

# Memorandum

May 18, 2021

To: Rick Thomas and Jing Liu, Washington Department of Ecology  
Elly Hale and Erika Hoffman, U.S. Environmental Protection Agency

From: Greg Brunkhorst, Julia Fitts, LG, and David Templeton, Anchor QEA, LLC

cc: Kyle McCleary, Duwamish Shipyard, Inc.  
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**Re: Recommended Framework for Remediating Duwamish Shipyard, Inc. Site Sediments**

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On March 24, 2021, Anchor QEA (on behalf of Duwamish Shipyard, Inc. [DSI]) met with the U.S. Environmental Protection Agency (EPA) and Washington Department of Ecology (Ecology) to discuss the approach for the DSI Site (Agreed Order [AO] No. DE6735) and the integration of the Model Toxics Control Act (MTCA) cleanup process and Lower Duwamish Waterway (LDW) cleanup process as outlined in the Record of Decision (ROD). We recognize that EPA and Ecology have a Memorandum of Understanding, but additional coordination efforts are required so that DSI has a clear pathway to meet their obligation under the AO and the ROD.

With that objective in mind, the discussion addressed the following:

1. DSI Site description and Conceptual Site Model (CSM)
2. Summary of the DSI Feasibility Study (FS) preferred alternative, including upland and shoreline source control and cleanup elements
3. Cleanup of sediment cleanup areas adjacent to DSI outlined in the ROD
4. The nature and extent of tributyltin (TBT) in sediments (not a ROD chemical)
5. Approaches for evaluating remedial alternatives for TBT in sediments
6. How the DSI FS should be constructed to meet DSI's obligations under the AO and the ROD

To further the discussion and arrive at an agreed path forward for the FS, this memorandum outlines DSI's proposed approach. Specially, the purpose is to promote a shared understanding between DSI, Ecology, and EPA so that the DSI FS can be developed and will receive written approval by Ecology and EPA.

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## Recommended FS Evaluations and Framework for Remediating Site Sediments

Overall, the cleanup process will be performed in two phases, the first in the DSI upland and the nearshore bank, and the second in the adjacent sediments. This cleanup approach will be reflected in the DSI Final FS, which will include the following:

1. The development of an FS that addresses the upland and nearshore bank area
2. Additional evaluations to address TBT in sediments (i.e., protectiveness)
3. Incorporation of these evaluations into the FS (as an Appendix) to establish how the ROD cleanup would be performed and how EPA and Ecology would coordinate any TBT-driven actions

The design, permitting, and construction would then be completed in two subsequent steps.

### FS Structure and Additional Evaluations

The DSI Draft Upland FS, which was submitted to Ecology in August 2020 in accordance with the AO for the Site, addresses both the upland and a portion of the adjacent sediment areas. The cleanup approach for the contaminated materials that form the interface between the upland and sediment areas (i.e., the nearshore bank) is a key consideration for the Draft Upland FS. Ultimately, the preferred alternative in the FS will consist of the following:

- Upland cleanup consistent with MTCA
- Source control measures consistent with LDW ROD requirements
- Nearshore bank cleanup consistent with the LDW ROD
- Nearshore bank cleanup that allows integration with future sediment cleanup actions in adjacent areas
- Nearshore bank cleanup that is consistent with future Site use.

Based on Ecology and EPA discussions, the Final FS will also evaluate sediments adjacent to the upland-bank remedial footprint and include the following:

- An update to the LDW ROD remedial technology assignment decision framework for sediments offshore of the DSI property with new data that were not considered in the LDW ROD. This will be an FS-level evaluation.
- An evaluation of the nature and extent of TBT in sediments offshore of the DSI property and establishment of a Site-specific TBT remedial action level.
- A TBT alternative evaluation, including FS-level cap modeling for TBT for partial dredging and capping areas to assess the mobility of buried TBT contamination and feasibility of capping areas with TBT exceeding the remedial action level.

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The FS will also develop a phased cleanup approach for DSI upland, bank, and sediment areas, which is summarized in the following sections.

## Cleanup Phasing

The recommended approach for phasing DSI upland, bank, and sediment cleanup work has been developed in consideration of multiple Site factors, including Site conditions (i.e., the CSM), upland and sediment cleanup requirements (MTCA, LDW ROD, Applicable or Relevant and Appropriate Requirements), shoreline bank configuration, geotechnical stability, current and potential future Site use, restoration of aquatic habitat, LDW source control requirements, risk reduction, recontamination potential, and integration with adjacent cleanups. The following phased cleanup approach is proposed for the DSI Site:

### *Phase I – Upland and Nearshore Bank Area*

The Phase I area (upland and nearshore bank areas) will be remediated under the existing AO in accordance with MTCA requirements. This area will be remediated prior to sediment cleanup in the LDW (under the ROD) in order to expedite the cleanup process, achieve source control, create new aquatic habitat areas (and remove derelict overwater structures), and reduce risks to Site receptors. Phase I will do the following:

- Address upland (soil and groundwater) concentrations exceeding Site remediation levels.
- Address nearshore bank sediments (highest concentrations in sediments).
- Address LDW source control requirements.
- Remove overwater structures.
- Create aquatic habitat areas.
- Support current and future property use.
- Support future offshore sediment cleanup (e.g., by leaving a stabilized bank with a sheetpile toe-wall).

Phase I design, permitting, and implementation will be performed by DSI under a Cleanup Action Plan and associated Consent Decree with EPA concurrence.

### *Phase II – Remaining Sediment Cleanup Areas*

Phase II includes the adjacent sediment areas (i.e., in-water areas next to the nearshore bank area that will be remediated during Phase I) that will be remediated in accordance with the LDW ROD decision process with Ecology concurrence. The remaining sediment areas are cleaned up in a second phase to reduce the chance of recontamination, better integrate with cleanup of surrounding

parts of the LDW Lower Reach, and incorporate lessons learned from cleanup of the LDW Upper Reach. Phase II will include the following elements:

- Completion of pre-remedial design investigations, remedial design, and construction consistent with the process used in the LDW Upper Reach
- Establishment of remediation areas and remedial technologies in accordance with the ROD decision tree, including additional Site-specific TBT remediation areas identified in the DSI FS

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