calc'd)	--	--	130	1000	320	211	250 J	62	340	95	127	141 J	270	36
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--	--	4090	--	--	557
PCB-077	--	--	--	--	--	--	--	--	--	--	406	--	--	52.8
PCB-081	--	--	--	--	--	--	--	--	--	--	27.6 J	--	--	3.89 J
PCB-090	--	--	--	--	--	--	--	--	--	--	8780 C	--	--	1030 C
PCB-101	--	--	--	--	--	--	--	--	--	--	C90	--	--	C90
PCB-105	--	--	--	--	--	--	--	--	--	--	3070	--	--	361
PCB-110	--	--	--	--	--	--	--	--	--	--	10300 C	--	--	1240 C
PCB-114	--	--	--	--	--	--	--	--	--	--	156	--	--	17.9
PCB-118	--	--	--	--	--	--	--	--	--	--	7490	--	--	894
PCB-123	--	--	--	--	--	--	--	--	--	--	195	--	--	20.2

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS62 LDW-SS207-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS327 LDW-SS327-010 10/2/2006 12:25:00 PM 0-10 cm East Nav. Channel - POS	LDW-SS60 LDW-SS60-010 1/19/2005 0-10 cm East Nav. Channel - POS	LDW-SS61 LDW-SS61-010 3/10/2005 0-10 cm East Nav. Channel - POS	LDW-SS62 LDW-SS62-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS63 LDW-SS63-010 1/21/2005 0-10 cm East Nav. Channel - POS	LDW-SS64 LDW-SS64-010 1/24/2005 0-9 cm East Nav. Channel - POS	LDW-SS65 LDW-SS65-010 3/8/2005 0-10 cm East Nav. Channel - POS	LDW-SS66 LDW-SS66-010 3/9/2005 0-10 cm West Nav. Channel - POS	LDW-SS67 LDW-SS67-010 1/21/2005 0-10 cm East Nav. Channel - POS
PCB-126	--	--	--	--	--	--	--	--	--	--	26.7 J	--	--	3.36
PCB-128	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-129	--	--	--	--	--	--	--	--	--	--	10600 C	--	--	1380 C
PCB-138	--	--	--	--	--	--	--	--	--	--	C129	--	--	C129
PCB-153	--	--	--	--	--	--	--	--	--	--	8430 C	--	--	1080 C
PCB-156	--	--	--	--	--	--	--	--	--	--	1100 C	--	--	141 C
PCB-157	--	--	--	--	--	--	--	--	--	--	C156	--	--	C156
PCB-167	--	--	--	--	--	--	--	--	--	--	398	--	--	50.7
PCB-169	--	--	--	--	--	--	--	--	--	--	12.8 U	--	--	1.28 U
PCB-170	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--	--	5020 C	--	--	735 C
PCB-187	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-189	--	--	--	--	--	--	--	--	--	--	84	--	--	12.7
PCB-195	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	26.3 J	--	--	3.43 J
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	4.49 J	--	--	0.557 J
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	288	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	42.8	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	3.12 J	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	2.24 J	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	5.12 J	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	11.7 J	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	1.98 J	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	7.69 J	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	0.149 J	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	1.75 J	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	0.811 J	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	1.62 J	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	1.89 J	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	0.463 J	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	1.13	--	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	2380	--	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	144	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	8.2 J	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS68 LDW-SS68-010 3/7/2005 0-10 cm West Nav. Channel - POS	LDW-SS70 LDW-SS70-010 1/21/2005 0-10 cm West Nav. Channel - POS	R3 SD0054 10/15/1997 1:58:00 PM 0-10 cm West Nav. Channel - POS	R1 SD0057 10/15/1997 4:18:00 PM 0-10 cm West Nav. Channel - POS	R2 SD0058 10/15/1997 4:48:00 PM 0-10 cm West Nav. Channel - POS	R4 SD0059 10/15/1997 1:05:00 PM 0-10 cm West Nav. Channel - POS	DR092 SD-DR092-0000 8/27/1998 0-10 cm East Nav. Channel - POS	DR094 SD-DR094-0000 8/20/1998 0-10 cm East Nav. Channel - POS	DR095 SD-DR095-0000 8/20/1998 0-10 cm East Nav. Channel - POS
Sediment Grain Size (Percent)													
Rocks (total calc'd)	--	--	--	--	0.1	2.7	1	--	--	1	1.7	0.01 U	4.7
Sand (total calc'd)	--	--	--	--	22.4	57.8	54	14 J	13	20	76	62	10.7
Silt (total calc'd)	--	--	--	--	57.7	26.4	32	64	68	60	17	26.5	61
Clay (total calc'd)	--	--	--	--	19.8	13	13	21	19	19	5.2	11.1	24
Fines (percent silt+clay)	--	--	--	--	77.5	39.4	45	85	87	79	22.2	37.6	86
Conventional Parameters													
Total Organic Carbon (TOC)	--	--	--	--	2.58	3.05	3.7	1.9 J	1.9	3.8	0.7	1.02	2.17
Total solids	--	--	--	--	47.1	56.3	41	48.6	47.3	48.8	--	--	--
Total solids (preserved)	--	--	--	--	42.9	57.3	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	9.78	8.34	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	80	320 J	--	--	--	--	--	--	--
Metals (mg/kg dry weight)													
Aluminum	--	--	--	--	--	--	--	--	--	--	9400	12000	20000
Antimony	--	--	--	--	0.4 UJ	0.3 UJ	--	--	--	--	10 U	10 UJ	10 UJ
Arsenic	57	93	--	--	12.1	14.8	17.7	12.2	12.8	13.8	6	8.7	13
Barium	--	--	--	--	--	--	--	--	--	--	41	1100	120
Beryllium	--	--	--	--	--	--	--	--	--	--	0.2	0.24	0.41
Cadmium	5.1	6.7	--	--	0.6	0.7	0.9	0.4 U	0.4 U	0.5	0.2	0.51	0.39
Calcium	--	--	--	--	--	--	--	--	--	--	3600	5100	5700
Chromium	260	270	--	--	36	38.3	46	32	30	33	15	23	28
Cobalt	--	--	--	--	10.3	8.2	--	--	--	--	5	7	9
Copper	390	390	--	--	87.4	84.2	78	62	58	68	26	39	59
Iron	--	--	--	--	--	--	--	--	--	--	15000	18000 J	29000 J
Lead	450	530	--	--	47	84	140	34	31	54	16	29	33
Magnesium	--	--	--	--	--	--	--	--	--	--	3500	5300	7700
Manganese	--	--	--	--	--	--	--	--	--	--	140	180	310
Mercury	0.41	0.59	--	--	0.2	0.14	0.12	0.1	0.13	0.12	0.07	0.11	0.15
Molybdenum	--	--	--	--	2	2.6	--	--	--	--	--	--	--
Nickel	--	--	--	--	24	28	43	32 UJ	29	32	14	16	21
Potassium	--	--	--	--	--	--	--	--	--	--	1100	1500	2600
Selenium	--	--	--	--	10 U	8 U	--	--	--	--	7	3	5
Silver	6.1	6.1	--	--	0.6 U	0.5 U	0.4 U	0.4 U	0.5	0.4	0.14	0.45	0.37
Sodium	--	--	--	--	--	--	--	--	--	--	5400	6300	10000
Thallium	--	--	--	--	0.4 U	0.3 U	--	--	--	--	0.08	0.11	0.12
Tin	--	--	--	--	--	--	--	--	--	--	4 UJ	6	4
Vanadium	--	--	--	--	75.4	59.9	--	--	--	--	43	44	59
Zinc	410	960	--	--	152	277	288	128 UJ	111	171	54	86	110
Organometallic Compounds (µg/kg dry weight)													
Monobutyltin as ion	--	--	--	--	--	--	--	--	--	--	5 UJ	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	--	--	--	7 J	--	--
Tributyltin as ion	--	--	--	--	--	--	--	--	--	--	25 J	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	--	--	--	5 UJ	--	--
PAHs (mg/kg organic carbon)													
2-Methylnaphthalene	38	64	--	--	3.8 U	5.9 U	3	1.1 U	1.1	0.84	2.9 U	2 U	0.92 U
Acenaphthylene	66	66	--	--	3.8 U	5.9 U	1 U	1.1 U	1 U	0.5 U	2.9 U	2 U	0.92 U
Acenaphthene	16	57	--	--	3.8 U	5.9 U	4.9	1.3	6.3	1.8	7.1	2.9	0.92 U
Anthracene	220	1200	--	--	2.8 J	5.9 U	9.7	9.5	7.4	4.5	7.1	4.9	2.8
Benzo(a)anthracene	110	270	--	--	8.1	9.8	18	11	15	8.2	19	16	9.2
Benzo(a)pyrene	99	210	--	--	8.1	7.9	16	9.5	12	7.1	16	18	10
Benzo(g,h,i)perylene	31	78	--	--	2.1 J	5.9 U	12	6.3	7.9	4.7	8.6	7.8	5.5
Chrysene	110	460	--	--	13	18	26	16	21	12	26	27	14

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Dibenzo(a,h)anthracene	12	33	--	--	3.8 U	5.9 U	4.6	2.3	2.6	1.9	2.9 U	2	1.8
Fluoranthene	160	1200	--	--	18	36	38 UJ	29	48	24	57	42	27
Fluorene	23	79	--	--	3.8 U	5.9 U	5.9 UJ	1.9	8.4	1.9	7.1	3.9	0.92
Indeno(1,2,3-cd)pyrene	34	88	--	--	0.54	5.9 U	11 UJ	6.3	7.9	4.5	8.6	9.8	6.9
Naphthalene	99	170	--	--	3.8 U	5.9 U	3.2	1.1 U	1 U	1.2	0.34 U	2 U	0.92 U
Phenanthrene	100	480	--	--	5.4	6.6	30	8.9	37	9.5	33	15	6
Pyrene	1000	1400	--	--	14	28	65 J	31	48	21	51	40	20
Benzofluoranthenes (total-calc'd)	230	450	--	--	24	29	33	24	29	16	37	43	25
Total LPAH (calc'd)	370	780	--	--	8.1 J	6.6	49	22	59	19	54	26	9.7
Total HPAH (calc'd)	960	5300	--	--	88 J	130	180 J	130	190	100	220	210	120
PAHs (µg/kg dry weight)													
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	98 U	180 U	110	20 U	20	32	20 U	20 U	20 U
Acenaphthylene	--	--	1300	1300	98 U	180 U	38 U	20 U	19 U	19 U	20 U	20 U	20 U
Acenaphthene	--	--	500	730	98 U	180 U	180	25	120	70	50	30	20 U
Anthracene	--	--	960	4400	72 J	180 U	360	180	140	170	50	50	60
Benzo(a)anthracene	--	--	1300	1600	210	300	660	200	280	310	130	160	200
Benzo(a)pyrene	--	--	1600	3000	210	240	580	180	220	270	110	180	220
Benzo(b)fluoranthene	--	--	--	--	380	410	630	220	310	310	130	240	300
Benzo(k)fluoranthene	--	--	--	--	240	470	580	230	250	290	130	200	240
Benzo(g,h,i)perylene	--	--	670	720	54 J	180 U	460	120	150	180	60	80	120
Chrysene	--	--	1400	2800	340	550	970	300	390	460	180	280	300
Dibenzo(a,h)anthracene	--	--	230	540	98 U	180 U	170	43	50	73	20 U	20	40
Fluoranthene	--	--	1700	2500	470	1100	1400 UJ	550	910	930	400	430	590
Fluorene	--	--	540	1000	98 U	180 U	220 UJ	37	160	74	50	40	20
Indeno(1,2,3-cd)pyrene	--	--	600	690	14	180 U	400 UJ	120	150	170	60	100	150
Naphthalene	--	--	2100	2400	98 U	180 U	120	20 U	19 U	46	2.4 U	20 U	20 U
Phenanthrene	--	--	1500	5400	140	200	1100	170	710	360	230	150	130
Pyrene	--	--	2600	3300	360	860	2400 J	580	910	800	360	410	430
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	620	880	1210	450	560	600	260	440	540
Total LPAH (calc'd)	--	--	5200	13000	210 J	200	1800	410	1130	720	380	270	210
Total HPAH (calc'd)	--	--	12000	17000	2280 J	3900	6500 J	2540	3620	3790	1560	2100	2590
Total PAH (calc'd)	--	--	--	--	2490 J	4100	8200 J	2960	4750	4510	1940	2370	2800
Benzenes (mg/kg organic carbon)													
1,2-Dichlorobenzene	2.3	2.3	--	--	0.25 U	***5.9 U***	1 UJ	1.1 U	1 U	0.5 U	0.34 U	2 U	0.92 U
1,4-Dichlorobenzene	3.1	9	--	--	0.25 U	**5.9 U**	1 UJ	1.1 UJ	1 U	0.5 U	0.34 U	2 U	0.92 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.25 U	***5.9 U***	**1 UJ**	**1.1 U**	**1 U**	0.5 U	0.69 U	***2 U***	**0.92 U**
Hexachlorobenzene	0.38	2.3	--	--	***3.7 J***	0.032 U	0.076	0.053 UJ	0.04 J	0.037 J	***2.9 U***	**2 U**	**0.92 U**
Benzenes (µg/kg dry weight)													
1,2-Dichlorobenzene	--	--	35	50	6.5 U	180 U	38 UJ	20 U	19 U	19 U	2.4 U	20 U	20 U
1,3-Dichlorobenzene	--	--	--	--	98 U	180 U	38 UJ	20 UJ	19 U	19 U	2.4 U	20 U	20 U
1,4-Dichlorobenzene	--	--	110	120	6.5 U	180 U	38 UJ	20 UJ	19 U	19 U	2.4 U	20 U	20 U
1,2,4-Trichlorobenzene	--	--	31	51	6.5 U	180 U	38 UJ	20 U	19 U	19 U	4.8 U	20 U	20 U
Hexachlorobenzene	--	--	22	70	95 J	0.98 U	2.8	1 UJ	0.8 J	1.4 J	20 U	20 U	20 U
Nitrobenzene	--	--	--	--	98 U	180 U	38 U	20 U	19 U	19 U	20 U	20 U	20 U
Phthalates (mg/kg organic carbon)													
Bis(2-ethylhexyl)phthalate	47	78	--	--	12	**56**	***95***	23	23	32	16	35 UJ	16 UJ
Butyl benzyl phthalate	4.9	64	--	--	0.47	**5.9 U**	**8.6**	1.6	2.2 J	2.3 J	2.9 U	2 U	1.4
Diethyl phthalate	61	110	--	--	0.25 U	5.9 U	1 U	1.1 U	1 U	0.5 U	2.9 U	2 U	0.92 U
Dimethyl phthalate	53	53	--	--	0.25 U	5.9 U	4.3	1.1 U	1 U	1.3	2.9 U	2 U	0.92 U
Di-n-butyl phthalate	220	1700	--	--	3.8 U	5.9 U	2.1	1.1 U	1 U	0.55	2.9 U	2 U	0.92 U
Di-n-octyl phthalate	58	4500	--	--	3.8 U	33	1 UJ	1.1 U	1 U	1.1 J	2.9 U	2 U	0.92 U

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Phthalates (µg/kg dry weight)													
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	310	1700	3500	430	440	1200	110	360 UJ	340 UJ
Butyl benzyl phthalate	--	--	63	900	12	180 U	320	30	42 J	89 J	20 U	20 U	30
Diethyl phthalate	--	--	200	1200	6.5 U	180 U	38 U	20 U	19 U	19 U	20 U	20 U	20 U
Dimethyl phthalate	--	--	71	160	6.5 U	180 U	160	20 U	19 U	48	20 U	20 U	20 U
Di-n-butyl phthalate	--	--	1400	5100	98 U	180 U	76	20 U	19 U	21	20 U	20 U	20 U
Di-n-octyl phthalate	--	--	6200	--	98 U	1000	38 UJ	20 U	19 U	40 J	20 U	20 U	20 U
Phenols (µg/kg dry weight)													
2-Chlorophenol	--	--	--	--	98 U	180 U	38 U	20 U	19 U	19 U	20 U	20 U	20 U
4-Chloro-3-methylphenol	--	--	--	--	490 U	890 U	77 UJ	40 U	38 U	39 U	40 U	40 U	40 U
2,4-Dichlorophenol	--	--	--	--	490 U	890 U	120 U	60 U	57 U	58 U	60 U	60 U	60 U
2,4-Dimethylphenol	29	29	--	--	6.5 U	***180 U***	***38 U***	20 U	19 U	19 U	20 U	20 U	20 U
2,4-Dinitrophenol	--	--	--	--	980 U	1800 U	380 U	200 U	190 UJ	190 UJ	200 U	200 UJ	200 UJ
2-Methylphenol	63	63	--	--	6.5 U	***180 U***	38 U	20 UJ	19 U	19 U	20 U	20 U	20 U
4-Methylphenol	670	670	--	--	98 U	180 U	65	20 U	86	27	20 U	20 U	20 U
2,4,5-Trichlorophenol	--	--	--	--	490 U	890 U	190 U	100 U	95 U	97 U	200 U	200 U	200 U
2,4,6-Trichlorophenol	--	--	--	--	490 U	890 U	190 U	100 U	95 U	97 U	200 U	200 U	200 U
2-Nitrophenol	--	--	--	--	490 U	890 U	190 U	100 U	95 U	97 U	100 U	100 U	100 U
4-Nitrophenol	--	--	--	--	490 U	890 U	190 U	100 U	95 UJ	97 UJ	100 U	100 U	100 U
Pentachlorophenol	360	690	--	--	33 U	***890 U***	190 U	100 U	95 UJ	97 UJ	100 U	100 U	100 U
Phenol	420	1200	--	--	98 U	180 U	68 J	20 U	46	53	**520**	70	160
Misc Extractables (mg/kg organic carbon)													
Dibenzofuran	15	58	--	--	3.8 U	5.9 U	4.3	1.6	5.3	1.7	5.7	2	0.92 U
Hexachlorobutadiene	3.9	6.2	--	--	0.25 U	0.032 U	1 U	1.1 U	1 U	0.5 U	0.69 U	2 U	0.92 U
N-Nitrosodiphenylamine	11	11	--	--	0.25 U	5.9 U	1 U	1.1 U	1 U	0.5 U	5.7 U	3.9 U	1.8 U
Misc Extractables (µg/kg dry weight)													
2-Nitroaniline	--	--	--	--	490 U	890 U	190 U	100 U	95 U	97 U	100 U	100 U	100 U
3-Nitroaniline	--	--	--	--	490 U	890 U	230 UJ	120 U	110 UJ	120 UJ	200 U	200 U	200 U
4-Nitroaniline	--	--	--	--	490 U	890 U	190 U	100 U	95 UJ	97 UJ	100 U	100 U	100 U
3,3'-Dichlorobenzidine	--	--	--	--	490 U	890 U	190 U	100 U	95 U	97 U	200 U	200 U	200 U
4-Chloroaniline	--	--	--	--	490 U	890 U	120 U	60 U	57 U	58 U	60 U	60 U	60 U
Aniline	--	--	--	--	98 U	180 U	--	--	--	--	--	--	--
Benzyl alcohol	57	73	--	--	33 U	***180 U***	38 U	20 U	19 UJ	19 UJ	50 U	50 U	50 U
Benzoic acid	650	650	--	--	65 U	***1800 U***	380 U	200 U	190 UJ	190 UJ	200 U	200 U	200 U
Carbazole	--	--	--	--	98 U	180 U	240	97	71 J	61 J	20 U	20 U	20
Dibenzofuran	--	--	540	700	98 U	180 U	160	30	100	65	40	20	20 U
Hexachlorobutadiene	--	--	11	120	6.5 U	0.98 U	38 U	20 U	19 U	19 U	4.8 U	20 U	20 U
Hexachloroethane	--	--	--	--	98 U	180 U	38 U	20 U	19 U	19 U	2.4 U	20 U	20 U
Hexachlorocyclopentadiene	--	--	--	--	490 U	890 U	190 U	100 U	95 UJ	97 UJ	100 UJ	100 UJ	100 UJ
Isophorone	--	--	--	--	98 U	180 U	38 U	20 U	19 U	19 U	20 U	20 U	20 U
N-Nitroso-di-n-propylamine	--	--	--	--	33 U	890 U	77 U	40 U	38 U	39 U	40 U	40 U	40 U
N-Nitrosodimethylamine	--	--	--	--	33 U	890 U	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	6.5 U	180 U	38 U	20 U	19 U	19 U	40 U	40 U	40 U
Ethers (µg/kg dry weight)													
4-Bromophenyl phenyl ether	--	--	--	--	98 U	180 U	38 U	20 U	19 U	19 U	40 U	40 U	40 U
4-Chlorophenyl phenyl ether	--	--	--	--	98 U	180 U	38 UJ	20 U	19 U	19 U	20 U	20 U	20 U
bis(2-chloroethyl)ether	--	--	--	--	98 U	180 U	77 U	40 U	38 U	39 U	40 U	40 U	40 U
bis(2-chloroisopropyl)ether	--	--	--	--	98 U	180 U	38 U	20 U	19 U	19 U	40 U	40 U	40 U
Pesticides (µg/kg dry weight)													
2,4'-DDD	--	--	--	--	--	2 U	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	2 U	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	2 U	--	--	--	--	--	--	--

Table B-5
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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	LDW-SS68 LDW-SS68-010 3/7/2005 0-10 cm West Nav. Channel - POS	LDW-SS70 LDW-SS70-010 1/21/2005 0-10 cm West Nav. Channel - POS	R3 SD0054 10/15/1997 1:58:00 PM 0-10 cm West Nav. Channel - POS	R1 SD0057 10/15/1997 4:18:00 PM 0-10 cm West Nav. Channel - POS	R2 SD0058 10/15/1997 4:48:00 PM 0-10 cm West Nav. Channel - POS	R4 SD0059 10/15/1997 1:05:00 PM 0-10 cm West Nav. Channel - POS	DR092 SD-DR092-0000 8/27/1998 0-10 cm East Nav. Channel - POS	DR094 SD-DR094-0000 8/20/1998 0-10 cm East Nav. Channel - POS	DR095 SD-DR095-0000 8/20/1998 0-10 cm East Nav. Channel - POS
4,4'-DDD	--	--	--	--	--	2 U	--	--	--	--	2 U	--	--
4,4'-DDE	--	--	--	--	--	2 U	--	--	--	--	1 U	--	--
4,4'-DDT	--	--	--	--	--	2 U	--	--	--	--	2 UJ	--	--
Aldrin	--	--	--	--	--	0.98 U	--	--	--	--	1 UJ	--	--
alpha-Chlordane	--	--	--	--	--	0.98 U	--	--	--	--	1 U	--	--
alpha-BHC	--	--	--	--	--	0.98 U	--	--	--	--	1 U	--	--
beta-BHC	--	--	--	--	--	0.98 U	--	--	--	--	1 U	--	--
delta-BHC	--	--	--	--	--	0.98 U	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	0.98 U	--	--	--	--	1 UJ	--	--
gamma-Chlordane	--	--	--	--	--	0.98 U	--	--	--	--	1 U	--	--
Oxychlordane	--	--	--	--	--	2 U	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	2 U	--	--	--	--	2 UJ	--	--
alpha-Endosulfan	--	--	--	--	--	0.98 U	--	--	--	--	1 U	--	--
beta-Endosulfan	--	--	--	--	--	2 U	--	--	--	--	2 U	--	--
Endosulfan sulfate	--	--	--	--	--	2 U	--	--	--	--	2 U	--	--
Endrin	--	--	--	--	--	2 U	--	--	--	--	2 UJ	--	--
Endrin aldehyde	--	--	--	--	--	2 UJ	--	--	--	--	2 U	--	--
Endrin ketone	--	--	--	--	--	2 U	--	--	--	--	2 U	--	--
Heptachlor	--	--	--	--	--	0.98 U	--	--	--	--	1 UJ	--	--
Heptachlor epoxide	--	--	--	--	--	0.98 U	--	--	--	--	1 U	--	--
Toxaphene	--	--	--	--	--	98 U	--	--	--	--	20 U	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	2 U	--	--	--	--	2 UJ	--	--
DDTs (total-calc'd)	--	--	--	--	--	2 U	--	--	--	--	2 UJ	--	--
Total Chlordane (calc'd)	--	--	--	--	--	2 U	--	--	--	--	1 U	--	--
Herbicides (µg/kg dry weight)													
Methoxychlor	--	--	--	--	--	9.8 U	--	--	--	--	1 U	--	--
PCB Aroclors (mg/kg organic carbon)													
PCBs (total calc'd)	12	65	--	--	7.5	3.1	3.7 J	8.3	8.6	4.5	9.1	**38 J**	4.2 J
PCB Aroclors (µg/kg dry weight)													
Aroclor-1016	--	--	--	--	20 U	20 U	18 U	20 U	18 U	19 U	20 UJ	20 UJ	20 UJ
Aroclor-1221	--	--	--	--	20 U	20 U	37 U	40 U	36 U	37 U	40 U	40 U	40 U
Aroclor-1232	--	--	--	--	20 U	20 U	18 U	20 U	18 U	19 U	20 U	20 U	20 U
Aroclor-1242	--	--	--	--	20 U	20 U	17 J	24	25	23	20 U	110	20 U
Aroclor-1248	--	--	--	--	52	40 U	18 U	20 UJ	18 U	19 U	20 U	20 U	20 U
Aroclor-1254	--	--	--	--	82	46	57 J	79	79	84	40	180	53
Aroclor-1260	--	--	--	--	59	50	63	54	60	65	24	100 J	38 J
PCBs (total calc'd)	--	--	130	1000	193	96	137 J	157	164	172	64	390 J	91 J
PCBs Congeners (ng/kg dry weight)													
PCB-018	--	--	--	--	--	--	--	--	--	--	1000 UJ	6000 J	1000 UJ
PCB-028	--	--	--	--	--	--	--	--	--	--	1000 J	13000 J	2000 J
PCB-044	--	--	--	--	--	--	--	--	--	--	1000 J	10000 J	2000 J
PCB-055	--	--	--	--	--	--	--	--	--	--	2000 J	11000 J	2000 J
PCB-066	--	--	--	--	--	--	--	--	--	--	3000 J	20000 J	5000 J
PCB-077	--	--	--	--	--	--	--	--	--	--	1000 U	1000 UJ	1000 UJ
PCB-081	--	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	1000 UJ
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--	--	3000 J	12000 J	2000 J
PCB-105	--	--	--	--	--	--	--	--	--	--	1000 UJ	5000 J	1000 J
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	1000 UJ
PCB-118	--	--	--	--	--	--	--	--	--	--	2000 J	10000	3000
PCB-123	--	--	--	--	--	--	--	--	--	--	1000 UJ	2000 U	1000 UJ

