

**EXPLANATION OF SIGNIFICANT DIFFERENCES  
COMMENCEMENT BAY NEARSHORE/TIDEFLATS SUPERFUND SITE  
Mouth of Hylebos Waterway Problem Area**

**I. INTRODUCTION**

**A. Purpose**

EPA's September 30, 1989 Record of Decision (ROD) for the Commencement Bay Nearshore /Tideflats (CB/NT) Superfund site selected a remedy involving a combination of five key elements: site use restrictions (now commonly referred to as institutional controls), source control, natural recovery, sediment remedial action (i.e., confinement and habitat restoration), and monitoring, to address contaminated sediments in the waterways of the CB/NT site. In July 1997, EPA issued an Explanation of Significant Differences (ESD) which modified the PCB cleanup level. In August 2000, EPA issued an ESD that described the cleanup plans for three of the waterways in Commencement Bay--Thea Foss, Wheeler-Osgood and Hylebos -- and identified the disposal sites, Blair Slip 1, St. Paul Waterway, and upland disposal, selected to contain dredged contaminated sediments from all the waterways.

The purpose of this ESD is to document EPA's decision to combine compatible wastes from two Superfund Sites, the Lower Duwamish Waterway (LDW) Superfund Site and the CB/NT Site into a single disposal facility, Blair Slip 1, at the CB/NT Site. Blair Slip 1 is a man-made slip that is being converted to contain contaminated sediment in what is known as a nearshore confined disposal (NCD) facility. Under this ESD, approximately 70,000 cubic yards (cy) of sediment from the Duwamish/Diagonal Early Action would be disposed of at Blair Slip 1 as part of the Mouth of Hylebos Waterway cleanup. Sediment from a seven-acre portion of the LDW Site at the Duwamish/Diagonal Combined Sewer Overflow and Storm Drain ("the Duwamish/Diagonal project") would utilize approximately 11% of unused disposal capacity in Blair Slip 1, out of a total 650,000 cubic yard disposal capacity.

**B. Lead and Support Agencies**

U.S. Environmental Protection Agency (EPA) – Lead Agency for Sediment Remediation

Washington State Department of Ecology (Ecology) - Lead Agency for Source Control; Support Agency for Sediment Remediation

Puyallup Tribe of Indians - Support Agency for Sediment Remediation

### **C. Statutory Authority**

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 117(c) and National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Section 300.435(c)(2)(i).

## **II. BACKGROUND**

### **A. Site Name, Location and History**

The CB/NT Superfund site is located in Tacoma, Washington at the southern end of the main basin of Puget Sound. The site includes 10-12 square miles of shallow water, shoreline, and adjacent land, most of which is highly developed and industrialized. The upland boundaries of the site are defined according to the contours of localized drainage basins that flow into the marine waters. The marine boundary of the site is limited to the shoreline, intertidal areas, bottom sediments, and water of depths less than 60 feet below mean lower low water level (MLLW). The nearshore portion of the site is defined as the area along the Ruston shoreline from the Mouth of Thea Foss Waterway to Pt. Defiance. The tideflats portion of the site includes the Hylebos, Blair, Sitcum, Milwaukee, St. Paul, Middle, Wheeler-Osgood, and Thea Foss waterways; the Puyallup River upstream to the Interstate-5 bridge; and the adjacent land areas. Hylebos Waterway is the northernmost waterway in Commencement Bay.

EPA placed the CB/NT site on the National Priorities List (NPL) of sites requiring investigation and cleanup under EPA's Superfund Program on September 8, 1983. A remedial investigation/feasibility study (RI/FS) was completed by Ecology in 1988. EPA made the final RI/FS and Proposed Plan available for public comment in February 1989. The RI/FS evaluated contaminants detected in sediments at the CB/NT Superfund site to identify problem chemicals that pose a risk to human health and the environment. The RI/FS concluded that sediments in the nearshore/tideflats area were contaminated with a large number of hazardous substances at concentrations greatly exceeding those found in Puget Sound reference areas and which exceed sediment quality objectives (SQOs) defined for the site. Contaminated sediments in Hylebos Waterway have been found to contain levels of PCBs, PAHs, chlorinated solvents, and metals that are considered harmful to humans and/or present increased ecological risks.

