APPENDIX J
Interim Action Completion (As-Built) Report

Construction Completion (As-Built) Report

Weyerhaeuser Mill A Former Cleanup Site
Interim Action
Everett, Washington

for
Washington State Department of Ecology on Behalf of Port of Everett

January 16, 2018

GeoEngineers
Earth Science + Technology

Construction Completion (As-Built) Report

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Construction Completion (As-Built) Report

Weyerhaeuser Mill A Former Cleanup Site
Interim Action
Everett, Washington

File No. 0676-020-05

January 16, 2018

Prepared for:
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1.0 INTRODUCTION AND PURPOSE

1.1. Introduction and Background

This Construction Completion Report provides summary information for a Model Toxics Control Act (MTCA) interim cleanup action (Interim Action) at the Weyerhaeuser Mill A Former Site (Site; Facility Site ID #1884322) (Figure 1) located in Everett, Washington. The Port of Everett (Port) and Weyerhaeuser Company (collectively, the "Implementing Parties") performed the Interim Action under an Agreed Order (Number DE 13119) with the Washington State Department of Ecology (Ecology). The Interim Action was contracted and administered by the Port in general accordance with the Ecology-approved Interim Action Work Plan (IAWP; GeoEngineers, 2015a), the Washington MTCA Cleanup Regulation [Washington Administrative Code (WAC) 173-340], the Washington State Sediment Management Standards (SMS; WAC 173-204) and requirements of the project US Army Corps of Engineers (USACE) Permit, Ecology Order, Department of Natural Resources Site Use Authorization, and the requirements of the Dredged Material Management Program (DMMP). The construction work was conducted during the 2016/2017 in-water work window.

The Interim Action area is situated within the Site adjacent to the Port's Pacific Terminal (Figure 2). The Pacific Terminal is the Port's primary marine terminal and currently provides a berth for deep draft vessels and is used by the Port for handling and loading of cargo. The Interim Action was completed to remove both contaminated and clean sediment to increase navigational access to the Pacific Terminal. The implementation of the Interim Action expedited part of the environmental cleanup at the Site and achieved the Port's operational requirements to facilitate navigation of larger vessels at the terminal.

1.2. Summary of Interim Action and Pre-Construction Activities

Prior to construction, a dredged material characterization was completed by GeoEngineers on behalf of the Implementing Parties to assess the conditions of sediment to be dredged and disposed from the Interim Action area and develop an appropriate approach for management and disposal of the dredge material. Additionally, the sediment to be exposed after dredging (i.e. up to two feet below the dredging overdepth; also identified as "Z-layer" by DMMP) was characterized to meet the requirements of the DMMP's Dredged Material Evaluation and Disposal Procedures User Manual and to determine the extent of containment required for the exposed subsurface contamination after dredging. The dredged material characterization was performed in general accordance with the Dredged Material Characterization Sampling and Analyses Plan (SAP; GeoEngineers, 2014a) that was approved by the DMMP agencies and Ecology prior to sampling. The report presenting the results of the dredged material characterization was submitted to Ecology Toxics Cleanup Program and DMMP agencies (GeoEngineers, 2015b). The DMMP agencies issued an Open Water Suitability Determination (DMMP, 2015) based on results of the dredged material characterization analytical results.

The Interim Action focused on dredging contaminated sediment. Underlying clean sediment was also removed as part of the project to meet navigation requirements. Contaminated sediment were disposed at an Ecology-approved Recourse Conservation and Recovery Act (RCRA) Subtitle D landfill and clean sediment were disposed at DNR's Port Gardner open water disposal site in accordance with the DMMP's Open Water Suitability Determination (DMMP, 2015) and dredged material characterization report (GeoEngineers, 2015b). The Interim Action also included placement of bedding and armor rock to construct a temporary armored transition slope designed to contain exposed contamination along the slope, and

placement of habitat mix to restore critical shoreline habitat elevations. The armored transition slope is considered temporary because it is assumed that the final Site cleanup action will include removal of the armor rock to allow for the removal of the contaminated sediment that is located behind the armor rock. Throughout the duration of the Interim Action and in accordance with project permits (Appendix A), necessary Best Management Practices (BMPs) were implemented to ensure protection of human health and the environment.

1.3. Purpose and Report Organization

The overall purpose of this report is to document as-built conditions and provide construction documentation for cleanup and restoration activities in accordance with WAC 173-340-400. This report is organized into the following sections:

- Section 1.0 introduces the document with a brief description and background of the Site and Interim Action, and presents the purpose and organization of the report.
- Section 2.0 identifies the project team for the Interim Action.
- Section 3.0 describes the Interim Action construction activities.
- Section 4.0 identifies regulatory and permit requirements under which the Interim Action was completed.
- Section 5.0 presents a brief summary of on-going and future remedial activities that will be completed at the Site.
- Section 6.0 describes the limitations for use of this report.
- Section 7.0 lists the references used in preparing this report.

2.0 INTERIM ACTION PROJECT TEAM

The Interim Action was contracted and administered by the Port and their contractors under regulatory oversight by Ecology and the U.S. Army Corps of Engineers. Key members of the project team are listed in the following table.

Agency/Company	Contact and Project Role
Washington State Department of Ecology	Andrew Kallus, Site Manager
U.S. Army Corps of Engineers	David Fox, DMMO representative
Port of Everett (Owner)	Erik Gerking, Project Manager Elise Gronewald, Field Engineer
Port of Everett Consultants	
GeoEngineers (Environmental Engineer)	John Herzog, Project Manager Abhijit Joshi, Project Engineer
TetraTech (Surveyor)	David Hericks, Hydrographer

Agency/Company	Contact and Project Role
Construction General Contractor	
Orion Marine Contractors, Inc. (General Contractor)	Casey Shaw, Project Superintendent (on-site) Brian Masten, Project Manager (off-site) Matt Cottingham, Project Engineer (on-site)
Subcontractors to General Contractor	
OMA Construction (Upland Sediment Hauling)	Brandon Akers
Republic Services (Upland Landfill Disposal)	Leslie Whiteman
Dunlap Towing (Tug Assistance for Barges)	Jim Sanford
eTrac, Inc. (Surveyor)	John Auernhamer
TetraTech (Surveyor)	David Hericks, Hydrographer
Iron Mountain Quarry (Import Material)	Lee Langley

3.0 INTERIM ACTION CONSTRUCTION

Construction of the Interim Action was completed by Orion Marine Contractors, Inc. (Contractor) with construction oversight from the Port and GeoEngineers. The contract was awarded to the Contractor through the Port's public works bidding process. A pre-construction meeting was completed on August 1, 2016. Mobilization of construction equipment began on August 8, 2016. The construction work was completed from mid-August 2016 through mid-February 2017 within the allowable in-water work window of regulatory agencies. Interim Action construction activities included:

- Implementing and maintaining environmental controls and performing water quality monitoring;
- Installing a temporary upland offload facility at the South Terminal to support loading and unloading of dredged and imported materials between marine and upland areas;
- Removing and stockpiling for reuse, a portion of the existing armor rock located along the shoreline of the Interim Action area to facilitate dredging;
- Dredging contaminated material and performing hydrographic surveys to confirm completeness of removal and compliance with the design;
- Transporting and disposing contaminated material at an off-site Subtitle D landfill operated by Republic Services located in Roosevelt, Washington;
- Dredging non-contaminated material and performing hydrographic surveys to confirm completeness of removal and compliance with the design;
- Transporting and disposing non-contaminated material at the Port Gardner open water disposal site;
- Importing and placing bedding and reusing, importing, and placing armor rock to create a stable transition slope to contain exposed contaminated sediment along the slope;
- Performing hydrographic surveys to ensure placement of bedding and armor meets design criteria;
- Importing and placing habitat mix to restore critical habitat elevations; and
- Performing post-construction as-built surveys to document final as-built conditions.

Detailed descriptions of construction activities are presented in Sections 3.1 through 3.5.

Following completion of Interim Action construction, record drawings were prepared by GeoEngineers on behalf of the Port by revising design drawings to reflect as-built conditions. Record Drawings are presented in Appendix B. The following is a list of the record drawings:

Sheet No.	Title
1	Cover Sheet
2	Legend and Survey Control
3	Project Overview
4	Project Photos
5	Pre-Dredge Site Conditions
6	Contractor Work Areas and Port Operations
7	Marine Environmental Controls
8	Contaminated Material Dredging Limits
9	Final Dredging Limits
10	Dredging Cross-Sections
11	South Terminal Offload Facility Plan
12	Non-Contaminated Dredged Material Disposal Plan
13	Bedding, Armor Rock and Habitat-Mix Placement Plan
14	Bedding, Armor Rock and Habitat-Mix Placement Cross-Sections

3.1. Environmental Controls and Water Quality Monitoring

Marine environmental controls including water quality controls were implemented during dredging, dredged material offload, transport and disposal, and material (bedding, armor and habitat mix) placement activities as per the requirements of project permits (Appendix A) including Ecology's 401 Water Quality Certification (WQC), and Ecology-approved Water Quality Monitoring and Protection Plan (WQMPP; GeoEngineers, 2016). Upland environmental controls including temporary erosion and sediment controls (TESC) were also implemented for upland portion of the construction at the South Terminal offload facility.

Water quality monitoring was completed by the Port during in-water activities in accordance with the WQMPP. A submersible-probe (Horiba U-52 or similar) was used to document turbidity and dissolved oxygen levels within the water column at 75-foot early warning point and 150-foot point of compliance. In addition, absence or presence of visual observations of petroleum sheen, floating debris and silt plume were also documented. Weekly reports of water quality monitoring results were submitted to Ecology. Water quality exceedances were not observed during any of the in-water work activities at the 150-foot point of compliance at the Site. Water quality monitoring results for in-water construction activities are summarized in Appendix C.

3.2. Installation of Temporary South Terminal Offload Facility

The only upland construction activities included offloading contaminated sediment from barges to trucks for upland transport and disposal, and offloading imported material from trucks to barges for in-water placement. A temporary offload facility was made by the contractor in the southern portion of the South Terminal and dismantled following the completion of project work. The offload facility was equipped with a backhoe to transfer material between marine barges and the upland area. The offload facility also

contained a container lining station where the Contractor lined the containers with plastic sheeting prior to loading contaminated material into them. As discussed in Section 3.1, necessary environmental controls were implemented for the offload facility in accordance with the requirements of project permit. The southern portion of the South Terminal used for material offloading is shown on Sheets 6 and 11 of the Record Drawings.

3.3. Removal and Reuse of Existing Armor Rock

Approximately 250 cubic yards of existing armor rock were removed from along the shoreline adjacent to the Pacific Terminal to facilitate dredging of sediment. Rock removal activities were performed in a careful manner to minimize removal of underlying sediment. The minimal amount of sediment that was observed stuck on the rocks was cleaned on the barge. Dewatering was performed from the barge within the dredge prism in accordance with the permit requirements. The rocks were offloaded, temporarily stockpiled on South Terminal and ultimately reused for the construction of armored slope following the completion of dredging. The approximate area of existing armor rock removal is shown on Sheet 8 of the Record Drawings. The approximate area on the South Terminal used to temporarily stockpile existing armor rock is shown on Sheet 11 of the Record Drawings.

3.4. Dredging, Transport and Disposal

Dredging was completed using a 4-cubic yard clamshell bucket attached to a barge mounted crawler crane. Dredging activities included removal of both contaminated and non-contaminated material to meet the design grades. Dredging of contaminated material was fully completed and equipment was decontaminated prior to commencing dredging of non-contaminated material. In accordance with the requirements of the IAWP and DMMP's Suitability Determination, a post-contaminated dredge survey was submitted to regulatory agencies and an approval to commence non-contaminated material dredging was provided by the DMMP via email on October 13, 2016 (DMMP, 2016). Contaminated and non-contaminated material dredging, transport and disposal activities are described in the following sections.

3.4.1. Contaminated Material Dredging, Transport and Disposal

Contaminated material dredging activities were performed between August 16 and October 11, 2016. During contaminated material dredging BMPs including a silt curtain and debris boom were deployed throughout construction work in accordance with Ecology's 401 WQC and other project permits. Contaminated material was dredged from mudline to three benches at elevations -32, -34 and -42 feet mean lower low water (MLLW) in general accordance with the IAWP and design drawings with one exception. The bench dredged to elevation -32 feet MLLW was designed to be dredged to elevation -30 feet MLLW based on results of dredged material characterization; however, based on field observations, the Contractor was directed to dredge an additional two feet from this bench to ensure that wood debris (sawdust, wood fragments and occasional dimensional wood pieces) mixed with silt and sand, and logs observed at the base of the dredge layer were removed. Regulatory agencies were notified and an approval was obtained from Ecology on September 30, 2016 via email to modify the dredge depth (Ecology, 2016). Transition slopes between the bottom of the dredge prism and adjacent existing surfaces were dredged at a slope of 2 Horizontal to 1 Vertical (2H:1V).

Wood debris (sawdust, wood fragments and occasional dimensional wood pieces) mixed with silt and sand, and logs were dredged from within the contaminated material dredging limits. Similar material was observed along the transition slopes, which were contained following the completion of dredging by placement of rock as described in Section 3.5. Native sediment containing sand and silt was observed at the base of contaminated material dredging. The Contractor performed dredge progress surveys, as

necessary, to ensure that required dredge elevations were achieved. A post-contaminated dredge survey was completed following the completion of contaminated material dredging activities and this survey data was submitted to regulatory agencies. The post-contaminated dredge survey was performed by eTrac, Inc. on October 6 and 11, 2016. Sheet 8 of the Record Drawings identifies contaminated material dredging limits and presents post-contaminated dredge bathymetry based on the survey. Cross-sections showing contaminated material dredging limits are presented on Sheet 10 of the Record Drawings.

Contaminated dredged material was loaded onto flat-deck barges with BMPs in place by the Contractor for transport to the upland offload location. Free draining water was allowed to drain from the dredged material within the dredge prism in accordance with design drawings and permit requirements. Two 1,500-cubic yard flat-deck barges were used. A tug boat transported the loaded flat-deck barges to the South Terminal, where dredged material was directly transferred from barges into lined containers. Trucks transported the contaminated dredge material containers to the Republic Services Everett Intermodal Facility, where the containers were placed on rail cars and taken by train to the Republic Services Roosevelt Regional Subtitle D landfill for final disposal. A Certificate of Disposal was provided by Republic Services documenting each container and the total weight (in tons) of contaminated material disposed. The Certificate of Disposal is presented in Appendix D.

According to the Certificate of Disposal, 22,952 tons of contaminated dredged material was disposed at the landfill. Based on comparison of post-contaminated dredge survey to the pre-dredge bathymetry, 22,660 cubic yards of contaminated dredge material was removed.

3.4.2. Non-Contaminated Material Dredging, Transport and Disposal

Non-contaminated material dredging activities were performed between October 17, 2016 and January 7, 2017 following the completion of contaminated material dredging activities. Non-Contaminated material was dredged from the base of the contaminated material dredge to elevation -42 feet MLLW. The transition slope between the base of the dredge prism and adjacent existing surfaces was dredged at an angle of 2H:1V. Additionally, at the base of the transition slope a keyway trench was dredged to elevation -47 feet MLLW as described in Section 3.5. The base of the keyway trench was dredged approximately 10 feet wide and the sidewalls were dredged at a slope angle of 2H:1V. The sidewalls were originally planned at a slope angle of 1H:1V; however, during keyway dredging, failure of the upper transition slope was observed (in progress surveys). To minimize the potential for further sliding, the slope angle was modified in the field to accommodate for the Contractor's dredging methods and to maintain stability of the transition slope during keyway dredging activities. Dredging and material placement were completed successfully using the modified approach.

Native sediment consisting of sand and silt were dredged from within the non-contaminated material dredging limits including the keyway. In general, the material dredged from the keyway was observed to be denser as compared to non-contaminated material dredging completed above the keyway. The Contractor performed dredge progress surveys as necessary, to ensure that required dredge elevations were achieved. Since dredging and material placement activities were done simultaneously in sections, multiple final post-dredge surveys were performed (dated December 8, 14, 21, 28 and 29, 2016 and January 5 and 9, 2017) and then combined by the surveyor to depict a complete final dredge bathymetry. The surveys were performed by TetraTech. Sheet 9 of the Record Drawings presents the final dredge limits and combined final post-dredge bathymetry for the Interim Action. Cross-sections showing final dredging limits including dredging completed for the keyway are presented on Sheet 10 of the Record Drawings.

Dredged non-contaminated material was loaded onto a bottom-dump barge for open water disposal. A 2,300 cubic yard bottom-dump barge comprised of seven individual self-unloading compartments with hydraulically operated hinged doors was used. A tug boat transported the loaded bottom-dump barge to the Port Gardner Open Water Disposal Site. During each disposal event, Puget Sound Vessel Traffic Service (VTS) was used to confirm that the disposal barge was located within the target disposal area for the Port Gardner Open Water Disposal Site. In addition to VTS, an on board global positioning system was also used for positioning. Once the barge was positioned over the target disposal area of the disposal site, the doors of the compartments were opened and the dredged material was disposed from the bottom of the barge. The approximate location of the Port Gardner Open Water Disposal Site in relation to the Site is shown on Sheet 12 of the Record Drawings. Disposal at Port Gardner was completed in accordance with DNR's Site Use Authorization (SUA No. 20-522034) included in Appendix E.

A total of 19 disposal events were completed at the Port Gardner Open Water Disposal Site in accordance with the requirements of DNR's SUA. Daily disposal site use reports and monthly disposal statements summarizing these disposal events were submitted to DNR and are presented in Appendix F. Estimated disposal quantities based on barge displacement measurement were provided in the weekly/monthly reports for informational purposes. In accordance with DNR's SUA, the actual disposal volume was calculated based on comparison of the pre- and post-dredging site survey measurements. The actual volume disposed at Port Gardner Site from Port's Mill A Cleanup Site Interim Action is 13,732 cubic yards. This disposed volume is less than the 17,210 cubic yards permitted in the DMMP's Suitability Determination.

3.5. Rock Placement

Bedding rock, armor rock and habitat mix were placed on the transition slope area to contain the underlying material and stabilize the slope. Placement of bedding and armor rock was completed between December 21, 2016 and February 13, 2017. Placement of habitat mix was completed on February 13, 2017. Rock was imported to the Site from Iron Mountain Quarry using trucks and trailers, and transferred into a flat-deck barge at the South Terminal offload facility. A tug boat was used to transport rock-filled barges to the Interim Action area. Rock was placed using a steel box attached to a barge-mounted crawler crane. The steel placement box measured approximately 10 feet long by 6 feet wide by 4 feet high and consisted of an open top and hinge-gated bottom. Rock was loaded into the placement box from the top using a front-end loader. Placement was completed by positioning the loaded box at the desired location and then opening the bottom gates.

Prior to importing rock on Site, size and quality of rocks were tested to ensure that it meets the requirements of the design. Following are the rock gradations used for the Interim Action:

1. Bedding Rock Gradation

Sieve Size	Percent Passing by Weight
8"	100
3"	9.9
¾"	1.1

2. Armor Rock Gradation

Particle Mass (lbs)	Particle Size (in)*	Percentage by Weight Lighter/Smaller than the Mass/Diameter Specified
2000	35	100
1500	31.1	15-30
60	10.6	0-15

*Based on unit weight of 165 lbs/ft^3.

3. Habitat Mix Gradation

Sieve Size	Percent Passing by Weight
2"	100
1"	89.4
#4	23.4
#40	4.7
#200	1.3

The Iron Mountain Quarry source material for bedding rock, armor rock and habitat mix was also tested to ensure it meets the chemical criteria. Material was tested for metals, polycyclic aromatic hydrocarbons (PAHs), chlorinated organic compounds, phthalates, miscellaneous extractables, polychlorinated biphenyls (PCBs), phenols, dioxins and furans. The results were either not detected or detected at concentrations less than the chemical import criteria. A table presenting chemical import criteria and the results of the testing is provided in Appendix G. The laboratory reports of the testing are also included in Appendix G.

The following sections describe additional detail on rock placement construction activities.

3.5.1. Bedding and Armor Rock Placement

Bedding rock was placed on the dredged transition slopes and the keyway prior to placing armor rock. Placement of rock was completed by starting at the lowest elevation and working up the slopes. Rock placement activities were completed in a section by section sequence following dredging. A minimum of an 8-inches thick bedding rock layer was placed in accordance with the design. On transition slopes, multibeam bathymetric surveys were performed following the placement of bedding rock to ensure that the design grades and limits were achieved. Within the keyway, bedding rock surveys were not performed and armor rock was placed immediately following the placement of bedding rock to completely fill the keyway as soon as possible and maintain slope stability. The quantity of bedding rock loaded into the placement box was calculated by the Contractor to achieve the design thickness of 8-inches within the keyway. Additionally, electronic records of the placement locations provided by the Contractor were used to confirm that the bedding rock were placed within the keyway design limits. Approximately 3,650 tons of bedding rock were placed.

Armor rock was placed on top of bedding rock to the design grades. Approximately 6,270 tons of armor rock were placed. Multibeam bathymetric surveys were performed following the placement of armor rock to ensure that the design grades and limits were met within the allowable tolerances. Surveys were performed by TetraTech. The final post-armor rock placement survey was performed on February 21, 2017. Sheet 13 of the Record Drawings identifies the rock placement limits and presents post-armor rock placement grades based on the final survey. Cross-sections showing thicknesses of bedding and armor rock are presented on Sheet 14 of the Record Drawings.

3.5.2. Habitat Mix Placement

Habitat mix was placed following the placement of bedding and armor rock. Approximately 450 cubic yards of habitat mix were placed on top of the armored slope along the shoreline over an area of approximately 3,600 square feet as required by the USACE permit. The habitat mix was placed between approximate elevations of -4 and -20 feet MLLW to fill interstitial voids and enhance the characteristics of the critical shoreline habitat elevations.

4.0 COMPLIANCE WITH REGULATORY AND PERMIT REQUIREMENTS

Interim Action activities were completed in general compliance with regulatory and permit requirements including implementation of BMPs to protect the environment during construction. The Interim Action was completed in general accordance with the following regulatory and permit requirements. These permit documentations are provided in Appendix A.

- Dredged Material Management Program's Suitability Determination of the dredged material (DMMP, 2015);
- United States Army Corps of Engineers' (USACE's) Permit No. NWS-2014-890;
- Ecology's 401 Water Quality Certification (WQC) Order No. 13125;
- Ecology's Certification of Consistency with Washington State Coastal Zone Management Program (CZMP);
- Washington State Department of Fish and Wildlife (WDFW) Substantive Requirements;
- Washington State Department of Natural Resources (DNR) Open Water Disposal Site Use Authorization (SUA) No. 20-522034;
- Port of Everett's SEPA (State Environmental Policy Act) Mitigated Determination of Non-Significance (MDNS);
- City of Everett Shoreline Master Program (SMP) Substantive Requirements; and
- City of Everett Exemption from Public Works permit.

5.0 ON-GOING AND FUTURE REMEDIAL ACTIVITIES

The Interim Action was completed in general accordance with requirements of the IAWP. The Site contaminated media located outside the limits of the Interim Action area is being investigated by the Port in accordance with the Agreed Order (Number NE 8979) and the Mill A Remedial Investigation/Feasibility Study (RI/FS) Work Plan (GeoEngineers, 2014b). A cleanup action for the Site will be selected by Ecology based on the results of the RI/FS Report.

6.0 LIMITATIONS

This report has been prepared for the exclusive use of the Port of Everett, their authorized agents and regulatory agencies in their evaluation of the Weyerhaeuser Mill A Former Cleanup Site Interim Action. No other party may rely on the product of our services unless we agree in advance and in writing to such reliance.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

7.0 REFERENCES

Dredged Material Management Program (DMMP, 2015). "Determination Regarding the Suitability/Unsuitability of Proposed Dredged Material for Expansion of the Port of Everett's Pacific Terminal Berthing Area, Located at the Former Site of Weyerhaeuser Mill A, Evaluated Under Section 404 of the Clean Water Act for Unconfined Open-Water Disposal at the Port Gardner Open-Water Site". Dredged Material Management Office. July 9, 2015.

Dredged Material Management Program (DMMP, 2016). Email correspondence from DMMP (David Fox) to GeoEngineers (John Herzog) confirming that the contaminated material dredging activities was complete and non-contaminated material dredging activities can begin, dated October 13, 2016.

Washington State Department of Ecology (Ecology, 2016). Email correspondence from Ecology (Andrew Kallus) to Port of Everett (Erik Gerking) concurring the modification in dredge depth to remove observed wood waste, dated September 30, 2016.

GeoEngineers, Inc. (GeoEngineers, 2014a). "Dredged Material Characterization Sampling and Analysis Plan, Weyerhaeuser Mill A Former Cleanup Site, Interim Action Dredging Project, Everett, Washington," Prepared for the Port of Everett, December 16, 2014.

GeoEngineers, Inc. (GeoEngineers, 2014b). "Remedial Investigation/Feasibility Study Work Plan, Weyerhaeuser Mill A Former, Everett, Washington, Ecology Agreed Order No. DE 8979," Prepared for Washington State Department of Ecology on behalf of Port of Everett, Weyerhaeuser Company and Washington State Department of Natural Resources, October 16, 2014.

GeoEngineers, Inc. (GeoEngineers, 2015a). Public Review Draft "Interim Action Work Plan, Weyerhaeuser Mill A Former Cleanup Site, Interim Action Dredging Project, Everett, Washington," Prepared for Washington State Department of Ecology on behalf of Port of Everett, August 14, 2015.

GeoEngineers, Inc. (GeoEngineers, 2015b). Draft "Dredged Material Characterization Report, Weyerhaeuser Mill A Former Cleanup Site, Interim Action Dredging Project, Everett, Washington," Prepared for the Port of Everett, May 8, 2015.

GeoEngineers, In. (GeoEngineers, 2016). "Water Quality Monitoring and Protection Plan, Weyerhaeuser Mill A Former Cleanup Site, Interim Action Dredging Project, Everett, Washington," Prepared for Washington State Department of Ecology on behalf of Port of Everett, July 19, 2016.

FIGURES

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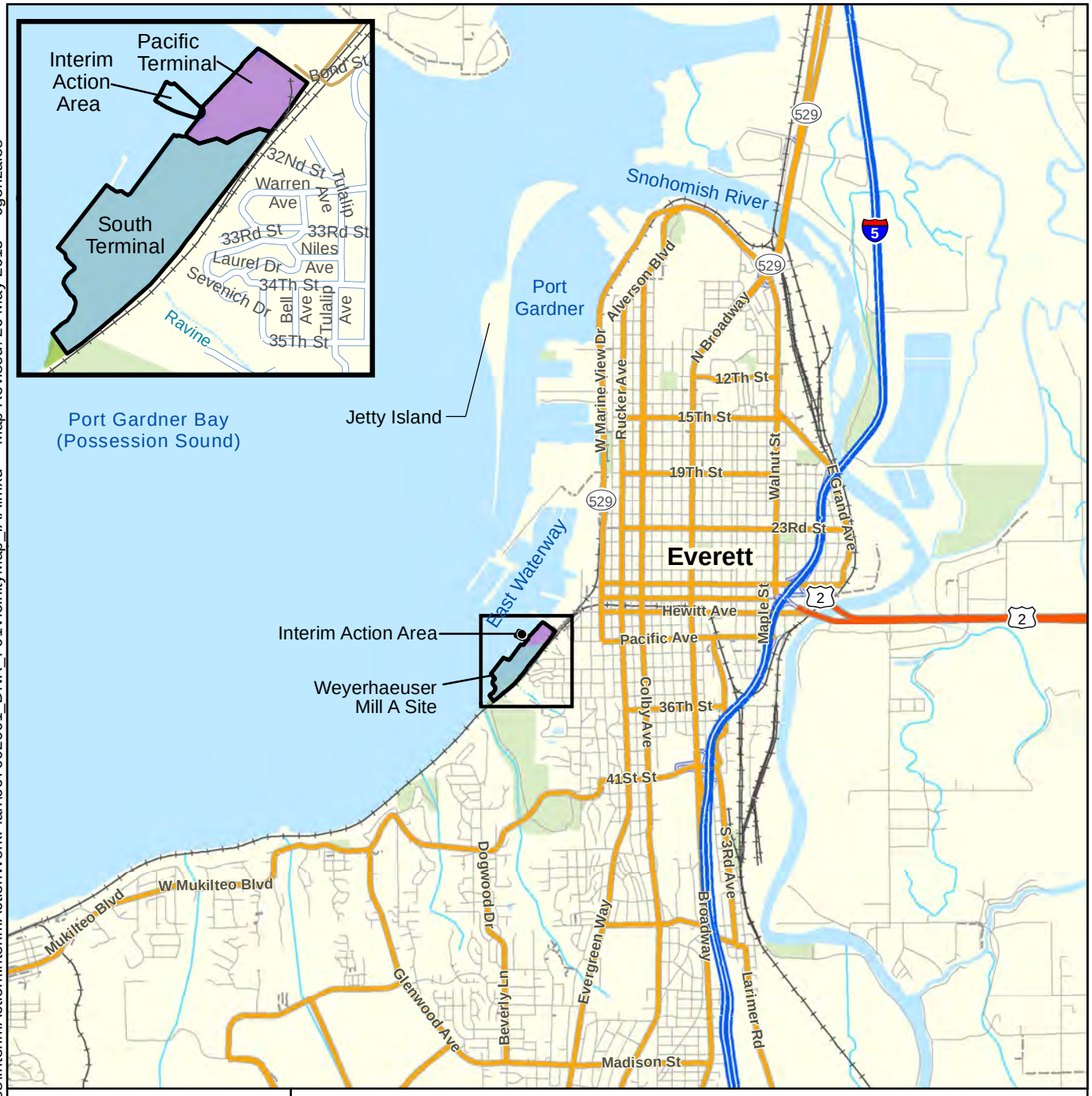

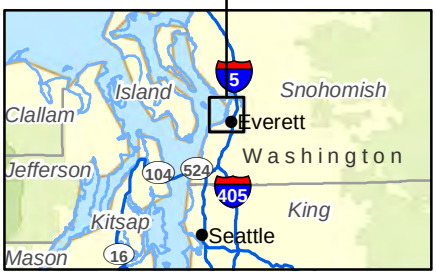

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Notes:
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2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
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Data Sources: ESRI Data & Maps

Projection: NAD83 UTM zone 10N

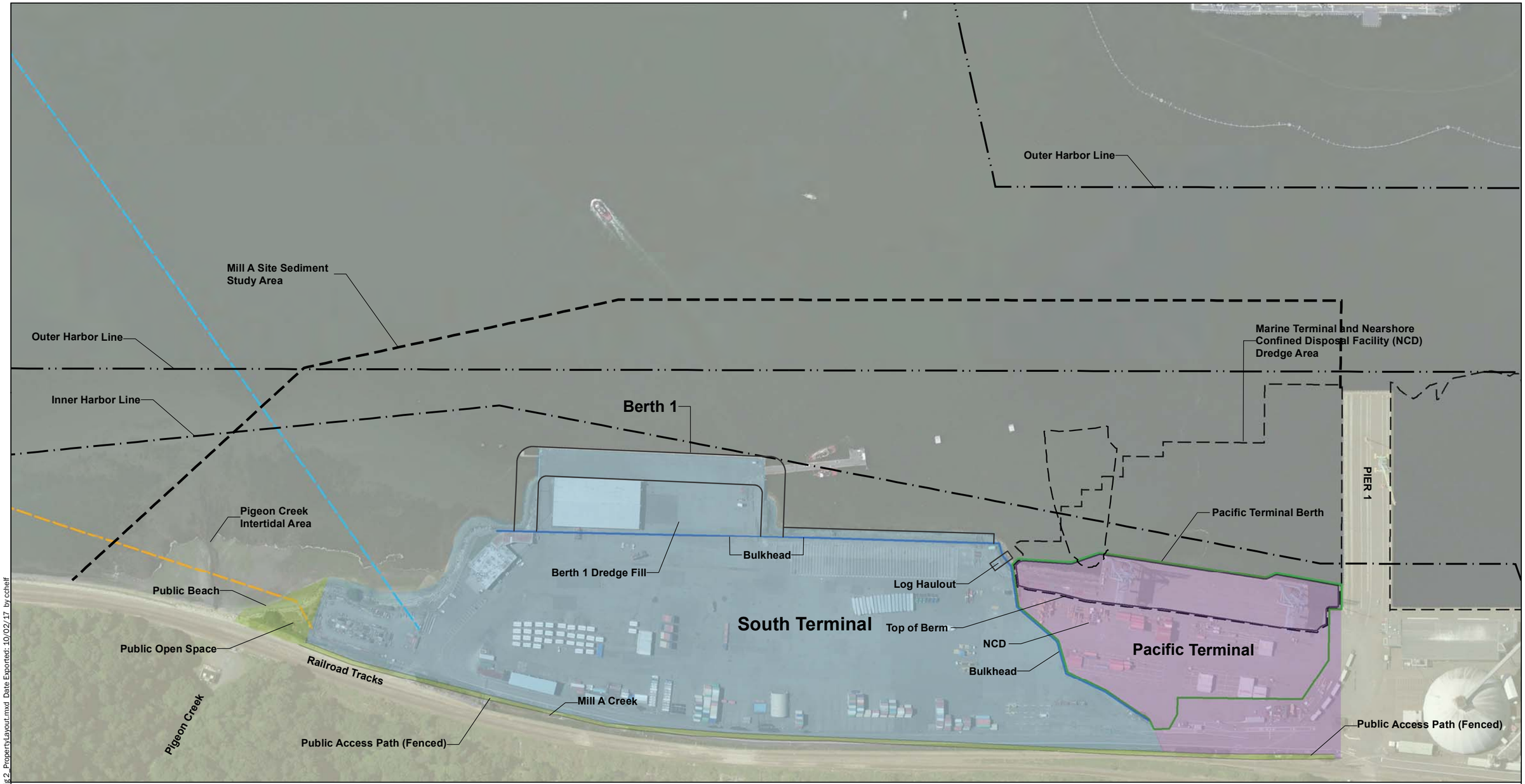
Vicinity Map

Weyerhaeuser Mill A Former Site
Interim Action Work Plan
Everett, Washington

GeoEngineers

Figure 1

Path: \\sea\projects\0\067602\GIS\DNR_Comment_Figures\InterimActionInterimActionWorkPlan\067602001_DNR_F01VicinityMap_IAA.mxd Map Revised: 26 May 2015 cgonzales



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3. Low tide surface water and groundwater elevations are from the low-low tide at 21:24 on December 12, 2016.
4. Deep monitoring well groundwater elevations not used for contouring.
Data Source: Base aerial from Bing Maps, 2011.
Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend
- South Terminal
- Pacific Terminal
- Open Space/Beach/Access Path
- Historical Dredging Area
- Current Diffuser Outfall
- Historic Diffuser Outfall
- Bulkhead

300 0 300
Feet

Current Property Conditions

Weyerhaeuser Mill A Former Site
Interim Action Work Plan
Everett, Washington

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Figure 2

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APPENDICES

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APPENDIX A
Project Permits

CENWS-OD-TS-NR-DMMO

MEMORANDUM FOR: RECORD July 9, 2015

SUBJECT: DETERMINATION REGARDING THE SUITABILITY/UNSUITABILITY OF PROPOSED DREDGED MATERIAL FOR EXPANSION OF THE PORT OF EVERETT'S PACIFIC TERMINAL BERTHING AREA, LOCATED AT THE FORMER SITE OF WEYERHAEUSER MILL A, EVALUATED UNDER SECTION 404 OF THE CLEAN WATER ACT FOR UNCONFINED OPEN-WATER DISPOSAL AT THE PORT GARDNER OPEN-WATER SITE.

1. Introduction. This memorandum reflects the consensus determination of the Dredged Material Management Program (DMMP) agencies (U.S. Army Corps of Engineers, Washington Departments of Ecology and Natural Resources, and the Environmental Protection Agency) regarding the suitability/unsuitability of up to 40,000 cubic yards (cy) of dredged material associated with expansion of the Port of Everett's Pacific Terminal berthing area, located at the former site of Weyerhaeuser Mill A, for disposal at the Port Gardner open-water site.

2. Background. The Port of Everett is proposing expansion of the berthing capacity at Pacific Terminal to support the larger ships anticipated to call on the terminal in the future. Pacific Terminal is the Port's primary marine terminal and is used by the Port for handling and loading of maritime cargo. It was constructed in the mid-1990s as part of a near-shore confined disposal (NCD) facility project. Currently, a 650-foot-long shipping berth operates at the terminal. Pacific Terminal is a part of a larger marine terminal complex, which also includes South Terminal and Pier 1 (GeoEngineers, 2014).

   Pacific Terminal is located on property formerly occupied by Weyerhaeuser's Mill A facility at the southern end of the City of Everett waterfront (Figure 1). Previous sediment investigations found elevated concentrations of metals, semivolatile organics, PCBs and dioxins/furans located offshore of the former mill facility. The contamination led the Department of Ecology (Ecology) to designate the area a cleanup site in 1996. A partial cleanup was accomplished at that time, resulting in construction of the NCD and dredging and sequestration of 130,000 cubic yards of contaminated sediment behind the NCD containment berm. Pacific Terminal was constructed over the NCD and serves as a cap which minimizes rainwater infiltration. The cleanup removed contaminated sediment to the west of Pier 1 and created a berthing area for Pacific Terminal. Other areas of contaminated sediment associated with the Mill A facility remain, including an area of wood debris accumulation adjacent to South and Pacific Terminals.

   Ecology is undertaking a cleanup of the remaining contaminated sediment associated with Mill A under an Agreed Order, but the cleanup is likely to take several years to accomplish. In the meantime, the Port of Everett has an immediate need to expand the berth at Pacific Terminal to facilitate maritime cargo shipping. To accommodate this need, Ecology has agreed to a Model Toxics Control Act (MTCA) Interim Cleanup Action in the berth expansion area under an amendment to the existing Agreed Order. The proposed interim action will expedite part of the environmental cleanup at the former Mill A site while meeting the Port's immediate navigation needs. Figure 2 shows the interim action dredge area in relation to the terminal complex and the area of wood debris accumulation. Also shown is the "Berth 1 Construction Dredge Area". The Port

of Everett plans to expand Berth 1 at some future time; however, it is not part of the current proposal. Figure 3 shows the interim action area in more detail and depicts the expansion of the berthing capacity at Pacific Terminal.

3. Sediment Evaluation under DMMP and MTCA. Characterization of the sediment proposed for dredging required the dual application of the DMMP evaluation guidelines and MTCA cleanup standards. To facilitate this characterization, Ecology's Toxics Cleanup Program (TCP) and the DMMP agencies agreed to a joint review of the sampling and analysis plan, in which the combined sediment evaluation framework was developed. The Interim Action Work Plan for the project requires that any sediment identified as cleanup material under MTCA will be disposed of at an appropriate landfill. Only dredged material meeting both the DMMP suitability guidelines and MTCA standards will be taken to the Port Gardner open-water disposal site. The resulting evaluation framework is provided in Figure 4 and summarized in the following bullets:

   ■ For arsenic, cadmium, lead and mercury the screening levels for protection of human health and higher trophic level ecological receptors would be the maximum allowable concentrations for open-water disposal. For other metals tiered testing would be conducted, with the DMMP screening levels used to determine the need for bioassays.

   ■ For PAHs, chlorinated hydrocarbons, phthalates, phenols and miscellaneous extractables the analytical results would be independently compared to DMMP screening levels, MTCA screening levels for protection of benthic organisms and MTCA screening levels for protection of human health and higher trophic level ecological receptors. If concentrations exceed any of these screening levels, then bioassay testing would be required for the material to be determined suitable for open-water disposal.

   ■ For total PCBs, the MTCA screening level for protection of human health and higher trophic level ecological receptors would be the maximum allowable concentration for open-water disposal.

   ■ For total cPAHs and total dioxin-like PCB congeners there are no MTCA screening levels for protection of benthic organisms or DMMP screening levels. For these groups of chemicals, the screening levels for protection of human health and higher trophic level ecological receptors would be the maximum allowable concentrations for open-water disposal.

   ■ The MTCA screening level for dioxin (5 ng/kg) is based on the practical quantitation limit and would not be used for determination of open-water suitability. The DMMP dioxin guidelines would be used instead.

   ■ For chemicals that do not have MTCA screening levels (e.g. pesticides and TBT), the DMMP guidelines would be used.

   ■ In the event that a DMMP bioaccumulation trigger (BT) were to be exceeded for a DMMU and the DMMU would otherwise qualify for open water disposal, the Port would determine whether or not to conduct bioaccumulation testing for that DMMU. If bioaccumulation testing was not conducted the DMMU would be found unsuitable for open-water disposal.

■ DMMUs with a dry-weight wood-waste content greater than 25% would be subjected to bioassay testing.

This suitability determination memorandum describes the sampling and testing that was performed, presents the results of the sediment evaluation, and documents the determination by the DMMP agencies of the suitability/unsuitability of the dredged material for open-water disposal based on the dual DMMP/MTCA framework.

4. Project Summary. Table 1 includes project summary and tracking information.

Table 1. Project Summary

Project ranking	High
Dredging volume	40,000 cubic yards
Proposed dredging depth	-43 feet MLLW within the main navigation area and -48 feet MLLW within the slope protection keyway; both base elevations include one foot of over-dredge allowance
1st draft sampling and analysis plan (SAP) received	November 7, 2014
DMMP comments provided on 1st draft	November 20, 2014
2nd draft SAP received	December 1, 2014
DMMP comments provided on 2nd draft	December 15, 2014
Final SAP received	December 16, 2014
SAP approved	December 20, 2014
Sampling dates	January 12-16, 2015
Draft data report received	May 8, 2015
DMMP comments provided on draft report	May 20, 2015
Final data report received	June 22, 2015
DAIS Tracking number	PEWMA-1-B-F-366
EIM study ID	AODE8979
USACE permit application number	NWS-2014-1083
Recency determination (high rank = 3 years)	January 12, 2018

5. Project Ranking and Sampling Requirements. The Former Mill A site was ranked "high" due to its location in East Waterway (DMMP, 2014).

In a high-ranked area the number of samples and analyses are normally calculated using the following guidelines (DMMP, 2014):

- Maximum volume of sediment represented by each field sample (typically a 4-foot core) = 4,000 cubic yards
- Maximum volume of sediment represented by each analysis in the upper 4-feet of the dredging prism (surface sediment) = 4,000 cubic yards

- Maximum volume of sediment represented by each analysis beyond the upper 4-feet of the dredging prism (subsurface sediment) = 12,000 cubic yards

However, due to the heterogeneity of the site and the site's designation as a MTCA cleanup site, the DMMP agencies limited both surface and subsurface analyses to 4,000 cubic yards.

The total project volume at the time the sampling and analysis plan (SAP) was submitted was 35,140 cubic yards, including a one-foot overdredge allowance and an uncertainty factor of 10%. The project was divided into eleven dredged material management units (DMMUs) in six layers. Figures 4 to 7 show the layers, DMMUs and sampling locations. Figure 8 shows the compositing scheme. A total of 48 individual core sections were to be composited to represent the 11 DMMUs. However, the DMMP agencies agreed to review the core logs prior to compositing in order to take into account the stratigraphy encountered during sampling.

The SAP also included analysis of 9 z-samples. Normally, the z-samples would be collected from the first 2 feet beyond the overdepth. However, to accommodate the needs of TCP, z-samples were restricted to the first foot beyond the dredging overdepth. The purpose of z-sample analysis was to determine the chemical quality of the sediment that would be exposed by dredging. TCP also needed z-sample analysis on the new side slopes to determine sediment composition and slope stability.

6. Sampling. Field sampling took place January 12-16, 2015 using a sonic drill rig mounted on a barge. Tables 2 and 3 present the coring data, including penetration and recovery. Figure 9 shows both the target and actual sampling locations.

   Full penetration was achieved at all sampling locations. The minimum acceptable recovery rate of 75% was also achieved, with the exception of 4 core sections (at sampling stations PT-6, PT-8, PT-9 and PT-12). A second core was collected at these 4 stations in order to replace the core sections with poor recovery. This procedure was successful, except for the -27 to -30.25 MLLW core section at PT-106, which again had poor recovery.

   The core from each sampling station was divided into one-foot core sections and archived. Upon completion of sampling, the core logs and stratigraphy were evaluated to determine if revisions needed to be made to the DMMU configurations and compositing plan. In consultation with the DMMP agencies and TCP, GeoEngineers made two substantive changes upon review of the logs. First, a new DMMU (D-7) was created, consisting of sediment with high wood content that was blanketing the base of the slope in the most offshore portion of the dredging prism. Second, the three DMMUs located between elevations -38 ft and -42 ft MLLW (D-6A, D-6B and D-6C) were consolidated into two DMMUs (D-6A and D-6B).

   Figures 10, 11 and 12 show the stratigraphy encountered during sampling and the revised DMMU configurations. Figure 13 includes the revised compositing plan. In addition to the DMMU modifications, the z-layer sample at PT-3 was substituted for PT-2 because wood debris was observed closer to the dredging limit at this location. This change is evident in Figure 13.

7. Wood-Content Analysis. Due to the fact that wood waste was known to be present in portions of the dredge prism, the DMMP agencies required the fraction of wood waste in each DMMU to be

quantified using a modified total volatile solids (TVS) test on 300-g samples of sediment. According to DMMP guidelines (DMMP, 2014), if the TVS content is greater than 25% (roughly equivalent to 50% wood waste by volume), then bioassays must be run and passed in order for that DMMU to be eligible for open-water disposal.

The results from the wood-content analysis were unexpected. Despite visual evidence of high wood-waste content, none of the DMMUs had greater than 25% TVS. However, out of an abundance of caution and to ensure holding times were met, the Port of Everett chose to conduct bioassays on the 6 DMMUs with the highest wood content, as these were visually estimated to be in excess of 50% wood waste by volume. These DMMUs are indicated in Table 4.

8. Chemical Analysis. The approved SAP was followed and the resulting analytical data were deemed adequate to characterize the proposed dredged material. The sediment conventional and chemistry results can be found in Tables 5 and 6, in which contaminant concentrations are compared to the DMMP guidelines and MTCA preliminary cleanup screening levels respectively. Figures 14-17 show the results of chemical comparisons to DMMP and MTCA.

   The total organic carbon content (TOC) of the DMMUs ranged widely, from a low of 0.12% in D-5B to a high of 14.4% in D-1, reflecting the highly variable quantities of wood waste within the dredge prism. The TOC concentrations were either too high (>3.5%) or too low (<0.5%) for carbon-normalization, with the exception of D-7. Total volatile solids covaried with TOC. Sulfide and ammonia were low in most samples.

   Grain-size analysis was conducted twice for the DMMUs. The first analysis was the standard DMMP analysis. The second analysis was conducted on the residue of the wood-waste analysis. It was anticipated that the standard analysis would be biased toward the coarser-grained fractions, with larger wood chunks being included with the gravel fraction. This hypothesis proved to be correct, although the effect was relatively subtle. For the DMMUs with the highest wood content, the grain-size results from the standard analysis were skewed toward the coarser fractions.

   For bioassay testing, it is assumed that the grain-size results from the ashed residue of the wood-waste analysis better reflect the nature of the sediment that the test organisms would be exposed to. The results from the grain-size analysis conducted on the ashed residue indicate that the sediment in the DMMUs was predominantly silty sand, with relatively low clay content (ranging from 2.6% to 12.5%).

   Chemical testing indicated that contamination was greater in the upper layers of sediment, which included a higher wood-waste content, and nearly non-existent in deeper native material, which did not contain appreciable woody material.

   Metals were not an issue with respect to the DMMP guidelines in any of the DMMUs, with no exceedances of DMMP screening levels (SLs). The concentrations of chromium and lead were slightly higher than the MTCA site-specific cleanup screening levels in some DMMUs, with chromium exceeding the screening level of 1 mg/kg for the protection of human health and higher trophic ecological receptors in DMMUs D-1 and D-3B, and lead exceeding the screening level of 21 mg/kg for the protection of human health and higher trophic ecological receptors in DMMUs D-1, D-2 and D-3B.

Semivolatile organics were elevated in several DMMUs, with DMMP maximum levels (MLs) exceeded for at least one chemical in DMMUs D-1, D-2, D-3B and D-4B. Semivolatiles exceeding the DMMP SL in at least one DMMU included naphthalene, diethyl phthalate, 2-methylphenol, 4-methylphenol, phenol, 2,4-dimethylphenol, benzoic acid and benzyl alcohol. These same chemicals exceeded the MTCA cleanup screening level for protection of benthic organisms in at least one DMMU.

PCB congener analysis was conducted to comply with MTCA testing requirements, replacing the Aroclor analysis done for typical DMMP projects. Like the metals, PCBs were not an issue in any of the DMMUs when compared to the DMMP guidelines. The highest concentration of total PCBs was 27.1 ug/kg in DMMU D-1, which is well below the DMMP SL of 130 ug/kg. Carbon-normalized, the highest concentration of PCBs was 0.7 mg/kg oc, which is far below the DMMP bioaccumulation trigger (BT) of 38 mg/kg oc. However, when compared to the site-specific MTCA levels, five of the DMMUs (D-1, D-2, D-3A, D-3B and D-4B) exceeded the sediment screening level for protection of human health and higher trophic level ecological receptors of 3.5 ug/kg.

Bulk concentrations of tributyltin (TBT) were mostly undetected. The highest detected concentration was 3.7 ug/kg, which is far below the DMMP BT of 73 ug/kg. There is no MTCA cleanup screening level for TBT.

Dioxin concentrations were elevated in several DMMUs, with D-1, D-2, D-3B, D-4B and D-7 all above the DMMP BT of 10 ng/kg toxic equivalents (TEQ). DMMU D-3A exceeded the DMMP site management objective of 4 ng/kg TEQ. The remaining DMMUs (D-4A, D-5A, D-5B, D-6A and D6B) had TEQs ranging from 0.43 to 1.38 ng/kg. The TEQ calculations are shown in Table 7.

TEQs for carcinogenic polycyclic aromatic hydrocarbons (cPAHs) were calculated for comparison to the site-specific MTCA cleanup screening level of 16 ug/kg for the protection of human health and higher trophic ecological receptors. DMMUs D-1, D-2, D-3A, D-3B and D-4B exceeded this concentration. There are no DMMP guidelines for cPAHs.

Data validation was conducted by GeoEngineers. All of the sample delivery group data packages received EPA Stage 2B validation, with 10 percent of the packages receiving EPA Stage 4 validation. The data and qualifiers presented in Tables 5, 6 and 7 include all modifications made by the validator.

9. Bioassays. As indicated in Section 6, bioassays were run on the six DMMUs with the highest wood content. These same DMMUs were subsequently found to contain at least one contaminant concentration exceeding a DMMP SL. The DMMUs that were not subjected to bioassays (D-4A, D-5A, D-5B, D-6A and D-6B) had no DMMP SL exceedances.

   The standard suite of three bioassay tests (amphipod mortality, larval development, and polychaete growth) was performed. The DMMP interpretation guidelines for non-dispersive disposal sites (DMMP, 2014) and Table IV from the Sediment Management Standards (SMS) (Ecology, 2013) were used to assess the bioassay results. The DMMP and SMS interpretation guidelines are found in Tables 8 and 9 respectively. The reference sediment sample was collected from Carr Inlet on February 24, 2015. The Carr Inlet sediment, with a fines content of only 1.1% (Table 10), was

coarser than the test sediments. The fines content of the test samples (from the grain-size analysis of ashed sediment) ranged from 20.6% to 33.7%. Because the bioassays tend to perform better when run with coarse sediment, use of a reference sediment that is coarser than the test sediments makes for an environmentally conservative evaluation. The reference sediment and negative controls met the DMMP performance criteria for all three bioassays.

Amphipod Mortality. The amphipod bioassay was run using *Eohaustorius estuarius* as the test species. Test results are shown in Table 11 and summarized in Tables 14 and 15. The test sediments performed well and there were no hits for any DMMU.

All water quality parameters were within the acceptable limits throughout the duration of the test, with the exception of minor deviations in salinity. Although salinity was recorded slightly above the recommended range of 28 ± 1 ppt, this salinity was still well within the tolerance range for this species.

A reference-toxicant test was performed on the batch of test organisms utilized for this study. The LC50 value was well within control chart limits (±2 standard deviations from the laboratory historical mean). This result indicates that the test organisms used in this study were of similar sensitivity to those previously tested at the bioassay lab (Environ, 2015).

Polychaete Growth. The juvenile polychaete growth test - using *Neanthes arenaceodentata* as the test species - was run with the ash-free dry-weight endpoint. Test results are shown in Table 12 and summarized in Tables 14 and 15. The test sediments performed well and there were no hits for any DMMU.

All water quality parameters were within the acceptable limits throughout the duration of the test. A reference-toxicant test was performed on the batch of test organisms utilized for this study. The LC50 value was well within control chart limits (±2 standard deviations from the laboratory historical mean). This result indicates that the test organisms used in this study were of similar sensitivity to those previously tested at the bioassay lab (Environ, 2015).

Larval Development. The larval development bioassay - using *Mytilus galloprovincialis* - was run with the standard endpoint, which involves carefully decanting the overlying water at the end of the test so as not to disturb the sediment. The results are shown in Table 13 and summarized in Tables 14 and 15.

DMMUs D-1, D-2 and D-4B scored a hit under the two-hit rule for DMMP non-dispersive disposal and exceeded the SMS sediment cleanup objective (SCO). DMMU D-3B scored a hit under the one-hit rule for DMMP unconfined open-water disposal and exceeded the SMS cleanup screening level (CSL).

All water quality parameters were within the acceptable limits throughout the duration of the test, with the exception of minor deviations in salinity. Although salinity was recorded at 30 ppt in the water quality surrogate for several samples on Day 1, this salinity was well within the tolerance range for this species.

A reference-toxicant test was performed on the batch of test organisms utilized for this study.

The LC50 value was well within control chart limits (±2 standard deviations from the laboratory historical mean). This result indicates that the test organisms used in this study were of similar sensitivity to those previously tested at the bioassay lab (Environ, 2015).

A single hit under the DMMP one-hit rule disqualifies a DMMU for open-water disposal. Therefore, DMMU D-3B failed biological testing and is unsuitable for open-water disposal. Under the DMMP two-hit rule, hits must occur in at least two bioassays to disqualify a DMMU for open-water disposal. DMMUs D-1, D-2 and D-4B scored hits under the two-hit rule for the larval test, but there were no corroborating hits in the other bioassays. Therefore, with regard to bioassay testing, these DMMUs are suitable for open-water disposal.

The SMS interpretation of the data yielded the same results. DMMU D-3B exceeded the CSL and is unsuitable for open-water disposal. DMMUs D-1, D-2 and D-4B exceeded the SCO for a single bioassay only and are, therefore, not considered cleanup material with regard to benthic effects.

Figure 18 graphically depicts the outcome of biological testing.

10. Sediment Exposed by Dredging. Ecology's TCP staff evaluated the z-samples taken from the dredge prism base and side slopes. The four z-samples taken from the dredge prism base had no exceedances of DMMP guidelines or MTCA cleanup screening levels. Two of the five z-samples taken from side slopes exceeded DMMP or MTCA screening levels. Exceedances occurred for dioxins/furans, cadmium, lead and cPAHs.

    As part of the MTCA Interim Action, Ecology will require the side slopes to be armored to contain the contaminated material and stabilize the slope. The placement of armor rock necessitated a design change to key the rock into the slope. This resulted in minor modifications of the DMMU layout and associated volumes. The DMMP-approved volume revisions are summarized in Table 16. Figures 10, 11 and 12 show the keyway necessary to construct the armored slope.

11. DMMP Suitability Determination. The chemical and biological testing results were evaluated using the DMMP guidelines and site-specific MTCA preliminary sediment screening levels – in accordance with the SAP – to characterize sediment quality and evaluate suitability of the dredged material for open-water disposal. The results of this dual evaluation are provided in Table 16.

Table 16. Evaluation of Chemical and Biological Testing Results for Open-Water Disposal

DMMU	Volume (cy)	Suitability	Reason
D-1	3,940	unsuitable	D/F>10 ng/kg TEQ with no bioaccumulation testing; cPAH and total PCBs>HH/HTL
D-2	3,750	unsuitable	D/F>10 ng/kg TEQ with no bioaccumulation testing; cPAH and total PCBs>HH/HTL
D-3A	2,450	unsuitable	cPAH and total PCBs>HH/HTL
D-3B	2,420	unsuitable	D/F>10 ng/kg TEQ with no bioaccumulation testing; cPAH and total PCBs>HH/HTL; failed bioassays
D-4A	2,790	suitable	No DMMP or MTCA chemical exceedances
D-4B	3,160	unsuitable	D/F>10 ng/kg TEQ with no bioaccumulation testing; cPAH and total PCBs>HH/HTL

D-5A	2,870	suitable	No DMMP or MTCA chemical exceedances
D-5B	2,710	suitable	No DMMP or MTCA chemical exceedances
D-6A	4,520	suitable	No DMMP or MTCA chemical exceedances
D-6B	4,320	suitable	No DMMP or MTCA chemical exceedances
D-7	4,390	unsuitable	D/F>10 ng/kg TEQ with no bioaccumulation testing; cPAH and total PCBs>HH/HTL; failed bioassays

cPAH = carcinogenic polycyclic aromatic hydrocarbons
D/F = dioxins/furans
HH/HTL = human health and higher trophic level ecological receptors
PCBs = polychlorinated biphenyls
TEQ = toxic equivalents

In summary, six DMMUs (D-1, D-2, D-3A, D-3B, D-4B and D-7), with a combined volume of 20,110 cy, are unsuitable for open-water disposal at the Port Gardner site. Five DMMUs (D-4A, D-5A, D-5B, D-6A and D-6B), with a combined volume of 17,210 cy, are suitable for open-water disposal. The suitable DMMUs all had low dioxin concentrations, with TEQs ranging from 0.43 to 1.38 ng/kg. The volume-weighted average for the suitable DMMUs is well below the DMMP disposal site management objective of 4 pptr TEQ.

In order to provide flexibility to the dredging contractor during project construction and to maintain consistency with the Port's permit applications, the Port of Everett requested that the upper limit on the total dredged material volume be increased to 40,000 cubic yards in the suitability determination. The DMMP agencies agreed to this modification, provided that the dredged material taken to the Port Gardner disposal site is restricted to the 17,210 cubic yards documented in this memorandum as being suitable for open-water disposal.

A pre-dredge meeting with DNR, Ecology, EPA and the Corps of Engineers is required at least 7 days prior to dredging. A dredging quality control plan must be developed and submitted to the Regulatory Branch of the Seattle District Corps of Engineers at least 7 days prior to the pre-dredge meeting. The dredging quality control plan must clearly show how the unsuitable material will be dredged separately from the suitable material. Dredging, positioning, de-watering, transloading and disposal will all need to be addressed with enough detail to provide assurance to the agencies that the dredge plan will be properly implemented. The unsuitable material must be completely dredged and removed before the suitable material may be dredged and taken to the Port Gardner site. A bathymetric survey will be required after the unsuitable material has been dredged to verify that it has been completely removed.

A DNR site-use authorization must be acquired for open-water disposal. Disposal at the Port Gardner site must be by bottom-dump barge.

This suitability determination does ***not*** constitute final agency approval of the project. During the public comment period that follows a public notice, the resource agencies will provide input on the overall project. A final decision will be made after full consideration of agency input, and after an alternatives analysis is done under section 404(b)(1) of the Clean Water Act.

12. References.

DMMP, 2014. *Dredged Material Evaluation and Disposal Procedures (User Manual)*. Prepared by the Seattle District Dredged Material Management Office for the Dredged Material Management Program, December 2014.

Ecology, 2013. *Sediment Management Standards – Chapter 173-204 WAC*. Washington State Department of Ecology, February 2013.

Environ, 2015. *Biological Testing Results for Weyerhaeuser Mill A Former Cleanup Site Dredged Material Evaluation.* Prepared by Environ International Corporation, Port Gamble, Washington for GeoEngineers, Inc. on behalf of the Port of Everett, April 13, 2015; Revised June 19, 2015.

GeoEngineers, 2014. *Dredged Material Characterization Sampling and Analysis Plan, Weyerhaeuser Mill A Former Cleanup Site, Interim Action Dredging Project, Everett, Washington.* Prepared by GeoEngineers for the Dredged Material Management Office and Washington State Department of Ecology on behalf of the Port of Everett, December 16, 2014.

GeoEngineers, 2015. *Final Dredged Material Characterization Report, Weyerhaeuser Mill A Former Cleanup Site, Interim Action Dredging Project, Everett, Washington.* Prepared by GeoEngineers for the Dredged Material Management Office and Washington State Department of Ecology on behalf of the Port of Everett, June 19, 2015.

13. **Agency Signatures**.

Concur:

7/9/15 David Fox
Date David Fox, P.E. - Seattle District Corps of Engineers

7/9/15 Erika Hoffman
Date Erika Hoffman - Environmental Protection Agency

07/21/2015 Laura Inouye
Date Laura Inouye, Ph.D. - Washington Department of Ecology

07/21/2015 Celia Barton
Date Celia Barton - Washington Department of Natural Resources

Copies furnished:

DMMP signatories
Frank Nichols – Seattle District Regulatory
Graham Anderson – Port of Everett
John Herzog – GeoEngineers

Table 2

Field Sediment Core Locations

Former Mill A Cleanup Interim Action Dredging Project

Everett, Washington

Core Location		Planned Coordinates (Lat/Long)	Actual Coordinates[1] (Northing/Easting)	Date	Time	Tide Elevation[2] (ft MLLW)	Depth to Mudline[2] (ft)	Anticipated Mudline Elevation (ft MLLW)	Actual Mudline Elevation (ft MLLW)	Target Penetration Elevation[3] (ft MLLW)	Actual Penetration Elevation (ft MLLW)
Base of Dredge Prism	PT-1	N 47° 58' 37.82" W 122° 13' 34.04"	N 47° 58' 37.768" W 122° 13' 33.965"	1/14/2015	1510	5.75	39.75	-35	-34.00	-45	-49.00
	PT-2	N 47° 58' 38.30" W 122° 13' 33.23"	N 47° 58' 38.268" W 122° 13' 33.139"	1/14/2015	800	8.50	38.00	-30	-29.50	-45	-49.50
	PT-3	N 47° 58' 38.50" W 122° 13' 32.39"	N 47° 58' 38.498" W 122° 13' 32.540"	1/13/2015	1340	5.00	42.50	-38	-37.50	-45	-47.50
	PT-4	N 47° 58' 37.49" W 122° 13' 33.39"	N 47° 58' 37.447" W 122° 13' 33.405"	1/14/2015	1300	9.25	36.50	-27	-27.25	-45	-47.25
	PT-5	N 47° 58' 37.71" W 122° 13' 32.29"	N 47° 58' 37.709" W 122° 13' 32.275"	1/13/2015	1230	9.00	33.25	-24	-24.25	-45	-49.25
	PT-6	N 47° 58' 36.97" W 122° 13' 31.43"	N 47° 58' 36.952" W 122° 13' 31.504"	1/13/2015	815	9.75	25.00	-16	-15.25	-45	-45.25
	PT-7	N 47° 58' 37.45" W 122° 13' 30.78"	N 47° 58' 37.456" W 122° 13' 30.776"	1/14/2015	955	10.50	40.50	-31	-30.00	-45	-45.00
	PT-8	N 47° 58' 36.79" W 122° 13' 30.45"	N 47° 58' 36.806" W 122° 13' 30.297"	1/12/2015	930	11.00	34.25	-23	-23.25	-45	-45.25
	PT-9	N 47° 58' 36.80" W 122° 13' 29.61"	N 47° 58' 36.772" W 122° 13' 29.631"	1/12/2015	1405	5.50	34.00	-30	-28.50	-45	-48.50
Dredge Transition Slope	PT-10	N 47° 58' 37.12" W 122° 13' 33.98"	N 47° 58' 37.039" W 122° 13' 33.906"	1/14/2015	1135	10.50	39.50	-30	-29.00	-38	-44.00
	PT-11	N 47° 58' 36.92" W 122° 13' 32.74"	N 47° 58' 36.822" W 122° 13' 32.695"	1/15/2015	1330	9.75	29.75	-20	-20.00	-38	-40.00
	PT-12	N 47° 58' 36.55" W 122° 13' 31.37"	N 47° 58' 36.577" W 122° 13' 31.431"	1/15/2015	745	8.00	22.00	-14	-14.00	-32	-39.00
	PT-13	N 47° 58' 36.31" W 122° 13' 30.22"	N 47° 58' 36.314" W 122° 13' 30.222"	1/15/2015	1140	10.75	26.75	-18	-16.00	-31	-36.00
	PT-14	N 47° 58' 36.32" W 122° 13' 29.49"	W 122° 13' 29.604" N 47° 58' 36.278"	1/15/2015	935	10.00	28.00	-19	-18.00	-31	-38.00
Duplicate Cores[4]	PT-106	N 47° 58' 36.97" W 122° 13' 31.43"	N 47° 58' 37.038" W 122° 13' 31.408"	1/16/2015	755	8.00	25.00	-16	-17.00	a	-32.00
	PT-108	N 47° 58' 36.79" W 122° 13' 30.45"	N 47° 58' 36.783" W 122° 13' 30.543"	1/16/2015	925	9.00	31.00	-23	-22.00	a	-30.00
	PT-109	N 47° 58' 36.80" W 122° 13' 29.61"	N 47° 58' 36.737" W 122° 13' 29.649"	1/12/2015	1600	5.50	34.00	-30	-28.50	a	-33.50
	PT-112	N 47° 58' 36.55" W 122° 13' 31.37"	N 47° 58' 36.605" W 122° 13' 31.454"	1/16/2015	1000	9.50	24.00	-14	-14.50	a	-24.00

Notes:

[1] Actual coordinates have been corrected using post-processing software.

[2] Depth of to mudline and tide elevation (from tideboard) measurements were rounded to the nearest 0.25 feet.

[3] Target penetration depths are from Sampling and Analysis Plan (GeoEngineers, 2014)

[4] Duplicate cores were completed to obtain core intervals and samples from elevation where required recovery (75%) was not obtained in the original core.

[a] Target depth in duplicate core dependent on missing interval in primary core

ft = Feet

MLLW = Mean low low water

Table 3

Sediment Core Interval Data and Recovery Measurements

Former Mill A Cleanup Interim Action Dredging Project

Everett, Washington

	Sample Location	Date	Total Depth Penetrated (ft below mudline)	Core Starting Elevation (ft MLLW)	Depth Penetrated (ft)	Core Ending Elevation (ft MLLW)	Recovery Measurement (ft)	% Recovery	Core Accepted (Y/N)
Base of Dredge Prism	PT-1	1/14/2015	5.0	-34.00	5.0	-39.00	5.0	100.0%	Yes
			10.0	-39.00	5.0	-44.00	5.0	100.0%	Yes
			15.0	-44.00	5.0	-49.00	5.0	100.0%	Yes
	PT-2	1/14/2015	5.0	-29.50	5.0	-34.50	4.6	92.0%	Yes
			10.0	-34.50	5.0	-39.50	4.0	80.0%	Yes
			15.0	-39.50	5.0	-44.50	4.0	80.0%	Yes
			20.0	-44.50	5.0	-49.50	5.0	100.0%	Yes
	PT-3	1/13/2015	5.0	-37.50	5.0	-42.50	4.0	80.0%	Yes
			10.0	-42.50	5.0	-47.50	5.0	100.0%	Yes
	PT-4	1/14/2015	5.0	-27.25	5.0	-32.25	5.0	100.0%	Yes
			10.0	-32.25	5.0	-37.25	5.0	100.0%	Yes
			15.0	-37.25	5.0	-42.25	5.0	100.0%	Yes
			20.0	-42.25	5.0	-47.25	5.0	100.0%	Yes
	PT-5	1/13/2015	5.0	-24.25	5.0	-29.25	5.0	100.0%	Yes
			10.0	-29.25	5.0	-34.25	4.0	80.0%	Yes
			15.0	-34.25	5.0	-39.25	5.0	100.0%	Yes
			20.0	-39.25	5.0	-44.25	5.0	100.0%	Yes
			25.0	-44.25	5.0	-49.25	5.0	100.0%	Yes
	PT-6	1/13/2015	5.0	-15.25	5.0	-20.25	5.0	100.0%	Yes
			10.0	-20.25	5.0	-25.25	4.2	84.0%	Yes
			15.0	-25.25	5.0	-30.25	1.0	20.0%	No
			20.0	-30.25	5.0	-35.25	5.0	100.0%	Yes
			25.0	-35.25	5.0	-40.25	5.0	100.0%	Yes
			30.0	-40.25	5.0	-45.25	5.0	100.0%	Yes
	PT-106	1/16/2015	10.0	-24.50	2.5	-27.00	2.2	88.0%	Yes
			15.0	-27.00	5.0	-32.00	0.3	5.0%	No
	PT-7	1/14/2015	5.0	-30.00	5.0	-35.00	5.0	100.0%	Yes
			10.0	-35.00	5.0	-40.00	5.0	100.0%	Yes
			15.0	-40.00	5.0	-45.00	5.0	100.0%	Yes
	PT-8	1/12/2015	2.0	-23.25	2.0	-25.25	2.0	100.0%	Yes
			7.0	-25.25	5.0	-30.25	1.0	20.0%	No
			12.0	-30.25	5.0	-35.25	5.0	100.0%	Yes
			17.0	-35.25	5.0	-40.25	5.0	100.0%	Yes
			22.0	-40.25	5.0	-45.25	5.0	100.0%	Yes
	PT-108[a]	1/16/2015	5.0	-25.00	5.0	-30.00	4.0	80.0%	Yes
	PT-9	1/12/2015	5.0	-28.50	5.0	-33.50	2.5	50.0%	No
			10.0	-33.50	5.0	-38.50	5.0	100.0%	Yes
			15.0	-38.50	5.0	-43.50	5.0	100.0%	Yes
			20.0	-43.50	5.0	-48.50	5.0	100.0%	Yes
	PT-109	1/12/2015	5.0	-28.50	5.0	-33.50	4.8	96.0%	Yes

Sample Location		Date	Total Depth Penetrated (ft below mudline)	Core Starting Elevation (ft MLLW)	Depth Penetrated (ft)	Core Ending Elevation (ft MLLW)	Recovery Measurement (ft)	% Recovery	Core Accepted (Y/N)
Dredge Transition Slope	PT-10	1/14/2015	5.0	-29.00	5.0	-34.00	5.0	100.0%	Yes
			10.0	-34.00	5.0	-39.00	4.5	90.0%	Yes
			15.0	-39.00	5.0	-44.00	5.0	100.0%	Yes
	PT-11	1/15/2015	5.0	-20.00	5.0	-25.00	5.0	100.0%	Yes
			10.0	-25.00	5.0	-30.00	5.0	100.0%	Yes
			15.0	-30.00	5.0	-35.00	5.0	100.0%	Yes
			20.0	-35.00	5.0	-40.00	5.0	100.0%	Yes
	PT-12	1/15/2014	5.0	-14.00	5.0	-19.00	5.0	100.0%	Yes
			10.0	-19.00	5.0	-24.00	1.0	20.0%	No
			15.0	-24.00	5.0	-29.00	4.0	80.0%	Yes
			20.0	-29.00	5.0	-34.00	5.0	100.0%	Yes
			25.0	-34.00	5.0	-39.00	5.0	100.0%	Yes
	PT-112[a]	1/16/2015	5.0	-19.00	5.0	-24.00	5.0	100.0%	Yes
	PT-13	1/15/2015	5.0	-16.00	5.0	-21.00	4.0	80.0%	Yes
			10.0	-21.00	5.0	-26.00	4.8	95.0%	Yes
			15.0	-26.00	5.0	-31.00	5.0	100.0%	Yes
			20.0	-31.00	5.0	-36.00	5.0	100.0%	Yes
	PT-14	1/15/2015	5.0	-18.00	5.0	-23.00	5.0	100.0%	Yes
			10.0	-23.00	5.0	-28.00	4.8	96.0%	Yes
			15.0	-28.00	5.0	-33.00	5.0	100.0%	Yes
			20.0	-33.00	5.0	-38.00	5.0	100.0%	Yes

Notes:

[a] Top interval of core was water-jetted to reach core starting elevation.

ft = Feet

MLLW = Mean low low water

Table 4

Wood Content Analytical Results for DMMU

Mill A Former Site Interim Action Dredging Project

Everett, Washington

DMMU	Approx. Average Wood Debris Content Observed in DMMU[1] (% by volume)	Organic Matter by Method ASTM D2974 (% by weight)	Bioassay[2]
D-1	70%	17.03%	X
D-2	50%	11.93%	X
D-3A	40%	5.91%	X
D-3B	70%	13.20%	X
D-4A	10%	0.65%	
D-4B	50%	7.87%	X
D-5A	0%	0.52%	
D-5B	10%	1.14%	
D-6A	0%	0.54%	
D-6B	0%	0.58%	
D-7	50%	7.20%	X

Notes:

[1] Approximate volume of wood debris observed during sediment core collection was determined by evaluating core logs.

[2] Samples were selected for bioassay based on observed wood debris volume to ensure that bioassay holding times were met.

DMMU = Dredged Material Management Unit

Table 5

Interim Action Sediment Chemical Analytical Results Compared to DMMP Guideline Chemistry Values

Mill A Former Site Interim Action Dredging Project

Everett, Washington

Analyte	DMMP Guideline Chemistry Values			Sample Location	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	PT-10-Z	PT-8	PT-11-Z	PT-12-Z	PT-13
				Sample ID	D-1	D-2	D-3A	D-3B	D-4A	D-4B	D-5A	D-5B	D-6A	D-6B	D-7	PT-10-36.0-37.0	PT-108-25.0-26.0	PT-11-36.0-37.0	PT-12-30.0-31.0	PT-13-27.0-28.0
				Sample Date	01/13/2015	01/12/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/13/2015	01/14/2015	01/16/2015	01/15/2015	01/15/2015	01/15/2015
	SL	BT	ML	Sample Depth	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	-36 to -37 ft MLLW	-25 to -26 ft MLLW	-36 to -37 ft MLLW	-30 to -31 ft MLLW	-27 to -28 ft MLLW
Conventionals																				
Total Organic Carbon	NE	NE	NE	%	**14.4**	**9.93**	**5.6**	**13.3**	**0.313**	**8.49**	**0.152**	**0.124**	**0.157**	**0.176**	**2.94**	**2.7**	--	**0.228**	**7.76**	--
Total Solids	NE	NE	NE	%	**45.98**	**50.15**	**62.61**	**44.45**	**79.68**	**51.63**	**81.11**	**81.14**	**82.81**	**81.72**	**57.21**	**71.55**	--	**81.58**	**61.16**	--
Total Volatile Solids	NE	NE	NE	%	**21.02**	**18.9**	**12.12**	**31.21**	**1.31**	**14.52**	**1.14**	**1.05**	**1.19**	**0.95**	**12.15**	**5.09**	--	**1.01**	**10.3**	--
Organic Matter	25	NE	NE	%	**16.73**	**11.93**	**5.91**	**13.2**	**0.65**	**7.87**	**0.52**	**1.14**	**0.54**	**0.58**	**7.2**	**4.39**	--	**0.43**	**8.29**	--
Preserved Total Solids	NE	NE	NE	%	--	--	--	--	--	--	--	--	--	--	--	--	**58.07**	--	--	**81.39**
Sulfide	NE	NE	NE	mg/kg	--	--	--	--	--	--	--	--	**1.92 J**	**4.38 J**	**112 J**	**16**	**205**	**1.32**	**4.8**	**22.3 J**
Ammonia	NE	NE	NE	mg/kg	**21**	**30**	**8.47**	**45.1**	**3.93**	**28.7**	**9.95**	**7.88**	**2.78**	**6.01**	**20.2**	**13.2**	--	**26.6**	**42.2**	--
Grain Size																				
Gravel (≤ -1)	NE	NE	NE	%	**10.2**	**8.2**	**1.8**	**7.2**	**0.3**	**5.7**	**0.1**	**1.6**	**0.7**	**0.1 U**	**4.6**	**1.1**	--	**0.1**	**0.8**	--
Very coarse sand (-1 < Phi ≤ 0)	NE	NE	NE	%	**4.8**	**2.4**	**1.5**	**3.9**	**0.3**	**2.2**	**0.1**	**0.6**	**0.1**	**0.2**	**1.9**	**0.8**	--	**0.4**	**1.6**	--
Coarse sand (0 < Phi ≤ 1)	NE	NE	NE	%	**6.6**	**3.7**	**2.7**	**5.8**	**1.1**	**3.5**	**0.5**	**1.6**	**0.5**	**1.2**	**3.8**	**2.2**	--	**2.8**	**2.3**	--
Medium sand (1 < Phi ≤ 2)	NE	NE	NE	%	**15**	**16.1**	**23**	**12.1**	**18.3**	**12.2**	**10.4**	**22.9**	**27.5**	**22.5**	**20.5**	**20.4**	--	**10.9**	**5.2**	--
Fine sand (2 < Phi ≤ 3)	NE	NE	NE	%	**19.3**	**30.2**	**42**	**27**	**49.2**	**42.5**	**52.6**	**55.5**	**41.8**	**60.2**	**34.9**	**51.2**	--	**46.3**	**14.7**	--
Very fine sand (3 < Phi ≤ 4)	NE	NE	NE	%	**10.4**	**11.4**	**12.6**	**11.7**	**20.4**	**13.3**	**25.7**	**7.3**	**18.5**	**8.4**	**8.3**	**6**	--	**29.2**	**23.4**	--
Coarse silt (4 < Phi ≤ 5)	NE	NE	NE	%	**4.8**	**5.2**	**2.6**	**5.1**	**3.7**	**1.6**	**3.6**	**2.7**	**4.1**	**2.1**	**7.9**	**4**	--	**4.1**	**13.6**	--
Medium silt (5 < Phi ≤ 6)	NE	NE	NE	%	**6.6**	**4.6**	**3**	**6.3**	**1.6**	**4.6**	**1.7**	**2**	**1.5**	**1.2**	**4.3**	**3.3**	--	**1.6**	**11.3**	--
Fine silt (6 < Phi ≤ 7)	NE	NE	NE	%	**5.4**	**4.5**	**2.8**	**5.1**	**1.2**	**3.4**	**1.2**	**1.5**	**1.2**	**0.8**	**3.1**	**2.7**	--	**1.1**	**7.9**	--
Very fine silt (7 < Phi ≤ 8)	NE	NE	NE	%	**4.4**	**3.5**	**2.1**	**4.4**	**1**	**2.9**	**1**	**1.1**	**1.2**	**0.7**	**2.6**	**2**	--	**0.8**	**5.3**	--
Coarse clay (8 < Phi ≤ 9)	NE	NE	NE	%	**2.8**	**2.3**	**1.5**	**3.2**	**0.7**	**2.1**	**0.7**	**1**	**0.8**	**0.6**	**2.2**	**1.8**	--	**0.7**	**4**	--
Medium clay (9 < Phi ≤ 10)	NE	NE	NE	%	**3**	**2.8**	**1.6**	**2.6**	**0.7**	**2**	**0.8**	**0.8**	**0.8**	**0.7**	**1.8**	**1.6**	--	**0.6**	**3.5**	--
Particle/Grain Size, Phi >10	NE	NE	NE	%	**6.7**	**5.2**	**2.9**	**5.7**	**1.6**	**4**	**1.8**	**1.4**	**1.3**	**1.3**	**4**	**2.8**	--	**1.4**	**6.1**	--
Total Fines	NE	NE	NE	%	**33.7**	**28**	**16.5**	**32.4**	**10.4**	**20.6**	**10.7**	**10.4**	**10.9**	**7.5**	**25.9**	**18.3**	--	**10.3**	**51.8**	--
Grain Size (Ash Wt.)																				
Gravel (≤ -1)	NE	NE	NE	%	**2.1**	**1.1**	**1.2**	**2.8**	**0.1 U**	**3.5**	**0.1 U**	**0.1 U**	**0.2**	**0.1 U**	**1.5**	--	--	--	--	--
Very coarse sand (-1 < Phi ≤ 0)	NE	NE	NE	%	**2.0**	**1.4**	**0.6**	**1.9**	**0.3**	**1.0**	**0.1**	**0.3**	**0.1**	**0.2**	**1.6**	--	--	--	--	--
Coarse sand (0 < Phi ≤ 1)	NE	NE	NE	%	**3.8**	**2.5**	**1.3**	**2.7**	**1.3**	**2.0**	**0.4**	**1.2**	**0.5**	**1.2**	**4.1**	--	--	--	--	--
Medium sand (1 < Phi ≤ 2)	NE	NE	NE	%	**14.6**	**14.8**	**21.5**	**8.6**	**19.1**	**9.5**	**12.9**	**16.2**	**26.6**	**28.2**	**24.0**	--	--	--	--	--
Fine sand (2 < Phi ≤ 3)	NE	NE	NE	%	**23.3**	**35.6**	**43.6**	**31.7**	**46.5**	**41.6**	**52.3**	**61.4**	**43.9**	**56.5**	**41.6**	--	--	--	--	--
Very fine sand (3 < Phi ≤ 4)	NE	NE	NE	%	**14.8**	**16.1**	**13.0**	**16.8**	**20.8**	**14.9**	**23.8**	**12.4**	**18.4**	**7.2**	**9.7**	--	--	--	--	--
Coarse silt (4 < Phi ≤ 5)	NE	NE	NE	%	**8.5**	**6.6**	**4.6**	**6.0**	**5.6**	**6.5**	**4.3**	**3.2**	**4.1**	**2.7**	**3.1**	--	--	--	--	--
Medium silt (5 < Phi ≤ 6)	NE	NE	NE	%	**15.6**	**9.1**	**4.5**	**17.7**	**1.9**	**11.0**	**1.6**	**1.2**	**2.1**	**1.0**	**6.0**	--	--	--	--	--
Fine silt (6 < Phi ≤ 7)	NE	NE	NE	%	**6.9**	**4.9**	**4.0**	**5.5**	**1.7**	**5.5**	**1.6**	**1.1**	**2.4**	**0.9**	**3.6**	--	--	--	--	--
Very fine silt (7 < Phi ≤ 8)	NE	NE	NE	%	**1.9**	**2.4**	**1.8**	**1.2**	**1.1**	**1.2**	**1.2**	**0.9**	**0.2**	**0.5**	**1.4**	--	--	--	--	--
Coarse clay (8 < Phi ≤ 9)	NE	NE	NE	%	**0.9**	**1.4**	**0.9**	**0.5**	**0.4**	**0.5**	**0.5**	**0.5**	**0.1 U**	**0.4**	**0.7**	--	--	--	--	--
Medium clay (9 < Phi ≤ 10)	NE	NE	NE	%	**0.3**	**0.6**	**0.4**	**0.2**	**0.1**	**0.1**	**0.2**	**0.4**	**0.1**	**0.2**	**0.1**	--	--	--	--	--
Particle/Grain Size, Phi >10	NE	NE	NE	%	**5.1**	**3.4**	**2.5**	**4.3**	**1.3**	**2.9**	**1.3**	**1.1**	**1.4**	**0.9**	**2.5**	--	--	--	--	--
Total Fines	NE	NE	NE	%	**39.4**	**28.5**	**18.8**	**35.5**	**12.0**	**27.6**	**10.6**	**8.5**	**10.3**	**6.6**	**17.5**	--	--	--	--	--
Metals																				
Antimony	150	NE	200	mg/kg	**1.1 J**	**1.40 J**	**0.75 J**	**1.1 J**	**0.82 J**	**2.38 J**	**0.68 J**	**0.75 J**	**1.03 J**	**0.68 J**	**1.07 J**	**0.84 J**	--	**0.77 J**	**1.46 J**	--
Arsenic	57	507	700	mg/kg	**10.7 J**	**6.80 J**	**5.83 J**	**9.5 J**	**4.57 J**	**6.67 J**	**5.14 J**	**4.81 J**	**5.18 J**	**4.42 J**	**7.69 J**	**6.08 J**	--	**3.92 J**	**9**	--
Cadmium	5.1	11.3	14	mg/kg	**1.3**	**1**	**0.6**	**1.3**	**0.2**	**0.7**	**0.3**	**0.3**	**0.220 J**	**0.210 J**	**1**	**0.4**	--	**0.211 J**	**1.1**	--
Chromium	260	260	NE	mg/kg	**35**	**31.3**	**24.3**	**35**	**28.4**	**30.3**	**27.7**	**25.7**	**29.9**	**22.2**	**31.5**	**28.2**	--	**24.2**	**47.9**	--
Copper	390	1,027	1,300	mg/kg	**43.9**	**32.9**	**18.3**	**43.2**	**11**	**24.8**	**9.9**	**9.8**	**10.2**	**7.1**	**33.6**	**12.8**	--	**7.6**	**44.2**	--
Lead	450	975	1,200	mg/kg	**28**	**22**	**9**	**31**	**1.86 J**	**14**	**1.80 J**	**5**	**1.94 J**	**2.30 J**	**19**	**10**	--	**1.48 J**	**26**	--
Mercury	0.41	1.5	2.3	mg/kg	**0.13**	**0.14**	**0.0380 J**	**0.12**	**0.0120 J**	**0.14**	**0.0106 J**	**0.0159 J**	**0.02**	**0.0080 J**	**0.1**	**0.08**	--	**0.0071 J**	**0.11**	--
Selenium	NE	3	NE	mg/kg	**0.52 J**	**0.337 J**	**0.214 J**	**0.45 J**	0.6 U	**0.311 J**	0.6 U	**0.127 J**	0.6 U	**0.125 J**	**0.315 J**	**0.185 J**	--	0.6 U	**0.487 J**	--
Silver	6.1	6.1	8.4	mg/kg	0.7 U	0.6 U	0.5 U	0.7 U	0.4 U	0.6 U	0.3 U	0.4 U	0.3 U	0.4 U	0.6 U	0.4 U	--	0.3 U	0.5 U	--
Zinc	410	2,783	3,800	mg/kg	**76**	**54**	**37**	**69**	**31**	**49**	**31**	**30**	**31**	**27**	**58**	**34**	--	**28**	**70**	--
LPAHs																				
2-Methylnaphthalene	670	NE	1,900	µg/kg	**280**	**190**	**130**	**410**	**5.7**	**280**	**3.2 J**	**5.9**	**2.5 J**	4.8 U	**240**	**75**	--	4.7 U	**180**	--
Acenaphthene	500	NE	2,000	µg/kg	**340**	**210**	**160**	**420**	**4.4 J**	**410**	4.8 U	**4.5 J**	4.7 U	4.8 U	**260**	**73**	--	4.7 U	**210**	--
Acenaphthylene	560	NE	1,300	µg/kg	**57**	**82**	**89**	**210**	4.8 U	**110**	4.8 U	**2.4 J**	4.7 U	4.8 U	**110**	**53**	--	4.7 U	**80**	--
Anthracene	960	NE	13,000	µg/kg	**280**	**150**	**99**	**210**	**3.4 J**	**180**	4.8 U	**6.1**	4.7 U	4.8 U	**150**	**100**	--	4.7 U	**160**	--
Fluorene	540	NE	3,600	µg/kg	**330**	**210**	**160**	**400**	**4.8 J**	**370**	4.8 U	**5.8**	4.7 U	4.8 U	**250**	**89**	--	4.7 U	**240**	--
Naphthalene	2,100	NE	2,400	µg/kg	**1,100**	**1,100**	**1,200**	**3,600**	**33**	**1,600**	**8.5**	**26**	4.7 U	**6.8**	**1,300**	**460**	--	**3.3 J**	**1,100**	--
Phenanthrene	1,500	NE	21,000	µg/kg	**680**	**600**	**550**	**1100**	**15**	**900**	**7.9**	**18**	4.7 U	4.8 U	**630**	**260**	--	4.7 U	**650**	--
Total LPAHs	5,200	NE	29,000	µg/kg	**2,787 T**	**2,352 T**	**2,258 T**	**5,940 T**	**60.6 T**	**3,570 T**	**16.4 T**	**62.8 T**	4.7 UT	**6.8 T**	**2,700 T**	**1,035 T**	--	**3.3 T**	**2,440 T**	--