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PCB-126	--	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	1000 UJ
PCB-128	--	--	--	--	--	--	--	--	--	--	1000 UJ	3000 J	1000 UJ
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--	--	4000	16000	6000
PCB-153	--	--	--	--	--	--	--	--	--	--	3000 J	11000	4000
PCB-156	--	--	--	--	--	--	--	--	--	--	1000 UJ	1000 J	1000 UJ
PCB-157	--	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	1000 UJ
PCB-167	--	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	1000 UJ
PCB-169	--	--	--	--	--	--	--	--	--	--	1000 UJ	1000 U	1000 U
PCB-170	--	--	--	--	--	--	--	--	--	--	5000 UJ	4000 J	2000 J
PCB-180	--	--	--	--	--	--	--	--	--	--	2000 J	7000 J	3000 J
PCB-187	--	--	--	--	--	--	--	--	--	--	2000 J	5000 J	2000 J
PCB-189	--	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	1000 UJ
PCB-195	--	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	1000 UJ
PCB-206	--	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	1000 UJ
PCB-209	--	--	--	--	--	--	--	--	--	--	1000 UJ	1000 UJ	1000 UJ
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)													
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	--	--	--	260	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	--	--	--	42	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	--	--	--	6.1 J	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	1.4 U	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	15	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	--	--	--	8.2	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	2.6 U	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	--	--	--	4.8 J	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	--	--	--	0.14 U	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	--	--	--	0.65 U	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	0.87 U	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	--	--	--	1.1 U	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	--	--	--	3 U	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	--	--	--	0.37 U	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	--	--	--	1.3 J	--	--
OCDD	--	--	--	--	--	--	--	--	--	--	2700	--	--
OCDF	--	--	--	--	--	--	--	--	--	--	120	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	6.7 J	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR098 SD-DR098-0000 8/20/1998 0-10 cm East Nav. Channel - POS	DR099 SD-DR099-0000 8/20/1998 0-10 cm East Nav. Channel - POS	DR100 SD-DR100-0000 8/20/1998 0-10 cm East Nav. Channel - POS	DR101 SD-DR101-0000 8/20/1998 0-10 cm East Nav. Channel - POS	DR102 SD-DR102-0000 8/20/1998 0-10 cm East Nav. Channel - POS	DR127 SD-DR127-0000 8/12/1998 0-10 cm West Nav. Channel - POS	DR128 SD-DR128-0000 8/12/1998 0-10 cm West Nav. Channel - POS	DR129 SD-DR129-0000 8/27/1998 0-10 cm West Nav. Channel - POS	DR130 SD-DR130-0000 8/12/1998 0-10 cm West Nav. Channel - POS	DR146 SD-DR146-0000 8/19/1998 0-10 cm Nav. Channel - POS
Sediment Grain Size (Percent)														
Rocks (total calc'd)	--	--	--	--	0.07	31	0.96	6	7.9	2.3 J	0.06 J	0.01 U	0.38	0.01 U
Sand (total calc'd)	--	--	--	--	15.2	47	78	11.2	33	14.9 J	32 J	15.2 J	17 J	13.3
Silt (total calc'd)	--	--	--	--	57	15.1	13.1	68	46	55	46	65	55	67
Clay (total calc'd)	--	--	--	--	28	6	7.3	15	14.5	28	22	19.5	27	19.4
Fines (percent silt+clay)	--	--	--	--	84	21.1	20.4	83	61	83	68	85	82	86
Conventional Parameters														
Total Organic Carbon (TOC)	--	--	--	--	1.84	1.66	0.61	1.73	2.15	2.78	2.99	2.67	2.87	2.63
Total solids	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)														
Aluminum	--	--	--	--	25000	10000	7900	19000	18000	21000	20000	27000	20000	22000
Antimony	--	--	--	--	10 UJ	10 UJ	5 J	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 UJ	10 UJ
Arsenic	57	93	--	--	12	8.5	4.6	11	14	13	13	14	10	12
Barium	--	--	--	--	110	53	42	73	74	84	81	91	80	84
Beryllium	--	--	--	--	0.48	0.21	0.16	0.38	0.36	0.42	0.42	0.46	0.33	0.48
Cadmium	5.1	6.7	--	--	0.35	0.24	0.22	0.47	0.42	0.41	0.44	0.5	0.3	0.5
Calcium	--	--	--	--	6100	7600	8800	5400	9100	6100	6300	7300	5600	6400
Chromium	260	270	--	--	32	15	12	25	36	31	30	37	28	29
Cobalt	--	--	--	--	11	5	4	8	9	10	10	11	10	10
Copper	390	390	--	--	61	31	25	47	69	85	81	75	67	67
Iron	--	--	--	--	34000 J	19000 J	13000 J	26000 J	27000 J	31000 J	31000 J	35000	29000 J	30000 J
Lead	450	530	--	--	30	21	12	27	45	47	45	47	34	33
Magnesium	--	--	--	--	9300	4600	3400	7100	7400	8900	8800	9200	8200	9000
Manganese	--	--	--	--	360	170	130	260	280	340	320	350	310	330
Mercury	0.41	0.59	--	--	0.17	0.07	0.06	0.18	0.13	0.19	0.22	0.19	0.18	0.17
Molybdenum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	26	15	11	21	26	20	19	25	16	23
Potassium	--	--	--	--	3000	1300	1100	2600	2200	3000	2900	3200	2700	2900
Selenium	--	--	--	--	5	2	3	5	4	1	0.8 J	15	0.8 J	6 J
Silver	6.1	6.1	--	--	0.32	0.18	0.33	0.43	0.36	0.31	0.34	0.38	0.28	0.35
Sodium	--	--	--	--	12000	6100	4300	11000	9800	15000	16000	14000	14000	13000
Thallium	--	--	--	--	0.13	0.05	0.05	0.13	0.1	0.13	0.13	0.16	0.09	0.1 J
Tin	--	--	--	--	3	3	2 UJ	3	5	11	9	8 UJ	5	5
Vanadium	--	--	--	--	72	33	29	59	56	60	58	77	56	63
Zinc	410	960	--	--	110	77	51	85	130	140	130	140	130	120
Organometallic Compounds (µg/kg dry weight)														
Monobutyltin as ion	--	--	--	--	--	--	--	10 UJ	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	--	--	--	11 J	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	--	--	--	42 J	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--
PAHs (mg/kg organic carbon)														
2-Methylnaphthalene	38	64	--	--	1.1 U	1.2 U	3.3 U	1.7 J	0.93 U	0.72 U	0.67 U	1.1	0.7	0.76 U
Acenaphthylene	66	66	--	--	1.1 U	1.2 U	3.3 U	1.2 UJ	0.93 U	0.72 U	0.67 U	0.75 U	0.7 U	0.76 U
Acenaphthene	16	57	--	--	1.1 U	1.2 U	3.3 U	8.1 J	1.4	1.1	1.3	1.9	2.4	0.76 U
Anthracene	220	1200	--	--	2.2	4.2	20	13 J	3.3	4.7	3	4.5	3.1	3
Benzo(a)anthracene	110	270	--	--	8.7	8.4	33	20 J	16	15	10	11	9.1	9.5
Benzo(a)pyrene	99	210	--	--	8.7	6.6	28	19 J	15	12	9.7	11	7.7	9.5
Benzo(g,h,i)perylene	31	78	--	--	4.3	3.6	16	10 J	8.8	7.6	6.7	5.6	5.2	5.7
Chrysene	110	460	--	--	13	11	59	25 J	22	22	17	18	15	14

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Dibenzo(a,h)anthracene	12	33	--	--	1.1 U	1.2 U	4.9	2.3 J	2.3	2.2	1.7	0.75 U	1.4	1.5
Fluoranthene	160	1200	--	--	22	17	59	40 J	41	36	24	28	34	25
Fluorene	23	79	--	--	1.1 U	1.8	4.9	5.8 J	1.4	2.2	2	2.6	2.4	1.1
Indeno(1,2,3-cd)pyrene	34	88	--	--	5.4	3.6	21	9.8 J	11	8.6	7	6	5.6	7.2
Naphthalene	99	170	--	--	1.1 U	1.2 U	3.3 U	1.2 J	0.93 U	0.72 U	0.67 U	1.1	0.7 U	0.76 U
Phenanthrene	100	480	--	--	6	6.6	18	43 J	9.8	11	9.4	12	17	6.5
Pyrene	1000	1400	--	--	20	14	51	45 J	31	26	21	28	28	17
Benzofluoranthenes (total-calc'd)	230	450	--	--	22	16	70	32 J	37	28	24	25	20	22
Total LPAH (calc'd)	370	780	--	--	8.2	13	43	71 J	16	19	16	22	25	11
Total HPAH (calc'd)	960	5300	--	--	100	80	340	200 J	180	160	120	130	130	110
PAHs (µg/kg dry weight)														
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	20 U	20 U	20 U	30 J	20 U	20 U	20 U	30	20	20 U
Acenaphthylene	--	--	1300	1300	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
Acenaphthene	--	--	500	730	20 U	20 U	20 U	140 J	30	30	40	50	70	20 U
Anthracene	--	--	960	4400	40	70	120	220 J	70	130	90	120	90	80
Benzo(a)anthracene	--	--	1300	1600	160	140	200	340 J	350	410	300	290	260	250
Benzo(a)pyrene	--	--	1600	3000	160	110	170	330 J	320	330	290	290	220	250
Benzo(b)fluoranthene	--	--	--	--	240	160	230	280 J	460	480	410	350	320	350
Benzo(k)fluoranthene	--	--	--	--	170	100	200	270 J	330	300	310	330	240	240
Benzo(g,h,i)perylene	--	--	670	720	80	60	100	180 J	190	210	200	150	150	150
Chrysene	--	--	1400	2800	230	180	360	430 J	470	610	500	470	440	360
Dibenzo(a,h)anthracene	--	--	230	540	20 U	20 U	30	40 J	50	60	50	20 U	40	40
Fluoranthene	--	--	1700	2500	410	280	360	690 J	890	1000	710	740	990	660
Fluorene	--	--	540	1000	20 U	30	30	100 J	30	60	60	70	70	30
Indeno(1,2,3-cd)pyrene	--	--	600	690	100	60	130	170 J	240	240	210	160	160	190
Naphthalene	--	--	2100	2400	20 U	20 U	20 U	20 J	20 U	20 U	20 U	30	20 U	20 U
Phenanthrene	--	--	1500	5400	110	110	110	750 J	210	310	280	310	500	170
Pyrene	--	--	2600	3300	360	230	310	770 J	660	730	630	740	800	460
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	410	260	430	550 J	790	780	720	680	560	590
Total LPAH (calc'd)	--	--	5200	13000	150	210	260	1230 J	340	530	470	580	730	280
Total HPAH (calc'd)	--	--	12000	17000	1910	1320	2090	3500 J	3960	4400	3610	3520	3620	2950
Total PAH (calc'd)	--	--	--	--	2060	1530	2350	4730 J	4300	4900	4080	4100	4350	3230
Benzenes (mg/kg organic carbon)														
1,2-Dichlorobenzene	2.3	2.3	--	--	1.1 U	1.2 U	***3.3 U***	0.16 U	0.93 U	0.72 U	0.67 U	0.75 U	0.7 U	0.76 U
1,4-Dichlorobenzene	3.1	9	--	--	1.1 U	1.2 U	**3.3 U**	0.16 U	0.93 U	0.72 U	0.67 U	0.75 U	0.7 U	0.76 U
1,2,4-Trichlorobenzene	0.81	1.8	--	--	**1.1 U**	**1.2 U**	***3.3 U***	0.32 U	**0.93 U**	0.72 U	0.67 U	0.75 U	0.7 U	0.76 U
Hexachlorobenzene	0.38	2.3	--	--	**1.1 U**	**1.2 U**	***3.3 U***	**1.2 UJ**	**0.93 U**	**0.72 U**	**0.67 U**	**0.75 U**	**0.7 U**	**0.76 U**
Benzenes (µg/kg dry weight)														
1,2-Dichlorobenzene	--	--	35	50	20 U	20 U	20 U	2.8 U	20 U	20 U	20 U	20 U	20 U	20 U
1,3-Dichlorobenzene	--	--	--	--	20 U	20 U	20 U	2.8 U	20 U	20 U	20 U	20 U	20 U	20 U
1,4-Dichlorobenzene	--	--	110	120	20 U	20 U	20 U	2.8 U	20 U	20 U	20 U	20 U	20 U	20 U
1,2,4-Trichlorobenzene	--	--	31	51	20 U	20 U	20 U	5.5 U	20 U	20 U	20 U	20 U	20 U	20 U
Hexachlorobenzene	--	--	22	70	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
Nitrobenzene	--	--	--	--	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
Phthalates (mg/kg organic carbon)														
Bis(2-ethylhexyl)phthalate	47	78	--	--	23	20 UJ	26 UJ	6.9 UJ	19	20	22	21	18	20
Butyl benzyl phthalate	4.9	64	--	--	1.6	1.2 U	3.3 U	1.2 UJ	1.4	1.4	1.7	2.2	1.7	1.5
Diethyl phthalate	61	110	--	--	1.1 U	1.2 U	3.3 U	1.2 UJ	0.93 U	0.72 U	0.67 U	0.75 U	0.7 U	0.76 U
Dimethyl phthalate	53	53	--	--	1.1 U	1.2 U	3.3 U	1.2 UJ	0.93 U	0.72 U	0.67 U	0.75	0.7	0.76 U
Di-n-butyl phthalate	220	1700	--	--	1.1 U	1.2 U	3.3 U	1.2 J	0.93 U	0.72	0.67 U	0.75	0.7 U	0.76 U
Di-n-octyl phthalate	58	4500	--	--	1.1 U	1.2 U	3.3 U	1.2 UJ	0.93 U	0.72 U	0.67 U	0.75	0.7 U	0.76 U

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Phthalates (µg/kg dry weight)														
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	420	330 UJ	160 UJ	120 UJ	400	550	660	550	510	530
Butyl benzyl phthalate	--	--	63	900	30	20 U	20 U	20 UJ	30	40	50	60	50	40
Diethyl phthalate	--	--	200	1200	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
Dimethyl phthalate	--	--	71	160	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20	20	20 U
Di-n-butyl phthalate	--	--	1400	5100	20 U	20 U	20 U	20 J	20 U	20	20 U	20	20 U	20 U
Di-n-octyl phthalate	--	--	6200	--	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20	20 U	20 U
Phenols (µg/kg dry weight)														
2-Chlorophenol	--	--	--	--	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
4-Chloro-3-methylphenol	--	--	--	--	40 U	40 U	40 U	40 UJ	40 U	40 U	40 U	40 U	40 U	40 U
2,4-Dichlorophenol	--	--	--	--	60 U	60 U	60 U	60 UJ	60 U	60 U	60 U	60 U	60 U	60 U
2,4-Dimethylphenol	29	29	--	--	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
2,4-Dinitrophenol	--	--	--	--	200 UJ	200 UJ	200 UJ	200 UJ	200 UJ	200 U	200 U	200 U	200 U	200 UJ
2-Methylphenol	63	63	--	--	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
4-Methylphenol	670	670	--	--	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
2,4,5-Trichlorophenol	--	--	--	--	200 U	200 U	200 U	200 UJ	200 U	200 U	200 U	200 U	200 U	200 U
2,4,6-Trichlorophenol	--	--	--	--	200 U	200 U	200 U	200 UJ	200 U	200 U	200 U	200 U	200 U	200 U
2-Nitrophenol	--	--	--	--	100 U	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U	100 U
4-Nitrophenol	--	--	--	--	100 U	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U	100 U
Pentachlorophenol	360	690	--	--	100 U	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U	100 U
Phenol	420	1200	--	--	20 U	20 U	30	20 UJ	20 U	20 U	80	20	20 U	20
Misc Extractables (mg/kg organic carbon)														
Dibenzofuran	15	58	--	--	1.1 U	1.2 U	3.3 U	1.7 J	0.93	1.1	1.3	1.9	1.7	0.76
Hexachlorobutadiene	3.9	6.2	--	--	1.1 U	1.2 U	3.3 U	0.16 U	0.93 U	0.72 U	0.67 U	0.75 U	0.7 U	0.76 U
N-Nitrosodiphenylamine	11	11	--	--	2.2 U	2.4 U	6.6 U	2.3 UJ	1.9 U	1.4 U	1.3 U	1.5 U	1.4 U	1.5 U
Misc Extractables (µg/kg dry weight)														
2-Nitroaniline	--	--	--	--	100 U	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U	100 U
3-Nitroaniline	--	--	--	--	200 U	200 U	200 U	200 UJ	200 U	200 U	200 U	200 U	200 U	200 U
4-Nitroaniline	--	--	--	--	100 U	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U	100 U	100 U
3,3'-Dichlorobenzidine	--	--	--	--	200 U	200 U	200 U	200 UJ	200 U	200 U	200 U	200 U	200 U	200 U
4-Chloroaniline	--	--	--	--	60 U	60 U	60 U	60 UJ	60 U	60 U	60 U	60 U	60 U	60 U
Aniline	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	57	73	--	--	50 U	50 U	50 U	50 UJ	50 U	50 U	50 U	50 U	50 U	50 U
Benzoic acid	650	650	--	--	200 U	200 U	200 U	200 UJ	200 U	200 U	200 U	200 U	200 U	200 U
Carbazole	--	--	--	--	20 U	20 U	40	50 J	30	40	30	40	40	30
Dibenzofuran	--	--	540	700	20 U	20 U	20 U	30 J	20	30	40	50	50	20
Hexachlorobutadiene	--	--	11	120	20 U	20 U	20 U	2.8 U	20 U	20 U	20 U	20 U	20 U	20 U
Hexachloroethane	--	--	--	--	20 U	20 U	20 U	5.5 U	20 U	20 U	20 U	20 U	20 U	20 U
Hexachlorocyclopentadiene	--	--	--	--	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 U	100 UJ	100 U	100 U
Isophorone	--	--	--	--	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
N-Nitroso-di-n-propylamine	--	--	--	--	40 U	40 U	40 U	40 UJ	40 U	40 U	40 U	40 U	40 U	40 U
N-Nitrosodimethylamine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	40 U	40 U	40 U	40 UJ	40 U	40 U	40 U	40 U	40 U	40 U
Ethers (µg/kg dry weight)														
4-Bromophenyl phenyl ether	--	--	--	--	40 U	40 U	40 U	40 UJ	40 U	40 U	40 U	40 U	40 U	40 U
4-Chlorophenyl phenyl ether	--	--	--	--	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
bis(2-chloroethyl)ether	--	--	--	--	40 U	40 U	40 U	40 UJ	40 U	40 U	40 U	40 U	40 U	40 U
bis(2-chloroisopropyl)ether	--	--	--	--	40 U	40 U	40 U	40 UJ	40 U	40 U	40 U	40 U	40 U	40 U
Pesticides (µg/kg dry weight)														
2,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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4,4'-DDD	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	--	--	--	3 U	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
Aldrin	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
alpha-BHC	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
beta-BHC	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
Endrin	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
Toxaphene	--	--	--	--	--	--	--	160 U	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	--	--	--	3 U	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--
Herbicides (µg/kg dry weight)														
Methoxychlor	--	--	--	--	--	--	--	2	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)														
PCBs (total calc'd)	12	65	--	--	3.8 J	1.9	6.6 U	2.3 UJ	5 J	6.4	5.6	8.1	5.5	4.8 J
PCB Aroclors (µg/kg dry weight)														
Aroclor-1016	--	--	--	--	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ
Aroclor-1221	--	--	--	--	40 U	40 U	40 U	40 UJ	40 U	40 U	40 U	40 U	40 U	40 U
Aroclor-1232	--	--	--	--	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
Aroclor-1242	--	--	--	--	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	26	20 U	20 U
Aroclor-1248	--	--	--	--	20 U	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U	20 U	20 U
Aroclor-1254	--	--	--	--	37	32	20 U	20 UJ	64	92	87	95	82	67
Aroclor-1260	--	--	--	--	32 J	20 UJ	20 UJ	20 UJ	44 J	87	80	96	75	58 J
PCBs (total calc'd)	--	--	130	1000	69 J	32	40 U	40 UJ	108 J	179	167	217	157	125 J
PCBs Congeners (ng/kg dry weight)														
PCB-018	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	3000 J	1000 J	1000 J	1000 J	1000 J	1000 UJ
PCB-028	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	4000 J	3000 J	3000 J	2000 J	3000 J	2000 J
PCB-044	--	--	--	--	1000 J	1000 UJ	1000 UJ	1000 UJ	2000 J	3000 J	2000 J	3000 J	2000 J	2000 J
PCB-055	--	--	--	--	2000 J	1000 J	1000 UJ	1000 J	4000 J	4000 J	4000 J	4000 J	4000 J	3000 J
PCB-066	--	--	--	--	4000 J	2000 J	2000 J	2000 J	6000 J	10000 U	10000 U	9000 J	10000	6000
PCB-077	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 U	1000 U	1000 U	1000 UJ
PCB-081	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	3000 J	1000 J	1000 UJ	1000 UJ	3000 J	5000 J	5000 J	7000 J	6000 J	5000 J
PCB-105	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	2000 J	3000 J	3000 UJ	2000 J	3000 J	1000 J
PCB-110	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-114	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ
PCB-118	--	--	--	--	3000	2000	1000	2000 J	4000	6000	6000	6000 J	6000	4000
PCB-123	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	2000 UJ	1000 UJ