## **III. DESCRIPTION OF AND BASIS FOR THE SIGNIFICANT DIFFERENCES**

## **A. Introduction**

The CB/NT ROD sets forth a general cleanup approach for the waterways that comprise the CB/NT site and identifies, based on RI/FS sampling data, problem areas requiring response action. The August 2000 ESD (“the 2000 ESD”) identified disposal sites (two nearshore confined disposal sites and upland disposal), which would be most appropriate to safely contain dredged sediments. None of these significant differences fundamentally altered the remedy selected in the ROD.

The 2000 ESD also identified cleanup actions to address contamination throughout the Hylebos Waterway, based on the Pre-Remedial Design and Evaluation Report (PRDE) (November 1999).

### **2000 ESD: Selection of Disposal Sites**

EPA made certain adjustments in the 2000 ESD in response to public comment on the draft ESD regarding the selection of disposal sites for CB/NT sediment (2000 ESD, p. 28). Specifically, EPA incorporated public comment that was received requesting that EPA:

- 1) Maximize the capacity of Blair Slip 1 for disposal of contaminated sediments;
- 2) Utilize upland disposal, capping, and disposal at the Dredged Material Management Program’s (DMMP) open water disposal site for less contaminated material, if possible, to preserve needed nearshore confined disposal capacity for contaminated sediments.

Incorporating these elements into the 2000 ESD was done in order to fully utilize the limited disposal capacity of the nearshore confined disposal sites, which provided the most cost effective disposal option given the large volume of sediment requiring disposal. Given the uncertainty about the final disposal volumes, EPA agreed with the comments that the disposal sites be fully utilized.

EPA determined that the remaining CB/NT cleanup actions could use any of the three disposal sites (upland regional landfill, Blair Slip 1 NCD or St. Paul NCD) identified by EPA (ESD, p. 32). Importantly, EPA also indicated that EPA would review the disposal site designs to ensure environmental impacts are minimized and unavoidable impacts are adequately compensated.

### **Basis for Receiving CERCLA Wastes from Outside the CB/NT Site**

In the two years following the 2000 ESD, the Port of Tacoma and Occidental prepared detailed design documents for the Mouth of Hylebos Waterway problem area and the Blair Slip 1 NCD Facility. This work is being implemented under EPA oversight pursuant to Unilateral Administrative Order (UAO) CERCLA 10-2002-0064 issued by EPA on March 25, 2002. As part of the 90% Remedial Design, the Port of Tacoma conducted additional sediment sampling following the Puget Sound Dredged Disposal Analysis (PSDDA) protocols to determine the

volume of sediment that could be disposed of at the Commencement Bay open water disposal site. As a result of that sampling effort, approximately 179,900 cy (Hart Crowser, 2003) from Segment 5 is suitable for disposal at an open water (PSDDA) disposal site.

EPA also issued a separate UAO (CERCLA 10-2002-0065) to General Metals and ATOFINA Chemicals to perform the cleanup at the Head of Hylebos Waterway Problem Area. Consistent with the 2000 ESD, General Metals and ATOFINA selected the upland disposal option and is currently preparing the 90% design for dredging the Head of Hylebos Waterway (Segments 1 and 2). Dredged material from the Head of Hylebos will be disposed of as solid waste at the Roosevelt Regional Landfill, a permitted solid waste landfill under Subtitle D of the Resource Conservation and Recovery Act (RCRA). Under Administrative Orders on Consent, the City of Tacoma is in the process of completing remedial design for portions of the Thea-Foss and Wheeler-Osgood Waterway cleanup actions. The City has selected the St. Paul NCD option and has hired a construction contractor to begin construction on the St. Paul NCD facility. The Middle Waterway Action Committee has selected Blair Slip 1 as the disposal site for dredged material from the Middle Waterway cleanup. All cleanup actions, including selection and design of disposal sites are being conducted consistent with the CB/NT ROD and subsequent ESDs. To date, it appears that 572,700 cy of Commencement Bay contaminated sediments will be disposed in the Blair Slip 1 NCD facility.

As the design of the Blair Slip 1 NCD facility developed, it became clear that the Blair Slip 1 NCD facility would not be fully utilized by disposal of Commencement Bay contaminated sediments. A draft 30% design (Anchor, 2002) for Segments 3 and 4 of the Mouth of Hylebos Waterway identified an estimated 65,000 cy of excess sediment capacity. The most recent addendum to the 100% design (May 2, 2003) discusses the capacity and utilization of the Blair Slip 1 NCD facility, and identifies “base case” and “worst case scenario”. Those scenarios indicate that even with the Duwamish/Diagonal sediment in Blair Slip 1, there would be a potential for approximately 10,000 to 60,000 cy of additional capacity remaining.