GeoEngineers

Analyte	DMMP Guideline Chemistry Values SL	BT	ML	Sample Location	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	PT-10-Z	PT-8	PT-11-Z	PT-12-Z	PT-13
				Sample ID	D-1	D-2	D-3A	D-3B	D-4A	D-4B	D-5A	D-5B	D-6A	D-6B	D-7	PT-10-36.0-37.0	PT-108-25.0-26.0	PT-11-36.0-37.0	PT-12-30.0-31.0	PT-13-27.0-28.0
				Sample Date	01/13/2015	01/12/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/13/2015	01/14/2015	01/16/2015	01/15/2015	01/15/2015	01/15/2015
				Sample Depth	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	-36 to -37 ft MLLW	-25 to -26 ft MLLW	-36 to -37 ft MLLW	-30 to -31 ft MLLW	-27 to -28 ft MLLW
HPAHs																				
Benzo(a)anthracene	1,300	NE	5,100	µg/kg	**140**	**58**	**34**	**52**	4.8 U	**130**	4.8 U	**5.4**	4.7 U	4.8 U	**55**	**59**	--	4.7 U	**71**	--
Benzo(a)pyrene	1,600	NE	3,600	µg/kg	**79**	**34**	**18 J**	**29**	4.8 U	**84**	4.8 U	**3.9 J**	4.7 U	4.8 U	**28**	**51**	--	4.7 U	**49**	--
Benzo(ghi)perylene	670	NE	3,200	µg/kg	**55**	**22 J**	**14 J**	**25**	4.8 U	**58**	4.8 U	**4.2 J**	4.7 U	4.8 U	**20**	**38**	--	4.7 U	**44**	--
Benzofluoranthenes (Sum)	3,200	NE	9,900	µg/kg	**200**	**83**	**45**	**89**	4.8 U	**200**	4.8 U	**7.5**	4.7 U	4.8 U	**76**	**84**	--	4.7 U	**98**	--
Chrysene	1,400	NE	21,000	µg/kg	**230**	**90**	**54**	**83**	**2.8 J**	**140**	4.8 U	**6.1**	4.7 U	4.8 U	**85**	**62**	--	4.7 U	**98**	--
Dibenzo(a,h)anthracene	230	NE	1,900	µg/kg	**16 J**	25 U	24 U	24 U	4.8 U	**12 J**	4.8 U	4.8 U	4.7 U	4.8 U	**4.0 J**	24 U	--	4.7 U	24 U	--
Fluoranthene	1,700	4,600	30,000	µg/kg	**570**	**480**	**360**	**670**	**11**	**640**	**7**	**19**	4.7 U	4.8 U	**420**	**260**	--	4.7 U	**460**	--
Indeno(1,2,3-cd)pyrene	600	NE	4,400	µg/kg	**45**	**18 J**	24 U	**16 J**	4.8 U	**44**	4.8 U	4.8 U	4.7 U	4.8 U	**13**	**27**	--	4.7 U	**25**	--
Pyrene	2,600	11,980	16,000	µg/kg	**440**	**360**	**270**	**460**	**9.5**	**460**	**4.4 J**	**21**	4.7 U	4.8 U	**300**	**240**	--	4.7 U	**430**	--
Total HPAHs	12,000	NE	69,000	µg/kg	**1,775 T**	**1,145 T**	**795 T**	**1,424 T**	**23.3 T**	**1,768 T**	**11.4 T**	**67.1 T**	4.7 UT	4.8 UT	**1,001 T**	**821 T**	--	4.7 UT	**1,275 T**	--
cPAHs																				
Total cPAH TEQ (ND=0.5DL)	NE	NE	NE	µg/kg	**121.4 JT**	**52.1 JT**	**28.8 JT**	**46.7 JT**	**3.4 JT**	**124 JT**	3.4 UT	**5.7 JT**	3.3 UT	3.4 UT	**43.7 JT**	**69.8 T**	--	3.3 UT	**70.6 T**	--
Chlorinated Hydrocarbons																				
Hexachlorobenzene	22	168	230	µg/kg	0.99 U	1.3 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	14 U	0.97 U	--	0.95 U	0.96 U	--
1,2,4-Trichlorobenzene	31	NE	64	µg/kg	4.9 U	4.9 U	4.7 U	**3.5 J**	4.8 U	**8.4**	4.8 U	4.8 U	4.8 U	4.8 U	**2.5 J**	4.9 U	--	4.7 U	4.8 U	--
1,2-Dichlorobenzene (o-Dichlorobenzene)	35	NE	110	µg/kg	**13**	**7.7**	**3.7 J**	**11**	**3.0 J**	**5.8**	**2.5 J**	4.8 U	4.8 U	4.8 U	**11**	4.9 U	--	4.7 U	4.8 U	--
1,4-Dichlorobenzene (p-Dichlorobenzene)	110	NE	120	µg/kg	**6.3**	**4.6 J**	**3.2 J**	**6.7**	4.8 U	**5.2**	4.8 U	4.8 U	4.8 U	4.8 U	**5.2**	4.9 U	--	4.7 U	4.8 U	--
Phthalates																				
Bis(2-Ethylhexyl) Phthalate	1,300	NE	8,300	µg/kg	**30 J**	49 UJ	47 UJ	48 UJ	48 UJ	48 UJ	48 UJ	48 UJ	48 UJ	48 UJ	**28 J**	49 U	--	47 U	48 U	--
Di-N-Octyl Phthalate	6,200	NE	6,200	µg/kg	**11 J**	20 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	20 U	--	19 U	19 U	--
Dibutyl Phthalate	1,400	NE	5,100	µg/kg	**65**	20 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	20 U	--	19 U	19 U	--
Diethyl Phthalate	200	NE	1,200	µg/kg	20 U	**380**	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	20 U	--	19 U	**34**	--
Dimethyl Phthalate	71	NE	1,400	µg/kg	20 U	20 U	19 U	19 U	19 U	**22**	19 U	19 U	19 U	19 U	19 U	20 U	--	19 U	19 U	--
Butyl benzyl Phthalate	63	NE	970	µg/kg	4.9 U	4.9 U	4.7 U	4.8 U	**4.8**	**31**	**3.2 J**	4.8 U	**2.5 J**	**2.6 J**	**22**	4.9 U	--	**7.4**	**8.8**	--
Phenols																				
o-Cresol (2-methylphenol)	63	NE	77	µg/kg	**37**	**68**	**45**	**140**	19 U	**81**	19 U	19 U	19 U	19 U	**49**	20 U	--	19 U	**36**	--
p-Cresol (4-methylphenol)	670	NE	3,600	µg/kg	**1,700**	**2,400**	**930**	**1,900**	**34**	**1,000**	19 U	**16 J**	19 U	19 U	**1,200**	20 U	--	**92**	**180**	--
Pentachlorophenol	400	504	690	µg/kg	**46 J**	99 U	94 U	**33 J**	96 U	**33 J**	97 U	97 U	95 U	96 U	96 U	98 U	--	94 U	96 U	--
Phenol	420	NE	1,200	µg/kg	**390**	**430**	**240**	**460**	**29**	**320**	**34**	19 U	19 U	19 U	**250**	20 U	--	**38**	**59**	--
2,4-Dimethylphenol	29	NE	210	µg/kg	**46**	**54**	**26**	**78**	24 U	**56**	24 U	24 U	24 U	24 U	**44**	24 U	--	23 U	**24 J**	--
Miscellaneous Extractables																				
Benzoic Acid	650	NE	760	µg/kg	**790**	**940**	**540**	**1,100**	190 U	**860**	190 U	190 U	190 U	190 U	**720**	200 U	--	**82 J**	**150 J**	--
Benzyl Alcohol	57	NE	870	µg/kg	**30**	**33**	**25**	**59**	19 U	**32**	19 U	19 U	19 U	19 U	**24**	20 U	--	19 U	19 U	--
Dibenzofuran	540	NE	1,700	µg/kg	**300**	**220**	**180**	**410**	**4.8 J**	**340**	4.8 U	**5.8**	4.7 U	4.8 U	**240**	**86**	--	4.7 U	**200**	--
Hexachlorobutadiene	11	NE	270	µg/kg	0.99 U	0.99 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	--	0.95 U	0.96 U	--
N-Nitrosodiphenylamine (as diphenylamine)	28	NE	130	µg/kg	4.9 U	4.9 U	4.7 U	4.8 U	**2.9 J**	4.8 U	**3.0 J**	4.8 U	4.8 U	4.8 U	4.8 U	4.9 U	--	4.7 U	4.8 U	--
Pesticides																				
4,4'-DDD	16	NE	NE	µg/kg	0.99 U	0.99 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	--	0.95 U	0.96 U	--
4,4'-DDE	9	NE	NE	µg/kg	0.99 U	0.99 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	--	0.95 U	0.96 U	--
4,4'-DDT	12	NE	NE	µg/kg	6.9 U	4.3 U	0.99 U	4.0 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	--	0.95 U	0.96 U	--
Total DDT (4,4 isomers)	NE	50	69	µg/kg	6.9 UT	4.3 UT	0.99 UT	4 UT	0.98 UT	0.98 UT	0.98 UT	0.98 UT	0.97 UT	0.97 UT	0.98 UT	0.97 UT	--	0.95 UT	0.96 UT	--
Aldrin	9.5	NE	NE	µg/kg	1.7 U	0.49 U	1.8 U	3.6 U	0.49 U	3.9 U	0.49 U	0.49 U	0.48 U	0.49 U	1.7 U	0.48 U	--	0.48 U	0.48 U	--
alpha-Chlordane (cis)	NE	NE	NE	µg/kg	0.50 U	0.49 U	0.50 U	0.50 U	0.49 U	0.49 U	0.49 U	0.49 U	0.48 U	0.49 U	0.49 U	0.48 U	--	0.48 U	0.48 U	--
beta or gamma-Chlordane (trans)	NE	NE	NE	µg/kg	0.50 U	0.49 U	0.50 U	0.50 U	0.49 U	0.49 U	0.49 U	0.49 U	0.48 U	0.49 U	1.0 U	0.48 U	--	0.48 U	0.48 U	--
Chlordane (Total)	2.8	37	NE	µg/kg	4.5 UT	1.7 UT	0.99 UT	**2.3 J**	0.98 UT	2.3 UT	0.98 UT	0.98 UT	0.97 UT	0.97 UT	2.7 UT	0.97 UT	--	0.95 UT	1.6 UT	--
cis-Nonachlor	NE	NE	NE	µg/kg	1.6 U	1.7 U	0.99 U	**2.3 J**	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	--	0.95 U	0.96 U	--
Dieldrin	1.9	NE	1700	µg/kg	1.2 U	0.99 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	--	0.95 U	0.96 U	--
Heptachlor	1.5	NE	270	µg/kg	0.50 U	0.49 U	0.50 U	0.50 U	0.49 U	0.80 U	0.49 U	0.49 U	0.48 U	0.49 U	1.5 U	0.48 U	--	0.48 U	0.48 U	--
Oxychlordane	NE	NE	NE	µg/kg	4.5 U	0.99 U	0.99 U	0.99 U	0.98 U	2.3 U	0.98 U	0.98 U	0.97 U	0.97 U	2.7 U	0.97 U	--	0.95 U	1.6 U	--
trans-Nonachlor	NE	NE	NE	µg/kg	2.2 U	0.99 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	--	0.95 U	0.96 U	--
Polychlorinated Biphenyls (PCBs)																				
PCB-001	NE	NE	NE	ng/kg	**18.2**	**18.0**	**20.5**	**5.77**	0.867 U	**5.34**	0.450 U	0.752 U	0.600 U	0.397 U	**9.50**	**1.20 J**	--	0.315 U	**3.28 J**	--
PCB-002	NE	NE	NE	ng/kg	**4.98**	**5.12**	**12.6**	**4.61**	0.973 U	**4.08**	0.544 U	0.856 U	0.696 U	0.461 U	**4.92**	**2.47 J**	--	0.381 U	**6.95**	--
PCB-003	NE	NE	NE	ng/kg	**13.3**	**11.4**	**16.9**	**6.67**	0.937 U	**4.56**	0.558 U	0.833 U	0.689 U	0.458 U	**7.96**	**1.82 J**	--	0.381 U	**5.20**	--
PCB-004	NE	NE	NE	ng/kg	**16.5**	**13.7**	**29.7**	**7.09**	1.62 U	**4.11**	1.63 U	1.21 U	1.39 U	1.39 U	**8.94**	**2.22 J**	--	0.810 U	0.626 U	--
PCB-005	NE	NE	NE	ng/kg	0.572 U	1.82 U	1.99 U	1.77 U	1.43 U	0.928 U	1.49 U	1.07 U	1.26 U	1.35 U	0.617 U	0.735 U	--	0.744 U	0.491 U	--
PCB-006	NE	NE	NE	ng/kg	**9.37**	**9.26**	**16.5**	**6.98**	**2.86 J**	**3.23 J**	1.39 U	0.994 U	1.17 U	1.25 U	**12.5**	**5.07**	--	0.710 U	**2.50 J**	--
PCB-007	NE	NE	NE	ng/kg	**2.94 J**	**3.61 J**	**4.40**	1.68 U	1.39 U	0.900 U	1.45 U	1.04 U	1.22 U	1.31 U	**3.48 J**	0.716 U	--	0.725 U	0.478 U	--
PCB-008	NE	NE	NE	ng/kg	**39.6**	**37.5**	**66.4**	**20.7**	1.45 U	**10.1**	1.52 U	1.09 U	1.28 U	1.37 U	**26.7**	**3.72 J**	--	0.741 U	**2.29 J**	--
PCB-009	NE	NE	NE	ng/kg	**3.61 J**	**2.72 J**	**6.64**	1.78 U	1.45 U	0.943 U	1.52 U	1.09 U	1.28 U	1.37 U	0.627 U	0.746 U	--	0.756 U	0.499 U	--
PCB-010	NE	NE	NE	ng/kg	0.590 U	1.97 U	2.15 U	1.92 U	1.62 U	1.05 U	1.69 U	1.21 U	1.42 U	1.53 U	0.699 U	0.765 U	--	0.776 U	0.512 U	--
PCB-011	NE	NE	NE	ng/kg	**13.0**	**14.4**	**11.8**	**9.70**	**3.91 J**	**5.32**	1.59 U	**3.10 J**	1.33 U	1.43 U	**13.9**	**6.53**	--	**2.91 J**	**4.55**	--
PCB-012	NE	NE	NE	ng/kg	**2.87 J**	**3.61 J**	**7.67**	1.79 U	1.43 U	1.37 U	1.50 U	1.07 U	1.26 U	1.35 U	**3.21 J**	**4.24**	--	0.798 U	**2.56 J**	--
PCB-013	NE	NE	NE	ng/kg	**4.80**	**4.87**	**5.44**	**4.99**	1.59 U	1.52 U	1.66 U	1.19 U	1.40 U	1.50 U	**8.75**	**2.36 J**	--	0.859 U	**1.94 J**	--
PCB-014	NE	NE	NE	ng/kg	0.599 U	1.88 U	2.06 U	1.83 U	1.47 U	0.954 U	1.54 U	1.10 U	1.29 U	1.38 U	0.634 U	0.758 U	--	0.768 U	0.506 U	--
PCB-015	NE	NE	NE	ng/kg	**36.6**	**28.6**	**22.4**	**11.8**	1.47 U	**7.61**	1.58 U	1.10 U	1.32 U	1.47 U	**19.4**	**1.97 J**	--	0.815 U	**1.16 J**	--
PCB-016	NE	NE	NE	ng/kg	**32.6**	**37.1**	**35.3**	**19.4**	1.32 U	**7.75**	0.566 U	1.44 U	0.546 U	0.646 U	**17.9**	0.553 U	--	0.404 U	0.583 U	--
PCB-017	NE	NE	NE	ng/kg	**45.3**	**41.1**	**51.5**	**21.3**	1.38 U	**10.4**	0.590 U	1.50 U	0.569 U	0.673 U	**23.3**	0.614 U	--	0.449 U	1.79 U	--
PCB-018	NE	NE	NE	ng/kg	**120.0**	**107**	**131**	**56.4**	1.53 U	**26.8**	0.654 U	1.66 U	0.631 U	0.747 U	**64.0**	0.681 U	--	0.497 U	1.98 U	--
PCB-019	NE	NE	NE	ng/kg	**10.9**	**11.4**	**12.4**	**5.95**	1.53 U	1.75 U	0.653 U	1.66 U	0.630 U	0.745 U	**5.88**	0.660 U	--	0.482 U	0.696 U	--
PCB-020	NE	NE	NE	ng/kg	**67.5**	**59.9**	**73.7**	**29.4**	1.08 U	**15.6**	0.837 U	1.46 U	0.974 U	0.740 U	**40.0**	0.930 U	--	0.843 U	**3.99**	--

GeoEngineers

Analyte	DMMP Guideline Chemistry Values			Sample Location	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	PT-10-Z	PT-8	PT-11-Z	PT-12-Z	PT-13
				Sample ID	D-1	D-2	D-3A	D-3B	D-4A	D-4B	D-5A	D-5B	D-6A	D-6B	D-7	PT-10-36.0-37.0	PT-108-25.0-26.0	PT-11-36.0-37.0	PT-12-30.0-31.0	PT-13-27.0-28.0
				Sample Date	01/13/2015	01/12/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/13/2015	01/14/2015	01/16/2015	01/15/2015	01/15/2015	01/15/2015
	SL	BT	ML	Sample Depth	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	-36 to -37 ft MLLW	-25 to -26 ft MLLW	-36 to -37 ft MLLW	-30 to -31 ft MLLW	-27 to -28 ft MLLW
PCB-021	NE	NE	NE	ng/kg	**67.5**	**59.9**	**73.7**	**29.4**	1.08 U	**15.6**	0.837 U	1.46 U	0.974 U	0.740 U	**40.0**	0.930 U	--	0.843 U	**3.99**	--
PCB-022	NE	NE	NE	ng/kg	**52.9**	**39.8**	**45.4**	**22.0**	1.13 U	**11.1**	0.873 U	1.52 U	1.02 U	0.772 U	**28.1**	0.911 U	--	0.826 U	1.34 U	--
PCB-023	NE	NE	NE	ng/kg	1.85 U	1.88 U	1.71 U	1.85 U	1.21 U	1.98 U	0.935 U	1.63 U	1.09 U	0.827 U	1.84 U	0.961 U	--	0.871 U	1.41 U	--
PCB-024	NE	NE	NE	ng/kg	**1.77 J**	**4.60**	**2.16 J**	1.50 U	1.02 U	1.17 U	0.437 U	1.11 U	0.422 U	0.499 U	**1.40 J**	0.475 U	--	0.347 U	0.501 U	--
PCB-025	NE	NE	NE	ng/kg	**9.50**	**7.96**	**9.97**	**3.58 J**	0.974 U	1.59 U	0.752 U	1.31 U	0.876 U	0.666 U	**6.23**	0.812 U	--	0.736 U	1.20 U	--
PCB-026	NE	NE	NE	ng/kg	**20.6**	**18.8**	**21.4**	**8.27**	1.12 U	**3.97 J**	0.869 U	1.52 U	1.01 U	0.769 U	**14.0**	0.949 U	--	0.860 U	1.40 U	--
PCB-027	NE	NE	NE	ng/kg	**6.95**	**4.76**	**8.46**	**4.00**	1.04 U	1.20 U	0.446 U	1.13 U	0.431 U	0.510 U	**2.79 J**	0.459 U	--	0.335 U	0.484 U	--
PCB-028	NE	NE	NE	ng/kg	**137**	**115**	**113**	**56.3**	**2.20 J**	**27.8**	0.770 U	**2.60 J**	0.896 U	0.682 U	**76.1**	0.787 U	--	0.713 U	**5.45**	--
PCB-029	NE	NE	NE	ng/kg	1.82 U	1.90 U	1.73 U	1.86 U	1.10 U	1.80 U	0.850 U	1.48 U	0.989 U	0.752 U	1.67 U	0.954 U	--	0.864 U	1.40 U	--
PCB-030	NE	NE	NE	ng/kg	0.637 U	1.70 U	1.20 U	1.42 U	0.991 U	1.13 U	0.424 U	1.08 U	0.409 U	0.484 U	1.44 U	0.440 U	--	0.321 U	0.464 U	--
PCB-031	NE	NE	NE	ng/kg	**138**	**99.8**	**113**	**58.3**	**1.94 J**	**29.6**	0.819 U	**2.37 J**	0.954 U	0.725 U	**44.8**	0.979 U	--	0.887 U	**6.29**	--
PCB-032	NE	NE	NE	ng/kg	**39.0**	**28.7**	**37.3**	**15.0**	1.11 U	**7.47**	0.476 U	1.21 U	0.459 U	0.543 U	**17.1**	0.516 U	--	0.376 U	0.544 U	--
PCB-033	NE	NE	NE	ng/kg	**67.5**	**59.9**	**73.7**	**29.4**	1.08 U	**15.6**	0.837 U	1.46 U	0.974 U	0.740 U	**40.0**	0.930 U	--	0.843 U	**3.99**	--
PCB-034	NE	NE	NE	ng/kg	1.81 U	2.15 U	1.96 U	2.11 U	1.09 U	1.78 U	0.844 U	1.47 U	0.981 U	0.746 U	1.66 U	0.949 U	--	0.860 U	1.40 U	--
PCB-035	NE	NE	NE	ng/kg	1.69 U	1.97 U	1.79 U	1.93 U	1.17 U	1.91 U	0.905 U	1.58 U	1.05 U	0.801 U	1.78 U	0.993 U	--	0.900 U	1.46 U	--
PCB-036	NE	NE	NE	ng/kg	1.63 U	1.88 U	1.71 U	1.84 U	1.10 U	1.79 U	0.847 U	1.48 U	0.986 U	0.750 U	1.67 U	0.931 U	--	0.844 U	1.37 U	--
PCB-037	NE	NE	NE	ng/kg	**39.7**	**24.7**	**28.9**	**14.7**	1.05 U	**8.04**	0.812 U	1.42 U	0.944 U	0.718 U	**20.3**	0.873 U	--	0.791 U	1.28 U	--
PCB-038	NE	NE	NE	ng/kg	1.59 U	1.83 U	1.67 U	1.80 U	1.10 U	1.79 U	0.846 U	1.48 U	0.985 U	0.749 U	1.66 U	0.891 U	--	0.807 U	1.31 U	--
PCB-039	NE	NE	NE	ng/kg	1.68 U	1.94 U	1.76 U	1.90 U	1.13 U	1.84 U	0.870 U	1.52 U	1.01 U	0.770 U	**8.88**	0.954 U	--	0.865 U	1.41 U	--
PCB-040	NE	NE	NE	ng/kg	**40.8**	**32.0**	**27.0**	**20.9**	1.57 U	**9.19**	0.997 U	0.721 U	0.651 U	0.843 U	**18.4**	0.790 U	--	0.613 U	0.809 U	--
PCB-041	NE	NE	NE	ng/kg	**234**	**173**	**138**	**93.7**	**2.46 J**	**46.8**	0.586 U	**5.14**	0.383 U	0.496 U	**89.5**	0.469 U	--	0.363 U	**4.05**	--
PCB-042	NE	NE	NE	ng/kg	**81.0**	**53.8**	**53.7**	**28.5**	1.02 U	**16.1**	0.651 U	**1.93 J**	0.425 U	0.550 U	**31.1**	0.517 U	--	0.401 U	**1.85 J**	--
PCB-043	NE	NE	NE	ng/kg	**255**	**193**	**162**	**96.6**	**2.09 J**	**51.9**	0.755 U	**4.90**	0.493 U	0.638 U	**92.9**	0.595 U	--	0.461 U	**4.57**	--
PCB-044	NE	NE	NE	ng/kg	**345**	**259**	**185**	**142**	**3.07 J**	**71.0**	0.865 U	**5.67**	0.565 U	0.731 U	**135**	0.686 U	--	0.532 U	**4.96**	--
PCB-045	NE	NE	NE	ng/kg	**42.3**	**25.3**	**25.8**	**15.6**	1.34 U	**7.77**	0.856 U	0.619 U	0.559 U	0.723 U	**15.9**	0.680 U	--	0.527 U	0.880 U	--
PCB-046	NE	NE	NE	ng/kg	**17.6**	**11.8**	**12.5**	**7.45**	1.45 U	**3.42 J**	0.926 U	0.670 U	0.605 U	0.783 U	**7.54**	0.726 U	--	0.563 U	0.940 U	--
PCB-047	NE	NE	NE	ng/kg	**71.3**	**49.8**	**45.1**	**22.7**	0.983 U	**15.0**	0.625 U	**2.04 J**	0.408 U	0.529 U	**16.7**	0.527 U	--	0.408 U	**2.61 J**	--
PCB-048	NE	NE	NE	ng/kg	**47.8**	**29.9**	**28.7**	**13.6**	0.987 U	**9.91**	0.628 U	**1.46 J**	0.410 U	0.531 U	**14.2**	0.488 U	--	0.378 U	**1.57 J**	--
PCB-049	NE	NE	NE	ng/kg	**255**	**193**	**162**	**96.6**	**2.09 J**	**51.9**	0.755 U	**4.90**	0.493 U	0.638 U	**92.9**	0.595 U	--	0.461 U	**4.57**	--
PCB-050	NE	NE	NE	ng/kg	0.849 U	2.22 U	2.35 U	1.77 U	1.19 U	0.546 U	0.756 U	0.547 U	0.494 U	0.639 U	0.731 U	0.602 U	--	0.467 U	0.780 U	--
PCB-051	NE	NE	NE	ng/kg	**12.2**	**8.76**	**8.73**	**5.64**	1.20 U	**2.70 J**	0.766 U	0.554 U	0.501 U	0.648 U	**5.00**	0.640 U	--	0.496 U	0.828 U	--
PCB-052	NE	NE	NE	ng/kg	**512**	**437**	**266**	**222**	**3.06 J**	**112**	0.652 U	**7.66**	0.426 U	0.552 U	**213**	**1.20 J**	--	0.376 U	**6.17**	--
PCB-053	NE	NE	NE	ng/kg	**44.9**	**30.0**	**27.8**	**17.7**	1.25 U	**8.88**	0.798 U	0.577 U	0.522 U	0.675 U	**18.6**	0.659 U	--	0.511 U	0.854 U	--
PCB-054	NE	NE	NE	ng/kg	0.649 U	1.73 U	1.83 U	1.38 U	0.936 U	0.430 U	0.596 U	0.431 U	0.389 U	0.504 U	0.576 U	0.484 U	--	0.375 U	0.627 U	--
PCB-055	NE	NE	NE	ng/kg	**9.62**	**5.25**	**7.78**	**3.94 J**	0.879 U	**2.10 J**	0.559 U	0.404 U	0.365 U	0.473 U	**4.23**	0.448 U	--	0.347 U	0.459 U	--
PCB-056	NE	NE	NE	ng/kg	**212**	**155**	**110.0**	**75.9**	1.34 U	**36.3**	0.523 U	**3.80 J**	0.466 U	0.560 U	**88.6**	0.684 U	--	0.603 U	**5.07**	--
PCB-057	NE	NE	NE	ng/kg	**1.50 J**	1.62 U	1.71 U	1.29 U	0.879 U	0.404 U	0.559 U	0.404 U	0.365 U	0.473 U	0.540 U	0.444 U	--	0.344 U	0.454 U	--
PCB-058	NE	NE	NE	ng/kg	0.630 U	1.60 U	1.70 U	1.28 U	0.929 U	0.427 U	0.591 U	0.427 U	0.386 U	0.500 U	0.571 U	0.457 U	--	0.354 U	0.468 U	--
PCB-059	NE	NE	NE	ng/kg	**81.0**	**53.8**	**53.7**	**28.5**	1.02 U	**16.1**	0.651 U	**1.93 J**	0.425 U	0.550 U	**31.1**	0.517 U	--	0.401 U	**1.85 J**	--
PCB-060	NE	NE	NE	ng/kg	**212**	**155**	**110.0**	**75.9**	1.34 U	**36.3**	0.523 U	**3.80 J**	0.466 U	0.560 U	**88.6**	0.684 U	--	0.603 U	**5.07**	--
PCB-061	NE	NE	NE	ng/kg	**469**	**376**	**221**	**177**	**2.62 J**	**94.9**	0.559 U	**7.65**	0.365 U	0.473 U	**222**	0.437 U	--	0.339 U	**7.51**	--
PCB-062	NE	NE	NE	ng/kg	0.742 U	1.84 U	1.95 U	1.47 U	0.949 U	0.436 U	0.604 U	0.437 U	0.395 U	0.511 U	0.584 U	0.517 U	--	0.401 U	0.529 U	--
PCB-063	NE	NE	NE	ng/kg	**13.8**	**9.31**	**9.41**	**4.69**	0.855 U	**2.51 J**	0.544 U	0.394 U	0.355 U	0.460 U	**6.14**	0.439 U	--	0.340 U	0.450 U	--
PCB-064	NE	NE	NE	ng/kg	**234**	**173**	**138**	**93.7**	**2.46 J**	**46.8**	0.586 U	**5.14**	0.383 U	0.496 U	**89.5**	0.469 U	--	0.363 U	**4.05**	--
PCB-065	NE	NE	NE	ng/kg	0.651 U	1.79 U	1.89 U	1.43 U	1.00 U	0.461 U	0.638 U	0.462 U	0.417 U	0.540 U	0.617 U	0.469 U	--	0.363 U	0.480 U	--
PCB-066	NE	NE	NE	ng/kg	**313**	**225**	**156**	**104**	**2.08 J**	**58.4**	0.534 U	**5.89**	0.349 U	0.452 U	**140.0**	0.431 U	--	0.334 U	**6.16**	--
PCB-067	NE	NE	NE	ng/kg	**9.97**	**7.14**	**6.44**	**3.85 J**	0.862 U	**1.51 J**	0.548 U	0.397 U	0.358 U	0.464 U	**4.20**	0.453 U	--	0.351 U	0.463 U	--
PCB-068	NE	NE	NE	ng/kg	0.600 U	1.58 U	1.67 U	1.26 U	0.843 U	0.387 U	0.536 U	0.388 U	0.350 U	0.453 U	0.518 U	0.435 U	--	0.337 U	0.445 U	--
PCB-069	NE	NE	NE	ng/kg	**512**	**437**	**266**	**222**	**3.06 J**	**112**	0.652 U	**7.66**	0.426 U	0.552 U	**213**	**1.20 J**	--	0.376 U	**6.17**	--
PCB-070	NE	NE	NE	ng/kg	**469**	**376**	**221**	**177**	**2.62 J**	**94.9**	0.559 U	**7.65**	0.365 U	0.473 U	**222**	0.437 U	--	0.339 U	**7.51**	--
PCB-071	NE	NE	NE	ng/kg	**234**	**173**	**138**	**93.7**	**2.46 J**	**46.8**	0.586 U	**5.14**	0.383 U	0.496 U	**89.5**	0.469 U	--	0.363 U	**4.05**	--
PCB-072	NE	NE	NE	ng/kg	**234**	**173**	**138**	**93.7**	**2.46 J**	**46.8**	0.586 U	**5.14**	0.383 U	0.496 U	**89.5**	0.469 U	--	0.363 U	**4.05**	--
PCB-073	NE	NE	NE	ng/kg	0.662 U	1.79 U	1.90 U	1.43 U	0.886 U	0.407 U	0.563 U	0.407 U	0.368 U	0.476 U	0.545 U	0.502 U	--	0.389 U	0.650 U	--
PCB-074	NE	NE	NE	ng/kg	**179**	**125**	**89.6**	**64.5**	0.818 U	**32.9**	0.520 U	**3.17 J**	0.340 U	0.440 U	**78.7**	0.436 U	--	0.338 U	**4.41**	--
PCB-075	NE	NE	NE	ng/kg	**47.8**	**29.9**	**28.7**	**13.6**	0.987 U	**9.91**	0.628 U	**1.46 J**	0.410 U	0.531 U	**14.2**	0.488 U	--	0.378 U	**1.57 J**	--
PCB-076	NE	NE	NE	ng/kg	**313**	**225**	**156**	**104**	**2.08 J**	**58.4**	0.534 U	**5.89**	0.349 U	0.452 U	**140.0**	0.431 U	--	0.334 U	**6.16**	--
PCB-077	NE	NE	NE	ng/kg	**22.9**	**18.2**	**18.4**	**9.78**	1.33 U	**3.66 J**	0.523 U	0.522 U	0.464 U	0.561 U	**9.47**	0.727 U	--	0.662 U	**1.18 J**	--
PCB-078	NE	NE	NE	ng/kg	1.28 U	2.35 U	1.91 U	1.97 U	1.31 U	0.651 U	0.514 U	0.521 U	0.458 U	0.550 U	0.926 U	0.688 U	--	0.607 U	0.632 U	--
PCB-079	NE	NE	NE	ng/kg	**7.14**	**8.56**	**7.22**	**4.95**	1.26 U	**1.62 J**	0.494 U	0.501 U	0.439 U	0.529 U	**4.16**	0.652 U	--	0.575 U	0.599 U	--
PCB-080	NE	NE	NE	ng/kg	0.535 U	1.44 U	1.52 U	1.15 U	0.767 U	0.353 U	0.488 U	0.353 U	0.319 U	0.413 U	0.472 U	0.384 U	--	0.298 U	0.393 U	--
PCB-081	NE	NE	NE	ng/kg	**10.8**	**13.8**	**11.4**	**8.83**	1.21 U	**3.62 J**	0.469 U	0.483 U	0.418 U	0.500 U	**8.53**	0.604 U	--	0.515 U	0.580 U	--
PCB-082	NE	NE	NE	ng/kg	**100.0**	**100.0**	**47.4**	**57.9**	1.29 U	**24.1**	1.02 U	1.05 U	0.779 U	1.14 U	**51.1**	0.555 U	--	0.996 U	**1.43 J**	--
PCB-083	NE	NE	NE	ng/kg	**33.5**	**32.6**	**18.7**	**18.4**	0.999 U	**8.43**	0.792 U	0.816 U	0.607 U	0.891 U	**17.2**	0.418 U	--	0.751 U	0.553 U	--
PCB-084	NE	NE	NE	ng/kg	**328**	**290.0**	**159**	**171**	1.13 U	**80.3**	0.894 U	**3.54 J**	0.685 U	1.01 U	**147**	0.453 U	--	0.815 U	**2.84 J**	--
PCB-085	NE	NE	NE	ng/kg	**129**	**134**	**59.0**	**69.2**	0.915 U	**30.6**	0.726 U	**1.68 J**	0.556 U	0.816 U	**60.7**	0.398 U	--	0.714 U	**1.94 J**	--
PCB-086	NE	NE	NE	ng/kg	0.667 U	1.55 U	1.66 U	1.50 U	1.02 U	0.432 U	0.805 U	0.829 U	0.616 U	0.905 U	1.81 U	0.395 U	--	0.711 U	0.523 U	--
PCB-087	NE	NE	NE	ng/kg	**326**	**334**	**154**	**189**	0.927 U	**84.0**	0.735 U	**3.96 J**	0.563 U	0.827 U	**185**	0.379 U	--	0.682 U	**3.28 J**	--
PCB-088	NE	NE	NE	ng/kg	**120.0**	**94.5**	**55.3**	**55.2**	0.534 U	**29.4**	0.545 U	**1.52 J**	0.516 U	0.801 U	**71.0**	0.372 U	--	0.578 U	**2.01 J**	--
PCB-089	NE	NE	NE	ng/kg	**9.27**	**9.67**	**6.42**	**5.15**	1.20 U	**2.14 J**	0.953 U	0.982 U	0.730 U	1.07 U	**3.87 J**	0.475 U	--	0.854 U	0.628 U	--
PCB-090	NE	NE	NE	ng/kg	**925**	**851**	**523**	**476**	**3.13 J**	**221**	0.814 U	**9.63**	0.623 U	0.915 U	**557**	**1.64 J**	--	0.767 U	**8.01**	--
PCB-091	NE	NE	NE	ng/kg	**120.0**	**94.5**	**55.3**	**55.2**	0.534 U	**29.4**	0.545 U	**1.52 J**	0.516 U	0.801 U	**71.0**	0.372 U	--	0.578 U	**2.01 J**	--
PCB-092	NE	NE	NE	ng/kg	**328**	**290.0**	**159**	**171**	1.13 U	**80.3**	0.894 U	**3.54 J**	0.685 U	1.01 U	**147**	0.453 U	--	0.815 U	**2.84 J**	--

Analyte	DMMP Guideline Chemistry Values			Sample Location	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	PT-10-Z	PT-8	PT-11-Z	PT-12-Z	PT-13
				Sample ID	D-1	D-2	D-3A	D-3B	D-4A	D-4B	D-5A	D-5B	D-6A	D-6B	D-7	PT-10-36.0-37.0	PT-108-25.0-26.0	PT-11-36.0-37.0	PT-12-30.0-31.0	PT-13-27.0-28.0
				Sample Date	01/13/2015	01/12/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/13/2015	01/14/2015	01/16/2015	01/15/2015	01/15/2015	01/15/2015
	SL	BT	ML	Sample Depth	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	-36 to -37 ft MLLW	-25 to -26 ft MLLW	-36 to -37 ft MLLW	-30 to -31 ft MLLW	-27 to -28 ft MLLW
PCB-093	NE	NE	NE	ng/kg	0.607 U	**99.2**	**136**	**23.6**	0.605 U	1.75 U	0.618 U	0.387 U	0.584 U	0.907 U	1.03 U	0.386 U	--	0.601 U	0.879 U	--
PCB-094	NE	NE	NE	ng/kg	**4.63**	2.71 U	1.75 U	1.64 U	0.613 U	1.77 U	0.625 U	0.392 U	0.591 U	0.918 U	1.05 U	0.429 U	--	0.667 U	0.977 U	--
PCB-095	NE	NE	NE	ng/kg	**718**	**473**	**232**	**76.8**	**2.52 J**	**183**	0.521 U	**6.65**	0.493 U	0.765 U	**114**	**1.08 J**	--	0.560 U	**7.06**	--
PCB-096	NE	NE	NE	ng/kg	**5.17**	**4.58**	**4.25**	**3.29 J**	0.419 U	1.21 U	0.427 U	0.268 U	0.404 U	0.628 U	**2.25 J**	0.286 U	--	0.445 U	0.651 U	--
PCB-097	NE	NE	NE	ng/kg	**221**	**222**	**104**	**123**	1.03 U	**58.9**	0.817 U	**2.95 J**	0.626 U	0.918 U	**121**	0.412 U	--	0.740 U	**2.48 J**	--
PCB-098	NE	NE	NE	ng/kg	0.532 U	2.29 U	1.48 U	**197**	0.510 U	1.47 U	0.520 U	0.326 U	0.492 U	0.764 U	**338**	0.373 U	--	0.580 U	0.848 U	--
PCB-099	NE	NE	NE	ng/kg	**319**	**327**	**156**	**173**	0.991 U	**84.4**	0.786 U	**4.25**	0.602 U	0.884 U	**167**	0.406 U	--	0.730 U	**4.16**	--
PCB-100	NE	NE	NE	ng/kg	**2.55 J**	2.21 U	1.43 U	1.34 U	0.519 U	1.50 U	0.530 U	0.332 U	0.501 U	0.778 U	0.887 U	0.359 U	--	0.558 U	0.817 U	--
PCB-101	NE	NE	NE	ng/kg	**925**	**851**	**523**	**476**	**3.13 J**	**221**	0.814 U	**9.63**	0.623 U	0.915 U	**557**	**1.64 J**	--	0.767 U	**8.01**	--
PCB-102	NE	NE	NE	ng/kg	0.532 U	2.29 U	1.48 U	**197**	0.510 U	1.47 U	0.520 U	0.326 U	0.492 U	0.764 U	**338**	0.373 U	--	0.580 U	0.848 U	--
PCB-103	NE	NE	NE	ng/kg	**5.40**	2.12 U	**4.27**	1.28 U	0.496 U	1.43 U	0.506 U	0.317 U	0.478 U	0.743 U	**2.71 J**	0.341 U	--	0.531 U	0.777 U	--
PCB-104	NE	NE	NE	ng/kg	0.410 U	1.72 U	1.11 U	1.04 U	0.394 U	1.14 U	0.402 U	0.252 U	0.381 U	0.591 U	0.673 U	0.273 U	--	0.424 U	0.621 U	--
PCB-105	NE	NE	NE	ng/kg	**301**	**285**	**125**	**146**	1.40 U	**72.2**	0.795 U	**3.45 J**	0.516 U	0.648 U	**161**	0.772 U	--	0.672 U	**3.45 J**	--
PCB-106	NE	NE	NE	ng/kg	**765**	**676**	**310.0**	**339**	1.61 U	**176**	0.986 U	**7.97**	0.520 U	0.759 U	**423**	0.781 U	--	0.719 U	**7.60**	--
PCB-107	NE	NE	NE	ng/kg	**50.9**	**48.6**	**26.6**	**24.7**	1.45 U	**12.2**	0.894 U	0.626 U	0.568 U	0.745 U	**26.2**	0.798 U	--	0.662 U	0.681 U	--
PCB-108	NE	NE	NE	ng/kg	**50.9**	**48.6**	**26.6**	**24.7**	1.45 U	**12.2**	0.894 U	0.626 U	0.568 U	0.745 U	**26.2**	0.798 U	--	0.662 U	0.681 U	--
PCB-109	NE	NE	NE	ng/kg	0.522 U	1.27 U	1.37 U	1.24 U	0.867 U	0.369 U	0.688 U	0.708 U	0.527 U	0.773 U	1.54 U	0.354 U	--	0.635 U	0.468 U	--
PCB-110	NE	NE	NE	ng/kg	**754**	**759**	**381**	**426**	**3.07 J**	**187**	0.586 U	**8.21**	0.449 U	0.659 U	**430.0**	**1.41 J**	--	0.572 U	**7.60**	--
PCB-111	NE	NE	NE	ng/kg	**16.3**	**17.3**	**8.88**	**9.35**	0.744 U	**3.83 J**	0.590 U	0.607 U	0.451 U	0.663 U	**10.0**	0.305 U	--	0.549 U	0.404 U	--
PCB-112	NE	NE	NE	ng/kg	**33.5**	**32.6**	**18.7**	**18.4**	0.999 U	**8.43**	0.792 U	0.816 U	0.607 U	0.891 U	**17.2**	0.418 U	--	0.751 U	0.553 U	--
PCB-113	NE	NE	NE	ng/kg	0.527 U	**18.3**	1.41 U	**4.04**	0.837 U	0.356 U	0.663 U	0.683 U	0.508 U	0.746 U	1.49 U	0.346 U	--	0.622 U	0.458 U	--
PCB-114	NE	NE	NE	ng/kg	**20.2**	**18.2**	**12.0**	**10.7**	1.34 U	**5.49**	0.831 U	0.568 U	0.585 U	0.708 U	**11.6**	0.838 U	--	0.644 U	0.647 U	--
PCB-115	NE	NE	NE	ng/kg	**16.3**	**17.3**	**8.88**	**9.35**	0.744 U	**3.83 J**	0.590 U	0.607 U	0.451 U	0.663 U	**10.0**	0.305 U	--	0.549 U	0.404 U	--
PCB-116	NE	NE	NE	ng/kg	**129**	**134**	**59.0**	**69.2**	0.915 U	**30.6**	0.726 U	**1.68 J**	0.556 U	0.816 U	**60.7**	0.398 U	--	0.714 U	**1.94 J**	--
PCB-117	NE	NE	NE	ng/kg	**326**	**334**	**154**	**189**	0.927 U	**84.0**	0.735 U	**3.96 J**	0.563 U	0.827 U	**185**	0.379 U	--	0.682 U	**3.28 J**	--
PCB-118	NE	NE	NE	ng/kg	**765**	**676**	**310.0**	**339**	1.61 U	**176**	0.986 U	**7.97**	0.520 U	0.759 U	**423**	0.781 U	--	0.719 U	**7.60**	--
PCB-119	NE	NE	NE	ng/kg	**11.0**	**11.7**	**8.31**	**5.39**	0.767 U	**2.66 J**	0.608 U	0.627 U	0.466 U	0.684 U	**5.52**	0.313 U	--	0.563 U	0.415 U	--
PCB-120	NE	NE	NE	ng/kg	0.462 U	**2.29 J**	1.20 U	**2.27 J**	0.719 U	0.306 U	0.570 U	0.587 U	0.437 U	0.641 U	1.28 U	0.300 U	--	0.540 U	0.397 U	--
PCB-121	NE	NE	NE	ng/kg	0.455 U	1.97 U	1.27 U	1.20 U	0.434 U	1.25 U	0.443 U	0.278 U	0.419 U	0.651 U	0.741 U	0.306 U	--	0.475 U	0.696 U	--
PCB-122	NE	NE	NE	ng/kg	**9.52**	**10.8**	**6.81**	**5.60**	1.31 U	**2.32 J**	0.803 U	0.563 U	0.511 U	0.669 U	**5.13**	0.774 U	--	0.643 U	0.661 U	--
PCB-123	NE	NE	NE	ng/kg	**12.0**	**13.1**	**4.87**	**7.36**	1.15 U	**3.21 J**	0.769 U	0.605 U	0.522 U	0.700 U	**6.26**	0.710 U	--	0.544 U	0.604 U	--
PCB-124	NE	NE	NE	ng/kg	**29.5**	**25.6**	**14.1**	**13.4**	1.50 U	**8.69**	0.923 U	0.647 U	0.587 U	0.769 U	**20.3**	0.806 U	--	0.669 U	0.688 U	--
PCB-125	NE	NE	NE	ng/kg	**326**	**334**	**154**	**189**	0.927 U	**84.0**	0.735 U	**3.96 J**	0.563 U	0.827 U	**185**	0.379 U	--	0.682 U	**3.28 J**	--
PCB-126	NE	NE	NE	ng/kg	**4.61**	**3.78 J**	**8.85**	1.59 U	1.60 U	0.541 U	1.10 U	0.646 U	0.577 U	0.878 U	**2.79 J**	0.987 U	--	1.05 U	0.765 U	--
PCB-127	NE	NE	NE	ng/kg	0.944 U	1.92 U	2.09 U	1.52 U	1.34 U	0.518 U	0.826 U	0.579 U	0.525 U	0.688 U	0.804 U	0.845 U	--	0.702 U	0.722 U	--
PCB-128	NE	NE	NE	ng/kg	**162**	**140.0**	**85.1**	**84.0**	0.989 U	**47.5**	0.545 U	1.14 U	0.507 U	0.995 U	**112**	0.647 U	--	0.611 U	**1.52 J**	--
PCB-129	NE	NE	NE	ng/kg	**50.2**	**41.0**	**27.3**	**27.0**	1.36 U	**14.1**	0.750 U	1.57 U	0.698 U	1.37 U	**35.7**	0.859 U	--	0.811 U	0.872 U	--
PCB-130	NE	NE	NE	ng/kg	**61.8**	**44.6**	**34.3**	**29.0**	1.18 U	**15.6**	0.651 U	1.36 U	0.606 U	1.19 U	**46.4**	0.812 U	--	0.766 U	0.824 U	--
PCB-131	NE	NE	NE	ng/kg	**28.8**	**19.9**	**18.6**	**14.4**	1.20 U	**7.11**	0.659 U	1.38 U	0.613 U	1.20 U	**22.4**	0.726 U	--	0.685 U	0.737 U	--
PCB-132	NE	NE	NE	ng/kg	**298**	**242**	**195**	**169**	1.02 U	**85.4**	0.563 U	**2.57 J**	0.524 U	1.03 U	**234**	0.643 U	--	0.607 U	**2.82 J**	--
PCB-133	NE	NE	NE	ng/kg	**28.8**	**19.9**	**18.6**	**14.4**	1.20 U	**7.11**	0.659 U	1.38 U	0.613 U	1.20 U	**22.4**	0.726 U	--	0.685 U	0.737 U	--
PCB-134	NE	NE	NE	ng/kg	**55.2**	**40.6**	**36.7**	**27.2**	1.29 U	**17.2**	0.712 U	1.49 U	0.662 U	1.30 U	**44.3**	0.748 U	--	0.705 U	0.759 U	--
PCB-135	NE	NE	NE	ng/kg	**144**	**87.2**	**97.3**	**57.5**	1.35 U	**42.6**	0.743 U	1.56 U	0.691 U	1.36 U	**122**	0.711 U	--	0.670 U	0.721 U	--
PCB-136	NE	NE	NE	ng/kg	**146**	**131**	**138**	**117**	0.405 U	**50.3**	0.398 U	0.971 U	0.363 U	0.479 U	**180.0**	0.387 U	--	0.334 U	0.669 U	--
PCB-137	NE	NE	NE	ng/kg	**52.9**	**46.5**	**20.9**	**27.4**	1.24 U	**15.9**	0.682 U	1.43 U	0.635 U	1.24 U	**31.4**	0.756 U	--	0.713 U	0.767 U	--
PCB-138	NE	NE	NE	ng/kg	**1,010**	**786**	**663**	**517**	**2.61 J**	**312**	0.474 U	**8.69**	0.441 U	0.865 U	**834**	**1.63 J**	--	0.509 U	**6.81**	--
PCB-139	NE	NE	NE	ng/kg	**892**	**633**	**691**	**476**	1.15 U	**270.0**	0.635 U	**7.42**	0.591 U	1.16 U	**709**	**1.36 J**	--	0.635 U	**5.89**	--
PCB-140	NE	NE	NE	ng/kg	**5.03**	**4.71**	**3.28 J**	2.17 U	1.15 U	0.880 U	0.635 U	1.33 U	0.591 U	1.16 U	**3.10 J**	0.677 U	--	0.639 U	0.687 U	--
PCB-141	NE	NE	NE	ng/kg	**225**	**166**	**176**	**120.0**	1.14 U	**73.7**	0.628 U	**2.11 J**	0.584 U	1.15 U	**204**	0.704 U	--	0.665 U	**1.81 J**	--
PCB-142	NE	NE	NE	ng/kg	0.680 U	2.00 U	1.42 U	2.58 U	1.32 U	1.01 U	0.729 U	1.53 U	0.678 U	1.33 U	0.639 U	0.808 U	--	0.763 U	0.821 U	--
PCB-143	NE	NE	NE	ng/kg	**55.2**	**40.6**	**36.7**	**27.2**	1.29 U	**17.2**	0.712 U	1.49 U	0.662 U	1.30 U	**44.3**	0.748 U	--	0.705 U	0.759 U	--
PCB-144	NE	NE	NE	ng/kg	**57.2**	**37.8**	**43.9**	**29.5**	1.18 U	**19.0**	0.651 U	1.36 U	0.606 U	1.19 U	**51.5**	0.687 U	--	0.648 U	0.697 U	--
PCB-145	NE	NE	NE	ng/kg	0.859 U	0.930 U	1.62 U	1.95 U	0.414 U	0.356 U	0.407 U	0.994 U	0.372 U	0.491 U	0.751 U	0.397 U	--	0.343 U	0.686 U	--
PCB-146	NE	NE	NE	ng/kg	**126**	**93.9**	**91.1**	**64.4**	0.984 U	**40.7**	0.542 U	1.14 U	0.505 U	0.990 U	**112**	0.617 U	--	0.582 U	0.627 U	--
PCB-147	NE	NE	NE	ng/kg	**16.0**	**12.5**	**6.26**	**8.24**	1.15 U	**5.29**	0.632 U	1.32 U	0.588 U	1.15 U	**10.1**	0.663 U	--	0.625 U	0.673 U	--
PCB-148	NE	NE	NE	ng/kg	1.14 U	1.20 U	2.09 U	2.52 U	0.468 U	0.402 U	0.460 U	1.12 U	0.420 U	0.555 U	0.849 U	0.494 U	--	0.426 U	0.853 U	--
PCB-149	NE	NE	NE	ng/kg	**892**	**633**	**691**	**476**	1.15 U	**270.0**	0.635 U	**7.42**	0.591 U	1.16 U	**709**	**1.36 J**	--	0.635 U	**5.89**	--
PCB-150	NE	NE	NE	ng/kg	0.840 U	0.886 U	1.54 U	1.86 U	0.400 U	0.344 U	0.394 U	0.960 U	0.359 U	0.474 U	0.726 U	0.392 U	--	0.338 U	0.677 U	--
PCB-151	NE	NE	NE	ng/kg	**125**	**85.3**	**162**	**69.2**	1.19 U	**70.4**	0.658 U	**2.32 J**	0.613 U	1.20 U	**156**	0.709 U	--	0.669 U	**1.79 J**	--
PCB-152	NE	NE	NE	ng/kg	0.817 U	0.887 U	1.54 U	1.86 U	0.399 U	0.342 U	0.392 U	0.956 U	0.357 U	0.472 U	0.723 U	0.380 U	--	0.328 U	0.656 U	--
PCB-153	NE	NE	NE	ng/kg	**962**	**707**	**712**	**509**	**1.89 J**	**313**	0.492 U	**8.18**	0.458 U	0.898 U	**770.0**	**1.32 J**	--	0.564 U	**6.70**	--
PCB-154	NE	NE	NE	ng/kg	**6.71**	**7.47**	**5.92**	2.01 U	0.426 U	**2.06 J**	0.418 U	1.02 U	0.382 U	0.504 U	**5.51**	0.439 U	--	0.379 U	0.758 U	--
PCB-155	NE	NE	NE	ng/kg	0.759 U	0.792 U	1.38 U	1.66 U	0.364 U	0.313 U	0.358 U	0.873 U	0.326 U	0.431 U	0.660 U	0.349 U	--	0.302 U	0.604 U	--
PCB-156	NE	NE	NE	ng/kg	**99.3**	**84.8**	**57.3**	**49.9**	0.837 U	**30.5**	0.447 U	0.972 U	0.415 U	0.833 U	**79.7**	0.524 U	--	0.488 U	0.554 U	--
PCB-157	NE	NE	NE	ng/kg	**20.8**	**19.5**	**11.9**	**10.6**	0.819 U	**5.54**	0.462 U	0.983 U	0.474 U	0.850 U	**13.5**	0.638 U	--	0.571 U	0.594 U	--
PCB-158	NE	NE	NE	ng/kg	**128**	**103**	**83.6**	**70.8**	0.844 U	**39.2**	0.465 U	0.974 U	0.433 U	0.849 U	**105**	0.530 U	--	0.500 U	**1.15 J**	--
PCB-159	NE	NE	NE	ng/kg	**11.1**	**7.81**	**11.9**	**7.33**	0.800 U	**4.51**	0.441 U	0.924 U	0.410 U	0.805 U	**8.98**	0.507 U	--	0.478 U	0.514 U	--
PCB-160	NE	NE	NE	ng/kg	**128**	**103**	**83.6**	**70.8**	0.844 U	**39.2**	0.465 U	0.974 U	0.433 U	0.849 U	**105**	0.530 U	--	0.500 U	**1.15 J**	--
PCB-161	NE	NE	NE	ng/kg	**298**	**242**	**195**	**169**	1.02 U	**85.4**	0.563 U	**2.57 J**	0.524 U	1.03 U	**234**	0.643 U	--	0.607 U	**2.82 J**	--
PCB-162	NE	NE	NE	ng/kg	**162**	**140.0**	**85.1**	**84.0**	0.989 U	**47.5**	0.545 U	1.14 U	0.507 U	0.995 U	**112**	0.647 U	--	0.611 U	**1.52 J**	--
PCB-163	NE	NE	NE	ng/kg	**1,010**	**786**	**663**	**517**	**2.61 J**	**312**	0.474 U	**8.69**	0.441 U	0.865 U	**834**	**1.63 J**	--	0.509 U	**6.81**	--
PCB-164	NE	NE	NE	ng/kg	**1,010**	**786**	**663**	**517**	**2.61 J**	**312**	0.474 U	**8.69**	0.441 U	0.865 U	**834**	**1.63 J**	--	0.509 U	**6.81**	--

Analyte	DMMP Guideline Chemistry Values			Sample Location	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	PT-10-Z	PT-8	PT-11-Z	PT-12-Z	PT-13
				Sample ID	D-1	D-2	D-3A	D-3B	D-4A	D-4B	D-5A	D-5B	D-6A	D-6B	D-7	PT-10-36.0-37.0	PT-108-25.0-26.0	PT-11-36.0-37.0	PT-12-30.0-31.0	PT-13-27.0-28.0
				Sample Date	01/13/2015	01/12/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/13/2015	01/14/2015	01/16/2015	01/15/2015	01/15/2015	01/15/2015
	SL	BT	ML	Sample Depth	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	-36 to -37 ft MLLW	-25 to -26 ft MLLW	-36 to -37 ft MLLW	-30 to -31 ft MLLW	-27 to -28 ft MLLW
PCB-165	NE	NE	NE	ng/kg	**126**	**93.9**	**91.1**	**64.4**	0.984 U	**40.7**	0.542 U	1.14 U	0.505 U	0.990 U	**112**	0.617 U	--	0.582 U	0.627 U	--
PCB-166	NE	NE	NE	ng/kg	**3.70 J**	1.33 U	**2.86 J**	1.72 U	0.893 U	0.682 U	0.492 U	1.03 U	0.458 U	0.898 U	**2.30 J**	0.569 U	--	0.537 U	0.578 U	--
PCB-167	NE	NE	NE	ng/kg	**38.1**	**30.3**	**22.0**	**18.1**	0.826 U	**12.0**	0.453 U	0.915 U	0.426 U	0.825 U	**32.3**	0.584 U	--	0.503 U	0.547 U	--
PCB-168	NE	NE	NE	ng/kg	0.464 U	1.38 U	**3.38 J**	1.78 U	0.884 U	0.675 U	0.487 U	1.02 U	0.453 U	0.889 U	0.427 U	0.568 U	--	0.535 U	0.576 U	--
PCB-169	NE	NE	NE	ng/kg	0.458 U	1.30 U	**10.0**	1.67 U	0.863 U	0.646 U	0.483 U	0.991 U	0.400 U	0.857 U	0.384 U	0.523 U	--	0.586 U	0.613 U	--
PCB-170	NE	NE	NE	ng/kg	**282**	**186**	**274**	**164**	1.36 U	**142**	0.987 U	**2.42 J**	1.01 U	1.02 U	**337**	0.750 U	--	0.556 U	**2.36 J**	--
PCB-171	NE	NE	NE	ng/kg	**90.9**	**64.3**	**87.2**	**53.4**	1.24 U	**42.7**	0.900 U	0.879 U	0.925 U	0.928 U	**95.6**	0.683 U	--	0.506 U	0.552 U	--
PCB-172	NE	NE	NE	ng/kg	**50.1**	**34.9**	**50.2**	**27.7**	1.30 U	**25.1**	0.943 U	0.921 U	0.969 U	0.973 U	**60.0**	0.704 U	--	0.522 U	0.569 U	--
PCB-173	NE	NE	NE	ng/kg	**7.80**	**6.25**	**8.90**	**5.35**	1.44 U	**3.92 J**	1.05 U	1.02 U	1.08 U	1.08 U	**8.24**	0.770 U	--	0.571 U	0.622 U	--
PCB-174	NE	NE	NE	ng/kg	**305**	**214**	**290.0**	**181**	1.22 U	**137**	0.888 U	**2.66 J**	0.913 U	0.916 U	**297**	0.622 U	--	0.461 U	**2.32 J**	--
PCB-175	NE	NE	NE	ng/kg	**13.8**	**9.95**	**15.1**	**9.06**	1.24 U	**5.95**	0.901 U	0.880 U	0.926 U	0.930 U	**16.3**	0.652 U	--	0.483 U	0.526 U	--
PCB-176	NE	NE	NE	ng/kg	**45.3**	**34.0**	**47.9**	**27.0**	0.934 U	**21.1**	0.679 U	0.663 U	0.697 U	0.700 U	**45.9**	0.480 U	--	0.356 U	0.388 U	--
PCB-177	NE	NE	NE	ng/kg	**182**	**128**	**180.0**	**106**	1.34 U	**84.8**	0.972 U	0.949 U	0.999 U	1.00 U	**177**	0.708 U	--	0.525 U	0.572 U	--
PCB-178	NE	NE	NE	ng/kg	**60.0**	**41.7**	**60.6**	**36.4**	1.28 U	**27.5**	0.928 U	0.907 U	0.954 U	0.958 U	**60.8**	0.699 U	--	0.518 U	0.565 U	--
PCB-179	NE	NE	NE	ng/kg	**126**	**97.9**	**128**	**80.8**	0.892 U	**55.4**	0.648 U	0.633 U	0.666 U	0.669 U	**115**	0.474 U	--	0.352 U	**1.32 J**	--
PCB-180	NE	NE	NE	ng/kg	**630.0**	**416**	**566**	**352**	1.05 U	**315**	0.765 U	**5.10**	0.787 U	0.790 U	**694**	0.589 U	--	0.437 U	**4.59**	--
PCB-181	NE	NE	NE	ng/kg	0.793 U	1.41 U	1.61 U	1.73 U	1.27 U	0.543 U	0.920 U	0.898 U	0.945 U	0.949 U	0.656 U	0.734 U	--	0.544 U	0.593 U	--
PCB-182	NE	NE	NE	ng/kg	**361**	**275**	**350.0**	**220.0**	1.14 U	**172**	0.831 U	**3.10 J**	0.854 U	0.858 U	**354**	0.607 U	--	0.450 U	**3.55 J**	--
PCB-183	NE	NE	NE	ng/kg	**192**	**142**	**192**	**122**	1.11 U	**95.0**	0.807 U	**2.61 J**	0.830 U	0.833 U	**204**	**1.46 J**	--	**1.20 J**	**3.21 J**	--
PCB-184	NE	NE	NE	ng/kg	0.545 U	0.990 U	1.13 U	1.21 U	0.889 U	0.381 U	0.646 U	0.631 U	0.664 U	0.666 U	0.461 U	0.466 U	--	0.346 U	0.377 U	--
PCB-185	NE	NE	NE	ng/kg	**38.3**	**30.8**	**41.7**	**24.5**	1.27 U	**18.8**	0.926 U	0.904 U	0.952 U	0.955 U	**39.8**	0.691 U	--	0.512 U	0.558 U	--
PCB-186	NE	NE	NE	ng/kg	0.600 U	1.06 U	1.20 U	1.30 U	0.960 U	0.412 U	0.698 U	0.681 U	0.717 U	0.720 U	0.498 U	0.494 U	--	0.366 U	0.399 U	--
PCB-187	NE	NE	NE	ng/kg	**361**	**275**	**350.0**	**220.0**	1.14 U	**172**	0.831 U	**3.10 J**	0.854 U	0.858 U	**354**	0.607 U	--	0.450 U	**3.55 J**	--
PCB-188	NE	NE	NE	ng/kg	0.611 U	1.16 U	1.24 U	1.36 U	0.963 U	0.384 U	0.652 U	0.667 U	0.774 U	0.690 U	0.476 U	0.506 U	--	0.371 U	0.439 U	--
PCB-189	NE	NE	NE	ng/kg	**10.8**	**9.23**	**14.0**	**6.49**	0.879 U	**5.72**	0.688 U	0.639 U	0.595 U	0.689 U	**17.5**	0.506 U	--	0.379 U	0.374 U	--
PCB-190	NE	NE	NE	ng/kg	**56.1**	**41.1**	**61.6**	**35.7**	1.01 U	**32.4**	0.732 U	0.715 U	0.752 U	0.755 U	**74.4**	0.536 U	--	0.398 U	0.433 U	--
PCB-191	NE	NE	NE	ng/kg	**13.9**	**9.72**	**14.1**	**7.74**	0.921 U	**6.19**	0.669 U	0.654 U	0.688 U	0.691 U	**16.3**	0.508 U	--	0.377 U	0.411 U	--
PCB-192	NE	NE	NE	ng/kg	0.644 U	1.10 U	1.26 U	1.35 U	1.05 U	0.452 U	0.765 U	0.747 U	0.787 U	0.790 U	0.546 U	0.566 U	--	0.420 U	0.458 U	--
PCB-193	NE	NE	NE	ng/kg	**34.8**	**24.1**	**34.8**	**19.5**	0.944 U	**17.7**	0.686 U	0.670 U	0.705 U	0.708 U	**39.7**	0.510 U	--	0.378 U	0.412 U	--
PCB-194	NE	NE	NE	ng/kg	**157**	**101**	**158**	**96.8**	0.501 U	**79.8**	0.430 U	1.27 U	0.347 U	0.477 U	**291**	0.420 U	--	0.502 U	**2.15 J**	--
PCB-195	NE	NE	NE	ng/kg	**62.9**	**39.3**	**69.5**	**38.3**	0.566 U	**36.4**	0.486 U	1.43 U	0.392 U	0.540 U	**121**	0.465 U	--	0.555 U	0.548 U	--
PCB-196	NE	NE	NE	ng/kg	**187**	**121**	**186**	**129**	0.783 U	**107**	0.576 U	1.43 U	0.409 U	0.671 U	**317**	0.599 U	--	0.597 U	**4.26**	--
PCB-197	NE	NE	NE	ng/kg	**7.94**	**5.52**	**10.9**	**6.30**	0.627 U	**4.70**	0.461 U	1.15 U	0.328 U	0.537 U	**13.7**	0.446 U	--	0.445 U	0.518 U	--
PCB-198	NE	NE	NE	ng/kg	**9.16**	**7.36**	**12.5**	**6.34**	0.866 U	**5.52**	0.636 U	1.58 U	0.452 U	0.741 U	**16.7**	0.677 U	--	0.674 U	0.785 U	--
PCB-199	NE	NE	NE	ng/kg	**165**	**115**	**159**	**110.0**	0.912 U	**92.7**	0.670 U	1.67 U	0.476 U	0.781 U	**250.0**	0.645 U	--	0.643 U	**4.79**	--
PCB-200	NE	NE	NE	ng/kg	**19.4**	**13.7**	**20.7**	**13.9**	0.607 U	**11.4**	0.446 U	1.11 U	0.317 U	0.520 U	**30.3**	0.452 U	--	0.450 U	0.524 U	--
PCB-201	NE	NE	NE	ng/kg	**24.2**	**20.2**	**27.4**	**17.5**	0.623 U	**13.7**	0.458 U	1.14 U	0.325 U	0.533 U	**35.1**	0.451 U	--	0.449 U	0.523 U	--
PCB-202	NE	NE	NE	ng/kg	**32.8**	**28.2**	**31.1**	**24.6**	0.613 U	**17.2**	0.451 U	1.12 U	0.320 U	0.525 U	**41.7**	0.463 U	--	0.461 U	**1.57 J**	--
PCB-203	NE	NE	NE	ng/kg	**187**	**121**	**186**	**129**	0.783 U	**107**	0.576 U	1.43 U	0.409 U	0.671 U	**317**	0.599 U	--	0.597 U	**4.26**	--
PCB-204	NE	NE	NE	ng/kg	0.335 U	1.70 U	0.803 U	1.41 U	0.619 U	0.416 U	0.455 U	1.13 U	0.323 U	0.530 U	0.399 U	0.449 U	--	0.447 U	0.521 U	--
PCB-205	NE	NE	NE	ng/kg	**7.98**	**5.30**	**13.4**	**4.71**	0.402 U	**4.36**	0.345 U	1.02 U	0.278 U	0.383 U	**16.6**	0.326 U	--	0.389 U	0.384 U	--
PCB-206	NE	NE	NE	ng/kg	**68.5**	**68.0**	**81.0**	**61.1**	0.974 U	**38.7**	0.351 U	0.632 U	0.318 U	0.336 U	**106**	0.412 U	--	0.506 U	**12.4**	--
PCB-207	NE	NE	NE	ng/kg	**9.69**	**10.5**	**14.1**	**7.46**	0.754 U	**5.69**	0.259 U	0.478 U	0.239 U	0.251 U	**16.2**	0.296 U	--	0.376 U	**1.25 J**	--
PCB-208	NE	NE	NE	ng/kg	**18.7**	**21.6**	**25.3**	**16.4**	0.725 U	**10.8**	0.238 U	0.450 U	0.224 U	0.233 U	**21.8**	0.278 U	--	0.364 U	**4.57**	--
PCB-209	NE	NE	NE	ng/kg	**42.4**	**164**	**121**	**120.0**	1.04 U	**27.3**	0.213 U	0.546 U	0.271 U	0.247 U	**30.3**	0.308 U	--	0.272 U	**14.9**	--
Total PCBs	130,000	NE	3,100,000	ng/kg	**27,102 T**	**22,080 T**	**17,935 T**	**13,887 T**	**65.1 T**	**7,913 T**	1.7 UT	**270 T**	1.4 UT	1.5 UT	**19,387 T**	**50.2 T**	--	**4.1 T**	**355 T**	--
Total PCBs	NE	38	NE	mg/kg OC	**0.2**	**0.2**	**0.3**	**0.1**	**0.0**	**0.1**	0.001 U	**0.2**	0.001 U	0.001 U	**0.7**	**0.002**	--	**0.002**	**0.005**	--
Organometallic Compounds																				
Tributyltin Ion	NE	73	NE	µg/kg	**3.7**	**1.8 J**	3.6 U	3.6 U	3.5 U	**2.2 J**	3.5 U	3.5 U	3.4 U	3.4 U	3.7 U	3.6 U	--	3.4 U	3.7 U	--
Dioxins/Furans																				
Total Dioxin/Furan TEQ (ND=0.5DL)	4-10	10	NE	ng/kg	**32.3 JT**	**25.1 JT**	**7.6 JT**	**26.1 JT**	**0.5 T**	**9.8 JT**	**0.3 T**	**0.7 JT**	**0.15 JT**	**0.5 JT**	**14.7 JT**	**0.7 JT**		**0.4 T**	**6.9 JT**	

Notes:

-- = not tested
BT = bioaccumulation trigger
cPAH = carcinogenic polycyclic aromatic hydrocarbon
DL = detection limit
HPAH = high molecular weight polycyclic aromatic hydrocarbon
J = Estimated concentration
JT = Estimated concentration total
LPAH = low molecular weight polycyclic aromatic hydrocarbon
mg/kg = milligram per kilogram
mg/kg OC = milligram per kilogram organic carbon normalized
ML = maximum level
NE = not established
ng/kg = nanogram per kilogram
PCB = polychlorinated biphenyl
SL = screening level
TEQ = toxicity equivalent
U = The analyte is not detected at or above the reported concentration.
µg/kg = microgram per kilogram
Bold indicates the analyte was detected.
Yellow shading indicates exceedance of SL.
Orange shading indicates exceedance of BT.
Red border indicates exceedance of ML.

Table 6

Interim Action Sediment Chemical Analytical Results Compared to MTCA Cleanup Preliminary Screening Levels

Mill A Former Site Interim Action Dredging Project

Everett, Washington

Analyte	Sediment Screening Level for Protection of Benthic Organisms	Sediment Screening Level for Protection of Human Health and Higher Trophic Level Ecological Receptors	Sample Location	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	PT-10-Z	PT-8	PT-11-Z	PT-12-A	PT-13
			Sample ID	D-1	D-2	D-3A	D-3B	D-4A	D-4B	D-5A	D-5B	D-6A	D-6B	D-7	PT-10-36.0-37.0	PT-108-25.0-26.0	PT-11-36.0-37.0	PT-12-30.0-31.0	PT-13-27.0-28.0
			Sample Date	01/13/2015	01/12/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/13/2015	01/14/2015	01/16/2015	01/15/2015	01/15/2015	01/15/2015
			Sample Depth	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	-36 to -37 ft MLLW	-25 to -26 ft MLLW	-36 to -37 ft MLLW	-30 to -31 ft MLLW	-27 to -28 ft MLLW
Conventionals																			
Total Organic Carbon	NE	NE	%	14.4	9.93	5.6	13.3	0.313	8.49	0.152	0.124	0.157	0.176	2.94	2.7	–	0.228	7.76	–
Organic Matter	NE	NE	%	16.73	11.93	5.91	13.2	0.65	7.87	0.52	1.14	0.54	0.58	7.2	4.39	–	0.43	8.29	–
Preserved Total Solids	NE	NE	%	–	–	–	–	–	–	–	–	–	–	–	–	58.07	–	–	81.39
Total Solids	NE	NE	%	45.98	50.15	62.61	44.45	79.68	51.63	81.11	81.14	82.81	81.72	57.21	71.55	–	81.58	61.16	–
Total Volatile Solids	NE	NE	%	21.02	18.9	12.12	31.21	1.31	14.52	1.14	1.05	1.19	0.95	12.15	5.09	–	1.01	10.3	–
Ammonia	NE	NE	mg/kg	21	30	8.47	45.1	3.93	28.7	9.95	7.88	2.78	6.01	20.2	13.2	–	26.6	42.2	–
Sulfide	NE	NE	mg/kg	–	–	–	–	–	–	–	–	1.92 J	4.38 J	112 J	16	205	1.32	4.8	22.3 J
Grain Size																			
Gravel (≤ -1)	NE	NE	%	10.2	8.2	1.8	7.2	0.3	5.7	0.1	1.6	0.7	0.1 U	4.6	1.1	–	0.1	0.8	–
Very coarse sand (-1 < Phi ≤ 0)	NE	NE	%	4.8	2.4	1.5	3.9	0.3	2.2	0.1	0.6	0.1	0.2	1.9	0.8	–	0.4	1.6	–
Coarse sand (0 < Phi ≤ 1)	NE	NE	%	6.6	3.7	2.7	5.8	1.1	3.5	0.5	1.6	0.5	1.2	3.8	2.2	–	2.8	2.3	–
Medium sand (1 < Phi ≤ 2)	NE	NE	%	15	16.1	23	12.1	18.3	12.2	10.4	22.9	27.5	22.5	20.5	20.4	–	10.9	5.2	–
Fine sand (2 < Phi ≤ 3)	NE	NE	%	19.3	30.2	42	27	49.2	42.5	52.6	55.5	41.8	60.2	34.9	51.2	–	46.3	14.7	–
Very fine sand (3 < Phi ≤ 4)	NE	NE	%	10.4	11.4	12.6	11.7	20.4	13.3	25.7	7.3	18.5	8.4	8.3	6	–	29.2	23.4	–
Coarse silt (4 < Phi ≤ 5)	NE	NE	%	4.8	5.2	2.6	5.1	3.7	1.6	3.6	2.7	4.1	2.1	7.9	4	–	4.1	13.6	–
Medium silt (5 < Phi ≤ 6)	NE	NE	%	6.6	4.6	3	6.3	1.6	4.6	1.7	2	1.5	1.2	4.3	3.3	–	1.6	11.3	–
Fine silt (6 < Phi ≤ 7)	NE	NE	%	5.4	4.5	2.8	5.1	1.2	3.4	1.2	1.5	1.2	0.8	3.1	2.7	–	1.1	7.9	–
Very fine silt (7 < Phi ≤ 8)	NE	NE	%	4.4	3.5	2.1	4.4	1	2.9	1	1.1	1.2	0.7	2.6	2	–	0.8	5.3	–
Coarse clay (8 < Phi ≤ 9)	NE	NE	%	2.8	2.3	1.5	3.2	0.7	2.1	0.7	1	0.8	0.6	2.2	1.8	–	0.7	4	–
Medium clay (9 < Phi ≤ 10)	NE	NE	%	3	2.8	1.6	2.6	0.7	2	0.8	0.8	0.8	0.7	1.8	1.6	–	0.6	3.5	–
Particle/Grain Size, Phi >10	NE	NE	%	6.7	5.2	2.9	5.7	1.6	4	1.8	1.4	1.3	1.3	4	2.8	–	1.4	6.1	–
Total Fines	NE	NE	%	33.7	28	16.5	32.4	10.4	20.6	10.7	10.4	10.9	7.5	25.9	18.3	–	10.3	51.8	–
Grain Size (Ash Wt.)																			
Gravel (≤ -1)	NE	NE	%	2.1	1.1	1.2	2.8	0.1 U	3.5	0.1 U	0.1 U	0.2	0.1 U	1.5	–	–	–	–	–
Very coarse sand (-1 < Phi ≤ 0)	NE	NE	%	2.0	1.4	0.6	1.9	0.3	1.0	0.1	0.3	0.1	0.2	1.6	–	–	–	–	–
Coarse sand (0 < Phi ≤ 1)	NE	NE	%	3.8	2.5	1.3	2.7	1.3	2.0	0.4	1.2	0.5	1.2	4.1	–	–	–	–	–
Medium sand (1 < Phi ≤ 2)	NE	NE	%	14.6	14.8	21.5	8.6	19.1	9.5	12.9	16.2	26.6	28.2	24.0	–	–	–	–	–
Fine sand (2 < Phi ≤ 3)	NE	NE	%	23.3	35.6	43.6	31.7	46.5	41.6	52.3	61.4	43.9	56.5	41.6	–	–	–	–	–
Very fine sand (3 < Phi ≤ 4)	NE	NE	%	14.8	16.1	13.0	16.8	20.8	14.9	23.8	12.4	18.4	7.2	9.7	–	–	–	–	–
Coarse silt (4 < Phi ≤ 5)	NE	NE	%	8.5	6.6	4.6	6.0	5.6	6.5	4.3	3.2	4.1	2.7	3.1	–	–	–	–	–
Medium silt (5 < Phi ≤ 6)	NE	NE	%	15.6	9.1	4.5	17.7	1.9	11.0	1.6	1.2	2.1	1.0	6.0	–	–	–	–	–
Fine silt (6 < Phi ≤ 7)	NE	NE	%	6.9	4.9	4.0	5.5	1.7	5.5	1.6	1.1	2.4	0.9	3.6	–	–	–	–	–
Very fine silt (7 < Phi ≤ 8)	NE	NE	%	1.9	2.4	1.8	1.2	1.1	1.2	1.2	0.9	0.2	0.5	1.4	–	–	–	–	–
Coarse clay (8 < Phi ≤ 9)	NE	NE	%	0.9	1.4	0.9	0.5	0.4	0.5	0.5	0.5	0.1 U	0.4	0.7	–	–	–	–	–
Medium clay (9 < Phi ≤ 10)	NE	NE	%	0.3	0.6	0.4	0.2	0.1	0.1	0.2	0.4	0.1	0.2	0.1	–	–	–	–	–
Particle/Grain Size, Phi >10	NE	NE	%	5.1	3.4	2.5	4.3	1.3	2.9	1.3	1.1	1.4	0.9	2.5	–	–	–	–	–
Total Fines	NE	NE	%	39.4	28.5	18.8	35.5	12.0	27.6	10.6	8.5	10.3	6.6	17.5	–	–	–	–	–
Metals																			
Antimony			mg/kg	1.1 J	1.40 J	0.75 J	1.1 J	0.82 J	2.38 J	0.68 J	0.75 J	1.03 J	0.68 J	1.07 J	0.84 J	–	0.77 J	1.46 J	–
Arsenic	57	11	mg/kg	10.7 J	6.80 J	5.83 J	9.5 J	4.57 J	6.67 J	5.14 J	4.81 J	5.18 J	4.42 J	7.69 J	6.08 J	–	3.92 J	9	–
Cadmium	5.1	1	mg/kg	1.3	1	0.6	1.3	0.2	0.7	0.3	0.3	0.220 J	0.210 J	1	0.4	–	0.211 J	1.1	–
Chromium	260	NE	mg/kg	35	31.3	24.3	35	28.4	30.3	27.7	25.7	29.9	22.2	31.5	28.2	–	24.2	47.9	–
Copper	390	69,000	mg/kg	43.9	32.9	18.3	43.2	11	24.8	9.9	9.8	10.2	7.1	33.6	12.8	–	7.6	44.2	–
Lead	450	21	mg/kg	28	22	9	31	1.86 J	14	1.80 J	5	1.94 J	2.30 J	19	10	–	1.48 J	26	–
Mercury	0.41	0.2	mg/kg	0.13	0.14	0.0380 J	0.12	0.0120 J	0.14	0.0106 J	0.0159 J	0.02	0.0080 J	0.1	0.08	–	0.0071 J	0.11	–
Selenium	NE	NE	mg/kg	0.52 J	0.337 J	0.214 J	0.45 J	0.6 U	0.311 J	0.6 U	0.127 J	0.6 U	0.125 J	0.315 J	0.185 J	–	0.6 U	0.487 J	–
Silver	6.1	8,700	mg/kg	0.7 U	0.6 U	0.5 U	0.7 U	0.4 U	0.6 U	0.3 U	0.4 U	0.3 U	0.4 U	0.6 U	0.4 U	–	0.3 U	0.5 U	–
Zinc	410	520,000	mg/kg	76	54	37	69	31	49	31	30	31	27	58	34	–	28	70	–