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PCB-126	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 U	1000 UJ	1000 U	1000 UJ
PCB-128	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 J	2000 J	2000 J	2000 J	2000 J	1000 UJ
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	5000	3000	2000	3000 J	8000	14000 J	8000 UJ	13000	13000 J	7000 J
PCB-153	--	--	--	--	4000	2000	2000	2000 J	6000	9000 J	9000 J	9000 J	9000 J	6000 J
PCB-156	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 J	1000 J	1000 J	1000 J	1000 UJ
PCB-157	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ
PCB-167	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ
PCB-169	--	--	--	--	1000 U	1000 U	1000 U	1000 UJ	1000 U	1000 U	1000 U	1000 UJ	1000 U	1000 U
PCB-170	--	--	--	--	1000 J	1000 UJ	1000 UJ	1000 UJ	2000 J	5000 J	5000 J	7000 J	4000 J	2000 J
PCB-180	--	--	--	--	2000 J	1000 J	1000 UJ	2000 J	3000 J	9000 J	7000 J	8000 J	7000 J	4000
PCB-187	--	--	--	--	2000 J	1000 UJ	1000 UJ	1000 J	2000 J	5000 J	4000 UJ	4000 J	4000 J	3000
PCB-189	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 U
PCB-195	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 J	1000 UJ	1000 UJ	1000 UJ	1000 UJ
PCB-206	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 U	1000 UJ	1000 U	1000 U
PCB-209	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 U	1000 U	1000 UJ	1000 U	1000 U
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)														
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	--	66	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	--	9.6	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	--	1.2 U	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	--	1.1 U	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	--	1.8 U	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	--	3.4 U	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	--	0.56 U	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	--	2.2 U	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	--	0.45 U	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	--	0.62 U	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	--	0.56 U	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	--	1.1 U	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	--	0.39 U	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	--	1.1 U	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	--	620	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	--	28	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	--	2.2	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR152 SD-DR152-0000 8/27/1998 0-10 cm West Nav. Channel - POS	DR153 SD-DR153-0000 8/31/1998 0-10 cm West Nav. Channel - POS	DR154 SD-DR154-0000 8/13/1998 0-10 cm West Nav. Channel - POS	DR162 SD-DR162-0000 8/27/1998 0-10 cm Nav. Channel - POS	DR164 SD-DR164-0000 8/19/1998 0-10 cm Nav. Channel - POS	WST350 WST17-01 10/22/1997 0-10 cm West Nav. Channel - POS	WST351 WST17-02 10/6/1997 0-10 cm West Nav. Channel - POS	WST356 WST18-04 10/10/1997 0-10 cm West Nav. Channel - POS	WST357 WST18-05 10/10/1997 0-10 cm West Nav. Channel - POS
Sediment Grain Size (Percent)													
Rocks (total calc'd)	--	--	--	--	0.01 U	0.01 U	0.06	0.22	0.01 U	--	--	--	--
Sand (total calc'd)	--	--	--	--	9.2 J	11.5 J	18.9	30	15.5 J	6.8	10	2.4	4.3
Silt (total calc'd)	--	--	--	--	69	67	61	53	66	65	63	71	69
Clay (total calc'd)	--	--	--	--	22	21	20.1	17	18.4	28	26	27	26
Fines (percent silt+clay)	--	--	--	--	91	88	81	70	84	--	--	--	--
Conventional Parameters													
Total Organic Carbon (TOC)	--	--	--	--	2.37	2.19	2.33	1.9	2.58	2.25	2.12	2.32	2.29
Total solids	--	--	--	--	--	--	--	--	--	--	--	--	--
Total solids (preserved)	--	--	--	--	--	--	--	--	--	--	--	--	--
Ammonia (total as nitrogen)	--	--	--	--	--	--	--	--	--	--	--	--	--
Sulfides (total)	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg dry weight)													
Aluminum	--	--	--	--	26000	26000	19000	21000	22000	--	--	--	--
Antimony	--	--	--	--	10 U	10 UJ	10 UJ	10 U	5 J	--	--	--	--
Arsenic	57	93	--	--	13	14	11	12	11	--	--	--	--
Barium	--	--	--	--	88	93	74	82	78	--	--	--	--
Beryllium	--	--	--	--	0.45	0.49	0.46	0.42	0.49	--	--	--	--
Cadmium	5.1	6.7	--	--	0.5	0.62	0.37	0.4	0.4	--	--	--	--
Calcium	--	--	--	--	7900	8000	5200	6900	5800	--	--	--	--
Chromium	260	270	--	--	34	39	29	27	28	--	--	--	--
Cobalt	--	--	--	--	11	11	9	10	11	--	--	--	--
Copper	390	390	--	--	73	84	57	55	56	--	--	--	--
Iron	--	--	--	--	34000	36000 J	30000 J	29000	29000 J	--	--	--	--
Lead	450	530	--	--	38	50	39	33	24	--	--	--	--
Magnesium	--	--	--	--	9200	9900	7300	7700	9100	--	--	--	--
Manganese	--	--	--	--	350	370	330	330	360	--	--	--	--
Mercury	0.41	0.59	--	--	0.25	0.22	0.17	0.13	0.14	--	--	--	--
Molybdenum	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	--	--	--	--	26	25	21	23	25	--	--	--	--
Potassium	--	--	--	--	3100	3400	2500	2500	2800	--	--	--	--
Selenium	--	--	--	--	16	20 J	5	15	6 J	--	--	--	--
Silver	6.1	6.1	--	--	0.37	0.42	0.31	0.26	0.38	--	--	--	--
Sodium	--	--	--	--	13000	15000	11000	11000	14000	--	--	--	--
Thallium	--	--	--	--	0.14	0.12	0.09	0.14	0.09 J	--	--	--	--
Tin	--	--	--	--	10	9	6	5 UJ	3	--	--	--	--
Vanadium	--	--	--	--	75	82	54	65	61	--	--	--	--
Zinc	410	960	--	--	120	150	130	100	98	--	--	--	--
Organometallic Compounds (µg/kg dry weight)													
Monobutyltin as ion	--	--	--	--	10 J	--	17 J	--	--	--	--	--	--
Dibutyltin as ion	--	--	--	--	24 J	--	25	--	--	--	--	--	--
Tributyltin as ion	--	--	--	--	68 J	--	69	--	--	--	--	--	--
Tetrabutyltin as ion	--	--	--	--	5 J	--	5 U	--	--	--	--	--	--
PAHs (mg/kg organic carbon)													
2-Methylnaphthalene	38	64	--	--	0.84 U	0.91 U	0.86 U	1.1 U	0.78 U	--	--	--	--
Acenaphthylene	66	66	--	--	0.84 U	0.91 U	0.86 U	1.1 U	0.78 U	--	--	--	--
Acenaphthene	16	57	--	--	0.84 U	1.8	0.86 U	1.1 U	0.78 U	--	--	--	--
Anthracene	220	1200	--	--	3	5.5	1.7	2.6	1.6	--	--	--	--
Benzo(a)anthracene	110	270	--	--	9.3	15	7.3	7.9	4.7	--	--	--	--
Benzo(a)pyrene	99	210	--	--	9.3	13	6.4	7.9	4.7	--	--	--	--
Benzo(g,h,i)perylene	31	78	--	--	5.9	9.6	4.7	4.7	3.5	--	--	--	--
Chrysene	110	460	--	--	15	23	9.9	12	6.6	--	--	--	--

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Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR152 SD-DR152-0000 8/27/1998 0-10 cm West Nav. Channel - POS	DR153 SD-DR153-0000 8/31/1998 0-10 cm West Nav. Channel - POS	DR154 SD-DR154-0000 8/13/1998 0-10 cm West Nav. Channel - POS	DR162 SD-DR162-0000 8/27/1998 0-10 cm Nav. Channel - POS	DR164 SD-DR164-0000 8/19/1998 0-10 cm Nav. Channel - POS	WST350 WST17-01 10/22/1997 0-10 cm West Nav. Channel - POS	WST351 WST17-02 10/6/1997 0-10 cm West Nav. Channel - POS	WST356 WST18-04 10/10/1997 0-10 cm West Nav. Channel - POS	WST357 WST18-05 10/10/1997 0-10 cm West Nav. Channel - POS
Dibenzo(a,h)anthracene	12	33	--	--	1.3	2.7	1.3	1.1	0.78 U	--	--	--	--
Fluoranthene	160	1200	--	--	22	39	18	18	13	--	--	--	--
Fluorene	23	79	--	--	1.3	2.7	0.86 U	1.6	0.78	--	--	--	--
Indeno(1,2,3-cd)pyrene	34	88	--	--	5.9	10	4.7	4.7	4.3	--	--	--	--
Naphthalene	99	170	--	--	0.14 U	0.91 U	0.86 U	1.1 U	0.78 U	--	--	--	--
Phenanthrene	100	480	--	--	7.6	12	5.2	7.9	3.9	--	--	--	--
Pyrene	1000	1400	--	--	23	26	15	20	8.9	--	--	--	--
Benzofluoranthenes (total-calc'd)	230	450	--	--	23	32	16	18	11	--	--	--	--
Total LPAH (calc'd)	370	780	--	--	12	22	6.9	12	6.2	--	--	--	--
Total HPAH (calc'd)	960	5300	--	--	110	170	85	95	57	--	--	--	--
PAHs (µg/kg dry weight)													
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	670	1400	20 U	20 U	20 U	20 U	20 U	--	--	--	--
Acenaphthylene	--	--	1300	1300	20 U	20 U	20 U	20 U	20 U	--	--	--	--
Acenaphthene	--	--	500	730	20 U	40	20 U	20 U	20 U	--	--	--	--
Anthracene	--	--	960	4400	70	120	40	50	40	--	--	--	--
Benzo(a)anthracene	--	--	1300	1600	220	320	170	150	120	--	--	--	--
Benzo(a)pyrene	--	--	1600	3000	220	290	150	150	120	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	290	390	210	170	160	--	--	--	--
Benzo(k)fluoranthene	--	--	--	--	260	310	170	180	120	--	--	--	--
Benzo(g,h,i)perylene	--	--	670	720	140	210	110	90	90	--	--	--	--
Chrysene	--	--	1400	2800	350	500	230	220	170	--	--	--	--
Dibenzo(a,h)anthracene	--	--	230	540	30	60	30	20	20 U	--	--	--	--
Fluoranthene	--	--	1700	2500	530	850	430	350	340	--	--	--	--
Fluorene	--	--	540	1000	30	60	20 U	30	20	--	--	--	--
Indeno(1,2,3-cd)pyrene	--	--	600	690	140	220	110	90	110	--	--	--	--
Naphthalene	--	--	2100	2400	3.2 U	20 U	20 U	20 U	20 U	--	--	--	--
Phenanthrene	--	--	1500	5400	180	270	120	150	100	--	--	--	--
Pyrene	--	--	2600	3300	540	580	360	380	230	--	--	--	--
Benzofluoranthenes (total-calc'd)	--	--	3200	3600	550	700	380	350	280	--	--	--	--
Total LPAH (calc'd)	--	--	5200	13000	280	490	160	230	160	--	--	--	--
Total HPAH (calc'd)	--	--	12000	17000	2720	3730	1970	1800	1460	--	--	--	--
Total PAH (calc'd)	--	--	--	--	3000	4220	2130	2030	1620	--	--	--	--
Benzenes (mg/kg organic carbon)													
1,2-Dichlorobenzene	2.3	2.3	--	--	0.14 U	0.91 U	0.86 U	1.1 U	0.78 U	--	--	--	--
1,4-Dichlorobenzene	3.1	9	--	--	0.14 U	0.91 U	0.86 U	1.1 U	0.78 U	--	--	--	--
1,2,4-Trichlorobenzene	0.81	1.8	--	--	0.27 U	**0.91 U**	**0.86 U**	**1.1 U**	0.78 U	--	--	--	--
Hexachlorobenzene	0.38	2.3	--	--	**0.84 U**	**0.91 U**	**0.86 U**	**1.1 U**	**0.78 U**	--	--	--	--
Benzenes (µg/kg dry weight)													
1,2-Dichlorobenzene	--	--	35	50	3.2 U	20 U	20 U	20 U	20 U	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	3.2 U	20 U	20 U	20 U	20 U	--	--	--	--
1,4-Dichlorobenzene	--	--	110	120	3.2 U	20 U	20 U	20 U	20 U	--	--	--	--
1,2,4-Trichlorobenzene	--	--	31	51	6.4 U	20 U	20 U	20 U	20 U	--	--	--	--
Hexachlorobenzene	--	--	22	70	20 U	20 U	20 U	20 U	20 U	--	--	--	--
Nitrobenzene	--	--	--	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--
Phthalates (mg/kg organic carbon)													
Bis(2-ethylhexyl)phthalate	47	78	--	--	19	23	17 UJ	13	11 U	--	--	--	--
Butyl benzyl phthalate	4.9	64	--	--	1.7	2.3	0.86 U	1.6	0.78 U	--	--	--	--
Diethyl phthalate	61	110	--	--	0.84 U	0.91 U	0.86 U	1.1 U	0.78 U	--	--	--	--
Dimethyl phthalate	53	53	--	--	0.84 U	0.91 U	0.86 U	1.1 U	0.78 U	--	--	--	--
Di-n-butyl phthalate	220	1700	--	--	0.84 U	0.91 U	0.86 U	1.1 U	0.78 U	--	--	--	--
Di-n-octyl phthalate	58	4500	--	--	0.84 U	0.91 U	0.86 U	1.1 U	0.78 U	--	--	--	--

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Phthalates (µg/kg dry weight)													
Bis(2-ethylhexyl)phthalate	--	--	1300	1900	450	510	390 UJ	250	280 U	--	--	--	--
Butyl benzyl phthalate	--	--	63	900	40	50	20 U	30	20 U	--	--	--	--
Diethyl phthalate	--	--	200	1200	20 U	20 U	20 U	20 U	20 U	--	--	--	--
Dimethyl phthalate	--	--	71	160	20 U	20 U	20 U	20 U	20 U	--	--	--	--
Di-n-butyl phthalate	--	--	1400	5100	20 U	20 U	20 U	20 U	20 U	--	--	--	--
Di-n-octyl phthalate	--	--	6200	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--
Phenols (µg/kg dry weight)													
2-Chlorophenol	--	--	--	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--
4-Chloro-3-methylphenol	--	--	--	--	40 U	40 U	40 U	40 U	40 U	--	--	--	--
2,4-Dichlorophenol	--	--	--	--	60 U	60 U	60 U	60 U	60 U	--	--	--	--
2,4-Dimethylphenol	29	29	--	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--
2,4-Dinitrophenol	--	--	--	--	200 U	200 U	200 U	200 U	200 UJ	--	--	--	--
2-Methylphenol	63	63	--	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--
4-Methylphenol	670	670	--	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--
2,4,5-Trichlorophenol	--	--	--	--	200 U	200 U	200 U	200 U	200 U	--	--	--	--
2,4,6-Trichlorophenol	--	--	--	--	200 U	200 U	200 U	200 U	200 U	--	--	--	--
2-Nitrophenol	--	--	--	--	100 U	100 U	100 U	100 U	100 U	--	--	--	--
4-Nitrophenol	--	--	--	--	100 U	100 U	100 U	100 U	100 U	--	--	--	--
Pentachlorophenol	360	690	--	--	100 U	100 U	100 U	100 U	100 U	--	--	--	--
Phenol	420	1200	--	--	20 U	20 U	40	20 U	20 U	--	--	--	--
Misc Extractables (mg/kg organic carbon)													
Dibenzofuran	15	58	--	--	0.84 U	1.8	0.86 U	1.1 U	0.78 U	--	--	--	--
Hexachlorobutadiene	3.9	6.2	--	--	0.27 U	0.91 U	0.86 U	1.1 U	0.78 U	--	--	--	--
N-Nitrosodiphenylamine	11	11	--	--	1.7 U	1.8 U	1.7 U	2.1 U	1.6 U	--	--	--	--
Misc Extractables (µg/kg dry weight)													
2-Nitroaniline	--	--	--	--	100 U	100 U	100 U	100 U	100 U	--	--	--	--
3-Nitroaniline	--	--	--	--	200 U	200 U	200 U	200 U	200 U	--	--	--	--
4-Nitroaniline	--	--	--	--	100 U	100 U	100 U	100 U	100 U	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	200 U	200 U	200 U	200 U	200 U	--	--	--	--
4-Chloroaniline	--	--	--	--	60 U	60 U	60 U	60 U	60 U	--	--	--	--
Aniline	--	--	--	--	--	--	--	--	--	--	--	--	--
Benzyl alcohol	57	73	--	--	50 U	50 U	50 U	50 U	50 U	--	--	--	--
Benzoic acid	650	650	--	--	200 U	200 U	200 U	200 U	200 U	--	--	--	--
Carbazole	--	--	--	--	30	50	20 U	20 U	20 U	--	--	--	--
Dibenzofuran	--	--	540	700	20 U	40	20 U	20 U	20 U	--	--	--	--
Hexachlorobutadiene	--	--	11	120	6.4 U	20 U	20 U	20 U	20 U	--	--	--	--
Hexachloroethane	--	--	--	--	3.2 U	20 U	20 U	20 U	20 U	--	--	--	--
Hexachlorocyclopentadiene	--	--	--	--	100 UJ	100 UJ	100 UJ	100 UJ	100 U	--	--	--	--
Isophorone	--	--	--	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--
N-Nitroso-di-n-propylamine	--	--	--	--	40 U	40 U	40 U	40 U	40 U	--	--	--	--
N-Nitrosodimethylamine	--	--	--	--	--	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	28	40	40 U	40 U	40 U	40 U	40 U	--	--	--	--
Ethers (µg/kg dry weight)													
4-Bromophenyl phenyl ether	--	--	--	--	40 U	40 U	40 U	40 U	40 U	--	--	--	--
4-Chlorophenyl phenyl ether	--	--	--	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--
bis(2-chloroethyl)ether	--	--	--	--	40 U	40 U	40 U	40 U	40 U	--	--	--	--
bis(2-chloroisopropyl)ether	--	--	--	--	40 U	40 U	40 U	40 U	40 U	--	--	--	--
Pesticides (µg/kg dry weight)													
2,4'-DDD	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDE	--	--	--	--	--	--	--	--	--	--	--	--	--
2,4'-DDT	--	--	--	--	--	--	--	--	--	--	--	--	--

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR152 SD-DR152-0000 8/27/1998 0-10 cm West Nav. Channel - POS	DR153 SD-DR153-0000 8/31/1998 0-10 cm West Nav. Channel - POS	DR154 SD-DR154-0000 8/13/1998 0-10 cm West Nav. Channel - POS	DR162 SD-DR162-0000 8/27/1998 0-10 cm Nav. Channel - POS	DR164 SD-DR164-0000 8/19/1998 0-10 cm Nav. Channel - POS	WST350 WST17-01 10/22/1997 0-10 cm West Nav. Channel - POS	WST351 WST17-02 10/6/1997 0-10 cm West Nav. Channel - POS	WST356 WST18-04 10/10/1997 0-10 cm West Nav. Channel - POS	WST357 WST18-05 10/10/1997 0-10 cm West Nav. Channel - POS
4,4'-DDD	--	--	--	--	2 U	--	2 U	--	--	--	--	--	--
4,4'-DDE	--	--	--	--	1 U	--	1 U	--	--	--	--	--	--
4,4'-DDT	--	--	--	--	2 UJ	--	2 U	--	--	--	--	--	--
Aldrin	--	--	--	--	1 UJ	--	1 UJ	--	--	--	--	--	--
alpha-Chlordane	--	--	--	--	1 U	--	1 U	--	--	--	--	--	--
alpha-BHC	--	--	--	--	1 U	--	1 U	--	--	--	--	--	--
beta-BHC	--	--	--	--	1 U	--	1 U	--	--	--	--	--	--
delta-BHC	--	--	--	--	--	--	--	--	--	--	--	--	--
gamma-BHC	--	--	--	--	1 UJ	--	1 U	--	--	--	--	--	--
gamma-Chlordane	--	--	--	--	1 U	--	1 U	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	--	--	2 UJ	--	2 UJ	--	--	--	--	--	--
alpha-Endosulfan	--	--	--	--	1 U	--	1 U	--	--	--	--	--	--
beta-Endosulfan	--	--	--	--	2 U	--	2 U	--	--	--	--	--	--
Endosulfan sulfate	--	--	--	--	2 U	--	3 U	--	--	--	--	--	--
Endrin	--	--	--	--	2 UJ	--	2 U	--	--	--	--	--	--
Endrin aldehyde	--	--	--	--	2 U	--	2 U	--	--	--	--	--	--
Endrin ketone	--	--	--	--	2 U	--	2 U	--	--	--	--	--	--
Heptachlor	--	--	--	--	1 UJ	--	1 U	--	--	--	--	--	--
Heptachlor epoxide	--	--	--	--	1 U	--	2 U	--	--	--	--	--	--
Toxaphene	--	--	--	--	45 U	--	10 U	--	--	--	--	--	--
Total aldrin/dieldrin (calc'd)	--	--	--	--	2 UJ	--	2 UJ	--	--	--	--	--	--
DDTs (total-calc'd)	--	--	--	--	2 UJ	--	2 U	--	--	--	--	--	--
Total Chlordane (calc'd)	--	--	--	--	1 U	--	1 U	--	--	--	--	--	--
Herbicides (µg/kg dry weight)													
Methoxychlor	--	--	--	--	1 U	--	1 U	--	--	--	--	--	--
PCB Aroclors (mg/kg organic carbon)													
PCBs (total calc'd)	12	65	--	--	5.2	5.2	4.3 J	7.7	2.5 J	6.2	**12**	5.2	6.1
PCB Aroclors (µg/kg dry weight)													
Aroclor-1016	--	--	--	--	20 UJ	20 U	20 UJ	20 UJ	20 UJ	--	--	--	--
Aroclor-1221	--	--	--	--	40 U	40 U	40 U	40 U	40 U	--	--	--	--
Aroclor-1232	--	--	--	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--
Aroclor-1242	--	--	--	--	20 U	20 U	20 U	24	20 U	--	--	--	--
Aroclor-1248	--	--	--	--	20 U	20 U	20 U	20 U	20 U	--	--	--	--
Aroclor-1254	--	--	--	--	67	64	57	69	34	--	--	--	--
Aroclor-1260	--	--	--	--	57	49	44 J	53	30 J	--	--	--	--
PCBs (total calc'd)	--	--	130	1000	124	113	101 J	146	64 J	140	260	120	140
PCBs Congeners (ng/kg dry weight)													
PCB-018	--	--	--	--	1000 J	1000 UJ	1000 UJ	1000 J	1000 UJ	--	--	--	--
PCB-028	--	--	--	--	2000 J	2000 UJ	1000 J	2000 J	1000 J	--	--	--	--
PCB-044	--	--	--	--	2000 J	2000 UJ	1000 J	2000 J	1000 UJ	--	--	--	--
PCB-055	--	--	--	--	3000 J	3000 UJ	3000 J	4000 J	2000 J	--	--	--	--
PCB-066	--	--	--	--	6000 J	7000 UJ	6000 J	6000 J	3000	--	--	--	--
PCB-077	--	--	--	--	1000 U	1000 UJ	1000 UJ	1000 U	1000 UJ	330 U	450 U	370 U	310 U
PCB-081	--	--	--	--	1000 UJ	1000 U	1000 UJ	1000 UJ	1000 UJ	--	--	--	--
PCB-090	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	5000 J	3000 J	5000 J	6000 J	2000 J	33000 J	66000 J	33000 J	36000 J
PCB-105	--	--	--	--	2000 J	2000 J	2000 J	2000 J	1000 UJ	4300	8400	3500	7200
PCB-110	--	--	--	--	--	--	--	--	--	8700	20000	7000	9300
PCB-114	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	--	--	--	--
PCB-118	--	--	--	--	5000 J	3000 J	4000 J	4000 J	2000	8500	15000	5800	10000
PCB-123	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	--	--	--	--

Table B-5
Summary of Available Lower Duwamish Waterway Sediment Concentrations – Adjacent to Port of Seattle Property

Analyte Group	SMS SQS	SMS CSL	SMS LAET[a]	Location ID Sample ID Sample Date Sample Depth SMS 2LAET[a]	DR152 SD-DR152-0000 8/27/1998 0-10 cm West Nav. Channel - POS	DR153 SD-DR153-0000 8/31/1998 0-10 cm West Nav. Channel - POS	DR154 SD-DR154-0000 8/13/1998 0-10 cm West Nav. Channel - POS	DR162 SD-DR162-0000 8/27/1998 0-10 cm Nav. Channel - POS	DR164 SD-DR164-0000 8/19/1998 0-10 cm Nav. Channel - POS	WST350 WST17-01 10/22/1997 0-10 cm West Nav. Channel - POS	WST351 WST17-02 10/6/1997 0-10 cm West Nav. Channel - POS	WST356 WST18-04 10/10/1997 0-10 cm West Nav. Channel - POS	WST357 WST18-05 10/10/1997 0-10 cm West Nav. Channel - POS
PCB-126	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	290 U	410 U	340 U	280 U
PCB-128	--	--	--	--	1000 J	1000 UJ	1000 J	1000 J	1000 UJ	4400 U	8500 J	2200 J	5400 J
PCB-129	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	10000	7000 J	8000 J	9000	4000 J	7800	15000	5400	7500
PCB-153	--	--	--	--	7000 J	5000 J	6000 J	6000 J	4000 J	23000 J	49000 J	23000 J	24000 J
PCB-156	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	260 U	1400	780	950
PCB-157	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	230 U	320 U	270 U	220 U
PCB-167	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	--	--	--	--
PCB-169	--	--	--	--	1000 UJ	1000 U	1000 UJ	1000 UJ	1000 U	730 U	1000 U	840 U	700 U
PCB-170	--	--	--	--	5000 UJ	2000 J	3000 J	3000 J	1000 J	4800	8800	3400	4200
PCB-180	--	--	--	--	4000 J	3000 J	4000 J	4000 J	2000	6800	13000	4700	7600
PCB-187	--	--	--	--	3000 J	2000 J	3000 J	3000 J	2000	--	--	--	--
PCB-189	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 U	330 U	460 U	380 U	320 U
PCB-195	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 UJ	--	--	--	--
PCB-206	--	--	--	--	1000 UJ	1000 UJ	1000 UJ	1000 UJ	1000 U	--	--	--	--
PCB-209	--	--	--	--	1000 UJ	1000 UJ	1000 U	1000 UJ	1000 U	--	--	--	--
PCB TEQ - Bird - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB TEQ - Mammal - Half DL	--	--	--	--	--	--	--	--	--	--	--	--	--
Dioxin/Furans (ng/kg dry weight)													
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--	--	400	--	--	--	--	--	--
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--	--	66	--	--	--	--	--	--
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--	--	6.9 J	--	--	--	--	--	--
1,2,3,4,7,8-HxCDD	--	--	--	--	--	--	3.8 U	--	--	--	--	--	--
1,2,3,4,7,8-HxCDF	--	--	--	--	--	--	10	--	--	--	--	--	--
1,2,3,6,7,8-HxCDD	--	--	--	--	--	--	17	--	--	--	--	--	--
1,2,3,6,7,8-HxCDF	--	--	--	--	--	--	3.2 U	--	--	--	--	--	--
1,2,3,7,8,9-HxCDD	--	--	--	--	--	--	10	--	--	--	--	--	--
1,2,3,7,8,9-HxCDF	--	--	--	--	--	--	0.57 U	--	--	--	--	--	--
1,2,3,7,8-PeCDD	--	--	--	--	--	--	1.8 U	--	--	--	--	--	--
1,2,3,7,8-PeCDF	--	--	--	--	--	--	1.4 U	--	--	--	--	--	--
2,3,4,6,7,8-HxCDF	--	--	--	--	--	--	2 U	--	--	--	--	--	--
2,3,4,7,8-PeCDF	--	--	--	--	--	--	3 U	--	--	--	--	--	--
2,3,7,8-TCDD	--	--	--	--	--	--	0.91 U	--	--	--	--	--	--
2,3,7,8-TCDF	--	--	--	--	--	--	2.3	--	--	--	--	--	--
OCDD	--	--	--	--	--	--	4000	--	--	--	--	--	--
OCDF	--	--	--	--	--	--	230	--	--	--	--	--	--
Dioxin/furan TEQ - Bird - Half DL	--	--	--	--	--	--	9.3 J	--	--	--	--	--	--

Notes:

-- No numerical criterion of this type or sample not analyzed for this chemical.