During development of the 90% design in 2001, the Port and Occidental informally notified EPA of its intention to pursue negotiations with King County to receive approximately 70,000 cy of contaminated sediment from the LDW Superfund Site. At that time EPA indicated that sediment would need to be compatible (e.g., of similar sediment chemistry and chemical concentration) with sediment from the CB/NT Site, and that the timing of placement and capacity of Blair Slip 1 must be considered. The Port and Occidental proceeded with the design and simultaneously continued discussion with King County on the viability of placing sediment from the Duwamish/Diagonal project into the Blair Slip 1 NCD facility.

EPA conditionally approved the 100% design for the Hylebos Waterway/Slip 1 Nearshore Confined Disposal Site Facility Project, which identified the Duwamish/Diagonal sediment as a source of material under consideration (Hart Crowser 2003). On May 2, 2003, the Port and Occidental submitted the May 2003 addendum to the 100% Design for Segment 5 (Anchor,

2003) formally requesting EPA's approval to confine the Duwamish/Diagonal dredged material in the Blair Slip 1 NCD facility as part of the Segment 5 100% design.

In 2002, the Port and Occidental began construction of the Blair Slip 1 NCD facility. Construction activities included pier demolition, phase 1 construction of habitat in Blair Slip 5 that will partially compensate for habitat impacts associated with filling Blair Slip 1, and phase 1 of the containment berm to elevation -5 feet MLLW. In addition to these actions, the first dredge material was placed in the Blair Slip 1 NCD facility from Occidental's Area 5106 removal action where 29,000 cy of sediment was treated and placed in the Blair Slip 1 NCD facility for disposal. Additional characterization is currently ongoing at Area 5106 to determine what additional volume of sediment associated with that removal action will require disposal in the Blair Slip 1 NCD facility. The Port and Occidental began dredging areas of the Mouth of Hylebos Waterway in mid-July 2003.

Simultaneously with dredging in 2003, the Port and Occidental continue to complete remedial design for Segments 3 and 4. A second draft 30% design (Anchor, 2003a) for Segments 3 and 4 of the Mouth of Hylebos Problem Area indicates that capping (at the Taylor Way property) and natural recovery at portions of Sediment Management Area (SMA) 421 will reduce the volume of sediment requiring disposal in Blair Slip 1. The results of the PSDDA sampling and the design of Segments 3 and 4 ensure, with a reasonable margin of safety, that there will be excess capacity in the Blair Slip 1 NCD facility for contaminated sediment. However, based on the decisions made by parties performing the remaining CB/NT cleanup actions as described above, there is no CB/NT Superfund sediment available to utilize the excess capacity identified by the Port and Occidental. As a result, CERCLA waste from outside of the CB/NT Site provides the only opportunity at present to complete the NCD facility using contaminated sediment as contemplated by EPA in the 2000 ESD and supporting documentation.

CERCLA 104(d)(4) allows, and the preamble to EPA's implementing regulations, the National Contingency Plan, contemplates that EPA may combine wastes from non-contiguous CERCLA sites into a combined disposal location without requiring permits if certain determinations are made. See, 55 Fed. Reg. at 8690-91 (March 8, 1990). Specifically, the preamble to the NCP states that wastes may be combined into a common disposal site if: 1) wastes are both from CERCLA facilities that are reasonably close to one another; 2) the wastes are compatible for the selected treatment or disposal approach, and 3) opportunity for public comment has been provided. The Duwamish/Diagonal project, which is being implemented by King County, has been identified by EPA as a candidate early action<sup>1</sup> site under a Remedial Investigation (RI)

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<sup>1</sup> This work is being performed under a Natural Resource Trustees (NRT) Consent Decree, to resolve NRDA Damage claims pursuant to CERCLA Section 107(f). Although EPA is not conducting this cleanup, EPA agrees with the NRTs that this cleanup is necessary to address the threat to human health and the environment posed by contaminated sediments in this area. The area is within the boundaries of the designated Superfund Site and may be subject to additional Superfund cleanup if necessary after the early action is completed.

deliverable titled "Task 5: Identification of Candidate Sites for Early Action, Technical Memorandum: Data Analysis and Candidate Site Identification, Final June 12, 2003, prepared by Windward Environmental for the Lower Duwamish Waterway Group at the LDW Superfund Site. King County has collected chemistry data on sediment from their project. The Port and Occidental have compared that data with the requirements of the Blair Slip 1 NCD facility and demonstrated the compatibility of sediment from the Duwamish/Diagonal with the NCD facility design criteria.