Analyte	Sediment Screening Level for Protection of Benthic Organisms	Sediment Screening Level for Protection of Human Health and Higher Trophic Level Ecological Receptors	Sample Location	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	PT-10-Z	PT-8	PT-11-Z	PT-12-A	PT-13
			Sample ID	D-1	D-2	D-3A	D-3B	D-4A	D-4B	D-5A	D-5B	D-6A	D-6B	D-7	PT-10-36.0-37.0	PT-108-25.0-26.0	PT-11-36.0-37.0	PT-12-30.0-31.0	PT-13-27.0-28.0
			Sample Date	01/13/2015	01/12/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/13/2015	01/14/2015	01/16/2015	01/15/2015	01/15/2015	01/15/2015
			Sample Depth	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	-36 to -37 ft MLLW	-25 to -26 ft MLLW	-36 to -37 ft MLLW	-30 to -31 ft MLLW	-27 to -28 ft MLLW
LPAHs (OC Normalized)																			
2-Methylnaphthalene	38	NA	mg/kg OC	**1.9**	**1.9**	**2.3**	**3.1**	**1.8**	**3.3**	**2.1**	**4.8**	**1.6**	2.7 U	**8.2**	**2.8**	–	2.1 U	**2.3**	–
Acenaphthene	16	NA	mg/kg OC	**2.4**	**2.1**	**2.9**	**3.2**	**1.4**	**4.8**	3.2 U	**3.6**	3 U	2.7 U	**8.8**	**2.7**	–	2.1 U	**2.7**	–
Acenaphthylene	66	NA	mg/kg OC	**0.4**	**0.83**	**1.6**	**1.6**	1.5 U	**1.3**	3.2 U	**1.9**	3 U	2.7 U	**3.7**	**2**	–	2.1 U	**1**	–
Anthracene	220	NA	mg/kg OC	**1.9**	**1.5**	**1.8**	**1.6**	**1.1**	**2.1**	3.2 U	**4.9**	3 U	2.7 U	**5.1**	**4**	–	2.1 U	**2.1**	–
Fluorene	23	NA	mg/kg OC	**2.3**	**2.1**	**2.9**	**3**	**1.5**	**4.4**	3.2 U	**4.7**	3 U	2.7 U	**8.5**	**3.3**	–	2.1 U	**3.1**	–
Naphthalene	99	NA	mg/kg OC	**7.6**	**11**	**21**	**27**	**11**	**19**	**5.6**	**21**	3 U	**3.9**	**44**	**17**	–	**1.4**	**14**	–
Phenanthrene	100	NA	mg/kg OC	**4.7**	**6**	**9.8**	**8.3**	**4.8**	**10**	**5.2**	**15**	3 U	2.7 U	**21**	**9.6**	–	2.1 U	**8.4**	–
Total LPAHs	370	NA	mg/kg OC	**19.4**	**23.7**	**40.3**	**44.7**	**19.4**	**42**	**10.8**	**50.6**	3 U	**3.9**	**91.8**	**38.3**	–	**1.4**	**31.4**	–
LPAHs																			
2-Methylnaphthalene	670	5,900,000	µg/kg	**280**	**190**	**130**	**410**	**5.7**	**280**	**3.2 J**	**5.9**	**2.5 J**	4.8 U	**240**	**75**	–	4.7 U	**180**	–
Acenaphthene	500	88,000,000	µg/kg	**340**	**210**	**160**	**420**	**4.4 J**	**410**	4.8 U	**4.5 J**	4.7 U	4.8 U	**260**	**73**	–	4.7 U	**210**	–
Acenaphthylene	1,300	NE	µg/kg	**57**	**82**	**89**	**210**	4.8 U	**110**	4.8 U	**2.4 J**	4.7 U	4.8 U	**110**	**53**	–	4.7 U	**80**	–
Anthracene	960	440,000,000	µg/kg	**280**	**150**	**99**	**210**	**3.4 J**	**180**	4.8 U	**6.1**	4.7 U	4.8 U	**150**	**100**	–	4.7 U	**160**	–
Fluorene	540	59,000,000	µg/kg	**330**	**210**	**160**	**400**	**4.8 J**	**370**	4.8 U	**5.8**	4.7 U	4.8 U	**250**	**89**	–	4.7 U	**240**	–
Naphthalene	2,100	29,000,000	µg/kg	**1,100**	**1,100**	**1,200**	**3,600**	**33**	**1,600**	**8.5**	**26**	4.7 U	**6.8**	**1,300**	**460**	–	**3.3 J**	**1,100**	–
Phenanthrene	1,500	NE	µg/kg	**680**	**600**	**550**	**1,100**	**15**	**900**	**7.9**	**18**	4.7 U	4.8 U	**630**	**260**	–	4.7 U	**650**	–
Total LPAHs	5,200	NE	µg/kg	**2,787 T**	**2,352 T**	**2,258 T**	**5,940 T**	**60.6 T**	**3,570 T**	**16.4 T**	**62.8 T**	4.7 UT	**6.8 T**	**2,700 T**	**1,035 T**	–	**3.3 T**	**2,440 T**	–
HPAHs (OC Normalized)																			
Benzo(a)anthracene	110	NE	mg/kg OC	**0.97**	**0.58**	**0.61**	**0.39**	1.5 U	**1.5**	3.2 U	**4.4**	3 U	2.7 U	**1.9**	**2.2**	–	2.1 U	**0.91**	–
Benzo(a)pyrene	99	NE	mg/kg OC	**0.55**	**0.34**	**0.32**	**0.22**	1.5 U	**0.99**	3.2 U	**3.1**	3 U	2.7 U	**0.95**	**1.9**	–	2.1 U	**0.63**	–
Benzo(ghi)perylene	31	NE	mg/kg OC	**0.38**	**0.22**	**0.25**	**0.19**	1.5 U	**0.68**	3.2 U	**3.4**	3 U	2.7 U	**0.7**	**1.4**	–	2.1 U	**0.57**	–
Chrysene	110	NE	mg/kg OC	**1.6**	**0.9**	**0.96**	**0.62**	**0.89**	**1.6**	3.2 U	**4.9**	3 U	2.7 U	**2.9**	**2.3**	–	2.1 U	**1.3**	–
Dibenzo(a,h)anthracene	12	NE	mg/kg OC	**0.11**	0.25 U	0.43 U	0.18 U	1.5 U	**0.14**	3.2 U	3.9 U	3 U	2.7 U	**0.14**	0.89 U	–	2.1 U	0.31 U	–
Fluoranthene	160	NE	mg/kg OC	**4**	**4.8**	**6.4**	**5**	**3.5**	**7.5**	**4.6**	**15**	3 U	2.7 U	**14**	**9.6**	–	2.1 U	**5.9**	–
Indeno(1,2,3-cd)pyrene	34	NE	mg/kg OC	**0.31**	**0.18**	0.43 U	**0.12**	1.5 U	**0.52**	3.2 U	3.9 U	3 U	2.7 U	**0.44**	**1**	–	2.1 U	**0.32**	–
Pyrene	1,000	NE	mg/kg OC	**3.1**	**3.6**	**4.8**	**3.5**	**3**	**5.4**	**2.9**	**17**	3 U	2.7 U	**10**	**8.9**	–	2.1 U	**5.5**	–
Total HPAHs	960.0	NE	mg/kg OC	**12.3**	**11.5**	**14.2**	**10.7**	**7.4**	**20.8**	**7.5**	**54.1**	3 U	2.7 U	**34.1**	**30.4**	–	2.1 U	**16.4**	–
HPAHs																			
Benzo(a)anthracene	1,300	5,000	µg/kg	**140**	**58**	**34**	**52**	4.8 U	**130**	4.8 U	**5.4**	4.7 U	4.8 U	**55**	**59**	–	4.7 U	**71**	–
Benzo(a)pyrene	1,600	500	µg/kg	**79**	**34**	**18 J**	**29**	4.8 U	**84**	4.8 U	**3.9 J**	4.7 U	4.8 U	**28**	**51**	–	4.7 U	**49**	–
Benzo(ghi)perylene	670	NE	µg/kg	**55**	**22 J**	**14 J**	**25**	4.8 U	**58**	4.8 U	**4.2 J**	4.7 U	4.8 U	**20**	**38**	–	4.7 U	**44**	–
Benzofluoranthenes (Sum)	3,200	5,000	µg/kg	**200**	**83**	**45**	**89**	4.8 U	**200**	4.8 U	**7.5**	4.7 U	4.8 U	**76**	**84**	–	4.7 U	**98**	–
Chrysene	1,400	50,000	µg/kg	**230**	**90**	**54**	**83**	**2.8 J**	**140**	4.8 U	**6.1**	4.7 U	4.8 U	**85**	**62**	–	4.7 U	**98**	–
Dibenzo(a,h)anthracene	230	5,000	µg/kg	**16 J**	25 U	24 U	24 U	4.8 U	**12 J**	4.8 U	4.8 U	4.7 U	4.8 U	**4.0 J**	24 U	–	4.7 U	24 U	–
Fluoranthene	1,700	59,000,000	µg/kg	**570**	**480**	**360**	**670**	**11**	**640**	**7**	**19**	4.7 U	4.8 U	**420**	**260**	–	4.7 U	**460**	–
Indeno(1,2,3-cd)pyrene	600	5,000	µg/kg	**45**	**18 J**	24 U	**16 J**	4.8 U	**44**	4.8 U	4.8 U	4.7 U	4.8 U	**13**	**27**	–	4.7 U	**25**	–
Pyrene	2,600	44,000,000	µg/kg	**440**	**360**	**270**	**460**	**9.5**	**460**	**4.4 J**	**21**	4.7 U	4.8 U	**300**	**240**	–	4.7 U	**430**	–
Total HPAHs	12,000	NE	µg/kg	**1,775 T**	**1,145 T**	**795 T**	**1,424 T**	**23.3 T**	**1,768 T**	**11.4 T**	**67.1 T**	4.7 UT	4.8 UT	**1,001 T**	**821 T**	–	4.7 UT	**1,275 T**	–
cPAHs																			
Total cPAH TEQ (ND=0.5DL)	NE	16	µg/kg	**121.4 JT**	**52.1 JT**	**28.8 JT**	**46.7 JT**	**3.4 JT**	**124 JT**	3.4 UT	**5.7 JT**	3.3 UT	3.4 UT	**43.7 JT**	**69.8 T**	–	3.3 UT	**70.6 T**	–
Chlorinated Hydrocarbons (OC Normalized)																			
1,2,4-Trichlorobenzene	0.81	NE	mg/kg OC	0.034 U	0.049 U	0.084 U	**0.026**	1.5 U	**0.099**	3.2 U	3.9 U	3.1 U	2.7 U	**0.085**	0.18 U	–	2.1 U	0.062 U	–
1,2-Dichlorobenzene (o-Dichlorobenzene)	2.3	NE	mg/kg OC	**0.09**	**0.078**	**0.066**	**0.083**	**0.96**	**0.068**	**1.6**	3.9 U	3.1 U	2.7 U	**0.37**	0.18 U	–	2.1 U	0.062 U	–
1,4-Dichlorobenzene (p-Dichlorobenzene)	3.1	NE	mg/kg OC	**0.044**	**0.046**	**0.057**	**0.05**	1.5 U	**0.061**	3.2 U	3.9 U	3.1 U	2.7 U	**0.18**	0.18 U	–	2.1 U	0.062 U	–
Hexachlorobenzene	0.38	NE	mg/kg OC	0.0069 U	0.013 U	0.018 U	0.0074 U	0.31 U	0.012 U	0.64 U	0.79 U	0.62 U	0.55 U	0.48 U	0.036 U	–	0.42 U	0.012 U	–
Chlorinated Hydrocarbons																			
1,2,4-Trichlorobenzene	31	130	µg/kg	4.9 U	4.9 U	4.7 U	**3.5 J**	4.8 U	**8.4**	4.8 U	4.8 U	4.8 U	4.8 U	**2.5 J**	4.9 U	–	4.7 U	4.8 U	–
1,2-Dichlorobenzene (o-Dichlorobenzene)	35	130,000	µg/kg	**13**	**7.7**	**3.7 J**	**11**	**3.0 J**	**5.8**	**2.5 J**	4.8 U	4.8 U	4.8 U	**11**	4.9 U	–	4.7 U	4.8 U	–
1,4-Dichlorobenzene (p-Dichlorobenzene)	110	680	µg/kg	**6.3**	**4.6 J**	**3.2 J**	**6.7**	4.8 U	**5.2**	4.8 U	4.8 U	4.8 U	4.8 U	**5.2**	4.9 U	–	4.7 U	4.8 U	–
Hexachlorobenzene	22	2.3	µg/kg	0.99 U	1.3 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	14 U	0.97 U	–	0.95 U	0.96 U	–
Phthalates (OC Normalized)																			
Bis(2-Ethylhexyl) Phthalate	47	NE	mg/kg OC	**0.2**	0.49 U	0.84 U	0.36 U	15 U	0.57 U	32 U	39 U	31 U	27 U	**0.95**	1.8 U	–	21 U	0.62 U	–
Butyl benzyl Phthalate	4.9	NE	mg/kg OC	0.034 U	0.049 U	0.084 U	0.036 U	**1.5**	**0.37**	**2.1**	3.9 U	**1.6**	**1.5**	**0.75**	0.18 U	–	**3.2**	**0.11**	–
Dibutyl Phthalate	220	NE	mg/kg OC	**0.45**	0.2 U	0.34 U	0.14 U	6.1 U	0.22 U		15 U	12 U	11 U	0.65 U	0.7 U	–	8.3 U	0.24 U	–
Diethyl Phthalate	61	NE	mg/kg OC	0.1 U	**3.8**	0.34 U	0.14 U	6.1 U	0.22 U	13 U	15 U	12 U	11 U	0.65 U	0.7 U	–	8.3 U	**0.44**	–
Dimethyl Phthalate	53	NE	mg/kg OC	0.1 U	0.2 U	0.34 U	0.14 U	6.1 U	**0.26**	13 U	15 U	12 U	11 U	0.65 U	0.7 U	–	8.3 U	0.24 U	–
Di-N-Octyl Phthalate	58	NE	mg/kg OC	**0.076**	0.2 U	0.34 U	0.14 U	6.1 U	0.22 U	13 U	15 U	12 U	11 U	0.65 U	0.7 U	–	8.3 U	0.24 U	–
Phthalates																			
Bis(2-Ethylhexyl) Phthalate	1,300	260,000	µg/kg	**30 J**	49 UJ	47 UJ	48 UJ	48 UJ	48 UJ	48 UJ	48 UJ	48 UJ	48 UJ	**28 J**	49 U	–	47 U	48 U	–
Butyl benzyl Phthalate	63	1,900,000	µg/kg	4.9 U	4.9 U	4.7 U	4.8 U	**4.8**	**31**	**3.2 J**	4.8 U	**2.5 J**	**2.6 J**	**22**	4.9 U	–	**7.4**	**8.8**	–
Dibutyl Phthalate	1,400	150,000,000	µg/kg	**65**	20 U	19 U	19 U	19 U	19 U	**19 U**	19 U	19 U	19 U	19 U	20 U	–	19 U	19 U	–
Diethyl Phthalate	200	NE	µg/kg	20 U	**380**	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	20 U	–	19 U	**34**	–
Dimethyl Phthalate	71	NE	µg/kg	20 U	20 U	19 U	19 U	19 U	**22**	19 U	19 U	19 U	19 U	19 U	20 U	–	19 U	19 U	–
Di-N-Octyl Phthalate	6,200	15,000,000	µg/kg	**11 J**	20 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	20 U	–	19 U	19 U	–

Analyte	Sediment Screening Level for Protection of Benthic Organisms	Sediment Screening Level for Protection of Human Health and Higher Trophic Level Ecological Receptors	Sample Location	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	PT-10-Z	PT-8	PT-11-Z	PT-12-A	PT-13
			Sample ID	D-1	D-2	D-3A	D-3B	D-4A	D-4B	D-5A	D-5B	D-6A	D-6B	D-7	PT-10-36.0-37.0	PT-108-25.0-26.0	PT-11-36.0-37.0	PT-12-30.0-31.0	PT-13-27.0-28.0
			Sample Date	01/13/2015	01/12/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/13/2015	01/14/2015	01/16/2015	01/15/2015	01/15/2015	01/15/2015
			Sample Depth	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	-36 to -37 ft MLLW	-25 to -26 ft MLLW	-36 to -37 ft MLLW	-30 to -31 ft MLLW	-27 to -28 ft MLLW
Phenols																			
2,4-Dimethylphenol	29	29,000,000	µg/kg	**46**	**54**	**26**	**78**	24 U	**56**	24 U	24 U	24 U	24 U	**44**	24 U	–	23 U	**24 J**	–
o-Cresol (2-methylphenol)	63	73,000,000	µg/kg	**37**	**68**	**45**	**140**	19 U	**81**	19 U	19 U	19 U	19 U	**49**	20 U	–	19 U	**36**	–
p-Cresol (4-methylphenol)	670	150,000,000	µg/kg	**1,700**	**2,400**	**930**	**1,900**	**34**	**1,000**	19 U	**16 J**	19 U	19 U	**1,200**	20 U	–	**92**	**180**	–
Pentachlorophenol	360	9,200	µg/kg	**46 J**	99 U	94 U	**33 J**	96 U	**33 J**	97 U	97 U	95 U	96 U	96 U	98 U	–	94 U	96 U	–
Phenol	420	440,000,000	µg/kg	**390**	**430**	**240**	**460**	**29**	**320**	**34**	19 U	19 U	19 U	**250**	20 U	–	**38**	**59**	–
Miscellaneous Extractables (OC Normalized)																			
Dibenzofuran	15	NE	mg/kg OC	**2**	**2.2**	**3.2**	**3.1**	**1.5**	**4**	3.2 U	**4.7**	3 U	2.7 U	**8.2**	**3.2**	–	2.1 U	**3**	–
Hexachlorobutadiene	3.9	NE	mg/kg OC	0.0069 U	0.01 U	0.018 U	0.0074 U	0.31 U	0.012 U	0.64 U	0.79 U	0.62 U	0.55 U	0.033 U	0.036 U	–	0.42 U	0.012 U	–
N-Nitrosodiphenylamine (as diphenylamine)	11	NE	mg/kg OC	0.034 U	0.049 U	0.084 U	0.036 U	**0.93**	0.057 U	**2**	3.9 U	3.1 U	2.7 U	0.16 U	0.18 U	–	2.1 U	0.062 U	–
Miscellaneous Extractables																			
Benzoic Acid	650	NE	µg/kg	**790**	**940**	**540**	**1,100**	190 U	**860**	190 U	190 U	190 U	190 U	**720**	200 U	–	**82 J**	**150 J**	–
Benzyl Alcohol	57	150,000,000	µg/kg	**30**	**33**	**25**	**59**	19 U	**32**	19 U	19 U	19 U	19 U	**24**	20 U	–	19 U	19 U	–
Dibenzofuran	540	1,500,000	µg/kg	**300**	**220**	**180**	**410**	**4.8 J**	**340**	4.8 U	**5.8**	4.7 U	4.8 U	**240**	**86**	–	4.7 U	**200**	–
Hexachlorobutadiene	11	47,000	µg/kg	0.99 U	0.99 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	–	0.95 U	0.96 U	–
N-Nitrosodiphenylamine (as diphenylamine)	28	750,000	µg/kg	4.9 U	4.9 U	4.7 U	4.8 U	**2.9 J**	4.8 U	**3.0 J**	4.8 U	4.8 U	4.8 U	4.8 U	4.9 U	–	4.7 U	4.8 U	–
Pesticides																			
4,4'-DDD	NE	NE	µg/kg	0.99 U	0.99 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	–	0.95 U	0.96 U	–
4,4'-DDE	NE	NE	µg/kg	0.99 U	0.99 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	–	0.95 U	0.96 U	–
4,4'-DDT	NE	NE	µg/kg	6.9 U	4.3 U	0.99 U	4.0 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	–	0.95 U	0.96 U	–
Total DDT (4,4 isomers)	NE	NE	µg/kg	6.9 UT	4.3 UT	0.99 UT	4 UT	0.98 UT	0.98 UT	0.98 UT	0.98 UT	0.97 UT	0.97 UT	0.98 UT	0.97 UT	–	0.95 UT	0.96 UT	–
Aldrin	NE	NE	µg/kg	1.7 U	0.49 U	1.8 U	3.6 U	0.49 U	3.9 U	0.49 U	0.49 U	0.48 U	0.49 U	1.7 U	0.48 U	–	0.48 U	0.48 U	–
alpha-Chlordane (cis)	NE	NE	µg/kg	0.50 U	0.49 U	0.50 U	0.50 U	0.49 U	0.49 U	0.49 U	0.49 U	0.48 U	0.49 U	0.49 U	0.48 U	–	0.48 U	0.48 U	–
beta or gamma-Chlordane (trans)	NE	NE	µg/kg	0.50 U	0.49 U	0.50 U	0.50 U	0.49 U	0.49 U	0.49 U	0.49 U	0.48 U	0.49 U	1.0 U	0.48 U	–	0.48 U	0.48 U	–
Chlordane (Total)	NE	NE	µg/kg	4.5 UT	1.7 UT	0.99 UT	**2.3 J**	0.98 UT	2.3 UT	0.98 UT	0.98 UT	0.97 UT	0.97 UT	2.7 UT	0.97 UT	–	0.95 UT	1.6 UT	–
cis-Nonachlor	NE	NE	µg/kg	1.6 U	1.7 U	0.99 U	**2.3 J**	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	–	0.95 U	0.96 U	–
Dieldrin	NE	NE	µg/kg	1.2 U	0.99 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	–	0.95 U	0.96 U	–
Heptachlor	NE	NE	µg/kg	0.50 U	0.49 U	0.50 U	0.50 U	0.49 U	0.80 U	0.49 U	0.49 U	0.48 U	0.49 U	1.5 U	0.48 U	–	0.48 U	0.48 U	–
Oxychlordane	NE	NE	µg/kg	4.5 U	0.99 U	0.99 U	0.99 U	0.98 U	2.3 U	0.98 U	0.98 U	0.97 U	0.97 U	2.7 U	0.97 U	–	0.95 U	1.6 U	–
trans-Nonachlor	NE	NE	µg/kg	2.2 U	0.99 U	0.99 U	0.99 U	0.98 U	0.98 U	0.98 U	0.98 U	0.97 U	0.97 U	0.98 U	0.97 U	–	0.95 U	0.96 U	–
Polychlorinated Biphenyls (PCBs)																			
PCB-001	NE	NE	ng/kg	**18.2**	**18**	**20.5**	**5.77**	0.867 U	**5.34**	0.450 U	0.752 U	0.600 U	0.397 U	**9.5**	**1.20 J**	–	0.315 U	**3.28 J**	–
PCB-002	NE	NE	ng/kg	**4.98**	**5.12**	**12.6**	**4.61**	0.973 U	**4.08**	0.544 U	0.856 U	0.696 U	0.461 U	**4.92**	**2.47 J**	–	0.381 U	**6.95**	–
PCB-003	NE	NE	ng/kg	**13.3**	**11.4**	**16.9**	**6.67**	0.937 U	**4.56**	0.558 U	0.833 U	0.689 U	0.458 U	**7.96**	**1.82 J**	–	0.381 U	**5.2**	–
PCB-004	NE	NE	ng/kg	**16.5**	**13.7**	**29.7**	**7.09**	1.62 U	**4.11**	1.63 U	1.21 U	1.39 U	1.39 U	**8.94**	**2.22 J**	–	0.810 U	0.626 U	–
PCB-005	NE	NE	ng/kg	0.572 U	1.82 U	1.99 U	1.77 U	1.43 U	0.928 U	1.49 U	1.07 U	1.26 U	1.35 U	0.617 U	0.735 U	–	0.744 U	0.491 U	–
PCB-006	NE	NE	ng/kg	**9.37**	**9.26**	**16.5**	**6.98**	**2.86 J**	**3.23 J**	1.39 U	0.994 U	1.17 U	1.25 U	**12.5**	**5.07**	–	0.710 U	**2.50 J**	–
PCB-007	NE	NE	ng/kg	**2.94 J**	**3.61 J**	**4.4**	1.68 U	1.39 U	0.900 U	1.45 U	1.04 U	1.22 U	1.31 U	**3.48 J**	0.716 U	–	0.725 U	0.478 U	–
PCB-008	NE	NE	ng/kg	**39.6**	**37.5**	**66.4**	**20.7**	1.45 U	**10.1**	1.52 U	1.09 U	1.28 U	1.37 U	**26.7**	**3.72 J**	–	0.741 U	**2.29 J**	–
PCB-009	NE	NE	ng/kg	**3.61 J**	**2.72 J**	**6.64**	1.78 U	1.45 U	0.943 U	1.52 U	1.09 U	1.28 U	1.37 U	0.627 U	0.746 U	–	0.756 U	0.499 U	–
PCB-010	NE	NE	ng/kg	0.590 U	1.97 U	2.15 U	1.92 U	1.62 U	1.05 U	1.69 U	1.21 U	1.42 U	1.53 U	0.699 U	0.765 U	–	0.776 U	0.512 U	–
PCB-011	NE	NE	ng/kg	**13**	**14.4**	**11.8**	**9.7**	**3.91 J**	**5.32**	1.59 U	**3.10 J**	1.33 U	1.43 U	**13.9**	**6.53**	–	**2.91 J**	**4.55**	–
PCB-012	NE	NE	ng/kg	**2.87 J**	**3.61 J**	**7.67**	1.79 U	1.43 U	1.37 U	1.50 U	1.07 U	1.26 U	1.35 U	**3.21 J**	**4.24**	–	0.798 U	**2.56 J**	–
PCB-013	NE	NE	ng/kg	**4.8**	**4.87**	**5.44**	**4.99**	1.59 U	1.52 U	1.66 U	1.19 U	1.40 U	1.50 U	**8.75**	**2.36 J**	–	0.859 U	**1.94 J**	–
PCB-014	NE	NE	ng/kg	0.599 U	1.88 U	2.06 U	1.83 U	1.47 U	0.954 U	1.54 U	1.10 U	1.29 U	1.38 U	0.634 U	0.758 U	–	0.768 U	0.506 U	–
PCB-015	NE	NE	ng/kg	**36.6**	**28.6**	**22.4**	**11.8**	1.47 U	**7.61**	1.58 U	1.10 U	1.32 U	1.47 U	**19.4**	**1.97 J**	–	0.815 U	**1.16 J**	–
PCB-016	NE	NE	ng/kg	**32.6**	**37.1**	**35.3**	**19.4**	1.32 U	**7.75**	0.566 U	1.44 U	0.546 U	0.646 U	**17.9**	0.553 U	–	0.404 U	0.583 U	–
PCB-017	NE	NE	ng/kg	**45.3**	**41.1**	**51.5**	**21.3**	1.38 U	**10.4**	0.590 U	1.50 U	0.569 U	0.673 U	**23.3**	0.614 U	–	0.449 U	1.79 U	–
PCB-018	NE	NE	ng/kg	**120**	**107**	**131**	**56.4**	1.53 U	**26.8**	0.654 U	1.66 U	0.631 U	0.747 U	**64**	0.681 U	–	0.497 U	1.98 U	–
PCB-019	NE	NE	ng/kg	**10.9**	**11.4**	**12.4**	**5.95**	1.53 U	1.75 U	0.653 U	1.66 U	0.630 U	0.745 U	**5.88**	0.660 U	–	0.482 U	0.696 U	–
PCB-020	NE	NE	ng/kg	**67.5**	**59.9**	**73.7**	**29.4**	1.08 U	**15.6**	0.837 U	1.46 U	0.974 U	0.740 U	**40**	0.930 U	–	0.843 U	**3.99**	–
PCB-021	NE	NE	ng/kg	**67.5**	**59.9**	**73.7**	**29.4**	1.08 U	**15.6**	0.837 U	1.46 U	0.974 U	0.740 U	**40**	0.930 U	–	0.843 U	**3.99**	–
PCB-022	NE	NE	ng/kg	**52.9**	**39.8**	**45.4**	**22**	1.13 U	**11.1**	0.873 U	1.52 U	1.02 U	0.772 U	**28.1**	0.911 U	–	0.826 U	1.34 U	–
PCB-023	NE	NE	ng/kg	1.85 U	1.88 U	1.71 U	1.85 U	1.21 U	1.98 U	0.935 U	1.63 U	1.09 U	0.827 U	1.84 U	0.961 U	–	0.871 U	1.41 U	–
PCB-024	NE	NE	ng/kg	**1.77 J**	**4.6**	**2.16 J**	1.50 U	1.02 U	1.17 U	0.437 U	1.11 U	0.422 U	0.499 U	**1.40 J**	0.475 U	–	0.347 U	0.501 U	–
PCB-025	NE	NE	ng/kg	**9.5**	**7.96**	**9.97**	**3.58 J**	0.974 U	1.59 U	0.752 U	1.31 U	0.876 U	0.666 U	**6.23**	0.812 U	–	0.736 U	1.20 U	–
PCB-026	NE	NE	ng/kg	**20.6**	**18.8**	**21.4**	**8.27**	1.12 U	**3.97 J**	0.869 U	1.52 U	1.01 U	0.769 U	**14**	0.949 U	–	0.860 U	1.40 U	–
PCB-027	NE	NE	ng/kg	**6.95**	**4.76**	**8.46**	**4**	1.04 U	1.20 U	0.446 U	1.13 U	0.431 U	0.510 U	**2.79 J**	0.459 U	–	0.335 U	0.484 U	–
PCB-028	NE	NE	ng/kg	**137**	**115**	**113**	**56.3**	**2.20 J**	**27.8**	0.770 U	**2.60 J**	0.896 U	0.682 U	**76.1**	0.787 U	–	0.713 U	**5.45**	–
PCB-029	NE	NE	ng/kg	1.82 U	1.90 U	1.73 U	1.86 U	1.10 U	1.80 U	0.850 U	1.48 U	0.989 U	0.752 U	1.67 U	0.954 U	–	0.864 U	1.40 U	–
PCB-030	NE	NE	ng/kg	0.637 U	1.70 U	1.20 U	1.42 U	0.991 U	1.13 U	0.424 U	1.08 U	0.409 U	0.484 U	1.44 U	0.440 U	–	0.321 U	0.464 U	–
PCB-031	NE	NE	ng/kg	**138**	**99.8**	**113**	**58.3**	**1.94 J**	**29.6**	0.819 U	**2.37 J**	0.954 U	0.725 U	**44.8**	0.979 U	–	0.887 U	**6.29**	–

Analyte	Sediment Screening Level for Protection of Benthic Organisms	Sediment Screening Level for Protection of Human Health and Higher Trophic Level Ecological Receptors	Sample Location	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	PT-10-Z	PT-8	PT-11-Z	PT-12-A	PT-13
			Sample ID	D-1	D-2	D-3A	D-3B	D-4A	D-4B	D-5A	D-5B	D-6A	D-6B	D-7	PT-10-36.0-37.0	PT-108-25.0-26.0	PT-11-36.0-37.0	PT-12-30.0-31.0	PT-13-27.0-28.0
			Sample Date	01/13/2015	01/12/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/13/2015	01/14/2015	01/16/2015	01/15/2015	01/15/2015	01/15/2015
			Sample Depth	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	-36 to -37 ft MLLW	-25 to -26 ft MLLW	-36 to -37 ft MLLW	-30 to -31 ft MLLW	-27 to -28 ft MLLW
PCB-032	NE	NE	ng/kg	**39**	**28.7**	**37.3**	**15**	1.11 U	**7.47**	0.476 U	1.21 U	0.459 U	0.543 U	**17.1**	0.516 U	–	0.376 U	0.544 U	–
PCB-033	NE	NE	ng/kg	**67.5**	**59.9**	**73.7**	**29.4**	1.08 U	**15.6**	0.837 U	1.46 U	0.974 U	0.740 U	**40**	0.930 U	–	0.843 U	**3.99**	–
PCB-034	NE	NE	ng/kg	1.81 U	2.15 U	1.96 U	2.11 U	1.09 U	1.78 U	0.844 U	1.47 U	0.981 U	0.746 U	1.66 U	0.949 U	–	0.860 U	1.40 U	–
PCB-035	NE	NE	ng/kg	1.69 U	1.97 U	1.79 U	1.93 U	1.17 U	1.91 U	0.905 U	1.58 U	1.05 U	0.801 U	1.78 U	0.993 U	–	0.900 U	1.46 U	–
PCB-036	NE	NE	ng/kg	1.63 U	1.88 U	1.71 U	1.84 U	1.10 U	1.79 U	0.847 U	1.48 U	0.986 U	0.750 U	1.67 U	0.931 U	–	0.844 U	1.37 U	–
PCB-037	NE	NE	ng/kg	**39.7**	**24.7**	**28.9**	**14.7**	1.05 U	**8.04**	0.812 U	1.42 U	0.944 U	0.718 U	**20.3**	0.873 U	–	0.791 U	1.28 U	–
PCB-038	NE	NE	ng/kg	1.59 U	1.83 U	1.67 U	1.80 U	1.10 U	1.79 U	0.846 U	1.48 U	0.985 U	0.749 U	1.66 U	0.891 U	–	0.807 U	1.31 U	–
PCB-039	NE	NE	ng/kg	1.68 U	1.94 U	1.76 U	1.90 U	1.13 U	1.84 U	0.870 U	1.52 U	1.01 U	0.770 U	**8.88**	0.954 U	–	0.865 U	1.41 U	–
PCB-040	NE	NE	ng/kg	**40.8**	**32**	**27**	**20.9**	1.57 U	**9.19**	0.997 U	0.721 U	0.651 U	0.843 U	**18.4**	0.790 U	–	0.613 U	0.809 U	–
PCB-041	NE	NE	ng/kg	**234**	**173**	**138**	**93.7**	**2.46 J**	**46.8**	0.586 U	**5.14**	0.383 U	0.496 U	**89.5**	0.469 U	–	0.363 U	**4.05**	–
PCB-042	NE	NE	ng/kg	**81**	**53.8**	**53.7**	**28.5**	1.02 U	**16.1**	0.651 U	**1.93 J**	0.425 U	0.550 U	**31.1**	0.517 U	–	0.401 U	**1.85 J**	–
PCB-043	NE	NE	ng/kg	**255**	**193**	**162**	**96.6**	**2.09 J**	**51.9**	0.755 U	**4.9**	0.493 U	0.638 U	**92.9**	0.595 U	–	0.461 U	**4.57**	–
PCB-044	NE	NE	ng/kg	**345**	**259**	**185**	**142**	**3.07 J**	**71**	0.865 U	**5.67**	0.565 U	0.731 U	**135**	0.686 U	–	0.532 U	**4.96**	–
PCB-045	NE	NE	ng/kg	**42.3**	**25.3**	**25.8**	**15.6**	1.34 U	**7.77**	0.856 U	0.619 U	0.559 U	0.723 U	**15.9**	0.680 U	–	0.527 U	0.880 U	–
PCB-046	NE	NE	ng/kg	**17.6**	**11.8**	**12.5**	**7.45**	1.45 U	**3.42 J**	0.926 U	0.670 U	0.605 U	0.783 U	**7.54**	0.726 U	–	0.563 U	0.940 U	–
PCB-047	NE	NE	ng/kg	**71.3**	**49.8**	**45.1**	**22.7**	0.983 U	**15**	0.625 U	**2.04 J**	0.408 U	0.529 U	**16.7**	0.527 U	–	0.408 U	**2.61 J**	–
PCB-048	NE	NE	ng/kg	**47.8**	**29.9**	**28.7**	**13.6**	0.987 U	**9.91**	0.628 U	**1.46 J**	0.410 U	0.531 U	**14.2**	0.488 U	–	0.378 U	**1.57 J**	–
PCB-049	NE	NE	ng/kg	**255**	**193**	**162**	**96.6**	**2.09 J**	**51.9**	0.755 U	**4.9**	0.493 U	0.638 U	**92.9**	0.595 U	–	0.461 U	**4.57**	–
PCB-050	NE	NE	ng/kg	0.849 U	2.22 U	2.35 U	1.77 U	1.19 U	0.546 U	0.756 U	0.547 U	0.494 U	0.639 U	0.731 U	0.602 U	–	0.467 U	0.780 U	–
PCB-051	NE	NE	ng/kg	**12.2**	**8.76**	**8.73**	**5.64**	1.20 U	**2.70 J**	0.766 U	0.554 U	0.501 U	0.648 U	**5**	0.640 U	–	0.496 U	0.828 U	–
PCB-052	NE	NE	ng/kg	**512**	**437**	**266**	**222**	**3.06 J**	**112**	0.652 U	**7.66**	0.426 U	0.552 U	**213**	**1.20 J**	–	0.376 U	**6.17**	–
PCB-053	NE	NE	ng/kg	**44.9**	**30**	**27.8**	**17.7**	1.25 U	**8.88**	0.798 U	0.577 U	0.522 U	0.675 U	**18.6**	0.659 U	–	0.511 U	0.854 U	–
PCB-054	NE	NE	ng/kg	0.649 U	1.73 U	1.83 U	1.38 U	0.936 U	0.430 U	0.596 U	0.431 U	0.389 U	0.504 U	0.576 U	0.484 U	–	0.375 U	0.627 U	–
PCB-055	NE	NE	ng/kg	**9.62**	**5.25**	**7.78**	**3.94 J**	0.879 U	**2.10 J**	0.559 U	0.404 U	0.365 U	0.473 U	**4.23**	0.448 U	–	0.347 U	0.459 U	–
PCB-056	NE	NE	ng/kg	**212**	**155**	**110**	**75.9**	1.34 U	**36.3**	0.523 U	**3.80 J**	0.466 U	0.560 U	**88.6**	0.684 U	–	0.603 U	**5.07**	–
PCB-057	NE	NE	ng/kg	**1.50 J**	1.62 U	1.71 U	1.29 U	0.879 U	0.404 U	0.559 U	0.404 U	0.365 U	0.473 U	0.540 U	0.444 U	–	0.344 U	0.454 U	–
PCB-058	NE	NE	ng/kg	0.630 U	1.60 U	1.70 U	1.28 U	0.929 U	0.427 U	0.591 U	0.427 U	0.386 U	0.500 U	0.571 U	0.457 U	–	0.354 U	0.468 U	–
PCB-059	NE	NE	ng/kg	**81**	**53.8**	**53.7**	**28.5**	1.02 U	**16.1**	0.651 U	**1.93 J**	0.425 U	0.550 U	**31.1**	0.517 U	–	0.401 U	**1.85 J**	–
PCB-060	NE	NE	ng/kg	**212**	**155**	**110**	**75.9**	1.34 U	**36.3**	0.523 U	**3.80 J**	0.466 U	0.560 U	**88.6**	0.684 U	–	0.603 U	**5.07**	–
PCB-061	NE	NE	ng/kg	**469**	**376**	**221**	**177**	**2.62 J**	**94.9**	0.559 U	**7.65**	0.365 U	0.473 U	**222**	0.437 U	–	0.339 U	**7.51**	–
PCB-062	NE	NE	ng/kg	0.742 U	1.84 U	1.95 U	1.47 U	0.949 U	0.436 U	0.604 U	0.437 U	0.395 U	0.511 U	0.584 U	0.517 U	–	0.401 U	0.529 U	–
PCB-063	NE	NE	ng/kg	**13.8**	**9.31**	**9.41**	**4.69**	0.855 U	**2.51 J**	0.544 U	0.394 U	0.355 U	0.460 U	**6.14**	0.439 U	–	0.340 U	0.450 U	–
PCB-064	NE	NE	ng/kg	**234**	**173**	**138**	**93.7**	**2.46 J**	**46.8**	0.586 U	**5.14**	0.383 U	0.496 U	**89.5**	0.469 U	–	0.363 U	**4.05**	–
PCB-065	NE	NE	ng/kg	0.651 U	1.79 U	1.89 U	1.43 U	1.00 U	0.461 U	0.638 U	0.462 U	0.417 U	0.540 U	0.617 U	0.469 U	–	0.363 U	0.480 U	–
PCB-066	NE	NE	ng/kg	**313**	**225**	**156**	**104**	**2.08 J**	**58.4**	0.534 U	**5.89**	0.349 U	0.452 U	**140**	0.431 U	–	0.334 U	**6.16**	–
PCB-067	NE	NE	ng/kg	**9.97**	**7.14**	**6.44**	**3.85 J**	0.862 U	**1.51 J**	0.548 U	0.397 U	0.358 U	0.464 U	**4.2**	0.453 U	–	0.351 U	0.463 U	–
PCB-068	NE	NE	ng/kg	0.600 U	1.58 U	1.67 U	1.26 U	0.843 U	0.387 U	0.536 U	0.388 U	0.350 U	0.453 U	0.518 U	0.435 U	–	0.337 U	0.445 U	–
PCB-069	NE	NE	ng/kg	**512**	**437**	**266**	**222**	**3.06 J**	**112**	0.652 U	**7.66**	0.426 U	0.552 U	**213**	**1.20 J**	–	0.376 U	**6.17**	–
PCB-070	NE	NE	ng/kg	**469**	**376**	**221**	**177**	**2.62 J**	**94.9**	0.559 U	**7.65**	0.365 U	0.473 U	**222**	0.437 U	–	0.339 U	**7.51**	–
PCB-071	NE	NE	ng/kg	**234**	**173**	**138**	**93.7**	**2.46 J**	**46.8**	0.586 U	**5.14**	0.383 U	0.496 U	**89.5**	0.469 U	–	0.363 U	**4.05**	–
PCB-072	NE	NE	ng/kg	**234**	**173**	**138**	**93.7**	**2.46 J**	**46.8**	0.586 U	**5.14**	0.383 U	0.496 U	**89.5**	0.469 U	–	0.363 U	**4.05**	–
PCB-073	NE	NE	ng/kg	0.662 U	1.79 U	1.90 U	1.43 U	0.886 U	0.407 U	0.563 U	0.407 U	0.368 U	0.476 U	0.545 U	0.502 U	–	0.389 U	0.650 U	–
PCB-074	NE	NE	ng/kg	**179**	**125**	**89.6**	**64.5**	0.818 U	**32.9**	0.520 U	**3.17 J**	0.340 U	0.440 U	**78.7**	0.436 U	–	0.338 U	**4.41**	–
PCB-075	NE	NE	ng/kg	**47.8**	**29.9**	**28.7**	**13.6**	0.987 U	**9.91**	0.628 U	**1.46 J**	0.410 U	0.531 U	**14.2**	0.488 U	–	0.378 U	**1.57 J**	–
PCB-076	NE	NE	ng/kg	**313**	**225**	**156**	**104**	**2.08 J**	**58.4**	0.534 U	**5.89**	0.349 U	0.452 U	**140**	0.431 U	–	0.334 U	**6.16**	–
PCB-077	NE	NE	ng/kg	**22.9**	**18.2**	**18.4**	**9.78**	1.33 U	**3.66 J**	0.523 U	0.522 U	0.464 U	0.561 U	**9.47**	0.727 U	–	0.662 U	**1.18 J**	–
PCB-078	NE	NE	ng/kg	1.28 U	2.35 U	1.91 U	1.97 U	1.31 U	0.651 U	0.514 U	0.521 U	0.458 U	0.550 U	0.926 U	0.688 U	–	0.607 U	0.632 U	–
PCB-079	NE	NE	ng/kg	**7.14**	**8.56**	**7.22**	**4.95**	1.26 U	**1.62 J**	0.494 U	0.501 U	0.439 U	0.529 U	**4.16**	0.652 U	–	0.575 U	0.599 U	–
PCB-080	NE	NE	ng/kg	0.535 U	1.44 U	1.52 U	1.15 U	0.767 U	0.353 U	0.488 U	0.353 U	0.319 U	0.413 U	0.472 U	0.384 U	–	0.298 U	0.393 U	–
PCB-081	NE	NE	ng/kg	**10.8**	**13.8**	**11.4**	**8.83**	1.21 U	**3.62 J**	0.469 U	0.483 U	0.418 U	0.500 U	**8.53**	0.604 U	–	0.515 U	0.580 U	–
PCB-082	NE	NE	ng/kg	**100**	**100**	**47.4**	**57.9**	1.29 U	**24.1**	1.02 U	1.05 U	0.779 U	1.14 U	**51.1**	0.555 U	–	0.996 U	**1.43 J**	–
PCB-083	NE	NE	ng/kg	**33.5**	**32.6**	**18.7**	**18.4**	0.999 U	**8.43**	0.792 U	0.816 U	0.607 U	0.891 U	**17.2**	0.418 U	–	0.751 U	0.553 U	–
PCB-084	NE	NE	ng/kg	**328**	**290**	**159**	**171**	1.13 U	**80.3**	0.894 U	**3.54 J**	0.685 U	1.01 U	**147**	0.453 U	–	0.815 U	**2.84 J**	–
PCB-085	NE	NE	ng/kg	**129**	**134**	**59**	**69.2**	0.915 U	**30.6**	0.726 U	**1.68 J**	0.556 U	0.816 U	**60.7**	0.398 U	–	0.714 U	**1.94 J**	–
PCB-086	NE	NE	ng/kg	0.667 U	1.55 U	1.66 U	1.50 U	1.02 U	0.432 U	0.805 U	0.829 U	0.616 U	0.905 U	1.81 U	0.395 U	–	0.711 U	0.523 U	–
PCB-087	NE	NE	ng/kg	**326**	**334**	**154**	**189**	0.927 U	**84**	0.735 U	**3.96 J**	0.563 U	0.827 U	**185**	0.379 U	–	0.682 U	**3.28 J**	–
PCB-088	NE	NE	ng/kg	**120**	**94.5**	**55.3**	**55.2**	0.534 U	**29.4**	0.545 U	**1.52 J**	0.516 U	0.801 U	**71**	0.372 U	–	0.578 U	**2.01 J**	–
PCB-089	NE	NE	ng/kg	**9.27**	**9.67**	**6.42**	**5.15**	1.20 U	**2.14 J**	0.953 U	0.982 U	0.730 U	1.07 U	**3.87 J**	0.475 U	–	0.854 U	0.628 U	–
PCB-090	NE	NE	ng/kg	**925**	**851**	**523**	**476**	**3.13 J**	**221**	0.814 U	**9.63**	0.623 U	0.915 U	**557**	**1.64 J**	–	0.767 U	**8.01**	–
PCB-091	NE	NE	ng/kg	**120**	**94.5**	**55.3**	**55.2**	0.534 U	**29.4**	0.545 U	**1.52 J**	0.516 U	0.801 U	**71**	0.372 U	–	0.578 U	**2.01 J**	–
PCB-092	NE	NE	ng/kg	**328**	**290**	**159**	**171**	1.13 U	**80.3**	0.894 U	**3.54 J**	0.685 U	1.01 U	**147**	0.453 U	–	0.815 U	**2.84 J**	–
PCB-093	NE	NE	ng/kg	0.607 U	**99.2**	**136**	**23.6**	0.605 U	1.75 U	0.618 U	0.387 U	0.584 U	0.907 U	1.03 U	0.386 U	–	0.601 U	0.879 U	–

Analyte	Sediment Screening Level for Protection of Benthic Organisms	Sediment Screening Level for Protection of Human Health and Higher Trophic Level Ecological Receptors	Sample Location	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	PT-10-Z	PT-8	PT-11-Z	PT-12-A	PT-13
			Sample ID	D-1	D-2	D-3A	D-3B	D-4A	D-4B	D-5A	D-5B	D-6A	D-6B	D-7	PT-10-36.0-37.0	PT-108-25.0-26.0	PT-11-36.0-37.0	PT-12-30.0-31.0	PT-13-27.0-28.0
			Sample Date	01/13/2015	01/12/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/13/2015	01/14/2015	01/16/2015	01/15/2015	01/15/2015	01/15/2015
			Sample Depth	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	-36 to -37 ft MLLW	-25 to -26 ft MLLW	-36 to -37 ft MLLW	-30 to -31 ft MLLW	-27 to -28 ft MLLW
PCB-094	NE	NE	ng/kg	**4.63**	2.71 U	1.75 U	1.64 U	0.613 U	1.77 U	0.625 U	0.392 U	0.591 U	0.918 U	1.05 U	0.429 U	–	0.667 U	0.977 U	–
PCB-095	NE	NE	ng/kg	**718**	**473**	**232**	**76.8**	**2.52 J**	**183**	0.521 U	**6.65**	0.493 U	0.765 U	**114**	**1.08 J**	–	0.560 U	**7.06**	–
PCB-096	NE	NE	ng/kg	**5.17**	**4.58**	**4.25**	**3.29 J**	0.419 U	1.21 U	0.427 U	0.268 U	0.404 U	0.628 U	**2.25 J**	0.286 U	–	0.445 U	0.651 U	–
PCB-097	NE	NE	ng/kg	**221**	**222**	**104**	**123**	1.03 U	**58.9**	0.817 U	**2.95 J**	0.626 U	0.918 U	**121**	0.412 U	–	0.740 U	**2.48 J**	–
PCB-098	NE	NE	ng/kg	0.532 U	2.29 U	1.48 U	**197**	0.510 U	1.47 U	0.520 U	0.326 U	0.492 U	0.764 U	**338**	0.373 U	–	0.580 U	0.848 U	–
PCB-099	NE	NE	ng/kg	**319**	**327**	**156**	**173**	0.991 U	**84.4**	0.786 U	**4.25**	0.602 U	0.884 U	**167**	0.406 U	–	0.730 U	**4.16**	–
PCB-100	NE	NE	ng/kg	**2.55 J**	2.21 U	1.43 U	1.34 U	0.519 U	1.50 U	0.530 U	0.332 U	0.501 U	0.778 U	0.887 U	0.359 U	–	0.558 U	0.817 U	–
PCB-101	NE	NE	ng/kg	**925**	**851**	**523**	**476**	**3.13 J**	**221**	0.814 U	**9.63**	0.623 U	0.915 U	**557**	**1.64 J**	–	0.767 U	**8.01**	–
PCB-102	NE	NE	ng/kg	0.532 U	2.29 U	1.48 U	**197**	0.510 U	1.47 U	0.520 U	0.326 U	0.492 U	0.764 U	**338**	0.373 U	–	0.580 U	0.848 U	–
PCB-103	NE	NE	ng/kg	**5.4**	2.12 U	**4.27**	1.28 U	0.496 U	1.43 U	0.506 U	0.317 U	0.478 U	0.743 U	**2.71 J**	0.341 U	–	0.531 U	0.777 U	–
PCB-104	NE	NE	ng/kg	0.410 U	1.72 U	1.11 U	1.04 U	0.394 U	1.14 U	0.402 U	0.252 U	0.381 U	0.591 U	0.673 U	0.273 U	–	0.424 U	0.621 U	–
PCB-105	NE	NE	ng/kg	**301**	**285**	**125**	**146**	1.40 U	**72.2**	0.795 U	**3.45 J**	0.516 U	0.648 U	**161**	0.772 U	–	0.672 U	**3.45 J**	–
PCB-106	NE	NE	ng/kg	**765**	**676**	**310**	**339**	1.61 U	**176**	0.986 U	**7.97**	0.520 U	0.759 U	**423**	0.781 U	–	0.719 U	**7.6**	–
PCB-107	NE	NE	ng/kg	**50.9**	**48.6**	**26.6**	**24.7**	1.45 U	**12.2**	0.894 U	0.626 U	0.568 U	0.745 U	**26.2**	0.798 U	–	0.662 U	0.681 U	–
PCB-108	NE	NE	ng/kg	**50.9**	**48.6**	**26.6**	**24.7**	1.45 U	**12.2**	0.894 U	0.626 U	0.568 U	0.745 U	**26.2**	0.798 U	–	0.662 U	0.681 U	–
PCB-109	NE	NE	ng/kg	0.522 U	1.27 U	1.37 U	1.24 U	0.867 U	0.369 U	0.688 U	0.708 U	0.527 U	0.773 U	1.54 U	0.354 U	–	0.635 U	0.468 U	–
PCB-110	NE	NE	ng/kg	**754**	**759**	**381**	**426**	**3.07 J**	**187**	0.586 U	**8.21**	0.449 U	0.659 U	**430**	**1.41 J**	–	0.572 U	**7.6**	–
PCB-111	NE	NE	ng/kg	**16.3**	**17.3**	**8.88**	**9.35**	0.744 U	**3.83 J**	0.590 U	0.607 U	0.451 U	0.663 U	**10**	0.305 U	–	0.549 U	0.404 U	–
PCB-112	NE	NE	ng/kg	**33.5**	**32.6**	**18.7**	**18.4**	0.999 U	**8.43**	0.792 U	0.816 U	0.607 U	0.891 U	**17.2**	0.418 U	–	0.751 U	0.553 U	–
PCB-113	NE	NE	ng/kg	0.527 U	**18.3**	1.41 U	**4.04**	0.837 U	0.356 U	0.663 U	0.683 U	0.508 U	0.746 U	1.49 U	0.346 U	–	0.622 U	0.458 U	–
PCB-114	NE	NE	ng/kg	**20.2**	**18.2**	**12**	**10.7**	1.34 U	**5.49**	0.831 U	0.568 U	0.585 U	0.708 U	**11.6**	0.838 U	–	0.644 U	0.647 U	–
PCB-115	NE	NE	ng/kg	**16.3**	**17.3**	**8.88**	**9.35**	0.744 U	**3.83 J**	0.590 U	0.607 U	0.451 U	0.663 U	**10**	0.305 U	–	0.549 U	0.404 U	–
PCB-116	NE	NE	ng/kg	**129**	**134**	**59**	**69.2**	0.915 U	**30.6**	0.726 U	**1.68 J**	0.556 U	0.816 U	**60.7**	0.398 U	–	0.714 U	**1.94 J**	–
PCB-117	NE	NE	ng/kg	**326**	**334**	**154**	**189**	0.927 U	**84**	0.735 U	**3.96 J**	0.563 U	0.827 U	**185**	0.379 U	–	0.682 U	**3.28 J**	–
PCB-118	NE	NE	ng/kg	**765**	**676**	**310**	**339**	1.61 U	**176**	0.986 U	**7.97**	0.520 U	0.759 U	**423**	0.781 U	–	0.719 U	**7.6**	–
PCB-119	NE	NE	ng/kg	**11**	**11.7**	**8.31**	**5.39**	0.767 U	**2.66 J**	0.608 U	0.627 U	0.466 U	0.684 U	**5.52**	0.313 U	–	0.563 U	0.415 U	–
PCB-120	NE	NE	ng/kg	0.462 U	**2.29 J**	1.20 U	**2.27 J**	0.719 U	0.306 U	0.570 U	0.587 U	0.437 U	0.641 U	1.28 U	0.300 U	–	0.540 U	0.397 U	–
PCB-121	NE	NE	ng/kg	0.455 U	1.97 U	1.27 U	1.20 U	0.434 U	1.25 U	0.443 U	0.278 U	0.419 U	0.651 U	0.741 U	0.306 U	–	0.475 U	0.696 U	–
PCB-122	NE	NE	ng/kg	**9.52**	**10.8**	**6.81**	**5.6**	1.31 U	**2.32 J**	0.803 U	0.563 U	0.511 U	0.669 U	**5.13**	0.774 U	–	0.643 U	0.661 U	–
PCB-123	NE	NE	ng/kg	**12**	**13.1**	**4.87**	**7.36**	1.15 U	**3.21 J**	0.769 U	0.605 U	0.522 U	0.700 U	**6.26**	0.710 U	–	0.544 U	0.604 U	–
PCB-124	NE	NE	ng/kg	**29.5**	**25.6**	**14.1**	**13.4**	1.50 U	**8.69**	0.923 U	0.647 U	0.587 U	0.769 U	**20.3**	0.806 U	–	0.669 U	0.688 U	–
PCB-125	NE	NE	ng/kg	**326**	**334**	**154**	**189**	0.927 U	**84**	0.735 U	**3.96 J**	0.563 U	0.827 U	**185**	0.379 U	–	0.682 U	**3.28 J**	–
PCB-126	NE	NE	ng/kg	**4.61**	**3.78 J**	**8.85**	1.59 U	1.60 U	0.541 U	1.10 U	0.646 U	0.577 U	0.878 U	**2.79 J**	0.987 U	–	1.05 U	0.765 U	–
PCB-127	NE	NE	ng/kg	0.944 U	1.92 U	2.09 U	1.52 U	1.34 U	0.518 U	0.826 U	0.579 U	0.525 U	0.688 U	0.804 U	0.845 U	–	0.702 U	0.722 U	–
PCB-128	NE	NE	ng/kg	**162**	**140**	**85.1**	**84**	0.989 U	**47.5**	0.545 U	1.14 U	0.507 U	0.995 U	**112**	0.647 U	–	0.611 U	**1.52 J**	–
PCB-129	NE	NE	ng/kg	**50.2**	**41**	**27.3**	**27**	1.36 U	**14.1**	0.750 U	1.57 U	0.698 U	1.37 U	**35.7**	0.859 U	–	0.811 U	0.872 U	–
PCB-130	NE	NE	ng/kg	**61.8**	**44.6**	**34.3**	**29**	1.18 U	**15.6**	0.651 U	1.36 U	0.606 U	1.19 U	**46.4**	0.812 U	–	0.766 U	0.824 U	–
PCB-131	NE	NE	ng/kg	**28.8**	**19.9**	**18.6**	**14.4**	1.20 U	**7.11**	0.659 U	1.38 U	0.613 U	1.20 U	**22.4**	0.726 U	–	0.685 U	0.737 U	–
PCB-132	NE	NE	ng/kg	**298**	**242**	**195**	**169**	1.02 U	**85.4**	0.563 U	**2.57 J**	0.524 U	1.03 U	**234**	0.643 U	–	0.607 U	**2.82 J**	–
PCB-133	NE	NE	ng/kg	**28.8**	**19.9**	**18.6**	**14.4**	1.20 U	**7.11**	0.659 U	1.38 U	0.613 U	1.20 U	**22.4**	0.726 U	–	0.685 U	0.737 U	–
PCB-134	NE	NE	ng/kg	**55.2**	**40.6**	**36.7**	**27.2**	1.29 U	**17.2**	0.712 U	1.49 U	0.662 U	1.30 U	**44.3**	0.748 U	–	0.705 U	0.759 U	–
PCB-135	NE	NE	ng/kg	**144**	**87.2**	**97.3**	**57.5**	1.35 U	**42.6**	0.743 U	1.56 U	0.691 U	1.36 U	**122**	0.711 U	–	0.670 U	0.721 U	–
PCB-136	NE	NE	ng/kg	**146**	**131**	**138**	**117**	0.405 U	**50.3**	0.398 U	0.971 U	0.363 U	0.479 U	**180**	0.387 U	–	0.334 U	0.669 U	–
PCB-137	NE	NE	ng/kg	**52.9**	**46.5**	**20.9**	**27.4**	1.24 U	**15.9**	0.682 U	1.43 U	0.635 U	1.24 U	**31.4**	0.756 U	–	0.713 U	0.767 U	–
PCB-138	NE	NE	ng/kg	**1,010**	**786**	**663**	**517**	**2.61 J**	**312**	0.474 U	**8.69**	0.441 U	0.865 U	**834**	**1.63 J**	–	0.509 U	**6.81**	–
PCB-139	NE	NE	ng/kg	**892**	**633**	**691**	**476**	1.15 U	**270**	0.635 U	**7.42**	0.591 U	1.16 U	**709**	**1.36 J**	–	0.635 U	**5.89**	–
PCB-140	NE	NE	ng/kg	**5.03**	**4.71**	**3.28 J**	2.17 U	1.15 U	0.880 U	0.635 U	1.33 U	0.591 U	1.16 U	**3.10 J**	0.677 U	–	0.639 U	0.687 U	–
PCB-141	NE	NE	ng/kg	**225**	**166**	**176**	**120**	1.14 U	**73.7**	0.628 U	**2.11 J**	0.584 U	1.15 U	**204**	0.704 U	–	0.665 U	**1.81 J**	–
PCB-142	NE	NE	ng/kg	0.680 U	2.00 U	1.42 U	2.58 U	1.32 U	1.01 U	0.729 U	1.53 U	0.678 U	1.33 U	0.639 U	0.808 U	–	0.763 U	0.821 U	–
PCB-143	NE	NE	ng/kg	**55.2**	**40.6**	**36.7**	**27.2**	1.29 U	**17.2**	0.712 U	1.49 U	0.662 U	1.30 U	**44.3**	0.748 U	–	0.705 U	0.759 U	–
PCB-144	NE	NE	ng/kg	**57.2**	**37.8**	**43.9**	**29.5**	1.18 U	**19**	0.651 U	1.36 U	0.606 U	1.19 U	**51.5**	0.687 U	–	0.648 U	0.697 U	–
PCB-145	NE	NE	ng/kg	0.859 U	0.930 U	1.62 U	1.95 U	0.414 U	0.356 U	0.407 U	0.994 U	0.372 U	0.491 U	0.751 U	0.397 U	–	0.343 U	0.686 U	–
PCB-146	NE	NE	ng/kg	**126**	**93.9**	**91.1**	**64.4**	0.984 U	**40.7**	0.542 U	1.14 U	0.505 U	0.990 U	**112**	0.617 U	–	0.582 U	0.627 U	–
PCB-147	NE	NE	ng/kg	**16**	**12.5**	**6.26**	**8.24**	1.15 U	**5.29**	0.632 U	1.32 U	0.588 U	1.15 U	**10.1**	0.663 U	–	0.625 U	0.673 U	–
PCB-148	NE	NE	ng/kg	1.14 U	1.20 U	2.09 U	2.52 U	0.468 U	0.402 U	0.460 U	1.12 U	0.420 U	0.555 U	0.849 U	0.494 U	–	0.426 U	0.853 U	–
PCB-149	NE	NE	ng/kg	**892**	**633**	**691**	**476**	1.15 U	**270**	0.635 U	**7.42**	0.591 U	1.16 U	**709**	**1.36 J**	–	0.635 U	**5.89**	–
PCB-150	NE	NE	ng/kg	0.840 U	0.886 U	1.54 U	1.86 U	0.400 U	0.344 U	0.394 U	0.960 U	0.359 U	0.474 U	0.726 U	0.392 U	–	0.338 U	0.677 U	–
PCB-151	NE	NE	ng/kg	**125**	**85.3**	**162**	**69.2**	1.19 U	**70.4**	0.658 U	**2.32 J**	0.613 U	1.20 U	**156**	0.709 U	–	0.669 U	**1.79 J**	–
PCB-152	NE	NE	ng/kg	0.817 U	0.887 U	1.54 U	1.86 U	0.399 U	0.342 U	0.392 U	0.956 U	0.357 U	0.472 U	0.723 U	0.380 U	–	0.328 U	0.656 U	–
PCB-153	NE	NE	ng/kg	**962**	**707**	**712**	**509**	**1.89 J**	**313**	0.492 U	**8.18**	0.458 U	0.898 U	**770**	**1.32 J**	–	0.564 U	**6.7**	–
PCB-154	NE	NE	ng/kg	**6.71**	**7.47**	**5.92**	2.01 U	0.426 U	**2.06 J**	0.418 U	1.02 U	0.382 U	0.504 U	**5.51**	0.439 U	–	0.379 U	0.758 U	–
PCB-155	NE	NE	ng/kg	0.759 U	0.792 U	1.38 U	1.66 U	0.364 U	0.313 U	0.358 U	0.873 U	0.326 U	0.431 U	0.660 U	0.349 U	–	0.302 U	0.604 U	–

Analyte	Sediment Screening Level for Protection of Benthic Organisms	Sediment Screening Level for Protection of Human Health and Higher Trophic Level Ecological Receptors	Sample Location	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	Composite	PT-10-Z	PT-8	PT-11-Z	PT-12-A	PT-13
			Sample ID	D-1	D-2	D-3A	D-3B	D-4A	D-4B	D-5A	D-5B	D-6A	D-6B	D-7	PT-10-36.0-37.0	PT-108-25.0-26.0	PT-11-36.0-37.0	PT-12-30.0-31.0	PT-13-27.0-28.0
			Sample Date	01/13/2015	01/12/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/12/2015	01/13/2015	01/13/2015	01/14/2015	01/16/2015	01/15/2015	01/15/2015	01/15/2015
			Sample Depth	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	Various	-36 to -37 ft MLLW	-25 to -26 ft MLLW	-36 to -37 ft MLLW	-30 to -31 ft MLLW	-27 to -28 ft MLLW
PCB-156	NE	NE	ng/kg	**99.3**	**84.8**	**57.3**	**49.9**	0.837 U	**30.5**	0.447 U	0.972 U	0.415 U	0.833 U	**79.7**	0.524 U	–	0.488 U	0.554 U	–
PCB-157	NE	NE	ng/kg	**20.8**	**19.5**	**11.9**	**10.6**	0.819 U	**5.54**	0.462 U	0.983 U	0.474 U	0.850 U	**13.5**	0.638 U	–	0.571 U	0.594 U	–
PCB-158	NE	NE	ng/kg	**128**	**103**	**83.6**	**70.8**	0.844 U	**39.2**	0.465 U	0.974 U	0.433 U	0.849 U	**105**	0.530 U	–	0.500 U	**1.15 J**	–
PCB-159	NE	NE	ng/kg	**11.1**	**7.81**	**11.9**	**7.33**	0.800 U	**4.51**	0.441 U	0.924 U	0.410 U	0.805 U	**8.98**	0.507 U	–	0.478 U	0.514 U	–
PCB-160	NE	NE	ng/kg	**128**	**103**	**83.6**	**70.8**	0.844 U	**39.2**	0.465 U	0.974 U	0.433 U	0.849 U	**105**	0.530 U	–	0.500 U	**1.15 J**	–
PCB-161	NE	NE	ng/kg	**298**	**242**	**195**	**169**	1.02 U	**85.4**	0.563 U	**2.57 J**	0.524 U	1.03 U	**234**	0.643 U	–	0.607 U	**2.82 J**	–
PCB-162	NE	NE	ng/kg	**162**	**140**	**85.1**	**84**	0.989 U	**47.5**	0.545 U	1.14 U	0.507 U	0.995 U	**112**	0.647 U	–	0.611 U	**1.52 J**	–
PCB-163	NE	NE	ng/kg	**1,010**	**786**	**663**	**517**	**2.61 J**	**312**	0.474 U	**8.69**	0.441 U	0.865 U	**834**	**1.63 J**	–	0.509 U	**6.81**	–
PCB-164	NE	NE	ng/kg	**1,010**	**786**	**663**	**517**	**2.61 J**	**312**	0.474 U	**8.69**	0.441 U	0.865 U	**834**	**1.63 J**	–	0.509 U	**6.81**	–
PCB-165	NE	NE	ng/kg	**126**	**93.9**	**91.1**	**64.4**	0.984 U	**40.7**	0.542 U	1.14 U	0.505 U	0.990 U	**112**	0.617 U	–	0.582 U	0.627 U	–
PCB-166	NE	NE	ng/kg	**3.70 J**	1.33 U	**2.86 J**	1.72 U	0.893 U	0.682 U	0.492 U	1.03 U	0.458 U	0.898 U	**2.30 J**	0.569 U	–	0.537 U	0.578 U	–
PCB-167	NE	NE	ng/kg	**38.1**	**30.3**	**22**	**18.1**	0.826 U	**12**	0.453 U	0.915 U	0.426 U	0.825 U	**32.3**	0.584 U	–	0.503 U	0.547 U	–
PCB-168	NE	NE	ng/kg	0.464 U	1.38 U	**3.38 J**	1.78 U	0.884 U	0.675 U	0.487 U	1.02 U	0.453 U	0.889 U	0.427 U	0.568 U	–	0.535 U	0.576 U	–
PCB-169	NE	NE	ng/kg	0.458 U	1.30 U	**10**	1.67 U	0.863 U	0.646 U	0.483 U	0.991 U	0.400 U	0.857 U	0.384 U	0.523 U	–	0.586 U	0.613 U	–
PCB-170	NE	NE	ng/kg	**282**	**186**	**274**	**164**	1.36 U	**142**	0.987 U	**2.42 J**	1.01 U	1.02 U	**337**	0.750 U	–	0.556 U	**2.36 J**	–
PCB-171	NE	NE	ng/kg	**90.9**	**64.3**	**87.2**	**53.4**	1.24 U	**42.7**	0.900 U	0.879 U	0.925 U	0.928 U	**95.6**	0.683 U	–	0.506 U	0.552 U	–
PCB-172	NE	NE	ng/kg	**50.1**	**34.9**	**50.2**	**27.7**	1.30 U	**25.1**	0.943 U	0.921 U	0.969 U	0.973 U	**60**	0.704 U	–	0.522 U	0.569 U	–
PCB-173	NE	NE	ng/kg	**7.8**	**6.25**	**8.9**	**5.35**	1.44 U	**3.92 J**	1.05 U	1.02 U	1.08 U	1.08 U	**8.24**	0.770 U	–	0.571 U	0.622 U	–
PCB-174	NE	NE	ng/kg	**305**	**214**	**290**	**181**	1.22 U	**137**	0.888 U	**2.66 J**	0.913 U	0.916 U	**297**	0.622 U	–	0.461 U	**2.32 J**	–
PCB-175	NE	NE	ng/kg	**13.8**	**9.95**	**15.1**	**9.06**	1.24 U	**5.95**	0.901 U	0.880 U	0.926 U	0.930 U	**16.3**	0.652 U	–	0.483 U	0.526 U	–
PCB-176	NE	NE	ng/kg	**45.3**	**34**	**47.9**	**27**	0.934 U	**21.1**	0.679 U	0.663 U	0.697 U	0.700 U	**45.9**	0.480 U	–	0.356 U	0.388 U	–
PCB-177	NE	NE	ng/kg	**182**	**128**	**180**	**106**	1.34 U	**84.8**	0.972 U	0.949 U	0.999 U	1.00 U	**177**	0.708 U	–	0.525 U	0.572 U	–
PCB-178	NE	NE	ng/kg	**60**	**41.7**	**60.6**	**36.4**	1.28 U	**27.5**	0.928 U	0.907 U	0.954 U	0.958 U	**60.8**	0.699 U	–	0.518 U	0.565 U	–
PCB-179	NE	NE	ng/kg	**126**	**97.9**	**128**	**80.8**	0.892 U	**55.4**	0.648 U	0.633 U	0.666 U	0.669 U	**115**	0.474 U	–	0.352 U	**1.32 J**	–
PCB-180	NE	NE	ng/kg	**630**	**416**	**566**	**352**	1.05 U	**315**	0.765 U	**5.1**	0.787 U	0.790 U	**694**	0.589 U	–	0.437 U	**4.59**	–
PCB-181	NE	NE	ng/kg	0.793 U	1.41 U	1.61 U	1.73 U	1.27 U	0.543 U	0.920 U	0.898 U	0.945 U	0.949 U	0.656 U	0.734 U	–	0.544 U	0.593 U	–
PCB-182	NE	NE	ng/kg	**361**	**275**	**350**	**220**	1.14 U	**172**	0.831 U	**3.10 J**	0.854 U	0.858 U	**354**	0.607 U	–	0.450 U	**3.55 J**	–
PCB-183	NE	NE	ng/kg	**192**	**142**	**192**	**122**	1.11 U	**95**	0.807 U	**2.61 J**	0.830 U	0.833 U	**204**	**1.46 J**	–	**1.20 J**	**3.21 J**	–
PCB-184	NE	NE	ng/kg	0.545 U	0.990 U	1.13 U	1.21 U	0.889 U	0.381 U	0.646 U	0.631 U	0.664 U	0.666 U	0.461 U	0.466 U	–	0.346 U	0.377 U	–
PCB-185	NE	NE	ng/kg	**38.3**	**30.8**	**41.7**	**24.5**	1.27 U	**18.8**	0.926 U	0.904 U	0.952 U	0.955 U	**39.8**	0.691 U	–	0.512 U	0.558 U	–
PCB-186	NE	NE	ng/kg	0.600 U	1.06 U	1.20 U	1.30 U	0.960 U	0.412 U	0.698 U	0.681 U	0.717 U	0.720 U	0.498 U	0.494 U	–	0.366 U	0.399 U	–
PCB-187	NE	NE	ng/kg	**361**	**275**	**350**	**220**	1.14 U	**172**	0.831 U	**3.10 J**	0.854 U	0.858 U	**354**	0.607 U	–	0.450 U	**3.55 J**	–
PCB-188	NE	NE	ng/kg	0.611 U	1.16 U	1.24 U	1.36 U	0.963 U	0.384 U	0.652 U	0.667 U	0.774 U	0.690 U	0.476 U	0.506 U	–	0.371 U	0.439 U	–
PCB-189	NE	NE	ng/kg	**10.8**	**9.23**	**14**	**6.49**	0.879 U	**5.72**	0.688 U	0.639 U	0.595 U	0.689 U	**17.5**	0.506 U	–	0.379 U	0.374 U	–
PCB-190	NE	NE	ng/kg	**56.1**	**41.1**	**61.6**	**35.7**	1.01 U	**32.4**	0.732 U	0.715 U	0.752 U	0.755 U	**74.4**	0.536 U	–	0.398 U	0.433 U	–
PCB-191	NE	NE	ng/kg	**13.9**	**9.72**	**14.1**	**7.74**	0.921 U	**6.19**	0.669 U	0.654 U	0.688 U	0.691 U	**16.3**	0.508 U	–	0.377 U	0.411 U	–
PCB-192	NE	NE	ng/kg	0.644 U	1.10 U	1.26 U	1.35 U	1.05 U	0.452 U	0.765 U	0.747 U	0.787 U	0.790 U	0.546 U	0.566 U	–	0.420 U	0.458 U	–
PCB-193	NE	NE	ng/kg	**34.8**	**24.1**	**34.8**	**19.5**	0.944 U	**17.7**	0.686 U	0.670 U	0.705 U	0.708 U	**39.7**	0.510 U	–	0.378 U	0.412 U	–
PCB-194	NE	NE	ng/kg	**157**	**101**	**158**	**96.8**	0.501 U	**79.8**	0.430 U	1.27 U	0.347 U	0.477 U	**291**	0.420 U	–	0.502 U	**2.15 J**	–
PCB-195	NE	NE	ng/kg	**62.9**	**39.3**	**69.5**	**38.3**	0.566 U	**36.4**	0.486 U	1.43 U	0.392 U	0.540 U	**121**	0.465 U	–	0.555 U	0.548 U	–
PCB-196	NE	NE	ng/kg	**187**	**121**	**186**	**129**	0.783 U	**107**	0.576 U	1.43 U	0.409 U	0.671 U	**317**	0.599 U	–	0.597 U	**4.26**	–
PCB-197	NE	NE	ng/kg	**7.94**	**5.52**	**10.9**	**6.3**	0.627 U	**4.7**	0.461 U	1.15 U	0.328 U	0.537 U	**13.7**	0.446 U	–	0.445 U	0.518 U	–
PCB-198	NE	NE	ng/kg	**9.16**	**7.36**	**12.5**	**6.34**	0.866 U	**5.52**	0.636 U	1.58 U	0.452 U	0.741 U	**16.7**	0.677 U	–	0.674 U	0.785 U	–
PCB-199	NE	NE	ng/kg	**165**	**115**	**159**	**110**	0.912 U	**92.7**	0.670 U	1.67 U	0.476 U	0.781 U	**250**	0.645 U	–	0.643 U	**4.79**	–
PCB-200	NE	NE	ng/kg	**19.4**	**13.7**	**20.7**	**13.9**	0.607 U	**11.4**	0.446 U	1.11 U	0.317 U	0.520 U	**30.3**	0.452 U	–	0.450 U	0.524 U	–
PCB-201	NE	NE	ng/kg	**24.2**	**20.2**	**27.4**	**17.5**	0.623 U	**13.7**	0.458 U	1.14 U	0.325 U	0.533 U	**35.1**	0.451 U	–	0.449 U	0.523 U	–
PCB-202	NE	NE	ng/kg	**32.8**	**28.2**	**31.1**	**24.6**	0.613 U	**17.2**	0.451 U	1.12 U	0.320 U	0.525 U	**41.7**	0.463 U	–	0.461 U	**1.57 J**	–
PCB-203	NE	NE	ng/kg	**187**	**121**	**186**	**129**	0.783 U	**107**	0.576 U	1.43 U	0.409 U	0.671 U	**317**	0.599 U	–	0.597 U	**4.26**	–
PCB-204	NE	NE	ng/kg	0.335 U	1.70 U	0.803 U	1.41 U	0.619 U	0.416 U	0.455 U	1.13 U	0.323 U	0.530 U	0.399 U	0.449 U	–	0.447 U	0.521 U	–
PCB-205	NE	NE	ng/kg	**7.98**	**5.3**	**13.4**	**4.71**	0.402 U	**4.36**	0.345 U	1.02 U	0.278 U	0.383 U	**16.6**	0.326 U	–	0.389 U	0.384 U	–
PCB-206	NE	NE	ng/kg	**68.5**	**68**	**81**	**61.1**	0.974 U	**38.7**	0.351 U	0.632 U	0.318 U	0.336 U	**106**	0.412 U	–	0.506 U	**12.4**	–
PCB-207	NE	NE	ng/kg	**9.69**	**10.5**	**14.1**	**7.46**	0.754 U	**5.69**	0.259 U	0.478 U	0.239 U	0.251 U	**16.2**	0.296 U	–	0.376 U	**1.25 J**	–
PCB-208	NE	NE	ng/kg	**18.7**	**21.6**	**25.3**	**16.4**	0.725 U	**10.8**	0.238 U	0.450 U	0.224 U	0.233 U	**21.8**	0.278 U	–	0.364 U	**4.57**	–
PCB-209	NE	NE	ng/kg	**42.4**	**164**	**121**	**120**	1.04 U	**27.3**	0.213 U	0.546 U	0.271 U	0.247 U	**30.3**	0.308 U	–	0.272 U	**14.9**	–
Total PCBs (OC Normalized)	12	NA	mg/kg OC	**0.2**	**0.2**	**0.3**	**0.1**	**0.02**	**0.1**	0.001 U	**0.2**	0.001 U	0.001 U	**0.7**	**0.002**	–	**0.002**	**0.005**	–
Total PCBs	130,000	3,500	ng/kg	**27,102 T**	**22,080 T**	**17,935 T**	**13,887 T**	**65.1 T**	**7,913 T**	1.7 UT	**270 T**	1.4 UT	1.5 UT	**19,387 T**	**50.2 T**	–	**4.1 T**	**355 T**	–
Total Dioxin-Like PCBs TEQ (ND=0.5DL)	NE	2	ng/kg	**0.5 T**	**0.4 T**	**1.2 T**	**0.1 T**	0.1 UT	**0.05 T**	0.06 UT	**0.05 T**	0.03 UT	0.06 UT	**0.3 T**	0.06 UT	–	0.06 UT	**0.05 T**	–
Organometallic Compounds																			
Tributyltin Ion	NE	NE	µg/kg	**3.7**	**1.8 J**	3.6 U	3.6 U	3.5 U	**2.2 J**	3.5 U	3.5 U	3.4 U	3.4 U	3.7 U	3.6 U	–	3.4 U	3.7 U	–
Dioxins/Furans																			
Total Dioxin/Furan TEQ (ND=0.5DL)	5	5	ng/kg	**32.3 JT**	**25.1 JT**	**7.6 JT**	**26.1 JT**	**0.5 T**	**9.8 JT**	**0.3 T**	**0.7 JT**	**0.15 JT**	**0.5 JT**	**14.7 JT**	**0.7 JT**		**0.4 T**	**6.9 T**	

Notes:

-- = not tested
BT = bioaccumulation trigger
cPAH = carcinogenic polycyclic aromatic hydrocarbon
DL = detection limit
HPAH = high molecular weight polycyclic aromatic hydrocarbon
J = Estimated concentration
JT = Estimated concentration total
LPAH = low molecular weight polycyclic aromatic hydrocarbon
mg/kg = milligram per kilogram
mg/kg OC = milligram per kilogram organic carbon normalized
ML = maximum level
NA = not applicable because TOC outside of range for comparison to TOC-normalized screening levels
NE = not established
ng/kg = nanogram per kilogram
PCB = polychlorinated biphenyl
SL = screening level
TEQ = toxicity equivalent
U = The analyte is not detected at or above the reported concentration.
µg/kg = microgram per kilogram
Bold indicates the analyte was detected.
Blue border indicates total organic carbon is outside the range of 0.5% to 3.5% and will be compared to dry weight screening levels for protection of benthic organisms.
Orange shading indicates exceedance of screening level protective of benthic organisms
Yellow shading indicates exceedance of screening level protective of human health and higher trophic level ecological receptors
Red shading indicates exceedance of screening levels protective of benthic organisms and protective of human health and higher trophic level ecological receptors.
Light blue shading indicates a non-detect that exceeds any screening level

Table 7

Dioxin/Furan Constituents and Toxic Equivalent Calculations

Mill A Former Site Interim Action Dredging Project

Everett, Washington

Sample ID	Congener	EDL	Result	Qualifier	TEF	TEQ(a)	Units	Detected?
D-1	1,2,3,4,6,7,8-HpCDD	0.747	190		0.01	1.9	ng/kg	Y
D-1	1,2,3,4,6,7,8-HpCDF	1.1	35.9		0.01	0.359	ng/kg	Y
D-1	1,2,3,4,7,8,9-HpCDF	0.872	2.14		0.01	0.0214	ng/kg	Y
D-1	1,2,3,4,7,8-HxCDD	0.765	4.28		0.1	0.428	ng/kg	Y
D-1	1,2,3,4,7,8-HxCDF	0.711	4.06	J	0.1	0.406	ng/kg	Y
D-1	1,2,3,6,7,8-HxCDD	0.652	11.7		0.1	1.17	ng/kg	Y
D-1	1,2,3,6,7,8-HxCDF	0.273	3.08		0.1	0.308	ng/kg	Y
D-1	1,2,3,7,8,9-HxCDD	0.473	6.57		0.1	0.657	ng/kg	Y
D-1	1,2,3,7,8,9-HxCDF	0.888	1.42		0.1	0.142	ng/kg	Y
D-1	1,2,3,7,8-PeCDD	0.374	4.51		1	4.51	ng/kg	Y
D-1	1,2,3,7,8-PeCDF	0.514	4.31	J	0.03	0.1293	ng/kg	Y
D-1	2,3,4,6,7,8-HxCDF	0.692	3.61	J	0.1	0.361	ng/kg	Y
D-1	2,3,4,7,8-PeCDF	0.667	5.72		0.3	1.716	ng/kg	Y
D-1	2,3,7,8-TCDD	0.173	1.48		1	1.48	ng/kg	Y
D-1	2,3,7,8-TCDF	0.234	183		0.1	18.3	ng/kg	Y
D-1	OCDD	1.73	1390		0.0003	0.417	ng/kg	Y
D-1	OCDF	1.51	53.5		0.0003	0.01605	ng/kg	Y
D-1	**Dioxin/Furan TEQ**		**32.3**	**JT**	**--**	**--**	**ng/kg**	**Y**
D-2	1,2,3,4,6,7,8-HpCDD	0.746	178		0.01	1.78	ng/kg	Y
D-2	1,2,3,4,6,7,8-HpCDF	1.1	29.7		0.01	0.297	ng/kg	Y
D-2	1,2,3,4,7,8,9-HpCDF	0.87	1.77	U	0.01	0.00885	ng/kg	N
D-2	1,2,3,4,7,8-HxCDD	0.763	7.87		0.1	0.787	ng/kg	Y
D-2	1,2,3,4,7,8-HxCDF	0.71	3.08	J	0.1	0.308	ng/kg	Y
D-2	1,2,3,6,7,8-HxCDD	0.651	13.7		0.1	1.37	ng/kg	Y
D-2	1,2,3,6,7,8-HxCDF	0.272	2.56		0.1	0.256	ng/kg	Y
D-2	1,2,3,7,8,9-HxCDD	0.472	9.75		0.1	0.975	ng/kg	Y
D-2	1,2,3,7,8,9-HxCDF	0.887	0.954	J	0.1	0.0954	ng/kg	Y
D-2	1,2,3,7,8-PeCDD	0.373	5.37		1	5.37	ng/kg	Y
D-2	1,2,3,7,8-PeCDF	0.513	3.76	J	0.03	0.1128	ng/kg	Y
D-2	2,3,4,6,7,8-HxCDF	0.691	3.07	J	0.1	0.307	ng/kg	Y
D-2	2,3,4,7,8-PeCDF	0.666	4.11		0.3	1.233	ng/kg	Y
D-2	2,3,7,8-TCDD	0.173	1.6		1	1.6	ng/kg	Y
D-2	2,3,7,8-TCDF	0.234	104		0.1	10.4	ng/kg	Y
D-2	OCDD	1.72	627		0.0003	0.1881	ng/kg	Y
D-2	OCDF	1.51	41.9		0.0003	0.01257	ng/kg	Y
D-2	**Dioxin/Furan TEQ**		**25.1**	**JT**	**--**	**--**	**ng/kg**	**Y**

Sample ID	Congener	EDL	Result	Qualifier	TEF	TEQ(a)	Units	Detected?
D-3A	1,2,3,4,6,7,8-HpCDD	0.737	43.3		0.01	0.433	ng/kg	Y
D-3A	1,2,3,4,6,7,8-HpCDF	1.09	9.97		0.01	0.0997	ng/kg	Y
D-3A	1,2,3,4,7,8,9-HpCDF	0.86	0.669	J	0.01	0.00669	ng/kg	Y
D-3A	1,2,3,4,7,8-HxCDD	0.755	2.8		0.1	0.28	ng/kg	Y
D-3A	1,2,3,4,7,8-HxCDF	0.702	1.41	J	0.1	0.141	ng/kg	Y
D-3A	1,2,3,6,7,8-HxCDD	0.644	4.5		0.1	0.45	ng/kg	Y
D-3A	1,2,3,6,7,8-HxCDF	0.269	1.43		0.1	0.143	ng/kg	Y
D-3A	1,2,3,7,8,9-HxCDD	0.467	3.21		0.1	0.321	ng/kg	Y
D-3A	1,2,3,7,8,9-HxCDF	0.877	0.541		0.1	0.0541	ng/kg	Y
D-3A	1,2,3,7,8-PeCDD	0.369	3.15		1	3.15	ng/kg	Y
D-3A	1,2,3,7,8-PeCDF	0.507	2.28	J	0.03	0.0684	ng/kg	Y
D-3A	2,3,4,6,7,8-HxCDF	0.683	1.6	J	0.1	0.16	ng/kg	Y
D-3A	2,3,4,7,8-PeCDF	0.659	2.39		0.3	0.717	ng/kg	Y
D-3A	2,3,7,8-TCDD	0.171	1.08	U	1	0.54	ng/kg	N
D-3A	2,3,7,8-TCDF	0.231	14.1		0.1	1.41	ng/kg	Y
D-3A	OCDD	1.7	241		0.0003	0.0723	ng/kg	Y
D-3A	OCDF	1.49	15.9		0.0003	0.00477	ng/kg	Y
D-3A	**Dioxin/Furan TEQ**		**8.1**	**JT**	**--**	**--**	**ng/kg**	**Y**
D-3B	1,2,3,4,6,7,8-HpCDD	0.738	141		0.01	1.41	ng/kg	Y
D-3B	1,2,3,4,6,7,8-HpCDF	1.09	34.2		0.01	0.342	ng/kg	Y
D-3B	1,2,3,4,7,8,9-HpCDF	0.861	1.87		0.01	0.0187	ng/kg	Y
D-3B	1,2,3,4,7,8-HxCDD	0.756	6.65		0.1	0.665	ng/kg	Y
D-3B	1,2,3,4,7,8-HxCDF	0.703	3.77	J	0.1	0.377	ng/kg	Y
D-3B	1,2,3,6,7,8-HxCDD	0.645	11.8		0.1	1.18	ng/kg	Y
D-3B	1,2,3,6,7,8-HxCDF	0.27	3.42		0.1	0.342	ng/kg	Y
D-3B	1,2,3,7,8,9-HxCDD	0.468	7.83		0.1	0.783	ng/kg	Y
D-3B	1,2,3,7,8,9-HxCDF	0.878	1.14		0.1	0.114	ng/kg	Y
D-3B	1,2,3,7,8-PeCDD	0.369	7.12		1	7.12	ng/kg	Y
D-3B	1,2,3,7,8-PeCDF	0.508	5.73	J	0.03	0.1719	ng/kg	Y
D-3B	2,3,4,6,7,8-HxCDF	0.684	4.16	J	0.1	0.416	ng/kg	Y
D-3B	2,3,4,7,8-PeCDF	0.659	6.29		0.3	1.887	ng/kg	Y
D-3B	2,3,7,8-TCDD	0.171	2.39		1	2.39	ng/kg	Y
D-3B	2,3,7,8-TCDF	0.231	86		0.1	8.6	ng/kg	Y
D-3B	OCDD	1.7	740		0.0003	0.222	ng/kg	Y
D-3B	OCDF	1.49	57.1		0.0003	0.01713	ng/kg	Y
D-3B	**Dioxin/Furan TEQ**		**26.1**	**JT**	**--**	**--**	**ng/kg**	**Y**
D-4A	1,2,3,4,6,7,8-HpCDD	0.745	2.07	U	0.01	0.01035	ng/kg	N
D-4A	1,2,3,4,6,7,8-HpCDF	1.1	0.127	U	0.01	0.000635	ng/kg	N
D-4A	1,2,3,4,7,8,9-HpCDF	0.0596	0.0596	U	0.01	0.000298	ng/kg	N
D-4A	1,2,3,4,7,8-HxCDD	0.763	0.129	U	0.1	0.00645	ng/kg	N
D-4A	1,2,3,4,7,8-HxCDF	0.709	0.0576	U	0.1	0.00288	ng/kg	N
D-4A	1,2,3,6,7,8-HxCDD	0.65	0.153		0.1	0.0153	ng/kg	Y
D-4A	1,2,3,6,7,8-HxCDF	0.0437	0.993	U	0.1	0.002185	ng/kg	N
D-4A	1,2,3,7,8,9-HxCDD	0.472	0.211	U	0.1	0.01055	ng/kg	N
D-4A	1,2,3,7,8,9-HxCDF	0.886	0.0735	U	0.1	0.003675	ng/kg	N
D-4A	1,2,3,7,8-PeCDD	0.372	0.0973	U	1	0.04865	ng/kg	N
D-4A	1,2,3,7,8-PeCDF	0.512	0.123	U	0.03	0.001845	ng/kg	N