[a] The sample concentration was compared to the SMS LAET and 2LAET criteria if the percent TOC was below 0.5 percent.

U The analyte was analyzed for, but not detected above the method reporting limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

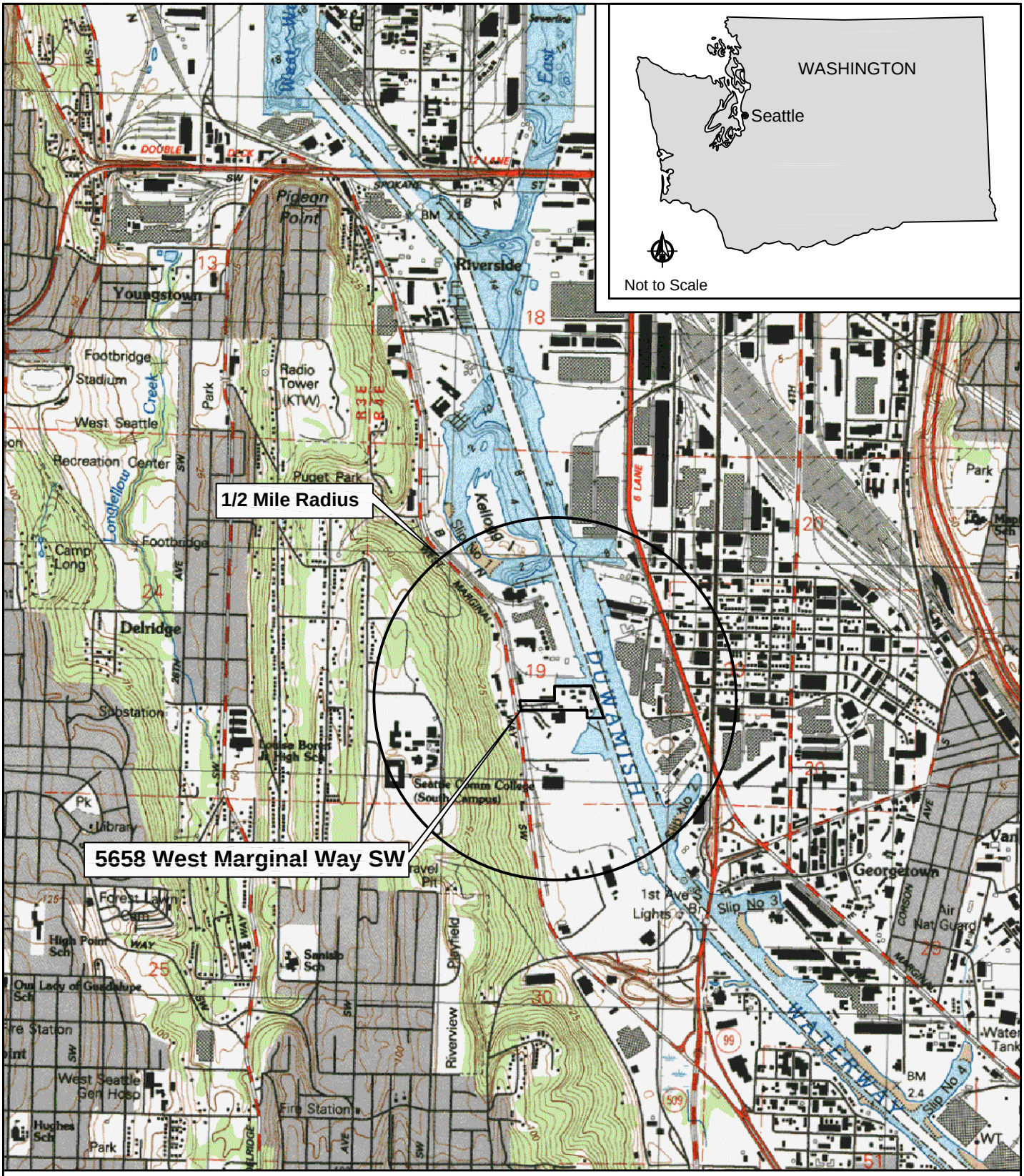
UJ The analyte was not detected at the estimated detection limit.

C The metal analyte is estimated below the reporting limit.

Non-detected concentration above either the SMS SQS and/or CSL criteria.

Bold Detected concentration greater than or equal to SMS SQS and less than SMS CSL criteria.

Bold Detected concentration greater than or equal to SMS CSL criteria.



Note: Base map prepared from Terrain Navigator Pro USGS 7.5 minute quadrangle map of Seattle South, Washington.

Apr 26, 2007 3:43pm cdavidson K: Jobs 000111-DUWAMISH_SHIPYARDS 00011101 00011101-021.dwg FIG 1

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 1
Vicinity Map
Duwamish Shipyard, Inc.
Seattle, Washington

ALASKA MARINE LINES

FORMER GRAVING DOCK LOCATION

CRANE RAILS

WEST MARGINAL WAY SOUTH

CONC. RETAINING WALL

FORMER
DUWAMISH SHIPYARD
214,287 S. F.
4.92 Acres

Machine Shop
Machine Shop
Shed
Steel Shop
Office
Office
Saw
Warehouse
Shed
Shed
Electric and Joiner Shops
Shed
Storage
Storage
Storage and Paint Shop
Shed

GLACIER NORTHWEST

DRY DOCK WALKWAY

CONCRETE ON OLD WOOD DOCK

CONCRETE AND PILES WOOD PILES AREA

ASPHALT COVERED CONCRETE

ASPHALT

CONCRETE

DOCK WOOD

WOOD PILES AREA

METAL RAMP ABOVE RIP-RAP

ASPHALT COVERED CONCRETE

CONC. PILES AREA

ASPHALT

METAL RAMP

CONCRETE

DOCK WOOD

WOOD PILE AREA

GRAVEL/BLACKBERRIES

BOLLARDS

WOOD RAMP ENDS / RAILS CONT.

FIXED WOOD DOCK

FIXED WOOD DOCK

Bulkhead

Fixed Wood Dock

Floating Dock

Fixed Dock

14" Wood Beam

Shed

150'

100'

100'

Fixed Wood Wharf

CHANNEL LIMIT

DUWAMISH WATERWAY

CHANNEL LIMIT

Legend

Subject Property Boundary

10 Topographic and Bathymetric Contours in Feet (MLLW)

Notes:
1. Horizontal Datum: Washington State Plane, North, NAD-83 (Feet).
2. Vertical Datum: MLLW (Feet).

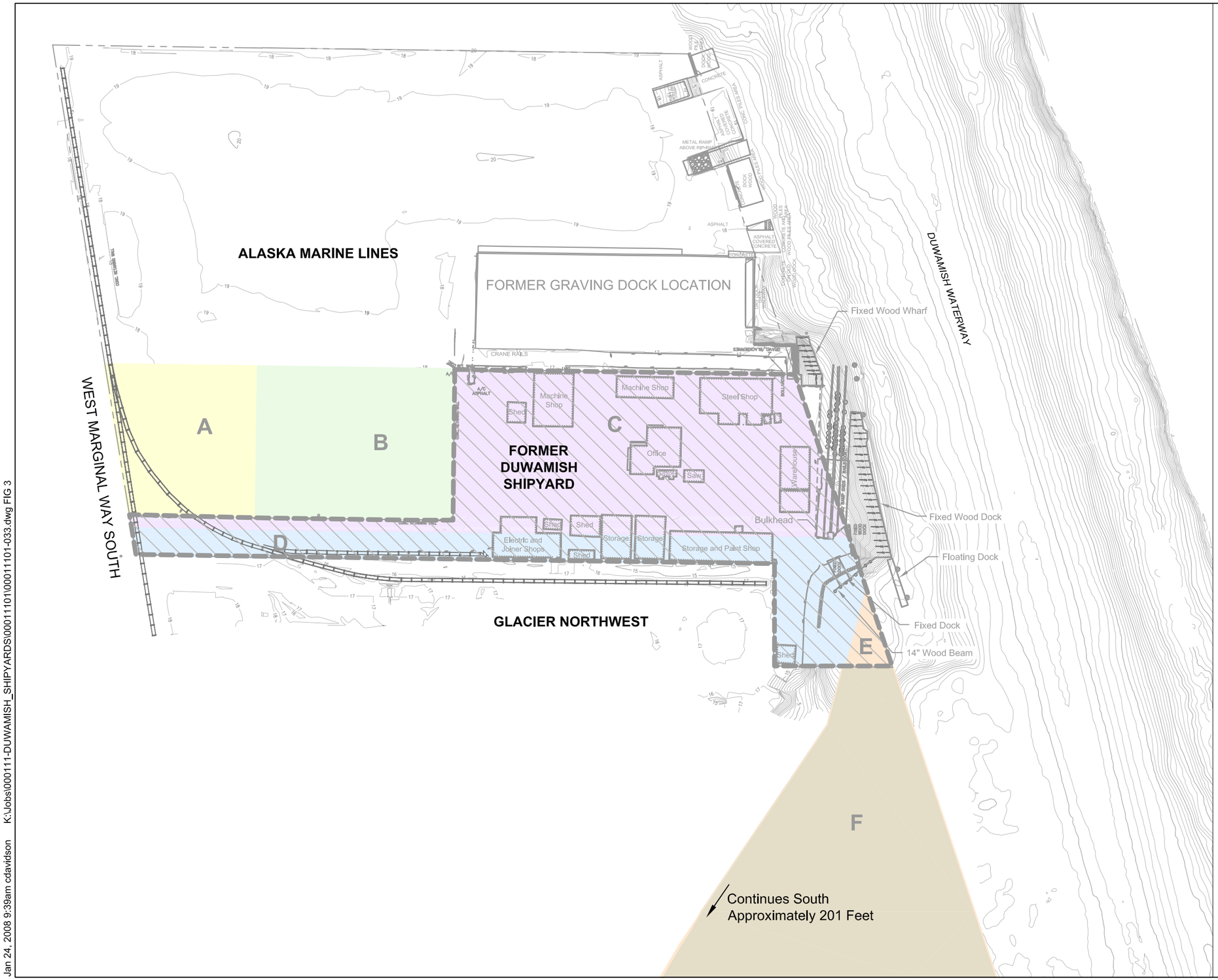
N

0 100
Scale in Feet

Jan 24, 2008 9:37am cdavidson K:\Jobs\0001111-DUWAMISH_SHIPYARDS\0001110100011101-032.dwg FIG 2

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 2
Current Property Boundary and Upland Features
Duwamish Shipyard, Inc.
Seattle, Washington



Legend

10	Topographic and Bathymetric Contours in Feet (MLLW)
	Current Property Boundary
A	Purchased from General Construction Co. in 1965; Sold to AML in 1999
B	Purchased from King County in 1941; Sold to AML in 1999
C	Purchased from King County in 1941; Currently owned by DSI
D	Purchased from the Port of Seattle in 1964; Currently owned by DSI
E	Purchased from the King County Commercial Waterway District No.1 in 1960; Currently owned by DSI
F	Purchased from the King County Commercial Waterway District No.1 in 1960; Sold to the Port of Seattle in 1964; Currently owned by Glacier Northwest

Notes:
1. Horizontal Datum: Washington State Plane, North, NAD-83 (Feet).
2. Vertical Datum: MLLW (Feet).

N

0 150
Scale in Feet

Jan 24, 2008 9:39am cdavidson K:\Jobs\000111-DUWAMISH_SHIPYARDS\000111010\000111101-033.dwg FIG 3

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 3
Historic Property Boundaries
Duwamish Shipyard, Inc.
Seattle, Washington

ALASKA MARINE LINES

Former Graving Dock Location

FORMER DUWAMISH SHIPYARD

Machine Shop

Shed

Machine Shop

Steel Shop

Office Building

Office

Shed

Warehouse

Shed

Shed

Storage

Storage

Electric and Joiner Shops

Shed

Hazardous Substance Storage and Paint Shop

GLACIER NORTHWEST

Shed

DSI STORMWATER SYSTEM

DSI SURFACE WATER CONVEYANCE SYSTEM

AML STORMWATER OUTFALL

OUTFALL 005

BULKHEAD

OUTFALL

150'

100'

100'

DUWAMISH WATERWAY

CHANNEL LIMIT

CHANNEL LIMIT

ASPHALT OVERLAID CONCRETE

CONCRETE

CONCRETE ON OLD WOOD DOCK

ASPHALT OVERLAID CONCRETE

CONCRETE AND WOOD PILES AREA

DRY DOCK WALKWAY

Legend

As-Built Storm Line and Direction of Flow

Top of Bank (TOB)

Subject Property Boundary

Topographic and Bathymetric Contours in Feet (MLLW)

Catch Basin Location

0 100

Scale in Feet

Notes:
1. Horizontal Datum: Washington State Plane, North, NAD-83 (Feet).
2. Vertical Datum: MLLW (Feet).

ANCHOR ENVIRONMENTAL, L.L.C.

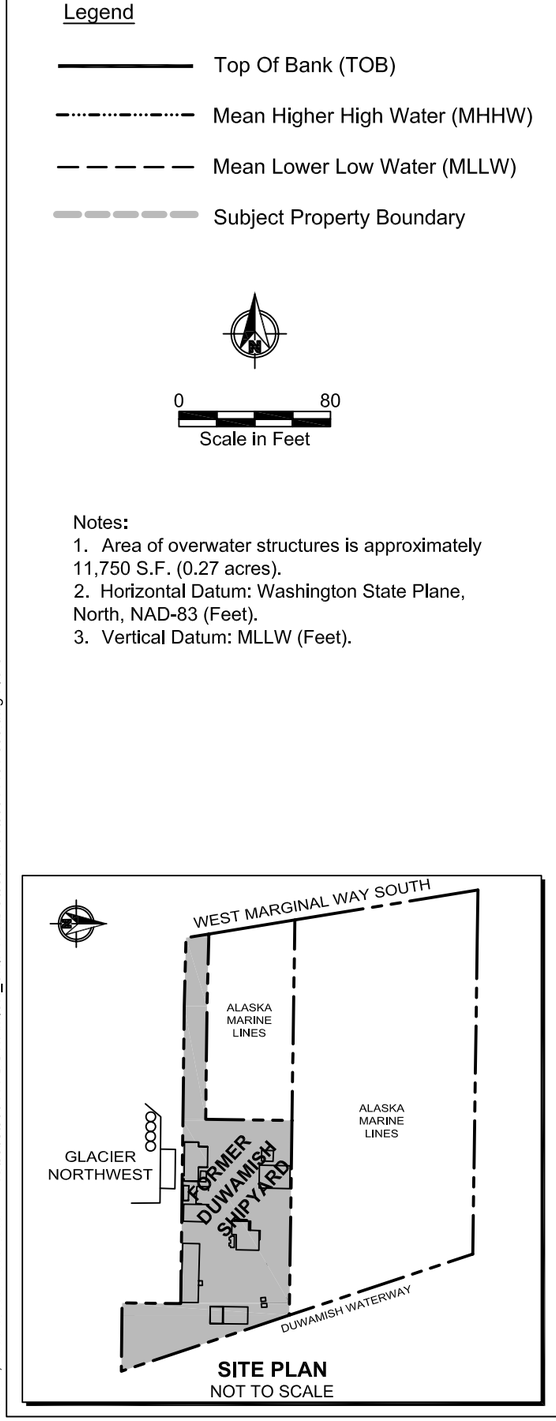
Figure 4
Existing Stormwater System
Duwamish Shipyard, Inc.
Seattle, Washington

Legend

- Top Of Bank (TOB)
- Mean Higher High Water (MHHW)
- Mean Lower Low Water (MLLW)
- Subject Property Boundary

0 80
Scale in Feet

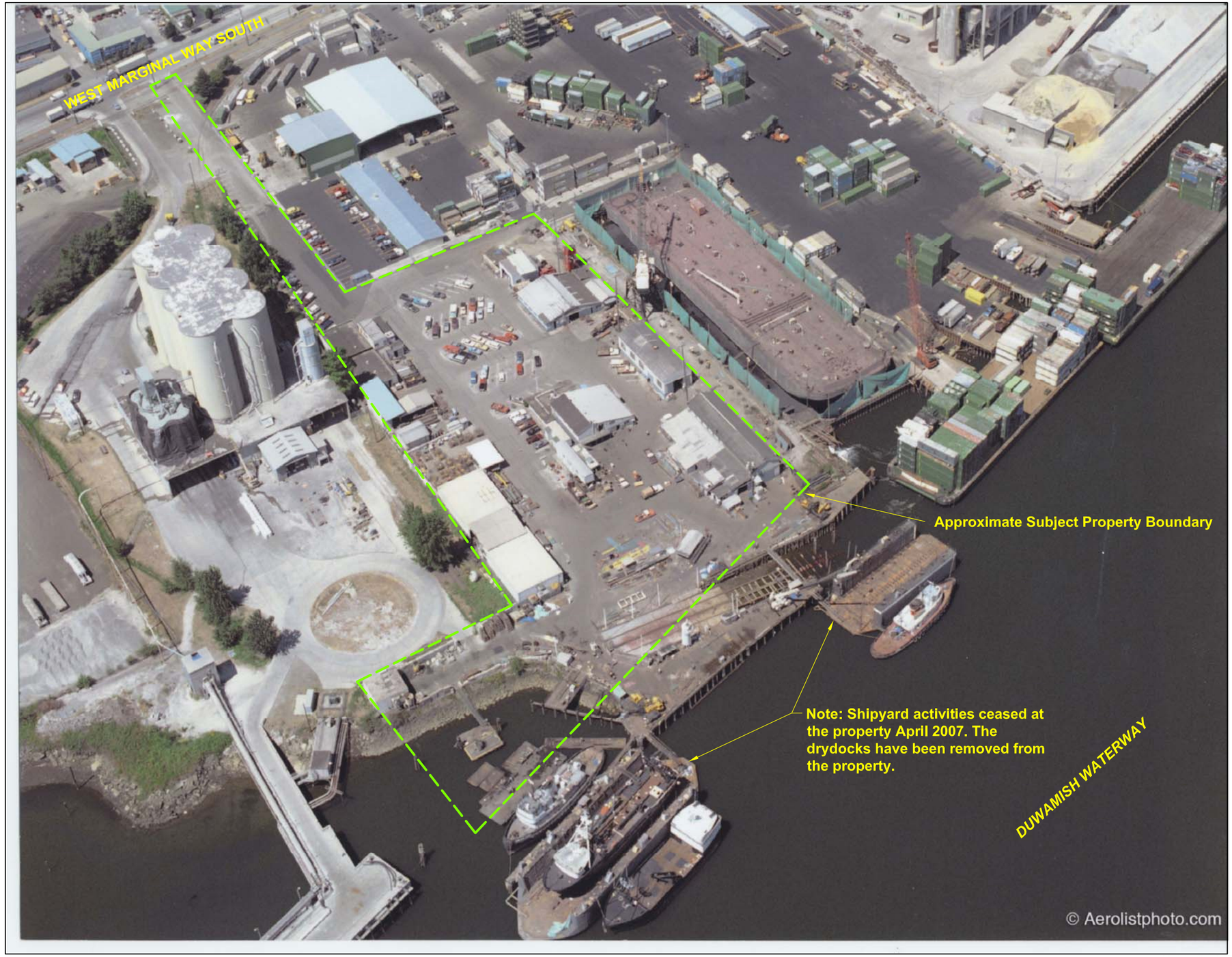
Notes:
1. Area of overwater structures is approximately 11,750 S.F. (0.27 acres).
2. Horizontal Datum: Washington State Plane, North, NAD-83 (Feet).
3. Vertical Datum: MLLW (Feet).



Jan 24, 2008 9:46am cdavidson K:\Jobs\000111-DUWAMISH_SHIPYARDS\000111010001110100011101-035.dwg FIG 5

ANCHOR ENVIRONMENTAL, L.L.C.