## **B. Description of Significant Differences**

The Port of Tacoma and Occidental have proposed to dispose of 70,000 cy of sediment from the Duwamish/Diagonal project from the LDW Superfund Site. This proposed change does not change the cleanup plan (dredging/capping/natural recovery or disposal locations) for the Mouth of Hylebos Waterway, nor any of the other CB/NT cleanup actions documented in the 2000 ESD. The 2000 ESD and its administrative record describe EPA's decision that the Blair Slip 1 NCD facility is a safe, environmentally protective approach for the long-term containment. With this ESD, EPA has determined that the Port and Occidental have adequately demonstrated that there is excess capacity for contaminated sediment in Blair Slip 1 as a result of the factors discussed above:

- 179,900 cy determined suitable for open water disposal
- Taylor Way embankment will be capped, not dredged to avoid habitat loss
- Portions of SMA 421 were resampled in 2001 and are now below the cleanup standard
- Other parties performing cleanup at CB/NT problem areas (Head of Hylebos and Thea-Foss/Wheeler-Osgood Waterways) have decided to use other disposal sites

The Port and Occidental have concluded that these events ensure, with a reasonable margin of safety, that there will be excess capacity in the Blair Slip 1 NCD facility for contaminated sediment and no CB/NT Superfund sediment available.

The only change for this ESD is the receipt of approximately 70,000 cy of sediment from outside of the CB/NT Site boundaries. The designated sediment is a CERCLA waste from the LDW Superfund Site. EPA is willing to allow the Port of Tacoma and Occidental to receive non-CB/NT sediment from the Duwamish/Diagonal project to fill excess capacity in the Blair Slip 1 NCD facility because they have satisfied the technical and regulatory criteria for this action.

Specifically, EPA has reviewed the pancake column leach test (PCLT, previously known as the thin-layer column leachate test, TCLT) data prepared by King County consistent with U.S. Army Corps of Engineers' guidelines. The PCLT data was submitted to EPA by the Port and Occidental in comparison with data from other CB/NT sediment designated for confinement in the Blair Slip 1 NCD facility. Appendix G to the Segment 5 100% design provides tabulated

summaries of the sources of sediment from Hylebos Waterway, Middle Waterway, and the Duwamish/Diagonal project. Tables G-1 through G-4 demonstrate to EPA that the sediment is compatible (i.e., similar chemical concentrations) for disposal in the Blair Slip 1 NCD facility.

EPA previously performed an interim final Clean Water Act 404(b)(1) evaluation of the CB/NT disposal sites, including Blair Slip 1 (July 2000). The 404(b)(1) evaluation documented substantive compliance with CWA Section 404 and Section 10 of the Rivers and Harbors Act for actions described in the 2000 ESD. EPA now concludes that disposal of other CERCLA wastes (i.e. contaminated sediments) from outside the CB/NT is consistent with EPA's earlier evaluation.

This conclusion rests on the assumption that the CB/NT disposal sites will not receive a larger volume or different type of CERCLA wastes than contemplated in its earlier 404(b)(1) evaluation. Because the volume and type of CERCLA wastes that will be disposed of in the Blair Slip 1 NCD facility will not change, the impacts of additional disposal of CERCLA wastes from outside the CB/NT Site will not result in any of the following: greater degradation to waters of the United States; an increase in the likelihood of violations of water quality standards or toxic effluent standards; or jeopardy to an endangered or threatened species or destruction or adverse modification of critical habitat.

Specifically, confining 70,000 cy of sediment from the Duwamish/Diagonal project in the absence of available CB/NT sediment does not change the area footprint of the Blair Slip 1 NCD facility nor other anticipated impacts (e.g., short and long-term water quality effects are the same). The proposed action for the CB/NT Site (i.e., implementation of the 2000 ESD cleanup plans including conservation and recovery of ESA-listed species) also remains unchanged. Mitigation associated with filling Blair Slip 1 has already been addressed by the Port and Occidental as part of the Mouth of Hylebos project design.

In addition, EPA, in Attachment 3 to the July 2000 CWA 404(b)(1) evaluation, previously articulated a preference for placement of only contaminated sediment in Blair Slip 1 unless that option is determined to be infeasible. Absent disposal of CERCLA wastes from outside of the CB/NT Site, satisfaction of this preference would not be possible. Although it was not determined feasible to fill the Blair Slip 1 NCD facility with contaminated sediments from the CB/NT Site, use of the Duwamish/Diagonal sediment for a small percentage of the total fill volume allows EPA to meet that element of its original objective.