Sample ID	Congener	EDL	Result	Qualifier	TEF	TEQ(a)	Units	Detected?
D-4A	2,3,4,6,7,8-HxCDF	0.0477	0.0477	U	0.1	0.002385	ng/kg	N
D-4A	2,3,4,7,8-PeCDF	0.0636	0.0636	U	0.3	0.00954	ng/kg	N
D-4A	2,3,7,8-TCDD	0.173	0.145	U	1	0.0725	ng/kg	N
D-4A	2,3,7,8-TCDF	0.233	0.109	U	0.1	0.00545	ng/kg	N
D-4A	OCDD	1.72	12.7	U	0.0003	0.001905	ng/kg	N
D-4A	OCDF	1.51	0.222	U	0.0003	0.0000333	ng/kg	N
D-4A	**Dioxin/Furan TEQ**		**0.2**	**T**	--	--	**ng/kg**	**Y**
D-4B	1,2,3,4,6,7,8-HpCDD	0.737	57.3		0.01	0.573	ng/kg	Y
D-4B	1,2,3,4,6,7,8-HpCDF	1.09	13.4		0.01	0.134	ng/kg	Y
D-4B	1,2,3,4,7,8,9-HpCDF	0.86	0.946	J	0.01	0.00946	ng/kg	Y
D-4B	1,2,3,4,7,8-HxCDD	0.755	2.91		0.1	0.291	ng/kg	Y
D-4B	1,2,3,4,7,8-HxCDF	0.702	1.8	J	0.1	0.18	ng/kg	Y
D-4B	1,2,3,6,7,8-HxCDD	0.644	4.77		0.1	0.477	ng/kg	Y
D-4B	1,2,3,6,7,8-HxCDF	0.269	1.56		0.1	0.156	ng/kg	Y
D-4B	1,2,3,7,8,9-HxCDD	0.467	3.31		0.1	0.331	ng/kg	Y
D-4B	1,2,3,7,8,9-HxCDF	0.877	0.82		0.1	0.082	ng/kg	Y
D-4B	1,2,3,7,8-PeCDD	0.369	3.14		1	3.14	ng/kg	Y
D-4B	1,2,3,7,8-PeCDF	0.507	2.2	J	0.03	0.066	ng/kg	Y
D-4B	2,3,4,6,7,8-HxCDF	0.683	1.82	J	0.1	0.182	ng/kg	Y
D-4B	2,3,4,7,8-PeCDF	0.659	2.6		0.3	0.78	ng/kg	Y
D-4B	2,3,7,8-TCDD	0.171	0.991	U	1	0.4955	ng/kg	N
D-4B	2,3,7,8-TCDF	0.231	31.5		0.1	3.15	ng/kg	Y
D-4B	OCDD	1.7	388		0.0003	0.1164	ng/kg	Y
D-4B	OCDF	1.49	18.9		0.0003	0.00567	ng/kg	Y
D-4B	**Dioxin/Furan TEQ**		**10.2**	**JT**	--	--	**ng/kg**	**Y**
D-5A	1,2,3,4,6,7,8-HpCDD	0.742	1	U	0.01	0.005	ng/kg	N
D-5A	1,2,3,4,6,7,8-HpCDF	1.1	0.111	U	0.01	0.000555	ng/kg	N
D-5A	1,2,3,4,7,8,9-HpCDF	0.0534	0.0534	U	0.01	0.000267	ng/kg	N
D-5A	1,2,3,4,7,8-HxCDD	0.0475	0.0475	U	0.1	0.002375	ng/kg	N
D-5A	1,2,3,4,7,8-HxCDF	0.0317	0.0317	U	0.1	0.001585	ng/kg	N
D-5A	1,2,3,6,7,8-HxCDD	0.648	0.095	U	0.1	0.00475	ng/kg	N
D-5A	1,2,3,6,7,8-HxCDF	0.271	0.0593		0.1	0.00593	ng/kg	Y
D-5A	1,2,3,7,8,9-HxCDD	0.47	0.194		0.1	0.0194	ng/kg	Y
D-5A	1,2,3,7,8,9-HxCDF	0.882	0.101	U	0.1	0.00505	ng/kg	N
D-5A	1,2,3,7,8-PeCDD	0.371	0.0851		1	0.0851	ng/kg	Y
D-5A	1,2,3,7,8-PeCDF	0.51	0.0653	U	0.03	0.0009795	ng/kg	N
D-5A	2,3,4,6,7,8-HxCDF	0.687	0.0455		0.1	0.00455	ng/kg	Y
D-5A	2,3,4,7,8-PeCDF	0.0376	0.0376	U	0.3	0.00564	ng/kg	N
D-5A	2,3,7,8-TCDD	0.172	0.125	U	1	0.0625	ng/kg	N
D-5A	2,3,7,8-TCDF	0.0336	0.0336	U	0.1	0.00168	ng/kg	N
D-5A	OCDD	1.71	7.41	U	0.0003	0.0011115	ng/kg	N
D-5A	OCDF	1.5	0.346		0.0003	0.0001038	ng/kg	Y
D-5A	**Dioxin/Furan TEQ**		**0.2**	**T**	--	--	**ng/kg**	**Y**

Sample ID	Congener	EDL	Result	Qualifier	TEF	TEQ(a)	Units	Detected?
D-5B	1,2,3,4,6,7,8-HpCDD	0.743	2.11	U	0.01	0.01055	ng/kg	N
D-5B	1,2,3,4,6,7,8-HpCDF	1.1	0.475	U	0.01	0.002375	ng/kg	N
D-5B	1,2,3,4,7,8,9-HpCDF	0.866	0.149	U	0.01	0.000745	ng/kg	N
D-5B	1,2,3,4,7,8-HxCDD	0.76	0.125	U	0.1	0.00625	ng/kg	N
D-5B	1,2,3,4,7,8-HxCDF	0.707	0.107	J	0.1	0.0107	ng/kg	Y
D-5B	1,2,3,6,7,8-HxCDD	0.649	0.248	U	0.1	0.0124	ng/kg	N
D-5B	1,2,3,6,7,8-HxCDF	0.271	0.097	U	0.1	0.00485	ng/kg	N
D-5B	1,2,3,7,8,9-HxCDD	0.47	0.313		0.1	0.0313	ng/kg	Y
D-5B	1,2,3,7,8,9-HxCDF	0.883	0.18	U	0.1	0.009	ng/kg	N
D-5B	1,2,3,7,8-PeCDD	0.371	0.162	U	1	0.081	ng/kg	N
D-5B	1,2,3,7,8-PeCDF	0.511	0.129	U	0.03	0.001935	ng/kg	N
D-5B	2,3,4,6,7,8-HxCDF	0.688	0.0891	U	0.1	0.004455	ng/kg	N
D-5B	2,3,4,7,8-PeCDF	0.663	0.117	U	0.3	0.01755	ng/kg	N
D-5B	2,3,7,8-TCDD	0.172	0.186	U	1	0.093	ng/kg	N
D-5B	2,3,7,8-TCDF	0.233	1.51		0.1	0.151	ng/kg	Y
D-5B	OCDD	1.71	17.4	U	0.0003	0.00261	ng/kg	N
D-5B	OCDF	1.5	0.952		0.0003	0.0002856	ng/kg	Y
D-5B	**Dioxin/Furan TEQ**		**0.4**	**JT**	**--**	**--**	**ng/kg**	**Y**
D-6A	1,2,3,4,6,7,8-HpCDD	0.744	1.37	U	0.01	0.00685	ng/kg	N
D-6A	1,2,3,4,6,7,8-HpCDF	1.1	0.107	U	0.01	0.000535	ng/kg	N
D-6A	1,2,3,4,7,8,9-HpCDF	0.868	0.0456	J	0.01	0.000456	ng/kg	Y
D-6A	1,2,3,4,7,8-HxCDD	0.0516	0.0516	U	0.1	0.00258	ng/kg	N
D-6A	1,2,3,4,7,8-HxCDF	0.0317	0.0317	U	0.1	0.001585	ng/kg	N
D-6A	1,2,3,6,7,8-HxCDD	0.0536	0.0536	U	0.1	0.00268	ng/kg	N
D-6A	1,2,3,6,7,8-HxCDF	0.272	0.0298	U	0.1	0.00149	ng/kg	N
D-6A	1,2,3,7,8,9-HxCDD	0.471	0.131	U	0.1	0.00655	ng/kg	N
D-6A	1,2,3,7,8,9-HxCDF	0.885	0.0853		0.1	0.00853	ng/kg	Y
D-6A	1,2,3,7,8-PeCDD	0.0516	0.0516	U	1	0.0258	ng/kg	N
D-6A	1,2,3,7,8-PeCDF	0.0337	0.0337	U	0.03	0.0005055	ng/kg	N
D-6A	2,3,4,6,7,8-HxCDF	0.689	0.0456	U	0.1	0.00228	ng/kg	N
D-6A	2,3,4,7,8-PeCDF	0.0357	0.0357	U	0.3	0.005355	ng/kg	N
D-6A	2,3,7,8-TCDD	0.0317	0.0317	U	1	0.01585	ng/kg	N
D-6A	2,3,7,8-TCDF	0.0198	0.0198	U	0.1	0.00099	ng/kg	N
D-6A	OCDD	1.72	13.2	U	0.0003	0.00198	ng/kg	N
D-6A	OCDF	1.5	0.518	J	0.0003	0.0001554	ng/kg	Y
D-6A	**Dioxin/Furan TEQ**		**0.1**	**JT**	**--**	**--**	**ng/kg**	**Y**
D-6B	1,2,3,4,6,7,8-HpCDD	0.741	1.45	U	0.01	0.00725	ng/kg	N
D-6B	1,2,3,4,6,7,8-HpCDF	1.1	0.292	U	0.01	0.00146	ng/kg	N
D-6B	1,2,3,4,7,8,9-HpCDF	0.865	0.241	J	0.01	0.00241	ng/kg	Y
D-6B	1,2,3,4,7,8-HxCDD	0.759	0.107	U	0.1	0.00535	ng/kg	N
D-6B	1,2,3,4,7,8-HxCDF	0.706	0.0909	J	0.1	0.00909	ng/kg	Y
D-6B	1,2,3,6,7,8-HxCDD	0.647	0.15	U	0.1	0.0075	ng/kg	N
D-6B	1,2,3,6,7,8-HxCDF	0.271	0.115	U	0.1	0.00575	ng/kg	N
D-6B	1,2,3,7,8,9-HxCDD	0.469	0.229	U	0.1	0.01145	ng/kg	N
D-6B	1,2,3,7,8,9-HxCDF	0.881	0.14	U	0.1	0.007	ng/kg	N
D-6B	1,2,3,7,8-PeCDD	0.371	0.0988	U	1	0.0494	ng/kg	N

Sample ID	Congener	EDL	Result	Qualifier	TEF	TEQ(a)	Units	Detected?
D-6B	1,2,3,7,8-PeCDF	0.51	0.081	U	0.03	0.001215	ng/kg	N
D-6B	2,3,4,6,7,8-HxCDF	0.687	0.136	U	0.1	0.0068	ng/kg	N
D-6B	2,3,4,7,8-PeCDF	0.662	0.0711	U	0.3	0.010665	ng/kg	N
D-6B	2,3,7,8-TCDD	0.0336	0.0336	U	1	0.0168	ng/kg	N
D-6B	2,3,7,8-TCDF	0.232	0.0455	U	0.1	0.002275	ng/kg	N
D-6B	OCDD	1.71	19.6	U	0.0003	0.00294	ng/kg	N
D-6B	OCDF	1.5	1.52		0.0003	0.000228	ng/kg	N
D-6B	**Dioxin/Furan TEQ**		**0.1**	**JT**	**--**	**--**	**ng/kg**	**Y**
D-7	1,2,3,4,6,7,8-HpCDD	0.746	108		0.01	1.08	ng/kg	Y
D-7	1,2,3,4,6,7,8-HpCDF	1.1	30.6		0.01	0.306	ng/kg	Y
D-7	1,2,3,4,7,8,9-HpCDF	0.871	1.48		0.01	0.0148	ng/kg	Y
D-7	1,2,3,4,7,8-HxCDD	0.764	3.25		0.1	0.325	ng/kg	Y
D-7	1,2,3,4,7,8-HxCDF	0.71	2.05	J	0.1	0.205	ng/kg	Y
D-7	1,2,3,6,7,8-HxCDD	0.652	6.35		0.1	0.635	ng/kg	Y
D-7	1,2,3,6,7,8-HxCDF	0.273	1.59		0.1	0.159	ng/kg	Y
D-7	1,2,3,7,8,9-HxCDD	0.473	3.77		0.1	0.377	ng/kg	Y
D-7	1,2,3,7,8,9-HxCDF	0.888	0.647		0.1	0.0647	ng/kg	Y
D-7	1,2,3,7,8-PeCDD	0.373	3.09		1	3.09	ng/kg	Y
D-7	1,2,3,7,8-PeCDF	0.513	2.63	J	0.03	0.0789	ng/kg	Y
D-7	2,3,4,6,7,8-HxCDF	0.692	1.98	J	0.1	0.198	ng/kg	Y
D-7	2,3,4,7,8-PeCDF	0.667	3.15		0.3	0.945	ng/kg	Y
D-7	2,3,7,8-TCDD	0.173	1.13		1	1.13	ng/kg	Y
D-7	2,3,7,8-TCDF	0.234	60.3		0.1	6.03	ng/kg	Y
D-7	OCDD	1.72	749	U	0.0003	0.11235	ng/kg	N
D-7	OCDF	1.51	94.3		0.0003	0.02829	ng/kg	Y
D-7	**Dioxin/Furan TEQ**		**14.8**	**JT**	**--**	**--**	**ng/kg**	**Y**
PT-10-36.0-37.0	1,2,3,4,6,7,8-HpCDD	0.743	2.1	U	0.01	0.0105	ng/kg	N
PT-10-36.0-37.0	1,2,3,4,6,7,8-HpCDF	1.1	0.427	U	0.01	0.002135	ng/kg	N
PT-10-36.0-37.0	1,2,3,4,7,8,9-HpCDF	0.866	0.246	U	0.01	0.00123	ng/kg	N
PT-10-36.0-37.0	1,2,3,4,7,8-HxCDD	0.76	0.248		0.1	0.0248	ng/kg	Y
PT-10-36.0-37.0	1,2,3,4,7,8-HxCDF	0.707	0.323	J	0.1	0.0323	ng/kg	Y
PT-10-36.0-37.0	1,2,3,6,7,8-HxCDD	0.649	0.281	U	0.1	0.01405	ng/kg	N
PT-10-36.0-37.0	1,2,3,6,7,8-HxCDF	0.271	0.271	U	0.1	0.01355	ng/kg	N
PT-10-36.0-37.0	1,2,3,7,8,9-HxCDD	0.47	0.371		0.1	0.0371	ng/kg	Y
PT-10-36.0-37.0	1,2,3,7,8,9-HxCDF	0.883	0.269	U	0.1	0.01345	ng/kg	N
PT-10-36.0-37.0	1,2,3,7,8-PeCDD	0.371	0.317	U	1	0.1585	ng/kg	N
PT-10-36.0-37.0	1,2,3,7,8-PeCDF	0.511	0.41	U	0.03	0.00615	ng/kg	N
PT-10-36.0-37.0	2,3,4,6,7,8-HxCDF	0.688	0.259		0.1	0.0259	ng/kg	Y
PT-10-36.0-37.0	2,3,4,7,8-PeCDF	0.663	0.352	U	0.3	0.0528	ng/kg	N
PT-10-36.0-37.0	2,3,7,8-TCDD	0.172	0.244	U	1	0.122	ng/kg	N
PT-10-36.0-37.0	2,3,7,8-TCDF	0.233	1.09		0.1	0.109	ng/kg	Y
PT-10-36.0-37.0	OCDD	1.71	15.6	U	0.0003	0.00234	ng/kg	N
PT-10-36.0-37.0	OCDF	1.5	0.547	U	0.0003	0.00008205	ng/kg	N
PT-10-36.0-37.0	**Dioxin/Furan TEQ**		**0.6**	**JT**	**--**	**--**	**ng/kg**	**Y**

Sample ID	Congener	EDL	Result	Qualifier	TEF	TEQ(a)	Units	Detected?
PT-11-36.0-37.0	1,2,3,4,6,7,8-HpCDD	0.738	0.747	U	0.01	0.003735	ng/kg	N
PT-11-36.0-37.0	1,2,3,4,6,7,8-HpCDF	1.09	0.0768	U	0.01	0.000384	ng/kg	N
PT-11-36.0-37.0	1,2,3,4,7,8,9-HpCDF	0.0335	0.0335	U	0.01	0.0001675	ng/kg	N
PT-11-36.0-37.0	1,2,3,4,7,8-HxCDD	0.756	0.0453	U	0.1	0.002265	ng/kg	N
PT-11-36.0-37.0	1,2,3,4,7,8-HxCDF	0.0236	0.0236	U	0.1	0.00118	ng/kg	N
PT-11-36.0-37.0	1,2,3,6,7,8-HxCDD	0.645	0.0719		0.1	0.00719	ng/kg	Y
PT-11-36.0-37.0	1,2,3,6,7,8-HxCDF	0.0217	0.0217	U	0.1	0.001085	ng/kg	N
PT-11-36.0-37.0	1,2,3,7,8,9-HxCDD	0.468	0.0943		0.1	0.00943	ng/kg	Y
PT-11-36.0-37.0	1,2,3,7,8,9-HxCDF	0.878	0.0906	U	0.1	0.00453	ng/kg	N
PT-11-36.0-37.0	1,2,3,7,8-PeCDD	0.369	0.0571	U	1	0.02855	ng/kg	N
PT-11-36.0-37.0	1,2,3,7,8-PeCDF	0.508	0.0559		0.03	0.001677	ng/kg	Y
PT-11-36.0-37.0	2,3,4,6,7,8-HxCDF	0.684	0.0374	U	0.1	0.00187	ng/kg	N
PT-11-36.0-37.0	2,3,4,7,8-PeCDF	0.0394	0.0394	U	0.3	0.00591	ng/kg	N
PT-11-36.0-37.0	2,3,7,8-TCDD	0.0295	0.0295	U	1	0.01475	ng/kg	N
PT-11-36.0-37.0	2,3,7,8-TCDF	0.0236	0.0236	U	0.1	0.00118	ng/kg	N
PT-11-36.0-37.0	OCDD	1.7	7.57	U	0.0003	0.0011355	ng/kg	N
PT-11-36.0-37.0	OCDF	1.49	0.167	U	0.0003	0.00002505	ng/kg	N
PT-11-36.0-37.0	**Dioxin/Furan TEQ**		**0.1**	**T**	--	--	**ng/kg**	**Y**
PT-12-30.0-31.0	1,2,3,4,6,7,8-HpCDD	0.746	57.3		0.01	0.573	ng/kg	Y
PT-12-30.0-31.0	1,2,3,4,6,7,8-HpCDF	1.1	6.01		0.01	0.0601	ng/kg	Y
PT-12-30.0-31.0	1,2,3,4,7,8,9-HpCDF	0.87	1.37		0.01	0.0137	ng/kg	Y
PT-12-30.0-31.0	1,2,3,4,7,8-HxCDD	0.763	3.78		0.1	0.378	ng/kg	Y
PT-12-30.0-31.0	1,2,3,4,7,8-HxCDF	0.71	1.92	J	0.1	0.192	ng/kg	Y
PT-12-30.0-31.0	1,2,3,6,7,8-HxCDD	0.651	5.38		0.1	0.538	ng/kg	Y
PT-12-30.0-31.0	1,2,3,6,7,8-HxCDF	0.272	2.12		0.1	0.212	ng/kg	Y
PT-12-30.0-31.0	1,2,3,7,8,9-HxCDD	0.472	4.57		0.1	0.457	ng/kg	Y
PT-12-30.0-31.0	1,2,3,7,8,9-HxCDF	0.887	0.866	J	0.1	0.0866	ng/kg	Y
PT-12-30.0-31.0	1,2,3,7,8-PeCDD	0.373	2.87		1	2.87	ng/kg	Y
PT-12-30.0-31.0	1,2,3,7,8-PeCDF	0.513	1.83	J	0.03	0.0549	ng/kg	Y
PT-12-30.0-31.0	2,3,4,6,7,8-HxCDF	0.691	2.58	J	0.1	0.258	ng/kg	Y
PT-12-30.0-31.0	2,3,4,7,8-PeCDF	0.666	2.53		0.3	0.759	ng/kg	Y
PT-12-30.0-31.0	2,3,7,8-TCDD	0.173	0.672	U	1	0.336	ng/kg	N
PT-12-30.0-31.0	2,3,7,8-TCDF	0.234	3.44		0.1	0.344	ng/kg	Y
PT-12-30.0-31.0	OCDD	1.72	65.8	U	0.0003	0.00987	ng/kg	N
PT-12-30.0-31.0	OCDF	1.51	3.83		0.0003	0.001149	ng/kg	Y
PT-12-30.0-31.0	**Dioxin/Furan TEQ**		**7.1**	**JT**	--	--	**ng/kg**	**Y**
PT-13-29.0-30.0	1,2,3,4,6,7,8-HpCDD	0.735	1.08	U	0.01	0.0054	ng/kg	N
PT-13-29.0-30.0	1,2,3,4,6,7,8-HpCDF	1.09	0.18	U	0.01	0.0009	ng/kg	N
PT-13-29.0-30.0	1,2,3,4,7,8,9-HpCDF	0.047	0.047	U	0.01	0.000235	ng/kg	N
PT-13-29.0-30.0	1,2,3,4,7,8-HxCDD	0.752	0.104		0.1	0.0104	ng/kg	Y
PT-13-29.0-30.0	1,2,3,4,7,8-HxCDF	0.699	0.0392	U	0.1	0.00196	ng/kg	N
PT-13-29.0-30.0	1,2,3,6,7,8-HxCDD	0.642	0.0725	U	0.1	0.003625	ng/kg	N
PT-13-29.0-30.0	1,2,3,6,7,8-HxCDF	0.268	0.0541		0.1	0.00541	ng/kg	Y
PT-13-29.0-30.0	1,2,3,7,8,9-HxCDD	0.465	0.165	U	0.1	0.00825	ng/kg	N
PT-13-29.0-30.0	1,2,3,7,8,9-HxCDF	0.874	0.0995		0.1	0.00995	ng/kg	Y
PT-13-29.0-30.0	1,2,3,7,8-PeCDD	0.367	0.0627	U	1	0.03135	ng/kg	N
PT-13-29.0-30.0	1,2,3,7,8-PeCDF	0.505	0.0337		0.03	0.001011	ng/kg	Y

Sample ID	Congener	EDL	Result	Qualifier	TEF	TEQ(a)	Units	Detected?
PT-13-29.0-30.0	2,3,4,6,7,8-HxCDF	0.0313	0.0313	U	0.1	0.001565	ng/kg	N
PT-13-29.0-30.0	2,3,4,7,8-PeCDF	0.0372	0.0372	U	0.3	0.00558	ng/kg	N
PT-13-29.0-30.0	2,3,7,8-TCDD	0.0274	0.0274	U	1	0.0137	ng/kg	N
PT-13-29.0-30.0	2,3,7,8-TCDF	0.0235	0.0235	U	0.1	0.001175	ng/kg	N
PT-13-29.0-30.0	OCDD	1.7	10.7	U	0.0003	0.001605	ng/kg	N
PT-13-29.0-30.0	OCDF	1.48	0.749		0.0003	0.0002247	ng/kg	Y
PT-13-29.0-30.0	**Dioxin/Furan TEQ**		**0.1**	**T**	--	--	**ng/kg**	**Y**
PT-14-29.0-30.0	1,2,3,4,6,7,8-HpCDD	0.746	0.836	U	0.01	0.00418	ng/kg	N
PT-14-29.0-30.0	1,2,3,4,6,7,8-HpCDF	1.1	0.0577	U	0.01	0.0002885	ng/kg	N
PT-14-29.0-30.0	1,2,3,4,7,8,9-HpCDF	0.179	0.179	U	0.01	0.000895	ng/kg	N
PT-14-29.0-30.0	1,2,3,4,7,8-HxCDD	0.764	0.0412		0.1	0.00412	ng/kg	Y
PT-14-29.0-30.0	1,2,3,4,7,8-HxCDF	0.0219	0.0219	U	0.1	0.001095	ng/kg	N
PT-14-29.0-30.0	1,2,3,6,7,8-HxCDD	0.652	0.0517	U	0.1	0.002585	ng/kg	N
PT-14-29.0-30.0	1,2,3,6,7,8-HxCDF	0.0219	0.0219	U	0.1	0.001095	ng/kg	N
PT-14-29.0-30.0	1,2,3,7,8,9-HxCDD	0.0398	0.0398	U	0.1	0.00199	ng/kg	N
PT-14-29.0-30.0	1,2,3,7,8,9-HxCDF	0.888	0.0756	U	0.1	0.00378	ng/kg	N
PT-14-29.0-30.0	1,2,3,7,8-PeCDD	0.0398	0.0398	U	1	0.0199	ng/kg	N
PT-14-29.0-30.0	1,2,3,7,8-PeCDF	0.513	0.0577	U	0.03	0.0008655	ng/kg	N
PT-14-29.0-30.0	2,3,4,6,7,8-HxCDF	0.0219	0.0219	U	0.1	0.001095	ng/kg	N
PT-14-29.0-30.0	2,3,4,7,8-PeCDF	0.0318	0.0318	U	0.3	0.00477	ng/kg	N
PT-14-29.0-30.0	2,3,7,8-TCDD	0.173	0.151	U	1	0.0755	ng/kg	N
PT-14-29.0-30.0	2,3,7,8-TCDF	0.0259	0.0259	U	0.1	0.001295	ng/kg	N
PT-14-29.0-30.0	OCDD	1.72	4.89	U	0.0003	0.0007335	ng/kg	N
PT-14-29.0-30.0	OCDF	0.0637	1.99	U	0.0003	0.000009555	ng/kg	N
PT-14-29.0-30.0	**Dioxin/Furan TEQ**		**0.1**	**T**	--	--	**ng/kg**	**Y**
PT-3-43.0-44.0	1,2,3,4,6,7,8-HpCDD	0.743	2.02	U	0.01	0.0101	ng/kg	N
PT-3-43.0-44.0	1,2,3,4,6,7,8-HpCDF	1.1	0.268	U	0.01	0.00134	ng/kg	N
PT-3-43.0-44.0	1,2,3,4,7,8,9-HpCDF	0.867	0.2	U	0.01	0.001	ng/kg	N
PT-3-43.0-44.0	1,2,3,4,7,8-HxCDD	0.761	0.0894		0.1	0.00894	ng/kg	Y
PT-3-43.0-44.0	1,2,3,4,7,8-HxCDF	0.708	0.0614	U	0.1	0.00307	ng/kg	N
PT-3-43.0-44.0	1,2,3,6,7,8-HxCDD	0.649	0.123	U	0.1	0.00615	ng/kg	N
PT-3-43.0-44.0	1,2,3,6,7,8-HxCDF	0.272	0.0396	U	0.1	0.00198	ng/kg	N
PT-3-43.0-44.0	1,2,3,7,8,9-HxCDD	0.471	0.165	U	0.1	0.00825	ng/kg	N
PT-3-43.0-44.0	1,2,3,7,8,9-HxCDF	0.0337	0.0337	U	0.1	0.001685	ng/kg	N
PT-3-43.0-44.0	1,2,3,7,8-PeCDD	0.0436	0.0436	U	1	0.0218	ng/kg	N
PT-3-43.0-44.0	1,2,3,7,8-PeCDF	0.511	0.0416	U	0.03	0.000624	ng/kg	N
PT-3-43.0-44.0	2,3,4,6,7,8-HxCDF	0.689	0.0496	U	0.1	0.00248	ng/kg	N
PT-3-43.0-44.0	2,3,4,7,8-PeCDF	0.0278	0.0278	U	0.3	0.00417	ng/kg	N
PT-3-43.0-44.0	2,3,7,8-TCDD	0.0337	0.0337	U	1	0.01685	ng/kg	N
PT-3-43.0-44.0	2,3,7,8-TCDF	0.0258	0.0258	U	0.1	0.00129	ng/kg	N
PT-3-43.0-44.0	OCDD	1.72	20.6	U	0.0003	0.00309	ng/kg	N
PT-3-43.0-44.0	OCDF	1.5	1.5		0.0003	0.00045	ng/kg	Y
PT-3-43.0-44.0	**Dioxin/Furan TEQ**		**0.1**	**T**	--	--	**ng/kg**	**Y**

Sample ID	Congener	EDL	Result	Qualifier	TEF	TEQ(a)	Units	Detected?
PT-5-43.0-44.0	1,2,3,4,6,7,8-HpCDD	0.736	2.45	U	0.01	0.01225	ng/kg	N
PT-5-43.0-44.0	1,2,3,4,6,7,8-HpCDF	1.09	0.475	U	0.01	0.002375	ng/kg	N
PT-5-43.0-44.0	1,2,3,4,7,8,9-HpCDF	0.859	0.194	U	0.01	0.00097	ng/kg	N
PT-5-43.0-44.0	1,2,3,4,7,8-HxCDD	0.754	0.173	U	0.1	0.00865	ng/kg	N
PT-5-43.0-44.0	1,2,3,4,7,8-HxCDF	0.701	0.0569	U	0.1	0.002845	ng/kg	N
PT-5-43.0-44.0	1,2,3,6,7,8-HxCDD	0.643	0.179	U	0.1	0.00895	ng/kg	N
PT-5-43.0-44.0	1,2,3,6,7,8-HxCDF	0.269	0.165	U	0.1	0.00825	ng/kg	N
PT-5-43.0-44.0	1,2,3,7,8,9-HxCDD	0.466	0.457	U	0.1	0.02285	ng/kg	N
PT-5-43.0-44.0	1,2,3,7,8,9-HxCDF	0.875	0.192		0.1	0.0192	ng/kg	Y
PT-5-43.0-44.0	1,2,3,7,8-PeCDD	0.368	0.108	U	1	0.054	ng/kg	N
PT-5-43.0-44.0	1,2,3,7,8-PeCDF	0.506	0.0883	U	0.03	0.0013245	ng/kg	N
PT-5-43.0-44.0	2,3,4,6,7,8-HxCDF	0.682	0.132	U	0.1	0.0066	ng/kg	N
PT-5-43.0-44.0	2,3,4,7,8-PeCDF	0.658	0.0393	U	0.3	0.005895	ng/kg	N
PT-5-43.0-44.0	2,3,7,8-TCDD	0.0334	0.0334	U	1	0.0167	ng/kg	N
PT-5-43.0-44.0	2,3,7,8-TCDF	0.0294	0.0294	U	0.1	0.00147	ng/kg	N
PT-5-43.0-44.0	OCDD	1.7	23.5	U	0.0003	0.003525	ng/kg	N
PT-5-43.0-44.0	OCDF	1.49	2.01	U	0.0003	0.0003015	ng/kg	N
PT-5-43.0-44.0	**Dioxin/Furan TEQ**		**0.2**	**T**	**--**	**--**	**ng/kg**	**Y**
PT-6-43.0-44.0	1,2,3,4,6,7,8-HpCDD	0.745	1.21	U	0.01	0.00605	ng/kg	N
PT-6-43.0-44.0	1,2,3,4,6,7,8-HpCDF	1.1	0.0497	U	0.01	0.0002485	ng/kg	N
PT-6-43.0-44.0	1,2,3,4,7,8,9-HpCDF	0.869	0.0377	U	0.01	0.0001885	ng/kg	N
PT-6-43.0-44.0	1,2,3,4,7,8-HxCDD	0.763	0.0338	U	0.1	0.00169	ng/kg	N
PT-6-43.0-44.0	1,2,3,4,7,8-HxCDF	0.0179	0.0179	U	0.1	0.000895	ng/kg	N
PT-6-43.0-44.0	1,2,3,6,7,8-HxCDD	0.0397	0.0397	U	0.1	0.001985	ng/kg	N
PT-6-43.0-44.0	1,2,3,6,7,8-HxCDF	0.0179	0.0179	U	0.1	0.000895	ng/kg	N
PT-6-43.0-44.0	1,2,3,7,8,9-HxCDD	0.472	0.0775	U	0.1	0.003875	ng/kg	N
PT-6-43.0-44.0	1,2,3,7,8,9-HxCDF	0.886	0.0397	U	0.1	0.001985	ng/kg	N
PT-6-43.0-44.0	1,2,3,7,8-PeCDD	0.0417	0.0417	U	1	0.02085	ng/kg	N
PT-6-43.0-44.0	1,2,3,7,8-PeCDF	0.0278	0.0278	U	0.03	0.000417	ng/kg	N
PT-6-43.0-44.0	2,3,4,6,7,8-HxCDF	0.0199	0.0199	U	0.1	0.000995	ng/kg	N
PT-6-43.0-44.0	2,3,4,7,8-PeCDF	0.0278	0.0278	U	0.3	0.00417	ng/kg	N
PT-6-43.0-44.0	2,3,7,8-TCDD	0.0357	0.0357	U	1	0.01785	ng/kg	N
PT-6-43.0-44.0	2,3,7,8-TCDF	0.0238	0.0238	U	0.1	0.00119	ng/kg	N
PT-6-43.0-44.0	OCDD	1.72	16.2	U	0.0003	0.00243	ng/kg	N
PT-6-43.0-44.0	OCDF	1.51	0.213	U	0.0003	0.00003195	ng/kg	N
PT-6-43.0-44.0	**Dioxin/Furan TEQ**		**0.1**	**UT**	**--**	**--**	**ng/kg**	**N**
PT-8-43.0-44.0	1,2,3,4,6,7,8-HpCDD	0.74	2.38	U	0.01	0.0119	ng/kg	N
PT-8-43.0-44.0	1,2,3,4,6,7,8-HpCDF	1.09	0.807	U	0.01	0.004035	ng/kg	N
PT-8-43.0-44.0	1,2,3,4,7,8,9-HpCDF	0.863	0.465	U	0.01	0.002325	ng/kg	N
PT-8-43.0-44.0	1,2,3,4,7,8-HxCDD	0.757	0.353	U	0.1	0.01765	ng/kg	N
PT-8-43.0-44.0	1,2,3,4,7,8-HxCDF	0.704	0.41	U	0.1	0.0205	ng/kg	N
PT-8-43.0-44.0	1,2,3,6,7,8-HxCDD	0.646	0.432		0.1	0.0432	ng/kg	Y
PT-8-43.0-44.0	1,2,3,6,7,8-HxCDF	0.27	0.424	U	0.1	0.0212	ng/kg	N

Sample ID	Congener	EDL	Result	Qualifier	TEF	TEQ(a)	Units	Detected?
PT-8-43.0-44.0	1,2,3,7,8,9-HxCDD	0.468	0.758		0.1	0.0758	ng/kg	Y
PT-8-43.0-44.0	1,2,3,7,8,9-HxCDF	0.88	0.465	U	0.1	0.02325	ng/kg	N
PT-8-43.0-44.0	1,2,3,7,8-PeCDD	0.37	0.284	U	1	0.142	ng/kg	N
PT-8-43.0-44.0	1,2,3,7,8-PeCDF	0.509	0.234		0.03	0.00702	ng/kg	Y
PT-8-43.0-44.0	2,3,4,6,7,8-HxCDF	0.685	0.316	U	0.1	0.0158	ng/kg	N
PT-8-43.0-44.0	2,3,4,7,8-PeCDF	0.661	0.147	J	0.3	0.0441	ng/kg	Y
PT-8-43.0-44.0	2,3,7,8-TCDD	0.172	0.148	U	1	0.074	ng/kg	N
PT-8-43.0-44.0	2,3,7,8-TCDF	0.232	0.0592	U	0.1	0.00296	ng/kg	N
PT-8-43.0-44.0	OCDD	1.71	20.4	U	0.0003	0.00306	ng/kg	N
PT-8-43.0-44.0	OCDF	1.5	2.56		0.0003	0.000768	ng/kg	Y
PT-8-43.0-44.0	**Dioxin/Furan TEQ**		**0.5**	**JT**	**--**	**--**	**ng/kg**	**Y**

Notes:

EDL = estimated detection limit

(a) Undetected values are included in the TEQ calculation as half of the EDL, except in cases where the validator reclassified estimated maximum possible concentrations (EMPCs) as not detected. In those cases, the result was elevated to the EMPC and included in the TEQ as half the reported result.

J = estimated

JT = estimated total

N = no

ng/kg = nanogram per kilogram

TEQ = toxicity equivalent

U = not detected

UT = not detected total

Y = yes

Table 8. Marine Bioassay Performance Standards and Evaluation Guidelines

Bioassay	Negative Control Performance Standard	Reference Sediment Performance Standard	Dispersive Disposal Site Interpretation Guidelines		Nondispersive Disposal Site Interpretation Guidelines	
			1-hit rule	2-hit rule	1-hit rule	2-hit rule
Amphipod Mortality	$M_C \leq 10\%$	$M_R - M_C \leq 20\%$	$M_T - M_C > 20\%$ and M_T vs. M_R SS (p=.05) **AND**			
			$M_T - M_R > 10\%$	NOCN	$M_T - M_R > 30\%$	NOCN
Larval Development	$N_C \div I \geq 0.70$	$N_R \div N_C \geq 0.65$	$N_T \div N_C < 0.80$ and N_T/N_C vs. N_R/N_C SS (p=.10) **AND**			
			$N_R/N_C - N_T/N_C > 0.15$	NOCN	$N_R/N_C - N_T/N_C > 0.30$	NOCN
Neanthes Growth	$M_C \leq 10\%$ and $MIG_C \geq 0.38$	$M_R \leq 20\%$ and $MIG_R \div MIG_C \geq 0.80$	$MIG_T \div MIG_C < 0.80$ and MIG_T vs. MIG_R SS (p=.05) **AND**			
			$MIG_T/MIG_R < 0.70$	NOCN	$MIG_T/MIG_R < 0.50$	$MIG_T/MIG_R < 0.70$

M = mortality
N = normal larvae
I = initial count
MIG = mean individual growth rate (mg/individual/day)
SS = statistically significant
NOCN = no other conditions necessary

Subscripts:
R = reference sediment
C = negative control
T = test sediment

Table IV

Marine Sediment Cleanup Objectives and Cleanup Screening Levels Biological Criteria

Biological Test/Endpoint	Performance Standard Control	Performance Standard Reference	Sediment Cleanup Objective for each biological test	Cleanup Screening Level for each biological test
Amphipod				
10-day Mortality	$M_C \leq 10\%$	$M_R \leq 25\%$	$M_T > 25\%$ Absolute and M_T vs M_R SD ($p \leq 0.05$)	$M_T - M_R \geq 30\%$ and M_T vs M_R SD ($p \leq 0.05$)
Larval				
Bivalve or Echinoderm Abnormality/Mortality	$N_C / I \geq 0.70$	$N_R/N_C \geq 0.65$	$(N_R - N_T)/N_C > 0.15$ and N_T/N_C vs N_R/N_C SD ($p \leq 0.10$)	$(N_R - N_T)/N_C > 0.30$ and N_T/N_C vs N_R/N_C SD ($p \leq 0.10$)
Juvenile Polychaete				
***Neanthes* 20-day Growth**	$M_C < 10\%$ and $MIG_C > 0.72$ mg/individual/day (or case-by-case)	$MIG_R / MIG_C > 0.80$	$MIG_T/MIG_R < 0.70$ and MIG_T vs MIG_R SD ($p \leq 0.05$)	$MIG_T/MIG_R < 0.50$ and MIG_T vs MIG_R SD ($p \leq 0.05$)
Microtox				
Microtox Decreased Luminescence	case-by-case	case-by-case	$ML_T / ML_R < 0.80$ and ML_T vs ML_R SD ($p = 0.05$)	
Benthic Abundance				
Benthic Abundance	See Table IV legend		$A_T/A_R < 0.50$ For any one of three major taxa Class Crustacea, Phylum Mollusca or Class Polychaeta	$A_T/A_R < 0.50$ For any two of three major taxa Class Crustacea, Phylum Mollusca or Class Polychaeta

Table 10

Summary of Conventional Parameters Associated with Bioassay Results

Mill A Former Site Interim Action Dredging Project

Everett, Washington

Analyte		Sample Location	Grab
		Sample ID	CARR-REF
		Sample Date	2/24/2015
		Sample Depth	10 cm
Conventionals			
Total Organic Carbon	%		**0.195**
Total Solids	%		**72.8**
Grain Size			
Gravel (≤ -1)	%		**0**
Very coarse sand (-1 < Phi ≤ 0)	%		**0.2**
Coarse sand (0 < Phi ≤ 1)	%		**1.4**
Medium sand (1 < Phi ≤ 2)	%		**33.8**
Fine sand (2 < Phi ≤ 3)	%		**60.7**
Very fine sand (3 < Phi ≤ 4)	%		**2.8**
Total sand	%		**98.9**
Coarse silt (4 < Phi ≤ 5)	%		**<1.1**
Medium silt (5 < Phi ≤ 6)	%		**<1.1**
Fine silt (6 < Phi ≤ 7)	%		**<1.1**
Very fine silt (7 < Phi ≤ 8)	%		**<1.1**
Total silt	%		**<1.1**
Coarse clay (8 < Phi ≤ 9)	%		**<1.1**
Medium clay (9 < Phi ≤ 10)	%		**<1.1**
Particle/Grain Size, Phi >10	%		**<1.1**
Total clay	%		**<1.1**
Total Fines	%		**1.1**

Table 11. Test Results for *Eohaustorius estuarius*.

Treatment	Replicate	Number Initiated	Number Surviving	Percentage Survival	Mean Percentage		Standard Deviation
					Survival	Mortality	
Control	1	20	20	100	100	0	0.0
	2	20	20	100			
	3	20	20	100			
	4	20	20	100			
	5	20	20	100			
CARR-REF	1	20	20	100	98	2	2.7
	2	20	20	100			
	3	20	19	95			
	4	20	20	100			
	5	20	19	95			
D-1	1	20	20	100	98	2	2.7
	2	20	20	100			
	3	20	19	95			
	4	20	20	100			
	5	20	19	95			
D-2	1	20	20	100	96	4	6.5
	2	20	19	95			
	3	20	20	100			
	4	20	17	85			
	5	20	20	100			
D-3A	1	20	20	100	97	3	6.7
	2	20	20	100			
	3	20	20	100			
	4	20	20	100			
	5	20	17	85			
D-3B	1	20	20	100	95	5	6.1
	2	20	17	85			
	3	20	19	95			
	4	20	20	100			
	5	20	19	95			
D-4B	1	20	20	100	96	4	2.2
	2	20	19	95			
	3	20	19	95			
	4	20	19	95			
	5	20	19	95			
D-7	1	20	19	95	92	8	7.6
	2	20	20	100			
	3	20	19	95			
	4	20	16	80			
	5	20	18	90			

Table 12. Test Results for *Neanthes arenaceodentata*.

Treatment	Rep	Number Initiated	Survivors	Mean Mortality (%)	Individual Growth (mg/ind/day)					
					Dry Weight	Mean	Std Dev	AFDW	Mean	Std Dev
Control	1	5	5	0	1.102	1.07	0.1	0.523	0.514	0.036
	2	5	5		0.927			0.454		
	3	5	5		1.132			0.519		
	4	5	5		1.103			0.551		
	5	5	5		1.076			0.521		
CARR-REF	1	5	4	4	0.572	0.714	0.1	0.351	0.400	0.075
	2	5	5		0.903			0.495		
	3	5	5		0.619			0.406		
	4	5	5		0.836			0.444		
	5	5	5		0.641			0.306		
D-1	1	5	5	0	0.771	0.731	0.1	0.565	0.527	0.089
	2	5	5		0.587			0.407		
	3	5	5		0.843			0.594		
	4	5	5		0.863			0.611		
	5	5	5		0.591			0.459		
D-2	1	5	5	0	0.761	0.819	0.0	0.526	0.552	0.025
	2	5	5		0.812			0.563		
	3	5	5		0.898			0.590		
	4	5	5		0.817			0.542		
	5	5	5		0.809			0.539		
D-3A	1	5	5	0	0.727	0.872	0.1	0.516	0.557	0.042
	2	5	5		0.926			0.559		
	3	5	5		0.970			0.608		
	4	5	5		0.844			0.513		
	5	5	5		0.895			0.589		
D-3B	1	5	5	0	0.753	0.745	0.1	0.530	0.539	0.049
	2	5	5		0.747			0.538		
	3	5	5		0.636			0.470		
	4	5	5		0.840			0.608		
	5	5	5		0.748			0.550		
D-4B	1	5	5	0	0.855	0.811	0.0	0.553	0.544	0.016
	2	5	5		0.807			0.555		
	3	5	5		0.821			0.553		
	4	5	5		0.822			0.541		
	5	5	5		0.749			0.518		
D-7	1	5	5	0	0.870	0.879	0.1	0.536	0.539	0.039
	2	5	5		0.764			0.500		
	3	5	5		1.010			0.588		
	4	5	5		0.914			0.569		
	5	5	5		0.840			0.502		

Table 13. Test Results for *Mytilus galloprovincialis*.

Treatment	Replicate	Number Normal	Number Abnormal	Mean # Normal	Normalized Combined Normal Survivorship (%)[1, 2]	Mean Combined Normal Survivorship (%)	Std. Dev.
Control	1	257	14	275.8	85.6	91.2	7.7
	2	310	18		100.0		
	3	246	10		81.9		
	4	272	24		90.6		
	5	294	20		97.9		
CARR-REF	1	213	9	228.4	77.2	82.8	5.3
	2	215	9		78.0		
	3	248	5		89.9		
	4	236	8		85.6		
	5	230	8		83.4		
D-1	1	209	6	157.6	75.8	57.1	11.7
	2	131	7		47.5		
	3	170	13		61.6		
	4	138	6		50.0		
	5	140	8		50.8		
D-2	1	174	16	167.2	63.1	60.6	4.2
	2	148	9		53.7		
	3	177	15		64.2		
	4	166	13		60.2		
	5	171	15		62.0		
D-3A	1	211	4	232.0	76.5	84.1	7.0
	2	226	8		81.9		
	3	223	7		80.9		
	4	262	8		95.0		
	5	238	11		86.3		
D-3B	1	99	19	105.6	35.9	38.3	9.5
	2	78	15		28.3		
	3	131	24		47.5		
	4	85	36		30.8		
	5	135	45		48.9		
D-4B	1	159	3	171.8	57.7	62.3	4.3
	2	185	11		67.1		
	3	182	7		66.0		
	4	161	16		58.4		
	5	172	8		62.4		
D-7	1	215	8	229.6	78.0	83.2	3.7
	2	231	7		83.8		
	3	239	5		86.7		
	4	239	16		86.7		
	5	224	5		81.2		

[1] Control normality normalized to stocking density (300.2).
[2] Reference and treatment normal survivorship are normalized to the mean Control normality (275.8).

Table 14. Summary of SMS Evaluation.

Treatment	Sediment Cleanup Objectives			Cleanup Screening Levels		
	Amphipod	Polychaete	Larval	Amphipod	Polychaete	Larval
D-1	Pass	Pass	**Fail**	Pass	Pass	Pass
D-2	Pass	Pass	**Fail**	Pass	Pass	Pass
D-3A	Pass	Pass	Pass	Pass	Pass	Pass
D-3B	Pass	Pass	**Fail**	Pass	Pass	**Fail**
D-4B	Pass	Pass	**Fail**	Pass	Pass	Pass
D-7	Pass	Pass	Pass	Pass	Pass	Pass

Table 15. Summary of DMMP Evaluation.

Treatment	2-Hit			1-Hit			Overall Determination
	Amphipod	Polychaete	Larval	Amphipod	Polychaete	Larval	
D-1	Pass	Pass	**Fail**	Pass	Pass	Pass	Pass
D-2	Pass	Pass	**Fail**	Pass	Pass	Pass	Pass
D-3A	Pass	Pass	Pass	Pass	Pass	Pass	Pass
D-3B	Pass	Pass	**Fail**	Pass	Pass	**Fail**	**Fail**
D-4B	Pass	Pass	**Fail**	Pass	Pass	Pass	Pass
D-7	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Table 16

Revisions to DMMU Volumes

Mill A Former Site Interim Action Dredging Project

Everett, Washington

Dredging Location	Dredged Material Ranking[1]	Sediment Classification	Number of DMMUs	DMMU Identification	DMMU Boundary Elevations	Estimated in Agency-approved SAP	Revised as approved by DMMP following sample collection and core log review	Second revision to allow for Ecology-required transition slope armor rock	Number of Sample Cores	Sampling Layer[3]
						Total Dredge Volume per DMMU[2] (CY)	Total Dredge Volume per DMMU[2] (CY)	Total Dredge Volume per DMMU[2] (CY)		
Interim Action Cleanup	High	Heterogeneous	11	D-1	Existing Surface to -22 ft	3,750	3,750	3,940	5	Surface DMMU
				D-2	-22 to -26 ft	3,680	3,680	3,750	7	Subsurface DMMU
				D-3A	-26 ft to -30 ft	2,380	2,380	2,450	3	Subsurface DMMU
				D-3B	-26 ft to -30 ft	2,420	2,420	2,420	5	Subsurface DMMU
				D-4A	-30 ft to -34 ft	2,710	2,710	2,790	2	Subsurface DMMU
				D-4B	-30 ft to -34 ft	3,160	3,160	3,160	6	Subsurface DMMU
				D-5A	-34 ft to -38 ft	3,010	2,800	2,870	3	Subsurface DMMU
				D-5B	-34 ft to -38 ft	3,810	2,710	2,710	7	Subsurface DMMU
				D-6A	-38 ft to -43 ft	2,870	3,920	4,520	3	Subsurface DMMU
										Z-layer
				D-6B	-38 ft to -43 ft	3,520	3,370	4,320	3	Subsurface DMMU
										Z-layer
				D-6C	-38 ft to -43 ft	3,830	Eliminated	Eliminated	--	--
										--
				D-7	Surface in areas from -34 to -43 ft	--	4,240	4,390	3	Subsurface DMMU
										Z-layer
				Total Dredge Volume (CY)		**35,140**	**35,140**	**37,320**		

Notes:

[1] Due to the status of the Site as a MTCA cleanup, the subsurface DMMUs are treated as surface DMMUs with a high ranking as required by the Dredged Material Management Office.

[2] DMMU volume includes 1-foot overdredge allowance and 10% contingency. Volumes calculated using bathymetry survey completed between September 8 and 11, 2014.

[3] Z-layer samples were collected to characterize the dredge-prism side-slope. Five core locations were completed within the side-slope area.

CY = *In situ* cubic yards

DMMP = Dredged Material Management Program

DMMU = Dredged Material Management Unit

NA = Not Applicable

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Data Sources: ESRI Data & Maps

Projection: NAD 1983 UTM Zone 10N

Vicinity Map

Weyerhaeuser Mill A Former Site
Everett, Washington

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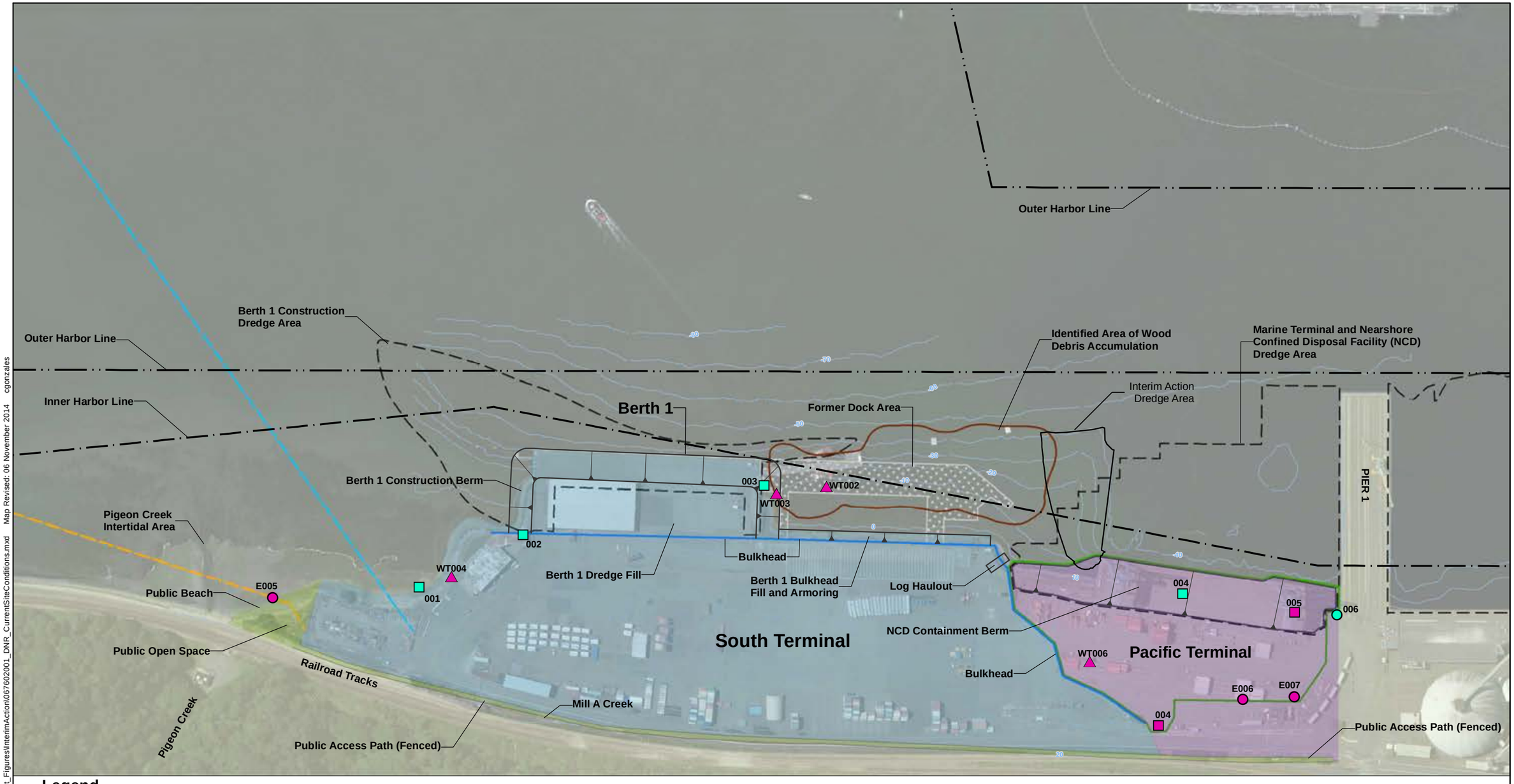
Figure 1

Path: \\sea\projects\0\0676020\GIS\DNR_Comment_Figures\067602001_DNR_VicinityMap.mxd Map Revised: 13 December 2012 amanza



Legend

- South Terminal
- Pacific Terminal
- Open Space/Beach/Access Path

- Construction Berm
- Identified Area of Wood Debris Accumulation
- Historical Piling Area
- Dredged Area
- Nearshore Confined Disposal (NCD) Facility
- Current Kimberly-Clark/City of Everett/ City of Marysville Outfall 100 (approximate)
- Historical Kimberly-Clark/Weyerhaeuser Outfall SW001 (approximate)

- Bulkhead
- Bathymetric and Topographic Contour (10ft, MLLW)
- Historical Industrial Outfall
- Former Combined Sewer Outfall (CSO)
- Former Stormwater Outfall
- Current CSO
- Current Stormwater Outfall

Data Source: Base aerial from Bing Maps, 2011.
Topography and bathymetry from Walker & Associates Survey, 2006.
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300 0 300
Feet

Current Property Conditions

Weyerhaeuser Mill A Former Site
Everett, Washington

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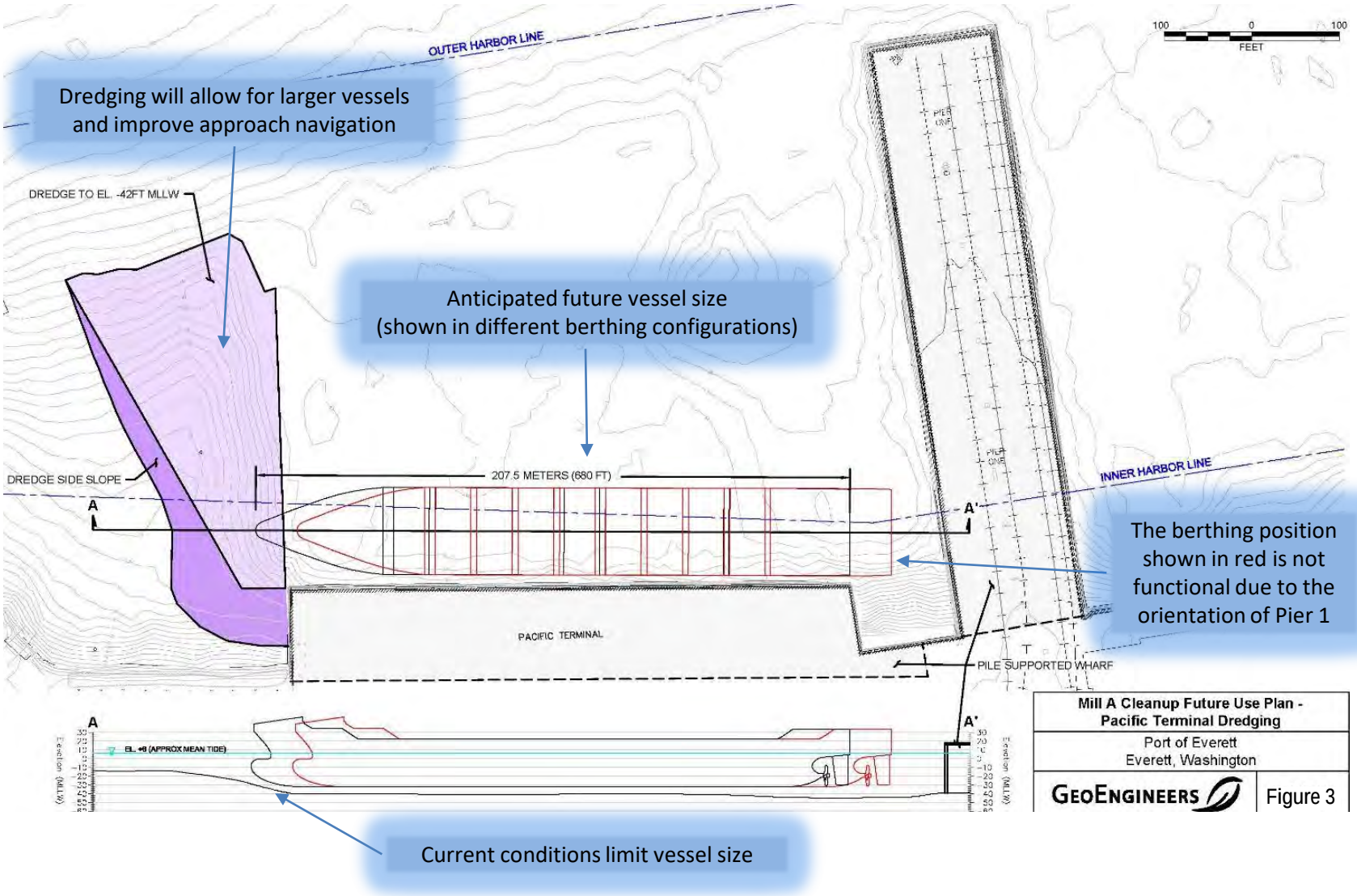
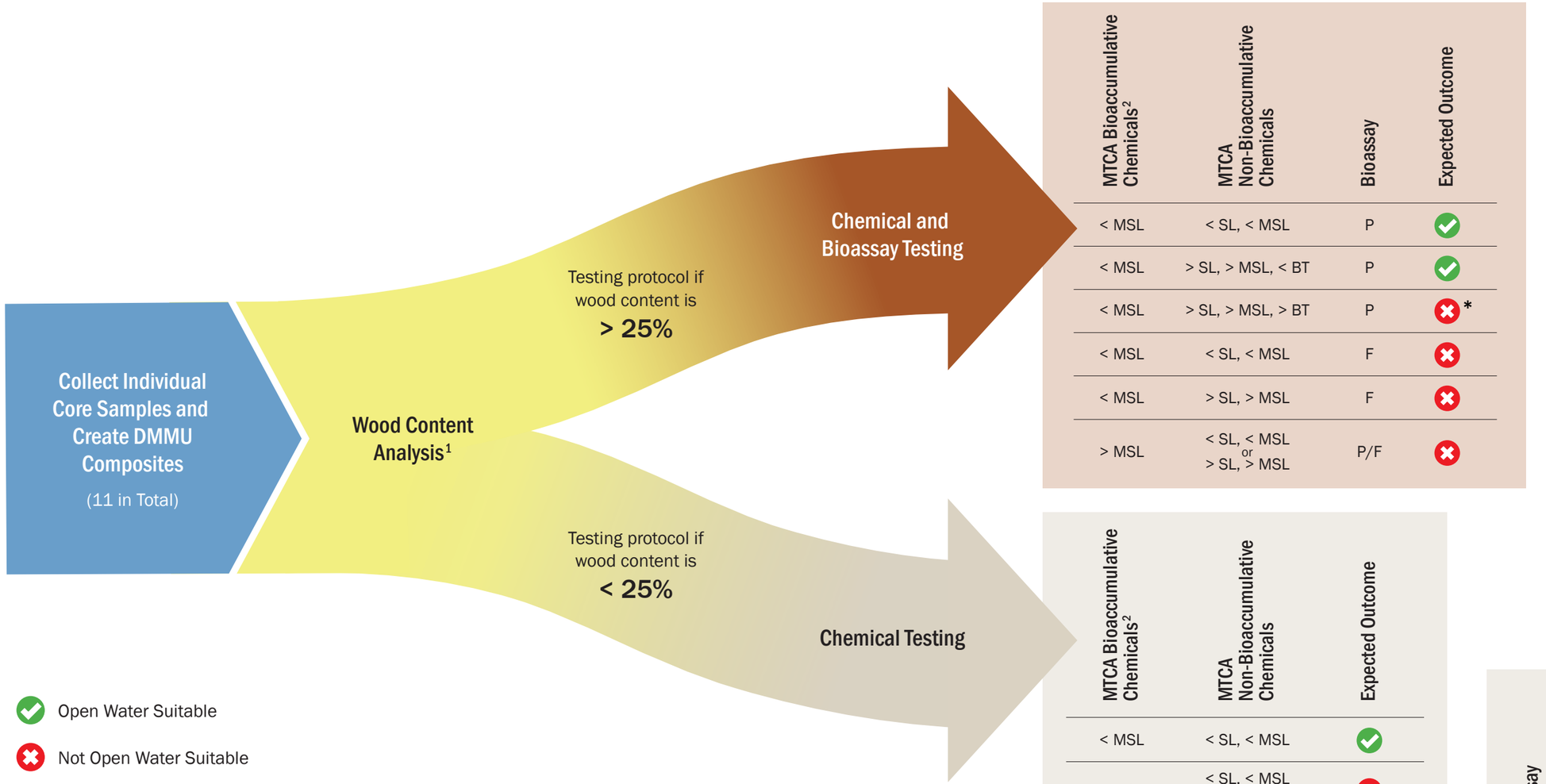
Figure 2

Path: \\sea\projects\0\0676020\GIS\DNR_Comment_Figures\InterimAction\0676020001_DNR_CurrentSiteConditions.mxd Map Revised: 06 November 2014 cgonzales

Interim Action (Phase 1) Detail





Notes:

* Bioaccumulative testing required to consider DMMU for open water suitability.

[1] Wood content will be analyzed to determine percentage of dry-weight wood content using ASTM D-2974 Method C.

[2] The MTCA bioaccumulative chemicals are defined in the Former Mill A Cleanup RI/FS Work Plan and include arsenic, cadmium, lead, mercury, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), total polychlorinated biphenyls (PCBs), dioxin-like PCBs and dioxins/furans. MTCA screening levels for these chemicals are natural background or Port Gardner regional background (if available).

SL = DMMP chemical evaluation guidelines.

BT = DMMP bioaccumulation trigger to determine when bioaccumulation testing is required.

MSL = Site-specific MTCA cleanup screening levels developed.

< = Analytical results are less than screening levels or triggers for all analytes.

> = Analytical results are greater than screening levels or triggers for one or more analytes.

P = Bioassay test passed.

F = Bioassay test failed.

DMMU = Dredged Material Management Unit

DMMP = Dredged Material Management Program

MTCA = Model Toxics Control Act

DMMU Sample Analysis and Expected Outcomes

Weyerhaeuser Mill A Former Site
Everett, Washington

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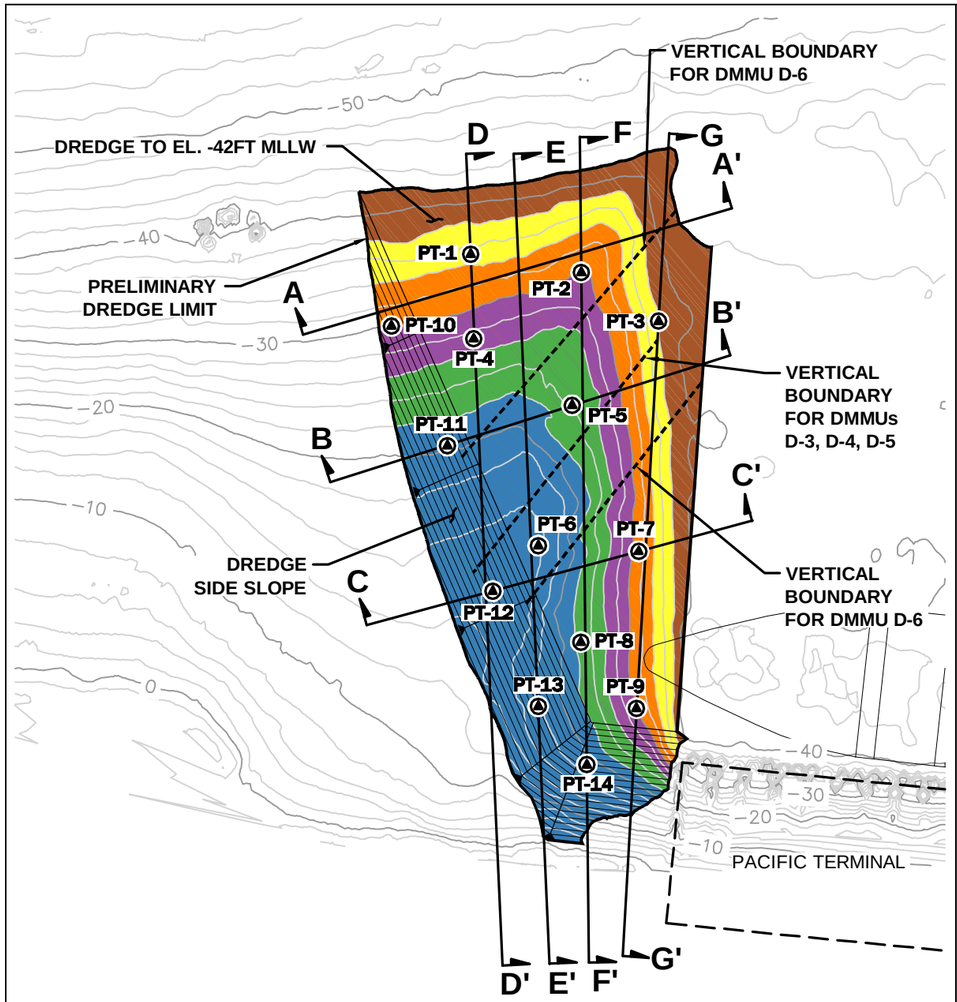
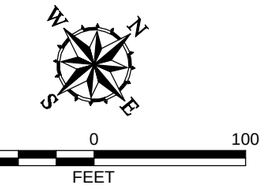
Figure 4





Legend

- PT-1 — Proposed Sediment Core Location
- DMMU Vertical Boundary
- D-1 — DMMU Identification
- A — A' — Cross-Section Location

DMMU Elevation Boundaries

- Existing Grade to -22 feet MLLW
- -22 to -26 feet MLLW
- -26 to -30 feet MLLW
- -30 to -34 feet MLLW
- -34 to -38 feet MLLW
- -38 to -43 feet MLLW

Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

Notes

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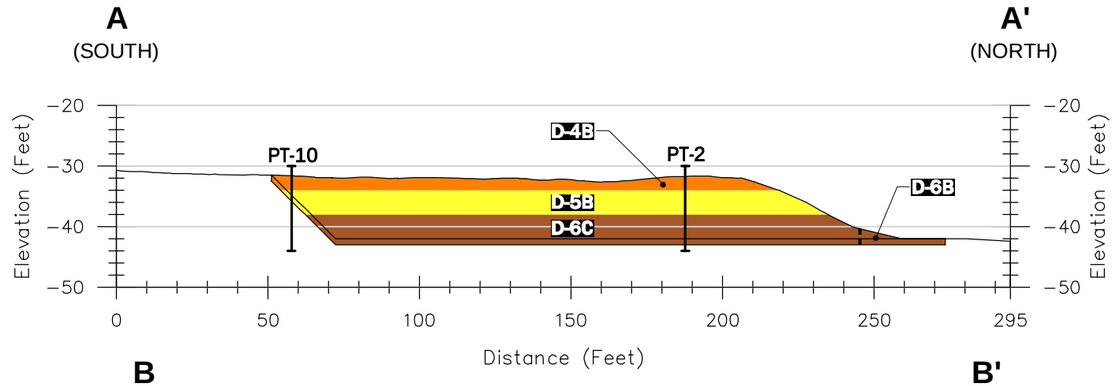

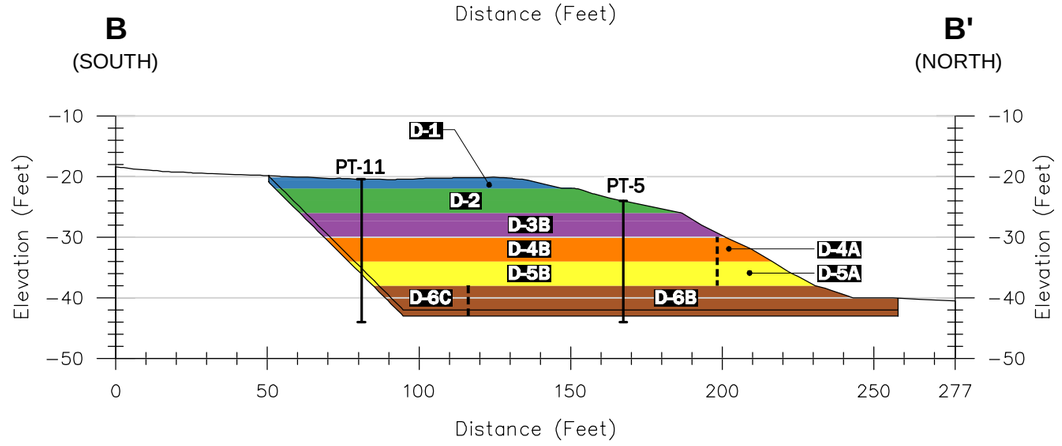

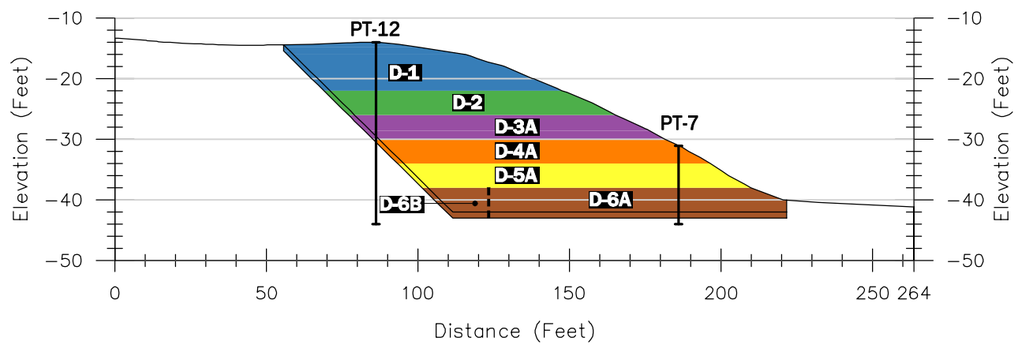

50 0 50
Horizontal Scale in Feet

25 0 25
Vertical Scale in Feet
Vertical Exaggeration: 2X

Sampling Plan and Cross-Sections A-A' through C-C'

Weyerhaeuser Mill A Former Site
Everett, Washington

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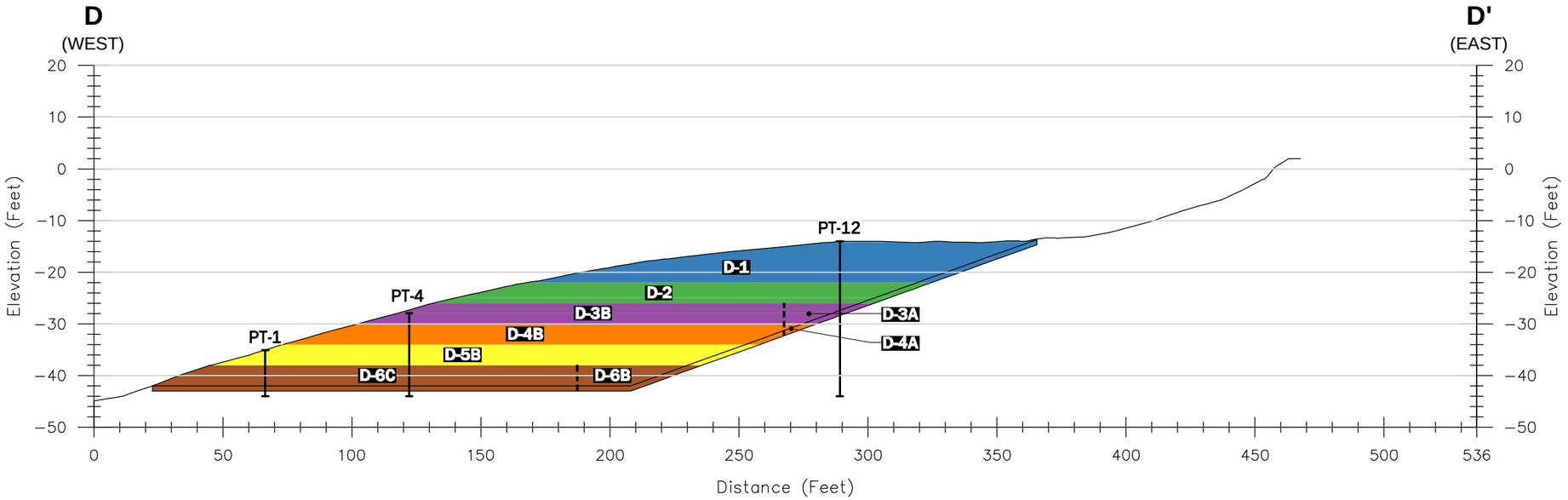
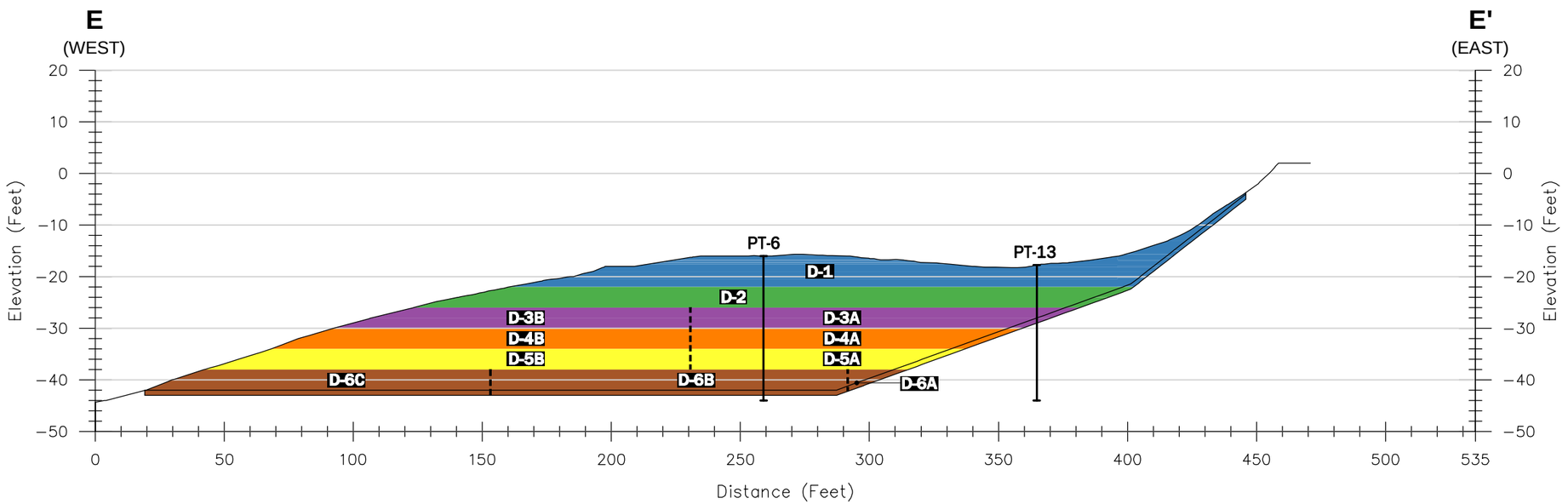
Figure 4





Legend

- DMMU Vertical Boundary
- D-1 DMMU Identification

DMMU Elevation Boundaries

- Existing Grade to -22 feet MLLW
- -22 to -26 feet MLLW
- -26 to -30 feet MLLW
- -30 to -34 feet MLLW
- -34 to -38 feet MLLW
- -38 to -43 feet MLLW

Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

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50 0 50
Horizontal Scale in Feet

25 0 25
Vertical Scale in Feet
Vertical Exaggeration: 2X

Cross-Sections D-D' and E-E'

Weyerhaeuser Mill A Former Site
Everett, Washington

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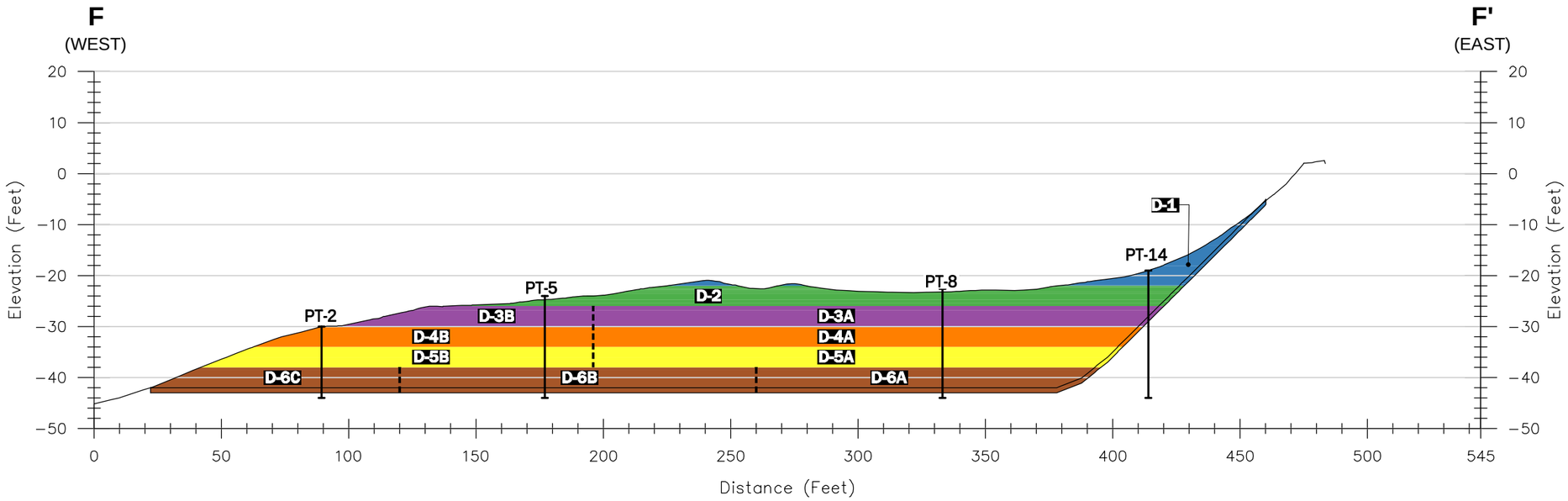
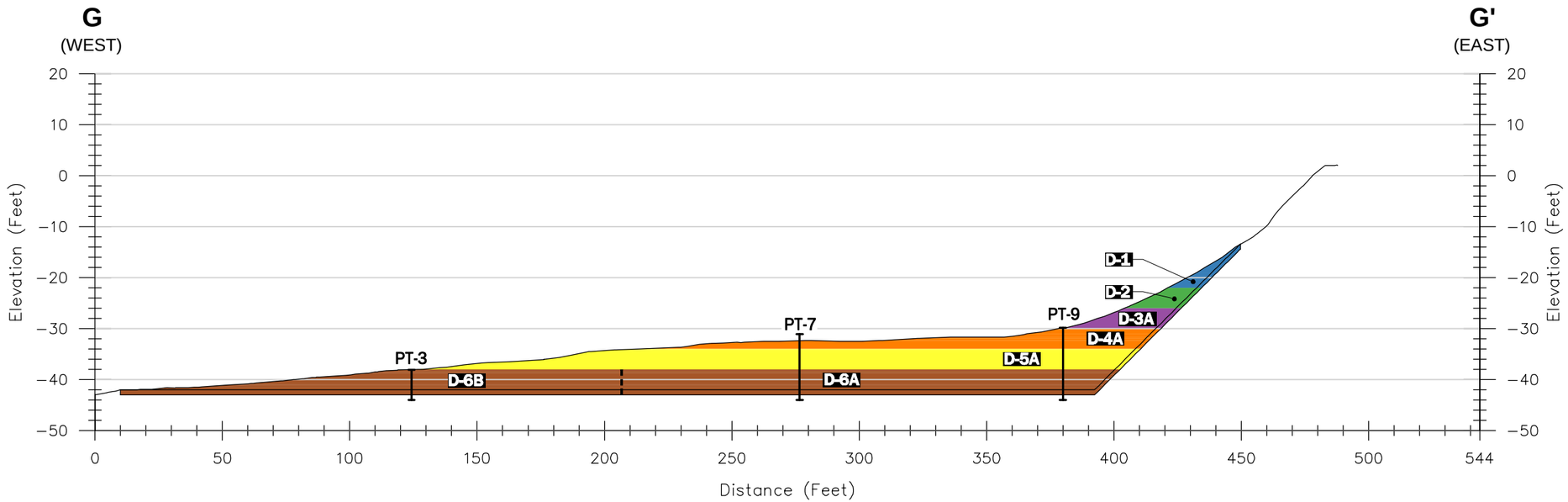
Figure 5





Legend

- DMMU Vertical Boundary
- D-1 DMMU Identification

DMMU Elevation Boundaries

- Existing Grade to -22 feet MLLW
- -22 to -26 feet MLLW
- -26 to -30 feet MLLW
- -30 to -34 feet MLLW
- -34 to -38 feet MLLW
- -38 to -43 feet MLLW

Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

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50 0 50
Horizontal Scale in Feet

25 0 25
Vertical Scale in Feet
Vertical Exaggeration: 2X

Cross-Sections F-F' and G-G'

Weyerhaeuser Mill A Former Site
Everett, Washington

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Figure 6

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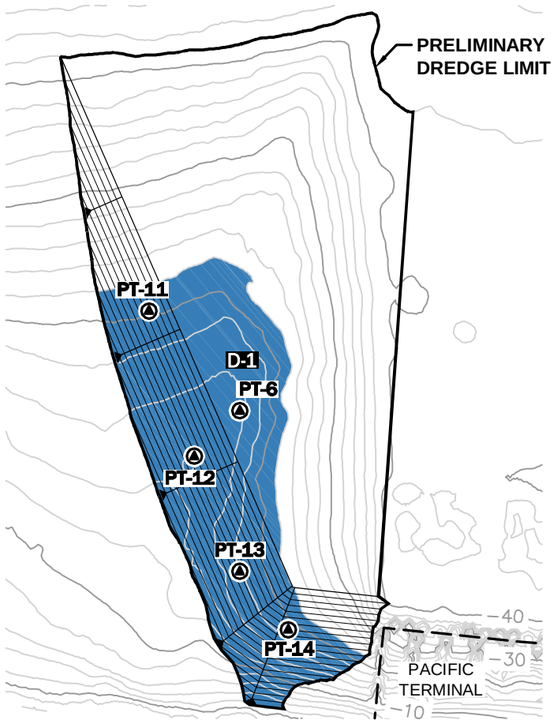

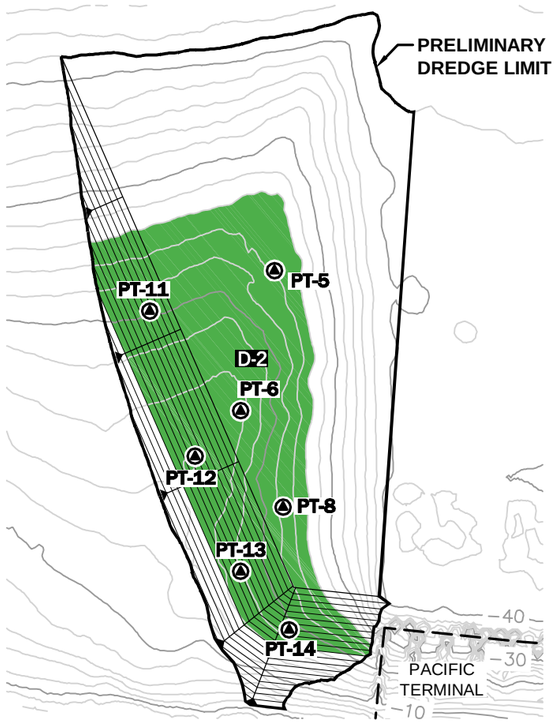

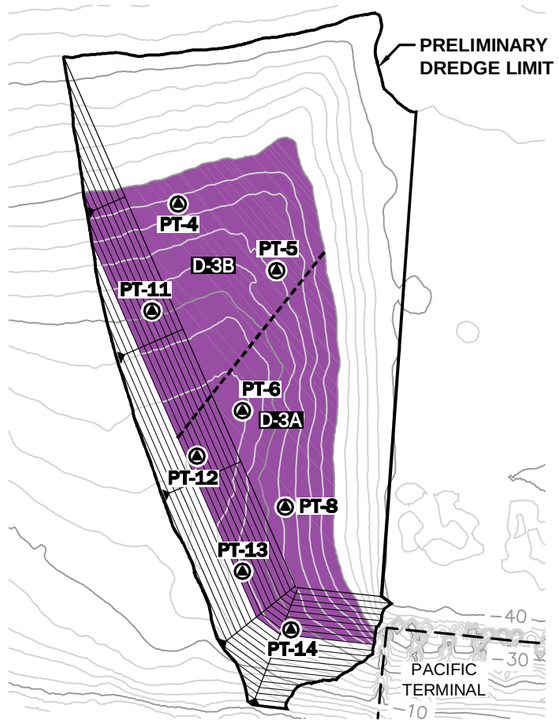

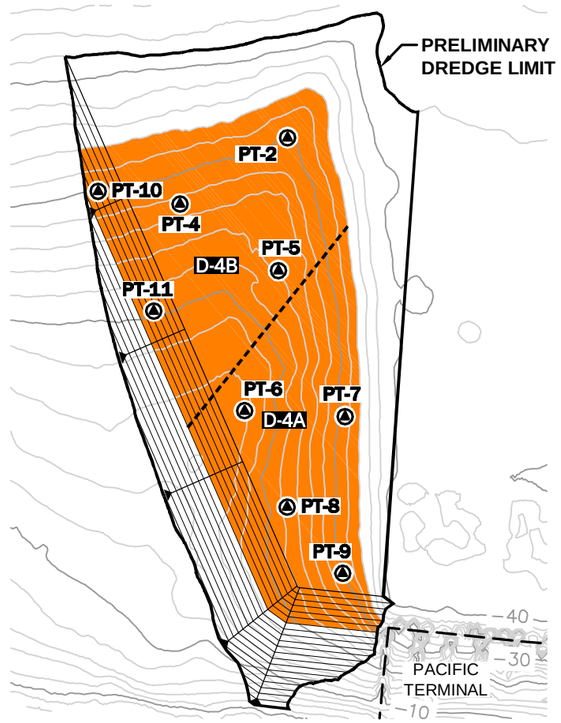

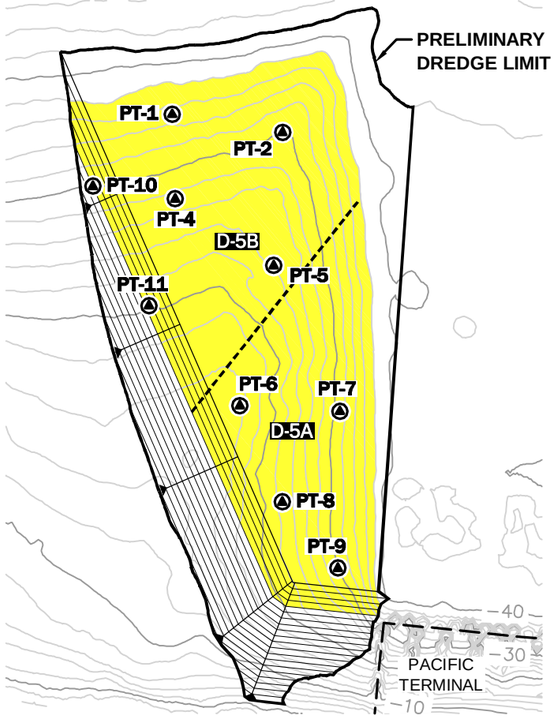

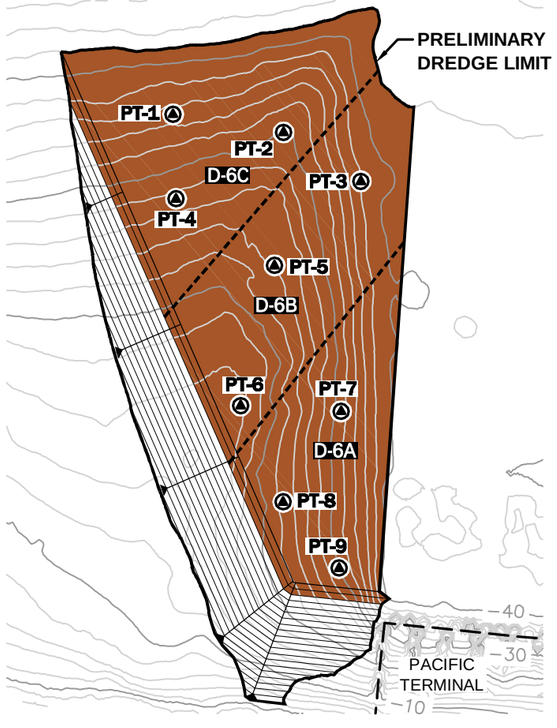

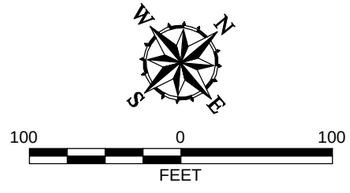

Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

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Legend

PT-1 — Proposed Sediment Core Location

DMMU Vertical Boundary

D-1 — DMMU Identification

DMMU Elevation Boundaries

- Existing Grade to -22 feet MLLW
- -22 to -26 feet MLLW
- -26 to -30 feet MLLW
- -30 to -34 feet MLLW
- -34 to -38 feet MLLW
- -38 to -43 feet MLLW

Plan View of DMMU Boundaries

Weyerhaeuser Mill A Former Site
Everett, Washington

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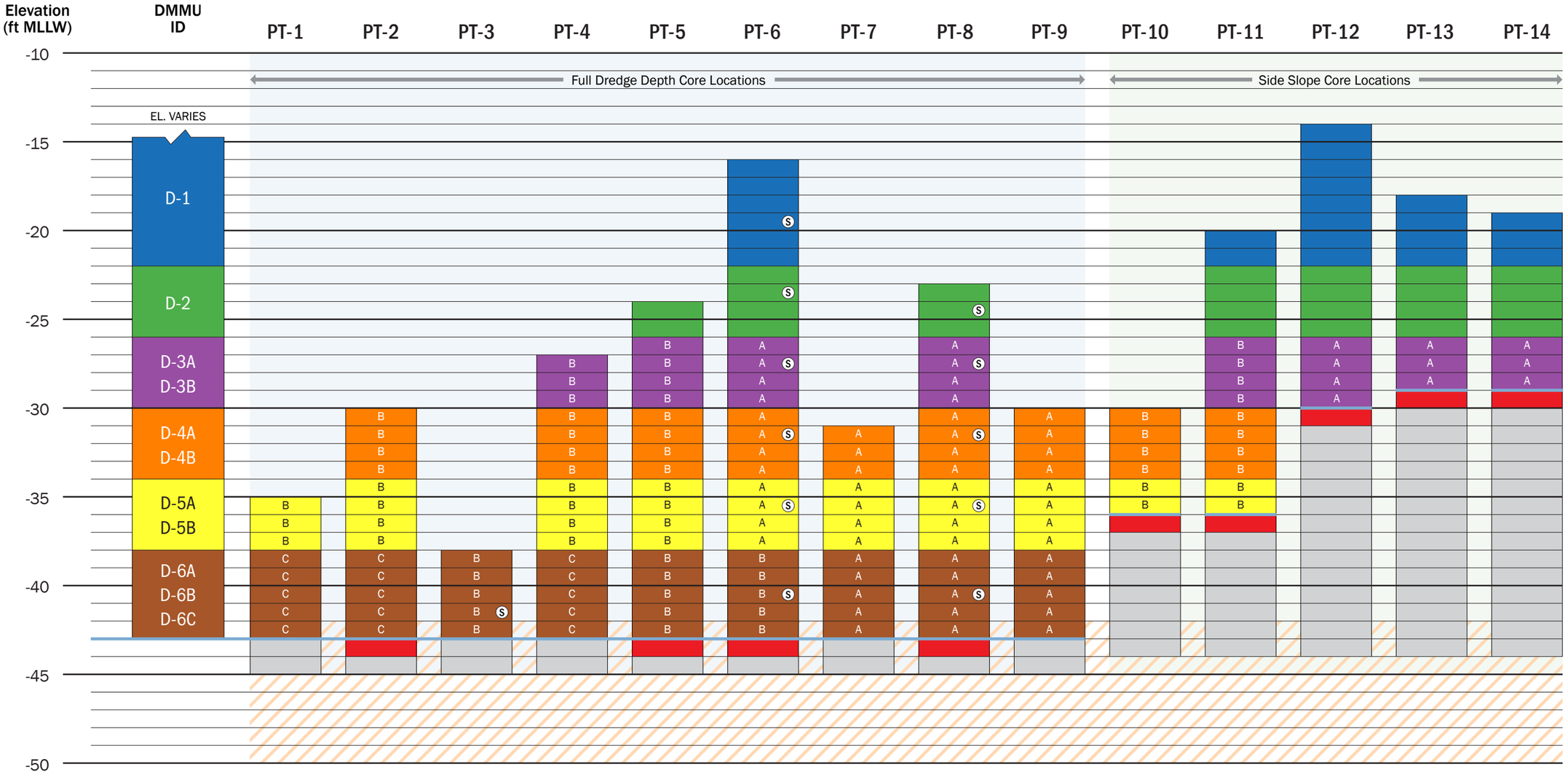
Figure 7

P:\0\0676020\03\CAD\SAP\PLAN VIEW OF DMMU.DWG\TAB:AA CC MODIFIED BY TMICHAUD ON DEC 16, 2014 - 9:29

Sediment Core Location



Notes:

The top of each sediment core is shown at the existing mudline elevation for the core location.