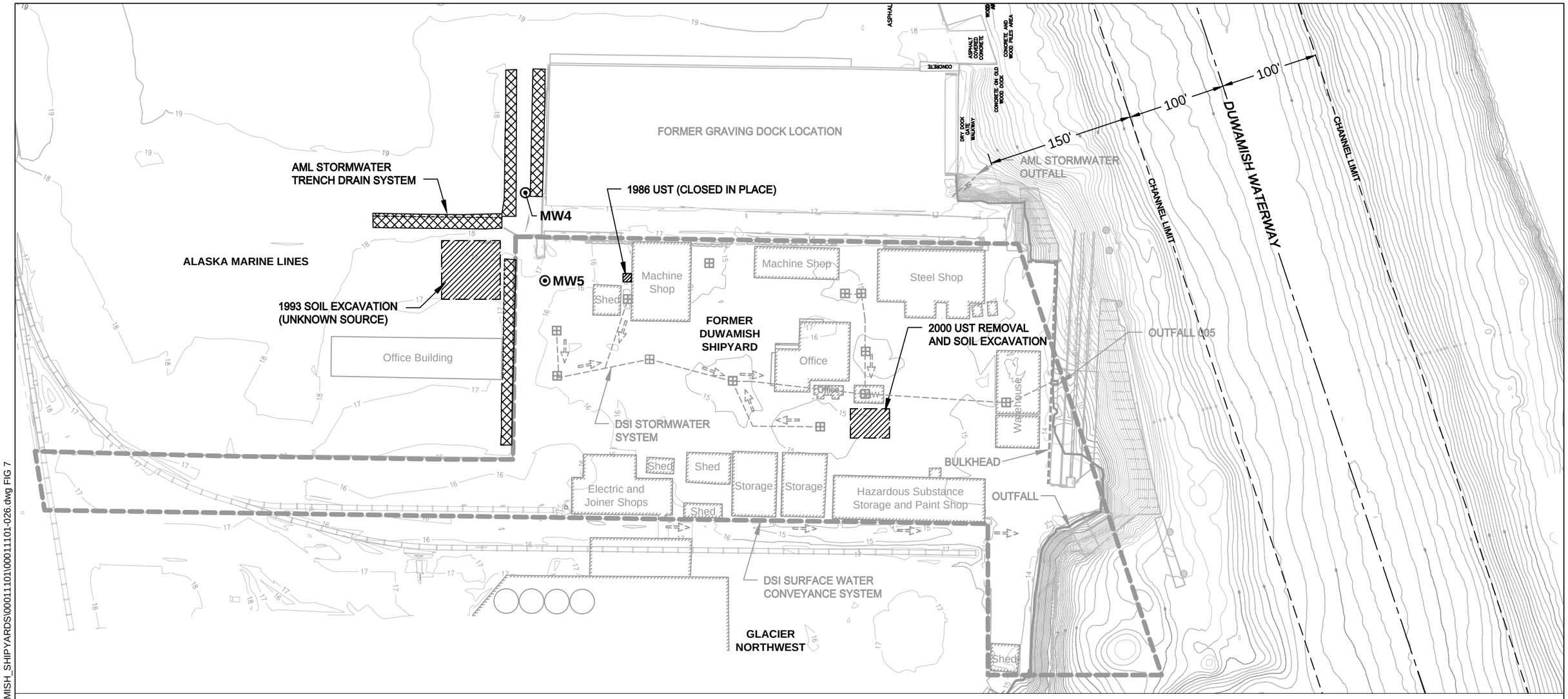
Figure 5
Existing Top of Bank with Structures
Duwamish Shipyard, Inc.
Seattle, Washington



Not to Scale

Figure 6
Oblique Aerial Photograph Showing Shoreline Structures - 1994
Duwamish Shipyard, Inc.
Seattle, Washington

ANCHOR ENVIRONMENTAL, L.L.C.



Legend

- As-Built Storm Line and Direction of Flow
- Top of Bank (TOB)
- Subject Property Boundary
- Topographic and Bathymetric Contours in Feet (MLLW)
- Catch Basin Location
- Independent Remedial Action Areas
- Trench Drain
- MW4 ⊙ Monitoring Well (Installed 1993 by Others)

0 100
Scale in Feet

Notes:
1. Location of underground structures has not been field verified with subsurface techniques such as cameras.
2. Horizontal Datum: Washington State Plane, North, NAD-83 (Feet).
3. Vertical Datum: MLLW (Feet).

Feb 07, 2008 1:06pm cdavidson K:\Jobs\000111-DUWAMISH_SHIPYARDS\000111101\000111101-026.dwg FIG 7

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 7
Independent Remedial Action Areas
Duwamish Shipyard, Inc.
Seattle, Washington

LDW-SS40
LDW-SS41
RM 1.2
LDW-SC23
DR025
LAFARGE
CHEMITHON
DR052
DR089
LDW-SS42
LDW-SS43
DR075
DR026
LDW-SC24
Duwamish Waterway
Channel Limit
Channel Limit
RM 1.3
DR027
LDW-SS44
DR064
ALASKA
MARINE
LINES
LDW-SS45
LDW-SS46
DR090
LDW-SS325
Former Graving Dock
-Filled in
LDW-SC25
DR054
LDW-SS47
SS-1
MW4
MW5
DSI09
LDW-SS48
B4b
DSI03
DSI16
DSI08
DSI04
DSI18
DSI13
DSI15
DSI19
LDW-SS326
RM 1.4
DSI14
DSI17
DSI21
DSI23
LDW-SS49
DSI02
DSI20
DSI07
LDW-SC26
LDW-SC27
LDW-SS50
Outfall 005
DSI05
DSI10
DR120
DSI06
DUWAMISH
SHIPYARD
DSI01
LDW-SS51
DSI11
LDW-SS52
LDW-SS53
LDW-SS54
DR121
DSI12
LDW-SC28
LDW-SS55
LDW-SSB5b
B5b
JHGSA-SD1-05-0010
JHGSA-SD1-COMP10-00
LDW-SS56
LDW-SC29
DR122
GLACIER
NORTHWEST
C4
62
LDW-SSB4a
B4a
DR091
RM 1.5
DR144
JHGSA-SD1-06-0010
LDW-SS57
JHGSA-SD1-COMP16-00
JHGSA-SD1-COMP22-00
61
LDW-SS58
DR124
DR126
DR161
JHGSA-SD1-02-0010
LDW-SS59
JHGSA-SD1-32-0010
LDW-SS60
80
LDW-SC30
DR092
PORT OF
SEATTLE
DR152
RM 1.6
DR127

- Surface Sediment and Toxicity Sampling Location
- Surface Sediment Sampling Location
- Subsurface Sediment Sampling Location
- Outfall
- Seep Sampling Station
- Catch Basin Sample
- Monitoring Well Sample
- Soil/Groundwater Sample
- Subject Property
- Lone Star 92 Dredging – 1992
- Glacier NW Dredging – 2005

J:\Jobs\000111-DSI\Maps\2008_09\Figure_8_upland_in-water.mxd NK 10/03/2008 11:04 AM

ANCHOR ENVIRONMENTAL, L.L.C.

0 100 200 400
Scale in Feet

1. Surface sediment data queried from the Lower Duwamish Water Group database (April 2007).
2. Outfall locations are approximate.
3. Glacier NW and Lone Star 92 dredging locations are approximate.
4. River Mile = RM.
5. Aerial Image 2002, pre-dates closure of Graving Dock

Figure 8
Upland and In-Water Sampling Stations
Duwamish Shipyard, Inc.
Seattle, Washington

J:\Jobs\000111-DSIM\Maps\2008_09\Figure_9_Surf_As.mxd NK 10/03/2008 11:05 AM

ANCHOR ENVIRONMENTAL, L.L.C.

0 100 200 400
Scale in Feet

1. Surface sediment data queried from the Lower Duwamish Water Group database (April 2007).
2. Sediment Quality Standard (SQS) = 57 mg/kg dry weight.
3. Cleanup Screening Level (CSL) = 93 mg/kg dry weight.
4. Outfall locations are approximate.
5. Glacier NW and Lone Star 92 dredging locations are approximate.
6. River Mile = RM.
7. Aerial Image 2002, pre-dates closure of Graving Dock

Figure 9
Surface Sediment Arsenic Sampling Stations and Concentrations
Duwamish Shipyard, Inc.
Seattle, Washington

Copper Surface Sediment Sampling Stations
- <CSL
- ≥CSL - 2 x CSL
- ≥2 x CSL - 3.6 x CSL
- Outfall
- Seep Sampling Station

Upland Copper Sampling Stations
- Catch Basin Sample
- Monitoring Well Sample
- Soil/Groundwater Sample
- Graving_Dock_Fill
- Subject Property
- Lone Star 92 Dredging – 1992
- Glacier NW Dredging – 2005

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ANCHOR ENVIRONMENTAL, L.L.C.

0 100 200 400
Scale in Feet

1. Surface sediment data queried from the Lower Duwamish Water Group database (April 2007).
2. Cleanup Screening Level (CSL) = 390 mg/kg dry weight.
3. Outfall locations are approximate.
4. Glacier NW and Lone Star 92 dredging locations are approximate.
5. River Mile = RM.
6. Aerial Image 2002, pre-dates closure of Graving Dock

Figure 10
Surface Sediment Copper Sampling Stations and Concentrations
Duwamish Shipyard, Inc.
Seattle, Washington

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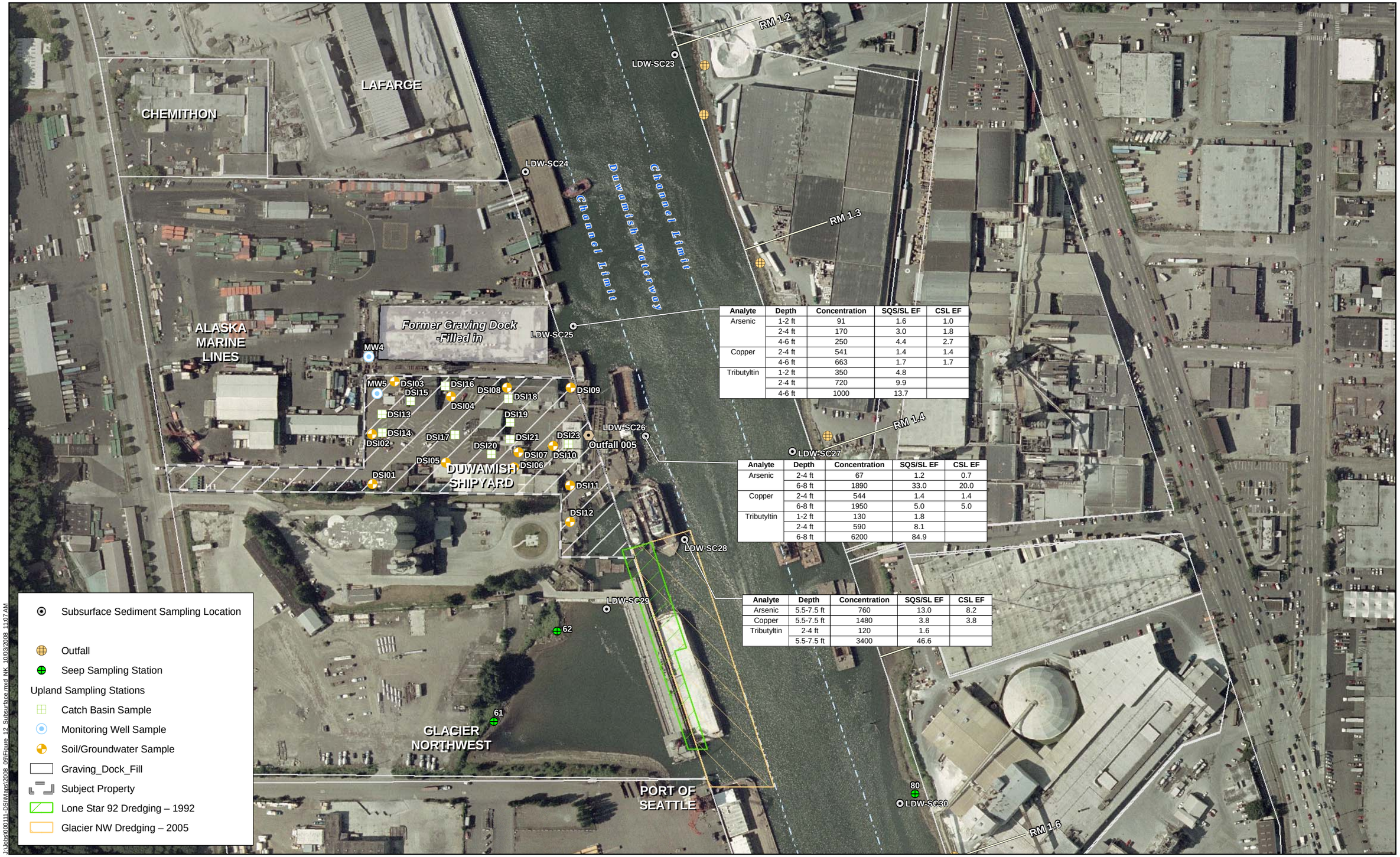
ANCHOR ENVIRONMENTAL, L.L.C.

0 100 200 400
Scale in Feet

1. Surface sediment data queried from the Lower Duwamish Water Group database (April 2007).
2. Former Puget Sound Dredge Disposal Act (PSDDA) screening level (SL) for Tributyltin (TBT) = 73 ug/kg dry weight as ion.
3. Outfall locations are approximate.
4. Glacier NW and Lone Star 92 dredging locations are approximate.
5. River Mile = RM.
6. Aerial Image 2002, pre-dates closure of Graving Dock

Figure 11
Surface Sediment Tributyltin Sampling Stations and Concentrations
Duwamish Shipyard, Inc.
Seattle, Washington



Analyte	Depth	Concentration	SQS/SL EF	CSL EF
Arsenic	1-2 ft	91	1.6	1.0
	2-4 ft	170	3.0	1.8
	4-6 ft	250	4.4	2.7
Copper	2-4 ft	541	1.4	1.4
	4-6 ft	663	1.7	1.7
Tributyltin	1-2 ft	350	4.8	
	2-4 ft	720	9.9	
	4-6 ft	1000	13.7	

Analyte	Depth	Concentration	SQS/SL EF	CSL EF
Arsenic	2-4 ft	67	1.2	0.7
	6-8 ft	1890	33.0	20.0
Copper	2-4 ft	544	1.4	1.4
	6-8 ft	1950	5.0	5.0
Tributyltin	1-2 ft	130	1.8	
	2-4 ft	590	8.1	
	6-8 ft	6200	84.9	

Analyte	Depth	Concentration	SQS/SL EF	CSL EF
Arsenic	5.5-7.5 ft	760	13.0	8.2
Copper	5.5-7.5 ft	1480	3.8	3.8
Tributyltin	2-4 ft	120	1.6	
	5.5-7.5 ft	3400	46.6	

- Subsurface Sediment Sampling Location
- Outfall
- Seep Sampling Station

Upland Sampling Stations

- Catch Basin Sample
- Monitoring Well Sample
- Soil/Groundwater Sample
- Graving_Dock_Fill
- Subject Property
- Lone Star 92 Dredging – 1992
- Glacier NW Dredging – 2005

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ANCHOR ENVIRONMENTAL, L.L.C.

0 100 200 400
Scale in Feet

1. Surface sediment data queried from the Lower Duwamish Water Group database (April 2007).
2. -Arsenic Sediment Quality Standard (SQS) = 390 mg/kg dry weight.
   -Arsenic Cleanup Screening Level (CSL) = 390 mg/kg dry weight.
   -Copper Cleanup Screening Level (CSL) = 390 mg/kg dry weight.
   -Copper Cleanup Screening Level (CSL) = 390 mg/kg dry weight.
   -Former Puget Sound Dredge Disposal Act (PSDDA) screening level (SL) for Tributyltin (TBT) = 73 ug/kg dry weight as ion.
3. Exceedance Factor (EF) = Concentration/Criteria.
4. Outfall locations are approximate.
5. Glacier NW and Lone Star 92 dredging locations are approximate.
6. River Mile = RM.
7. Aerial Image 2002, pre-dates closure of Graving Dock

Figure 12
Subsurface Sediment Arsenic, Copper, and TBT Concentrations
Duwamish Shipyard, Inc.
Seattle, Washington

Table 1
Summary of Year 2000 UST Removal Confirmation Sampling Exceedances

Sample ID	Constituent	Concentration (mg/kg)	MTCA Method A Industrial Cleanup Level (mg/kg)
B3	TPH-G	170	100
B4(1)	TPH-G	800	100
B1(2)	Benzene	0.7	0.5
SS-1	TPH-G	140	100
SS-3(2)	TPH-G	300	100

Notes:
mg/kg milligrams per kilogram
MTCA Model Toxics Control Act
TPH-G Total petroleum hydrocarbons – gasoline range

Table 2
Summary of Year 2006 Upland Property Investigation Sample Coordinates and Intervals

Station ID	Soil/Catch Basin Sample ID	Sample Interval (feet)		Groundwater Sample ID	Screened Sample Interval (feet)		Northing (feet)	Easting (feet)	Ground Surface Elevation
DSI01	DSI01-SO-A	0	3	DSI01-GW	0	10	204362.38	1267483.65	15.85
	DSI01-SO-B	4	6	-			204362.38	1267483.65	15.85
DSI02	DSI02-SO-A	0	3	DSI02-GW	-	-	204484.72	1267482.28	16.55
	DSI02-SO-B	3	5	-			204484.72	1267482.28	16.55
DSI03	DSI03-SO-A	0	3	DSI03-GW	0	10	204614.54	1267538.20	16.56
	DSI03-SO-B	5	6.5	-			204614.54	1267538.20	16.56
DSI04	DSI04-SO-A	0	3	DSI04-GW	0	10	204577.53	1267677.30	14.95
	DSI04-SO-B	3	5	-			204577.53	1267677.30	14.95
DSI05	DSI05-SO-A	0	3	DSI05-GW	0	10	204414.79	1267664.49	15.38
	DSI05-SO-B	3	5	-			204414.79	1267664.49	15.38
DSI06	DSI06-SO-A	0	3	DSI06-GW	0	10	204403.48	1267832.57	15.38
	DSI06-SO-B	4	6	-			204403.48	1267832.57	15.38
DSI07	DSI07-SO-A	0	3	DSI07-GW	0	10	204440.17	1267843.29	15.30
	DSI07-SO-B	3	5	-			204440.17	1267843.29	15.30
DSI08	DSI08-SO-A	0	3	DSI08-GW	0	10	204599.08	1267815.08	15.08
	DSI08-SO-B	3	5	-			204599.08	1267815.08	15.08
DSI09	DSI09-SO-A	0	3	DSI09-GW	0	10	204599.10	1267972.09	15.10
	DSI09-SO-B	3	5	-			204599.10	1267972.09	15.10
DSI10	DSI10-SO-A	0	3	DSI10-GW	0	10	204456.02	1267928.63	14.96
	DSI10-SO-B	3	5	-			204456.02	1267928.63	14.96
DSI11	DSI11-SO-A	0	3	DSI11-GW	0	10	204358.81	1267970.43	14.74
	DSI11-SO-B	3	5	-			204358.81	1267970.43	14.74
DSI12	DSI12-SO-A	0	3	DSI12-GW	0	10	204269.04	1267970.42	14.38
	DSI12-SO-B	3	5	-			204269.04	1267970.42	14.38
DSI13	DSI13-CB-YYMMDD	-	-	-	-	-	204534.18	1267506.84	15.60
DSI14	DSI14-CB-YYMMDD	-	-	-	-	-	204487.92	1267507.37	15.31
DSI15	DSI15-CB-YYMMDD	-	-	-	-	-	204566.32	1267577.87	14.60
DSI16	DSI16-CB-YYMMDD	-	-	-	-	-	204603.21	1267662.99	14.75
DSI17	DSI17-CB-YYMMDD	-	-	-	-	-	204482.78	1267687.03	14.66
DSI18	DSI18-CB-YYMMDD	-	-	-	-	-	204572.22	1267818.66	14.97
DSI19	DSI19-CB-YYMMDD	-	-	-	-	-	204512.92	1267823.23	14.49
DSI20	DSI20-CB-YYMMDD	-	-	-	-	-	204435.85	1267776.70	14.43
DSI21	DSI21-CB-YYMMDD	-	-	-	-	-	204471.91	1267822.86	15.23
DSI22	DSI22-CB-YYMMDD	0	1.5	-	-	-	204481.19	1268018.19	-
DSI23	DSI23-CB-YYMMDD	-	-	-	-	-	204460.68	1267966.97	14.59
MW-4	-	-	-	MW4-GW-YYMMDD	5	17	204675.26	1267474.81	20.09
MW-5	-	-	-	MW5-GW-YYMMDD	11	16	204585.26	1267494.81	16.49

Notes:

Northing and Easting coordinates are referenced to the Washington State Coordinate System, North Zone in U.S. Survey feet

Ground surface elevation coordinates are referenced to mean lower low water (MLLW) in feet.

Table 3
Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels

Location ID / Sample ID / Sample Date / Depth Interval		MTCA A Industrial	DSI-01 DSI01-SO-A 9/27/2006 0-3 ft	DSI-01 DSI01-SO-B 9/27/2006 4-6 ft	DSI-02 DSI02-SO-A 9/27/2006 0-3 ft	DSI-02 DSI02-SO-B 9/27/2006 3-5 ft	DSI-03 DSI03-SO-A 9/27/2006 0-3 ft	DSI-03 DSI03-SO-B 9/27/2006 5-6.5 ft	DSI-04 DSI04-SO-A 9/27/2006 0-3 ft	DSI-04 DSI04-SO-B 9/27/2006 3-5 ft	DSI-05 DSI05-SO-A 9/27/2006 0-3 ft	DSI-05 DSI05-SO-B 9/27/2006 3-5 ft	DSI-06 DSI06-SO-A 9/27/2006 0-3 ft	DSI-06 DSI06-SO-B 9/27/2006 4-6 ft	DSI-07 DSI07-SO-A 9/28/2006 0-3 ft	DSI-07 DSI07-SO-B 9/28/2006 3-5 ft
Conventionals (%)																
	Total solids	--	**88.40**	**80.20**	**96.10**	**78.60**	**96.10**	**89.40**	**74.30**	**87.60**	**76.70**	**88.90**	**78.40**	**90.20**	**74.10**	**95.50**
	Total Organic Carbon	--	**1.11**	**0.384**	**0.305**	**0.698**	**0.325**	**0.781**	**0.579**	**0.084**	**1.07**	**0.226**	**1.37**	**0.308**	**1.05**	**0.097**
TPH (mg/kg)																
	TPH - Gasoline Range	30/100[(1)]	5.3 U	6.3 U	4.8 U	**22**	**92**	**110**	**20**	6.4 U	**16**	**8.4**	**120**	**13**	**74**	**36**
	TPH - Diesel Range	2000	**65**	**12**	**15**	**66**	**61**	**380**	**40**	5.5 U	**46**	5.7 U	**2700**	**2200**	**16**	**20**
	TPH - Motor Oil Range	2000	**140**	**33**	**170**	**130**	**110**	**310**	**100**	11 U	**160**	11 U	**260**	**190**	**29**	**18**
Metals (mg/kg)																
	Arsenic	20	**48.1 J**	**3.5**	**18.9**	**5.8**	**7.1**	**10.4**	**6.4**	**1.1**	**7.1**	**1.3**	**7.0**	**2.2**	**4.3 J**	**1.6**
	Cadmium	2	**0.4**	**0.2**	2 U	**0.3**	1 U	**0.5**	**0.5**	0.2 U	**0.6**	0.2 U	**0.3**	0.2 U	0.3 U	0.2 U
	Chromium	2000	**20.4**	**15.9**	**5**	**21.7**	**61**	**34**	**27.2**	**10.4**	**21.1**	**11.0**	**20.0**	**15.2**	**19.6**	**25.9**
	Chromium VI	19	0.125 UJ	0.135 UJ	0.116 UJ	0.140 UJ	0.111 UJ	0.126 UJ	0.151 UJ	0.127 UJ	0.142 UJ	0.127 UJ	0.143 UJ	0.120 UJ	0.150 UJ	0.115 UJ
	Copper	--	**103 J**	**20.4**	**55**	**33.6**	**539**	**238**	**45.9**	**9.0**	**122**	**11.9**	**37.1**	**18.2**	**52.1 J**	**10.3**
	Lead	1000	**36 J**	**6**	20 U	**32**	**460**	**94**	**14**	2 U	**78**	**3**	**14**	**6**	**11 J**	**3**
	Mercury	2	**0.09**	0.05 U	**0.05**	**0.20**	0.05 U	0.05 U	**0.15**	0.04 U	**0.27**	0.04 U	**0.14**	0.05 U	**0.72 J**	0.04 U
	Silver	--	0.3 U	0.3 U	3 U	0.4 U	2 U	0.8 U	0.4 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U	0.4 U	0.3 U
	Zinc	--	**192**	**36.8**	**57**	**57.7**	**129**	**160**	**85.4**	**21.9**	**127**	**26.4**	**57.5**	**33.6**	**53.2**	**29.1**
Pesticides (µg/kg)																
	4,4'-DDD	--	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	**28**	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
	4,4'-DDE	--	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
	4,4'-DDT	4000	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
	Total DDT (U=1/2)	--	4.95 U	4.8 U	4.8 U	4.95 U	4.8 U	4.8 U	4.8 U	4.65 U	**31.1**	4.8 U	4.8 U	4.95 U	4.8 U	4.8 U
	Aldrin	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	alpha-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	beta-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	delta-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	gamma-BHC (Lindane)	10	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	alpha-Chlordane	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	gamma-Chlordane	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	Dieldrin	--	3.3 U	3.2 U	3.2 U	3.3 U	8.5 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
	Endosulfan I	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	Endosulfan II	--	3.3 U	3.2 U	3.2 U	3.3 U	9.9 U	7.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
	Endosulfan Sulfate	--	3.3 U	3.2 U	3.2 U	3.3 U	15 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
	Endrin	--	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
	Endrin aldehyde	--	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
	Endrin ketone	--	3.3 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U	3.2 U	3.1 U	3.1 U	3.2 U	3.2 U	3.3 U	3.2 U	3.2 U
	Heptachlor	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	Heptachlor Epoxide	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	Methoxychlor	--	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	17 U	16 U	16 U
	Toxaphene	--	160 U	160 U	160 U	160 U	160 U	160 U	160 U	160 U	160 U	160 U	160 U	170 U	160 U	160 U
PCBs (µg/kg)																
	Aroclor 1016	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	9.8 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
	Aroclor 1221	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	9.8 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
	Aroclor 1232	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	9.8 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
	Aroclor 1242	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	9.8 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
	Aroclor 1248	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	9.8 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
	Aroclor 1254	--	9.8 U	9.8 U	9.7 U	9.7 U	48 U	9.5 U	9.6 U	9.5 U	39 U	9.6 U	9.7 U	9.7 U	9.7 U	9.6 U
	Aroclor 1260	--	**43 J**	**10 J**	9.7 UJ	9.7 UJ	**300 J**	**94 J**	9.6 UJ	9.5 UJ	**46 J**	9.6 UJ	9.7 UJ	9.7 UJ	9.7 U	9.6 U
	Total PCBs (U=1/2)	10000	**72.4**	**39.4**	34 U	34 U	**444**	**122**	33.6 U	33.2 U	**90**	33.6 U	34 U	34 U	34 U	33.6 U
SVOCs (µg/kg)																
	1,2,3-Trichlorobenzene	--	4.6 U	5.6 U	4.8 U	5.2 U	5.2 U	4.6 U	6.5 U	5.6 U	6.4 UJ	6.4 U	470 U	5.5 U	6.1 U	6.2 U
	1,2,4-Trichlorobenzene	--	4.6 U	5.6 U	4.8 U	5.2 U	5.2 U	4.6 U	6.5 U	5.6 U	6.4 UJ	6.4 U	470 U	5.5 U	6.1 U	6.2 U