The parties have also determined and demonstrated to EPA that the project will not adversely affect the time line for the Mouth of Hylebos cleanup. The Duwamish/Diagonal sediment would be placed in Blair Slip 1 NCD facility in fall 2003/winter 2004 with an anticipated start date in November 2003, allowing some flexibility in the contract schedule for adjustments as needed. The Blair Slip 1 NCD facility is scheduled to be completed to its final elevation the following dredge season (2004/2005) to allow for scheduled upland development on top of the finished

Blair Slip 1 NCD facility.

This ESD only addresses the suitability of disposal of Duwamish/Diagonal material into the Blair Slip 1 NCD facility (i.e., combining disposal sites as described in this ESD). EPA oversight of disposal of sediment from outside of the CB/NT Site will be conducted through EPA's removal authority as a time-critical removal action. All other elements of the Duwamish/Diagonal project are subject to oversight pursuant to Consent Decree No. C90-395WD. If EPA determines that additional cleanup is necessary at the Duwamish/Diagonal project area, that additional work will be conducted as part of the Superfund cleanup for the LDW Superfund Site.

#### **IV. PERFORMANCE CRITERIA FOR THE REMEDIAL ACTIONS**

For all the waterways in Commencement Bay, the 2000 ESD expands on and clarifies the general cleanup approach set forth in the CB/NT ROD; it added the Endangered Species Act (ESA) as an applicable, or relevant and appropriate, requirement (ARAR) for remedial actions under the ROD; it selects two in-water disposal sites and upland disposal as acceptable disposal options; and, it provides performance criteria to be applied to the design and implementation of the selected remedial actions and mitigation projects. Those performance criteria are not changed by this ESD and apply to the Mouth of Hylebos Waterway Problem Areas including all capping, dredging, confined disposal, natural recovery, and/or enhanced natural recovery activities, and address subsurface contamination and mitigation.

Water quality certification requirements related to disposal of sediment from the Duwamish/Diagonal project will be included in the water quality certification for the Blair Slip 1 NCD facility. Disposal of Duwamish/Diagonal sediment in the Blair Slip 1 NCD facility will be subject to EPA oversight. The long-term monitoring of the Blair Slip 1 NCD facility will remain the responsibility of the Port and Occidental, under EPA oversight. There are no new ARARs associated with combining CERCLA waste from the Duwamish/Diagonal project with the Mouth of Hylebos Waterway cleanup in the Blair Slip 1 NCD facility. The Duwamish/Diagonal project will have to comply with all the requirements associated with the dredging and transport of the sediment as specified in the Consent Decree with the Natural Resource Trustees overseeing that work. A permit has been issued by the U.S. Army Corps of Engineers for the dredging, capping and transport of dredged material associated with the project. A time-critical removal action memorandum will ensure EPA's oversight of disposal of Duwamish/Diagonal sediment into the Blair Slip 1 NCD facility.

#### **V. SUPPORT AGENCY COMMENTS**

Both the Washington State Department of Ecology (Ecology) and the Puyallup Tribe did support

the selected remedy for the 2000 ESD, including the disposal site selection and the Hylebos Waterway cleanup plan.

**[EPA will summarize the comments received from Ecology and the Puyallup Tribe at the time a final decision is made regarding the action described in this ESD.]**

## **VI. AFFIRMATION OF THE STATUTORY DETERMINATION**

This selected remedy is protective of human health and the environment, complies with Federal, State and Tribal requirements that are applicable, or relevant and appropriate to this remedial action as identified in the ROD and subsequent ESDs, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site. However, because treatment was not found to be practicable, this remedy does not satisfy the statutory preference for treatment as a principle element. Because the decision to combine wastes from CERCLA sites will still result in hazardous substances remaining onsite above health-based levels, a review will be conducted within five years after commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

## VII. PUBLIC PARTICIPATION ACTIVITIES

**[EPA will receive public comment on this ESD for 30-days. After receipt and consideration of the public comment EPA will respond to public comments in a written responsiveness summary prior to making its final decision. Any changes made based on public comments will also be explained.]**

Signed:

\_\_\_\_\_  
Michael F. Gearheard, Director  
Office of Environmental Cleanup

\_\_\_\_\_  
Date

**VII. PUBLIC PARTICIPATION ACTIVITIES**

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Signed:

\_\_\_\_\_  
Michael F. Gearheard, Director  
Office of Environmental Cleanup

\_\_\_\_\_  
Date

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