The assumed native horizon for this graphic is -42 ft MLLW. Each sample core will be penetrated to a minimum depth of 2-ft into the native horizon or 2-ft beyond the over-dredge limit, whichever is deeper.

Sample locations within the dredge prism side slope will be completed to a minimum of 2-ft below the native horizon. If the native horizon is encountered before reaching the anticipated side slope, the sample will be completed a minimum of 10 ft below the anticipated side slope.

DMMU = Dredged Material Management Unit
FT = Feet
MLLW = Mean Lower Low Water

Legend:

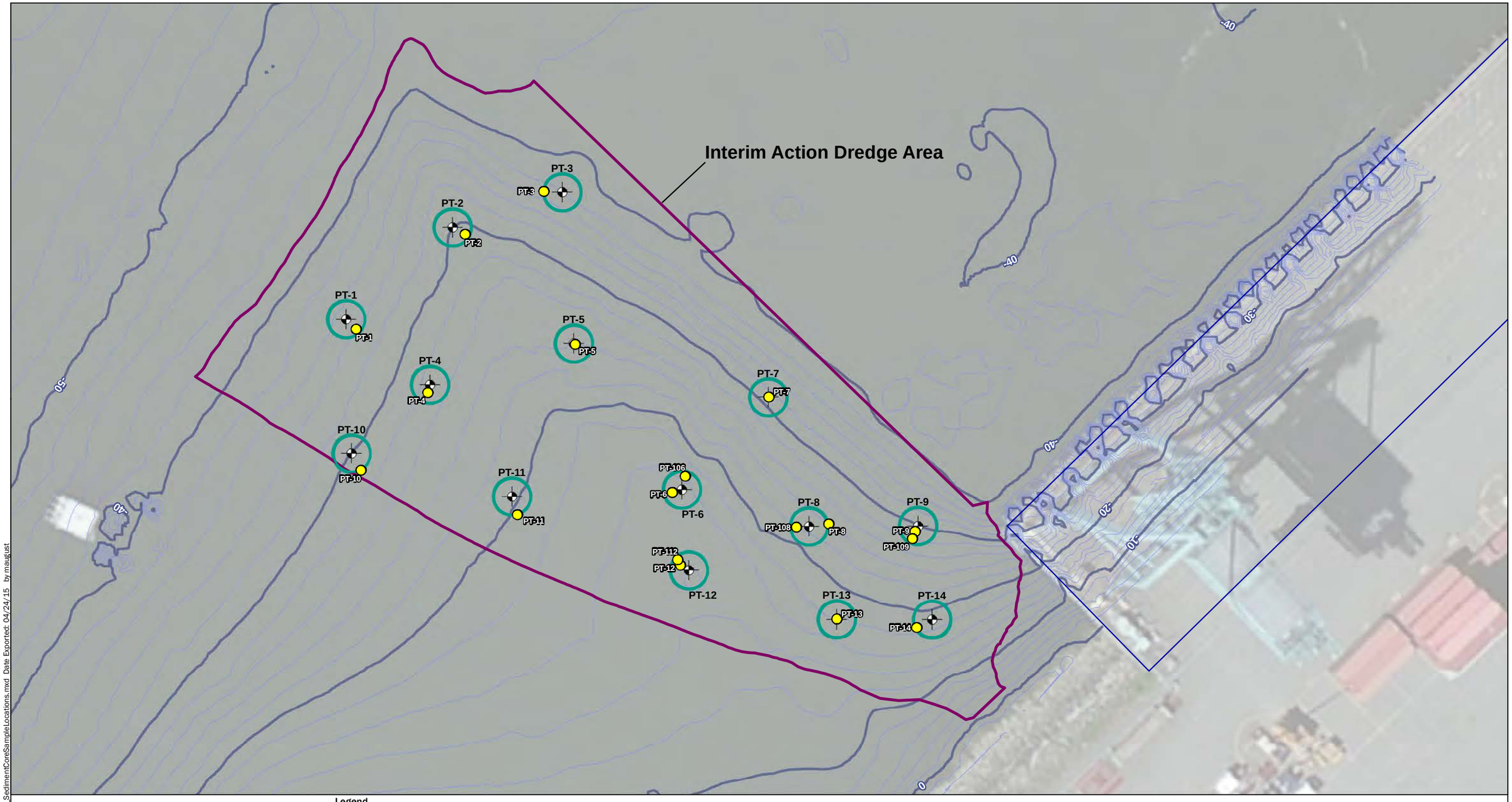
- Dredge Limit (including overdredge allowance)
- Anticipated Native Horizon (assumed at -42 ft MLLW)
- 1-ft sample interval to be collected and used as composite material for corresponding color DMMU and individually archived for possible followup analysis
- 1-ft sample interval to be collected and archived
- 1-ft sample interval to be collected and analyzed for characterization of exposed surface
- (S) Sample to be collected and analyzed for total sulfides

Sediment Core Sampling and Compositing Plan

Weyerhaeuser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 8



Notes:
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Data Source:

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Proposed Core Location
- Actual Core Location
- 10-ft Radius from Proposed Location

N W E S

50 0 50
Feet

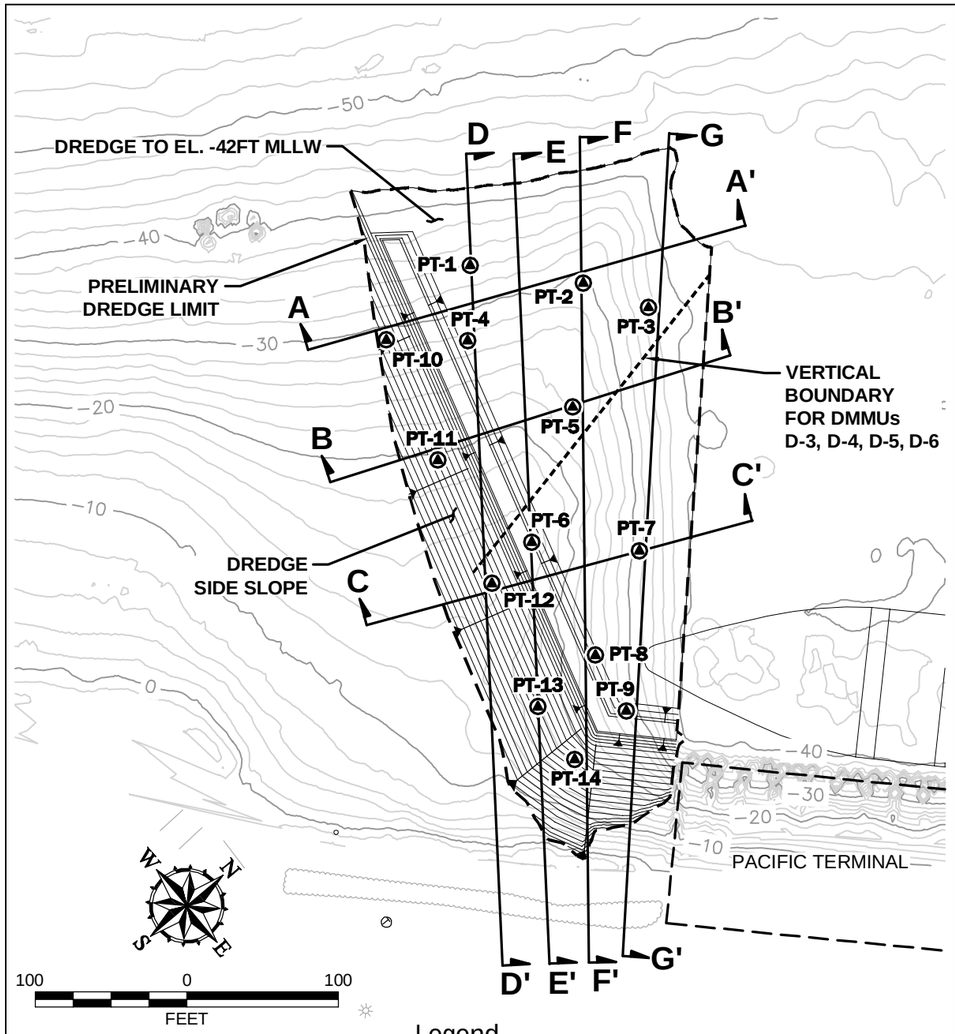
Sediment Core Sample Location

Weyerhaeuser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 9

\\sea\projects\0\0676020\GIS\0676020001_SedimentCoreSampleLocations.mxd Date Exported: 04/24/15 by maugust



Legend

PT-1	Sediment Core Location
	DMMU Boundary
D-1	DMMU Identification
A A'	Cross-Section Location

DMMU Elevation Boundaries

D-1	Existing Grade to -22 feet MLLW
D-2	-22 to -26 feet MLLW
D-3A & D-3B	-26 to -30 feet MLLW
D-4A & D-4B	-30 to -34 feet MLLW
D-5A & D-5B	-34 to -38 feet MLLW
D-6A & D-6B	-38 to -43 feet MLLW
D-7	Surface DMMU -34 to -43 feet MLLW

Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

Notes

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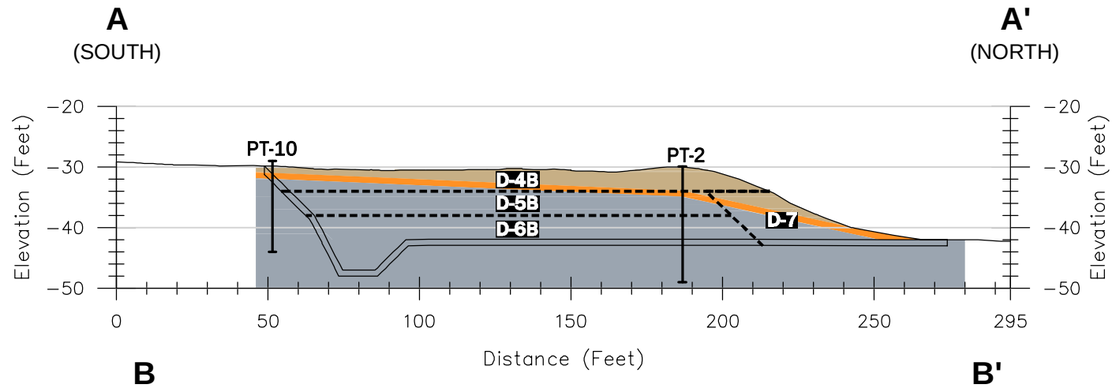
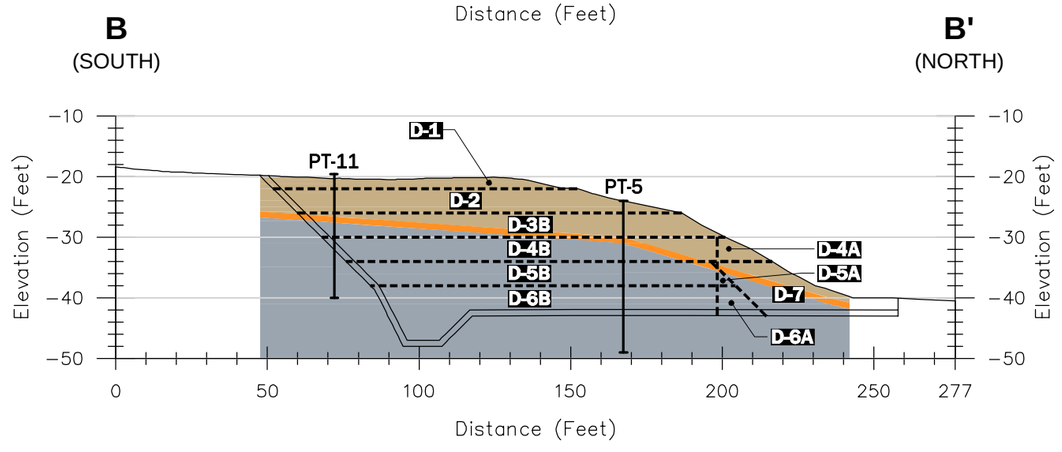
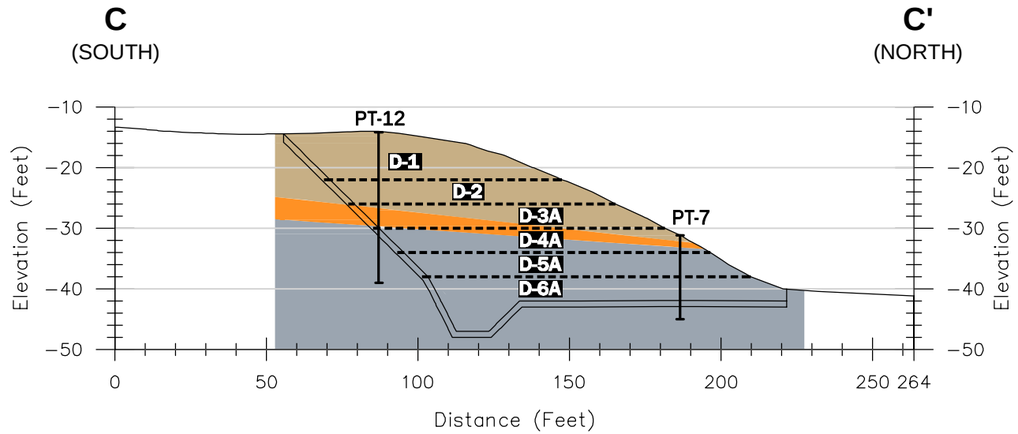






Silt and sand with wood debris greater than 50% by volume (wood debris includes sawdust, fragments of dimensional lumber and wood chips)

Silt/sand with occasional wood debris (less than 50% by volume)

Gray silty sand (native material)

50 0 50
Horizontal Scale in Feet

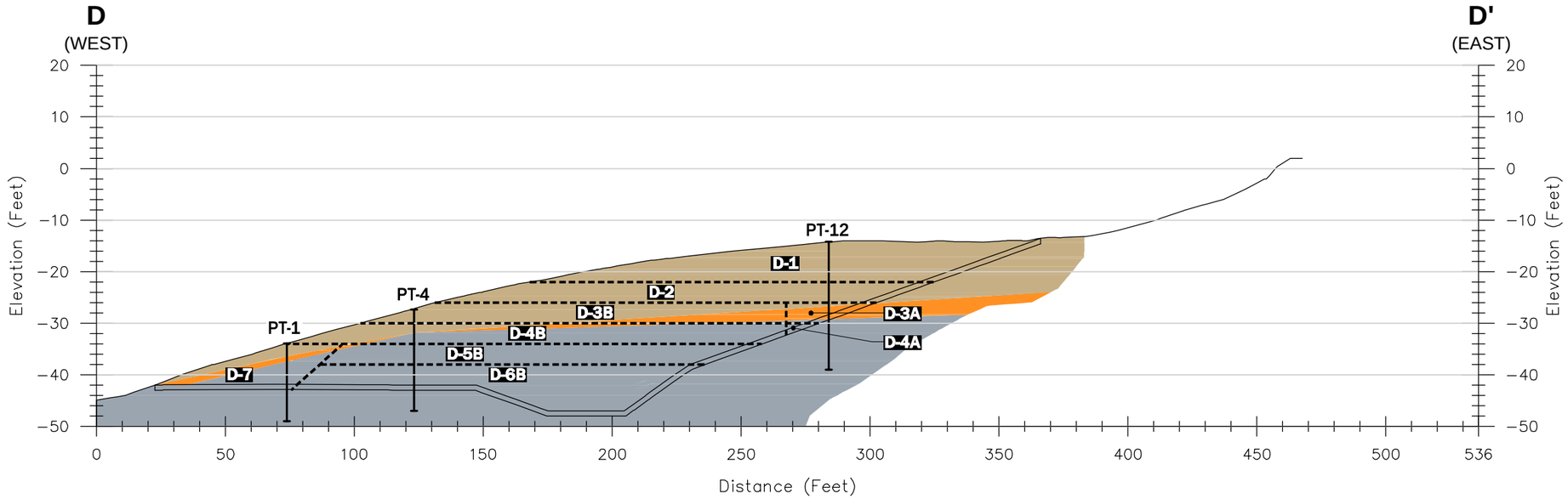
25 0 25
Vertical Scale in Feet
Vertical Exaggeration: 2X

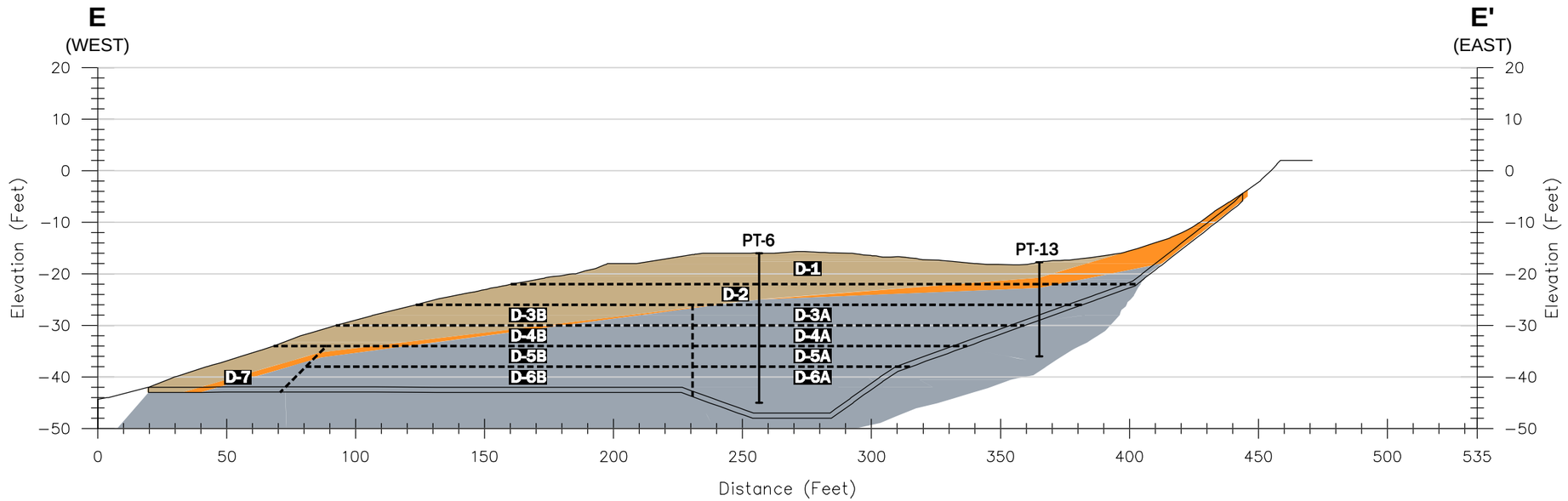
Summary of Stratigraphy - Cross-Sections A-A' through C-C'

Weyerhaeuser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 10





Legend

- DMMU Boundary
- D-1 DMMU Identification
- Silt and sand with wood debris greater than 50% by volume (wood debris includes sawdust, fragments of dimensional lumber and wood chips)
- Silt/sand with occasional wood debris (less than 50% by volume)
- Gray silty sand (native material)

DMMU Elevation Boundaries

- D-1 Existing Grade to -22 feet MLLW
- D-2 -22 to -26 feet MLLW
- D-3A & D-3B -26 to -30 feet MLLW
- D-4A & D-4B -30 to -34 feet MLLW
- D-5A & D-5B -34 to -38 feet MLLW
- D-6A & D-6B -38 to -43 feet MLLW
- D-7 Surface DMMU -34 to -43 feet MLLW

Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

Notes

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50 0 50
Horizontal Scale in Feet

25 0 25
Vertical Scale in Feet
Vertical Exaggeration: 2X

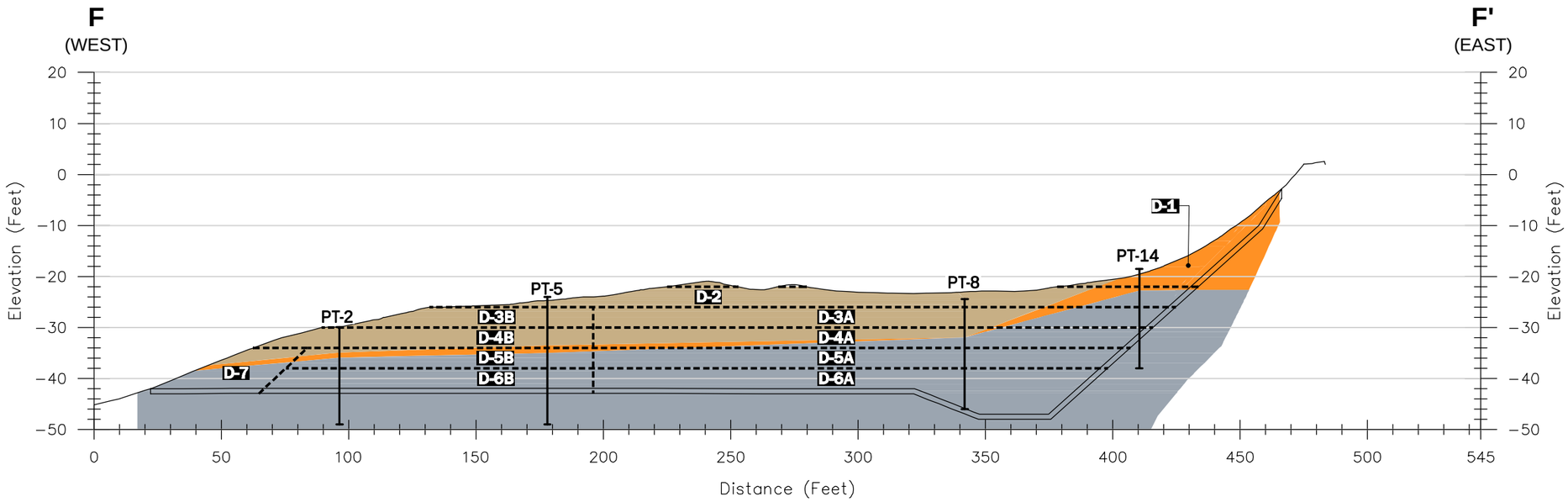
Summary of Stratigraphy - Cross-Sections D-D' and E-E'

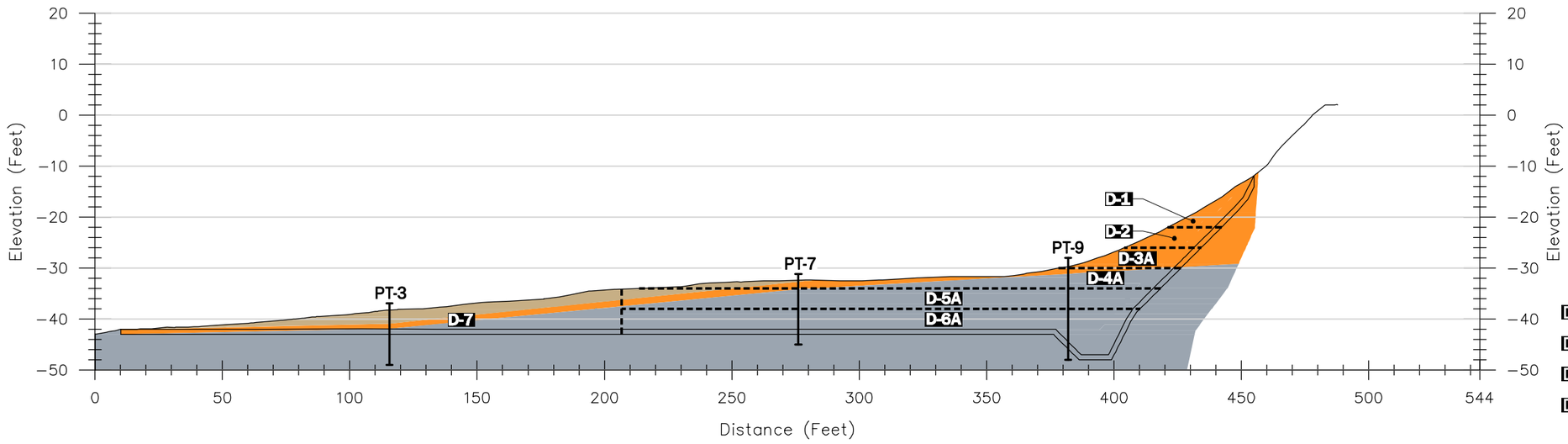
Weyerhaeuser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 11

P:\0106760203\CAD\Dredge Material Characterization Report\Figs 3-5 Site Plan and Sections.dwg\TAB:DDEE modified by TMichaud on Jun 02, 2015 - 9:07





Legend

- DMMU Boundary
- D-1 — DMMU Identification
- Silt and sand with wood debris greater than 50% by volume (wood debris includes sawdust, fragments of dimensional lumber and wood chips)
- Silt/sand with occasional wood debris (less than 50% by volume)
- Gray silty sand (native material)

DMMU Elevation Boundaries

D-1	Existing Grade to -22 feet MLLW
D-2	-22 to -26 feet MLLW
D-3A & D-3B	-26 to -30 feet MLLW
D-4A & D-4B	-30 to -34 feet MLLW
D-5A & D-5B	-34 to -38 feet MLLW
D-6A & D-6B	-38 to -43 feet MLLW
D-7	Surface DMMU -34 to -43 feet MLLW

Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

Notes

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50 0 50
Horizontal Scale in Feet

25 0 25
Vertical Scale in Feet
Vertical Exaggeration: 2X

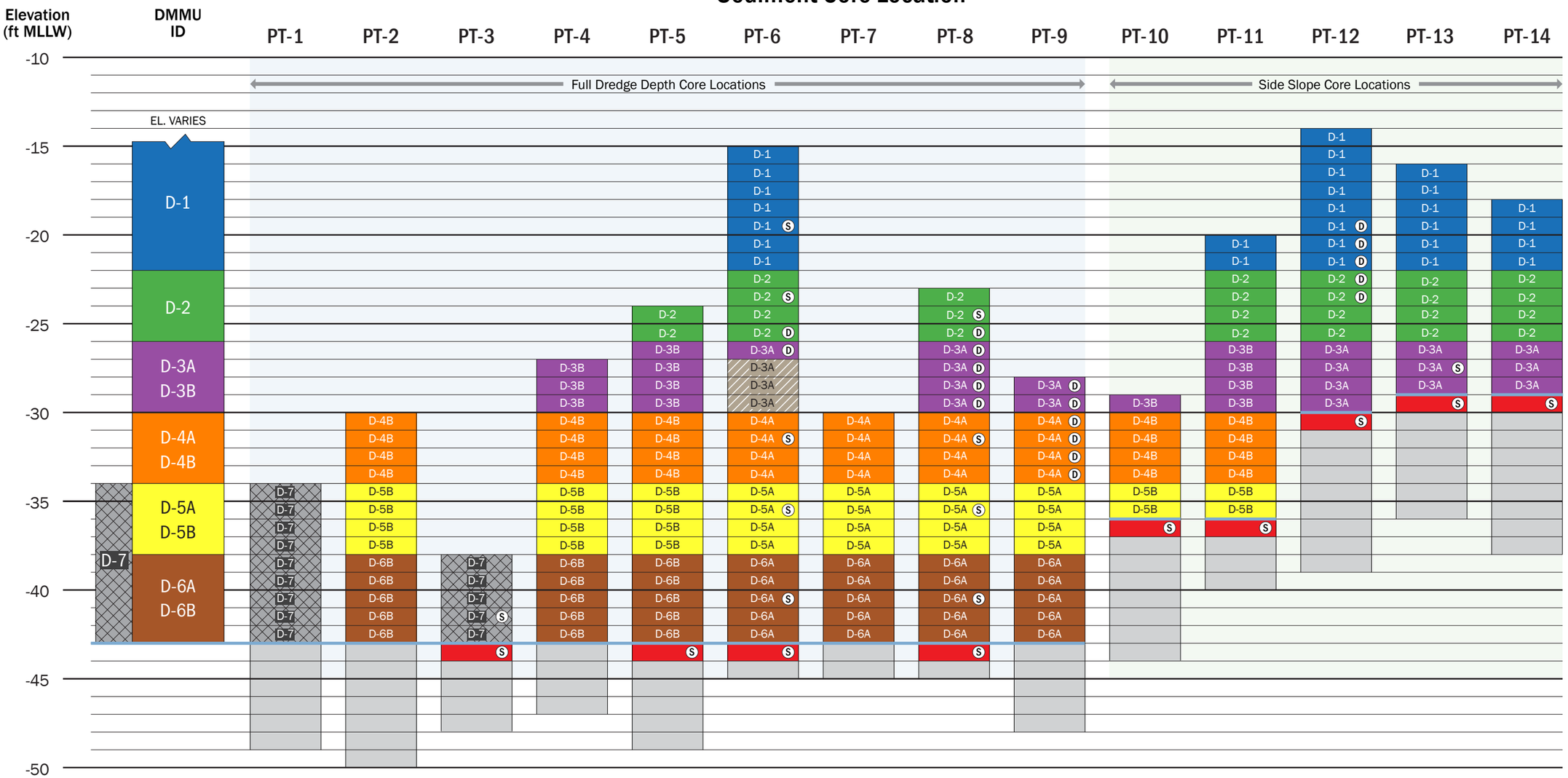
Summary of Stratigraphy - Cross-Sections F-F' and G-G'

Weyerhaeuser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 12

Sediment Core Location



Notes:

The top of each sediment core is shown at the existing mudline elevation for the core location.

Mudline elevations and maximum penetration depths are rounded to the nearest foot.

DMMU = Dredged Material Management Unit
FT = Feet
MLLW = Mean Lower Low Water

Legend:

- Dredge Limit (including overdredge allowance)
- 1-ft sample interval collected and used as composite material for corresponding color DMMU and individually archived
- 1-ft sample interval collected and archived
- 1-ft sample interval collected and analyzed for characterization of exposed surface (Z-layer)
- Sample interval not collected due to poor recovery
- (S) Sample collected and analyzed for total sulfides
- (D) Sample collected from duplicate core (i.e. 106, 108, 109, 112)

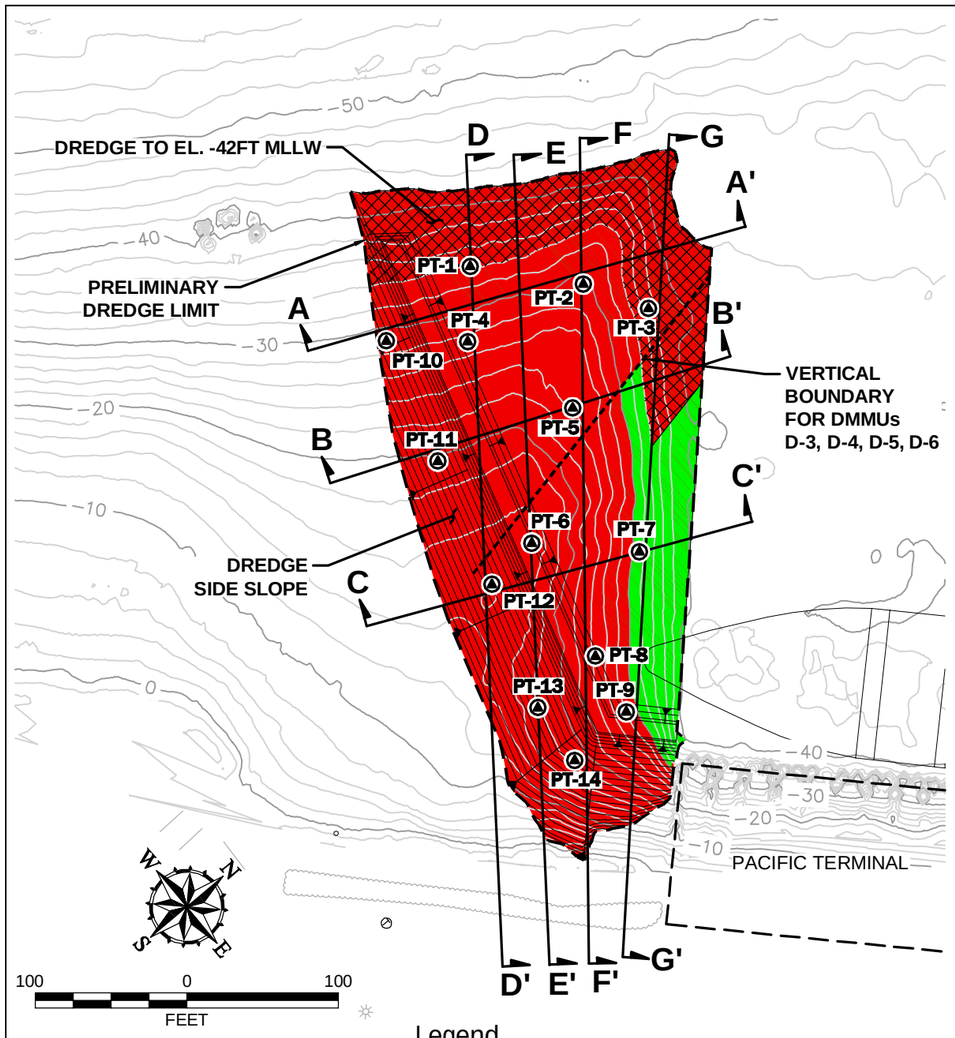
Sediment Core Sampling and DMMU Compositing Summary

Weyerhaeuser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 13

\\sea\projects\0\06760201\03\Figures\Figure 6 Mill a-sediment-core-sampling-and-dmmu-compositing-summary.ai Date Exported: 06-05/15 by spride



Legend

- PT-1 — Sediment Core Location
- DMMU Boundary
- D-1 — DMMU Identification
- A — A' — Cross-Section Location
- Chemical analytical results indicate one or more analytes exceeding screening levels.
- Chemical analytical results indicate no exceedances of screening levels.

DMMU Elevation Boundaries

- D-1 — Existing Grade to -22 feet MLLW
- D-2 — -22 to -26 feet MLLW
- D-3A & D-3B — -26 to -30 feet MLLW
- D-4A & D-4B — -30 to -34 feet MLLW
- D-5A & D-5B — -34 to -38 feet MLLW
- D-6A & D-6B — -38 to -43 feet MLLW
- D-7 — Surface DMMU -34 to -43 feet MLLW

Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

Notes

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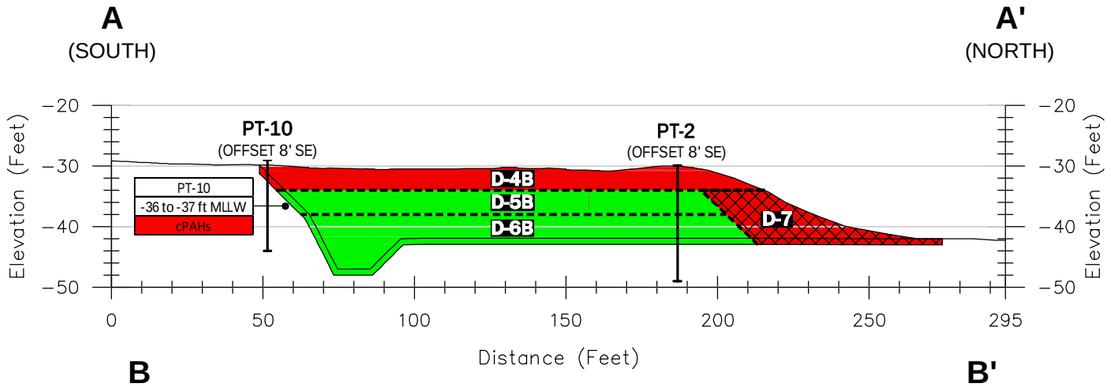
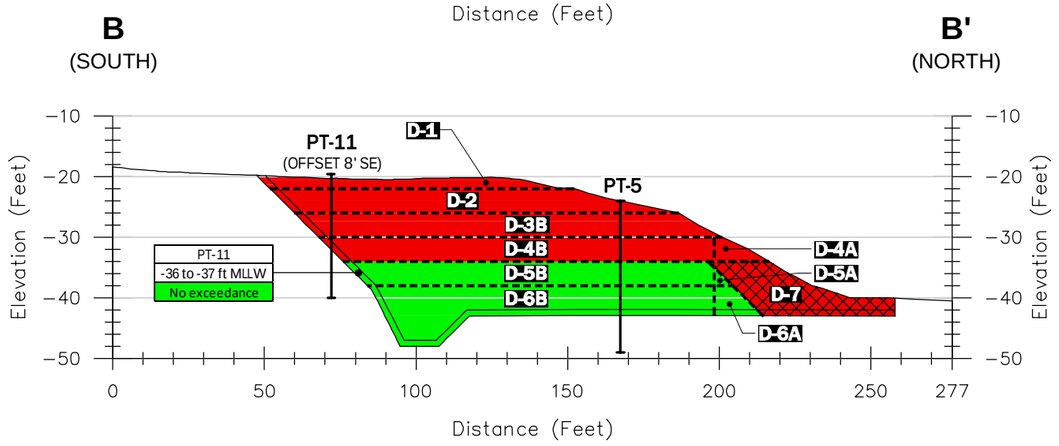
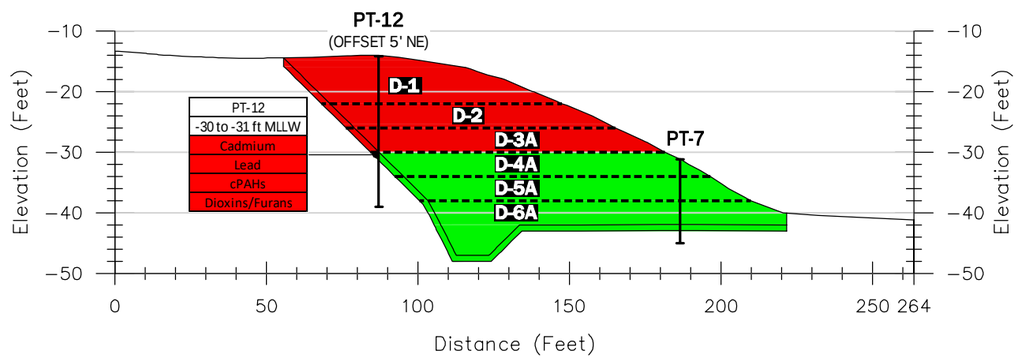






50 0 50
Horizontal Scale in Feet

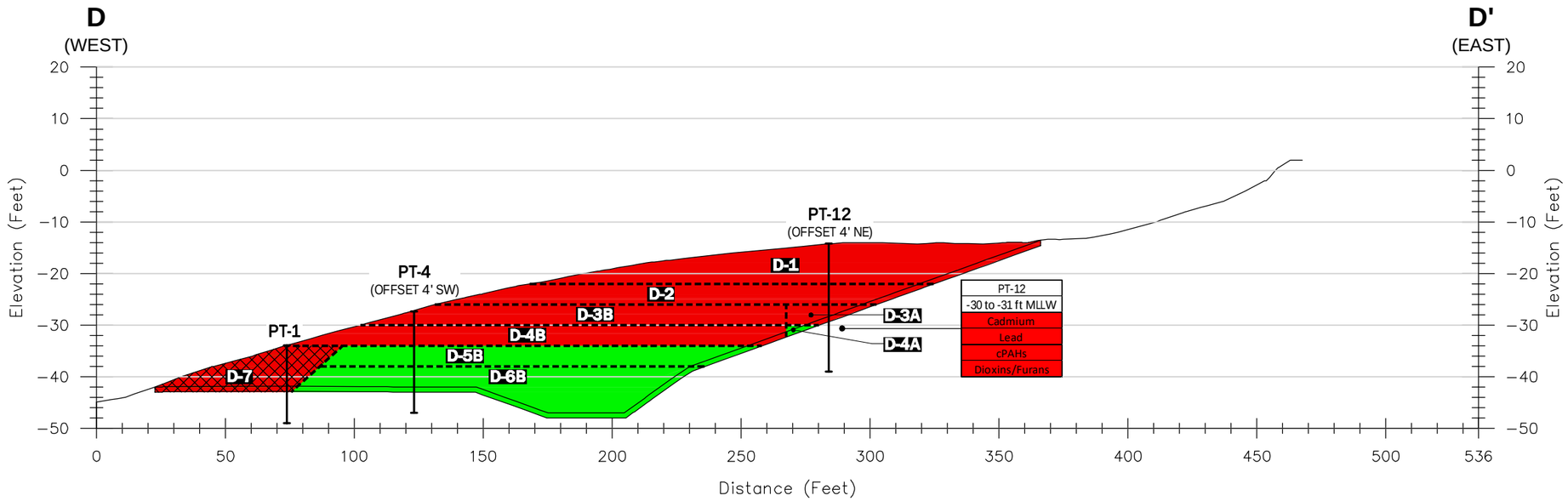
25 0 25
Vertical Scale in Feet
Vertical Exaggeration: 2X

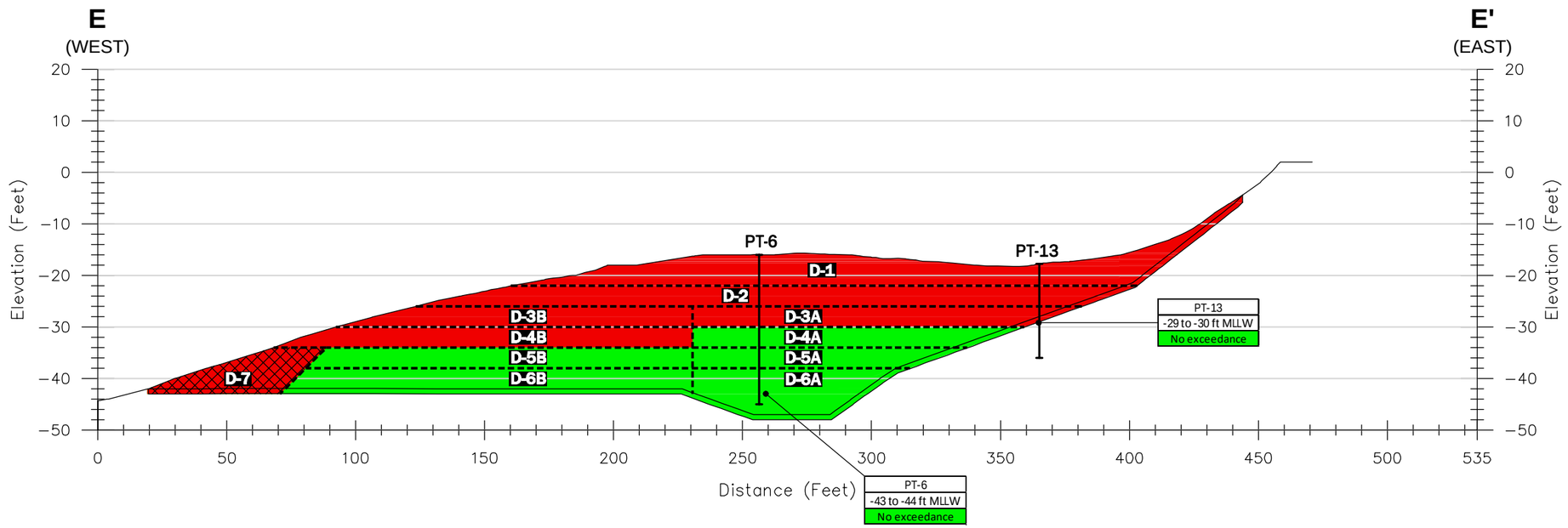
Chemical Analytical Results - Cross-Sections A-A' through C-C'

Weyerhaeuser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 14





Legend

- DMMU Boundary
- D-1 DMMU Identification
- Chemical analytical results indicate one or more analytes exceeding screening levels.
- Chemical analytical results indicate no exceedances of screening levels.

DMMU Elevation Boundaries

- D-1 Existing Grade to -22 feet MLLW
- D-2 -22 to -26 feet MLLW
- D-3A & D-3B -26 to -30 feet MLLW
- D-4A & D-4B -30 to -34 feet MLLW
- D-5A & D-5B -34 to -38 feet MLLW
- D-6A & D-6B -38 to -43 feet MLLW
- D-7 Surface DMMU -34 to -43 feet MLLW

Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

Notes

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50 0 50
Horizontal Scale in Feet

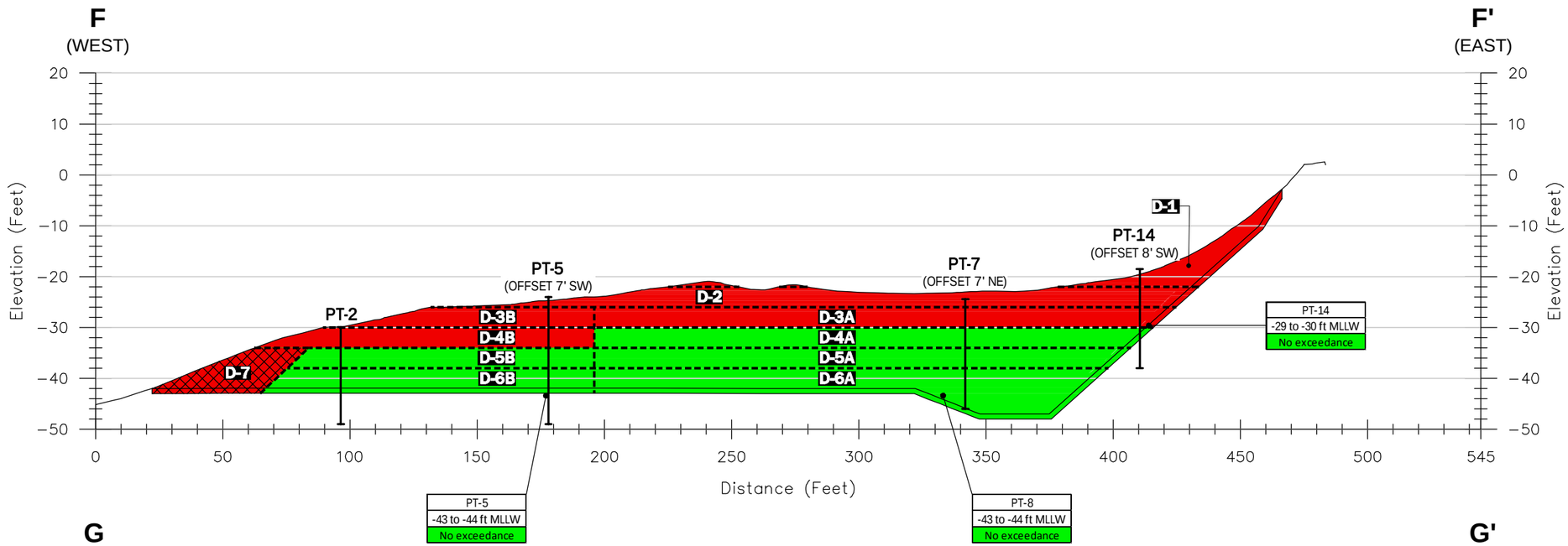
25 0 25
Vertical Scale in Feet
Vertical Exaggeration: 2X

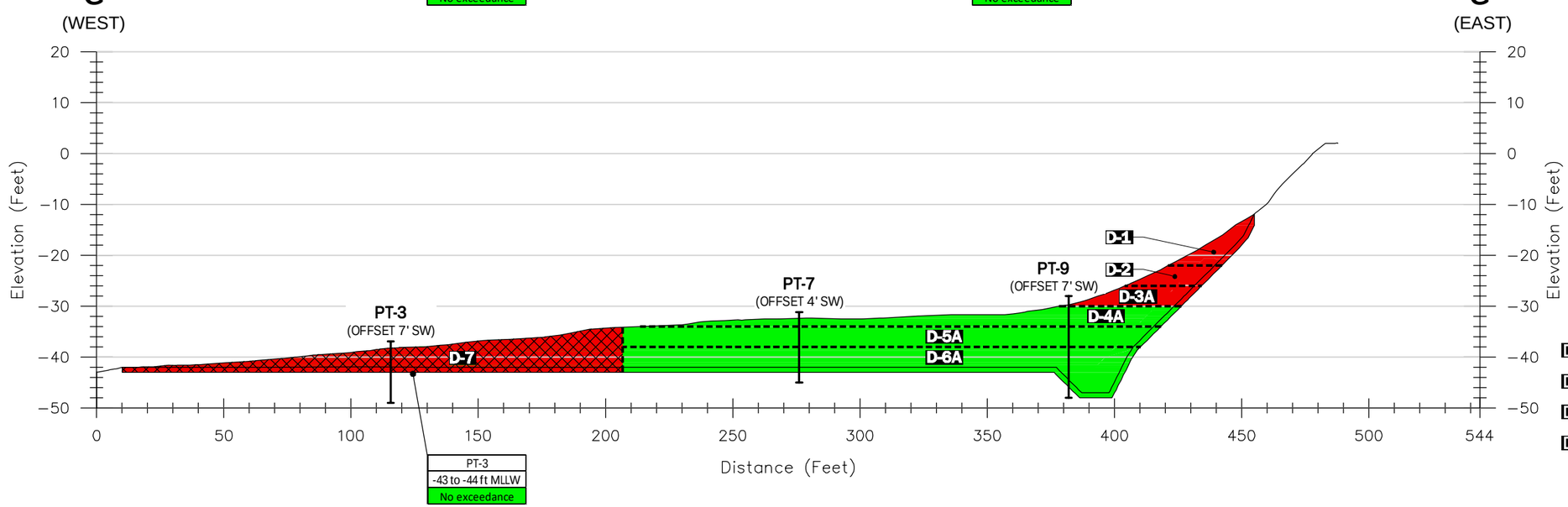
Chemical Analytical Results - Cross-Sections D-D' and E-E'

Weyerhaeuser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 15





Legend

- DMMU Boundary
- D-1 — DMMU Identification
- Chemical analytical results indicate one or more analytes exceeding screening levels.
- Chemical analytical results indicate no exceedances of screening levels.

DMMU Elevation Boundaries

D-1	Existing Grade to -22 feet MLLW
D-2	-22 to -26 feet MLLW
D-3A & D-3B	-26 to -30 feet MLLW
D-4A & D-4B	-30 to -34 feet MLLW
D-5A & D-5B	-34 to -38 feet MLLW
D-6A & D-6B	-38 to -43 feet MLLW
D-7	Surface DMMU -34 to -43 feet MLLW

Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

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50 0 50
Horizontal Scale in Feet

25 0 25
Vertical Scale in Feet
Vertical Exaggeration: 2X

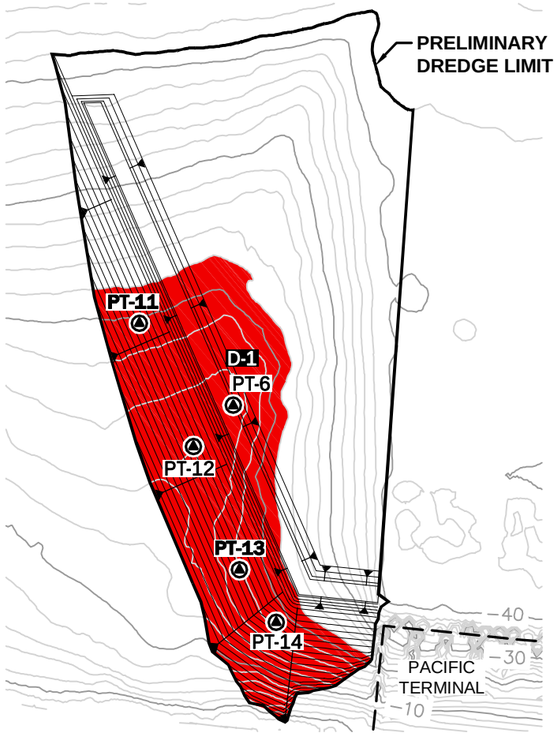
Chemical Analytical Results - Cross-Sections F-F' and G-G'

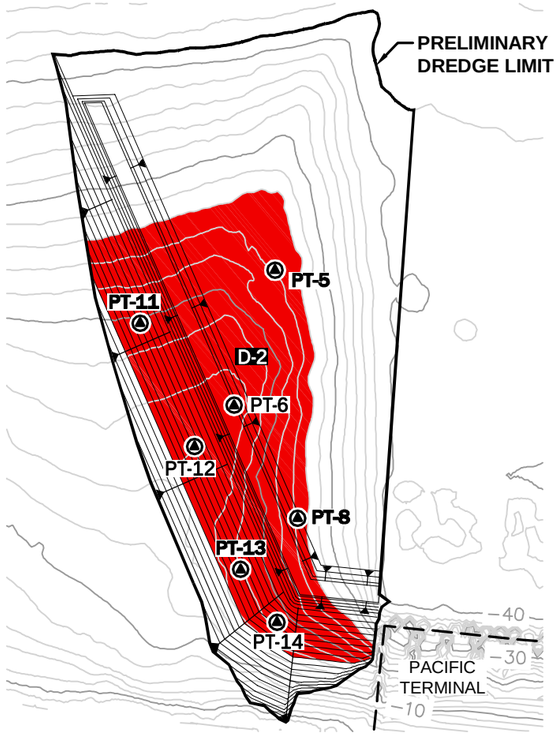
Weyerhaeuser Mill A Former Site
Everett, Washington

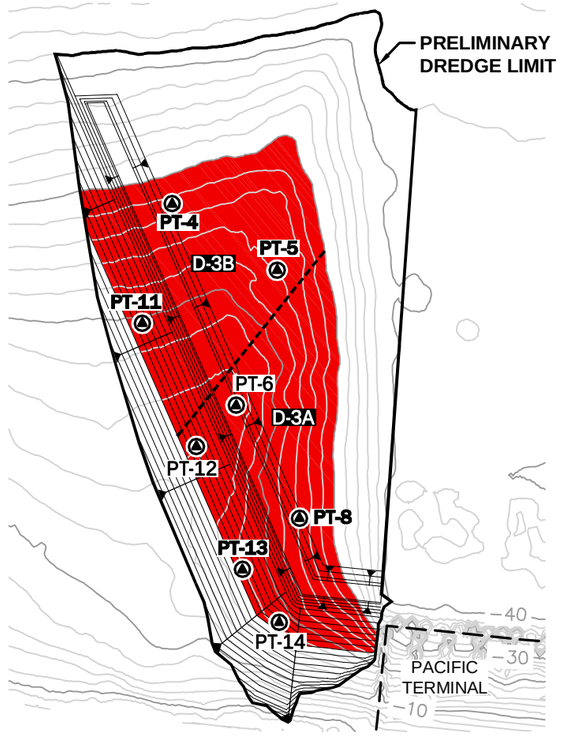
GeoEngineers

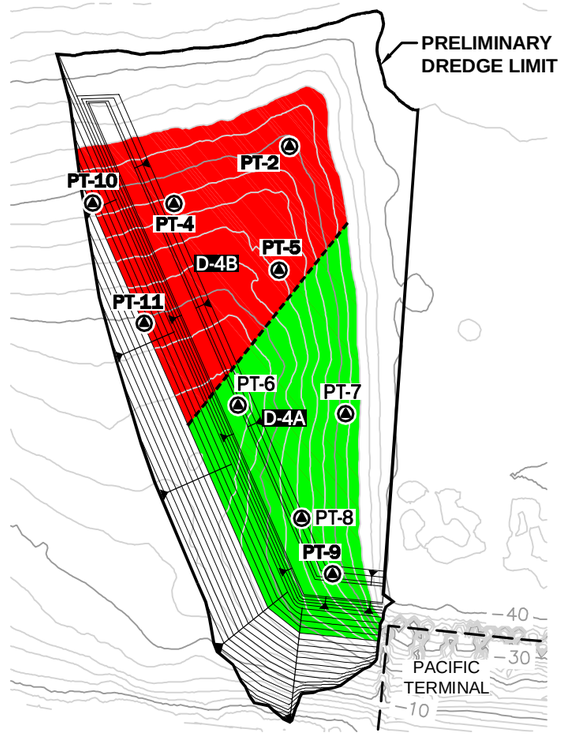
Figure 16

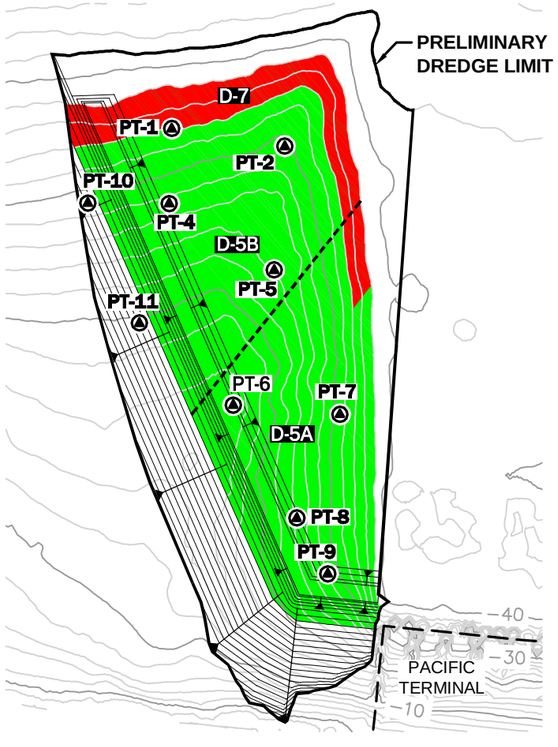
P:\0\067602003\CAD\Dredge Material Characterization Report\Figs 7-9 Sampling Plan Site Plan and Sections.dwg\TAB:FFGG modified by THICHAUD on Jun 04, 2015 - 13:54

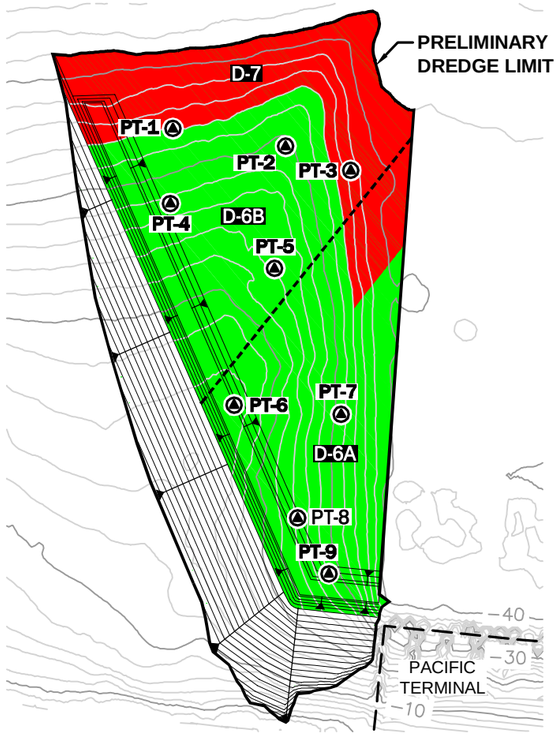






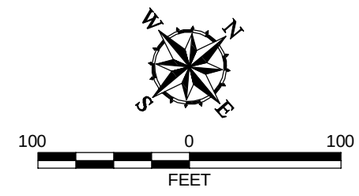






Legend

PT-1 ▲	Sediment Core Location
- - - - - - - -	DMMU Vertical Boundary
D-1	DMMU Identification
	Chemical analytical results indicate one or more analytes exceeding screening levels.
	Chemical analytical results indicate no exceedances of screening levels.
	DMMU Elevation Boundaries
D-1	Existing Grade to -22 feet MLLW
D-2	-22 to -26 feet MLLW
D-3A & D-3B	-26 to -30 feet MLLW
D-4A & D-4B	-30 to -34 feet MLLW
D-5A & D-5B	-34 to -38 feet MLLW
D-6A & D-6B	-38 to -43 feet MLLW
D-7	Surface DMMU -34 to -43 feet MLLW



Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

Notes

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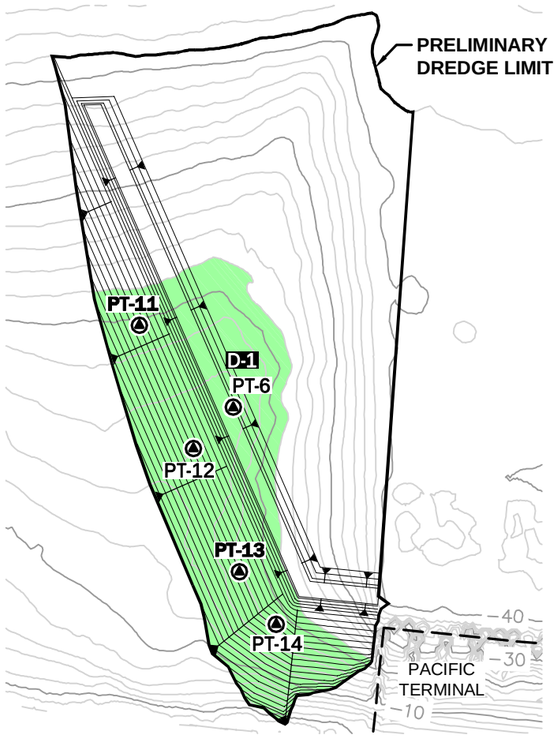
Chemical Analytical Results - Plan View

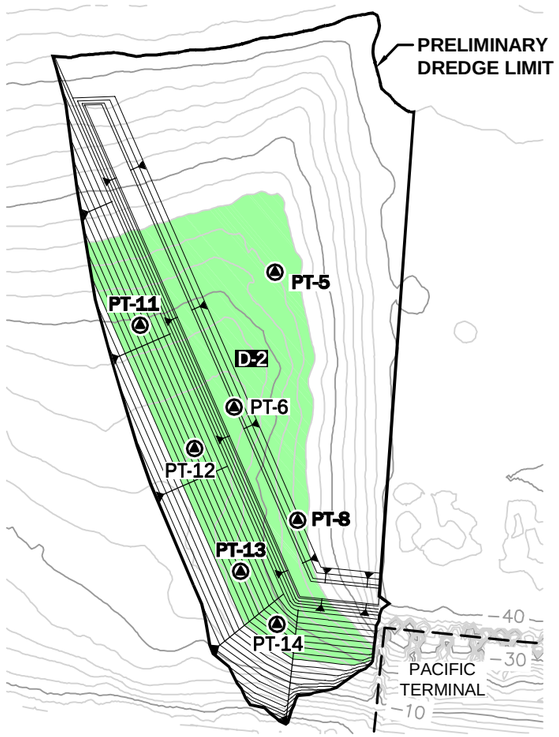
Weyerhaeuser Mill A Former Site
Everett, Washington

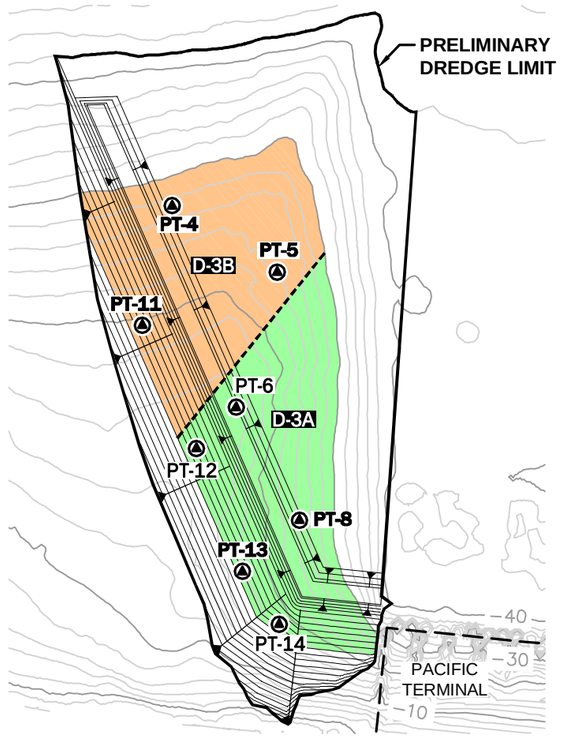
GeoEngineers

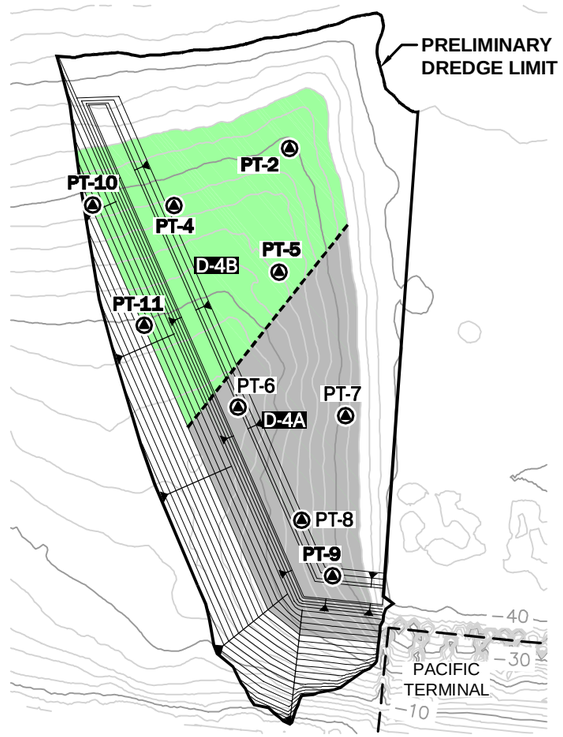
Figure 17

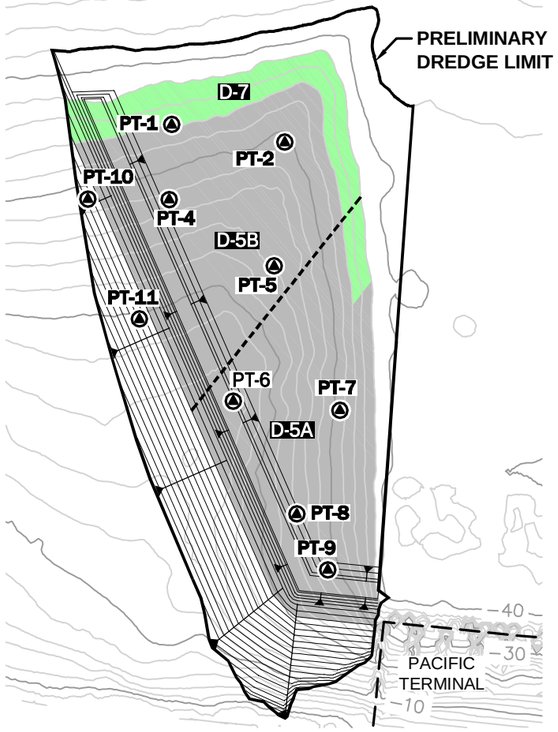
P:\0\067602\03\CAD\Dredge Material Characterization Report\Figs 10 Plan View of DMMU.dwg\TAB:AA CC modified by TMichaud on Jun 02, 2015 - 9:11

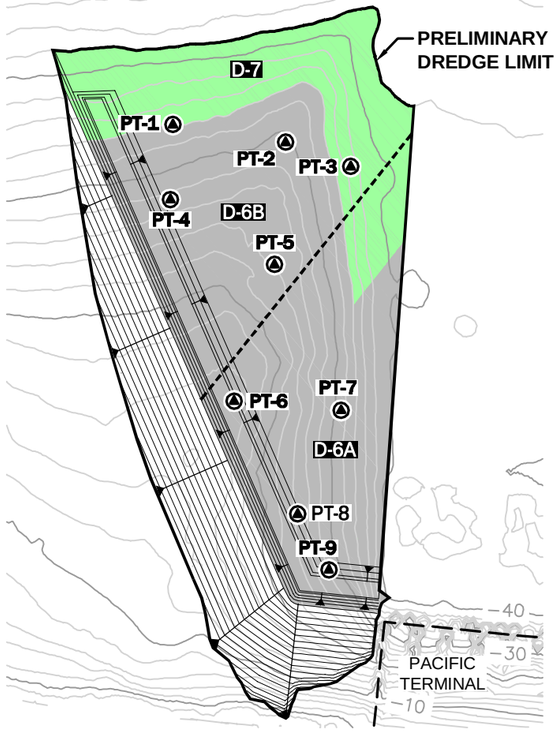










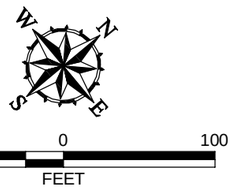


Legend

PT-1	Sediment Core Location
	DMMU Vertical Boundary
D-1	DMMU Identification
	Bioassay testing results indicate overall failure relative to screening criteria.
	Bioassay testing results indicate pass relative to screening criteria.
	Bioassy testing not completed for DMMU.

DMMU Elevation Boundaries

D-1	Existing Grade to -22 feet MLLW
D-2	-22 to -26 feet MLLW
D-3A & D-3B	-26 to -30 feet MLLW
D-4A & D-4B	-30 to -34 feet MLLW
D-5A & D-5B	-34 to -38 feet MLLW
D-6A & D-6B	-38 to -43 feet MLLW
D-7	Surface DMMU -34 to -43 feet MLLW



Data Source: Bathymetry from Pacific Geomatic Services, Inc., Completed September 2014.

Notes

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Biological Testing Results - Plan View

Weyerhaeuser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 18

DEPARTMENT OF THE ARMY PERMIT

Permittee: Port of Everett

P.O. Box 538
Everett, Washington 98206

Permit No: NWS-2014-890

Issuing Office: Seattle District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: Dredge up to 40,000 cubic yards of sediment over 1.7 acres of waters of the U.S. to a depth of -43 feet mean lower low water (MLLW), including one foot of over-dredge. Armor rock along the shoreline between elevations of -2 and -43 feet MLLW will be removed to enable dredging. The southeastern edge of the dredge prism will be dredged to a maximum of -48 feet MLLW, including one foot of over-dredge, to create a trench for the foundation of a 2:1 rock slope that would cover and contain contaminated sediment adjacent to the dredging area. Up to 4,000 cubic yards of suitably sized (3-foot-diameter) rock at the site would be combined with additional similarly sized rock and placed over up to 23,000 square feet of waters of the U.S. Up to 200 cubic yards of sand and gravel "habitat mix" will be placed over 3,600 square feet of the shoreward end of the rock slope between -4 and -20 feet MLLW.

Dredging will be conducted using a clamshell dredge operated from the pier or a barge. Up to 22,790 cubic yards of dredged material unsuitable for in-water disposal will be disposed at an approved upland landfill site. The remaining 17,210 cubic yards of dredged material will be disposed at the Port Gardner open-water disposal site.

All work shall be conducted in accordance with the plans and drawings, dated June 12, 2015, attached hereto, which are incorporated in and made a part of this permit. The purpose of the project is to expand the berthing capacity at the Port of Everett to support larger ships.

Project Location: In Port Gardner Bay at the Port of Everett's Pacific Terminal in Everett, Washington.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on APR 15 2019. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least 1 month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in accordance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification to this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

7. After a detailed and careful review of all the conditions contained in this permit, the permittee acknowledges that, although said conditions were required by the U.S. Army Corps of Engineers, nonetheless the permittee agreed to those conditions voluntarily to facilitate issuance of the permit; the permittee will comply fully with all the terms of all the permit conditions.

Special Conditions:

a. You must provide a copy of the permit transmittal letter, permit form, and drawings to all contractors performing any of the authorized work.

b. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

The following Special Conditions are added to the permit to ensure compliance with the ESA:

c. You must implement and abide by the Endangered Species Act (ESA) requirements and/or agreements set forth in the Biological Evaluation, *Mill 'A' Interim Cleanup Action, Pacific Terminal, Port of Everett*, dated June 15, 2015, in their entirety. The National Marine Fisheries Service (NMFS) concurred with a finding of "may affect, not likely to adversely affect" based on this document on October 16, 2015 (NMFS Reference Number WCR-2015-3569). The U.S. Fish and Wildlife Service (USFWS) concurred with a finding of "may affect, not likely to adversely affect" based on this document on November 4, 2015 (USFWS Reference Number 01EWFW00-2015-I-095). Both agencies will be informed of this permit issuance. Failure to comply with the commitments made in this document constitutes non-compliance with the ESA and your Department of the Army permit. The USFWS and NMFS are the appropriate authorities to determine compliance with the ESA.

d. In order to meet the requirements of the Endangered Species Act and protect Puget Sound Chinook, Puget Sound steelhead, and Coastal-Puget Sound bull trout, the permittee may conduct the authorized activities from 16 July through 15 February in any year this permit is valid. You shall not conduct work authorized by this permit from 16 February through 15 July in any year this permit is valid.

The following Special Conditions are added to the permit to ensure compliance with the 2008 Mitigation Rule:

e. You shall implement and abide by the *"Mitigation Plan – Mill 'A' Cleanup Action/Berth Deepening"* dated November 20, 2015, and provide an updated copy of the *Advance Mitigation Site Ledger,* as depicted in Table 1 of the mitigation plan showing that 0.016 of an acre has been deducted from the Port of Everett's Union Slough Restoration Site for use as advance permittee-responsible mitigation for this project. This ledger form must be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch within 60 days of permit issuance and reference permit number NWS-2014-890.

f. Your responsibility to complete the required compensatory mitigation as set forth in Special Condition "e" will not be considered fulfilled until you have demonstrated mitigation success and received written verification of that success from the U.S. Army Corps of Engineers, Seattle District.

The following Special Conditions are added to the permit to ensure compliance with the DMMP:

g. At least 14 days prior to beginning the dredging and disposal work, you must notify the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch project manager by telephone at (206) 764-6695 to schedule a pre-dredge meeting.

h. At least 7 days prior to the scheduled pre-dredge meeting, you must submit to the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch Project Manager, a quality control plan for dredging and disposal. This plan must include: the equipment and vessels to be used, operational controls to ensure dredging accuracy, disposal positioning procedures, spill control and response measures, water quality monitoring and contingency plans for exceeding water quality standards, debris management, personnel and responsibilities, dredging and disposal schedule, report submittals, agency contact information and coordination procedures. The plan must be approved by the Corps, Washington State Department of Natural Resources, and the Washington State Department of Ecology prior to commencement of open-water disposal.

i. At least 7 days prior to dredging and disposal, you, the dredging contractor's representative, and the dredging contractor's disposal positioning supervisor must attend a pre-dredge meeting to review the Department of the Army permit conditions, dredging and disposal quality control plan, Washington State Department of Natural Resources Site-Use Authorization and Water Quality Certification.

j. A pre-disposal dry run may be required by the U.S. Army Corps of Engineers (Corps). At the discretion of the Corps, the Regulatory Branch project manager may ride out to the disposal site during the predisposal dry run or the first disposal run to verify positioning accuracy.

k. Open-water disposal must be by bottom-dump barge. Disposal by any other means is prohibited.

l. Disposal operations must not interfere with Indian treaty fishing at the disposal site, including gill nets and other fishing gear. You must coordinate any proposed nighttime disposal with the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch project manager. Approval must be received from the Corps prior to conducting nighttime disposal.

m. The U.S. Coast Guard must be notified by email at D13-PF-LNM@uscg.mil at least 14 days prior to commencing dredging operations, so the project information can be issued in the Local Notice to Mariners. Dredging operations north of a line between Bush Point on Whidbey Island and Nodule Point on Marrowstone Island must monitor VHF-FM Channels 13 and 5A. Dredging operations south of this line must monitor VHF-FM Channels 13 and 14.

n. The U.S. Coast Guard (USCG) Puget Sound Vessel Traffic Service, also known as "Seattle Traffic", must be contacted by radio prior to each disposal for positioning and verification of location within the disposal site target area. Disposal may not commence until verification is received from the USCG. Information required by the USCG must be provided for recording of the dump.

o. You must have a copy of this permit available on the vessel used for the authorized transportation and disposal of the dredged material.

p. Any deviations from the authorized dredging footprint or depths must be reported to the Regulatory Branch project manager within 24 hours of discovery.

q. Plotted results of the post-dredge bathymetric survey shall be submitted to the U.S. Army Corps of Engineers, Seattle District, Dredged Material Management Office and Regulatory Branch in PDF format within 30 days of completion of dredging. Results must clearly display the post-dredge sediment surface in relation to the permitted dredge boundary and depth, as well as the location of project features such as docks, wharfs and other landmarks. The vertical datum must be clearly indicated. Full bathymetric survey data must be submitted upon request.

r. A post-dredge report shall be submitted to the U.S. Army Corps of Engineers, Seattle District, Dredged Material Management Office and Regulatory Branch within 30 days of completion of dredging and include the volume and location of in-water disposal and the volume and location of material placed in uplands.

s. If dredging cannot be completed prior to the "Recency Determination" date specified in the Dredged Material Management Program (DMMP) suitability determination dated July 9, 2015, the U.S. Army Corps of Engineers, Seattle District, Dredged Material Management Office (DMMO) must be contacted. The DMMO will coordinate with the other DMMP agencies to determine whether an extension to the recency period can be granted.

t. Dredged material found unsuitable for open-water disposal must be deposited at an upland site and comply with rules and regulations promulgated by the local health district, Washington State Department of Ecology (Ecology) and the landfill operator. The location of the disposal site must be provided to the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch (by phone, (206) 764-6695) and Ecology's Federal Permit Coordinator (by phone, (360) 407-6076 or email, ecyrefedpermits@ecy.wa.gov), at least 14 days prior to commencement of dredging. Return flow to waters of the U.S. is prohibited without engineering controls approved by the Corps and Department of Ecology.

Further Information:

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:

☒ Section 10 of the Rivers and Harbor Act of 1899 (33 United States Code (U.S.C.) 403).

☒ Section 404 of the Clean Water Act (33 U.S.C. 1344).

☐ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorization required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of the permit.

b. The information provided by you in support of your application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 Code of Federal Regulations (CFR), Part 325.7 or enforcement procedures such as those contained in 33 CFR, Parts 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR, Part 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Laura Gurley FOR — April 15, 2016

Graham Anderson (DATE)
Port of Everett
LAURA M. GURLEY

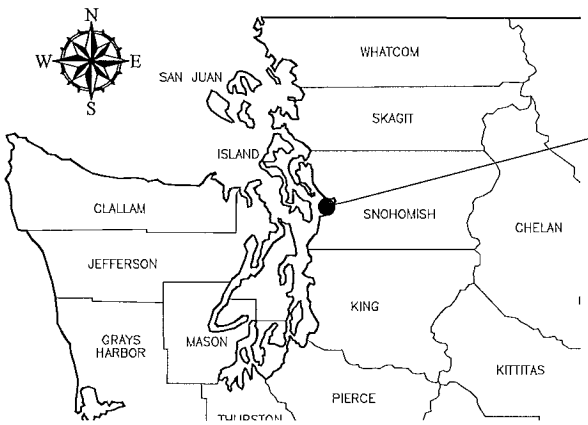
This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

for David J Marfia — 15 APRIL 2016

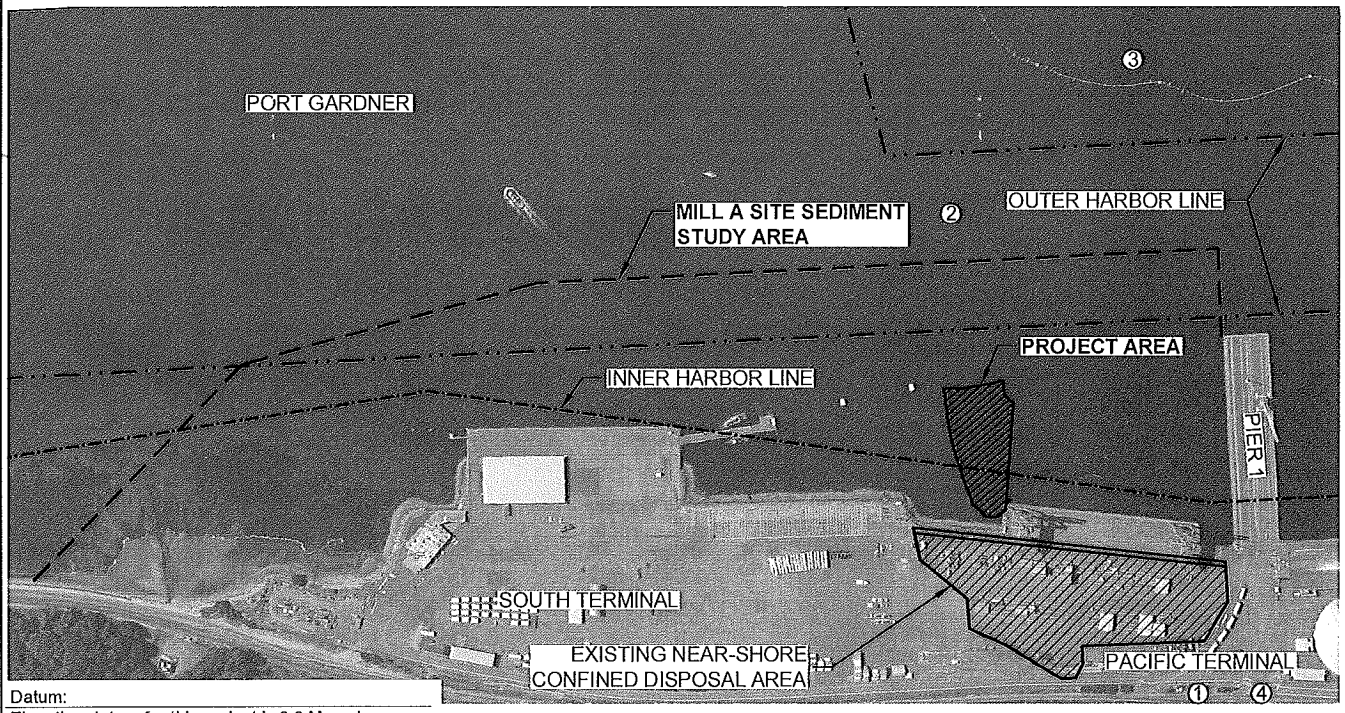
John G. Buck (DATE)
Colonel, Corps of Engineers
District Engineer

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE) (DATE)



VICINITY MAP



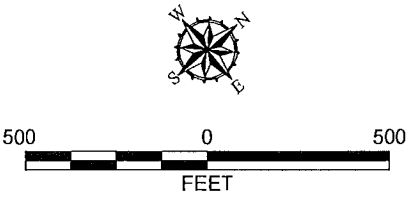
PLAN

Reference: Base aerial from Aerials Express Seattle, 2009.