Table 3
Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels

Location ID / Sample ID / Sample Date / Depth Interval		MTCA A Industrial	DSI-01 DSI01-SO-A 9/27/2006 0-3 ft	DSI-01 DSI01-SO-B 9/27/2006 4-6 ft	DSI-02 DSI02-SO-A 9/27/2006 0-3 ft	DSI-02 DSI02-SO-B 9/27/2006 3-5 ft	DSI-03 DSI03-SO-A 9/27/2006 0-3 ft	DSI-03 DSI03-SO-B 9/27/2006 5-6.5 ft	DSI-04 DSI04-SO-A 9/27/2006 0-3 ft	DSI-04 DSI04-SO-B 9/27/2006 3-5 ft	DSI-05 DSI05-SO-A 9/27/2006 0-3 ft	DSI-05 DSI05-SO-B 9/27/2006 3-5 ft	DSI-06 DSI06-SO-A 9/27/2006 0-3 ft	DSI-06 DSI06-SO-B 9/27/2006 4-6 ft	DSI-07 DSI07-SO-A 9/28/2006 0-3 ft	DSI-07 DSI07-SO-B 9/28/2006 3-5 ft
	1,2,4-Trimethylbenzene	--	0.9 U	1.1 U	**3.8**	**100**	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	**120**	1.1 U	**3200**	**51**
	1,2-Dichlorobenzene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,3,5-Trimethylbenzene	--	0.9 U	1.1 U	**1.2**	**39**	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	**80**	**15**
	1,3-Dichlorobenzene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,4-Dichlorobenzene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	2,4-Dimethylphenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Methylnaphthalene	--	**19**	5.0 U	**4.7**	**98**	4.7 U	**40**	**16**	5.0 U	**26**	4.7 U	**33**	27 U	**22**	**66**
	2-Methylphenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Methylphenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Acenaphthene	--	**5.8**	5.0 U	4.7 U	**120**	**5.6**	4.7 U	5.0 U	5.0 U	4.9 U	4.7 U	30 U	27 U	5.0 U	**9.9**
	Acenaphthylene	--	**9.1**	5.0 U	4.7 U	4.8 U	4.7 U	4.7 U	5.0 U	5.0 U	**6.4**	4.7 U	30 U	**48**	5.0 U	5.0 U
	Anthracene	--	**44**	**8.4**	4.7 U	**100**	**5.1**	**8.5**	**5.9**	5.0 U	**12**	4.7 U	30 U	27 U	**5.5**	**7.9**
	Benzo(a)anthracene	--	**64**	**9.9**	4.7 U	**110**	**9.8**	**11**	**14**	5.0 U	**28**	4.7 U	**30**	**43**	**14**	**6.4**
	Benzo(a)pyrene	2000	**56**	**9.4**	**5.7**	**110**	**10**	**12**	**8.4**	5.0 U	**29**	4.7 U	**39**	**99**	**11**	**5.9**
	Benzo(b)fluoranthene	--	**120**	**15**	**11**	**72**	**12**	**21**	**16**	5.0 U	**48**	4.7 U	**57**	**91**	**16**	**5.9**
	Benzo(g,h,i)perylene	--	**65**	**9.4**	**5.7**	**38**	**7.0**	**5.2**	5.0 U	5.0 U	**13**	4.7 U	30 U	**54**	**9.5**	5.0 U
	Benzo(k)fluoranthene	--	**74**	**17**	**9.4**	**90 J**	**14**	**15**	**13**	5.0 U	**28**	4.7 U	**54**	**94**	**14**	5.0 U
	Benzoic acid	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Benzyl alcohol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(2-Ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Butylbenzylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chrysene	--	**130**	**22**	**10**	**140 J**	**17**	**31**	**25**	5.0 U	**50**	4.7 U	**78**	**120**	**22**	**6.9**
	Dibenzo(a,h)anthracene	--	**18**	5.0 U	4.7 U	**12**	4.7 U	4.7 U	5.0 U	5.0 U	4.9 U	4.7 U	30 U	27 U	5.0 U	5.0 U
	Dibenzofuran	--	**12**	5.0 U	4.7 U	**56**	4.7 U	**9.4**	**5.4**	5.0 U	**16**	4.7 U	30 U	27 U	5.0 U	5.0 U
	Diethylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Dimethylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Di-n-octylphthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Fluoranthene	--	**170**	**36**	**11**	**270**	**26**	**38**	**40**	5.0 U	**96**	4.7 U	**120**	**120**	**45**	**15**
	Fluorene	--	**11**	5.0 U	4.7 U	**120**	**5.1**	**19**	5.0 U	5.0 U	**6.9**	4.7 U	30 U	**27**	5.0 U	**14**
	Hexachlorobenzene	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	Hexachlorobutadiene	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U
	Hexachloroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Indeno(1,2,3-cd)pyrene	--	**54**	**8.9**	4.7 U	**37**	**5.6**	4.7 U	**5.4**	5.0 U	**13**	4.7 U	30 U	**48**	**7.0**	5.0 U
	Naphthalene	5000	**24**	**5.0**	**5.2**	**180**	**6.5**	**12**	**13**	5.0 U	**53**	4.7 U	**57**	**27**	**69**	**47**
	n-Nitrosodiphenylamine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pentachlorophenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phenanthrene	--	**68**	**14**	**7.6**	**410 J**	**27**	**100**	**24**	5.0 U	**91**	4.7 U	**90**	**80**	**25**	**13**
	Phenol	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pyrene	--	**140**	**29**	**10**	**280**	**21**	**37**	**33**	5.0 U	**72**	4.7 U	**160**	**320**	**34**	**21**
	Total PAHs (U=1/2)	--	**1053**	**194**	**92**	**2091**	**176**	**319**	**210**	40 U	**551**	37.6 U	**790**	**1212**	**282**	**165**
Volatiles (µg/kg)																
	1,1,1,2-Tetrachloroethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,1,1-Trichloroethane	2000	**13**	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,1,2,2-Tetrachloroethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,1,2-Trichloroethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,1-Dichloroethane	--	**10**	**7.9**	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,1-Dichloroethene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,1-Dichloropropene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,2,3-Trichloropropane	--	1.8 U	2.2 U	1.9 U	2.1 U	2.1 U	1.8 U	2.6 U	2.2 U	2.5 UJ	2.6 U	190 U	2.2 U	2.4 U	2.5 U
	1,2-Dibromo-3-chloropropane	--	4.6 U	5.6 U	4.8 U	5.2 U	5.2 U	4.6 U	6.5 U	5.6 U	6.4 UJ	6.4 U	470 U	5.5 U	6.1 U	6.2 U
	1,2-Dibromoethane	5	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U

Table 3
Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels

	Location ID Sample ID Sample Date Depth Interval	MTCA A Industrial	DSI-01 DSI01-SO-A 9/27/2006 0-3 ft	DSI-01 DSI01-SO-B 9/27/2006 4-6 ft	DSI-02 DSI02-SO-A 9/27/2006 0-3 ft	DSI-02 DSI02-SO-B 9/27/2006 3-5 ft	DSI-03 DSI03-SO-A 9/27/2006 0-3 ft	DSI-03 DSI03-SO-B 9/27/2006 5-6.5 ft	DSI-04 DSI04-SO-A 9/27/2006 0-3 ft	DSI-04 DSI04-SO-B 9/27/2006 3-5 ft	DSI-05 DSI05-SO-A 9/27/2006 0-3 ft	DSI-05 DSI05-SO-B 9/27/2006 3-5 ft	DSI-06 DSI06-SO-A 9/27/2006 0-3 ft	DSI-06 DSI06-SO-B 9/27/2006 4-6 ft	DSI-07 DSI07-SO-A 9/28/2006 0-3 ft	DSI-07 DSI07-SO-B 9/28/2006 3-5 ft
	1,2-Dichloroethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,2-Dichloropropane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	1,3-Dichloropropane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	2,2-Dichloropropane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	2-Butanone	--	**11**	**12**	**5.2**	**18**	**11**	**5.2**	**9.2**	5.6 U	6.4 U	**10**	**780**	**13**	**27**	**16**
	2-Chlorotoluene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	2-Hexanone	--	4.6 U	5.6 U	4.8 U	5.2 U	5.2 U	4.6 U	6.5 U	5.6 U	6.4 U	6.4 U	470 U	5.5 U	6.1 U	6.2 U
	4-Chlorotoluene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	4-Isopropyltoluene	--	0.9 U	1.1 U	1.0 U	**6.0**	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	**1.3**
	4-Methyl-2-pentanone	--	4.6 U	5.6 U	4.8 U	5.2 U	5.2 U	4.6 U	6.5 U	5.6 U	6.4 U	6.4 U	470 U	5.5 U	6.1 U	6.2 U
	Acetone	--	**77**	**70**	**83**	**160**	**85**	41 U	**66**	29 U	51 U	**90**	**6500**	**92**	6.1 U	**110**
	Benzene	30	0.9 U	**1.2**	1.0 U	**2.0**	1.0 U	0.9 U	**1.6**	1.1 U	**1.8**	1.3 U	**260**	**1.7**	**50**	**6.0**
	Bromobenzene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Bromochloromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Bromodichloromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Bromoform	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Bromomethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Carbon disulfide	--	**1.8**	**11**	**1.2**	**4.9**	**1.4**	**1.2**	**8.6**	1.1 U	1.3 U	**17**	93 U	**30**	**3.3**	**10**
	Carbon tetrachloride	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Chloroethane	--	**1.5**	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Chloroform	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Chloromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	cis-1,2-Dichloroethene	--	0.9 U	**2.2**	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	cis-1,3-Dichloropropene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Dibromochloromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Dibromomethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Dichlorodifluoromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Dichloromethane	20	2.1 U	2.6 U	1.9 U	2.1 U	2.1 U	1.8 U	2.6 U	2.2 U	2.5 U	2.6 U	190 U	2.5 U	**2.6**	2.5 U
	Ethylbenzene	6000	0.9 U	1.1 U	1.0 U	**6.0**	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	**60**	**7.4**
	Isopropylbenzene	--	0.9 U	1.1 U	1.0 U	**19**	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	**34**	**5.0**
	n-Butylbenzene	--	0.9 U	1.1 U	1.0 U	**4.4**	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	**22**	**20**
	n-Propylbenzene	--	0.9 U	1.1 U	1.0 U	**9.9**	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	**120**	**28**
	sec-Butylbenzene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	**5.4**
	Styrene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	tert-Butylbenzene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 UJ	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	tert-Butylmethylether	100	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Tetrachloroethene	50	**3.7**	**1.3**	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Toluene	7000	0.9 U	1.1 U	**1.8**	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	**5.5**	1.2 U
	trans-1,2-Dichloroethene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	trans-1,3-Dichloropropene	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Trichloroethene	30	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Trichlorofluoromethane	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	Vinyl chloride	--	0.9 U	1.1 U	1.0 U	1.0 U	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	93 U	1.1 U	1.2 U	1.2 U
	m,p-Xylenes	--	0.9 U	1.1 U	**3.6**	**47**	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	**290**	**1.5**	**160**	**13**
	o-Xylene	--	0.9 U	1.1 U	**1.8**	**26**	1.0 U	0.9 U	1.3 U	1.1 U	1.3 U	1.3 U	**100**	1.1 U	**5.1**	1.2 U

Table 3
Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels

Location ID / Sample ID / Sample Date / Depth Interval		MTCA A Industrial	DSI-08 DSI08-SO-A 9/28/2006 0-3 ft	DSI-08 DSI08-SO-B 9/28/2006 3-5 ft	DSI-09 DSI09-SO-A 9/28/2006 0-3 ft	DSI-09 DSI09-SO-B 9/28/2006 3-5 ft	DSI-10 DSI10-SO-A 9/28/2006 0-3 ft	DSI-10 DSI10-SO-B 9/28/2006 3-5 ft	DSI-11 DSI11-SO-A 9/28/2006 0-3 ft	DSI-11 DSI11-SO-B 9/28/2006 3-5 ft	DSI-12 DSI12-SO-A 9/28/2006 0-3 ft	DSI-12 DSI12-SO-B 9/28/2006 3-5 ft
Conventionals (%)												
	Total solids	--	**70.40**	**92.90**	**92.60**	**89.60**	**69.70**	**95.30**	**76.10**	**93.70**	**87.70**	**86.70**
	Total Organic Carbon	--	**0.661**	**0.133**	**0.939**	**2.35**	**1.30**	**0.147**	**1.34**	**0.099**	**1.25**	**1.12**
TPH (mg/kg)												
	TPH - Gasoline Range	30/100[(1)]	8.8 U	6.7 U	**14**	**200**	8.3 U	6.0 U	**8.0**	5.9 U	6.6 U	**27**
	TPH - Diesel Range	2000	6.7 U	5.4 U	**42**	**56**	**16**	5.2 U	**120**	5.5 U	**88**	**170**
	TPH - Motor Oil Range	2000	**21**	11 U	**87**	**110**	**39**	10 U	**180**	11 U	**130**	**240**
Metals (mg/kg)												
	Arsenic	20	**4.8**	**0.7**	**3.7**	**20.2**	**6.2**	**1.9**	**4.4**	**1.4**	**17.1**	**3.3**
	Cadmium	2	0.3 U	0.2 U	**0.3**	**8.5**	0.3 U	0.2 U	**0.3**	0.2 U	**0.2**	0.2 U
	Chromium	2000	**17.7**	**9.7**	**17.4**	**36**	**20.2**	**14.2**	**17.1**	**11.4**	**20.1**	**15.5**
	Chromium VI	19	0.160 UJ	0.116 UJ	0.117 UJ	0.124 UJ	0.157 UJ	0.117 UJ	**2.05 J**	0.120 UJ	0.125 UJ	0.123 UJ
	Copper	--	**31.0**	**8.5**	**65.9**	**3310**	**29.0**	**8.8**	**49.0**	**8.4**	**34.2**	**18.1**
	Lead	1000	**11**	2 U	**118**	**4940**	**8**	**11**	**92**	2 U	**20**	**6**
	Mercury	2	**0.10**	0.05 U	**0.31**	**0.18**	**0.11**	0.04 U	**0.76**	0.04 U	**0.08**	0.05 U
	Silver	--	0.4 U	0.3 U	0.3 U	**1.2**	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U
	Zinc	--	**52.3**	**30.5**	**115**	**5840**	**43.7**	**25.2**	**78.3**	**23.0**	**77.4**	**36.8**
Pesticides (µg/kg)												
	4,4'-DDD	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	3.3 U
	4,4'-DDE	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	3.3 U
	4,4'-DDT	4000	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	12 U
	Total DDT (U=1/2)	--	4.8 U	4.8 U	4.8 U	4.95 U	4.95 U	4.95 U	4.8 U	4.95 U	4.95 U	9.3 U
	Aldrin	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
	alpha-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
	beta-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	4.0 U	3.1 U
	delta-BHC	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
	gamma-BHC (Lindane)	10	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
	alpha-Chlordane	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
	gamma-Chlordane	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
	Dieldrin	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	3.3 U
	Endosulfan I	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
	Endosulfan II	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	3.3 U
	Endosulfan Sulfate	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	19 U	21 U
	Endrin	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	14 U	17 U
	Endrin aldehyde	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	3.3 U	3.3 U
	Endrin ketone	--	3.2 U	3.2 U	3.2 U	3.3 U	3.3 U	3.3 U	3.2 U	3.3 UJ	15 U	16 U
	Heptachlor	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
	Heptachlor Epoxide	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	3.8 U
	Methoxychlor	--	16 U	16 U	16 U	16 U	16 U	17 U	16 U	16 UJ	16 U	16 U
	Toxaphene	--	160 U	160 U	160 U	160 U	160 U	170 U	160 U	160 UJ	160 U	160 U
PCBs (µg/kg)												
	Aroclor 1016	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
	Aroclor 1221	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
	Aroclor 1232	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
	Aroclor 1242	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
	Aroclor 1248	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
	Aroclor 1254	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	9.8 U	9.9 U	29 U	29 U
	Aroclor 1260	--	9.8 U	9.5 U	9.6 U	9.8 U	9.8 U	9.4 U	**35**	9.9 U	29 U	29 U
	Total PCBs (U=1/2)	10000	34.3 U	33.2 U	33.6 U	34.3 U	34.3 U	32.9 U	**64.4**	34.6 U	102 U	102 U
SVOCs (µg/kg)												
	1,2,3-Trichlorobenzene	--	6.4 U	5.7 U	5.2 U	5.0 UJ-	6.0 U	5.1 U	5.6 U	5.3 U	4.9 U	5.4 U
	1,2,4-Trichlorobenzene	--	6.4 U	5.7 U	5.2 U	5.0 UJ-	6.0 U	5.1 U	5.6 U	5.3 U	4.9 U	5.4 U

Table 3
Summary of Year 2006 Investigation Analytical Results for Soil Samples and Comparison with MTCA Method A Cleanup Levels

	Location ID Sample ID Sample Date Depth Interval	MTCA A Industrial	DSI-08 DSI08-SO-A 9/28/2006 0-3 ft	DSI-08 DSI08-SO-B 9/28/2006 3-5 ft	DSI-09 DSI09-SO-A 9/28/2006 0-3 ft	DSI-09 DSI09-SO-B 9/28/2006 3-5 ft	DSI-10 DSI10-SO-A 9/28/2006 0-3 ft	DSI-10 DSI10-SO-B 9/28/2006 3-5 ft	DSI-11 DSI11-SO-A 9/28/2006 0-3 ft	DSI-11 DSI11-SO-B 9/28/2006 3-5 ft	DSI-12 DSI12-SO-A 9/28/2006 0-3 ft	DSI-12 DSI12-SO-B 9/28/2006 3-5 ft
	1,2,4-Trimethylbenzene	--	1.3 U	1.2 U	1.0 U	**1.4 J-**	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,2-Dichlorobenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,3,5-Trimethylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,3-Dichlorobenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,4-Dichlorobenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	2,4-Dimethylphenol	--	--	--	--	--	--	--	--	--	--	--
	2-Methylnaphthalene	--	**5.0**	4.9 U	**47**	**34**	**7.8**	5.0 U	**19**	4.8 U	**230**	**300**
	2-Methylphenol	--	--	--	--	--	--	--	--	--	--	--
	4-Methylphenol	--	--	--	--	--	--	--	--	--	--	--
	Acenaphthene	--	5.0 U	4.9 U	**82**	**30**	4.8 U	5.0 U	**6.9**	4.8 U	37 U	**45**
	Acenaphthylene	--	5.0 U	4.9 U	**14**	**5.4**	4.8 U	5.0 U	**14**	4.8 U	**880**	**1700**
	Anthracene	--	5.0 U	4.9 U	**87**	**19**	**11**	5.0 U	**18**	4.8 U	**290**	**450**
	Benzo(a)anthracene	--	**12**	4.9 U	**160**	**27**	**18**	5.0 U	**54**	4.8 U	**1800**	**3600**
	Benzo(a)pyrene	2000	**12**	4.9 U	**180**	**23**	**15**	5.0 U	**61**	4.8 U	**3000**	**7900**
	Benzo(b)fluoranthene	--	**18**	4.9 U	**240**	**35**	**20**	5.0 U	**73**	4.8 U	**1700**	**3400**
	Benzo(g,h,i)perylene	--	**8.4**	4.9 U	**110**	**9.9**	**6.3**	5.0 U	**37**	4.8 U	**1300**	**2900**
	Benzo(k)fluoranthene	--	**13**	4.9 U	**230**	**26**	**18**	5.0 U	**67**	4.8 U	**2100**	**5600**
	Benzoic acid	--	--	--	--	--	--	--	--	--	--	--
	Benzyl alcohol	--	--	--	--	--	--	--	--	--	--	--
	bis(2-Ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--
	Butylbenzylphthalate	--	--	--	--	--	--	--	--	--	--	--
	Chrysene	--	**22**	4.9 U	**280**	**54**	**23**	5.0 U	**87**	4.8 U	**3000**	**7500**
	Dibenzo(a,h)anthracene	--	5.0 U	4.9 U	**38**	5.0 U	4.8 U	5.0 U	**8.4**	4.8 U	**390**	**900**
	Dibenzofuran	--	5.0 U	4.9 U	**32**	**18**	**6.8**	5.0 U	**7.9**	4.8 U	37 U	38 U
	Diethylphthalate	--	--	--	--	--	--	--	--	--	--	--
	Dimethylphthalate	--	--	--	--	--	--	--	--	--	--	--
	Di-n-butylphthalate	--	--	--	--	--	--	--	--	--	--	--
	Di-n-octylphthalate	--	--	--	--	--	--	--	--	--	--	--
	Fluoranthene	--	**37**	4.9 U	**480**	**91**	**61**	5.0 U	**120**	4.8 U	**2500**	**6000**
	Fluorene	--	5.0 U	4.9 U	**88**	**35**	**7.3**	5.0 U	**7.9**	4.8 U	**67**	**53**
	Hexachlorobenzene	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
	Hexachlorobutadiene	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U
	Hexachloroethane	--	--	--	--	--	--	--	--	--	--	--
	Indeno(1,2,3-cd)pyrene	--	**7.4**	4.9 U	**110**	**9.4**	**6.3**	5.0 U	**35**	4.8 U	**1200**	**2700**
	Naphthalene	5000	5.0 U	4.9 U	**74**	**58**	**7.3**	5.0 U	**24**	4.8 U	**340**	**470**
	n-Nitrosodiphenylamine	--	--	--	--	--	--	--	--	--	--	--
	Pentachlorophenol	--	--	--	--	--	--	--	--	--	--	--
	Phenanthrene	--	**26**	4.9 U	**370**	**140**	**27**	5.0 U	**54**	4.8 U	**510**	**640**
	Phenol	--	--	--	--	--	--	--	--	--	--	--
	Pyrene	--	**32**	4.9 U	**400**	**110**	**51**	5.0 U	**120**	4.8 U	**4000**	**10000**
	Total PAHs (U=1/2)	--	**203**	39.2 U	**2943**	**675**	**278**	40 U	**787**	38.4 U	**23096**	**53858**
Volatiles (µg/kg)												
	1,1,1,2-Tetrachloroethane	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,1,1-Trichloroethane	2000	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,1,2,2-Tetrachloroethane	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,1,2-Trichloroethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,1-Dichloroethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,1-Dichloroethene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,1-Dichloropropene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,2,3-Trichloropropane	--	2.6 U	2.3 U	2.1 U	2.0 UJ-	2.4 U	2.0 U	2.2 U	2.1 U	2.0 U	2.2 U
	1,2-Dibromo-3-chloropropane	--	6.4 U	5.7 U	5.2 U	5.0 UJ-	6.0 U	5.1 U	5.6 U	5.3 U	4.9 U	5.4 U
	1,2-Dibromoethane	5	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U

Table 3
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	Location ID Sample ID Sample Date Depth Interval	MTCA A Industrial	DSI-08 DSI08-SO-A 9/28/2006 0-3 ft	DSI-08 DSI08-SO-B 9/28/2006 3-5 ft	DSI-09 DSI09-SO-A 9/28/2006 0-3 ft	DSI-09 DSI09-SO-B 9/28/2006 3-5 ft	DSI-10 DSI10-SO-A 9/28/2006 0-3 ft	DSI-10 DSI10-SO-B 9/28/2006 3-5 ft	DSI-11 DSI11-SO-A 9/28/2006 0-3 ft	DSI-11 DSI11-SO-B 9/28/2006 3-5 ft	DSI-12 DSI12-SO-A 9/28/2006 0-3 ft	DSI-12 DSI12-SO-B 9/28/2006 3-5 ft
	1,2-Dichloroethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,2-Dichloropropane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	1,3-Dichloropropane	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	2,2-Dichloropropane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	2-Butanone	--	**6.6**	5.7 U	**10**	5.0 U	**6.5**	5.1 U	**12**	**9.4**	**5.6**	5.4 U
	2-Chlorotoluene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	2-Hexanone	--	6.4 U	5.7 U	5.2 U	5.0 UJ-	6.0 U	5.1 U	5.6 U	5.3 U	4.9 U	5.4 U
	4-Chlorotoluene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	4-Isopropyltoluene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	4-Methyl-2-pentanone	--	6.4 U	5.7 U	5.2 U	5.0 U	6.0 U	5.1 U	5.6 U	5.3 U	4.9 U	5.4 U
	Acetone	--	**62**	**49**	**100**	**55**	**55**	35 U	**96**	**70**	**57**	**45**
	Benzene	30	1.3 U	1.2 U	**1.0**	**1.3**	1.2 U	1.0 U	**2.3**	1.1 U	**1.4**	**3.0**
	Bromobenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Bromochloromethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Bromodichloromethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Bromoform	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Bromomethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Carbon disulfide	--	1.3 U	1.2 U	1.0 U	**1.6**	1.2 U	**1.0**	**1.9**	**15**	1.0 U	1.1 U
	Carbon tetrachloride	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Chloroethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Chloroform	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Chloromethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	cis-1,2-Dichloroethene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	cis-1,3-Dichloropropene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Dibromochloromethane	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Dibromomethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Dichlorodifluoromethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Dichloromethane	20	**2.8**	2.3 U	2.1 U	2.0 U	2.4 U	**2.3**	2.2 U	2.1 U	2.0 U	2.2 U
	Ethylbenzene	6000	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Isopropylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	n-Butylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	n-Propylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	sec-Butylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Styrene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	tert-Butylbenzene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	tert-Butylmethylether	100	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Tetrachloroethene	50	**3.6**	**1.4**	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Toluene	7000	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	**3.4**
	trans-1,2-Dichloroethene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	trans-1,3-Dichloropropene	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Trichloroethene	30	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Trichlorofluoromethane	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	Vinyl chloride	--	1.3 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	m,p-Xylenes	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U
	o-Xylene	--	1.3 U	1.2 U	1.0 U	1.0 UJ-	1.2 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U

Table 4
Summary of Year 2006 Investigation Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels

Location ID Sample ID Sample Date	MTCA A Industrial	DSI-01 DSI01-GW 9/27/2006	DSI-02 DSI02-GW 9/27/2006	DSI-03 DSI03-GW 9/27/2006	DSI-04 DSI04-GW 9/27/2006	DSI-05 DSI05-GW 9/27/2006	DSI-06 DSI06-GW 9/27/2006	DSI-07 DSI07-GW 9/28/2006	DSI-07 DSI57-GW 9/28/2006	DSI-08 DSI08-GW 9/28/2006	DSI-09 DSI09-GW 9/28/2006	DSI-10 DSI10-GW 9/28/2006	DSI-11 DSI11-GW 9/28/2006	DSI-12 DSI12-GW 9/28/2006	MW-4 MW-4-GW-060929 9/29/2006	MW-5 MW-5-GW-060929 9/29/2006
TPH (mg/L)																
TPH - Gasoline Range	0.8/1.0[(1)]	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	**2.0**	**2.2**	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
TPH - Diesel Range	0.5	0.25 U	0.25 U	**0.93**	0.25 U	0.25 U	0.25 U	**1.9**	**1.9**	0.25 U	0.25 U	0.25 U	**3.2**	**0.63**	**0.35**	0.25 U
TPH - Motor Oil Range	0.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Metals-dissolved (µg/L)																
Arsenic	5	**68.4**	**2.4**	**1.5**	**2.2**	**0.6**	**1.8**	**3.8**	**4.2**	**1.4**	**1.6**	**0.8**	**0.8**	**5.0**	**1.0**	**3.4**
Cadmium	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chromium	50	0.5 UJ	0.5 U	2 U	2 U	2 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	1 U	**42**
Copper	--	0.5 U	0.5 U	**0.8**	**0.7**	0.5 U	0.5 U	**0.6**	**1.1**	**0.7**	**0.9**	0.5 U	0.5 U	0.5 U	0.5 U	**14.3**
Lead	15	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Mercury	2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Silver	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**
Zinc	--	**5**	4 U	**13**	4 U	**7**	**5**	**6**	**7**	4 U	**44**	**7**	**8**	4 U	**4**	**8**
Metals-total (µg/L) [2]																
Arsenic	--	**84.4**	**16.4**	**9.5**	**11.2**	**2**	**2.3**	**9.5**	**7.2**	**11.8**	**2.6**	**2.4**	**6.7**	**32.5**	**1.0**	**4.9**
Cadmium	--	**0.3**	**0.3**	**0.2**	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	**0.3**	**1.6**	**0.3**	0.2 U	0.2 U
Chromium	--	**7**	**49**	**38**	**29**	**6**	2 U	**21**	**14**	**37**	5 U	**5**	**34**	**20**	1 U	**54**
Copper	--	**18.5**	**86.7**	**53**	**55.6**	**15.2**	**7.5**	**39.1**	**24**	**70.4**	**34.4**	**26.1**	**49.2**	**126**	0.5 U	**29**
Lead	--	**3**	**11**	**8**	**13**	**6**	**2**	**6**	**5**	**12**	**55**	**14**	**10**	**27**	1 U	**2**
Mercury	--	0.1 U	**0.1**	0.1 U	0.1 U	0.1 U	0.1 U	0.10 U	0.10 U	**0.12**	0.10 U	0.10 U	0.10 U	**0.12**	0.10 U	0.10 U
Silver	--	0.2 UJ	**0.3**	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**	**0.2**	0.2 U	0.2 U	**0.2**	0.2 U	**0.8**
Zinc	--	**33**	**137**	**147**	**92**	**25**	**9**	**61**	**42**	**103**	**98**	**19**	**154**	**109**	**4**	**14**
Pesticides (µg/L)																
4,4'-DDD	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDE	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDT	0.3	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Total DDT (U=1/2)	--	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.017 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Aldrin	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
alpha-BHC	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
beta-BHC	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
delta-BHC	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
gamma-BHC (Lindane)	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.018 U	0.0050 U	0.0050 U
alpha-Chlordane	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
gamma-Chlordane	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Dieldrin	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan I	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Endosulfan II	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan Sulfate	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin aldehyde	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin ketone	--	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Heptachlor	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Heptachlor Epoxide	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Methoxychlor	--	0.054 U	0.056 U	0.055 U	0.054 U	0.053 U	0.055 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Toxaphene	--	0.54 U	0.56 U	0.55 U	0.54 U	0.53 U	0.55 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
PCBs (µg/L)																
Aroclor 1016	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1221	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.080 U	0.080 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1232	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.040 U	0.080 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1242	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1248	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1254	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 UJ
Aroclor 1260	--	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 U	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ	0.020 U	0.020 UJ
Total PCBs (U=1/2)	0.1	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.11 U	0.13 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U

Table 4
Summary of Year 2006 Investigation Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels

Location ID Sample ID Sample Date	MTCA A Industrial	DSI-01 DSI01-GW 9/27/2006	DSI-02 DSI02-GW 9/27/2006	DSI-03 DSI03-GW 9/27/2006	DSI-04 DSI04-GW 9/27/2006	DSI-05 DSI05-GW 9/27/2006	DSI-06 DSI06-GW 9/27/2006	DSI-07 DSI07-GW 9/28/2006	DSI-07 DSI57-GW 9/28/2006	DSI-08 DSI08-GW 9/28/2006	DSI-09 DSI09-GW 9/28/2006	DSI-10 DSI10-GW 9/28/2006	DSI-11 DSI11-GW 9/28/2006	DSI-12 DSI12-GW 9/28/2006	MW-4 MW-4-GW-060929 9/29/2006	MW-5 MW-5-GW-060929 9/29/2006
SVOCs (µg/L)																
1,2,3-Trichlorobenzene	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5 U
1,2,4-Trichlorobenzene	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5 U
1,2,4-Trimethylbenzene	--	0.2 U	**0.4**	0.2 U	0.2 U	0.2 U	0.2 U	**24**	**26**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,2-Dichlorobenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,3,5-Trimethylbenzene	--	0.2 U	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	**10**	**12**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,3-Dichlorobenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,4-Dichlorobenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
2-Methylnaphthalene	--	0.10 U	0.07 U	**0.11**	0.02 U	**0.12**	0.06 U	**32**	**28**	0.06 U	0.08 U	0.06 U	0.07 U	**0.47**	**1.3**	0.01 U
Acenaphthene	--	**0.07**	**0.03**	**0.01**	0.01 U	**0.06**	**0.09**	**0.54**	**0.53**	**0.01 J**	**0.05**	**0.11**	**0.22**	**2.2**	**2.9**	0.01 U
Acenaphthylene	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**0.01 J**	**0.06**	**0.06**	0.01 U	0.01 U	0.01 U	**0.02**	**1.8**	**0.08**	0.01 U
Anthracene	--	**0.02**	**0.01 J**	**0.02**	0.01 U	**0.01 J**	**0.01 J**	**0.03**	**0.03**	**0.01 J**	**0.02**	0.01 U	**0.01**	**2.6**	**0.14**	0.01 U
Benzo(a)anthracene	--	**0.01 J**	0.01 U	**0.03**	0.01 U	**0.01 J**	0.01 U	0.01 U	0.01 U	0.01 U	**0.01**	0.01 U	0.01 U	**3.4**	0.01 U	0.01 U
Benzo(a)pyrene	0.1	0.01 U	0.01 U	**0.02**	0.01 U	**0.01 J**	0.01 U	0.01 U	0.01 U	0.01 U	**0.01 J**	0.01 U	0.01 U	**3.5**	0.01 U	0.01 U
Benzo(b)fluoranthene	--	0.01 U	0.01 U	**0.02**	0.01 U	**0.01 J**	0.01 U	0.01 U	0.01 U	0.01 U	**0.01 J**	**0.01 J**	0.01 U	**2.0**	0.01 U	0.01 U
Benzo(g,h,i)perylene	--	0.01 U	0.01 U	**0.01 J**	0.01 U	**0.01 J**	0.01 U	**0.01 J**	0.01 U	0.01 U	0.01 U	**0.01 J**	0.01 U	**1.9**	0.01 U	0.01 U
Benzo(k)fluoranthene	--	0.01 U	0.01 U	**0.03**	0.01 U	**0.01 J**	0.01 U	0.01 U	0.01 U	0.01 U	**0.01 J**	**0.01 J**	0.01 U	**2.2**	0.01 U	0.01 U
Chrysene	--	**0.01**	**0.01 J**	**0.06**	0.01 U	**0.02**	**0.01 J**	**0.01 J**	**0.01 J**	**0.01 J**	**0.02**	**0.02**	**0.01 J**	**5.0**	0.01 U	0.01 U
Dibenzo(a,h)anthracene	--	0.01 U	0.01 U	**0.01 J**	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**0.65**	0.01 U	0.01 U
Dibenzofuran	--	**0.03**	**0.01**	**0.01**	0.01 U	**0.01 J**	**0.01 J**	**0.14**	**0.14**	**0.01 J**	**0.01 J**	0.01 U	**0.03**	**0.44**	**0.13**	0.01 U
Fluoranthene	--	**0.05**	**0.02**	**0.02**	**0.01**	**0.02**	**0.03**	**0.02**	**0.02**	**0.02**	**0.04**	**0.01 J**	**0.03**	**8.5**	**0.13**	**0.01 J**
Fluorene	--	**0.06**	**0.03**	**0.02**	0.01 U	**0.01**	**0.03**	**0.57**	**0.54**	**0.01 J**	**0.03**	**0.01 J**	**0.16**	**3.3**	**2.0**	**0.01 J**
Hexachlorobenzene	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Hexachlorobutadiene	--	0.0054 U	0.0056 U	0.0055 U	0.0054 U	0.0053 U	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	--	--
Indeno(1,2,3-cd)pyrene	--	0.01 U	0.01 U	**0.01 J**	0.01 U	**0.01 J**	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**1.5**	0.01 U	0.01 U
Naphthalene	160	**0.12**	**0.12**	**0.13**	**0.07**	**0.16**	**0.15**	**4.7**	**4.2**	**0.08**	**0.10**	**0.10**	**0.20**	**1.2**	**8.7**	**0.01 J**
Phenanthrene	--	**0.14**	**0.05**	**0.06**	**0.01**	**0.04**	**0.04**	**0.31**	**0.31**	**0.03**	**0.13**	**0.02**	**0.04**	**5.6**	**0.15**	**0.02**
Pyrene	--	**0.04**	**0.02**	**0.01**	**0.01 J**	**0.02**	**0.05**	**0.02**	**0.02**	**0.01**	**0.05**	**0.01**	**0.02**	**11**	**0.07**	**0.01 J**
Total PAHs (U=1/2)	--	**0.55**	**0.33**	**0.46**	**0.16**	**0.41**	**0.45**	**6.3**	**5.75**	**0.22**	**0.5**	**0.34**	**0.74**	**56.4**	**14.2**	**0.11**
Volatiles (µg/L)																
1,1,1,2-Tetrachloroethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,1,1-Trichloroethane	200	**1.0**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,1,2,2-Tetrachloroethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,1,2-Trichloroethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,1-Dichloroethane	--	**0.2**	0.2 U	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**	0.6 U
1,1-Dichloroethene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,1-Dichloropropene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,2,3-Trichloropropane	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5 U
1,2-Dibromo-3-chloropropane	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5 U
1,2-Dibromoethane	0.01	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,2-Dichloroethane	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,2-Dichloropropane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
1,3-Dichloropropane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
2,2-Dichloropropane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
2-Butanone	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
2-Chlorotoluene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
2-Hexanone	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	9.0 U
4-Chlorotoluene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
4-Isopropyltoluene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
4-Methyl-2-pentanone	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U
Acetone	--	**5.4**	**8.0**	**6.3**	**3.8**	3.0 U	**3.8**	3.0 U	3.0 U	**5.5**	**4.7**	**4.7**	**6.3**	**6.3**	**4.1**	9.0 U
Benzene	5	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	**0.6**	**180**	**210**	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Bromobenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Bromochloromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Bromodichloromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U

Table 4
Summary of Year 2006 Investigation Analytical Results for Groundwater Samples and Comparison with MTCA Method A Cleanup Levels

Location ID Sample ID Sample Date	MTCA A Industrial	DSI-01 DSI01-GW 9/27/2006	DSI-02 DSI02-GW 9/27/2006	DSI-03 DSI03-GW 9/27/2006	DSI-04 DSI04-GW 9/27/2006	DSI-05 DSI05-GW 9/27/2006	DSI-06 DSI06-GW 9/27/2006	DSI-07 DSI07-GW 9/28/2006	DSI-07 DSI57-GW 9/28/2006	DSI-08 DSI08-GW 9/28/2006	DSI-09 DSI09-GW 9/28/2006	DSI-10 DSI10-GW 9/28/2006	DSI-11 DSI11-GW 9/28/2006	DSI-12 DSI12-GW 9/28/2006	MW-4 MW-4-GW-060929 9/29/2006	MW-5 MW-5-GW-060929 9/29/2006
Bromoform	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Bromomethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Carbon disulfide	--	**0.2**	**0.6**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	0.2 U	0.2 U	0.6 U
Carbon tetrachloride	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Chloroethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Chloroform	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Chloromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
cis-1,2-Dichloroethene	--	**0.5**	0.2 U	**0.2**	**0.6**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
cis-1,3-Dichloropropene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Dibromochloromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Dibromomethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Dichlorodifluoromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Dichloromethane	5	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	**0.3**	0.9 U
Ethylbenzene	700	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**10**	**11**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Isopropylbenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**25**	**28**	0.2 U	0.2 U	0.2 U	**0.5**	**0.5**	0.2 U	0.6 U
n-Butylbenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**14**	**13**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
n-Propylbenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**94**	**110**	0.2 U	0.2 U	0.2 U	**0.5**	**0.5**	0.2 U	0.6 U
sec-Butylbenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**8.2**	**8.5**	0.2 U	0.2 U	0.2 U	**0.2**	**0.2**	0.2 U	0.6 U
Styrene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
tert-Butylbenzene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.5**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
tert-Butylmethylether	20	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Tetrachloroethene	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Toluene	1000	**0.5**	**0.7**	**0.6**	**0.5**	**0.4**	**0.4**	**4.4**	**4.6**	**0.4**	**0.4**	**0.7**	**0.5**	**0.4**	0.2 U	0.6 U
trans-1,2-Dichloroethene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
trans-1,3-Dichloropropene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Trichloroethene	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Trichlorofluoromethane	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
Vinyl chloride	0.2	0.2 U	0.2 U	0.2 U	**0.6**	**0.3**	0.2 U	0.2 U	0.2 U	**0.4**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.6 U
m,p-Xylenes	1000	0.4 U	**0.5**	**0.5**	0.4 U	0.4 U	**0.4**	**6.4**	**7.1**	0.4 U	0.4 U	0.4 U	**0.5**	**0.5**	0.4 U	1.2 U
o-Xylene	--	0.2 U	**0.2**	**0.2**	0.2 U	0.2 U	**0.2**	0.2 U	**0.9**	0.2 U	0.2 U	0.2 U	**0.3**	**0.3**	0.2 U	0.6 U

Qualifiers:

N	Normal field sample
FD	Field duplicate
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U	The analyte was analyzed for, but not detected above the sample reporting limit.
	Denotes criteria exceedance
Bold	Denotes detections

Notes:

--	No numerical criterion of this type or sample not analyzed for this chemical.
MTCA	Model Toxics Control Act (WAC 173-340)
HPAH	High molecular weight polycyclic aromatic hydrocarbon
LPAH	Low molecular weight polycyclic aromatic hydrocarbon
mg/L	milligrams per liter
µg/L	micrograms per liter
1	If benzene is present, the cleanup level is 800 mg/L. If benzene is not present, the cleanup level is 1,000 mg/L.
2	Due to turbidity in tested groundwater samples, the groundwater data for dissolved metals are used for comparison to groundwater cleanup levels. Total metals data are provided for information purposes, but are not considered representative of groundwater quality.

Table 5
Summary of Year 2006 Investigation Analytical Results for Selected Soil Samples (Organic Carbon Normalized) and Comparison with Washington Sediment Management Standards

Location ID Sample ID Sample Date Depth Interval	SMS SQS	SMS CSL	DSI-09 DSI09-SO-A 9/28/2006 0-3 ft	DSI-09 DSI09-SO-B 9/28/2006 3-5 ft	DSI-10 DSI10-SO-A 9/28/2006 0-3 ft	DSI-10 DSI10-SO-B 9/28/2006 3-5 ft	DSI-11 DSI11-SO-A 9/28/2006 0-3 ft	DSI-11 DSI11-SO-B 9/28/2006 3-5 ft	DSI-12 DSI12-SO-A 9/28/2006 0-3 ft	DSI-12 DSI12-SO-B 9/28/2006 3-5 ft	DSI-22 DSI22-CB-060929 9/29/2006
Conventionals (%)											
Total solids	--	--	**92.60**	**89.60**	**69.70**	**95.30**	**76.10**	**93.70**	**87.70**	**86.70**	**67.00**
Total Organic Carbon	--	--	**0.939**	**2.35**	**1.30**	**0.147**	**1.34**	**0.099**	**1.25**	**1.12**	**3.28**
Metals (mg/kg)											
Arsenic	57	93	**3.7**	**20.2**	**6.2**	**1.9**	**4.4**	**1.4**	**17.1**	**3.3**	**29.7 J**
Cadmium	5.1	6.7	**0.3**	**8.5 * #**	0.3 U	0.2 U	**0.3**	0.2 U	**0.2**	0.2 U	**2**
Chromium	260	270	**17.4**	**36**	**20.2**	**14.2**	**17.1**	**11.4**	**20.1**	**15.5**	**87**
Chromium VI			0.117 UJ	0.124 UJ	0.157 UJ	0.117 UJ	**2.05 J**	0.120 UJ	0.125 UJ	0.123 UJ	--
Copper	390	390	**65.9**	**3310 * #**	**29.0**	**8.8**	**49.0**	**8.4**	**34.2**	**18.1**	**2450 * #**
Lead	450	530	**118**	**4940 * #**	**8**	**11**	**92**	2 U	**20**	**6**	**350 J**
Mercury	0.41	0.59	**0.31**	**0.18**	**0.11**	0.04 U	**0.76 * #**	0.04 U	**0.08**	0.05 U	**1.05 * #**
Silver	6.1	6.1	0.3 U	**1.2**	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.3 U	2 U
Zinc	410	960	**115**	**5840 * #**	**43.7**	**25.2**	**78.3**	**23.0**	**77.4**	**36.8**	**2600 * #**
PCBs (mg/kg-OC)											
Total PCBs (SMS)	12	65	1.02 U	0.417 U	0.754 U	6.39 U	**2.61**	10 U	2.32 U	2.59 U	11.9 U
LPAH (mg/kg-OC)											
Naphthalene	99	170	**7.88**	**2.47**	**0.562**	3.4 U	**1.79**	4.85 U	**27.2**	**42**	**12.5**
Acenaphthylene	66	66	**1.49**	**0.23**	0.369 U	3.4 U	**1.04**	4.85 U	**70.4 * #**	**152 * #**	1.8 U
Acenaphthene	16	57	**8.73**	**1.28**	0.369 U	3.4 U	**0.515**	4.85 U	2.96 U	**4.02**	**22.6 J ***
Fluorene	23	79	**9.37**	**1.49**	**0.562**	3.4 U	**0.59**	4.85 U	**5.36**	**4.73**	**17.7**
Phenanthrene	100	480	**39.4**	**5.96**	**2.08**	3.4 U	**4.03**	4.85 U	**40.8**	**57.1**	**67.1**
Anthracene	220	1200	**9.27**	**0.809**	**0.846**	3.4 U	**1.34**	4.85 U	**23.2**	**40.2**	**13.4**
2-Methylnaphthalene	38	64	**5.01**	**1.45**	**0.6**	3.4 U	**1.42**	4.85 U	**18.4**	**26.8**	**4.88**
Total LPAH (SMS)	370	780	**76.1**	**12.2**	**4.05**	3.4 U	**9.33**	4.85 U	**167**	**300**	**133**
HPAH (mg/kg-OC)											
Fluoranthene	160	1200	**51.1**	**3.87**	**4.69**	3.4 U	**8.96**	4.85 U	**200 ***	**536 ***	**97.6**
Pyrene	1000	1400	**42.6**	**4.68**	**3.92**	3.4 U	**8.96**	4.85 U	**320**	**893**	**79.3 J**
Benzo(a)anthracene	110	270	**17**	**1.15**	**1.38**	3.4 U	**4.03**	4.85 U	**144 ***	**321 * #**	**14.6**
Chrysene	110	460	**29.8**	**2.3**	**1.77**	3.4 U	**6.49**	4.85 U	**240 ***	**670 * #**	**39.6**
Benzo(a)pyrene	99	210	**19.2**	**0.979**	**1.15**	3.4 U	**4.55**	4.85 U	**240 * #**	**705 * #**	**21**
Indeno(1,2,3-cd)pyrene	34	88	**11.7**	**0.4**	**0.485**	3.4 U	**2.61**	4.85 U	**96 * #**	**241 * #**	**8.54**
Dibenzo(a,h)anthracene	12	33	**4.05**	0.213 U	0.369 U	3.4 U	**0.627**	4.85 U	**31.2 ***	**80.4 * #**	**2.44**
Benzo(g,h,i)perylene	31	78	**11.7**	**0.421**	**0.485**	3.4 U	**2.76**	4.85 U	**104 * #**	**259 * #**	**9.76**
Total benzofluoranthenes (SMS)	230	450	**50.1**	**2.6**	**2.92**	3.4 U	**10.4**	4.85 U	**304 ***	**804 * #**	**50.9**
Total HPAH (SMS)	960	5300	**237**	**16.4**	**16.8**	3.4 U	**49.4**	4.85 U	**1679 ***	**4509 ***	**324**
Chlorinated Hydrocarbons (mg/kg-OC)											
1,4-Dichlorobenzene	3.1	9	0.106 U	0.0426 UJ-	0.0923 U	0.68 U	0.0821 U	1.11 U	0.08 U	0.0982 U	1.8 U
1,2-Dichlorobenzene	2.3	2.3	0.106 U	0.0426 UJ-	0.0923 U	0.68 U	0.0821 U	1.11 U	0.08 U	0.0982 U	1.8 U
1,2,4-Trichlorobenzene	0.81	1.8	0.554 U	0.213 UJ-	0.462 U	3.47 U	0.418 U	5.35 U	0.392 U	0.482 U	1.8 U
Hexachlorobenzene	0.38	2.3	0.17 U	0.0681 U	0.123 U	1.16 U	0.119 U	1.62 UJ	0.128 U	0.143 U	1.8 U
Phthalates (mg/kg-OC)											
Dimethylphthalate	53	53	--	--	--	--	--	--	--	--	1.8 U
Diethylphthalate	61	110	--	--	--	--	--	--	--	--	1.8 U
Di-n-butylphthalate	220	1700	--	--	--	--	--	--	--	--	**5.49**
Butylbenzylphthalate	4.9	64	--	--	--	--	--	--	--	--	**14.3 ***
bis(2-Ethylhexyl)phthalate	47	78	--	--	--	--	--	--	--	--	**488 * #**
Di-n-octylphthalate	58	4500	--	--	--	--	--	--	--	--	**24.4**
Misc Extractables (mg/kg-OC)											
Dibenzofuran	15	58	**3.41**	**0.766**	**0.523**	3.4 U	**0.59**	4.85 U	2.96 U	3.39 U	**14.6**
Hexachlorobutadiene	3.9	6.2	0.17 U	0.0681 U	0.123 U	1.16 U	0.119 U	1.62 UJ	0.128 U	0.143 U	1.8 U
n-Nitrosodiphenylamine	11	11	--	--	--	--	--	--	--	--	3.96 UJ