Datum:
Elevation datum for this project is 0.0 Mean Lower Low Water (MLLW)

Total Data Plane - National Oceanic and Atmospheric Administration (NOAA) Tidal Benchmark at the Historic Everett Station 944-7659.

Mean Higher High Water (MHHW)	+11.09 ft
Mean High Water (MHW)	+10.21 ft
Mean (Half) Tide Level (MTL)	+ 6.51 ft
Mean Sea Level (MSL)	+ 6.48 ft
Mean Low Water (MLW)	+ 2.80 ft
NAVD88	+ 2.03 ft
Mean Lower Low Water (MLLW)	+ 0.00 ft
Extreme Low Water (ELW)	- 4.50 ft



PURPOSE:
INTERIM CLEANUP ACTION DREDGING TO ELEVATION -42 FEET MLLW ADJACENT TO PACIFIC TERMINAL

ADJACENT PROPERTY OWNERS:
1. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
2. BNSF RAILWAY CO.
3. US NAVY
4. CITY OF EVERETT

MILL A INTERIM CLEANUP ACTION DREDGING
NWS-2014-0890

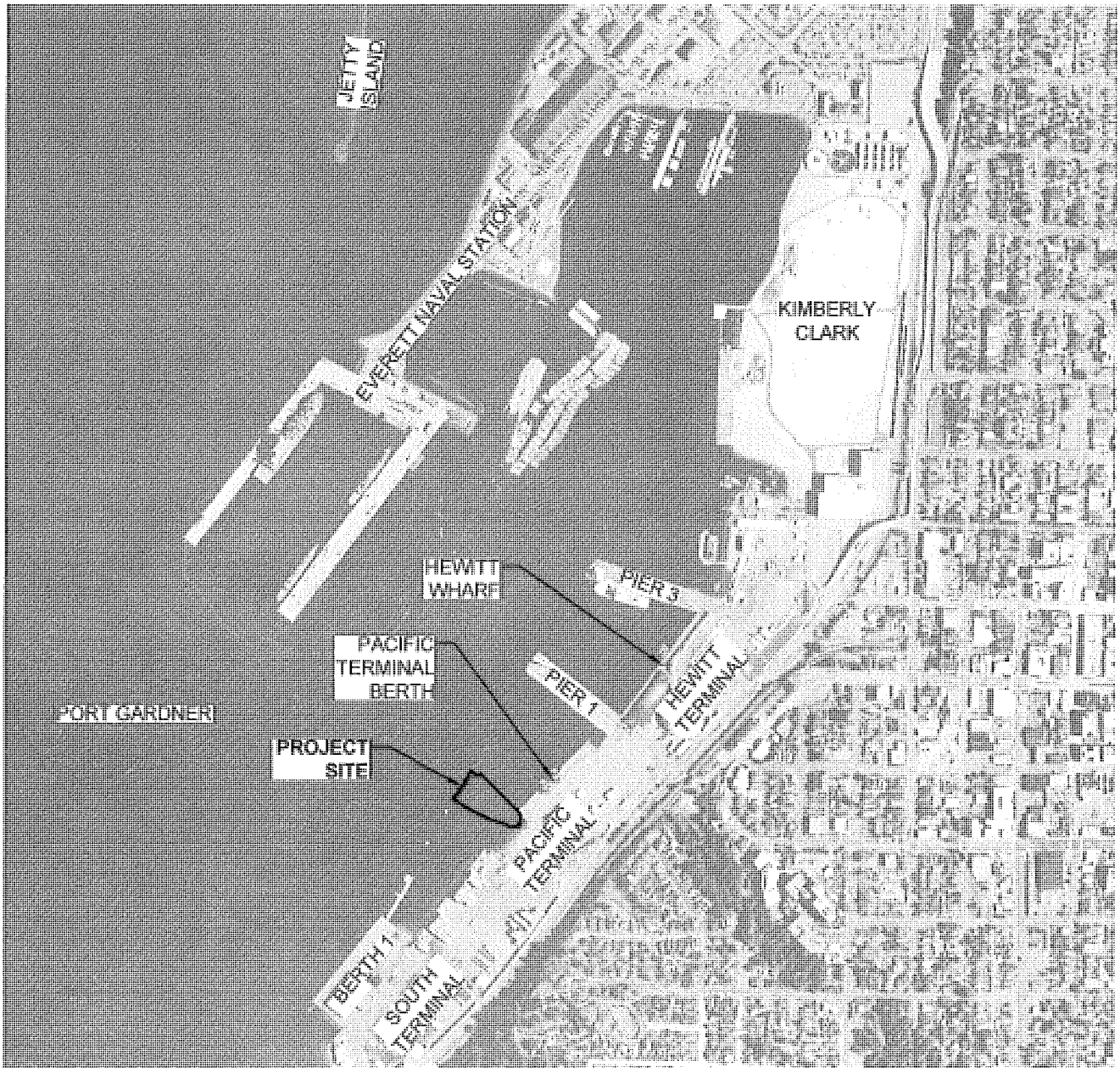
SITE PLAN

PACIFIC TERMINAL
3500 TERMINAL AVE
EVERETT, WA 98201

PROPOSED: INTERIM CLEANUP ACTION DREDGING ADJACENT TO PACIFIC TERMINAL
IN: ADJ. TO PORT GARDNER
AT: EVERETT, WA
NW & NE QUARTER SEC 30, T29N, R5E
APPLICATION BY:
PORT OF EVERETT
(425) 388-0703
SHEET: 1 OF 9 DATE: JUNE 12, 2015

U.S. Army Corps of Engineers Reference: NWS-2014-890 (Port of Everett)

P:\0\0676020\03\CAD\JARPA FOR DREDGING\0676020-03 JARPA SHT 1.DWG\TAB:SITE PLAN MODIFIED BY TMICHAUD ON JUN 12, 2015 - 15:51



Reference: Base aerial photo from ESRI database.

PURPOSE:
INTERIM CLEANUP ACTION DREDGING TO ELEVATION -42 FEET MLLW ADJACENT TO PACIFIC TERMINAL

ADJACENT PROPERTY OWNERS:
1. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
2. BNSF RAILWAY CO.
3. US NAVY
4. CITY OF EVERETT

MILL A INTERIM CLEANUP ACTION DREDGING
NWS-2014-0890

STRUCTURES IN NEARBY VICINITY

PACIFIC TERMINAL
3500 TERMINAL AVE
EVERETT, WA 98201

PROPOSED: INTERIM CLEANUP ACTION DREDGING ADJACENT TO PACIFIC TERMINAL

IN: ADJ. TO PORT GARDNER
AT: EVERETT, WA
NW & NE QUARTER SEC 30, T29N, R5E
APPLICATION BY:
PORT OF EVERETT
(425) 388-0703

SHEET: 2 OF 9 DATE: JUNE 12, 2015

U.S. Army Corps of Engineers Reference: NWS-2014-890 (Port of Everett)

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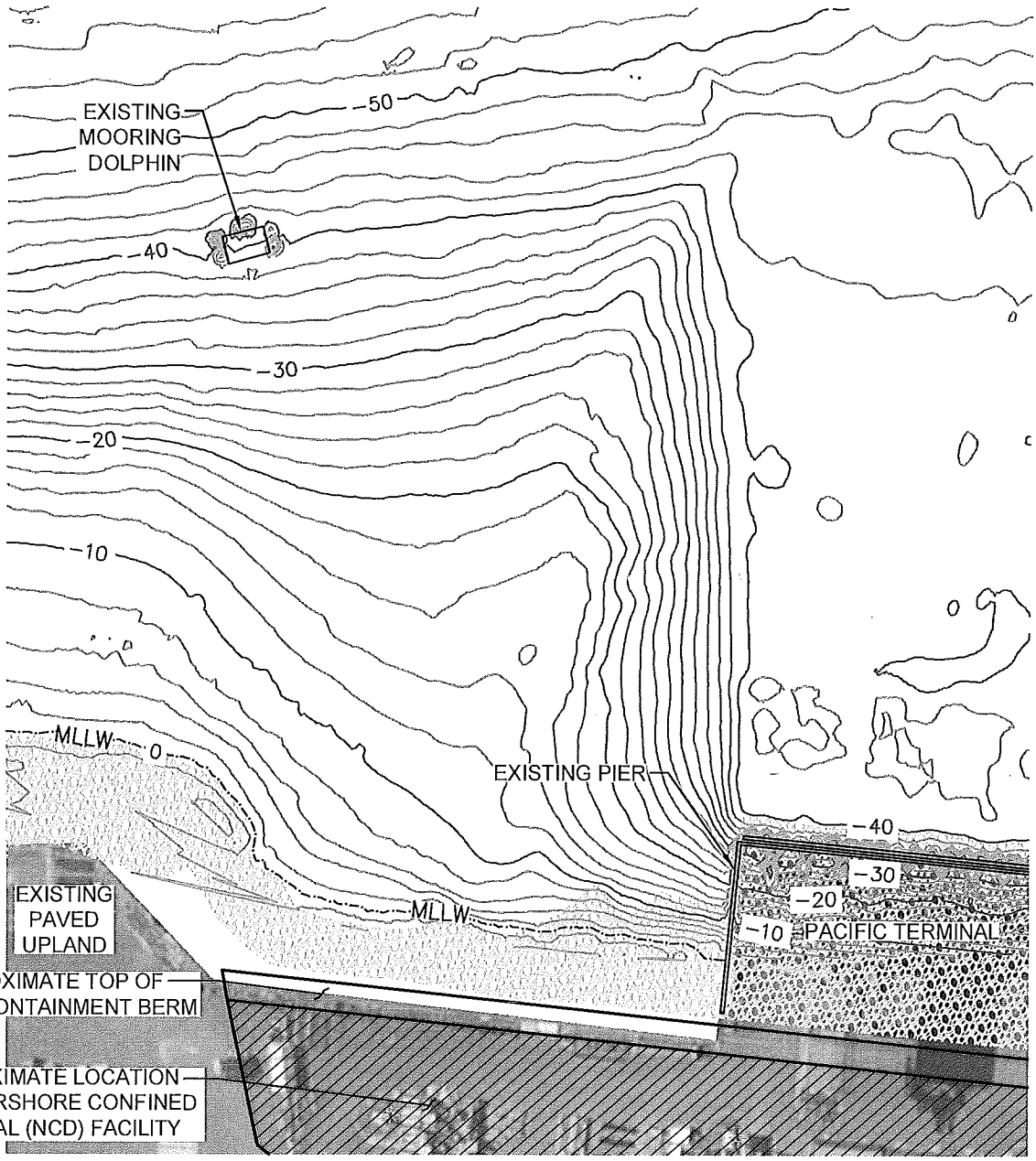

Legend

—10— Bathymetric Contour (ft)

Approximate Area of Existing Riprap

100 0 100
FEET

Reference: Hydrographic Survey by Pacific Geomatic Services Inc, dated October 15, 2014.

PURPOSE:
INTERIM CLEANUP ACTION DREDGING TO ELEVATION -42 FEET MLLW ADJACENT TO PACIFIC TERMINAL

ADJACENT PROPERTY OWNERS:
1. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
2. BNSF RAILWAY CO.
3. US NAVY
4. CITY OF EVERETT

MILL A INTERIM CLEANUP ACTION DREDGING
NWS-2014-0890

EXISTING CONDITIONS

PACIFIC TERMINAL
3500 TERMINAL AVE
EVERETT, WA 98201

PROPOSED: INTERIM CLEANUP ACTION DREDGING ADJACENT TO PACIFIC TERMINAL
IN: ADJ. TO PORT GARDNER
AT: EVERETT, WA
NW & NE QUARTER SEC 30, T29N, R5E
APPLICATION BY:
PORT OF EVERETT
(425) 388-0703
SHEET: 3 OF 9 DATE: JUNE 12, 2015

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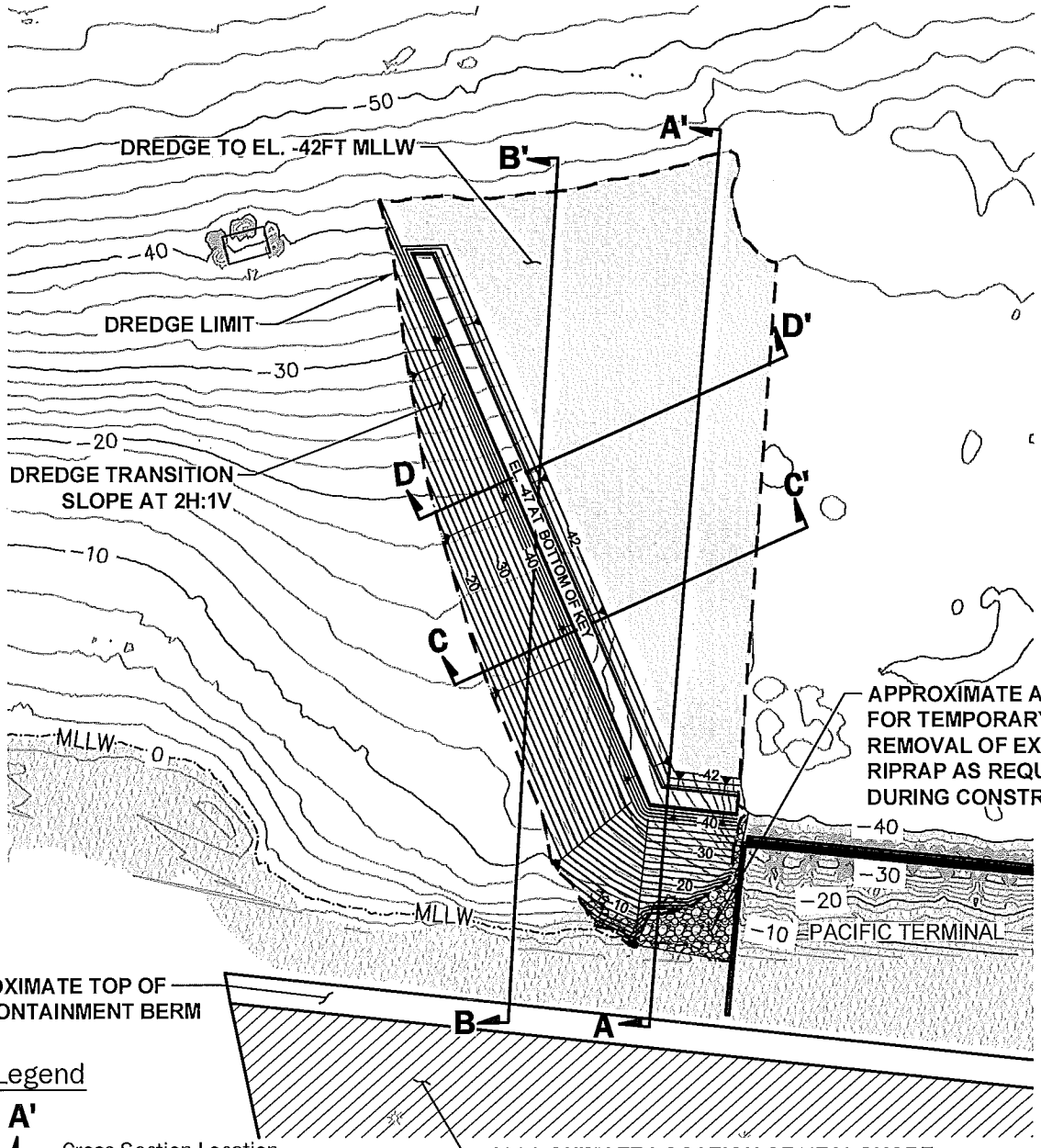
U.S. Army Corps of Engineers Reference: NWS-2014-890 (Port of Everett)



Legend

- A A' — Cross-Section Location
- —10— Bathymetric Contour (ft)
- —10— Dredging Contour (ft)
- Dredging Limit (Approximate Volume of 40,000 Cubic Yards/~74,000 sq. ft.)
- Area to be Dredged to -42 ft MLLW plus 1-ft Overdredge Allowance
- Approximate Area of Existing Riprap (~1,500 sq. ft.)

100 0 100
FEET

Reference: Hydrographic Survey by Pacific Geomatic Services Inc, dated October 15, 2014.

PURPOSE:
INTERIM CLEANUP ACTION DREDGING TO ELEVATION -42 FEET MLLW ADJACENT TO PACIFIC TERMINAL

ADJACENT PROPERTY OWNERS:
1. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
2. BNSF RAILWAY CO.
3. US NAVY
4. CITY OF EVERETT

MILL A INTERIM CLEANUP ACTION DREDGING
NWS-2014-0890

DREDGING PLAN

PACIFIC TERMINAL
3500 TERMINAL AVE
EVERETT, WA 98201

PROPOSED: INTERIM CLEANUP ACTION DREDGING ADJACENT TO PACIFIC TERMINAL
IN: ADJ. TO PORT GARDNER
AT: EVERETT, WA
NW & NE QUARTER SEC 30, T29N, R5E
APPLICATION BY:
PORT OF EVERETT
(425) 388-0703
SHEET: 4 OF 9 DATE: JUNE 12, 2015

U.S. Army Corps of Engineers Reference: NWS-2014-890 (Port of Everett)

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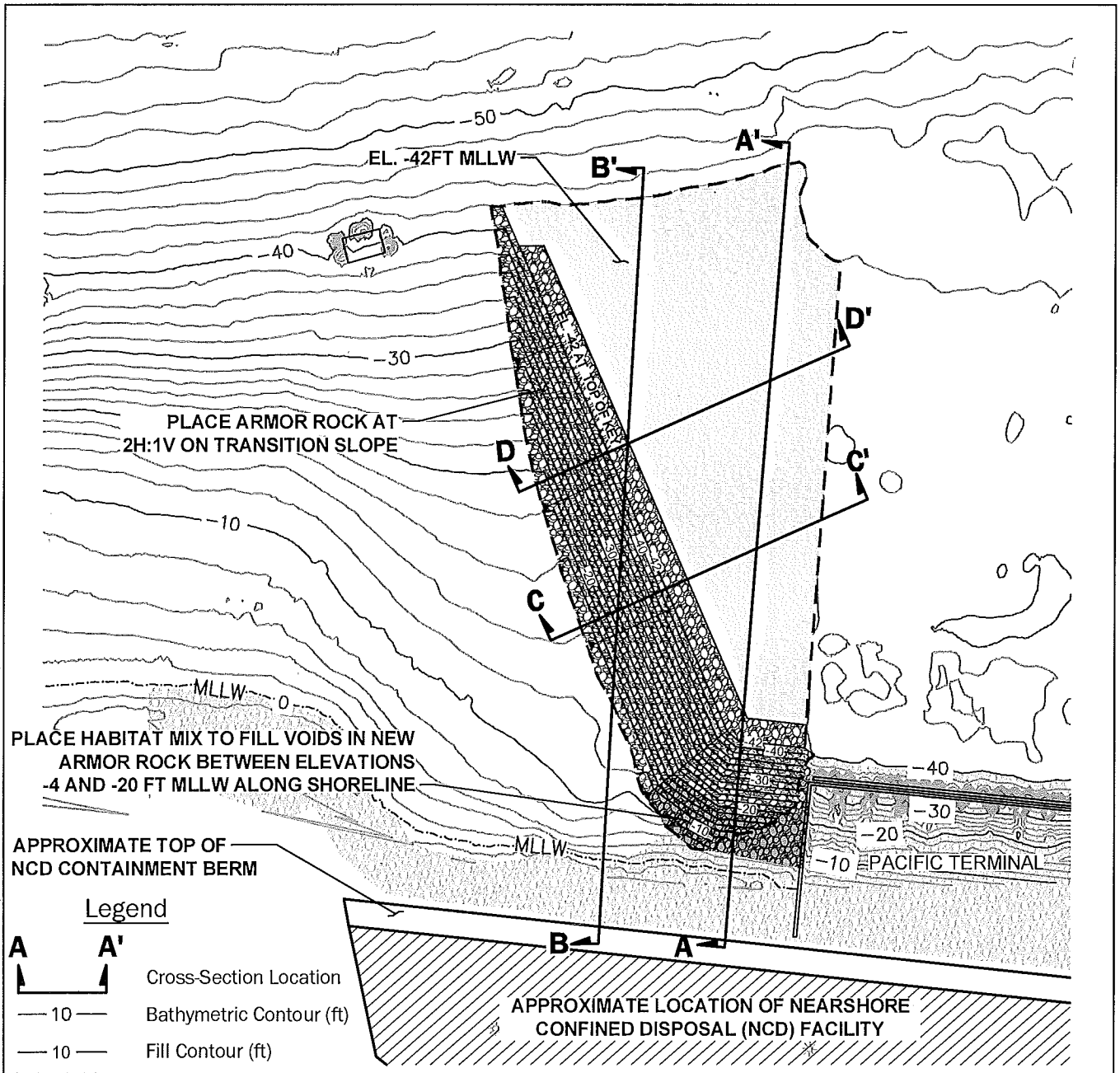


Reference: Hydrographic Survey by Pacific Geomatic Services Inc, dated October 15, 2014.

PURPOSE:
INTERIM CLEANUP ACTION DREDGING TO ELEVATION -42 FEET MLLW ADJACENT TO PACIFIC TERMINAL

ADJACENT PROPERTY OWNERS:
1. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
2. BNSF RAILWAY CO.
3. US NAVY
4. CITY OF EVERETT

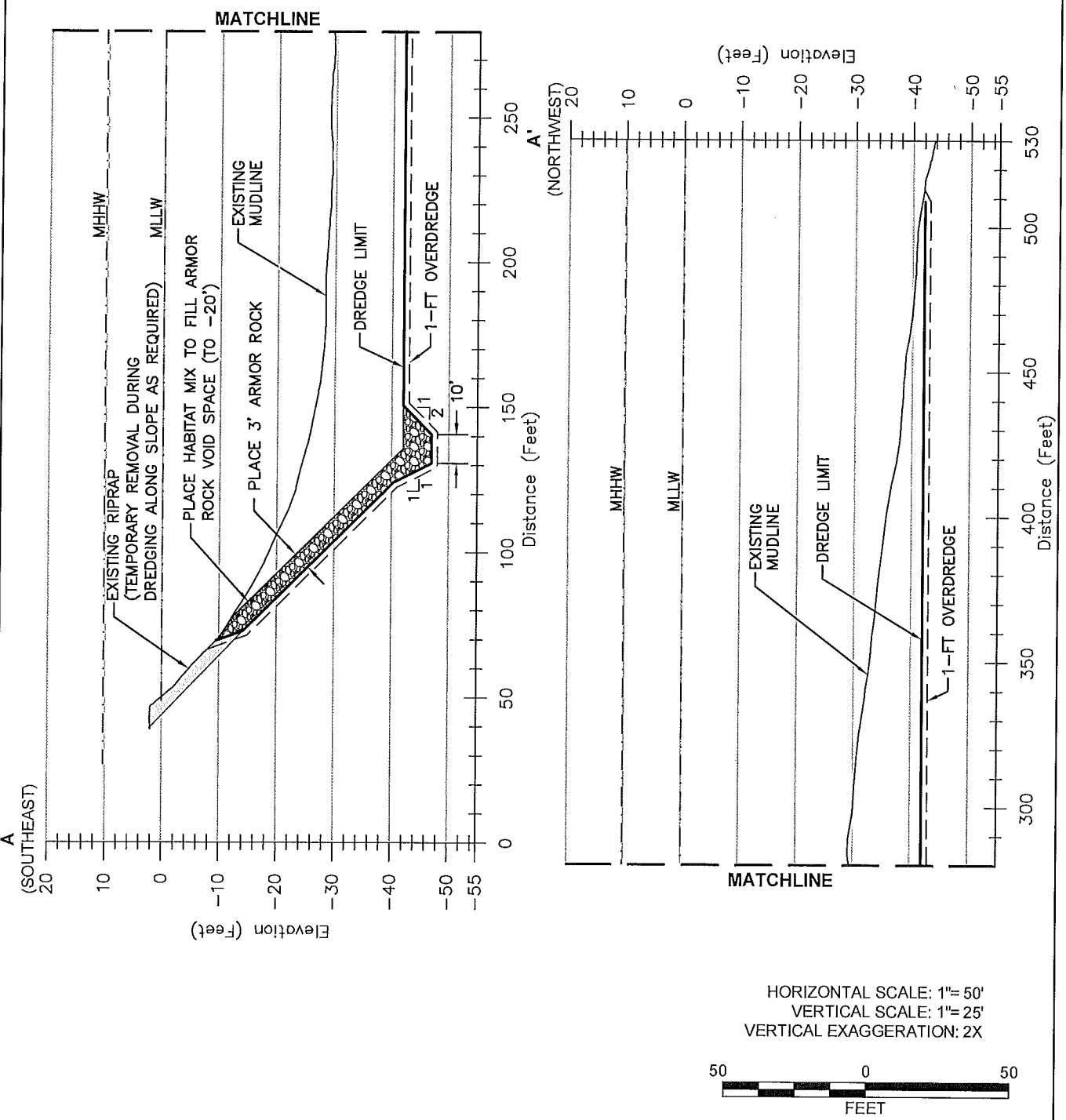
MILL A INTERIM CLEANUP ACTION DREDGING
NWS-2014-0890

FILL PLAN

PACIFIC TERMINAL
3500 TERMINAL AVE
EVERETT, WA 98201

PROPOSED: INTERIM CLEANUP ACTION DREDGING ADJACENT TO PACIFIC TERMINAL
IN: ADJ. TO PORT GARDNER
AT: EVERETT, WA
NW & NE QUARTER SEC 30, T29N, R5E
APPLICATION BY:
PORT OF EVERETT
(425) 388-0703
SHEET: 5 OF 9 DATE: JUNE 12, 2015

P:\0676020\03\CAD\JARPA FOR DREDGING\0676020-03 JARPA SHT 5.DWG\TAB:PLAN (2) MODIFIED BY TMICHAUD ON JUN 12, 2015 - 15:53



HORIZONTAL SCALE: 1"= 50'
VERTICAL SCALE: 1"= 25'
VERTICAL EXAGGERATION: 2X

50 0 50
FEET

PURPOSE:
INTERIM CLEANUP ACTION DREDGING TO ELEVATION -42 FEET MLLW ADJACENT TO PACIFIC TERMINAL

ADJACENT PROPERTY OWNERS:
1. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
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3. US NAVY
4. CITY OF EVERETT

MILL A INTERIM CLEANUP ACTION DREDGING
NWS-2014-0890

CROSS-SECTION A-A'

PACIFIC TERMINAL
3500 TERMINAL AVE
EVERETT, WA 98201

PROPOSED: INTERIM CLEANUP ACTION DREDGING ADJACENT TO PACIFIC TERMINAL
IN: ADJ. TO PORT GARDNER
AT: EVERETT, WA
NW & NE QUARTER SEC 30, T29N, R5E
APPLICATION BY:
PORT OF EVERETT
(425) 388-0703
SHEET: 6 OF 9 DATE: JUNE 12, 2015

U.S. Army Corps of Engineers Reference: NWS-2014-890 (Port of Everett)

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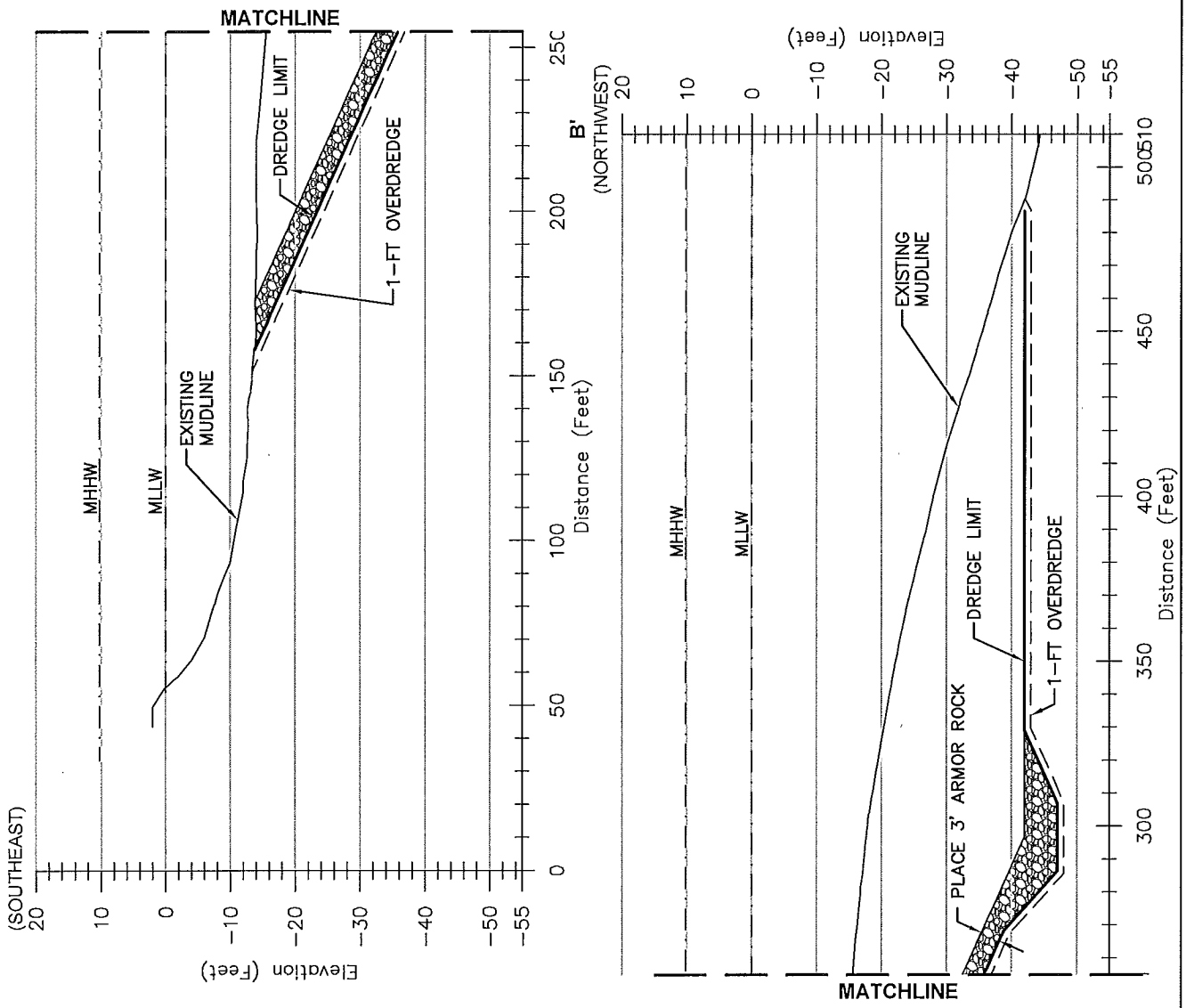

HORIZONTAL SCALE: 1"= 50'
VERTICAL SCALE: 1"= 25'
VERTICAL EXAGGERATION: 2X

50 0 50
FEET

PURPOSE:
INTERIM CLEANUP ACTION DREDGING TO ELEVATION -42 FEET MLLW ADJACENT TO PACIFIC TERMINAL

ADJACENT PROPERTY OWNERS:
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2. BNSF RAILWAY CO.
3. US NAVY
4. CITY OF EVERETT

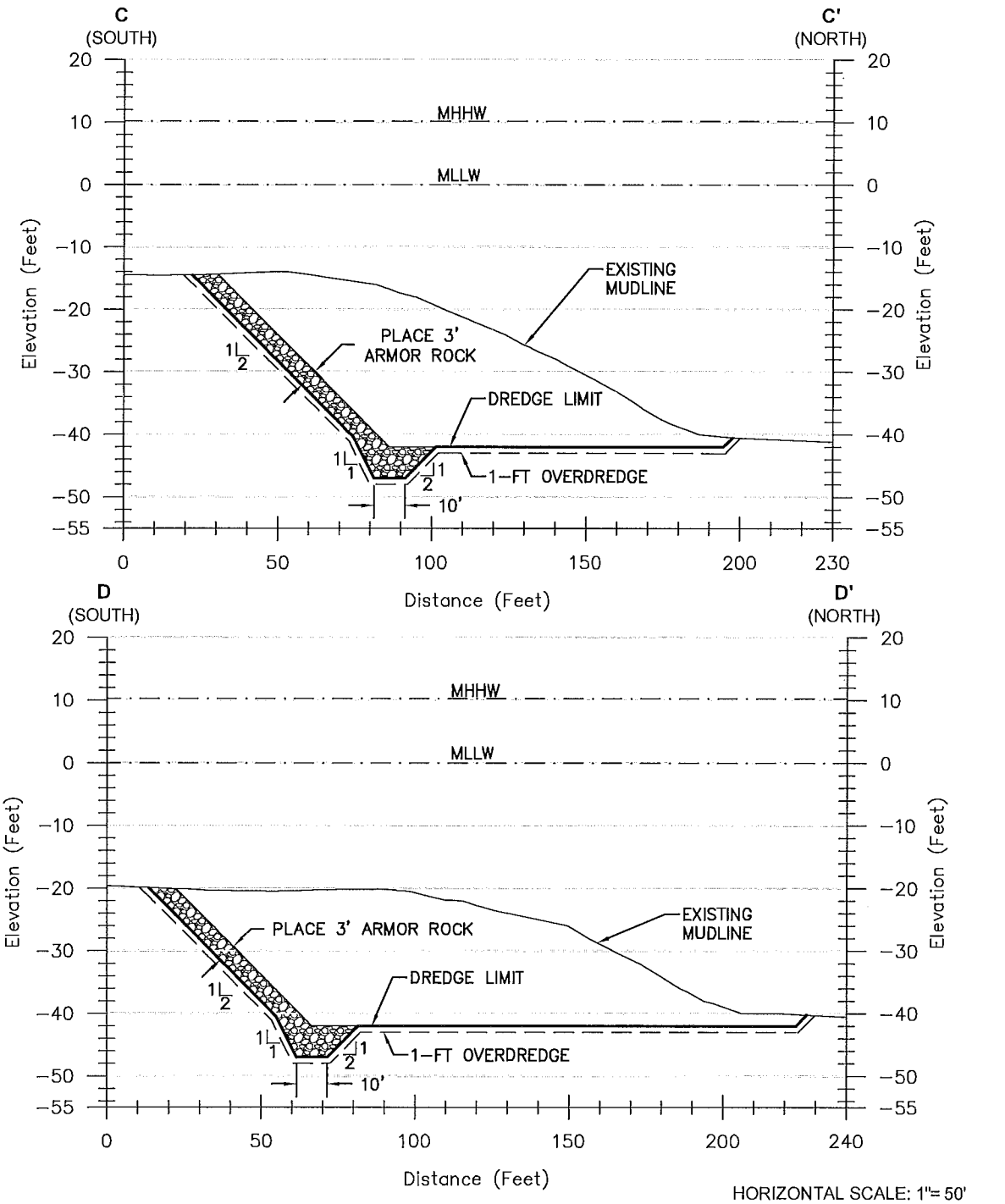
MILL A INTERIM CLEANUP ACTION DREDGING
NWS-2014-0890

CROSS-SECTION B-B'

PACIFIC TERMINAL
3500 TERMINAL AVE
EVERETT, WA 98201

PROPOSED: INTERIM CLEANUP ACTION DREDGING ADJACENT TO PACIFIC TERMINAL
IN: ADJ. TO PORT GARDNER
AT: EVERETT, WA
NW & NE QUARTER SEC 30, T29N, R5E
APPLICATION BY:
PORT OF EVERETT
(425) 388-0703
SHEET: 7 OF 9 DATE: JUNE 12, 2015

P:\10\0676020\03\CAD\JARPA FOR DREDGING\0676020-03 JARPA SECTIONS.DWG\TAB:BB MODIFIED BY TMICHAUD ON JUN 12, 2015 - 15:55



HORIZONTAL SCALE: 1"= 50'
VERTICAL SCALE: 1"= 25'
VERTICAL EXAGGERATION: 2X

50 0 50
FEET

PURPOSE:
INTERIM CLEANUP ACTION DREDGING TO ELEVATION -42 FEET MLLW ADJACENT TO PACIFIC TERMINAL

ADJACENT PROPERTY OWNERS:
1. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
2. BNSF RAILWAY CO.
3. US NAVY
4. CITY OF EVERETT

MILL A INTERIM CLEANUP ACTION DREDGING
NWS-2014-0890

CROSS-SECTION C-C' & D-D'

PACIFIC TERMINAL
3500 TERMINAL AVE
EVERETT, WA 98201

PROPOSED: INTERIM CLEANUP ACTION DREDGING ADJACENT TO PACIFIC TERMINAL
IN: ADJ. TO PORT GARDNER
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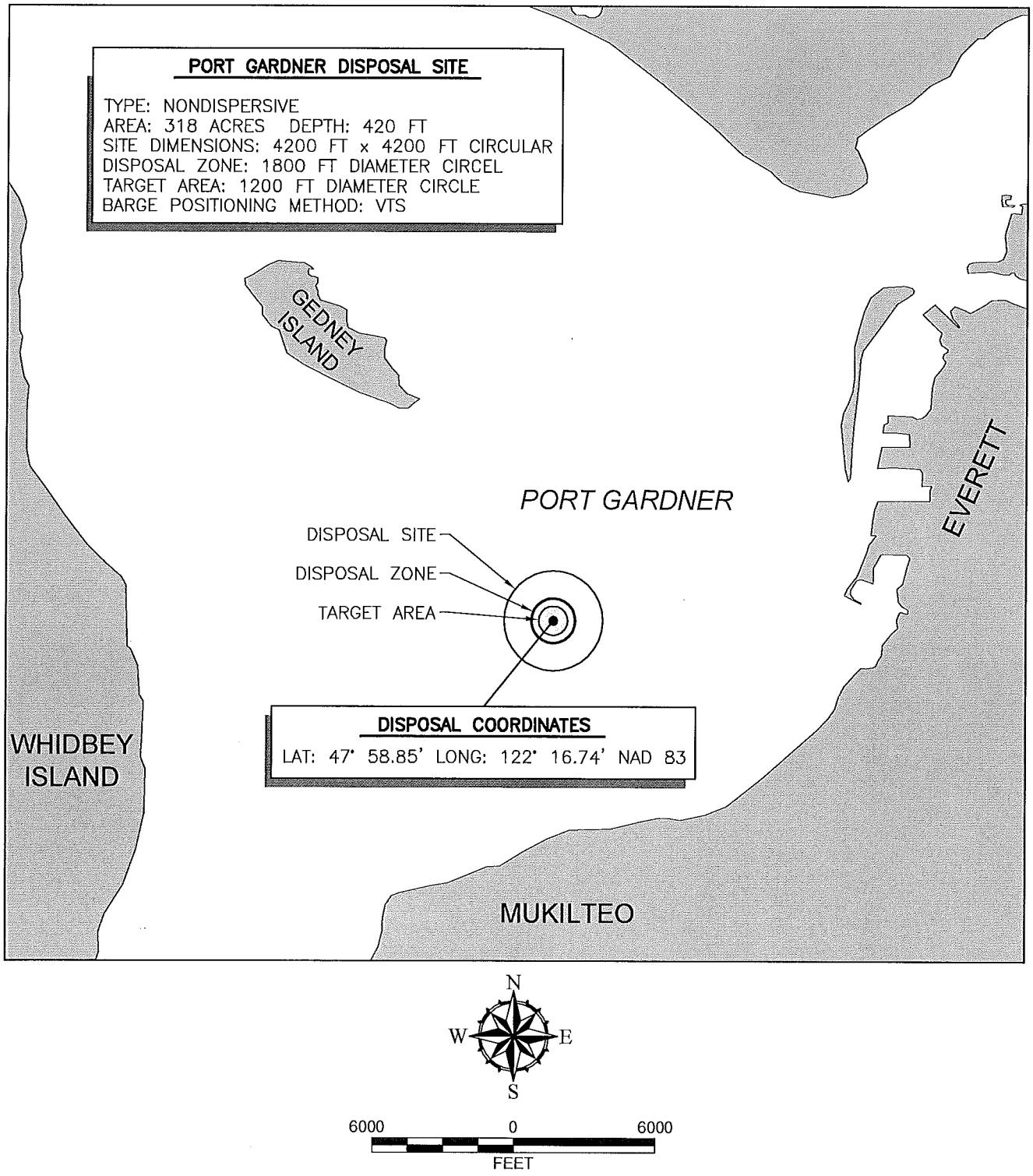
SHEET: 8 OF 9 DATE: JUNE 12, 2015

U.S. Army Corps of Engineers Reference: NWS-2014-890 (Port of Everett)

P:\10\0676020\03\CAD\JARPA FOR DREDGING\0676020-03 JARPA SECTIONS.DWG\TAB:CC AND DD MODIFIED BY TMICHAUD ON JUN 12, 2015 - 15:54



PURPOSE:
INTERIM CLEANUP ACTION DREDGING TO ELEVATION -42 FEET MLLW ADJACENT TO PACIFIC TERMINAL

ADJACENT PROPERTY OWNERS:
1. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
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4. CITY OF EVERETT

MILL A INTERIM CLEANUP ACTION DREDGING
NWS-2014-0890

PORT GARDNER DISPOSAL SITE

PACIFIC TERMINAL
3500 TERMINAL AVE
EVERETT, WA 98201

PROPOSED: INTERIM CLEANUP ACTION DREDGING ADJACENT TO PACIFIC TERMINAL

IN: ADJ. TO PORT GARDNER
AT: EVERETT, WA
NW & NE QUARTER SEC 30, T29N, R5E

APPLICATION BY:
PORT OF EVERETT
(425) 388-0703

SHEET: 9 OF 9 DATE: JUNE 12, 2015

U.S. Army Corps of Engineers Reference: NWS-2014-890 (Port of Everett)

P:\10\06760201\03\CAD\JARPA FOR DREDGING\06760201-03 JARPA SHT 9.DWG\TAB:PLAN (2) MODIFIED BY TMICHAUD ON JUN 12, 2015 - 16:20

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

February 3, 2016

Erik Gerking
Port of Everett
PO Box 538
Everett, WA 98206

RE: Water Quality Certification Order No. 13125 for Corps Public Notice No. NWS-2014-0890, Port of Everett Mill A Interim Cleanup, Snohomish County, Washington

Dear Mr. Gerking:

On June 24, 2015 the Port of Everett submitted a Joint Aquatic Resources Permit Application (JARPA) to the Department of Ecology (Ecology) for a Section 401 Water Quality Certification (401 Certification) under the federal Clean Water Act Port of Everett Mill A Interim Cleanup, Snohomish County, Washington.

The proposed project is being conducted under the Model Toxics Clean-up Action (MTCA) Interim Cleanup Agreed Order No NE8979. The project includes dredging of up to 40,000 CY of sediment with upland and in-water disposal, as well as placement of armoring and mitigation for loss of shallow water habitat.

On behalf of the State of Washington, Ecology certifies that the work described in the JARPA and the public notice complies with applicable provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, as amended and applicable state laws. This certification is subject to the conditions contained in the enclosed Order.

If you have any questions, please contact Laura Inouye at (360)-407-6165. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

Brenden McFarland
Shorelands and Environmental Assistance Program

Enclosure

cc: Erin Legge, Corps of Engineers

by certified mail 7015 0640 0006 1040 9340

e-cc: ECY RE FEDPERMITS
Loree Randall – HQ, SEA
Laura Inouye– HQ, SEA
Pete Adolphson– HQ, TCP
Andrew Kallus –LCU, TCP

IN THE MATTER OF GRANTING A WATER QUALITY CERTIFICATION TO Port of Everett in accordance with 33 U.S.C. 1341 (FWPCA § 401), RCW 90.48.120, RCW 90.48.260 and Chapter 173-201A WAC	))))))	**ORDER #13125** **Corps Reference No. NWS-2014-0890** Port of Everett Mill A Interim Cleanup in Everett, Snohomish County, Washington

TO: Erik Gerking
Port of Everett
PO Box 538
Everett, WA 98206

On June 24, 2015 the Port of Everett submitted a Joint Aquatic Resources Permit Application (JARPA) to the Department of Ecology (Ecology) requesting a Section 401 Water Quality Certification. A joint public notice regarding the request was distributed by the Army Corps of Engineers (Corps) for the above-referenced project pursuant to the provisions of Chapter 173-225 WAC on November 24, 2015.

This project is being conducted under the Model Toxics Clean-up Action (MTCA) Interim Cleanup Agreed Order No NE8979. The project includes dredging of up to 40,000 cubic yards of sediment over 1.7 acres. The majority of the dredge area will be performed to a depth of -43 feet mean lower low water (MLLW) which includes one foot of over-dredge. The southeastern edge of the dredge prism will be dredged to a maximum of -48 feet MLLW which includes one foot of over-dredge to create a trench for armor rock needed to stabilize the slope and contain contaminated sediment because the project area is partially located within the MTCA site. Dredging will be completed with a mechanical clam-shell dredge operated from the pier or a barge. The 22,790 cubic yards of unsuitable material will be disposed in an upland disposal area. The remaining 17,210 cubic yards were found to be suitable for unconfined disposal at the DMMP non-dispersive open-water disposal site in Port Gardner.

There is 1,500 square feet of existing armor rock located along the shoreline between the elevations of -2 feet MLLW and -43 feet MLLW that is used to contain contamination and stabilize the slopes. This rock will be removed to enable dredging, then 4,000 cubic yards of new armor rock will be installed over 23,000 square feet along the shoreline and the off-shore transition slope. The rock slope will remain 2H:1V.

To improve habitat conditions, a habitat mix of gravel/sand materials will be placed on top of the riprap over 3,600 square feet to fill interstitial voids along the shoreward edge of the wedge-shaped portion of the dredge footprint between elevations of -4 feet MLLW and -20 feet MLLW.

This project will result in the loss of 700 square feet of shallow water habitat, which will be mitigated through application of credits from the Port of Everett's Union Slough advance mitigation program.

AUTHORITIES:

In exercising authority under 33 U.S.C. § 1341, RCW 90.48.120, and RCW 90.48.260, Ecology has examined this application pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. §1311, 1312, 1313, 1316, and 1317 (FWPCA § 301, 302, 303, 306 and 307);

2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. §1313 and by Chapter 90.48 RCW, and with other applicable state laws; and

3. Conformance with the provision of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

WATER QUALITY CERTIFICATION CONDITIONS:

Through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as proposed and conditioned will be conducted in a manner that will meet the applicable water quality standards and other appropriate requirements of state law. In view of the foregoing and in accordance with 33 U.S.C. § 1341, RCW 90.48.120, RCW 90.48.260, Chapter 173-200 WAC and Chapter 173-201A WAC, water quality certification is granted to the Applicant subject to the conditions within this Order.

Certification of this proposal does not authorize the Applicant to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water standards (Chapter 173-200 WAC) or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this certification shall absolve the Applicant from liability for contamination and any subsequent cleanup of surface waters, ground waters or sediments occurring as a result of project construction or operations.

A. General Conditions:

1. In this Order, the term "Applicant" shall mean the Port of Everett and its agents, assignees and contractors.

2. All submittals required by this Order shall be sent to Ecology's Headquarters Office, Attn: Federal Permit Coordinator, P.O. Box 47600 Olympia, WA 98504-7600 and/or fednotification@ecy.wa.gov. Any submittals shall reference Order #13125 and Corps Reference # NWS-2014-0890.

3. All notifications listed below shall be made via phone to Laura Inouye at (360)-407-6165, or e-mail at lino461@ecy.wa.gov. These notifications shall be identified with Order

#13125 and include the Applicant's name, the project contact, and the contact's phone number.

a. At least ten (10) days prior to conducting initial in-water work activities for each in-water work window.
b. Within at least seven (7) days after completion of the in-water work each year.

4. Work authorized by this Order is limited to the work described in the Joint Aquatic Resources Permit Application (JARPA) received by Ecology on June 24, 2014, unless otherwise authorized by Ecology.

5. The Applicant shall obtain Ecology review and approval before undertaking any changes to the proposed project that might significantly and adversely affect water quality, other than those project changes required by this Order.

6. Within 30 days of receipt of the updated information, Ecology will determine if the revised project requires a new public notice and Certification or if a modification to this Order is required.

7. This Order shall be rescinded if the U.S. Army Corps of Engineers does not issue an individual 404 and/or Section 10 permit for the project.

8. The Applicant shall send (per A.2.) a copy of the final Section 404 Corps permit to Ecology' Federal Project Manager within two weeks of receiving it from the Corps.

9. The Applicant shall keep copies of this Order on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.

10. Upon Ecology personnel's request, the Applicant shall provide access to the project site, all staging areas, and mitigation sites for site inspections, monitoring, necessary data collection, and/or to ensure that conditions of this Order are being met.

11. Nothing in this Order waives Ecology's authority to issue additional orders if Ecology determines that further actions are necessary to implement the water quality laws of the state. Furthermore, Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified or if additional conditions are necessary to further protect water quality.

12. In the event of changes or amendments to the state water quality, ground water quality, or sediment standards, or changes in or amendments to the state Water Pollution Control Act (RCW 90.48), or the federal Clean Water Act, Ecology will issue an administrative order to incorporate any such changes or amendments applicable to this project.

13. The Applicant shall ensure that all appropriate project engineers and contractors at the project site have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order. The Applicant shall provide Ecology a signed statement (see Attachment A for an example) from each project engineer and contractor that they have read and understand the conditions of this Order and the above-referenced permits, plans, documents and approvals. These statements shall be provided to Ecology before construction begins at the project.

14. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.

15. Failure of any person or entity to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce its terms.

16. This Order will automatically transfer to a new owner or operator if:

    a. A written agreement between the Applicant and new owner or operator with the specific transfer date of the Order's obligations, coverage, and liability is submitted to Ecology per condition A.2.;
    b. A copy of this Order is provided to the new owner or operator; and
    c. If Ecology does not notify the new Applicant that this Order must be modified to complete the transfer.

B. Water Quality Conditions:

1. This order does not authorize temporary exceedances of water quality standards beyond the limits established in WAC 173-201A-210.

    - The area of mixing established for marine waters is a 150 foot radius surrounding the in-water activity. Turbidity occurring outside that zone that is more than 5 nephelometric turbidity units (NTU) over background when the background is 50 NTU or less, or a 10% increase in turbidity when the background turbidity is more than 50 NTU is a violation of the turbidity water quality standard.

    - Visible turbidity anywhere at 150 ft point of compliance from the activity and/or the disposal location shall be considered to be an exceedance of the standard.

C. Water Quality Monitoring

1. The Applicant shall submit a water quality monitoring plan to Ecology per Condition A2 at least 30 days prior to the pre-dredge meeting. This plan shall be approved by Ecology prior to any in-water work. The plan shall include at a minimum the following information:

a. Name and contact information of the person or firm responsible for monitoring;
b. Map of sample locations including background, and early warning location (75-100 ft from activity), and point of compliance with readings at or near the surface, midway, and bottom depths for all locations. For this project the point of compliance is a radius of 150 feet from the activity causing the turbidity exceedance.
c. Parameter(s) to be monitored: turbidity, DO
d. Sample method;
e. Frequency (intensive and routine), and
f. Steps to be taken if monitoring results indicate an exceedance at the point of compliance, or an elevation at the early warning point has occurred. The amount of the exceedance/elevation and the reason for the exceedance/elevation shall also be reported.

2. Water quality monitoring will be implemented according to the approved plan; any changes must be approved by Ecology prior to implementation.

3. Turbidity monitoring reports shall be sent weekly to the 401/CZM Federal permit coordinator. The permit coordinator shall be contacted within 2 hours if an exceedance occurs during dredging of material unsuitable for in-water disposal, and within 24 hours for material suited for in-water disposal.

D. Dredging:

1. All dredging is to be done using a clamshell dredge or fixed-arm excavator. **Use of any other type of equipment requires preapproval from Ecology.**

2. Dredging operations shall be conducted in a manner that minimizes the disturbance or siltation of adjacent waters and prevents the accidental discharge of petroleum products, chemicals or other toxic or deleterious substances into waters of the State.

3. Dredged material shall not be stockpiled on a temporary or permanent basis below the ordinary high water line.

4. During dredging, the Applicant shall have a boat available on site at all times to retrieve debris from the water.

5. Caution shall be used when placing material from the bucket into the scow to limit splash and prevent spillage, especially when working with material not suited for in-water disposal.

6. The Dredge operator shall not overfill the scow to the point where dredge material overtops the sidewalls. When working with material not suited for in-water disposal, neither dredge material nor associated water is allowed to overtop the sidewalls.

7. Grounding out of vessels is not allowed.

8. Dredge cycles will be complete; partial loads will not be returned.

9. Leveling out with bucket or drag beam is not allowed.

10. Float booms will be used around in-water equipment at the dredge site to control floating debris.

11. All unsuited material along with a one foot buffer into the suitable material will be removed prior to commencing dredging of material suitable for in-water disposal.

12. A post-dredge survey must be conducted after completion of dredging of the unsuitable material to ensure complete removal of the unsuitable material. The removal completion survey must be approved by Ecology prior to starting dredging the suitable material.

13. A pre-dredge meeting is required to be convened at least one week prior to the start of dredging. A **Dredging Plan** and **Spill Prevention, Control and Countermeasures (SPCC) Plan** are required and shall be submitted to Ecology to the 401/CZM Federal permit coordinator at the address shown in Condition A2 for review and approval 30 days prior to the pre-construction meeting.

E. Disposal

1. All dredged material designated unsuitable for in-water disposal will be taken to an Ecology-approved upland location.

2. All dredged material designated suitable for in-water disposal will be taken to the Port Gardner non-dispersive open water disposal site via bottom dump barge. **Use of any other type of disposal method or location requires preapproval by Ecology.**

3. For material being taken to open water disposal sites, all debris (larger than 2 feet in any dimension) shall be removed from the dredged sediment prior to disposal. Similar sized debris found floating in the dredging or disposal area shall also be removed.

F. Armor placement

1. Grounding out of vessels is not allowed.

2. Appropriate BMPs shall be implemented to minimize turbidity associated with placement of armoring.

3. Imported materials will be tested prior to placement to ensure material are free of contaminants.

G. Transloading

1. A transloading plan must be submitted to Ecology for review and approval at least 30 days prior to the pre-dredge meeting. Early coordination is strongly encouraged.

2. Transloading shall use appropriate BMPs to protect both the waterbody where transfer is occurring and the stormwater system at the transload site.

3. No dewatering is allowed during transit of barges from the project site to the transload site.

H. Mitigation

1. The Applicant shall notify Ecology of any changes to the amount of aquatic resource impacts, or revisions to the mitigation plan.

2. Prior to impacting aquatic resources, the Applicant shall submit to Ecology documentation from the Port of Everett's Union Slough advance mitigation program verifying the purchase of credits from the Port of Everett's Union Slough advance mitigation program. This must be sent to Ecology by Ecology at least 2 weeks prior to the pre-dredge meeting. This documentation must include:
   a) The permit number
   b) Permit issuance date
   c) Impact acreage
   d) The amount of credits required by the permit, and
   e) The date of credit purchase.

3. The Applicant shall complete the purchase of credits before the impacts to aquatic resources occur or Ecology may require additional compensation to account for temporal loss of aquatic resource functions.

4. If the credits are not purchased within 13 months of the date of this Order, the Applicant shall inform Ecology, in writing, of the status of:
   a. Port of Everett Mill A Interim Cleanup
   b. When credits will be purchased.
   With the:
   c. Expected date of completion.
   d. Reason for the delay.

5. The Applicant shall submit an updated written notification every 12 months thereafter until Port of Everett Mill A Interim Cleanup is complete and the required credits are purchased.

I. Timing Requirements:

1. All in-water work shall not occur between February 16 through August 14. Any project change that requires change or extension to the in-water work window shall be sent to Ecology for approval.

2. This Order shall remain in effect until December 31, 2017.

J. Notification Requirements:

1. The Applicant shall provide notice to Ecology's Federal permit coordinator at least 7 days prior to the start of construction or dredging and within 14 days after completion of construction or dredging at the project site. Notification should be made using all the information required in Condition A2.

K. Emergency/Contingency Measures:

1. The Applicant shall develop a spill prevention and containment plan for this project, and shall have spill cleanup materials and an emergency call list available on site.
2. Any work that is out of compliance with the provisions of this Order, or conditions causing distressed or dying fish, or any discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, is prohibited. If these occur, the Applicant or operator shall immediately take the following actions:
    a. Cease operations that are causing the compliance problem.
    b. Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.
    c. In the event of finding distressed or dying fish, the applicant shall collect fish specimens and water samples in the affected area within the first hour of the event. These samples shall be held in refrigeration or on ice until the applicant is instructed by Ecology on what to do with them. Ecology may require analyses of these samples before allowing the work to resume.
    d. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.
    e. Immediately notify Ecology's 24-Hour Spill Response Team at 1-800-258-5990, **and** within 24 hours of spills or other events Ecology's Federal permit coordinator at (360) 407-6165.

f. Submit a detailed written report to Ecology within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

3. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters, including wetlands.
4. If at any time during work the proponent finds buried chemical containers, such as drums, or any unusual conditions indicating disposal of chemicals, the proponent shall immediately notify Ecology using the above phone numbers.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do both of the following within 30 days of the date of receipt of this Order:

File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel Road SW STE 301 Tumwater, WA 98501	**Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

CONTACT INFORMATION

Please direct all questions about this Order to:

Laura Inouye
Department of Ecology
Headquarters
PO Box 47600
Olympia, WA 98504-7600
(360)-407-6165
Lino461@ecy.wa.gov

MORE INFORMATION

Pollution Control Hearings Board Website
www.eho.wa.gov/Boards_PCHB.aspx

Chapter 43.21B RCW - Environmental and Land Use Hearings Office – Pollution Control Hearings Board
http://apps.leg.wa.gov/RCW/default.aspx?cite=43.21B

Chapter 371-08 WAC – Practice And Procedure
http://apps.leg.wa.gov/WAC/default.aspx?cite=371-08

Chapter 34.05 RCW – Administrative Procedure Act
http://apps.leg.wa.gov/RCW/default.aspx?cite=34.05

Chapter 90.48 RCW – Water Pollution Control
http://apps.leg.wa.gov/RCW/default.aspx?cite=90.48

Chapter 173.204 WAC – Sediment Management Standards
www.ecy.wa.gov/biblio/wac173204.html

Chapter 173-200 WAC – Water Quality Standards for Ground Waters of the State of Washington
www.ecy.wa.gov/biblio/wac173200.html

Chapter 173-201A WAC – Water Quality Standards for Surface Waters of the State of Washington
www.ecy.wa.gov/biblio/wac173201A.html

SIGNATURE

Dated February 3, 2016 in Olympia Washington

Brenden McFarland, Section Manager
Shorelands and Environmental Assistance Program
Headquarters Office – Ecology

ATTACHMENT A

Port of Everett
Mill A interim Cleanup
Water Quality Certification Order #13125

Statement of Understanding of
Water Quality Certification Conditions

I have read and understand the conditions of Order #13125 Section 401 Water Quality Certification for the Port of Everett Mill A Interim Cleanup. I have also read and understand all permits, plans, documents, and approvals associated with the project referenced in this order.

_____ _____
Signature Date

_____
Print Name

_____
Company

_____
Title

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

February 3, 2016

Erik Gerking
Port of Everett
PO Box 538
Everett, WA 98206

RE: Water Quality Certification Order No. 13125 for Corps Public Notice No. NWS-2014-0890, Port of Everett Mill A Interim Cleanup, Snohomish County, Washington

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Shorelands and Environmental Assistance Program

Enclosure

cc: Erin Legge, Corps of Engineers

by certified mail 7015 0640 0006 1040 9340

e-cc: ECY RE FEDPERMITS
Loree Randall – HQ, SEA
Laura Inouye– HQ, SEA
Pete Adolphson– HQ, TCP
Andrew Kallus –LCU, TCP

IN THE MATTER OF GRANTING A WATER QUALITY CERTIFICATION TO Port of Everett in accordance with 33 U.S.C. 1341 (FWPCA § 401), RCW 90.48.120, RCW 90.48.260 and Chapter 173-201A WAC	))))))	**ORDER #13125** **Corps Reference No. NWS-2014-0890** Port of Everett Mill A Interim Cleanup in Everett, Snohomish County, Washington

TO: Erik Gerking
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PO Box 538
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This project will result in the loss of 700 square feet of shallow water habitat, which will be mitigated through application of credits from the Port of Everett's Union Slough advance mitigation program.

AUTHORITIES:

In exercising authority under 33 U.S.C. § 1341, RCW 90.48.120, and RCW 90.48.260, Ecology has examined this application pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. §1311, 1312, 1313, 1316, and 1317 (FWPCA § 301, 302, 303, 306 and 307);

2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. §1313 and by Chapter 90.48 RCW, and with other applicable state laws; and

3. Conformance with the provision of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

WATER QUALITY CERTIFICATION CONDITIONS:

Through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as proposed and conditioned will be conducted in a manner that will meet the applicable water quality standards and other appropriate requirements of state law. In view of the foregoing and in accordance with 33 U.S.C. § 1341, RCW 90.48.120, RCW 90.48.260, Chapter 173-200 WAC and Chapter 173-201A WAC, water quality certification is granted to the Applicant subject to the conditions within this Order.

Certification of this proposal does not authorize the Applicant to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water standards (Chapter 173-200 WAC) or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this certification shall absolve the Applicant from liability for contamination and any subsequent cleanup of surface waters, ground waters or sediments occurring as a result of project construction or operations.

A. General Conditions:

1. In this Order, the term "Applicant" shall mean the Port of Everett and its agents, assignees and contractors.

2. All submittals required by this Order shall be sent to Ecology's Headquarters Office, Attn: Federal Permit Coordinator, P.O. Box 47600 Olympia, WA 98504-7600 and/or fednotification@ecy.wa.gov. Any submittals shall reference Order #13125 and Corps Reference # NWS-2014-0890.

3. All notifications listed below shall be made via phone to Laura Inouye at (360)-407-6165, or e-mail at lino461@ecy.wa.gov. These notifications shall be identified with Order

#13125 and include the Applicant's name, the project contact, and the contact's phone number.

a. At least ten (10) days prior to conducting initial in-water work activities for each in-water work window.
b. Within at least seven (7) days after completion of the in-water work each year.

4. Work authorized by this Order is limited to the work described in the Joint Aquatic Resources Permit Application (JARPA) received by Ecology on June 24, 2014, unless otherwise authorized by Ecology.

5. The Applicant shall obtain Ecology review and approval before undertaking any changes to the proposed project that might significantly and adversely affect water quality, other than those project changes required by this Order.

6. Within 30 days of receipt of the updated information, Ecology will determine if the revised project requires a new public notice and Certification or if a modification to this Order is required.

7. This Order shall be rescinded if the U.S. Army Corps of Engineers does not issue an individual 404 and/or Section 10 permit for the project.

8. The Applicant shall send (per A.2.) a copy of the final Section 404 Corps permit to Ecology' Federal Project Manager within two weeks of receiving it from the Corps.

9. The Applicant shall keep copies of this Order on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.

10. Upon Ecology personnel's request, the Applicant shall provide access to the project site, all staging areas, and mitigation sites for site inspections, monitoring, necessary data collection, and/or to ensure that conditions of this Order are being met.

11. Nothing in this Order waives Ecology's authority to issue additional orders if Ecology determines that further actions are necessary to implement the water quality laws of the state. Furthermore, Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified or if additional conditions are necessary to further protect water quality.

12. In the event of changes or amendments to the state water quality, ground water quality, or sediment standards, or changes in or amendments to the state Water Pollution Control Act (RCW 90.48), or the federal Clean Water Act, Ecology will issue an administrative order to incorporate any such changes or amendments applicable to this project.

13. The Applicant shall ensure that all appropriate project engineers and contractors at the project site have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order. The Applicant shall provide Ecology a signed statement (see Attachment A for an example) from each project engineer and contractor that they have read and understand the conditions of this Order and the above-referenced permits, plans, documents and approvals. These statements shall be provided to Ecology before construction begins at the project.

14. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.

15. Failure of any person or entity to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce its terms.

16. This Order will automatically transfer to a new owner or operator if:

    a. A written agreement between the Applicant and new owner or operator with the specific transfer date of the Order's obligations, coverage, and liability is submitted to Ecology per condition A.2.;
    b. A copy of this Order is provided to the new owner or operator; and
    c. If Ecology does not notify the new Applicant that this Order must be modified to complete the transfer.

B. Water Quality Conditions:

1. This order does not authorize temporary exceedances of water quality standards beyond the limits established in WAC 173-201A-210.

    - The area of mixing established for marine waters is a 150 foot radius surrounding the in-water activity. Turbidity occurring outside that zone that is more than 5 nephelometric turbidity units (NTU) over background when the background is 50 NTU or less, or a 10% increase in turbidity when the background turbidity is more than 50 NTU is a violation of the turbidity water quality standard.

    - Visible turbidity anywhere at 150 ft point of compliance from the activity and/or the disposal location shall be considered to be an exceedance of the standard.

C. Water Quality Monitoring

1. The Applicant shall submit a water quality monitoring plan to Ecology per Condition A2 at least 30 days prior to the pre-dredge meeting. This plan shall be approved by Ecology prior to any in-water work. The plan shall include at a minimum the following information:

a. Name and contact information of the person or firm responsible for monitoring;
b. Map of sample locations including background, and early warning location (75-100 ft from activity), and point of compliance with readings at or near the surface, midway, and bottom depths for all locations. For this project the point of compliance is a radius of 150 feet from the activity causing the turbidity exceedance.
c. Parameter(s) to be monitored: turbidity, DO
d. Sample method;
e. Frequency (intensive and routine), and
f. Steps to be taken if monitoring results indicate an exceedance at the point of compliance, or an elevation at the early warning point has occurred. The amount of the exceedance/elevation and the reason for the exceedance/elevation shall also be reported.

2. Water quality monitoring will be implemented according to the approved plan; any changes must be approved by Ecology prior to implementation.

3. Turbidity monitoring reports shall be sent weekly to the 401/CZM Federal permit coordinator. The permit coordinator shall be contacted within 2 hours if an exceedance occurs during dredging of material unsuitable for in-water disposal, and within 24 hours for material suited for in-water disposal.

D. Dredging:

1. All dredging is to be done using a clamshell dredge or fixed-arm excavator. **Use of any other type of equipment requires preapproval from Ecology.**

2. Dredging operations shall be conducted in a manner that minimizes the disturbance or siltation of adjacent waters and prevents the accidental discharge of petroleum products, chemicals or other toxic or deleterious substances into waters of the State.

3. Dredged material shall not be stockpiled on a temporary or permanent basis below the ordinary high water line.

4. During dredging, the Applicant shall have a boat available on site at all times to retrieve debris from the water.

5. Caution shall be used when placing material from the bucket into the scow to limit splash and prevent spillage, especially when working with material not suited for in-water disposal.

6. The Dredge operator shall not overfill the scow to the point where dredge material overtops the sidewalls. When working with material not suited for in-water disposal, neither dredge material nor associated water is allowed to overtop the sidewalls.

7. Grounding out of vessels is not allowed.

8. Dredge cycles will be complete; partial loads will not be returned.

9. Leveling out with bucket or drag beam is not allowed.

10. Float booms will be used around in-water equipment at the dredge site to control floating debris.

11. All unsuited material along with a one foot buffer into the suitable material will be removed prior to commencing dredging of material suitable for in-water disposal.

12. A post-dredge survey must be conducted after completion of dredging of the unsuitable material to ensure complete removal of the unsuitable material. The removal completion survey must be approved by Ecology prior to starting dredging the suitable material.

13. A pre-dredge meeting is required to be convened at least one week prior to the start of dredging. A **Dredging Plan** and **Spill Prevention, Control and Countermeasures (SPCC) Plan** are required and shall be submitted to Ecology to the 401/CZM Federal permit coordinator at the address shown in Condition A2 for review and approval 30 days prior to the pre-construction meeting.

E. Disposal

1. All dredged material designated unsuitable for in-water disposal will be taken to an Ecology-approved upland location.

2. All dredged material designated suitable for in-water disposal will be taken to the Port Gardner non-dispersive open water disposal site via bottom dump barge. **Use of any other type of disposal method or location requires preapproval by Ecology.**

3. For material being taken to open water disposal sites, all debris (larger than 2 feet in any dimension) shall be removed from the dredged sediment prior to disposal. Similar sized debris found floating in the dredging or disposal area shall also be removed.

F. Armor placemeut

1. Grounding out of vessels is not allowed.

2. Appropriate BMPs shall be implemented to minimize turbidity associated with placement of armoring.

3. Imported materials will be tested prior to placement to ensure material are free of contaminants.

G. Transloading

1. A transloading plan must be submitted to Ecology for review and approval at least 30 days prior to the pre-dredge meeting. Early coordination is strongly encouraged.

2. Transloading shall use appropriate BMPs to protect both the waterbody where transfer is occurring and the stormwater system at the transload site.

3. No dewatering is allowed during transit of barges from the project site to the transload site.

H. Mitigation

1. The Applicant shall notify Ecology of any changes to the amount of aquatic resource impacts, or revisions to the mitigation plan.

2. Prior to impacting aquatic resources, the Applicant shall submit to Ecology documentation from the Port of Everett's Union Slough advance mitigation program verifying the purchase of credits from the Port of Everett's Union Slough advance mitigation program. This must be sent to Ecology by Ecology at least 2 weeks prior to the pre-dredge meeting. This documentation must include:
   a) The permit number
   b) Permit issuance date
   c) Impact acreage
   d) The amount of credits required by the permit, and
   e) The date of credit purchase.

3. The Applicant shall complete the purchase of credits before the impacts to aquatic resources occur or Ecology may require additional compensation to account for temporal loss of aquatic resource functions.

4. If the credits are not purchased within 13 months of the date of this Order, the Applicant shall inform Ecology, in writing, of the status of:
   a. Port of Everett Mill A Interim Cleanup
   b. When credits will be purchased.

   With the:
   c. Expected date of completion.
   d. Reason for the delay.

5. The Applicant shall submit an updated written notification every 12 months thereafter until Port of Everett Mill A Interim Cleanup is complete and the required credits are purchased.

I. Timing Requirements:

1. All in-water work shall not occur between February 16 through August 14. Any project change that requires change or extension to the in-water work window shall be sent to Ecology for approval.

2. This Order shall remain in effect until December 31, 2017.

J. Notification Requirements:

1. The Applicant shall provide notice to Ecology's Federal permit coordinator at least 7 days prior to the start of construction or dredging and within 14 days after completion of construction or dredging at the project site. Notification should be made using all the information required in Condition A2.

K. Emergency/Contingency Measures:

1. The Applicant shall develop a spill prevention and containment plan for this project, and shall have spill cleanup materials and an emergency call list available on site.
2. Any work that is out of compliance with the provisions of this Order, or conditions causing distressed or dying fish, or any discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, is prohibited. If these occur, the Applicant or operator shall immediately take the following actions:
    a. Cease operations that are causing the compliance problem.
    b. Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.
    c. In the event of finding distressed or dying fish, the applicant shall collect fish specimens and water samples in the affected area within the first hour of the event. These samples shall be held in refrigeration or on ice until the applicant is instructed by Ecology on what to do with them. Ecology may require analyses of these samples before allowing the work to resume.
    d. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.
    e. Immediately notify Ecology's 24-Hour Spill Response Team at 1-800-258-5990, **and** within 24 hours of spills or other events Ecology's Federal permit coordinator at (360) 407-6165.

f. Submit a detailed written report to Ecology within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

3. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters, including wetlands.

4. If at any time during work the proponent finds buried chemical containers, such as drums, or any unusual conditions indicating disposal of chemicals, the proponent shall immediately notify Ecology using the above phone numbers.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do both of the following within 30 days of the date of receipt of this Order:

File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel Road SW STE 301 Tumwater, WA 98501	**Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

CONTACT INFORMATION

Please direct all questions about this Order to:

Laura Inouye
Department of Ecology
Headquarters
PO Box 47600

Olympia, WA 98504-7600

(360)-407-6165
Lino461@ecy.wa.gov

MORE INFORMATION

Pollution Control Hearings Board Website
www.eho.wa.gov/Boards_PCHB.aspx

Chapter 43.21B RCW - Environmental and Land Use Hearings Office – Pollution Control Hearings Board
http://apps.leg.wa.gov/RCW/default.aspx?cite=43.21B

Chapter 371-08 WAC – Practice And Procedure
http://apps.leg.wa.gov/WAC/default.aspx?cite=371-08

Chapter 34.05 RCW – Administrative Procedure Act
http://apps.leg.wa.gov/RCW/default.aspx?cite=34.05

Chapter 90.48 RCW – Water Pollution Control
http://apps.leg.wa.gov/RCW/default.aspx?cite=90.48

Chapter 173.204 WAC – Sediment Management Standards
www.ecy.wa.gov/biblio/wac173204.html

Chapter 173-200 WAC – Water Quality Standards for Ground Waters of the State of Washington
www.ecy.wa.gov/biblio/wac173200.html

Chapter 173-201A WAC – Water Quality Standards for Surface Waters of the State of Washington
www.ecy.wa.gov/biblio/wac173201A.html

SIGNATURE

Dated February 3, 2016 in Olympia Washington

Brenden McFarland, Section Manager
Shorelands and Environmental Assistance Program
Headquarters Office – Ecology

ATTACHMENT A

Port of Everett
Mill A interim Cleanup
Water Quality Certification Order #13125

Statement of Understanding of
Water Quality Certification Conditions

I have read and understand the conditions of Order #13125 Section 401 Water Quality Certification for the Port of Everett Mill A Interim Cleanup. I have also read and understand all permits, plans, documents, and approvals associated with the project referenced in this order.

_____ _____
Signature Date

_____
Print Name

_____
Company

_____
Title

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

February 3, 2016

Erik Gerking
Port of Everett
PO Box 538
Everett, WA 98206

RE: Coastal Zone Consistency for Corps Reference # NWS-2014-0890, Port of Everett Mill A Interim Cleanup

Dear Mr. Gerking:

On June 24, 2015 the Port of Everett submitted a Certification of Consistency with the Washington State Coastal Zone Management Program (CZMP). Pursuant to Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended, Ecology concurs with Port of Everett's determination that the proposed work is consistent with Washington's CZMP.

If you have any questions regarding Ecology's consistency determination please contact Laura Inouye at (360)-407-6165.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel RD SW STE 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

Sincerely,

Brenden McFarland, Section Manager
Environmental Review and Transportation
Shorelands and Environmental Assistance Program
WA Department of Ecology Headquarters

by Certified Mail 7015 0640 0006 1040 9364

e-cc: Jess Jordan, U.S. Army Corps of Engineers
ecyrefedpermits@ecy.wa.gov
Loree' Randall – Ecology, HQ-SEA

State of Washington
Department of Fish and Wildlife
Mailing Address: 600 Capitol Way N, Olympia WA 98501-1091, (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia WA

July 6, 2015

Port of Everett
Graham Anderson
PO Box 538
Everett, Washington 98206

Dear Mr. Anderson,

SUBJECT: YOUR MODIFICATION REQUEST FOR MILL A CLEANUP PROJECT INTERIM ACTION, SUBSTANTIVE REQUIREMENTS

On May 28, 2015, I received your request for a modification to the Substantive Requirements for the project described above.

☐ **NO OBJECTION.** See enclosed letter.

X **NO OBJECTION.** We request that our enclosed comments be made a condition of the state coordinated response.

☐ **OBJECTION.** We request that the State of Washington recommend denial of the proposed project due to the concerns expressed in the enclosed letter.

☐ **HOLD.** See enclosed letter.

NOTE: The sediment cleanup is subject to cleanup investigation under a Model Toxics Control Act (MTCA) Agreed Order with the Department of Ecology to complete a Remedial Investigation/Feasibility Study and Cleanup Action for the site with the Port of Everett, Weyerhaeuser and the WA Dept. of Natural Resources.

1. TIMING LIMITATIONS: The project may begin immediately and shall be completed by December 31, 2017, provided, work below the ordinary high water line shall not occur from February 16 through August 14 of any year for the protection of migrating juvenile salmonids.

2. PRE-CONSTRUCTION NOTIFICATION REQUIREMENT: No less than three working days prior to start of work, the applicant or their representative shall notify the Habitat Biologist (HB) listed below by email (Laura.Arber@dfw.wa.gov) or phone (425)379-2306, of the project start date. The notifications shall include the applicants name, project location, starting date of work, and the control number of this HPA.

3. APPROVED PLANS: Work shall be accomplished per plans and specifications submitted and approved by the Washington Department of Fish and Wildlife, entitled “MILL A CLEANUP PROJEC INTERIM ACTION, AGREED ORDER NO. DE 8979”, dated (AUGUST 20, 2014), and E-mail entitled, 'RE: “FW: MILL-A SEDIMENT INVESTIGATION LOCATIONS”, received on (JUNE 2, 2015), except as modified by this Hydraulic Project Approval. A copy of these plans shall be available on site during all phases of the project proposal.

4. All trash and unauthorized fill, including concrete blocks or pieces, bricks, asphalt, metal, treated wood, glass, floating debris, and paper, below the ordinary high water line (OHWL) in and around the applicant's project area shall be removed and deposited at an approved upland disposal site.

CLEANUP DREDGING

5. Project activities shall include dredging approximately 1.7 acres (85,000 square feet) totaling up to 40,000 cubic yards of varying amounts of wood debris, sawdust, and native silt and sand from the Former Weyerhaeuser Mill A Cleanup Site, as illustrated in the plans, except as modified by this Hydraulic Project Approval.

6. All existing debris or other deleterious materials resulting from dredging activities shall be removed and disposed of upland such that it does not enter waters of the state.

7. As specified in the application, the area shall be dredged to maintain a depth of -42.0 feet MLLW (0.0=MLLW) plus 2 feet of over-dredge allowance.

8. As specified in the plans, a temporary transition slope shall be constructed from the base of the navigation dredging area to meet the existing elevations to the south. The transition slope will be removed as part of future cleanup actions at the site (under a separate permit).

9. Dredging shall be confined to the footprint illustrated in your project plans.

10. The bottom profile for the Mill A Cleanup Project Site shall be dredged to the contours illustrated in your project plans.

11. As specified in the application, unavoidable impacts associated with the Port of Everett's dredging activity at the Mill A Interim Cleanup Action (700 sf) shall be mitigated by the dedication of 700 sf of existing estuarine habitat from the Port of Everett's Union Slough Restoration Site.

12. As specified in the application, approximately 4,000 cy of new armor rock shall be placed over 23,000 sf along the shoreline and temporary offshore transition slopes. Approximately 200 CY of fish mix shall be placed on top of the armored slope over approximately 3,600 sf between elevations of -4 and -20 ft MLLW (0.0= MLLW).

13. If a clamshell dredge is used for dredging, each pass of the clamshell dredge bucket shall be complete.

14. Dredged material shall not be stockpiled below the ordinary high water line. Sweeping the bottom to smooth contours is not permitted.

15. Dredged materials shall be deposited at either an approved designated Department of Natural Resources deep water disposal site or approved upland site.

SEDIMENT SAMPLES

16. As specified in the plans, and email from Graham Anderson on June 2, 2015, sediment core samples may be collected at up to several hundred locations, at depth elevations ranging between -0.0 ft and –100 ft MLLW (0.0=MLLW).

17. Work shall be done in a manner that minimizes turbidity and discharge of silt to the water column.

18. The discharge of turbid or slurry laden process water to state waters is not authorized by these Substantive Requirements.

19. During collection of samples care shall be taken to minimize the suspension of sediment. All excess sediment and water derived during sampling activities shall be placed in proper containers, labeled, characterized, and disposed of by the operators in accordance with the appropriate guidelines.

20. All waste material such as drill spoils and cuttings, construction debris, silt, excess dirt, excess gravel, or overburden resulting from this project shall be deposited above the limits of floodwater in an upland disposal site that has appropriate regulatory approval.

21. Sampling equipment shall be checked daily for leaks and be well maintained and kept in good repair and shall prevent the loss of lubricants, grease, and any other deleterious materials from entering the state waters.

22. If kelp or eelgrass beds are present, vessel operation shall be restricted to tidal elevations adequate to prevent propeller related damage to vegetation.

MARINE HABITAT FEATURES

23. Eelgrass and kelp shall not be adversely impacted due to any project activities (e.g., barge shall not ground, equipment shall not operate, and other project activities shall not occur in eelgrass and kelp).

WATER QUALITY PROVISIONS

24. Project activities shall be conducted to minimize siltation of the beach area and bed.

25. If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediate notification shall be made to the Washington Department of Ecology at 1-800-258-5990, and to the Area Habitat Biologist listed below.

26. No petroleum products or other deleterious materials shall enter surface waters.

27. Project activities shall not degrade water quality to the detriment of fish life.

If you have any questions, please contact me at Laura.Arber@dfw.wa.gov or 425-379-2306.

Sincerely,

Laura Arber
Area Habitat Biologist

State of Washington
Department of Fish and Wildlife
Mailing Address: 600 Capitol Way N, Olympia WA 98501-1091, (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia WA

December 19, 2014

Port of Everett
Graham Anderson
PO Box 538
Everett, Washington 98206

Dear Mr. Anderson:

SUBJECT: YOUR APPLICATION FOR MILL A CLEANUP PROJECT INTERIM ACTION, SUBSTANTIVE REQUIREMENTS

On October 28, 2014, I received your request for Substantive Requirements for the project described above.

☐ **NO OBJECTION.** See enclosed letter.

X **NO OBJECTION.** We request that our enclosed comments be made a condition of the state coordinated response.

☐ **OBJECTION.** We request that the State of Washington recommend denial of the proposed project due to the concerns expressed in the enclosed letter.

☐ **HOLD.** See enclosed letter.

If you have any questions, please contact me at Laura.Arber@dfw.wa.gov or 425-379-2306.

Sincerely,

Laura Arber
Area Habitat Biologist

NOTE: The sediment cleanup is subject to cleanup investigation under a Model Toxics Control Act (MTCA) Agreed Order with the Department of Ecology to complete a Remedial Investigation/Feasibility Study and Cleanup Action for the site with the Port of Everett, Weyerhaeuser and the WA Dept. of Natural Resources.

1. TIMING LIMITATIONS: The project may begin immediately and shall be completed by December 31, 2017, provided, work below the ordinary high water line shall not occur from February 16 through September 14 of any year for the protection of migrating juvenile salmonids.

2. PRE-CONSTRUCTION NOTIFICATION REQUIREMENT: No less than three working days prior to start of work, the applicant or their representative shall notify the Habitat Biologist (HB) listed below by email (Laura.Arber@dfw.wa.gov) or phone (425)379-2306, of the project start date. The notifications shall include the applicants name, project location, starting date of work, and the control number of this HPA.

3. APPROVED PLANS: Work shall be accomplished per plans and specifications submitted and approved by the Washington Department of Fish and Wildlife, entitled "MILL A CLEANUP PROJEC INTERIM ACTION, AGREED ORDER NO. DE 8979", dated (AUGUST 20, 2014), except as modified by this Hydraulic Project Approval. A copy of these plans shall be available on site during all phases of the project proposal.

4. All trash and unauthorized fill, including concrete blocks or pieces, bricks, asphalt, metal, treated wood, glass, floating debris, and paper, below the ordinary high water line (OHWL) in and around the applicant's project area shall be removed and deposited at an approved upland disposal site.

CLEANUP DREDGING

5. Project activities shall include dredging approximately 1.95 acres (85,000 square feet) totaling 35,000 cubic yards of varying amounts of wood debris, sawdust, and native silt and sand from the Former Weyerhaeuser Mill A Cleanup Site, as illustrated in the plans, except as modified by this Hydraulic Project Approval.

6. All existing debris or other deleterious materials resulting from dredging activities shall be removed and disposed of upland such that it does not enter waters of the state.

7. As specified in the application, the area shall be dredged to maintain a depth of -42.0 feet MLLW (0.0=MLLW) plus 2 feet of over-dredge allowance.

8. As specified in the plans, a temporary transition slope shall be constructed from the base of the navigation dredging area to meet the existing elevations to the south. The transition slope will be removed as part of future cleanup actions at the site (under a separate permit).

9. Dredging shall be confined to the footprint illustrated in your project plans.

10. The bottom profile for the Mill A Cleanup Project Site shall be dredged to the contours illustrated in your project plans.

11. As specified in the plans, depending on the sampling and analysis results of dredged material, any exposed contamination may be over-dredged for complete removal, or placement of a sand cover.

12. If a clamshell dredge is used for dredging, each pass of the clamshell dredge bucket shall be complete.

13. Dredged material shall not be stockpiled below the ordinary high water line. Sweeping the bottom to smooth contours is not permitted.

14. Dredged materials shall be deposited at either an approved designated Department of Natural Resources deep water disposal site or approved upland site.

SEDIMENT SAMPLES

15. As specified in the plans, sediment core samples shall be collected at up to 20 locations, at depth elevations ranging between -15 and –30 ft MLLW (0.0=MLLW).

16. Work shall be done in a manner that minimizes turbidity and discharge of silt to the water column.

17. The discharge of turbid or slurry laden process water to state waters is not authorized by these Substantive Requirements.