Table 5

Summary of Year 2006 Investigation Analytical Results for Selected Soil Samples (Organic Carbon Normalized) and Comparison with Washington Sediment Management Standards

Location ID Sample ID Sample Date Depth Interval		SMS SQS	SMS CSL	DSI-09 DSI09-SO-A 9/28/2006 0-3 ft	DSI-09 DSI09-SO-B 9/28/2006 3-5 ft	DSI-10 DSI10-SO-A 9/28/2006 0-3 ft	DSI-10 DSI10-SO-B 9/28/2006 3-5 ft	DSI-11 DSI11-SO-A 9/28/2006 0-3 ft	DSI-11 DSI11-SO-B 9/28/2006 3-5 ft	DSI-12 DSI12-SO-A 9/28/2006 0-3 ft	DSI-12 DSI12-SO-B 9/28/2006 3-5 ft	DSI-22 DSI22-CB-060929 9/29/2006
Phenols (µg/kg)												
	Phenol	420	1200	--	--	--	--	--	--	--	--	**140 J**
	2-Methylphenol	63	63	--	--	--	--	--	--	--	--	59 U
	4-Methylphenol	670	670	--	--	--	--	--	--	--	--	**96**
	2,4-Dimethylphenol	29	29	--	--	--	--	--	--	--	--	59 U
	Pentachlorophenol	360	690	--	--	--	--	--	--	--	--	290 UJ
Misc Extractables (µg/kg)												
	Benzyl alcohol	57	73	--	--	--	--	--	--	--	--	240 U
	Benzoic acid	650	650	--	--	--	--	--	--	--	--	590 U
	Dibenzofuran	--	--	**32**	**18**	**6.8**	5.0 U	**7.9**	4.8 U	37 U	38 U	**480**
	Hexachloroethane	--	--	--	--	--	--	--	--	--	--	59 U
	Hexachlorobutadiene	--	--	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 UJ	1.6 U	1.6 U	59 U
	n-Nitrosodiphenylamine	--	--	--	--	--	--	--	--	--	--	130 UJ

Qualifiers:

N	normal field sample
FD	field duplicate
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U	The analyte was analyzed for, but not detected above the sample reporting limit.
	Denotes criteria exceedance
*	Exceeds SQS criteria
#	Exceeds CSL criteria
Bold	Denotes detections

Notes:

--	No numerical criterion of this type or sample not analyzed for this chemical.
HPAH	High molecular weight polycyclic aromatic hydrocarbon
LPAH	Low molecular weight polycyclic aromatic hydrocarbon
SMS	Sediment Management Standards (WAC 173-204)
SQS	Sediment Quality Standards (WAC 173-204-320)
CSL	Cleanup Screening Level (WAC 173-204-520)
mg/kg	miligrams per kilogram
µg/kg	micrograms per kilogram
OC	organic carbon normalized

Where laboratory analysis indicates a chemical is not detected in a sediment sample, the detection limit will be reported, except as noted. Where chemical criteria in this table represent the sums of individual compounds (e.g., total LPAHs and total HPAHs), isomers (e.g., total benzofluoranthenes), or groups of aroclors/congeners (e.g., total PCBs), and a chemical analysis identifies an undetected value for one or more individual compounds, isomers, or groups of congeners, the SMS require that the sum of the detected values should be used as the sum of the respective compounds or groups of isomers or aroclors/congeners. If all values are undetected, then the highest detection limit should be used as the sum of the respective compounds or groups of isomers or aroclors/congeners.

The listed values represent concentrations in parts per million (ppm) "normalized" on a total organic carbon (TOC) basis. To normalize to TOC, the dry-weight concentration for each parameter is divided by the decimal fraction representing the percent TOC content of the sediment.

The total LPAH criteria will be compared to the sum of the concentrations of the following LPAH compounds: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, and anthracene. 2-methylnaphthalene is not included in the LPAH definition under the SMS. Inclusion of 2-methylnaphthalene in the LPAH definition under the SMS is being considered. The total LPAH criteria are not the sums of the corresponding criteria listed for the individual LPAH compounds.

The total HPAH criteria will be compared to the sum of the concentrations of the following HPAH compounds: fluoranthene, pyrene, benz[a]-anthracene, chrysene, total benzo-fluoranthenes, benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenz[a,h]anthracene, and benzo-[g,h,i]-perylene. The total HPAH criteria are not the sums of the corresponding criteria listed for the individual HPAH compounds.

The total benzofluoranthenes criteria will be compared to the sums of the concentrations of the b, j, and k isomers of benzofluoranthene.

Table 6
Summary of Year 2006 Investigation Analytical Results for Selected Groundwater Samples and Comparison with Washington Marine Water Quality Criteria

Location ID Sample ID Sample Date	Washington Marine Chronic	Washington Marine Acute	DSI-06 DSI06-GW 9/27/2006	DSI-07 DSI07-GW 9/28/2006	DSI-07 DSI57-GW 9/28/2006	DSI-08 DSI08-GW 9/28/2006	DSI-09 DSI09-GW 9/28/2006	DSI-10 DSI10-GW 9/28/2006	DSI-11 DSI11-GW 9/28/2006	DSI-12 DSI12-GW 9/28/2006
TPH (mg/L)										
TPH - Gasoline Range	--	--	0.25 U	**2.0**	**2.2**	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
TPH - Diesel Range	--	--	0.25 U	**1.9**	**1.9**	0.25 U	0.25 U	0.25 U	**3.2**	**0.63**
TPH - Motor Oil Range	--	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Metals-dissolved (µg/L)										
Arsenic	36	69	**1.8**	**3.8**	**4.2**	**1.4**	**1.6**	**0.8**	**0.8**	**5.0**
Cadmium	9.3	42	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chromium	--	--	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U
Copper	3.1	4.8	0.5 U	**0.6**	**1.1**	**0.7**	**0.9**	0.5 U	0.5 U	0.5 U
Lead	8.1	210	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Mercury	0.025	1.8	0.1 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Silver	--	1.9	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Zinc	81	90	**5**	**6**	**7**	4 U	**44**	**7**	**8**	4 U
Metals-total (µg/L)										
Arsenic	--	--	**2.3**	**9.5**	**7.2**	**11.8**	**2.6**	**2.4**	**6.7**	**32.5**
Cadmium	--	--	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	**0.3**	**1.6**	**0.3**
Chromium	--	--	2 U	**21**	**14**	**37**	5 U	**5**	**34**	**20**
Copper	--	--	**7.5**	**39.1**	**24**	**70.4**	**34.4**	**26.1**	**49.2**	**126**
Lead	--	--	**2**	**6**	**5**	**12**	**55**	**14**	**10**	**27**
Mercury	--	--	0.1 U	0.10 U	0.10 U	**0.12**	0.10 U	0.10 U	0.10 U	**0.12**
Silver	--	--	0.2 U	0.2 U	0.2 U	**0.4**	**0.2**	0.2 U	0.2 U	**0.2**
Zinc	--	--	**9**	**61**	**42**	**103**	**98**	**19**	**154**	**109**
Pesticides (µg/L)										
4,4'-DDD	0.001	0.13	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDE	0.001	0.13	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDT	0.001	0.13	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Total DDT (U=1/2)	--	--	0.017 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Aldrin	0.0019	0.71	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
alpha-BHC	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
beta-BHC	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
delta-BHC	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
gamma-BHC (Lindane)	--	0.16	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.018 U
alpha-Chlordane	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
gamma-Chlordane	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Dieldrin	0.0019	0.71	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan I	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Endosulfan II	--	--	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan Sulfate	--	--	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin	0.0023	0.037	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin aldehyde	--	--	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin ketone	--	--	0.011 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Heptachlor	0.0036	0.053	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Heptachlor Epoxide	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Methoxychlor	--	--	0.055 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Toxaphene	0.0002	0.21	0.55 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
PCBs (µg/L)										
Aroclor 1016	--	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1221	--	--	0.020 U	0.080 U	0.080 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1232	--	--	0.020 U	0.040 U	0.080 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1242	--	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1248	--	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1254	--	--	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Aroclor 1260	--	--	0.020 UJ	0.020 UJ	0.020 UJ	0.020 U	0.020 UJ	0.020 UJ	0.020 UJ	0.020 UJ
Total PCBs (U=1/2)	0.03	10	0.07 U	0.11 U	0.13 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
SVOCs (µg/L)										
1,2,3-Trichlorobenzene	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	--	--	0.2 U	**24**	**26**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	--	--	0.2 U	**10**	**12**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichlorobenzene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Methylnaphthalene	--	--	0.06 U	**32**	**28**	0.06 U	0.08 U	0.06 U	0.07 U	**0.47**
Acenaphthene	--	--	**0.09**	**0.54**	**0.53**	**0.01 J**	**0.05**	**0.11**	**0.22**	**2.2**
Acenaphthylene	--	--	**0.01 J**	**0.06**	**0.06**	0.01 U	0.01 U	0.01 U	**0.02**	**1.8**
Anthracene	--	--	**0.01 J**	**0.03**	**0.03**	**0.01 J**	**0.02**	0.01 U	**0.01**	**2.6**
Benzo(a)anthracene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	**0.01**	0.01 U	0.01 U	**3.4**
Benzo(a)pyrene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	**0.01 J**	0.01 U	0.01 U	**3.5**
Benzo(b)fluoranthene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	**0.01 J**	**0.01 J**	0.01 U	**2.0**
Benzo(g,h,i)perylene	--	--	0.01 U	**0.01 J**	0.01 U	0.01 U	0.01 U	**0.01 J**	0.01 U	**1.9**
Benzo(k)fluoranthene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	**0.01 J**	**0.01 J**	0.01 U	**2.2**
Chrysene	--	--	**0.01 J**	**0.01 J**	**0.01 J**	**0.01 J**	**0.02**	**0.02**	**0.01 J**	**5.0**
Dibenzo(a,h)anthracene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**0.65**
Dibenzofuran	--	--	**0.01 J**	**0.14**	**0.14**	**0.01 J**	**0.01 J**	0.01 U	**0.03**	**0.44**
Fluoranthene	--	--	**0.03**	**0.02**	**0.02**	**0.02**	**0.04**	**0.01 J**	**0.03**	**8.5**
Fluorene	--	--	**0.03**	**0.57**	**0.54**	**0.01 J**	**0.03**	**0.01 J**	**0.16**	**3.3**
Hexachlorobenzene	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Hexachlorobutadiene	--	--	0.0055 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Indeno(1,2,3-cd)pyrene	--	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**1.5**
Naphthalene	--	--	**0.15**	**4.7**	**4.2**	**0.08**	**0.10**	**0.10**	**0.20**	**1.2**
Phenanthrene	--	--	**0.04**	**0.31**	**0.31**	**0.03**	**0.13**	**0.02**	**0.04**	**5.6**
Pyrene	--	--	**0.05**	**0.02**	**0.02**	**0.01**	**0.05**	**0.01**	**0.02**	**11**
Total PAHs (U=1/2)	--	--	**0.45**	**6.3**	**5.75**	**0.22**	**0.5**	**0.34**	**0.74**	**56.4**
Volatiles (µg/L)										
1,1,1,2-Tetrachloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Table 6
Summary of Year 2006 Investigation Analytical Results for Selected Groundwater Samples and Comparison with Washington Marine Water Quality Criteria

Location ID Sample ID Sample Date	Washington Marine Chronic	Washington Marine Acute	DSI-06 DSI06-GW 9/27/2006	DSI-07 DSI07-GW 9/28/2006	DSI-07 DSI57-GW 9/28/2006	DSI-08 DSI08-GW 9/28/2006	DSI-09 DSI09-GW 9/28/2006	DSI-10 DSI10-GW 9/28/2006	DSI-11 DSI11-GW 9/28/2006	DSI-12 DSI12-GW 9/28/2006
1,1-Dichloroethene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloropropene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-Trichloropropane	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichloropropane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,2-Dichloropropane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Butanone	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Hexanone	--	--	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
4-Chlorotoluene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-Isopropyltoluene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-Methyl-2-pentanone	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	--	--	**3.8**	3.0 U	3.0 U	**5.5**	**4.7**	**4.7**	**6.3**	**6.3**
Benzene	--	--	**0.6**	**180**	**210**	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U
Bromobenzene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromochloromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromodichloromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromoform	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromomethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon disulfide	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	0.2 U
Carbon tetrachloride	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroform	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,3-Dichloropropene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibromochloromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibromomethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dichlorodifluoromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dichloromethane	--	--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Ethylbenzene	--	--	0.2 U	**10**	**11**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Isopropylbenzene	--	--	0.2 U	**25**	**28**	0.2 U	0.2 U	0.2 U	**0.5**	**0.5**
n-Butylbenzene	--	--	0.2 U	**14**	**13**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
n-Propylbenzene	--	--	0.2 U	**94**	**110**	0.2 U	0.2 U	0.2 U	**0.5**	**0.5**
sec-Butylbenzene	--	--	0.2 U	**8.2**	**8.5**	0.2 U	0.2 U	0.2 U	**0.2**	**0.2**
Styrene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
tert-Butylbenzene	--	--	0.2 U	0.2 U	**0.5**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
tert-Butylmethylether	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	--	--	**0.4**	**4.4**	**4.6**	**0.4**	**0.4**	**0.7**	**0.5**	**0.4**
trans-1,2-Dichloroethene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichlorofluoromethane	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl chloride	--	--	0.2 U	0.2 U	0.2 U	**0.4**	0.2 U	0.2 U	0.2 U	0.2 U
m,p-Xylenes	--	--	**0.4**	**6.4**	**7.1**	0.4 U	0.4 U	0.4 U	**0.5**	**0.5**
o-Xylene	--	--	**0.2**	0.2 U	**0.9**	0.2 U	0.2 U	0.2 U	**0.3**	**0.3**

Qualifiers:

N	normal field sample
FD	field duplicate
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U	The analyte was analyzed for, but not detected above the sample reporting limit.
	Denotes criteria exceedance
*	Exceeds chronic criteria
#	Exceeds acute criteria
Bold	Denotes detections

Notes:

--	No numerical criterion of this type for this chemical
mg/L	milligrams per liter
µg/L	micrograms per liter

Table 7
Potentially Relevant Fate and Transport Processes

Fate & Transport Processes	Description and Applicability
Processes Potentially Applicable to Upland Areas	
Transport Processes	
Stormwater Entrainment	Potentially relevant only to catch basin solids or to contaminated surface soils not capped with clean soil or pavement (e.g., Rail Spur Area).
Soil Leaching	Soil contamination can leach to groundwater, resulting in groundwater impacts. Due to the age of the site, the potential leachability of site contmainants can be directly assessed using site groundwater data.
Groundwater Migration	Groundwater generally migrates toward the Duwamish River. Only petroleum and PAH compounds have been detected above screening levels in nearshore areas adjacent to the river.
Groundwater Extraction	City codes prohibit consumptive use of site groundwater. Groundwater extraction only considered significant potential risk if utility corridors installed with preferential drainage toward the river.
Vapor Migration	Potentially relevant only for vinyl chloride (Central Site Area) and for benzene (2000 UST Removal Area). Potential receptor would be future industrial user.
Natural Attenuation Processes	
Biodegradation	Biodegradation processes can effectively destroy organic compounds such as petroleum hydrocarbons, benzene and vinyl chloride. Biodegradation can also degrade PAH compounds, though with lower overall performance.
Geochemical Stabilization	Geochemical processes can precipitate inorganic constituents such as arsenic, reducing or preventing their transport through groundwater.
Tidally-Influenced Mixing	Groundwater mixing in nearshore areas occurs due to tidal influences, reducing the concentration of groundwater constituents prior to discharge of site groundwater into the sediment bioactive zone and surface water.
Processes Potentially Applicable to Shoreline or Sediment Areas	
Transport Processes	
Wind and Wave Erosion	Wind and wave erosion can cause resuspension of shallow sediments or erosion of river-bank soils, resulting in exposure of contaminated soils or sediments to the bioactive zone or water column. Erosional forces generally decrease with increasing water depth, and are significant mainly for intertidal and shallow sub-tidal areas.
River Scour	River scour can cause sediment or river-bank erosion, resulting in exposure of contaminated soils or sediments to the bioactive zone or water column.
Seismic Disturbances	Seismic events can cause instability of river-bank soils and/or sediments, resulting in exposure of contaminated soils or sediments to the bioactive zone or water column.
Prop Wash or Anchor Drag	Vessel navigation activity in waterway and/or berth areas can resuspend buried sediments through prop wash, anchor drag or vessel groundings. Such resuspension can re-expose contaminated sediments to aquatic receptors of the bioactive zone or within the water column.
Construction Disturbances	Construction activities can disturb sediments or shoreline soils through dredging, bank cutting or structure removal.
Natural Attenuation Processes	
Sediment Deposition	Natural sediment deposition can bury contaminated sediments and isolate them from the water column and bioactive zone.
Contaminant Degradation and Weathering	The toxicity and mobility of sediment contaminants can be reduced through natural degradation and weathering processes. The extent of these processes is dependent on the type of contaminant and the conditions to which the contaminants are exposed.

Notes:

This list of fate and transport processes is preliminary and is subject to change in response to new information.

Table 8
Summary of Remedial Investigation Data Objectives and Design Data Needs

RI Component	Data Objective	Data Need	Remedial Investigaiton Components fo Fill Identified Data Needs
Nature and Extent - Upland			
Soil Quality	Verifty Nature and Extent of Contamination	Reduce the uncertainty of the lateral and vertical extent of COCs	Perform soil sampling in areas identified during the 2006 investigation including: rail spur area, 2000 UST removal area, shipyard nearshore area, and Parcel D nearshore area.
Groundwater Quality	Verifty Nature and Extent of Contamination	Reduce the uncertainty of the lateral and vertical extent of COCs	Install monitoring wells and perform groundwater sampling in areas identified during the 2006 investigation including: rail spur area, 2000 UST removal area, shipyard nearshore area, and Parcel D nearshore area.
Nature and Extent - Sediment			
Surface Sediment Quality	Verifty Nature and Extent of Contamination	Reduce the uncertainty of the lateral extent of COCs	Perform surface sediment sampling in adjacent areas to the north, south, and east of the property.
Subsurface Sediment Quality	Verifty Nature and Extent of Contamination	Reduce the uncertainty of the lateral and vertical extent of COCs	Perform subsurface sediment sampling in adjacent areas to the north, south, and east of the property.
Survey and Shoreline Stability Evaluation			
Stormwater vault and UST Identification	Survey	Condition and location of existing stormwater vault and potential UST	Verify presence and features of potential stormwater vault and UST at the shipyard nearshore area.
Armored Slope Evaluation	Survey	Sediment slope stability	Evaluation of armored slope including testing, direct inspection, review of available records, and potential diver survey.
Bulkhead Assessm	Survey	Bulkhead integrity	Assessment of bulkhead by structural engineer.
Shoreline Geotechnical Stability	Shoreline stability and erosion	Evaluate existing shoreline conditions	Collect available information and perform a reconnaisance survey to assess shoreline stability. Perform geotechnical sampling at nearshore and slope areas.
Fate and Transport Processes			
Future Land Uses	Future property use	Identify future property use	Identify potential future property uses as part of property planning to inform RI activties.
Groundwater Gradients, Aquifer, and Geochemical Properties	Groundwater contaminant migration	Obtain additional information to evaluate groundwater properties	Perform gradient and tidal groundwater study from installed RI monitoring wells. Perform geochemical testing as part of groundwater sampling activities.
Wind, Wave, River Scour, propwash and Redeposition Processes	Sediment stability	Evaluate stability and potential transport of sediment	Collect available information to assess potential sediment stability and transport

Exhibit C - Schedule

RI/FS Tasks and/or Deliverable	Completion Time
RI/FS Work Plan	Completed as SOW of AO
Draft Project Plans (SAP, QAPP, HASP)	45 days from effective date of AO
Ecology comments on draft Project Plans	30 days after receipt of report
Final Project Plans	21 days after receipt of Ecology comments
Phase 1 RI Activities	120 days after Ecology approval of Project Plans
Draft Phase 1 RI Data Memorandum	90 days after completion of Phase 1 RI Activities
Draft Phase 2 Technical Memorandum	90 days after completion of Phase 1 RI Activities
Ecology comments on draft Phase 1 RI Data Memorandum and Phase 2 Technical Memorandum	30 days after receipt of report
Final Phase 1 RI Data Memorandum	45 days after receipt of Ecology comments
Final Phase 2 Technical Memorandum	45 days after receipt of Ecology comments
Phase 2 RI Activities	If necessary, 120 days after Ecology approval of Phase 2 Technical Memorandum
Draft Alternative Screening Memorandum	90 days after (1) Completion of Phase 2 Activities; or (2) If Phase 2 Activities were not necessary, Ecology approval of both the Phase 1 RI Data Memorandum and Phase 2 Technical Memorandum
Ecology comments on draft Alternative Screening Memorandum	30 days after receipt of report
Draft RI/FS Report	90 days after Ecology approval of Alternatives Screening Memorandum
Ecology comments on draft RI/FS Report	30 days after receipt of report
Draft Final RI/FS Report and response to Ecology comments	45 days after receipt of Ecology comments
Public Comment Period on RI/FS Report	For a period of 45 days after Ecology's receipt of Draft Final RI/FS Report
Responsiveness Summary	30 days after completion of public comment period
Final RI/FS Report	45 days after Ecology's issuance of final responsiveness summary

Note: Days are calendar days. If due dates fall on a Saturday, Sunday, or federal or state holiday, deliverables will be submitted on the next business day.