18. During collection of samples care shall be taken to minimize the suspension of sediment. All excess sediment and water derived during sampling activities shall be placed in proper containers, labeled, characterized, and disposed of by the operators in accordance with the appropriate guidelines.

19. All waste material such as drill spoils and cuttings, construction debris, silt, excess dirt, excess gravel, or overburden resulting from this project shall be deposited above the limits of floodwater in an upland disposal site that has appropriate regulatory approval.

20. Sampling equipment shall be checked daily for leaks and be well maintained and kept in good repair and shall prevent the loss of lubricants, grease, and any other deleterious materials from entering the state waters.

21. If kelp or eelgrass beds are present, vessel operation shall be restricted to tidal elevations adequate to prevent propeller related damage to vegetation.

MARINE HABITAT FEATURES

22. Eelgrass and kelp shall not be adversely impacted due to any project activities (e.g., barge shall not ground, equipment shall not operate, and other project activities shall not occur in eelgrass and kelp).

WATER QUALITY PROVISIONS

23. Project activities shall be conducted to minimize siltation of the beach area and bed.

24. If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediate notification shall be made to the Washington Department of Ecology at 1-800-258-5990, and to the Area Habitat Biologist listed below.

25. No petroleum products or other deleterious materials shall enter surface waters.

26. Project activities shall not degrade water quality to the detriment of fish life.

PETER GOLDMARK
COMMISSIONER OF PUBLIC LANDS

OPEN WATER DISPOSAL SITE USE AUTHORIZATION NO. 20-522034

The STATE OF WASHINGTON, acting by and through the Department of Natural Resources, hereinafter called State, does hereby permit the PORT OF EVERETT (Grantee), a Washington State Special Purpose District (Port District), to use certain lands owned by the state of Washington situated in Snohomish County and designated as follows:

That area encompassed within a 600 foot radius of a point which is 47° 58.85 North Latitude and 122° 16.74 West Longitude (1983 North American Datum), also known as the Port Gardner non-dispersive VTS open water disposal site.

SECTION 1 TERMS

1.01 Term. This use authorization shall be effective on August 15, 2016, and will expire at 11:59 pm on February 15, 2017, or as otherwise specified herein.

1.02 Renewal. State may extend this use authorization upon whatever terms and conditions it may prescribe, providing an extension is in the public interest.

1.03 Cancellation. This use authorization may be suspended or terminated for violation of any of the terms stated in this use authorization or any amendments thereto or if such action is found to be in the public interest.

1.04 Termination. This use authorization shall terminate upon the expiration, cancellation, or suspension of State's shoreline permit authorizing the site. If State does obtain a renewed shoreline permit for said site, this use authorization may be reinstated upon terms then in effect, but shall include any additional application fees associated with increased costs for management of the site. This use authorization or reinstated use authorization will terminate upon the use authorization expiration date shown above.

SECTION 2 USE OF PREMISES

2.01 Permitted Use. Grantee shall have non-exclusive use of the premises only for the disposal of approved dredged material of a volume not to exceed 17,210 cubic yards, as authorized by federal, state, and local regulatory agencies for the Port of Everett's Pacific Terminal Berth. This volume will be determined based on pre- and post- dredging site measurements using procedures established by State. If such procedures are not established by State, then volume will be based on the barge volume times the number of trips to the site.

2.02 Positioning. Grantee, its contractor, or operator shall fix and record exact position (latitude and longitude to the nearest one-thousandths of a minute) at the initiation and completion of discharge and shall concentrate the dumping of material at the center of the site, unless otherwise specified. The vessel's position shall be fixed by using a global positioning system (GPS), the Coast Guard Puget Sound Vessel Traffic Service (PSVTS), Radar, LORAN-C, SATNAV, or any other methods approved by State. Grantee, its contractor, or operator shall also record the reading on the vessel's fathometer at the time of discharge of the material. In areas where the Coast Guard PSVTS is available, Grantee, its contractor, or operator shall notify PSVTS ("Seattle Traffic" on VHF-FM Channel 14) prior to arriving at the disposal site and shall obtain US Coast Guard notification that the barge is on site at the time of dumping. If such notification is not received the material shall not be dumped. Position and fathometer recordings shall be made on Disposal Site Use Report forms (see Subsection 4.02) provided by State.

2.03 Cleanup. All floatable debris coming from material disposed of at the site shall be collected and disposed of on land by Grantee. Grantee shall comply with all federal, state, and local laws, regulations, rules or ordinances in disposing of any such debris.

2.04 Other. From time-to-time, if it is determined that additional environmental conditions or benefits to the public are necessary, State reserves the right to amend this use authorization to include such conditions.

2.05 Disposal Method. All disposals of approved dredged materials shall be done in accordance with the specifications set forth in the Plan of Operations (Attachment A). In addition to any requirements described in the Plan of Operations, Grantee must only use bottom dump barges to dispose of the approved dredged material at this site. Use of any type of barge other than a bottom dump barge is prohibited, unless expressly approved in a separate writing by the State before the commencement of any disposal activity.

SECTION 3 PAYMENT

The payment of these fees to State is the essence of this use authorization, and the same shall be, and is, a condition precedent to the execution and continuance of this use authorization or any rights thereunder.

3.01 Minimum Fee. Grantee shall pay State a fee of $2,000.00 or $0.45 for each cubic yard dumped, whichever is larger as provided in WAC 332-30-166(9) or as hereafter amended, with the initial $2,000.00 per permit being a minimum nonrefundable fee.

3.02 Payment. The payment of the minimal nonrefundable fee to State is a condition precedent to the execution of this permit. Failure to pay any required fees in addition to the nonrefundable fee shall be grounds for termination or suspension of the permit. Payment is to be made to the Department of Natural Resources, Financial Management Division, PO Box 47041, Olympia, Washington 98504-7041, in the following manner:

$2,000.00 is due and payable at time of application. Additional payments, as provided by Subsection 3.01; if any, due monthly not more than thirty (30) days after completion of each calendar month's dredging. Payments to be based on either actual amounts dumped or estimates based on barge volume.

3.03 Records. Grantee shall keep an accurate record and account of all materials deposited at the above described site, including but not limited to those records required by Section 2.02 of this use authorization on the Disposal Site Use Report (see Subsection 4.02). State shall be allowed to inspect and audit books, contracts and accounts of Grantee to determine whether State is being paid the full amount payable to it for the disposal of such material, and to ensure that the material discharged at the open water disposal site originated at an approved dredging site.

3.04 Application Fee Adjustments. The fees stated herein may be reviewed and adjusted annually or more often as needed in accordance with WAC 332-30-166(9) as enacted and as hereafter amended.

SECTION 4 REQUIREMENTS

4.01 Notification. Grantee shall observe the completed Plan of Operation (Attachment A) submitted in writing to State at least five working days in advance of first use. State must be notified of, and approve any changes in the Plan of Operations at least twenty-four (24) hours before the changes are implemented. Notification by Grantee, and subsequent approval by State, may be made verbally. However, the verbal notification must be followed by submission of a revised Plan of Operation within five (5) working days. State shall be notified by telephone at (360) 902-1735, twenty-four (24) hours prior to each startup of dredging operations. Grantee also shall notify State by letter immediately upon completing use of the site.

4.02 Disposal Site Use Report. The tug captain shall fill out a Disposal Site Use Report (provided by State) at the time of each disposal event. It is the responsibility of Grantee to ensure that the completed forms are forwarded to State at the completion of each week's disposal operations.

4.03 Volume Reporting. Within twenty (20) days of completing dredging operations for a calendar month, Grantee shall forward a summary of that month's disposal information to State. The summary shall include the volumes of material deposited at the site or volumes estimated from barge volume, and shall be provided on a Monthly Disposal Statement form provided by State.

4.04 Compliance. Grantee shall conform to any applicable law, regulation, permit, or license of any public authority affecting the disposal site premises and the use thereof, and shall correct at Grantee's own expense any failure of compliance created through Grantee's fault or by reason of Grantee's use. If any other permit or license condition changes during the term of this use authorization, those changed conditions shall apply to Grantee.

4.05 Permits. Procurement of the necessary permits and licenses, excepting the shoreline permit for the disposal site, shall be solely the responsibility of Grantee.

4.06 Indemnity. Grantee shall indemnify and save harmless State, its employees, officers and agents from any and all liability, damages (including environmental damages, damages to land, aquatic life, and other natural resources), expenses, causes of action, suits, claims, costs, fees (including attorneys' fees and costs), penalties (civil or criminal), and response, clean-up, and habitat restoration costs assessed, imposed or incurred as a result of the use, occupation or control of the site by Grantee's employees, agents, assigns, contractors, subcontractors, licensees, or invitees. This indemnity shall not extend to liability arising solely out of the willful or grossly negligent act of State or State's agents.

4.07 Damages. In addition to other remedies available to it under the law, State may charge Grantee a fee of $5.00 per cubic yard for all dumping not in conformance with the use authorization, WAC 332-30-166 or other statute, rule, regulation or ordinance governing the activity, including, but not limited to, materials not approved for open water disposal, failure to give proper notification, dumping without valid permits and/or dumping outside the disposal zone.

4.08 Shoreline Permit. This Open Water Disposal Site Use Authorization is subject to the conditions contained in the shoreline permit issued for the aforementioned site and any conditions and/or provisions contained therein.

4.09 Breach. In addition to any other remedies available, if any condition of this use authorization is violated by Grantee, State may suspend or terminate this use authorization. Any action by a contractor, operator, or agent of Grantee may be imputed to Grantee.

4.10 Survival. All obligations of Grantee to be performed prior to the expiration or earlier termination shall not cease upon termination or expiration of this use authorization, and shall continue as obligations until fully performed. All clauses of this use authorization (including but not limited to 4.06 (Indemnity)), which require performance beyond the termination or expiration date shall survive the termination or expiration date of this use authorization.

Grantee expressly agrees to all covenants herein and binds itself for the payment hereinbefore specified.

PORT OF EVERETT

Dated: July 5, 2016

Les Reardanz

By: LES REARDANZ
Title: Chief Executive Officer
Address: PO Box 538
Everett, WA 98206

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Dated: July 8, 2016

Blair Reeves for

By: KRISTIN SWENDDAL
Title: Division Manager
Address: PO Box 47027
Olympia, WA 98504-7027

REPRESENTATIVE ACKNOWLEDGMENT

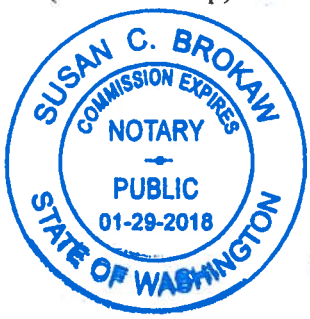
STATE OF WASHINGTON)
) ss.
County of Snohomish)

I certify that I know or have satisfactory evidence that LES REARDANZ is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument, on oath stated that (he/she) was authorized to execute the instrument and acknowledged it as the Chief Executive Officer of the Port of Everett to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated: July 5, 2016

Susan C. Brokaw
(Signature)

(Seal or stamp)



Susan C. Brokaw
(Print Name)

Notary Public in and for the State of Washington, residing at Everett

My appointment expires 1-29-2018

STATE ACKNOWLEDGMENT

STATE OF WASHINGTON)
) ss.
County of Thurston)

I certify that I know or have satisfactory evidence that KRISTIN SWENDDAL is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as the ~~Division Manager~~ acting of the Department of Natural Resources of the State of Washington to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Blair Reeves for

Dated: 7-8-, 2016

(Signature)

(Seal or stamp)

Andrea Wagner

(Print Name)

Notary Public in and for the State of Washington, residing at Olympia, WA

My appointment expires 9-16-18

ANDREA WAGNER NOTARY PUBLIC COMMISSION EXPIRES 09-16-18 STATE OF WASHINGTON

SEPA MITIGATED DETERMINATION OF NON-SIGNIFICANCE (MDNS)
PORT OF EVERETT

Mill A Interim Cleanup Action
Port SEPA File No. 2015-04

DESCRIPTION OF PROPOSAL: This Interim Cleanup Action will be conducted under a Model Toxics Control Act (MTCA) Agreed Order (Ref. No. DE 8979) with and under the supervision of the Washington Department of Ecology (Ecology) for the former Weyerhaeuser Mill A site. This Interim Cleanup Action will be conducted to both remove identified contaminated sediment and wood debris and increase navigational access to the Pacific Terminal. The Interim Cleanup Action will be subject to review and approval by Ecology to ensure compliance with MTCA requirements. Within the Interim Cleanup Action area, contaminated and clean sediment will be removed to a depth of -42 feet Mean Lower Low Water (MLLW) with a 1-foot over dredging allowance. The total area of the proposed dredge prism will be approximately 1.7 acres. The estimated dredge volume is 40,000 cubic yards.

A temporary transition slope will be constructed along the dredge area to meet the existing depths to the south. Contamination may be exposed by the dredging on the temporary transition slope. The project includes placement of cover materials over exposed contamination on the transition slope. Based on the sampling and analysis results, the Dredge Material Management Program (DMMP) and Ecology MTCA site managers will determine the appropriate management method for exposed contamination. The required exposed contamination management methods will be implemented as part of the Interim Cleanup Action. It is proposed that a temporary 3-foot thick rock cap will be placed on this slope.

Approximately 1,500 square feet of existing shoreline riprap between elevations of -2 feet and -43 feet MLLW along the shoreline slope will be removed to access the area to be dredged. This material will be replaced after dredge operations are completed. Additionally, approximately 4,200 square feet (SF) of new riprap will be placed along the slope directly south and adjacent to Pacific Terminal to ensure a stable slope from existing riprap to the new navigation dredge base. In total approximately 4,000 cubic yards (CY) of riprap will be placed over an area approximately 23,000 SF along the shoreline and temporary offshore transition slopes. Approximately 200 CY of fish mix gravel will be placed on top of areas of riprap to enhance habitat.

A Dredged Material Characterization Report will be prepared for DMMP and will be used by the regulatory agencies to determine the suitability of the dredged material for open water disposal, to serve as the basis for the permitted disposal options for the project, and to assist Ecology in determining specific MTCA cleanup considerations. Dredged material in the Interim Cleanup Action area that are shown to not contain contamination levels in excess of applicable criteria will be loaded onto barges and disposed of at the Port Gardner Open Water Disposal Site. Dredged materials in the Interim Cleanup Action area that do not meet the open water disposal criteria will be dredged separately and processed for transport to an offsite permitted landfill facility. The Interim Cleanup Action will be subject to review and approval by Ecology to ensure compliance with MTCA requirements.

Project site activities are anticipated to start mid-July 2016 and finish in January 2017.

PROPONENT AND LEAD AGENCY: Port of Everett

LOCATION OF PROPOSAL: The property is located at 3500 Terminal Avenue, Everett, Washington, 98201, in Snohomish County. The Project is located in the NW quarter of Section 30 in Township 29 North, Range 5 East, and NE quarter of Section 30, Township 29 North, Range 5

East, Willamette Meridian. The Snohomish County Tax Parcel Numbers include 29053000201800, 29053000203400, and 29042500400200.

DETERMINATION: The Lead Agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This determination assumes compliance with federal and state law as well as City of Everett ordinances related to general environmental protection. This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public upon request.

Note: Issuance of this threshold determination does not constitute approval of permits. This proposal will be reviewed for compliance with all applicable federal, State and City of Everett codes.

This MDNS is issued under WAC 197-11-340(2) and WAC 197-11-350.

PUBLIC AND AGENCY COMMENT: The lead agency will not act on this proposal until after the public comment period closes 14 calendar days from the published date below. Comments must be submitted in writing by 4:00 PM May 25, 2015 to the Responsible Official as named below. Comments will not be accepted by telephone or personal conversation. For general project related questions or additional information, please contact Graham Anderson, Director of Planning, at 425-388-0703 or email grahama@portofeverett.com.

MITIGATION MEASURES:

1. Prior to start of work, all local, State and Federal permits and authorizations will be obtained and all conditions therein adhered to including in-water work timing restrictions.
2. Water Quality Monitoring will be implemented during construction as part of the MTCA cleanup program and applicable authority.
3. Port of Everett's Environmental Management System (EMS) Best Management Practices (BMPs) shall apply to the project's construction activities.
4. The Port will continue to coordinate with the Ecology MTCA Program to ensure appropriate project BMPs are being instituted to protect human health and the environment, considering this project is located within the study area of the former Mill A site.
5. BMPs for dredging and material handling activities will be implemented to avoid and minimize potential negative impacts to the environment.
6. A contractor-prepared Sediment Removal and Disposal Plan will be reviewed for approval by the Port.
7. Project activity will result in the permanent loss of approximately 700 square feet of shallow water habitat. This will be mitigated for through use of credits from the Port's Union Slough Restoration Site.
8. In the event noise concerns arise, the Port maintains a Noise Compliant Hotline (425-388-0269) that is monitored 24 hours per day, 7 days per week.

Contact Person:	Graham E. Anderson, Director of Planning Phone: (425) 388-0703
Responsible Official:	Les Reardanz
Title:	CEO / Executive Director
Address:	Port of Everett PO Box 538 Everett, Washington 98206
Email:	SEPAComments@portofeverett.com, subject line: "SEPA Mill A Interim Cleanup Action"

Signature: Lee Reardan **Date:** 5/7/15

Published: May 11, 2015
Posted: May 11, 2015
Mailed: May 11, 2015

APPEALS: There is no administrative appeal for this determination per Port of Everett Resolution 614. Procedures for appeal of this SEPA threshold determination are set forth in Chapter 43.21C RCW including, without limitation, RCW 43.21C.060, 43.21C.075, and RCW 43.21C.080 and Chapter 197-11 WAC including, without limitation, WAC 197-11-680.

PLANNING AND COMMUNITY DEVELOPMENT

Allan Giffen
Director

November 24, 2014

Port of Everett
Attn: Graham Anderson, Planning Director
P.O. Box 538
Everett, WA 98206

Re: Former Weyerhaeuser Mill A Cleanup Project – Interim Cleanup Action

Dear Graham,

Thank you for providing the city the background information on the former Weyerhaeuser Mill A cleanup project - interim cleanup action. In your August 20, 2014, Project Description you mentioned the subject property is undergoing cleanup investigations consistent with the Model Toxics Control Act (MTCA) Agreed Order with the Washington State Department of Ecology. As you stated, the Port has identified an urgent need to perform an interim cleanup action at this site to improve navigation at the Pacific Terminal to meet the growing demand on the Boeing supply line for the new 777x production.

This interim action will remove sediments from an area south of the Pacific Terminal to provide increased navigational area for the ships docking at the facility. The end result will be the creation of a temporary transition slope from the base of the navigation dredging area to meet the existing elevations to the south. These improvements will facilitate the Boeing supply line by accommodating larger vessels that will call on the terminal. It is understood that this transition slope is a temporary slope that will be removed during future cleanup actions at the site.

As described, the interim action dredge prism will be characterized in accordance with the Dredged Material Management Program (DMMP) and that the Department of Ecology will review and approve the project specifics to insure compliance with the MTCA requirements. Dredge materials will either disposed of at the Port Gardner disposal site, or materials that exceed in-water disposal standards will be processed for transport to an Ecology-approved landfill facility. Any contamination on the newly exposed slope will properly isolated from the marine environment as determined by the DMMP and MTCA site managers.

The City of Everett Planning and Community Development Department supports the Port's efforts to improve navigation and to provide expanded berthing capabilities to service the Boeing 777x supply needs. We recognize that this project will comply with the regulations contained in RCW 70.105D.090 and that that the project will also comply with all DMMP and MTCA

requirements. This project, as proposed, satisfies the substantive requirements of the City of Everett Shoreline Master Program and is exempt from the City of Everett procedural requirements.

If you have any questions about the City's position related to your interim cleanup action, feel free to contact me at (425) 257-7146.

Sincerely,

Gerry Ervine, Land Use Manager

CC: Allan Giffen
Paul McKee

PUBLIC WORKS

EVERETT

December 16, 2014

Port of Everett
Attn: Graham Anderson, Planning Director
P.O. Box 538
Everett, WA 98206

Re: Former Weyerhaeuser Mill A Site
Interim Cleanup Action under Agreed Order No. DE 8979

Dear Graham,

Thank you for providing notice and narrative of the Port's plans to conduct an interim cleanup action at the former Weyerhaeuser Mill A site under the regulatory oversight of the Washington State Department of Ecology. We recognize that pursuant to Section VIII.P (Compliance with Applicable Laws) of Agreed Order No. DE 8979 and RCW 70.105D.090(1), this work is exempt from the procedural requirements of any laws requiring or authorizing local government permits or approvals for the remedial action.

We support the Port's efforts to remediate the contaminated sediments and soils in a manner consistent with current Best Management Practices and all other applicable regulations.

Please feel free to contact me at (425) 257-8867 with any questions you may have.

Sincerely,

Paul McKee

Paul McKee
Permit Services Manager

cc: Gerry Ervine
Tony Lee
Ryan Sass
Dave Davis

APPENDIX B
As-Built Record Drawings

PORT OF EVERETT
MILL A CLEANUP SITE
INTERIM ACTION DREDGING

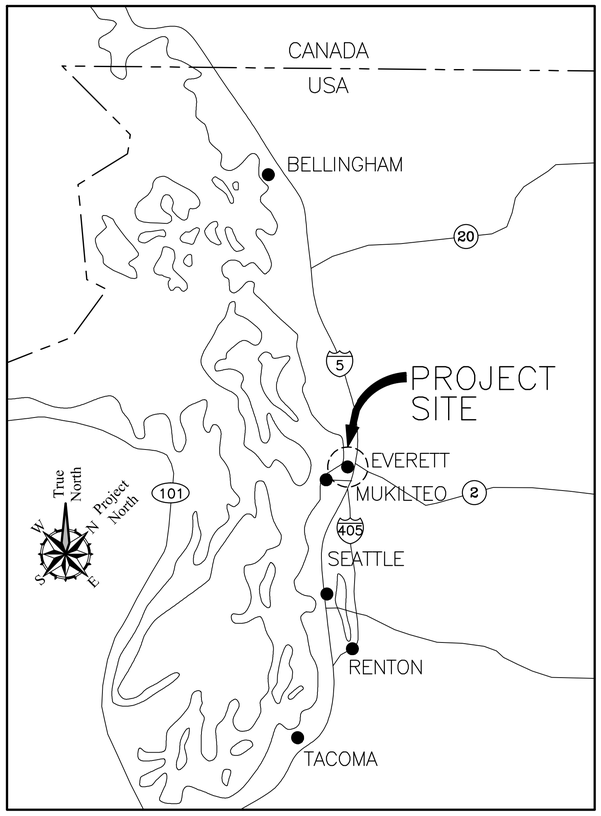
PORT STAFF:

LES REARDANZ	CEO/EXECUTIVE DIRECTOR
CARL WOLLEBEK	CHIEF OPERATIONS OFFICER
WALTER SEIDEL	MARINE TERMINAL DIRECTOR
JOHN KLEKOTKA, P.E., S.E.	CHIEF OF ENGINEERING & PLANNING
ERIK GERKING, P.G., P.M.P.	DIRECTOR OF ENVIRONMENTAL PROGRAMS

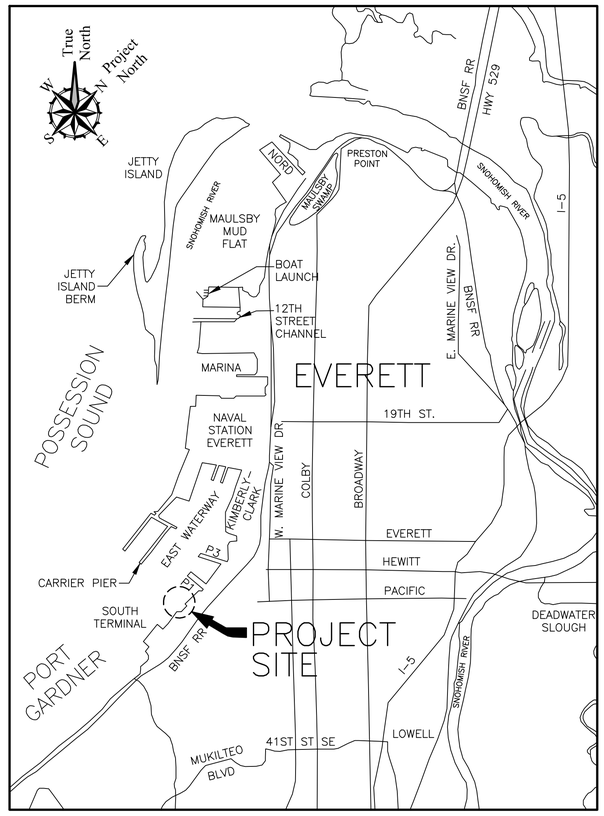
PROJECT ENGINEER:

GEOENGINEERS, INC. (GEI)
CONTACT: BRIAN TRACY, P.E.

DRAWING INDEX:



LOCATION MAP
NOT TO SCALE



VICNITY MAP
NOT TO SCALE

(1) RECORD DRAWING

*IF SHEET IS LESS THAN 22x34
REDUCE SCALES ACCORDINGLY

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

GeoEngineers
PROJECT NO. 0676-020-04

NO.	DATE	BY	REVISION
1	5/16/17	GEI	ADDED: RECORD DRAWINGS
0	3/21/16	GEI	ISSUED FOR BID AND CONSTRUCTION

PROJECT ENGINEER: B. TRACY	SCALE: AS NOTED
DESIGNED BY: A. JOSHI & B. TRACY	DATE: 03/21/2016
DRAWN BY: T. MICHAUD	CHECKED BY: J. HERZOG
APPROVED BY:	

PORT OF EVERETT
MILL A CLEANUP SITE
INTERIM ACTION DREDGING

COVER SHEET

DWG. NO. 1
CIP NO. 1-0-004-01
3-0-012-06
PROJECT NO. MT-PT-2016-01
SHEET NO. 1 OF 14

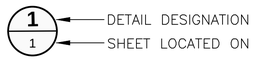
LEGEND

2' CONTOUR (MLLW)

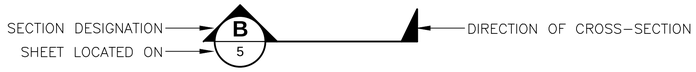
10 — 10' CONTOUR (MLLW)

-·-·-·-(MLLW)-·-·-·- EXISTING MEAN LOWER LOW WATER (MLLW)

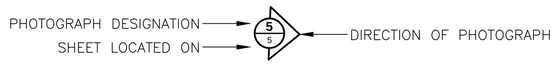
SHEET SYMBOLS



DETAIL



SECTION



PHOTOGRAPH

ABBREVIATIONS

BMPs = BEST MANAGEMENT PRACTICES
DMMP = DREDGED MATERIAL MANAGEMENT PROGRAM
DNR = DEPARTMENT OF NATURAL RESOURCES
ECOLOGY = DEPARTMENT OF ECOLOGY
FT = FEET
MHHW = MEAN HIGHER HIGH WATER
MLLW = MEAN LOWER LOW WATER
NAD83 = NORTH AMERICAN DATUM OF 1983
TESC = TEMPORARY EROSION AND SEDIMENT CONTROL

SURVEY CONTROL

1. PRE-CONSTRUCTION BATHYMETRIC SURVEY AND DATA USED WITHIN CONTRACT DOCUMENTS IS FROM 'PORT OF EVERETT MILL A BATHYMETRIC AND PRE-CONSTRUCTIO VESSEL MOUNTED LIDAR SURVEY" BY PACIFIC GEOMATIC SERVICES, INC., DATED OCTOBER 15, 2014. ADDITIONAL BATHYMETRIC DATA USED ON CONTRACT DOCUMENTS WAS COLLECTED UNDER PACIFIC TERMINAL AND SOUTH TERMINAL BY TETRATECH ON DECEMBER 15-16, 2015.
2. SOUTH TERMINAL UPLAND SURVEY USED WITHIN CONTRACT DRAWINGS IS FROM ENGINEERING SURVEY COMPLETED BY METRON AND ASSOCIATES, INC. IN SEPTEMBER 2015.
3. HORIZONTAL DATUM: NAD 83/91: REFERENCE BASELINE; 2 SURVEY CONTROL POINTS AS FOLLOWS

   MONUMENT NO. 1 – CITY OF EVERETT CONTROL MONUMENT (E009 1991) – 3" ALUMINUM DISC IN CONCRETE MONUMENT IN CASE.
   N: 369674.1986
   E: 1300666.9227

   MONUMENT NO. 2 – CENTERLINE R/W MONUMENT AT THE INTERSECTION OF WEST MARINE VIEW DRIVE AND 14TH STREET – 4" CONCRETRE MONUMENT WITH LEAD AND COPPER TACK.
   N: 367492.1087
   E: 1302456.1581

4. VERTICAL DATUM: ELEVATION DATUM FOR THIS PROJECT IS 0.0' MEAN LOWER LOW WATER (MLLW). PRIMARY BENCHMARK AS FOLLOWS:

   BASED ON AN ALUMINUM DISC ON A CONCRETE MONUMENT IN CASE LOCATED IN THE PERMITER DRIVING LANE FO THE BOAT LAUNCH PARKING, IN THE NORTHWEST CORNER OF THE PARKING LOT; SAID POINT IS REFERENCED IN THE "PORT OF EVERETT 12TH STREET MARINA" CONSTRUCTION PLANS AS POINT NUMBER 2000/E009, SHEET 6 OF 149 (PROVIDED IN THE REFERENCE SECTION).
   MLLW ELEV: 17.14'

5. TIDAL DATA: BASED ON NOAA'S PUBLICATION SHEET (WASHINGTON 944-7659), DATED 09-29-1988.
   THE HIGHEST RECORDED TIDE; ESTIMATED (EHW) = +14.35
   MEAN HIGHER HIGH WATER (MHHW) = +11.11
   NGVD 1929 = +5.93
   MEAN LOW WATER (MLW) = +2.80
   NAVD 1988 = +2.25
   MEAN LOWER LOW WATER (MLLW) = 0.0
   LOWEST OBSERVED WATER LEVEL (6-02-1977) = -3.60
   EXTREME LOW WATER (ELW) = -4.50

△1 NOTES

1. POST-DREDGE SURVEY FOR CONTAMINATED MATERIAL COMPLETED USING COMBINED SURVEYS PERFORMED BY ETRAC, INC. ON OCTOBER 6 AND 11, 2016.
2. APPROXIMATELY 22,660 CUBIC YARDS OF CONTAMINATED DREDGE MATERIAL REMOVED AND DISPOSED OF AT UPLAND LANDFILL BETWEEN APPROXIMATELY AUGUST 16 TO OCTOBER 11, 2016.
3. FINAL POST-DREDGE SURVEY COMPLETED USING COMBINED SURVEYS PERFORMED BY TETRATECH ON DECEMBER 8, 14, 21, 28, 29, 2016 AND JANUARY 5 AND 7, 2017.
4. APPROXIMATELY 14,986 CUBIC YARDS OF NON-CONTAMINATED DREDGE MATERIAL REMOVED AND DISPOSED OF AT PORT GARDNER DISPOSAL SITE BETWEEN APPROXIMATELY OCTOBER 16, 2016 TO JANUARY 7, 2017.
5. POST-BEDDING PLACEMENT SURVEY PERFORMED BY TETRATECH ON JANUARY 18, 2017. NO SURVEYS COMPLETED FOR BEDDING PLACEMENT IN KEYWAY. ASSUMED THAT 8-INCH WAS PLACED THROUGHOUT KEYWAY AND CONFIRMED BY BUCKET PRINTS FROM DREDGING SUBCONTRACTOR, ORION MARINE GROUP.
6. APPROXIMATELY 4,176 TONS OF BEDDING MATERIAL WAS PLACED BETWEEN APPROXIMATELY JANUARY 7 TO 18, 2017.
7. APPROXIMATELY 6,268 TONS OF ARMOR ROCK WAS PLACED BETWEEN APPROXIMATELY JANUARY 8 TO FEBRUARY 12, 2017. APPROXIMATELY 450 TONS OF HABITAT MIX WAS PLACED BETWEEN FEBRUARY 11 TO 12, 2017.
8. AS-BUILT SURVEY COMPLETED BY TETRATECH ON FEBRUARY 21 AND 22, 2017.

△1 RECORD DRAWING

*IF SHEET IS LESS THAN 22x34 REDUCE SCALES ACCORDINGLY

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GeoEngineers
PROJECT NO. 0676-020-04

NO.	DATE	BY	REVISION
△1	5/16/17	GEI	ADDED: RECORD DRAWINGS
△0	3/21/16	GEI	ISSUED FOR BID AND CONSTRUCTION

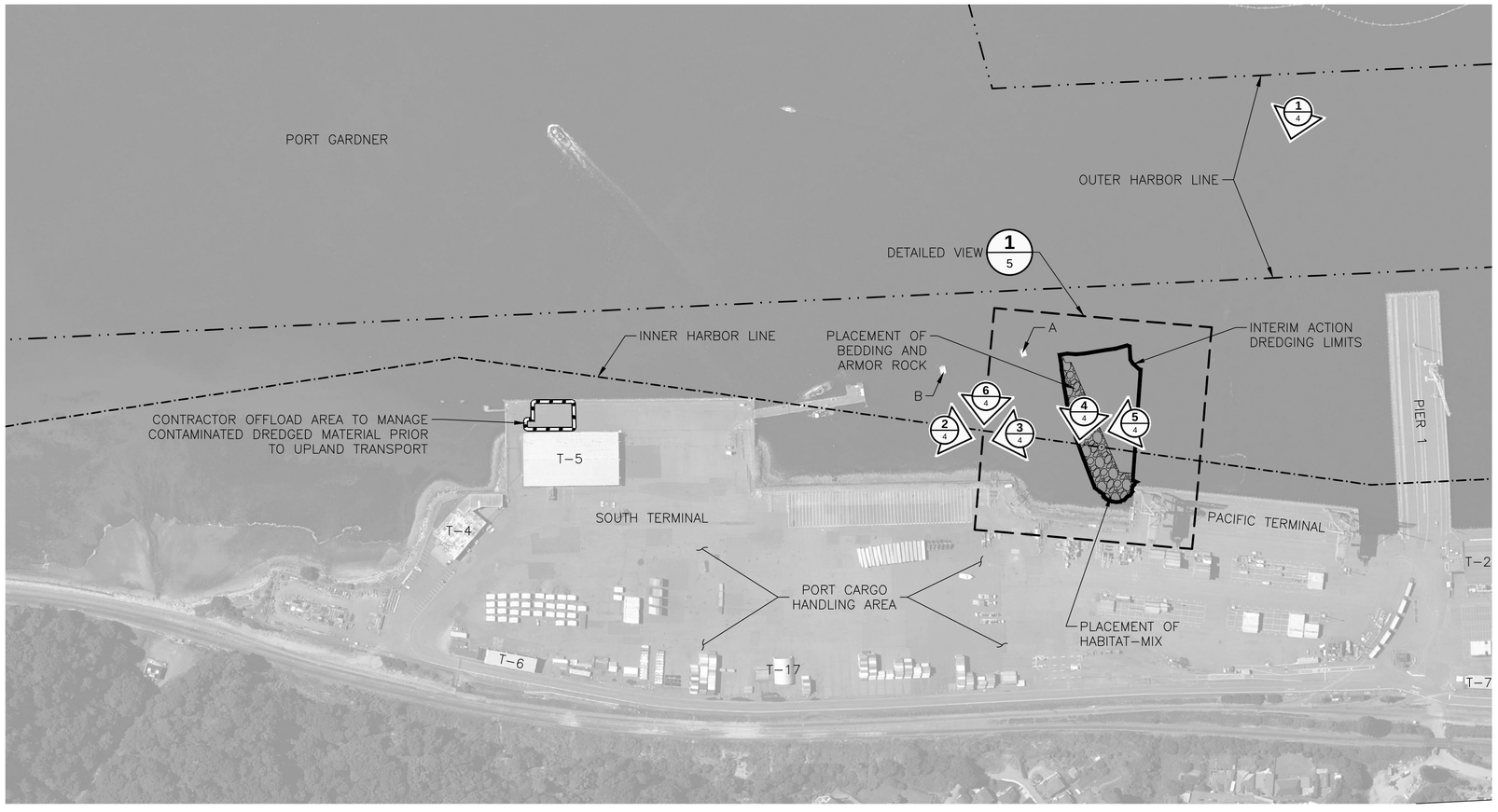
NO.	DATE	BY	REVISION

PROJECT ENGINEER: B. TRACY	SCALE: AS NOTED
DESIGNED BY: A. JOSHI & B. TRACY	DATE: 03/21/2016
DRAWN BY: T. MICHAUD	CHECKED BY: J. HERZOG
APPROVED BY:	

PORT OF EVERETT
MILL A CLEANUP SITE
INTERIM ACTION DREDGING

LEGEND AND SURVEY CONTROL

DWG. NO. 2
CIP NO. 1-0-004-01, 3-0-012-06
PROJECT NO. MT-PT-2016-01
SHEET NO. 2 OF 14



PROJECT OVERVIEW

SCALE: 1"=200' (FOR SHEET SIZED 22x34 INCH*)

200 0 200
FEET

True North
Project North
W
S
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E

PROJECT SUMMARY

1. PREPARE REQUIRED SUBMITTALS AND ATTEND REQUIRED MEETINGS INCLUDING PRE-DREDGE CONFERENCE WITH THE PORT AND REGULATORY AGENCIES AS REQUIRED BY PROJECT PERMITS. BEFORE ANY CONSTRUCTION ACTIVITY IS CONDUCTED, A PRE-CONSTRUCTION MEETING MUST BE HELD BETWEEN THE PORT, ENGINEER AND THE CONTRACTOR. THE CONTRACTOR SHALL ALSO ATTEND WEEKLY CONSTRUCTION MEETINGS WITH THE PORT AND ENGINEER.
2. MOBILIZE TO THE SITE.
3. REMOVE A PORTION OF THE EXISTING ARMOR ROCK LOCATED ALONG THE SHORELINE OF THE INTERIM ACTION DREDGING AREA TO FACILITATE DREDGING. PREPARE THE ARMOR ROCKS FOR REUSE FOR ARMORING DREDGED TRANSITION SLOPES FOLLOWING THE COMPLETION OF DREDGING.
4. DREDGE CONTAMINATED MATERIAL AND COMPLETE HYDROGRAPHIC SURVEYS TO CONFIRM THAT THE CONTAMINATED MATERIAL HAS BEEN COMPLETELY REMOVED TO MEET THE DESIGN DREDGE ELEVATIONS AND ALLOWANCES PRIOR TO DREDGING NON-CONTAMINATED MATERIAL.
5. DREDGE NON-CONTAMINATED MATERIAL AND COMPLETE HYDROGRAPHIC SURVEYS TO CONFIRM AND DOCUMENT THAT THE FINAL DREDGE ELEVATIONS ARE MET WITH THE CONTRACT ALLOWANCES.
6. TRANSPORT AND OFFLOAD CONTAMINATED DREDGED MATERIAL AT A PORT AND ECOLOGY APPROVED UPLAND OFFLOAD FACILITY. THE CONTRACTOR MAY ELECT TO USE THE AREA AVAILABLE ON THE PORT'S SOUTH TERMINAL FOR OFFLOADING AND MANAGING CONTAMINATED DREDGED MATERIAL OR PROPOSE AN OFFSITE OFFLOAD FACILITY SUBJECT TO PORT AND ECOLOGY APPROVAL.
7. MANAGE CONTAMINATED DREDGED MATERIAL AT THE UPLAND OFFLOAD FACILITY INCLUDING HANDLING AND TEMPORARY STOCKPILING, DEWATERING/AMENDING DREDGED MATERIAL AS NECESSARY FOR UPLAND TRANSPORT AND DISPOSAL, AND COLLECTION, STORAGE, TREATMENT (IF NECESSARY) AND PERMITTED DISPOSAL/DISCHARGE OF THE RETURN/WASTE WATER GENERATED AT THE OFFLOAD FACILITY.
8. TRANSPORT AND LANDFILL DISPOSAL OF CONTAMINATED DREDGED MATERIAL AT A PORT APPROVED PERMITTED UPLAND DISPOSAL FACILITY.
9. TRANSPORT AND DISPOSE NON-CONTAMINATED DREDGED MATERIAL VIA BOTTOM DUMPING BARGE AT DEPARTMENT OF NATURAL RESOURCES' (DNR'S) PORT GARDNER OPEN-WATER DISPOSAL SITE.
10. PLACE IMPORTED BEDDING AND ARMOR ROCK ON THE DREDGED TRANSITION SLOPES TO MEET DESIGN ELEVATIONS.
11. PLACE IMPORTED HABITAT MIX OVER THE UPPER PORTION OF THE NEWLY CONSTRUCTED ARMORED TRANSITION SLOPE ALONG THE SHORELINE TO FILL INTERSTITIAL VOIDS AND ENHANCE THE CHARACTERISTICS OF THE CRITICAL SHORELINE HABITAT ELEVATIONS.
12. PERFORM HYDROGRAPHIC SURVEYS TO CONFIRM THAT THE FINAL GRADES OF BEDDING AND ARMOR ROCK PLACEMENT MEETS DESIGN THICKNESSES AND ELEVATIONS.
13. IMPLEMENT ENVIRONMENTAL QUALITY CONTROLS INCLUDING WATER QUALITY CONTROLS DURING DREDGING, DREDGED MATERIAL MANAGEMENT, TRANSPORT AND DISPOSAL, AND MATERIAL (BEDDING, ARMOR AND HABITAT MIX) PLACEMENT ACTIVITIES AS PER THE REQUIREMENTS OF CONTRACT DOCUMENTS AND PROJECT PERMITS.
14. IMPLEMENT TEMPORARY UPLAND TRAFFIC CONTROLS AND TEMPORARY EROSION AND SEDIMENT CONTROLS (TESC) ON UPLAND OFFLOADING SITE.
15. DEMOBILIZE EQUIPMENT, LABOR, TEMPORARY FACILITIES AND UNUSED MATERIALS FROM THE SITE AND COMPLETE FINAL SITE CLEANING.

PROJECT WORK RESTRICTIONS

1. ECOLOGY'S WATER QUALITY CERTIFICATION (WQC) REQUIRE THAT IN-WATER WORK, INCLUDING DREDGING AND DISPOSAL, SHALL NOT OCCUR FROM FEBRUARY 16 THROUGH AUGUST 14 OF ANY YEAR. THE CONTRACTOR SHALL ADHERE TO ALLOWABLE IN-WATER WORK WINDOW OF ECOLOGY'S WQC AND ALL OTHER PERMITS.
2. ALLOWABLE CONSTRUCTION WORK HOURS ARE 24 HOURS, 7 DAYS A WEEK, EXCEPT WHEN DREDGING INTERFERES WITH PORT'S OPERATIONS (E.G. SHIPS AND/OR BARGES ARE ACTIVELY LOADING OR UNLOADING AT THE PACIFIC TERMINAL). OTHER OFF-HOUR WORK MAY BE ALLOWED, WITH PORT APPROVAL.
3. THE PORT WILL MAKE THEIR MONTHLY TERMINAL VESSEL SCHEDULE AVAILABLE TO THE CONTRACTOR DURING THE WEEKLY CONSTRUCTION MEETING. PORT'S OPERATIONS SHALL TAKE PRECEDENCE OVER CONSTRUCTION WORK. THE CONTRACTOR SHALL MAKE ALLOWANCES IN THE CONSTRUCTION SCHEDULE FOR DELAYS OR INTERRUPTIONS DUE TO PORT'S OPERATIONS AND THIS SHALL NOT BE CONSIDERED AS A BASIS FOR CONTRACT CHANGES, SCHEDULE DELAYS, OR CLAIMS.
4. A COPY OF THE APPROVED PLANS MUST BE ON THE JOB SITE AT ALL TIMES.
5. THE CONTRACTOR SHALL SECURE AND MOOR THEIR VESSELS WHEN NOT IN USE IN THE DESIGNATED MOORAGE AS PROVIDED BY THE PORT WHEN AT THE MARINE TERMINALS DURING THE CONTRACT PERIOD.

*IF SHEET IS LESS THAN 22x34 REDUCE SCALES ACCORDINGLY

⚠1 RECORD DRAWING

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PROJECT NO. 0676-020-04

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⚠0	3/21/16	GEI	ISSUED FOR BID AND CONSTRUCTION

NO.	DATE	BY	REVISION

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DESIGNED BY: A. JOSHI & B. TRACY	DATE: 03/21/2016
DRAWN BY: T. MICHAUD	CHECKED BY: J. HERZOG
APPROVED BY:	

PORT OF EVERETT
MILL A CLEANUP SITE
INTERIM ACTION DREDGING

PROJECT OVERVIEW

DWG. NO. 3
CIP NO. 1-0-004-01
3-0-012-06
PROJECT NO. MT-PT-2016-01
SHEET NO. 3 OF 14

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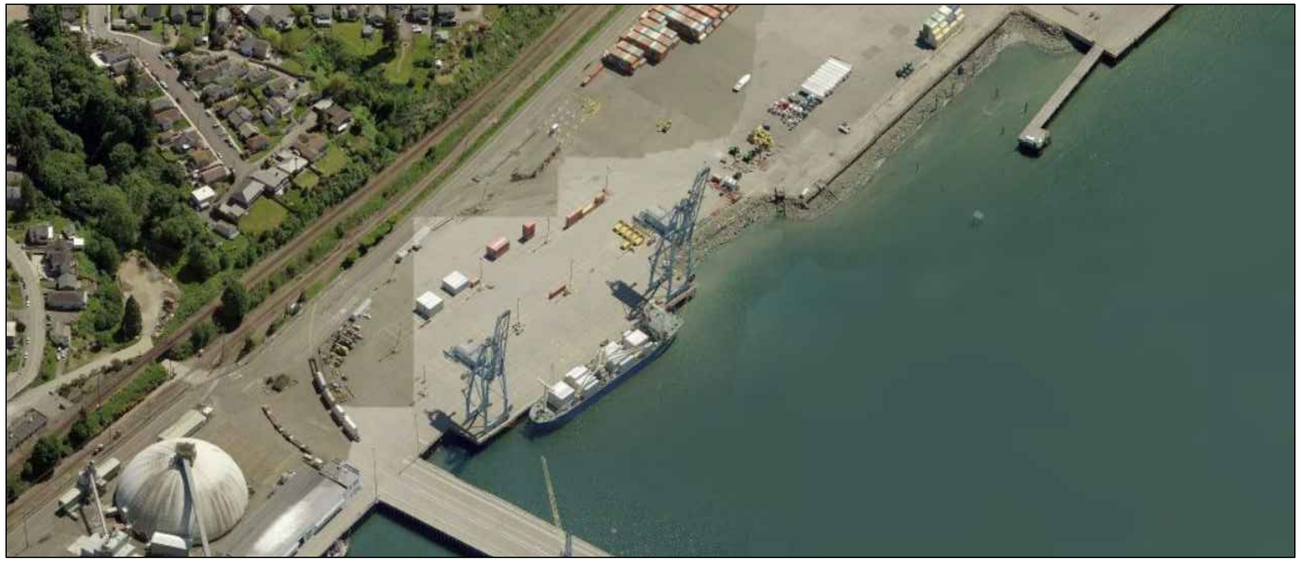
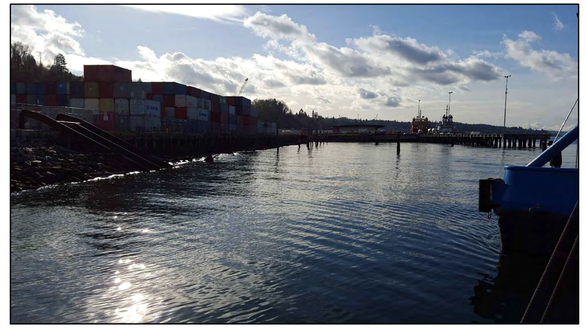
⚠1 RECORD DRAWING



OVERVIEW OF PROJECT AREA 1/3

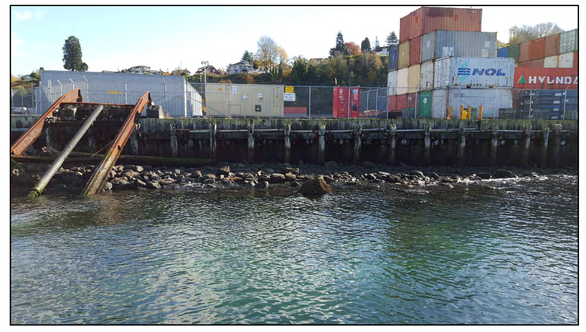
VIEW OF PACIFIC TERMINAL LOOKING NORTHWEST 2/3



VIEW OF SOUTH TERMINAL LOOKING SOUTH 3/3

VIEW OF SOUTH TERMINAL SHORELINE LOOKING SOUTHEAST 4/3

VIEW OF SOUTH TERMINAL SHORELINE LOOKING SOUTH 5/3



VIEW OF SOUTH TERMINAL SHORELINE LOOKING SOUTHEAST 6/3

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PORT OF EVERETT

MILL A CLEANUP SITE
INTERIM ACTION DREDGING

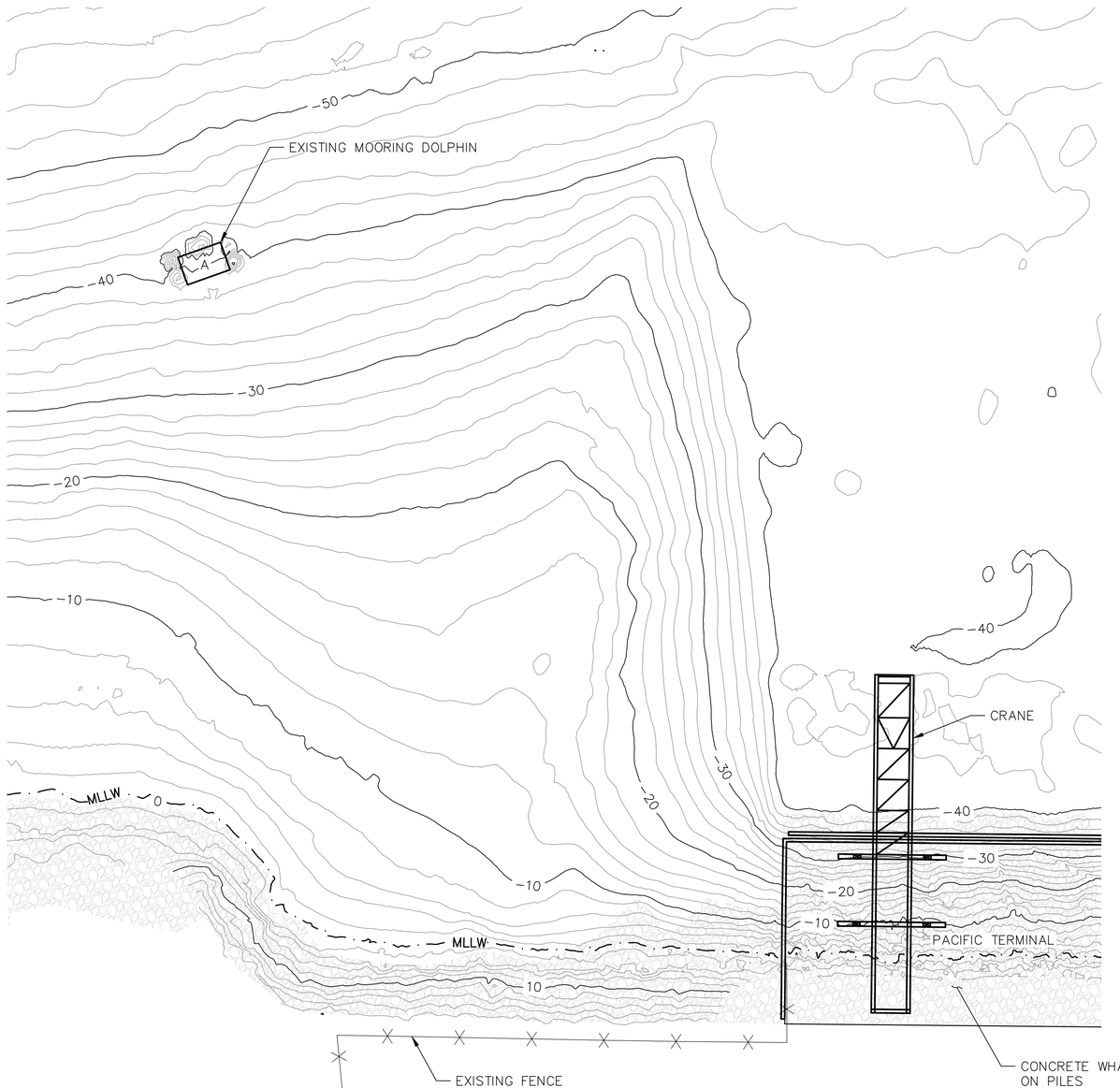
PROJECT PHOTOS

DWG. NO. 4

CIP NO. 1-0-004-01
3-0-012-06

PROJECT NO. MT-PT-2016-01

SHEET NO. 4 OF 14



1/3 PRE-DREDGE SITE CONDITIONS

SCALE: 1"=40'

40 0 40
FEET

True North
Project North
W
S
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E

1 RECORD DRAWING

*IF SHEET IS LESS THAN 22x34
REDUCE SCALES ACCORDINGLY

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PORT OF EVERETT

MILL A CLEANUP SITE
INTERIM ACTION DREDGING

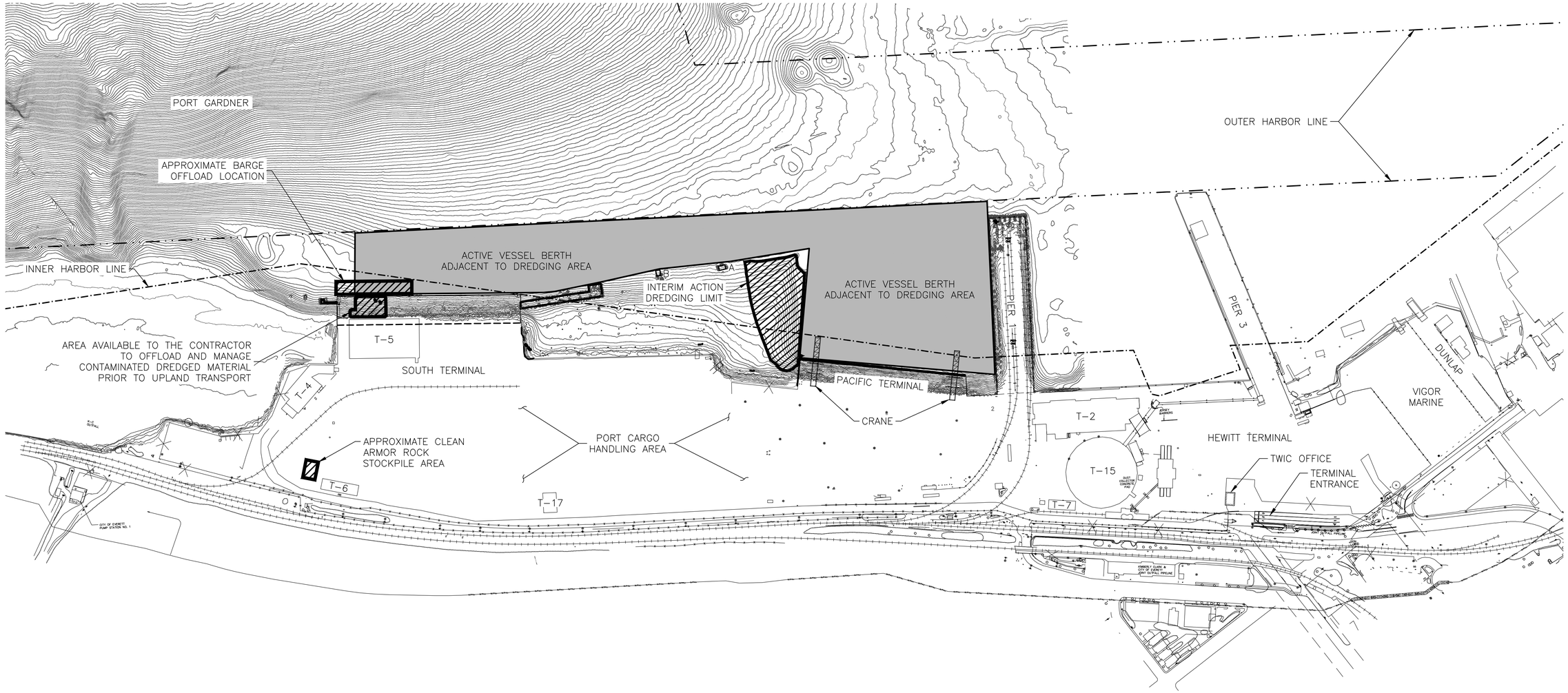
PRE-DREDGE SITE CONDITIONS

DWG. NO. 5

CIP NO. 1-0-004-01
3-0-012-06

PROJECT NO. MT-PT-2016-01

SHEET NO. 5 OF 14



NOTES

1. CONTRACTOR SHALL NOT DISRUPT ANY PORT TERMINAL OPERATIONS, UPLAND OR IN-WATER, DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE ROUTINELY WITH PORT TERMINAL OPERATIONS STAFF THROUGHOUT CONSTRUCTION TO ENSURE THAT PORT'S SHIPPING AND TERMINAL OPERATIONS ARE NOT IMPACTED.

CONTRACTOR WORK AREAS AND PORT OPERATIONS

SCALE: 1"=200'

200 0 200
FEET

True North
Project North
W S N E

LEGEND

CONTRACTOR WORK AREAS

⚠1 RECORD DRAWING

*IF SHEET IS LESS THAN 22x34 REDUCE SCALES ACCORDINGLY

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DESIGNED BY: A. JOSHI & B. TRACY	DATE: 03/21/2016
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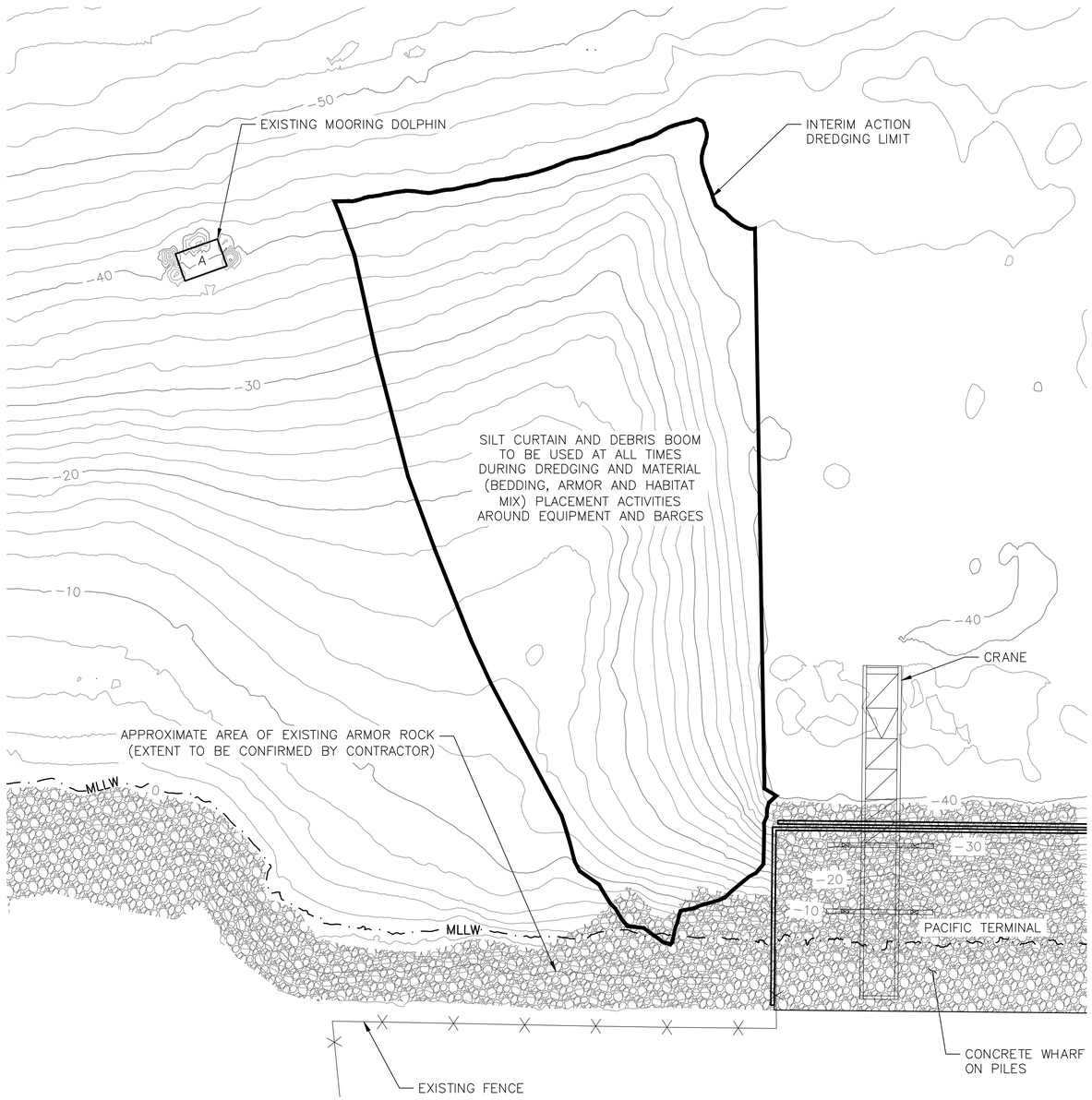
APPROVED BY:	

PORT OF EVERETT

MILL A CLEANUP SITE
INTERIM ACTION DREDGING

CONTRACTOR WORK AREAS AND PORT OPERATIONS

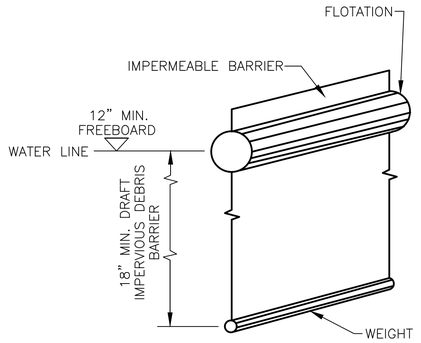
DWG. NO. 6
CIP NO. 1-0-004-01, 3-0-012-06
PROJECT NO. MT-PT-2016-01
SHEET NO. 6 OF 14



MARINE ENVIRONMENTAL CONTROLS

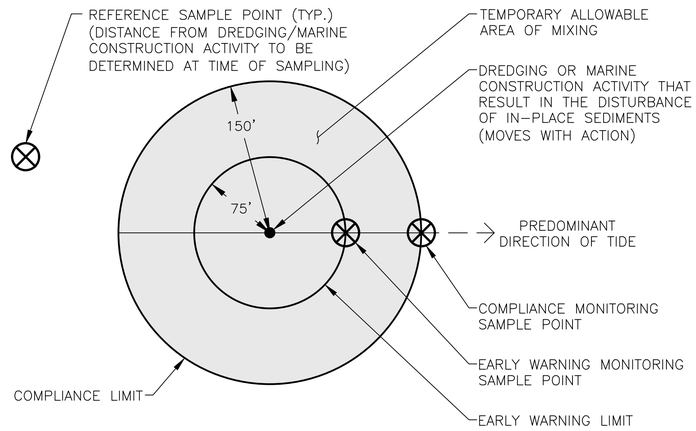
SCALE: 1"=40'

40 0 40
FEET



SILT CURTAIN AND DEBRIS BOOM DETAIL 1

NTS



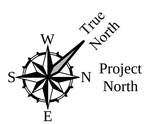
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL 2

SCALE: 1"=75'

75 0 75
FEET

NOTES

1. ALL PROJECT WORK SHALL BE CONDUCTED IN COMPLIANCE WITH THE ECOLOGY 401-WATER QUALITY CERTIFICATION – ORDER NO. 13125 NWP NO. NWS-2014-0890 AND OTHER APPLICABLE PERMITS.
2. DREDGED MATERIAL SHALL BE FULLY CONTAINED WHEN ON BARGES AND FREE DRAINING WATER SHALL BE TREATED PIROR TO DISCHARGE TO REMOVE SUSPENDED SOLIDS AND MEET THE ALLOWABLE WATER QUALITY LIMITS.
3. BEST MANAGEMENT PRACTICES FOR SEDIMENT DEWATERING ON THE BARGE MAY INCLUDE, BUT ARE NOT LIMITED TO LINING BARGES WITH FILTER FABRICS OR HAY BALES TO ELIMINATE FINE GRAINED SEDIMENT PARTICLES FROM ENTERING MARINE WATERS.
4. NO LOSSES OF DREDGED MATERIAL FROM THE BARGE ARE ALLOWED AT ANY POINT IN THE COLLECTION, TRANSPORT, OFFLOAD, AND DISPOSAL OPERATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND MITIGATING ANY LOSSES AND THE COSTS FOR ANY REPARATIONS DUE TO ANY LOSS.
5. WATER QUALITY MONITORING WILL BE PERFORMED BY THE PORT/ENGINEER. IN THE EVENT MONITORING INDICATES WATER QUALITY CRITERIA ARE NOT BEING MAINTAINED, THE CONTRACTOR SHALL MODIFY DREDGING PROCEDURES OR IMPLEMENT ADDITIONAL CONTROLS AS COORDINATED WITH THE PORT/ENGINEER TO MEET WATER QUALITY LIMITS.
6. WATER QUALITY MONITORING LOCATIONS MAY SHIFT ALONG THE COMPLIANCE AND EARLY WARNING LIMITS TO INTERCEPT TURBID PLUMES OR IF THERE IS FIELD EVIDENCE OF WATER QUALITY IMPACTS.
7. THE CONTRACTOR SHALL MAINTAIN A SILT CURTAIN AND FLOATING DEBRIS BOOM AROUND THE ACTIVE WORK EQUIPMENT AREA AT ALL TIMES DURING IN-WATER WORK INCLUDING DREDGING, OFFLOADING, AND MATERIAL (BEDDING, ARMOR AND HABITAT MIX) PLACEMENT ACTIVITIES. THE WORK EQUIPMENT INCLUDES ALL WORK VESSELS, BARGES, EXCAVATORS, OR OTHER EQUIPMENT USED FOR DREDGING AND MATERIAL PLACEMENT.
8. THE CONTRACTOR SHALL REMOVE ANY FLOATING OIL, SHEEN, OR DEBRIS WITHIN THE WORK AREA ON A ROUTINE BASIS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RETRIEVAL OF ANY FLOATING OIL, SHEEN, OR DEBRIS FROM THE WORK AREA AND ANY DAMAGES RESULTING FROM THE LOSS. ABSORBENT MATERIALS MUST BE EMPLOYED IF A PETROCHEMICAL SHEEN IS OBSERVED. MATERIALS SHALL REMAIN IN PLACE UNTIL ALL POLLUTANTS HAVE BEEN COLLECTED AND SHEENS ABSORBED. USED ABSORBENT MATERIALS SHALL BE DISPOSED OF IN AN APPROPRIATE UPLAND DISPOSAL FACILITY.
9. OPEN WATER DISPOSAL MUST BE COMPLETED USING A BOTTOM DUMPING BARGE AND FOLLOW ALL REQUIREMENTS INCLUDING NOTIFICATION/DOCUMENTATION SPECIFIED IN DREDGED MATERIAL MANAGEMENT PROGRAM'S CURRENT DREDGED MATERIAL EVALUATION AND DISPOSAL PROCEDURES USER MANUAL.



1 RECORD DRAWING

*IF SHEET IS LESS THAN 22x34 REDUCE SCALES ACCORDINGLY

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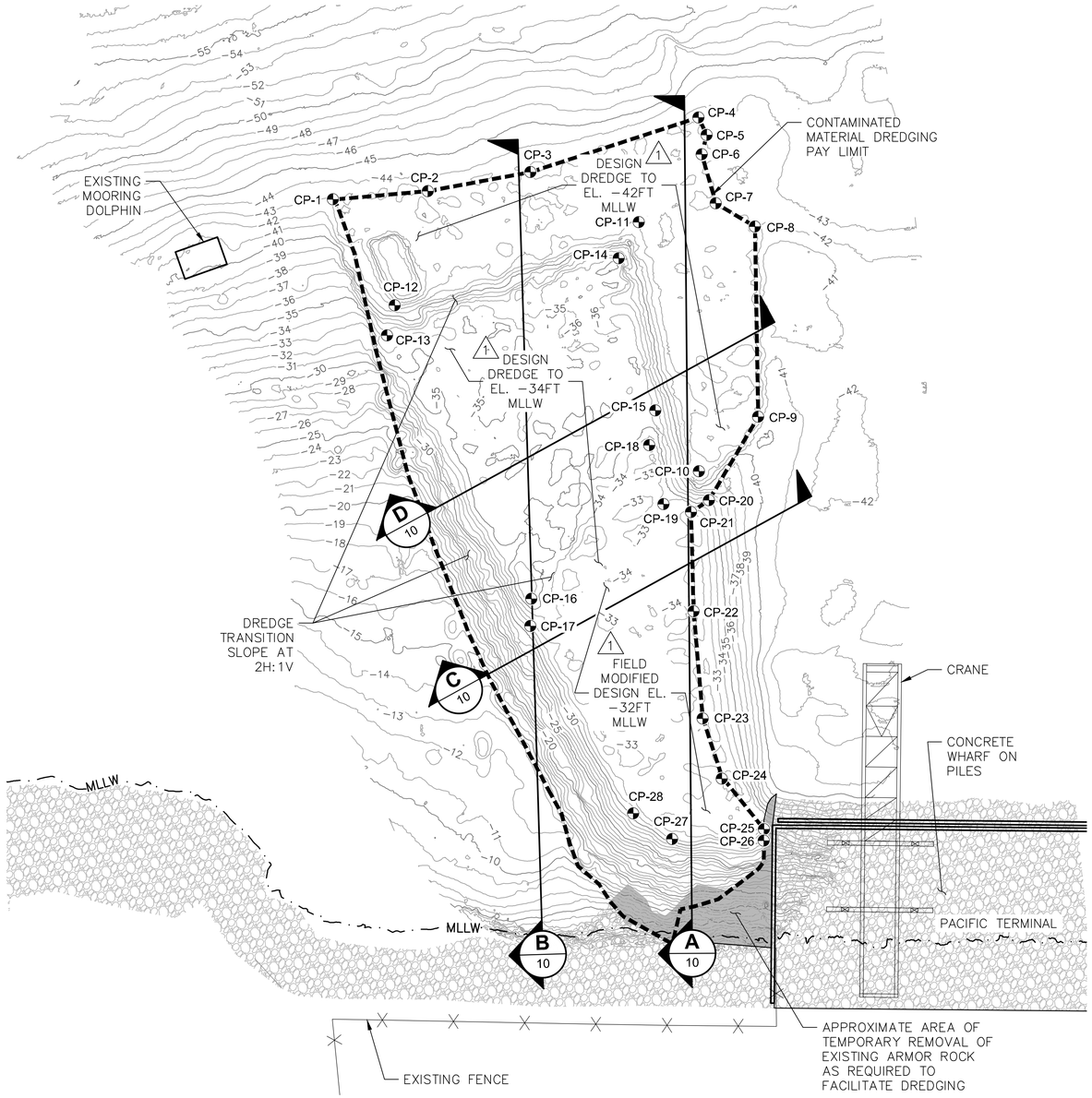
APPROVED BY:	

PORT OF EVERETT
MILL A CLEANUP SITE
INTERIM ACTION DREDGING

MARINE ENVIRONMENTAL CONTROLS

DWG. NO. 7
CIP NO. 1-0-004-01, 3-0-012-06
PROJECT NO. MT-PT-2016-01
SHEET NO. 7 OF 14



1 CONTAMINATED MATERIAL DREDGING LIMITS

SCALE: 1"=40'

40 0 40
FEET

W True North S N Project North E

LEGEND

1 —— 10 —— POST−DREDGE SURVEY CONTOUR FOR CONTAMINATED MATERIAL (FT MLLW) (COMBINED SURVEYS DATED OCTOBER 6 & 11, 2016)

CONTAMINATED MATERIAL DREDGING PAY LIMIT

APPROXIMATE AREA OF EXISTING ARMOR ROCK (EXTENT TO BE CONFIRMED BY THE CONTRACTOR)

CP-1 DREDGING CONTROL POINT LOCATION AND DESIGNATION

NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY SITE CONDITIONS AND LOCATE UTILITIES (SUBMERGED OR BURIED) PRIOR TO DREDGING.
2. CONTAMINATED MATERIAL TO BE DREDGED AT THE SITE GENERALLY CONSISTS OF WOOD DEBRIS (SAWDUST, WOOD CHIPS AND DIMENSIONAL LUMBER OF VARYING CONTENT) MIXED WITH SILT/SAND; HOWEVER, THE PORT DOES NOT GUARANTEE THE NATURE OF THE MATERIAL TO BE DREDGED OR ITS CONTENTS. THE CONTRACTOR SHALL MAKE DETERMINATIONS REGARDING THE CHARACTER OF MATERIALS TO BE DREDGED AND SHALL DEVELOP THE DREDGING OPERATIONS ACCORDINGLY TO COMPLETE THE WORK TO THE REQUIRED ELEVATIONS SPECIFIED IN THE CONTRACT DOCUMENTS.
3. ALL DREDGING SHALL BE COMPLETED USING BARGE−BASED MECHANICAL CLAMSHELL AND/OR FIXED−ARM EXCAVATION EQUIPMENT ONLY AS ALLOWED BY THE PROJECT PERMIT. HYDRAULIC DREDGING SHALL NOT BE ALLOWED AS PER THE REQUIREMENTS OF THE PROJECT PERMITS.
4. THE CONTRACTOR SHALL CONDUCT ALL DREDGING ACTIVITIES, AS WELL AS ALL LOADING AND TRANSPORTATION OF CONTAMINATED DREDGED MATERIAL TO THE OFFLOAD LOCATION USING WATER−BASED EQUIPMENT. NO EQUIPMENT SHALL BE ALLOWED TO OPERATE ON THE SEDIMENT SURFACE.
5. REMOVE A PORTION OF THE EXISTING ARMOR ROCK LOCATED ALONG THE SHORELINE OF THE INTERIM ACTION DREDGING AREA TO FACILITATE DREDGING AS NECESSARY. REMOVED ARMOR ROCK SHALL BE TEMPORARILY STOCKPILED ON A BARGE OR OFFLOADED ONTO THE PORT'S SOUTH TERMINAL AND REUSED FOR ARMORING THE DREDGED TRANSITION SLOPES FOLLOWING THE COMPLETION OF DREDGING. THE CONTRACTOR SHALL BE REQUIRED TO CLEAN/WASH THE ARMOR ROCKS PRIOR TO REUSING FOR ARMORING.
6. DREDGING OF ALL CONTAMINATED MATERIAL SHALL BE COMPLETED PRIOR TO DREDGING UNDERLYING NON−CONTAMINATED MATERIAL IN ACCORDANCE WITH PROJECT PERMITS AND DMMP'S SUITABILITY DETERMINATION FOR THE PROJECT. VERIFICATION OF CONTAMINATED MATERIAL REMOVAL WILL BE CONFIRMED BY THE PORT/ENGINEER BY CONTRACTOR'S PROGRESS SURVEYS. THE CONTRACTOR SHALL NOT COMMENCE DREDGING OF NON−CONTAMINATED MATERIAL UNTIL THE PORT/ ENGINEER HAS REVIEWED CONTRACTOR'S PROGRESS SURVEYS AND PROVIDED WRITTEN APPROVAL TO THE CONTRACTOR TO COMMENCE NON−CONTAMINATED MATERIAL DREDGING ACTIVITIES.
7. CONTAMINATED MATERIAL DREDGING SHALL BE COMPLETED TO THE CONTAMINATED MATERIAL DREDGE PAY LIMIT SHOWN ON THE CONTRACT DRAWINGS. REFER TO CONTRACT SPECIFICATIONS FOR PAYMENT PROCEDURES RELATED TO DREDGING PERFORMED WITHIN OVERDREGE ALLOWANCES AND OUTSIDE DREDGE PAY LIMIT.
8. THE CONTRACTOR SHALL PLACE ALL CONTAMINATED DREDGED MATERIAL ON A BARGE FOR TRANSPORT TO THE UPLAND OFFLOAD FACILITY APPROVED BY THE PORT AND ECOLOGY.
9. DREDGED MATERIAL PLACED ON BARGES WILL BE ALLOWED TO DEWATER ONLY AT THE DREDGE SITE IN ACCORDANCE WITH PROJECT PERMIT CONDITIONS. DEWATERING OF BARGES WILL NOT BE ALLOWED IN TRANSIT OR AT THE OFFLOAD FACILITY.
10. DREDGING COMPLETENESS AND ACCEPTANCE OF WORK WILL BE EVALUATED BY THE PORT/ENGINEER BASED ON REVIEW OF CONTRACTOR PROGRESS SURVEYS.
11. DREDGE BARGES AND VESSELS SPECIFICATIONS, NAVIGATION, AND MOORAGE SHALL BE COMPLETED IN ACCORDANCE WITH ALL U.S. COAST GUARD, STATE AND LOCAL REGULATIONS.
12. REMNANT CREOSOTE WOOD PILING MAY BE LOCATED WITHIN THE DREDGE LIMITS. ALL PILES WITHIN DREDGING LIMITS SHALL BE REMOVED OR CUT TO AN ELEVATION OF 2−FEET BELOW THE FINAL DREDGE ELEVATIONS AND BACKFILLED WITH SAND. REMOVAL, CUTTING, TREATMENT, MANAGEMENT, AND DISPOSAL OF PILES/PILE STUBS SHALL BE CONSIDERED INCIDENTAL TO THE DREDGING.

1 DREDGE CONTROL POINT COORDINATES

CONTROL POINT #	NORTHING	EASTING	DESIGN DREDGE ELEVATION (MLLW)	AS−BUILT DREDGE ELEVATION (MLLW)
CP−1	359494.5600	1299218.8249	−42	−42.94
CP−2	359536.2415	1299253.9200	−42	−43.23
CP−3	359585.4402	1299287.6798	−42	−43.34
CP−4	359675.4647	1299333.5249	−42	−42.75
CP−5	359671.6800	1299343.8935	−42	−42.69
CP−6	359661.8400	1299349.7495	−42	−43.44
CP−7	359647.6887	1299375.2800	−42	−42.89
CP−8	359654.1208	1299400.4683	−42	−42.27
CP−9	359578.4782	1299478.7172	−42	−42.66
CP−10	359532.4208	1299476.8425	−42	−43.08
CP−11	359608.9585	1299351.7442	−42	−43.12
CP−12	359476.6566	1299286.6659	−42	−42.38
CP−13	359461.3148	1299295.7281	−34	−36.67
CP−14	359586.2188	1299358.2537	−34	−36.37

1 DREDGE CONTROL POINT COORDINATES

CONTROL POINT #	NORTHING	EASTING	DESIGN DREDGE ELEVATION (MLLW)	AS−BUILT DREDGE ELEVATION (MLLW)
CP−15	359539.4664	1299434.6689	−34	−36.51
CP−16	359413.1823	1299460.6856	−34	−36.11
CP−17	359401.7799	1299471.2027	−30	−31.91
CP−18	359523.0172	1299446.2257	−30	−33.18
CP−19	359504.9006	1299475.8367	−30	−33.88
CP−20	359524.8203	1299492.5594	−34	−35.34
CP−21	359512.7880	1299490.0800	−30	−32.85
CP−22	359473.6918	1299531.2718	−30	−32.36
CP−23	359434.0535	1299578.3711	−30	−32.21
CP−24	359417.3662	1299610.4383	−30	−32.44
CP−25	359414.0077	1299647.8298	−30	−31.42
CP−26	359409.3039	1299652.4895	−30	−29.04
CP−27	359372.8946	1299614.7457	−30	−30.63
CP−28	359367.5198	1299588.6176	−30	−30.35

1 RECORD DRAWING

*IF SHEET IS LESS THAN 22x34 REDUCE SCALES ACCORDINGLY

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PROJECT NO. 0676−020−04

NO.	DATE	BY	REVISION
1	5/16/17	GEI	ADDED: RECORD DRAWINGS
0	3/21/16	GEI	ISSUED FOR BID AND CONSTRUCTION

NO.	DATE	BY	REVISION

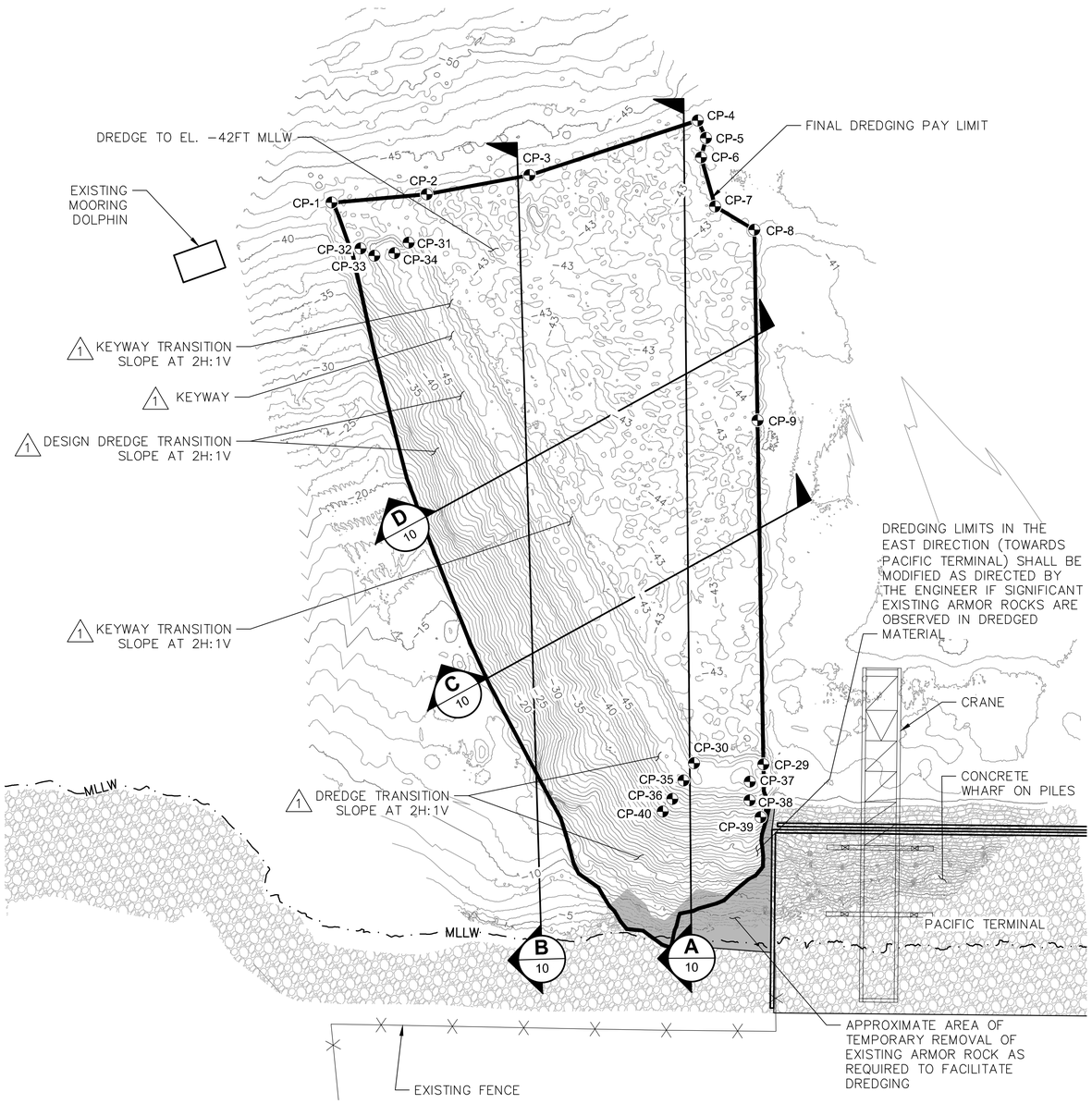
PROJECT ENGINEER: B. TRACY	SCALE: AS NOTED
DESIGNED BY: A. JOSHI & B. TRACY	DATE: 03/21/2016
DRAWN BY: T. MICHAUD	CHECKED BY: J. HERZOG
APPROVED BY:	

PORT OF EVERETT
MILL A CLEANUP SITE
INTERIM ACTION DREDGING

CONTAMINATED MATERIAL DREDGING LIMITS

DWG. NO. 8
CIP NO. 1−0−004−01 3−0−012−06
PROJECT NO. MT−PT−2016−01
SHEET NO. 8 OF 14

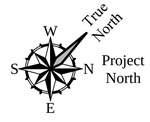
P:\0\0676020\05\CAD\Task 1700 Record Drawings\Sheets\S-8 Contaminated Material Dredging Plan.dwg\TAB:Layout1 Modified by TMichaud on May 16, 2017 - 14:10



1 FINAL DREDGING LIMITS

SCALE: 1"=40'

40 0 40
FEET



1 RECORD DRAWING

LEGEND

- 1 — 10 — FINAL POST−DREDGE SURVEY CONTOUR (FT MLLW) (COMBINED SURVEYS DATED DECEMBER 8, 14, 21, 28 AND 29 2016 AND JANUARY 5 AND 9, 2017)
- AS−BUILT FINAL DREDGING PAY LIMIT
- APPROXIMATE AREA OF EXISTING ARMOR ROCK (EXTENT TO BE CONFIRMED BY THE CONTRACTOR)
- CP-1 — DREDGING CONTROL POINT LOCATION AND DESIGNATION

NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY SITE CONDITIONS AND LOCATE UTILITIES (SUBMERGED OR BURIED) PRIOR TO DREDGING.
2. ALL DREDGING SHALL BE COMPLETED USING BARGE−BASED MECHANICAL CLAMSHELL AND/OR FIXED−ARM EXCAVATION EQUIPMENT. HYDRAULIC DREDGING SHALL NOT BE ALLOWED AS PER THE REQUIREMENTS OF THE PROJECT PERMITS.
3. THE CONTRACTOR SHALL CONDUCT ALL DREDGING ACTIVITIES, AS WELL AS ALL LOADING, TRANSPORTATION AND DISPOSAL OF NON−CONTAMINATED DREDGED MATERIAL USING WATER−BASED EQUIPMENT. NO EQUIPMENT SHALL BE ALLOWED TO OPERATE ON THE SEDIMENT SURFACE.
4. THE CONTRACTOR SHALL NOT COMMENCE DREDGING OF NON−CONTAMINATED MATERIAL UNTIL THE PORT/ ENGINEER HAS REVIEWED CONTRACTOR'S PROGRESS SURVEYS AND PROVIDED WRITTEN APPROVAL TO THE CONTRACTOR TO COMMENCE NON−CONTAMINATED MATERIAL DREDGING ACTIVITIES.
5. NON−CONTAMINATED MATERIAL DREDGING SHALL BE COMPLETED TO THE FINAL DREDGING PAY LIMIT SHOWN ON THE CONTRACT DRAWINGS. REFER CONTRACT SPECIFICATIONS FOR PAYMENT PROCEDURES RELATED TO DREDGING PERFORMED WITHIN OVERDREGDE ALLOWANCES AND OUTSIDE DREDGE PAY LIMIT.
6. THE CONTRACTOR SHALL PLACE ALL NON−CONTAMINATED DREDGED MATERIAL ON A BOTTOM DUMPING BARGE FOR TRANSPORT TO THE PORT GARDNER OPEN−WATER DISPOSAL SITE.
7. DREDGED MATERIAL PLACED ON BARGES WILL BE ALLOWED TO DEWATER ONLY ON THE DREDGE SITE IN ACCORDANCE WITH PROJECT PERMIT CONDITIONS. DEWATERING OF BARGES WILL NOT BE ALLOWED IN TRANSIT.
8. DREDGING COMPLETENESS AND ACCEPTANCE OF WORK WILL BE EVALUATED BY THE PORT/ENGINEER BASED ON REVIEW OF CONTRACTOR PROGRESS SURVEYS.
9. DREDGE BARGES AND VESSELS SPECIFICATIONS, NAVIGATION, AND MOORAGE SHALL BE COMPLETED IN ACCORDANCE WITH ALL U.S. COAST GUARD, STATE AND LOCAL REGULATIONS.
10. REMNANT CREOSOTE TREATED WOOD PILING MAY BE LOCATED WITHIN THE DREDGE LIMITS. ALL PILES WITHIN DREDGING LIMITS SHALL BE REMOVED OR CUT TO AN ELEVATION OF 2−FEET BELOW THE FINAL DREDGE ELEVATIONS AND BACKFILLED WITH SAND. REMOVAL, CUTTING, TREATMENT, MANAGEMENT AND DISPOSAL OF PILES/PILE STUBS SHALL BE CONSIDERED INCIDENTAL TO THE DREDGING.
11. NATURAL MATERIAL (E.G. NATURAL WOOD, ROCK) DEBRIS OBSERVED IN NON−CONTAMINATED DREDGED MATERIAL SHALL BE REDUCED TO THE SIZE OF 1−FT IN ANY DIMENSIONS PRIOR TO DISPOSAL AT THE PORT GARDNER OPEN−WATER DISPOSAL SITE.
12. ANTHROPOGENICALLY−DERIVED DEBRIS (E.G. REBAR, TIRES, PLASTIC TRASH, WOOD DEBRIS, ETC.) OF ANY SIZE (IF OBSERVED IN NON−CONTAMINATED DREDGED MATERIAL) SHALL BE SEGREGATED FOR UPLAND DISPOSAL. ANTHROPOGENICALLY−DERIVED DEBRIS ARE PROHIBITED FOR OPEN WATER DISPOSAL.
13. IF ANY ARCHAEOLOGICAL RESOURCES ARE DISCOVERED DURING DREDGING ACTIVITY, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY PORT AND SHALL FOLLOW THE PROCEDURES/NOTIFICATION REQUIREMENTS IDENTIFIED IN SPECIFICATIONS.

1 DREDGE CONTROL POINT COORDINATES

CONTROL POINT #	NORTHING	EASTING	DESIGN DREDGE ELEVATION (MLLW)	AS−BUILT DREDGE ELEVATION (MLLW)
CP−1 THROUGH CP−9	REFER TO DWG. NO. 8			
CP−29	359442.0137	1299619.8834	−42	−44.30
CP−30	359414.4563	1299591.3967	−42	−47.64
CP−31	359509.3600	1299266.1469	−42	−43.35
CP−32	359487.6160	1299249.0939	−42	−42.30
CP−33	359490.3457	1299257.5890	−47	−45.42
CP−34	359499.3740	1299264.6696	−47	−47.80
CP−35	359403.2290	1299594.1735	−47	−48.07
CP−36	359391.2718	1299597.1308	−47	−41.74
CP−37	359429.5791	1299621.4120	−47	−48.50
CP−38	359421.9244	1299628.8170	−47	−43.66
CP−39	359419.5757	1299640.0956	−38	−38.15
CP−40	359382.3320	1299598.3693	−38	−38.31

*IF SHEET IS LESS THAN 22x34 REDUCE SCALES ACCORDINGLY

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PROJECT NO. 0676−020−04

NO.	DATE	BY	REVISION
1	5/16/17	GEI	ADDED: RECORD DRAWINGS
0	3/21/16	GEI	ISSUED FOR BID AND CONSTRUCTION

PROJECT ENGINEER: B. TRACY	SCALE: AS NOTED
DESIGNED BY: A. JOSHI & B. TRACY	DATE: 03/21/2016
DRAWN BY: T. MICHAUD	CHECKED BY: J. HERZOG
APPROVED BY:	

PORT OF EVERETT
MILL A CLEANUP SITE
INTERIM ACTION DREDGING

FINAL DREDGING LIMITS

DWG. NO. 9
CIP NO. 1−0−004−01, 3−0−012−06
PROJECT NO. MT−PT−2016−01
SHEET NO. 9 OF 14

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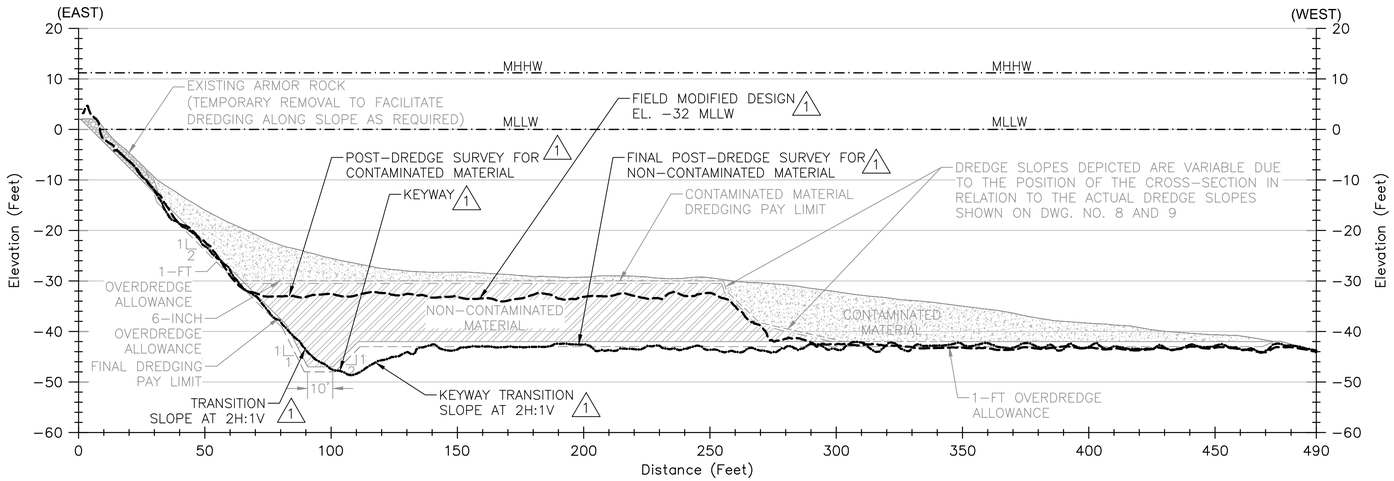
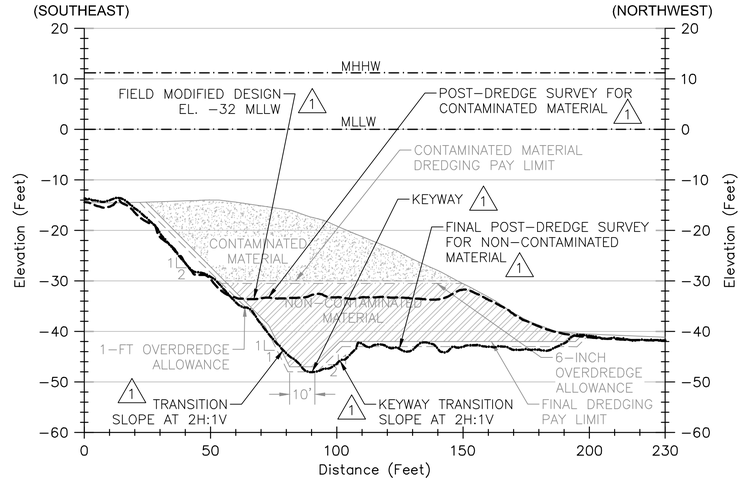


1 DREDGING CROSS−SECTION — A / 9

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=15'
VERTICAL EXAGGERATION = 2X



1 DREDGING CROSS−SECTION — C / 9

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=15'
VERTICAL EXAGGERATION = 2X

1 DREDGING CROSS−SECTION — B / 9

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=15'
VERTICAL EXAGGERATION = 2X

1 DREDGING CROSS−SECTION — D / 9

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=15'
VERTICAL EXAGGERATION = 2X

GRAPHIC SCALE

30 0 30
Horizontal Scale in Feet
15 0 15
Vertical Scale in Feet

1 RECORD DRAWING

*IF SHEET IS LESS THAN 22x34
REDUCE SCALES ACCORDINGLY

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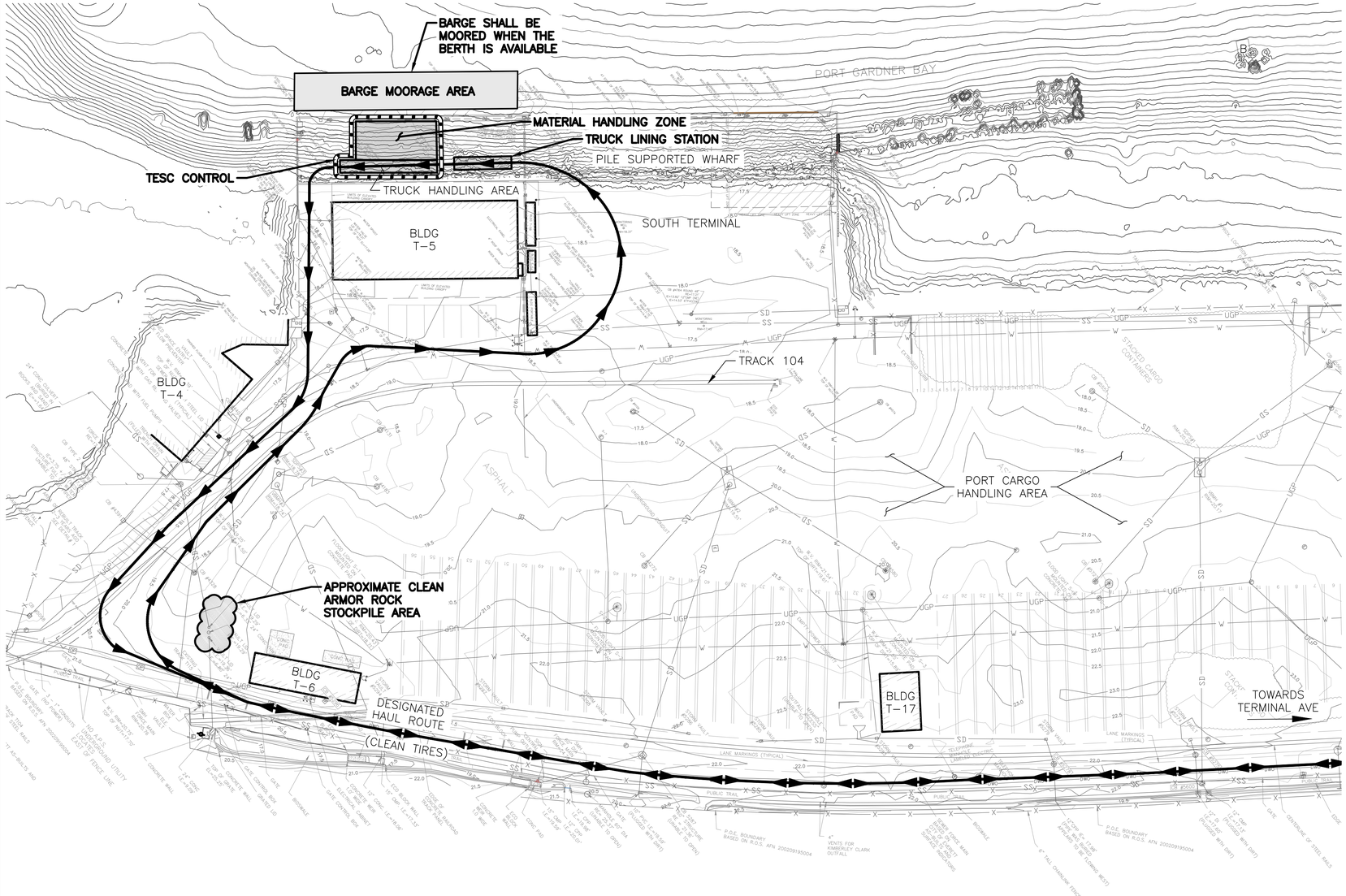
0	3/21/16	GEI	ISSUED FOR BID AND CONSTRUCTION

PROJECT ENGINEER: B. TRACY	SCALE: AS NOTED	PORT OF EVERETT	DWG. NO. 10
DESIGNED BY: A. JOSHI & B. TRACY	DATE: 03/21/2016	MILL A CLEANUP SITE INTERIM ACTION DREDGING	CIP NO. 1−0−004−01 3−0−012−06
DRAWN BY: T. MICHAUD	CHECKED BY: J. HERZOG		PROJECT NO. MT−PT−2016−01
APPROVED BY:		DREDGING CROSS−SECTIONS	SHEET NO. 10 OF 14



LEGEND

- AREA AVAILABLE TO THE CONTRACTOR TO OFFLOAD AND MANAGE CONTAMINATED MATERIAL (SIZE AND LAYOUT TO BE DETERMINED BY CONTRACTOR AND APPROVED BY PORT)
- SS — SANITARY SEWER LINE
- SD — STORM DRAIN LINE
- W — WATER LINE
- UGP — UNDERGROUND POWER LINE
- CATCH BASIN
- ELECTRICAL VAULT
- LIGHT POLE
- X — EXISTING FENCE

NOTES

1. CONTRACTOR'S PERSONNEL ACCESSING UPLAND PORTION OF THE TERMINALS, INCLUDING TRUCK DRIVERS, SHALL BE REQUIRED TO HAVE A VALID TRANSPORTATION WORKER IDENTIFICATION CREDENTIAL (TWIC) CARD.
2. IF CONTRACTOR ELECTS TO USE THE SOUTH TERMINAL FOR CONTAMINATED MATERIAL OFFLOADING, THEN ALL CONTRACTOR OFFLOADING AND DREDGED MATERIAL MANAGEMENT OPERATIONS SHALL BE CONFINED WITHIN THE AVAILABLE AREA SHOWN ON THIS DRAWING UNLESS OTHERWISE APPROVED BY THE PORT IN WRITING.
3. THE CONTRACTOR SHALL COORDINATE THEIR OFFLOADING SCHEDULE AND ACTIVITIES WITH PORT STAFF TO ENSURE THAT PORT'S OPERATIONS AT THE SOUTH AND PACIFIC TERMINAL ARE NOT IMPACTED. INTERFERENCE TO CONTRACTOR'S ACTIVITIES CAUSED DUE TO PORT'S OPERATIONS AT THE TERMINALS SHALL NOT BE CONSIDERED AS A CHANGE IN THE CONTRACT.
4. LAYOUT OF THE OFFLOADING AND DREDGE MATERIAL MANAGEMENT OPERATIONS SHOWN ON THIS DRAWING IS PRELIMINARY AND THE CONTRACTOR IS REQUIRED TO SUBMIT THEIR PLAN FOR OFFLOADING AND UPLAND MANAGEMENT OF CONTAMINATED DREDGED MATERIAL AS PART OF THE CONTRACTOR'S WORK PLAN FOR PORT'S/ENGINEER'S REVIEW AND ACCEPTANCE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO IMPLEMENTING NECESSARY TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) MEASURES TO ENSURE THAT DREDGED MATERIAL, RETURN WATER FROM THE DREDGED MATERIAL OR STORMWATER THAT COMES IN CONTACT WITH THE DREDGED MATERIAL, IS CONTAINED WITHIN AND DOES NOT ESCAPE THE AVAILABLE AREA FOR DREDGED MATERIAL OFFLOAD AND MANAGEMENT.
6. STORM/RETURN/WASTE WATER GENERATED AT THE SOUTH TERMINAL OFFLOAD FACILITY SHALL BE COLLECTED, STORED AND TREATED (IF NECESSARY) AND DISCHARGED INTO THE CITY OF EVERETT SEWER CONNECTION SHOWN ON THIS DRAWING IN ACCORDANCE WITH ALL THE REQUIREMENTS OF THE CITY OF EVERETT TEMPORARY SEWER DISCHARGE PERMIT. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE DIRECTLY WITH THE CITY IN OBTAINING TEMPORARY SEWER DISCHARGE PERMIT. THE CONTRACTOR SHALL DISCHARGE WATER INTO CITY'S SEWER ONLY IF CITY'S DISCHARGE CRITERIA AND ALL OTHER REQUIREMENTS/APPROVALS/PERMIT CONDITIONS ARE MET. THE CONTRACTOR SHALL COMPLY WITH CITY'S DISCHARGE RATE REQUIREMENTS WHILE DISCHARGING WATER INTO CITY'S SEWER. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR FINES RESULTING FROM ANY VIOLATIONS OF CITY'S REQUIREMENTS.
7. THE CONTRACTOR SHALL INSTALL TEMPORARY DISCHARGE LINES TO TRANSPORT COLLECTED WATER FROM UPLAND WORK AREAS (E.G. DREDGED MATERIAL STOCKPILE AREA) TO SEWER CONNECTION IN A MANNER THAT DOES NOT INTERFERE WITH OPERATION OF RAIL LINES OR VEHICULAR TRAFFIC AT THE TERMINAL.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL NECESSARY SAMPLING AND ANALYSIS ACTIVITIES OF STORM/RETURN/WASTE WATER GENERATED AT THE OFFLOAD FACILITY TO CONFIRM THAT APPLICABLE REGULATORY REQUIREMENTS/DISCHARGE CRITERIA ARE MET PRIOR TO DISCHARGE/DISPOSAL.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING NECESSARY TRAFFIC CONTROLS TO THE SATISFACTION OF THE PORT TO ENSURE SAFE PASSAGE/MOVEMENT OF PORT VEHICLES AROUND CONTRACTOR'S OPERATIONS. THE CONTRACTOR SHALL ALSO IMPLEMENT TRAFFIC CONTROLS IN ACCORDANCE WITH THE CITY OF EVERETT'S CODE/REGULATIONS ON TERMINAL AVENUE OR OTHER CITY STREETS AS NECESSARY FOR SMOOTH AND SAFE TRANSPORTATION OF TRUCKS AND OTHER CONSTRUCTION VEHICLES ENTERING AND LEAVING THE PORT TERMINALS.
10. THE CONTRACTOR SHALL PERFORM OFFLOADING AND DREDGED MATERIAL MANAGEMENT OPERATIONS IN ACCORDANCE WITH REQUIREMENTS AND BEST MANAGEMENT PRACTICES (BMPS) AS SHOWN OR AS SPECIFIED.
11. CATCH BASIN INSERTS, MEASURES TO CONTROL TRACKED SEDIMENT, AND OTHER BMPS AS REQUIRED TO PREVENT EROSION AND DISCHARGE OF SEDIMENT AND WASTE MATERIALS ON THE UPLANDS SHALL BE INSTALLED IN ALL LOCATIONS ON SITE WHERE CONTRACTOR TRUCKING AND LAND SIDE ACTIVITIES WILL OCCUR.
12. THE CONTRACTOR SHALL PROTECT RAILROAD TRACKS FROM CONSTRUCTION EQUIPMENT. EQUIPMENT WITH STEEL TRACKS WILL DAMAGE RAILS. THE CONTRACTOR SHALL EMPLOY SOFTENERS TO PROTECT RAILS FROM EQUIPMENT CROSSING.

SOUTH TERMINAL OFFLOAD FACILITY PLAN

SCALE: 1"=80'

80 0 80
FEET

True North
Project North

⚠1 RECORD DRAWING

*IF SHEET IS LESS THAN 22x34 REDUCE SCALES ACCORDINGLY

P:\0\0676020\05\CAD\Task 1700 Record Drawings\Sheets\S-11 South Terminal Offload Facility Plan.dwg\TAB:Layout1 Modified by THICHAUD on May 16, 2017 - 14:15

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PROJECT NO. 0676-020-04

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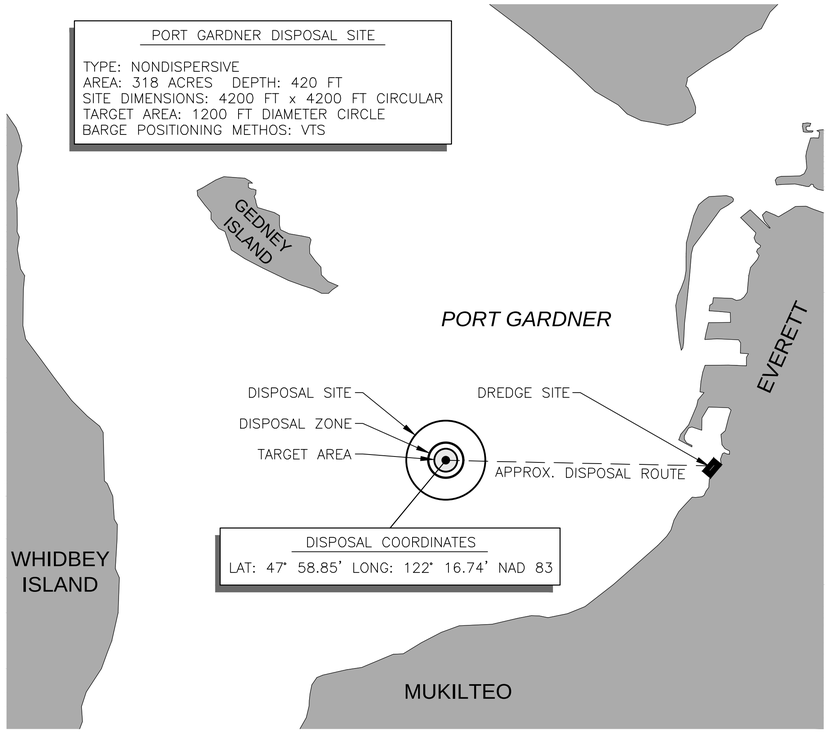
⚠1	5/16/17	GEI	ADDED: RECORD DRAWINGS
⚠0	3/21/16	GEI	ISSUED FOR BID AND CONSTRUCTION

PROJECT ENGINEER:	SCALE:
B. TRACY	AS NOTED
DESIGNED BY: A. JOSHI & B. TRACY	DATE: 03/21/2016
DRAWN BY: T. MICHAUD	CHECKED BY: J. HERZOG
APPROVED BY:	

PORT OF EVERETT
MILL A CLEANUP SITE
INTERIM ACTION DREDGING

SOUTH TERMINAL
OFFLOAD FACILITY PLAN

DWG. NO. 11
CIP NO. 1-0-004-01, 3-0-012-06
PROJECT NO. MT-PT-2016-01
SHEET NO. 11 OF 14



PORT GARDNER DISPOSAL SITE

SCALE: 1"=4000'

4000 0 4000
FEET

N
W E
S

NOTES

1. ALL NON-CONTAMINATED DREDGED MATERIAL SHALL BE TRANSPORTED FROM THE SITE AND DISPOSED AT THE PORT GARDNER OPEN-WATER DISPOSAL SITE IN ACCORDANCE WITH DREDGED MATERIAL MANAGEMENT PROGRAM'S (DMMP'S) CURRENT DREDGED MATERIAL EVALUATION AND DISPOSAL PROCEDURES USER MANUAL (USER MANUAL), APPLICABLE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES' (DNR'S) REQUIREMENTS AND REQUIREMENTS OF THE CONTRACT DOCUMENTS.
2. ONLY BOTTOM-DUMP BARGES ARE ALLOWED FOR DREDGED MATERIAL DISPOSAL AT THE DISPOSAL SITE.
3. THE CONTRACTOR (OR THEIR SUBCONTRACTOR) SHALL CONTACT USCG PUGET SOUND VESSEL TRAFFIC SERVICE (VTS) ALSO KNOWN AS "SEATTLE TRAFFIC" BY RADIO PRIOR TO EACH DISPOSAL FOR POSITIONING AND VERIFICATION OF LOCATION WITHIN THE DISPOSAL SITE TARGET AREA. DISPOSAL SHALL NOT COMMENCE UNTIL VERIFICATION IS RECEIVED FROM THE USCG.
4. THE CONTRACTOR SHALL COORDINATE NIGHTTIME DISPOSAL WITH THE SEATTLE DISTRICT CORPS REGULATORY BRANCH PROJECT MANAGER. APPROVAL MUST BE RECEIVED FROM THE DISTRICT ENGINEER PRIOR TO CONDUCTING NIGHTTIME DISPOSAL.
5. THE CONTRACTOR (OR THEIR SUBCONTRACTOR) SHALL OPEN DISPOSAL BARGES INSIDE THE TARGET AREA SHOWN ON THE DRAWING TO ENSURE DREDGED MATERIAL IS RELEASED WITHIN THE DISPOSAL ZONE AFTER RECEIPT OF CONFIRMATION FROM VTS.
6. DISPOSAL OPERATIONS MUST NOT INTERFERE WITH INDIAN TREATY FISHING AT THE DISPOSAL SITE, INCLUDING GILL NETS AND OTHER FISHING GEAR.
7. THE CONTRACTOR SHALL FOLLOW DNR'S REPORTING REQUIREMENTS FOR EVERY LOAD OF DREDGED MATERIAL TAKEN TO THE DISPOSAL SITE INCLUDING BUT NOT LIMITED TO COMPLETING THE DISPOSAL SITE USE REPORT AT THE TIME OF EACH DISPOSAL.
8. THE CONTRACTOR SHALL SUBMIT THE COMPLETED DISPOSAL SITE USE REPORT TO THE OWNER WITHIN 24 HOURS OF THE DISPOSAL. THE OWNER WILL COORDINATE SUBMITTAL OF DISPOSAL SITE USE REPORT TO THE DNR. A COPY OF THE DISPOSAL SITE USE REPORT IS PROVIDED IN THE REFERENCE SECTION.
9. THE CONTRACTOR SHALL MONITOR VHF-FM CHANNELS 5A, 13 AND 14 DURING DREDGING/DISPOSAL OPERATIONS AS PER THE REQUIREMENT OF THE DMMP'S USER MANUAL.

⚠1 RECORD DRAWING

*IF SHEET IS LESS THAN 22x34
REDUCE SCALES ACCORDINGLY

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⚠0	3/21/16	GEI	ISSUED FOR BID AND CONSTRUCTION

NO.	DATE	BY	REVISION

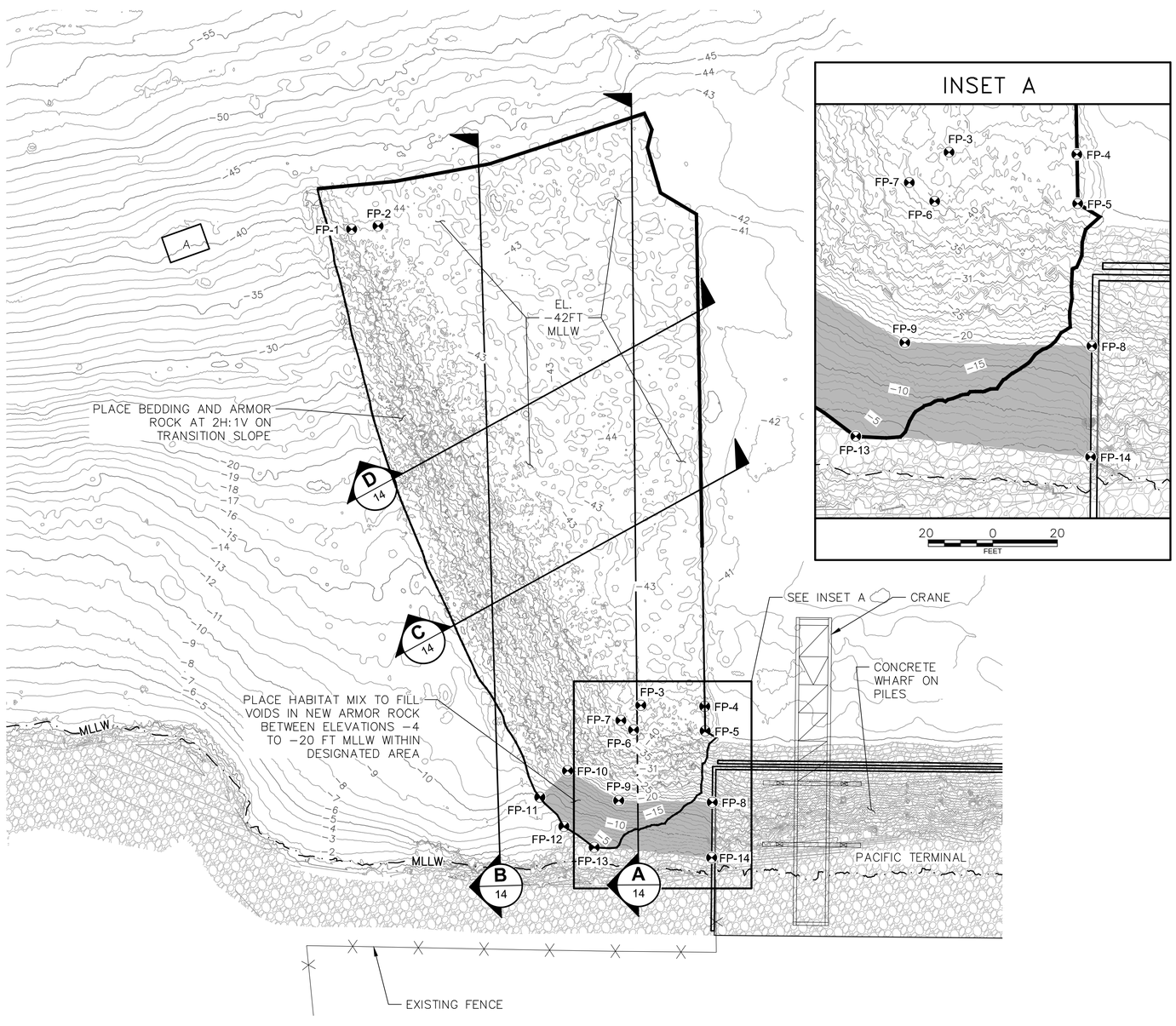
PROJECT ENGINEER: B. TRACY	SCALE: AS NOTED
DESIGNED BY: A. JOSHI & B. TRACY	DATE: 03/21/2016
DRAWN BY: T. MICHAUD	CHECKED BY: J. HERZOG
APPROVED BY:	

PORT OF EVERETT

MILL A CLEANUP SITE
INTERIM ACTION DREDGING

NON-CONTAMINATED DREDGED
MATERIAL DISPOSAL PLAN

DWG. NO. 12
CIP NO. 1-0-004-01
3-0-012-06
PROJECT NO. MT-PT-2016-01
SHEET NO. 12 OF 14



BEDDING, ARMOR ROCK AND HABITAT-MIX PLACEMENT PLAN

SCALE: 1"=40'

40 0 40
FEET

True North
Project North

LEGEND

- 1 — 10 — AS-BUILT SURVEY CONTOUR (FT MLLW) (DATED 2-21-2017)
- FINAL DREDGING PAY LIMIT
- AREA OF HABITAT MIX PLACEMENT
- FP-1 — FILL CONTROL POINT LOCATION AND DESIGNATION

NOTES

1. THE CONTRACTOR SHALL CONDUCT ALL MATERIAL PLACEMENT ACTIVITIES USING WATER-BASED EQUIPMENT. NO EQUIPMENT SHALL BE ALLOWED TO OPERATE ON THE SEDIMENT SURFACE.
2. BEDDING, ARMOR ROCK AND HABITAT-MIX PLACED ON SITE SHALL MEET ALL THE REQUIREMENTS IDENTIFIED IN THE CONTRACT SPECIFICATIONS INCLUDING MATERIAL QUALITY, TESTING, GRADATION, ETC.

FILL CONTROL POINT COORDINATES

CONTROL POINT #	NORTHING	EASTING	DREDGE ELEVATION (MLLW)	AS-BUILT DREDGE ELEVATION (MLLW)
FP-1	359496.3687	1299255.9583	-42	-40.36
FP-2	359509.3600	1299266.1469	-42	-41.57
FP-3	359414.4563	1299591.3967	-42	-41.62
FP-4	359442.0137	1299619.8834	-42	-42.77
FP-5	359400.6088	1299630.8439	-42	-41.93
FP-6	359490.3457	1299598.9956	-42	-41.53
FP-7	359399.0885	1299589.3528	-42	-41.33
FP-8	359403.2928	1299665.2120	-20	-20.58
FP-9	359363.0549	1299623.4553	-20	-18.01
FP-10	359353.6650	1299587.9429	-20	-19.50
FP-11	359329.9038	1299587.4032	-11	-9.86
FP-12	359327.7433	1299610.7829	-8	-5.67
FP-13	359331.7761	1299633.2231	-4	-3.02
FP-14	359378.7232	1299689.2446	-6	-5.54

1 RECORD DRAWING

*IF SHEET IS LESS THAN 22x34 REDUCE SCALES ACCORDINGLY

Port of Everett
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

GeoEngineers

PROJECT NO. 0676-020-04

NO.	DATE	BY	REVISION
1	5/16/17	GEI	ADDED: RECORD DRAWINGS
0	3/21/16	GEI	ISSUED FOR BID AND CONSTRUCTION

NO.	DATE	BY	REVISION

PROJECT ENGINEER: B. TRACY	SCALE: AS NOTED
DESIGNED BY: A. JOSHI & B. TRACY	DATE: 03/21/2016
DRAWN BY: T. MICHAUD	CHECKED BY: J. HERZOG
APPROVED BY:	

PORT OF EVERETT

MILL A CLEANUP SITE
INTERIM ACTION DREDGING

BEDDING, ARMOR ROCK AND HABITAT MIX PLACEMENT PLAN

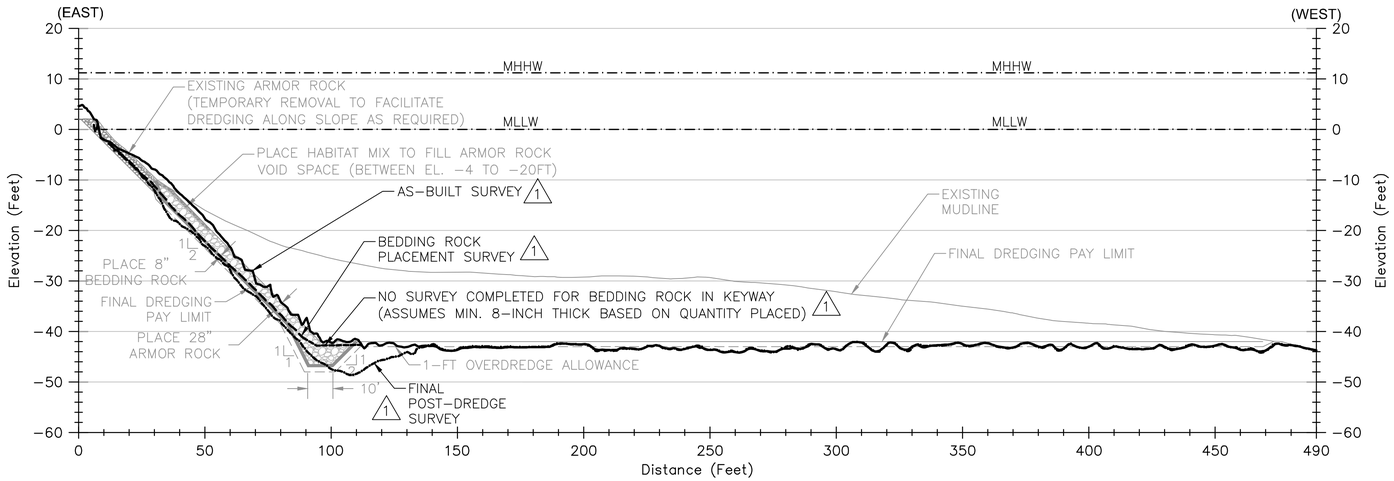
DWG. NO. 13

CIP NO. 1-0-004-01
3-0-012-06

PROJECT NO. MT-PT-2016-01

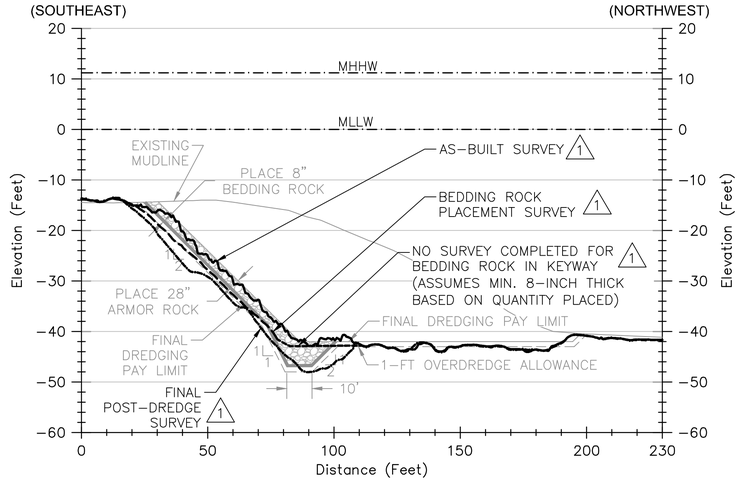
SHEET NO. 13 OF 14

P:\0\06760200\05\CAD\Task 1700 Record Drawings\Sheets\S-13 Armor Rock and Habitat Placement Plan.dwg TAB:Layout1 Modified by: MICHAUD on May 16, 2017 - 14:17



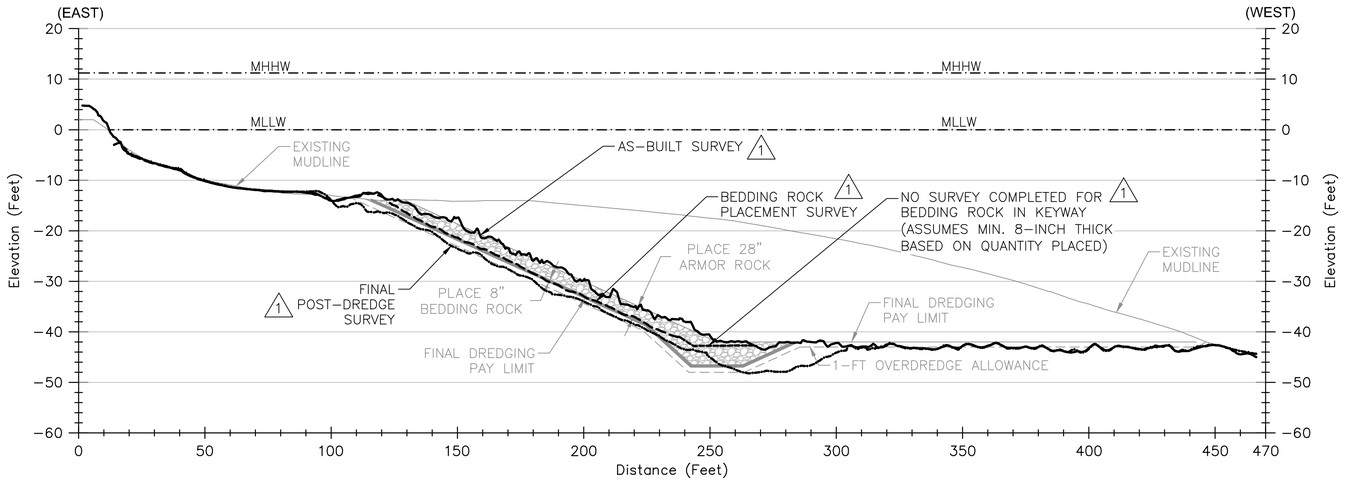
1 ARMOR ROCK AND HABITAT MIX PLACEMENT CROSS−SECTION **A** 13

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=15'
VERTICAL EXAGGERATION = 2X



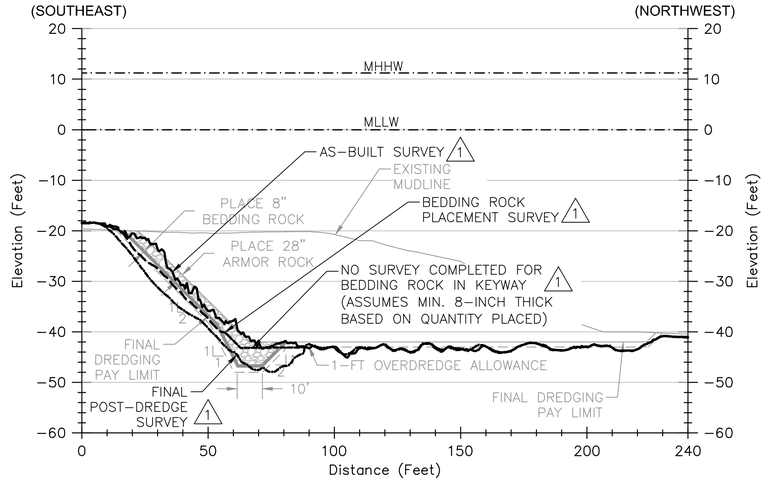
1 ARMOR ROCK AND HABITAT MIX PLACEMENT CROSS−SECTION **C** 13

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=15'
VERTICAL EXAGGERATION = 2X



1 ARMOR ROCK AND HABITAT MIX PLACEMENT CROSS−SECTION **B** 13

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=15'
VERTICAL EXAGGERATION = 2X



1 ARMOR ROCK AND HABITAT MIX PLACEMENT CROSS−SECTION **D** 13

HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=15'
VERTICAL EXAGGERATION = 2X

GRAPHIC SCALE

(FOR SHEET SIZED 22x34 INCH*)

30 0 30
Horizontal Scale in Feet

15 0 15
Vertical Scale in Feet

1 RECORD DRAWING

*IF SHEET IS LESS THAN 22x34
REDUCE SCALES ACCORDINGLY

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259−3164

GEOENGINEERS

PROJECT NO. 0676−020−04

NO.	DATE	BY	REVISION
1	5/16/17	GEI	ADDED: RECORD DRAWINGS
0	3/21/16	GEI	ISSUED FOR BID AND CONSTRUCTION

NO.	DATE	BY	REVISION

PROJECT ENGINEER: B. TRACY	SCALE: AS NOTED
DESIGNED BY: A. JOSHI & B. TRACY	DATE: 03/21/2016
DRAWN BY: T. MICHAUD	CHECKED BY: J. HERZOG
APPROVED BY:	

PORT OF EVERETT

MILL A CLEANUP SITE
INTERIM ACTION DREDGING
BEDDING, ARMOR ROCK AND HABITAT MIX PLACEMENT CROSS−SECTIONS

DWG. NO. 14
CIP NO. 1−0−004−01 3−0−012−06
PROJECT NO. MT−PT−2016−01
SHEET NO. 14 OF 14

P:\0\0676\020\05\CAD\Task 1700 Record Drawings\Sheets\S-14 Armor Rock and Habitat Mix Placement Cross-Sections.dwg\TAB:Layout1 Modified by TMICHAUD on May 16, 2017 - 14:21

APPENDIX C
Water Quality Monitoring Results

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[1]	Distance from In-Water Construction Activity (feet)	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
						Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
8/15/2016	Tier I/Event 1	Silt Curtain Install and Armor Rock Removal	Background	400	26	0	0	0.73	8.8	8.3	8.5	Flood	Tide related turbidity visible along entire shoreline. No sheen or floating/suspended material observed. The contractor was notified to implement necessary BMPs to control turbidity due to Early Warning # 1 detection.
			Early Warning 1	75	3	--	9.1	--	--	5.9	--		
			Early Warning 2	75	45	2	1.6	2.1	7.8	7.8	7.4		
			Compliance Point 1	150	10	3.9	1.7	1.5	8.1	6.6	7		
			Compliance Point 2	150	45	0.5	0	0	6	6.5	5.1		
	Tier I/Event 2	Armor Rock Removal	Background	600	47	0.66	0	0.9	9.29	9.93	7.36	Flood	No sheen, visible turbidity or floating/suspended material observed.
			Early Warning 1	75	18	0	0	0	7.44	6.98	7.9		
			Early Warning 2	75	45	4.8	1.78	1.13	6.77	7.7	11.5		
			Compliance Point 1	150	18	0	0	0	7.5	7	7.9		
			Compliance Point 2	150	45	0.5	0	0	7.43	7.5	5.3		
8/16/2016	Tier I/Event 1	Dredging	Background	500	37	3.34	0.06	0	13.1	14.5	15	Flood	No sheen, visible turbidity or floating/suspended material observed.
			Early Warning 1	75	20	5.7	3.4	1.35	9.9	7.35	6.01		
			Early Warning 2	75	45	0.5	0.7	0	7	7.2	6.72		
			Compliance Point 1	150	15	3.6	2.38	2.71	6.7	6.8	7.04		
			Compliance Point 2	150	45	0.32	1.47	0.8	6.41	6.7	6.96		
	Tier I/Event 2	Dredging	Background	550	40	1.1	0	0	7.72	9.25	6.4	Flood	No sheen, visible turbidity or floating/suspended material observed. The contractor was notified to implement necessary BMPs to control turbidity due to Early Warning # 1 detection.
			Early Warning 1	50	55	6.8	2.29	0	6.7	8.3	5.3		
			Early Warning 2	75	50	4.71	1.06	0	6.14	7.6	6.4		
			Compliance Point 1	150	50	4.58	0	0	6.67	7.8	5.35		
			Compliance Point 2	150	50	1.55	0	0	6.1	7.32	5.4		
8/17/2016	Tier I/Event 1	Dredging	Background	500	46	0	0	0	8	7.6	6.44	Slack	No sheen, visible turbidity or floating/suspended material observed. The contractor was notified to implement necessary BMPs to control turbidity due to Early Warning # 2 detection.
			Early Warning 1	50	40	0.73	0	0	7.02	6.69	7.29		
			Early Warning 2	75	50	0.43	7.41	0	6.73	6.27	6.3		
			Compliance Point 1	150	52	0	0	0	6.65	7.1	7.62		
			Compliance Point 2	150	50	0.91	4.24	0	7.22	6.51	6.91		
	Tier I/Event 2	Dredging	Background	500	46	2.98	6.34	1.76	7.68	8.27	6.8	Flood	No sheen, visible turbidity or floating/suspended material observed.
			Early Warning 1	75	40	1.53	3.93	3	7.91	7.4	6.3		
			Early Warning 2	75	50	3.75	3.95	0	7.4	7.5	7.54		
			Compliance Point 1	150	52	6.08	3.3	0	6.67	7.8	6.4		
			Compliance Point 2	150	50	3.79	5.6	0	6.6	7.8	10.31		
8/18/2016	Tier I/Event 1	Dredging	Background	650	50	1.41	0	0	7.4	16.7	8.71	Ebb	No sheen, visible turbidity or floating/suspended material observed.
			Early Warning 1	75	45	0	0	0	9.5	10.12	10.43		
			Early Warning 2	75	23	0.96	1.65	2.03	8.04	12.98	8.85		
			Compliance Point 1	150	45	0.09	0	0	6.67	12	9.4		
			Compliance Point 2	150	25	0.57	0.58	1.13	6.4	10.08	12.15		
	Tier I/Event 2	Dredging	Background	600	42	3.54	4.19	0.23	16.19	10.14	9.11	Flood	No sheen, visible turbidity or floating/suspended material observed.
			Early Warning 1	75	23	0.23	2.86	0.38	7.27	7.74	7.5		
			Early Warning 2	75	47	0.65	0	0	7.68	8.01	11.5		
			Compliance Point 1	150	30	0.66	0.65	2.38	7.28	7.32	7.86		
			Compliance Point 2	150	47	0	0.85	0	10.41	7.29	6.91		

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[1]	Distance from In-Water Construction Activity (feet)	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
						Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
8/19/2016	Tier I/Event 1	Dredging	Background	600	50	0	0	0.17	8.25	7.26	6.28	Ebb	No sheen, visible turbidity or floating/suspended material observed.
			Early Warning 1	75	46	0	0	0	6.68	6.47	5.18		
			Early Warning 2	75	30	0	4.53	0.94	5.88	7.32	6.78		
			Compliance Point 1	150	45	2.21	0	0	6.12	6.48	5.27		
			Compliance Point 2	150	32	0.38	0	0.19	6.25	6.69	7.46		
	Tier I/Event 2	Dredging	Background	500	50	8.17	1.01	0	7.69	10.71	6.25	Flood	No sheen or floating/suspended material observed. Some turbidity along shoreline consistent with flood tide.
			Early Warning 1	75	40	0	1.83	0	6.53	14.85	13.07		
			Early Warning 2	75	55	1.44	2.4	0.99	6.86	6.45	5.71		
			Compliance Point 1	150	42	2.67	0	0	7.83	6.57	7.12		
			Compliance Point 2	150	55	0	0	0	5.69	6.38	6.11		
8/22/2016	Tier I/Event 1	Dredging	Background	500	60	2.43	0	0.36	7.35	10.04	11.32	Slack	No sheen, visible turbidity or floating/suspended material observed. The contractor was notified to implement necessary BMPs to control turbidity due to Early Warning # 1 detection.
			Early Warning 1	75	52	11	2.62	0	6.19	10.57	7.3		
			Early Warning 2	75	43	3.47	1.12	2.12	7.37	13.72	6.73		
			Compliance Point 1	150	50	1.37	0	0	6.51	10.88	8.95		
			Compliance Point 2	150	45	1.95	0	2.62	6.86	15.39	9.05		
	Tier I/Event 2	Dredging	Background	550	55	5.31	2.64	0	14.94	12.69	6.69	Slack	No sheen, visible turbidity or floating/suspended material observed. The contractor was notified to implement necessary BMPs to control turbidity due to Early Warning # 1 detection.
			Early Warning 1	75	50	10.8	0.46	2.97	8.37	12.13	10.93		
			Early Warning 2	75	45	7.64	0.16	2.91	7.57	9.86	6.1		
			Compliance Point 1	150	55	8.47	1.72	0.37	6.74	12.7	8.68		
			Compliance Point 2	150	53	5.99	1.6	1.68	6.1	9.23	7.35		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based no NOAA predictions
Low Tide = 9:31AM -0.2 Ft MLLW
High Tide = 4:57 PM 10.3 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Silt Curtain install & Armor Rock Removal	Recorded By: Elise G. & Abhijit J.
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 8/15/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier I

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		400	75	75		150	150	
Station Monitoring Time		1010	1120	1040		1030	1045	
Tidal Status (Ebb, Slack or Flood)		Flood →		→		Flood →	→	
Water Column Height (feet)		26	3	45		10	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	—	2.0		3.9	0.5	
	DO (mg/L)	8.8	—	7.8		8.1	6.0	
Mid-Water	Turbidity (NTUs)	0	9.1	1.6		1.7	0	
	DO (mg/L)	8.3	5.9	7.8		6.6	6.5	
Near-Bottom	Turbidity (NTUs)	0.73	—	2.1		1.5	0	
	DO (mg/L)	8.5	—	7.4		7.0	5.1	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO ship @ terminals, tide related turbidity visible along entire shoreline
Corrective Actions Required/Implemented:	talked to contractor about BMPs

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Tide Levels based no NOAA predictions
Low Tide = 9:31AM -0.2 Ft MLLW
High Tide = 4:57 PM 10.3 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Armor Rock Removal	Recorded By: Abhi / Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 8/15/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier I event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1415	1420	1440		1430	1435	
Tidal Status (Ebb, Slack or Flood)		Flood →	→			Flood →	→	
Water Column Height (feet)		47	18	45		18	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0.66	0	4.8		0	0.5	
	DO (mg/L)	9.29	7.44	6.77		7.50	7.43	
Mid-Water	Turbidity (NTUs)	0	0	1.78		0	0	
	DO (mg/L)	9.93	6.98	7.7		7.0	7.5	
Near-Bottom	Turbidity (NTUs)	0.9	0	1.13		0	0	
	DO (mg/L)	7.36	7.9	11.5		7.90	5.3	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	No ships
Corrective Actions Required/Implemented:	—

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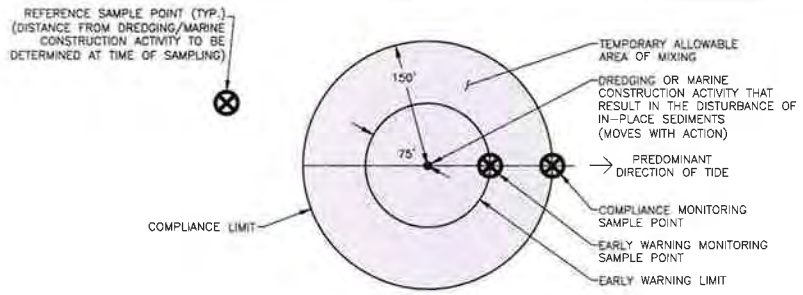
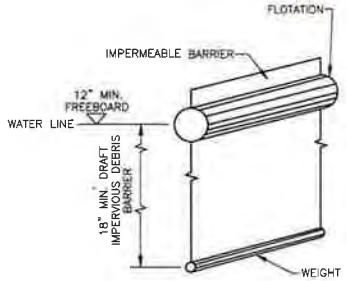
8/15/16



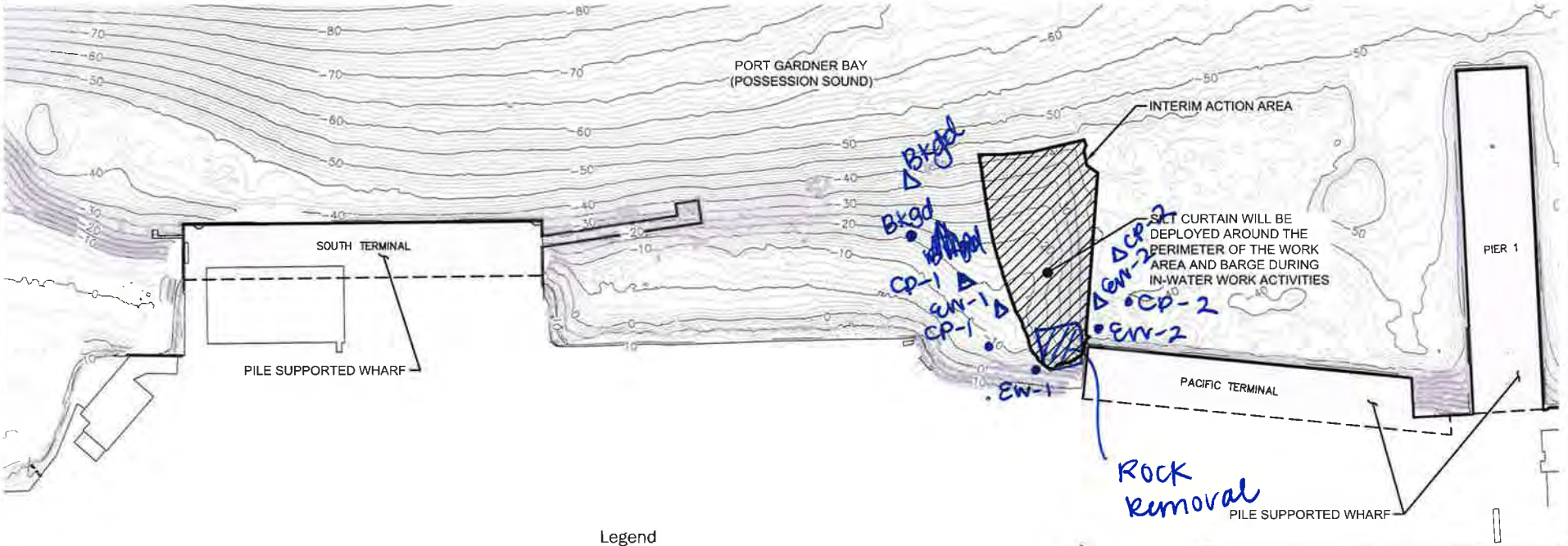
• Event 1

Δ Event 2

TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

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Figure 2

P:\0\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 10:15AM -0.7 Ft MLLW
High Tide = 5:29 PM 10.8 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise/Abbi
Project No.: MT-PT-2016-01	Weather Conditions: sunny	Date: 8/16/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier I - event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	75		150	150	
Station Monitoring Time		1130	1140	1200		1150	1205	
Tidal Status (Ebb, Slack or Flood)		Flood →		→		Flood →	→	
Water Column Height (feet)		37	20	45		15	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	3.34	5.7	05		3.6	0.32	
	DO (mg/L)	13.1	9.9	7.0		6.7	6.41	
Mid-Water	Turbidity (NTUs)	0.06	3.4	0.7		2.38	1.47	
	DO (mg/L)	14.5	7.35	7.2		6.8	6.7	
Near-Bottom	Turbidity (NTUs)	0	1.35	0		2.71	0.8	
	DO (mg/L)	15.0	6.01	6.72		7.04	6.96	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	NA

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Tide Levels based no NOAA predictions
Low Tide = 10:15AM -0.7 Ft MLLW
High Tide = 5:29 PM 10.8 Ft MLLW

WATER QUALITY MONITORING FORM

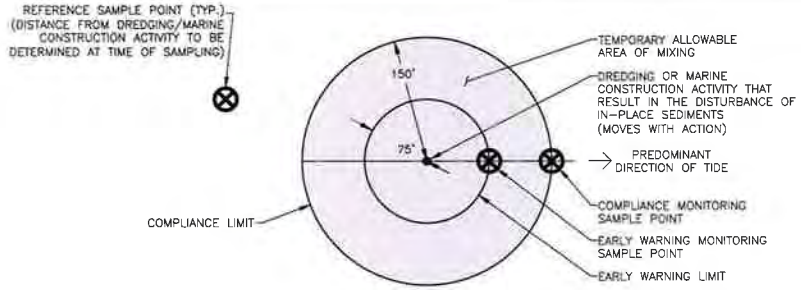
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise / Abhi
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 8/16/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier I - Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		550	50	75		150	150	
Station Monitoring Time		1540	1550	1600		1608	1620	
Tidal Status (Ebb, Slack or Flood)		Flood →		→		Flood →	→	
Water Column Height (feet)		40	55	50		50	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	1.1	6.8	4.71		458	1.55	
	DO (mg/L)	7.72	6.7	6.14		6.67	6.1	
Mid-Water	Turbidity (NTUs)	0	2.29	1.06		0	0	
	DO (mg/L)	9.25	8.3	7.6		7.8	7.32	
Near-Bottom	Turbidity (NTUs)	0	5.0	0		0	0	
	DO (mg/L)	6.40	5.3	6.4		5.35	5.40	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	Ship arrived @ Pac. Term, stop dredging 12:40-1430
Corrective Actions Required/Implemented:	— BMPs

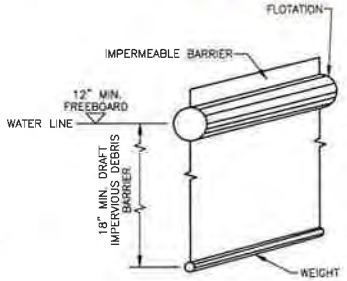
GeoEngineers

8/16/16

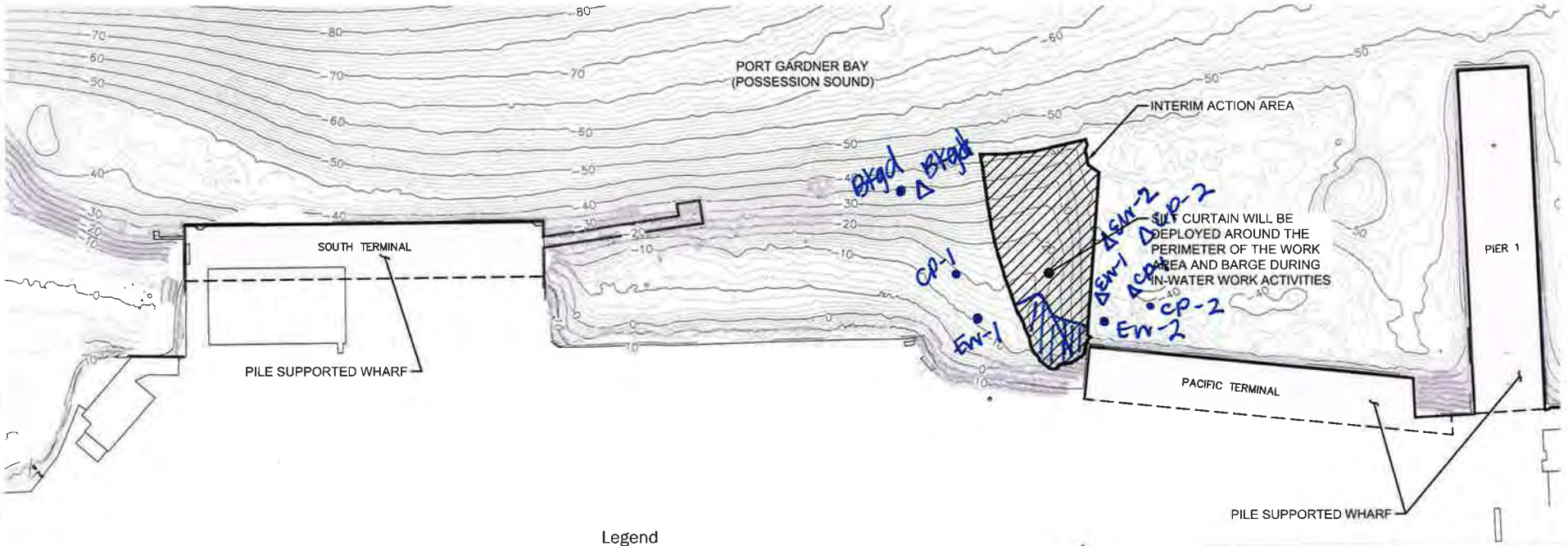


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Data Source:
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Legend

—30—	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760104\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

WATER QUALITY MONITORING FORM

Tide Levels based no NOAA predictions
Low Tide = 10:56AM -1.0 Ft MLLW
High Tide = 5:59 PM 11.2 Ft MLLW

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 8/17/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier I - event

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	50	75		150	150	
Station Monitoring Time		1000	1015	1020		1009	1030	
Tidal Status (Ebb, Slack or Flood)		Slack →		→		slack →	→	
Water Column Height (feet)		46	40	50		52	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0.73	0.43		0	0.91	
	DO (mg/L)	8.0	7.02	6.73		6.65	7.22	
Mid-Water	Turbidity (NTUs)	0	0	7.41		0	4.24	
	DO (mg/L)	7.6	6.69	6.27		7.10	6.51	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	6.44	7.29	6.3		7.62	6.91	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	Westwood @ PT until 1pm
Corrective Actions Required/Implemented:	BMP reminder provided to the Contractor

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 10:56AM -1.0 Ft MLLW
High Tide = 5:59 PM 11.2 Ft MLLW

WATER QUALITY MONITORING FORM

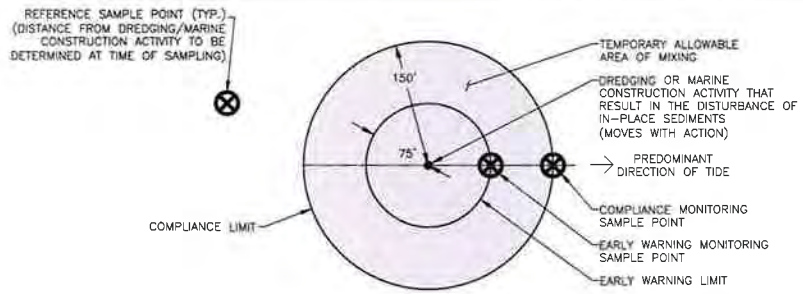
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Reise
Project No.: MT-PT-2016-01	Weather Conditions: sunny	Date: 8/17/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1 event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	75		150	150	
Station Monitoring Time		1433	1440	1447		1453	1502	
Tidal Status (Ebb, Slack or Flood)		Flood →		→		Flood →		
Water Column Height (feet)		46	40	50		52	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	2.98	1.53	3.75		6.08	3.79	
	DO (mg/L)	7.68	7.91	7.4		6.67	6.6	
Mid-Water	Turbidity (NTUs)	6.34	3.93	3.95		3.3	5.6	
	DO (mg/L)	8.27	7.4	7.5		7.8	7.8	
Near-Bottom	Turbidity (NTUs)	1.76	3.0	0		0	0	
	DO (mg/L)	6.9	6.3	7.54		6.4	10.31	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	westrrood ship left PT @ 1pm NO dredging from 12:20-1330
Corrective Actions Required/Implemented:	— BMP reminder

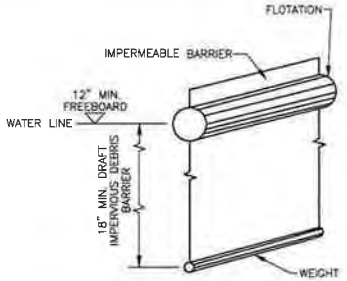
GeoEngineers

8/17/16

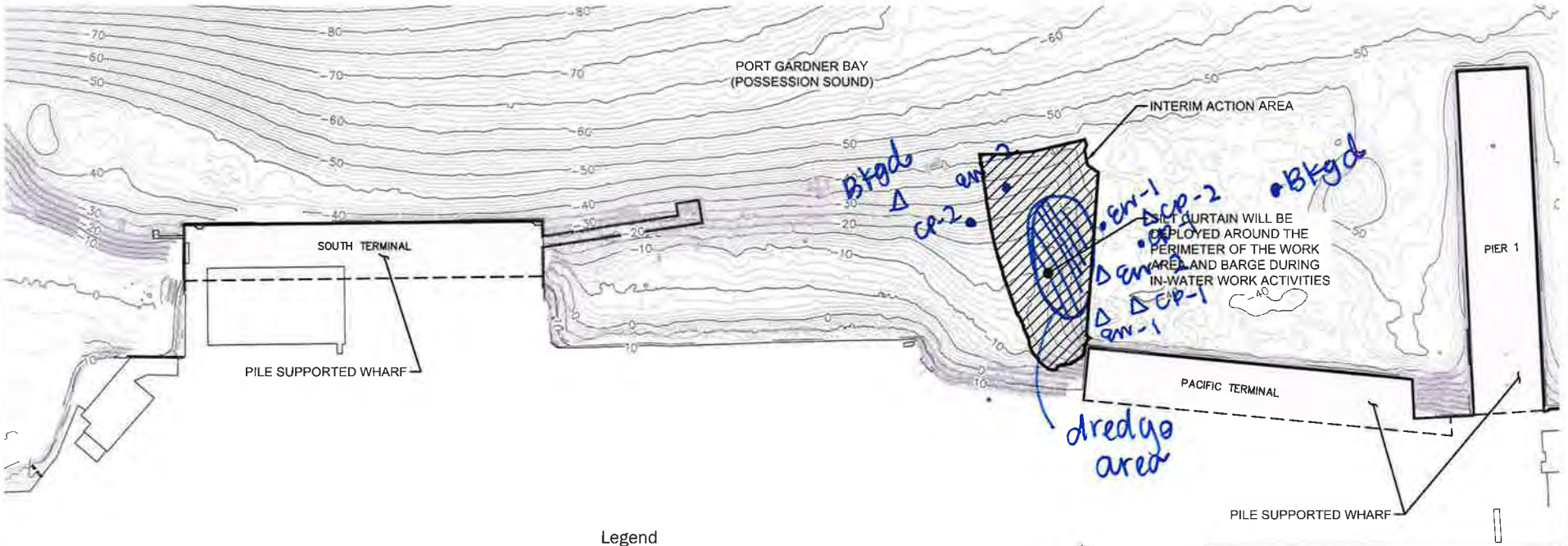


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

True North / Project North

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 11:37AM -1.0 Ft MLLW
High Tide = 6:30 PM 11.4 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise / Abhi
Project No.: MT-PT-2016-01	Weather Conditions: sunny	Date: 9/18/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier I - Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		650	75	75		150	150	
Station Monitoring Time		935	940	950		1000	1010	
Tidal Status (Ebb, Slack or Flood)		Ebb	Ebb	Ebb		Ebb	Ebb	
Water Column Height (feet)		50	45	23		45	25	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	1.41	0	0.96		0.09	0.57	
	DO (mg/L)	7.4	9.5	9.04		10.67	10.4	
Mid-Water	Turbidity (NTUs)	0	0	1.65		0	0.58	
	DO (mg/L)	10.7	10.12	12.98		12.0	10.09	
Near-Bottom	Turbidity (NTUs)	0	0	2.03		0	1.13	
	DO (mg/L)	9.71	10.43	9.85		9.4	12.15	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	No
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	No
Other Observations:	— No ships @ PT
Corrective Actions Required/Implemented:	—

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 11:37AM -1.0 Ft MLLW
High Tide = 6:30 PM 11.4 Ft MLLW

WATER QUALITY MONITORING FORM

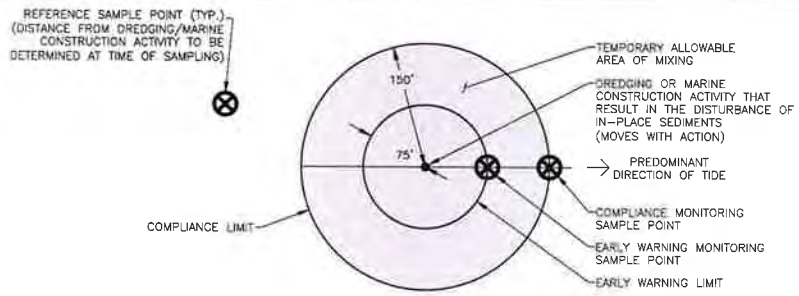
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise / Andri
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 8/18/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier I - Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1335	1345	1400		1350	1405	
Tidal Status (Ebb, Slack or Flood)		Flood →		→		Flood →	→	
Water Column Height (feet)		42	23	47		30	47	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	3.54	0.23	0.65		0.66	0	
	DO (mg/L)	16.19	7.27	7.68		7.28	10.41	
Mid-Water	Turbidity (NTUs)	4.19	2.86	0		0.65	0.85	
	DO (mg/L)	10.14	7.74	8.01		7.32	7.29	
Near-Bottom	Turbidity (NTUs)	0.23	0.38	0		2.38	0	
	DO (mg/L)	9.11	7.50	11.50		7.86	6.91	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

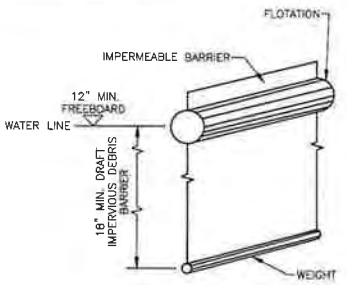
GeoEngineers

6/18/16

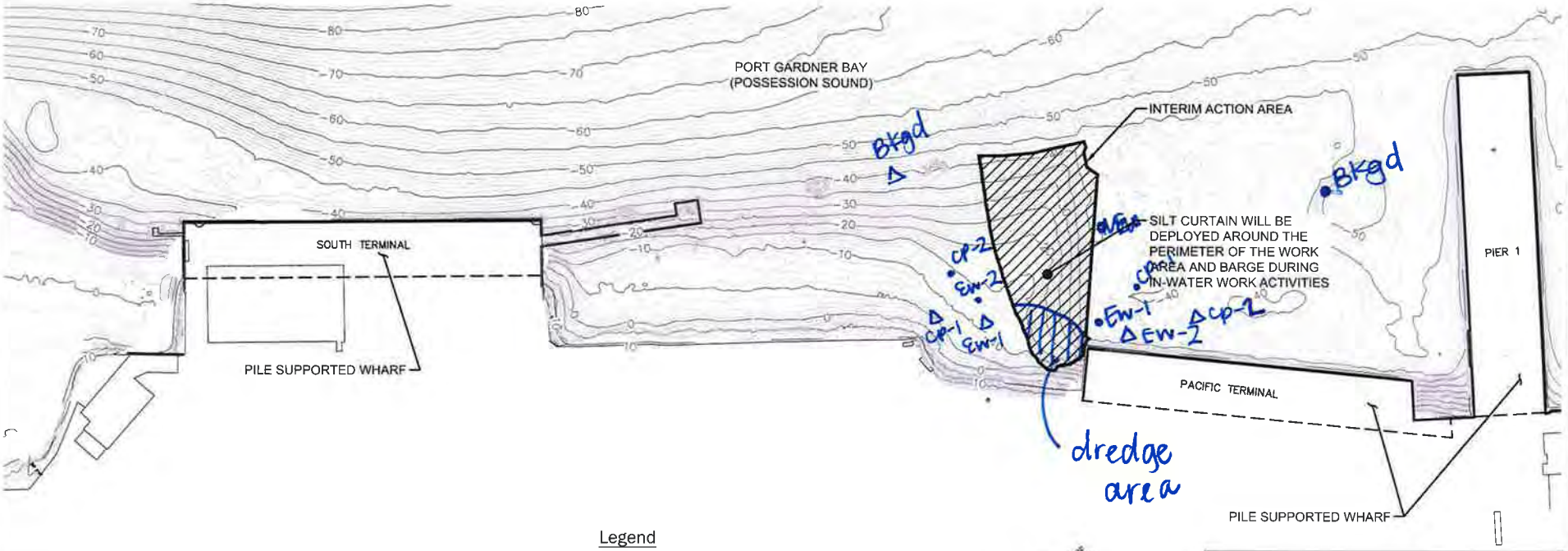


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

—30—	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 12:18PM -0.6 Ft MLLW
High Tide = 7:02 PM 11.6 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise Mavrin
Project No.: MT-PT-2016-01	Weather Conditions: sunny	Date: 8/19/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1 - Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1035	1044	1056		1049	1104	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		50	40	30		45	32	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		2.21	0.38	
	DO (mg/L)	8.25	6.08	5.88		6.12	6.25	
Mid-Water	Turbidity (NTUs)	0	0	4.53		0	0.0	
	DO (mg/L)	7.26	6.47	7.32		6.48	6.69	
Near-Bottom	Turbidity (NTUs)	0.17	0	0.94		0	0.19	
	DO (mg/L)	6.29	5.18	6.78		5.27	7.40	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

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Tide Levels based no NOAA predictions
Low Tide = 12:18PM -0.6 Ft MLLW
High Tide = 7:02 PM 11.6 Ft MLLW

WATER QUALITY MONITORING FORM

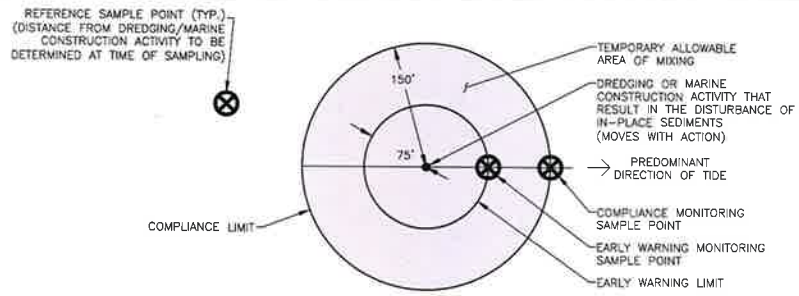
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: sunny	Date: 9/19/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier I - Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	75		150	150	
Station Monitoring Time		1515	1520	1530		1525	1535	
Tidal Status (Ebb, Slack or Flood)		Flood →				Flood →		
Water Column Height (feet)		50	40	55		42	55	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	8.17	0	1.44		2.67	0	
	DO (mg/L)	7.69	6.53	6.86		7.83	5.69	
Mid-Water	Turbidity (NTUs)	1.01	1.83	2.4		0	0	
	DO (mg/L)	10.71	14.95	6.45		6.57	6.36	
Near-Bottom	Turbidity (NTUs)	0	0	0.99		0	0	
	DO (mg/L)	6.25	13.07	5.71		7.12	6.22	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO, some turbidity @ shoreline consistent w/flood tide
Other Observations:	—
Corrective Actions Required/Implemented:	—

GeoEngineers

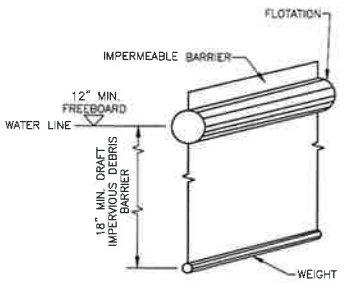
8/19/16



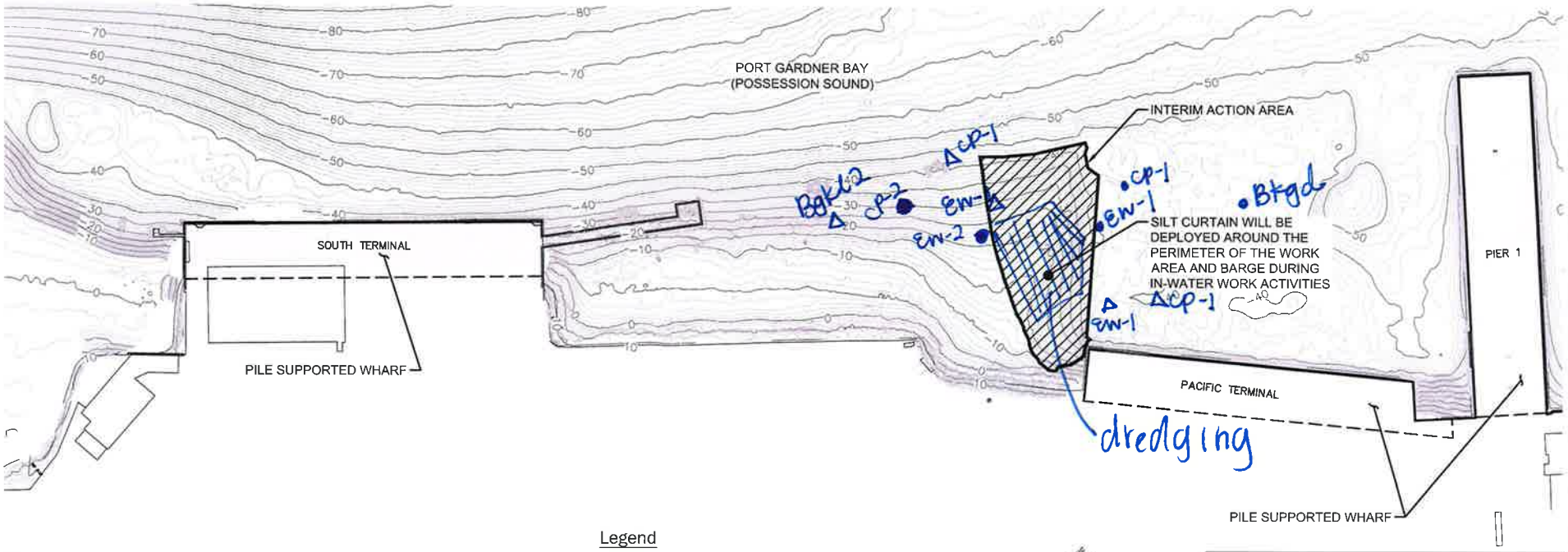
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1

Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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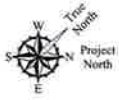
Legend

——30——	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

P:\01\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 Fig_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 2:30PM 2.4 Ft MLLW
High Tide = 8:30 AM 9.7 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise/Abhi
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy.	Date: 8/22/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier I - Event1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	75		150	150	
Station Monitoring Time		0930	0950	1000		0940	1010	
Tidal Status (Ebb, Slack or Flood)		Slack →	→	→		Slack →	→	
Water Column Height (feet)		60	52	43		50	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	2.43	11	3.47		1.37	1.95	
	DO (mg/L)	7.35	6.19	7.37		6.51	6.86	
Mid-Water	Turbidity (NTUs)	0	2.62	1.12		0	0	
	DO (mg/L)	10.04	10.57	13.72		10.88	15.39	
Near-Bottom	Turbidity (NTUs)	0.36	0	2.12		0	2.62	
	DO (mg/L)	11.32	7.3	6.73		8.95	9.05	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	Rough waters today, 2 ships @ Port. PT & P3N
Corrective Actions Required/Implemented:	notified to increase BMPs

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 2:30PM 2.4 Ft MLLW
High Tide = 8:30 AM 9.7 Ft MLLW

WATER QUALITY MONITORING FORM

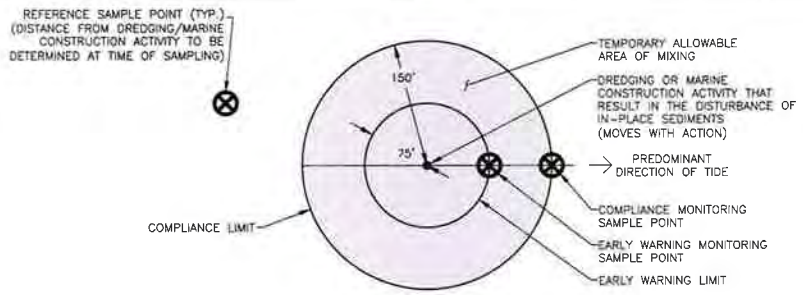
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elsie
Project No.: MT-PT-2016-01	Weather Conditions: sunny – windy	Date: 8/22/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier I - Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		550	75	75		150	150	
Station Monitoring Time		1420	1430	1440		1436	1445	
Tidal Status (Ebb, Slack or Flood)		Slack →	→	→		Slack →	→	
Water Column Height (feet)		55	50	45		55	53	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	5.31	10.8	7.64		8.47	5.99	
	DO (mg/L)	14.94	8.37	7.57		6.74	6.1	
Mid-Water	Turbidity (NTUs)	2.64	0.46	0.16		1.72	1.6	
	DO (mg/L)	12.69	12.13	9.86		12.70	9.23	
Near-Bottom	Turbidity (NTUs)	0	2.97	2.91		0.37	1.68	
	DO (mg/L)	6.69	10.93	6.10		9.68	7.35	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO
Evidence of Floating or Suspended Materials: NO
Visual Evidence of Discoloration or Turbidity: NO
Other Observations: Rough water – small white caps
Corrective Actions Required/Implemented: notified contractor to increase BMPs

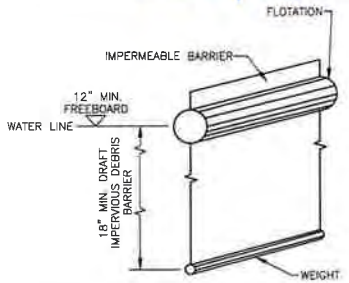
GeoEngineers

8/22/16

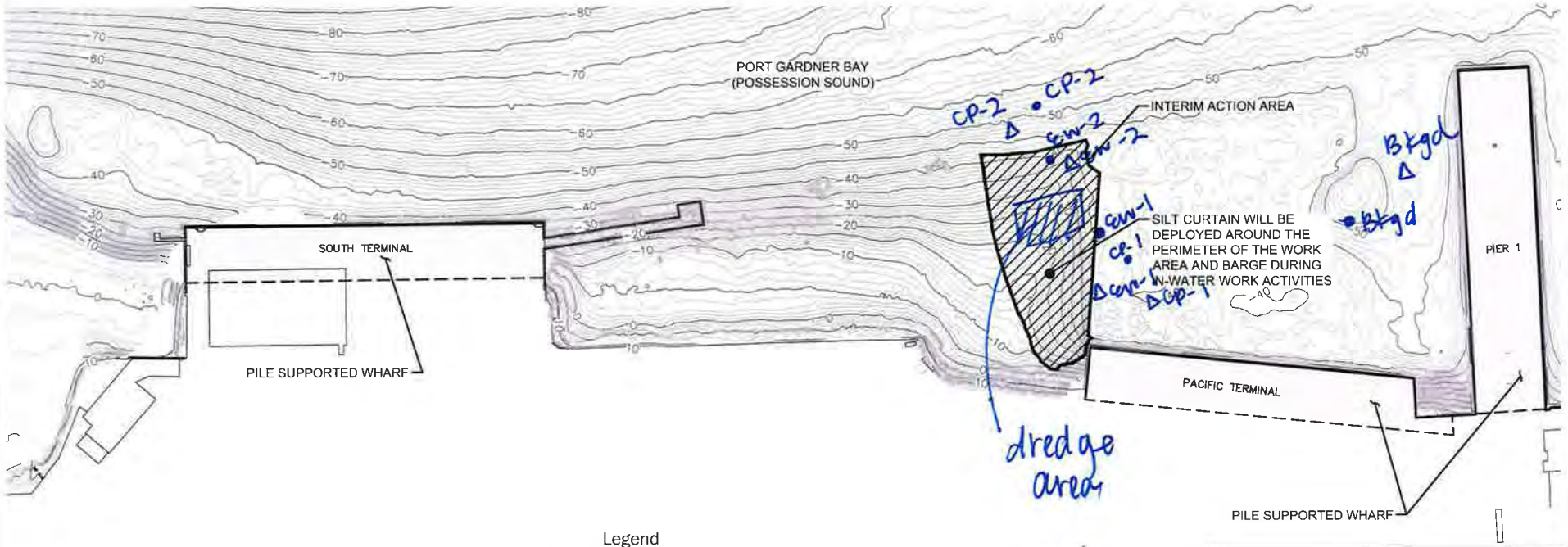


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• event 1
Δ event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LIDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water

Legend

-30-	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201041CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
8/24/2016	Tier II/Event 1	Dredging	Background	600	9:05	55	2.6	2.27	0	9.63	8.12	6.66	Flood, No Current - - Slack	No sheen, visible turbidity or floating/suspended material observed.
			Early Warning 1	75	9:14	40	0	0	0	8.12	14.05	6.74		
			Early Warning 2	50	9:20	28	0.06	2.24	2.41	6.66	10.22	6.47		
			Compliance Point 1	150	9:30	55	0	3.65	0	5.74	11.14	5.74		
			Compliance Point 2	150	9:35	55	0	0	0	5.43	8.19	5.43		
	Tier II/Event 2	Dredging	Background	600	13:15	55	0.83	0.72	1.11	6.83	7.92	8.05	Slack/Ebb	No sheen, visible turbidity or floating/suspended material observed. Contractor notified to check and maintain BMPs.
			Early Warning 1	70	13:30	50	3.22	1.5	0	6.28	6.23	6.64		
			Early Warning 2	75	13:50	55	2.07	0	0	5.32	5.3	5.38		
			Compliance Point 1	150	13:25	50	0.17	3.83	0.46	7.08	6.95	6.28		
			Compliance Point 2	150	13:40	50	4.92	0	0	6.27	6.52	6.21		
8/25/2016	Tier II/Event 1	Dredging	Background	500	11:10	55	9.28	1.95	0	7.85	8.85	5.79	Slack	No sheen, visible turbidity or floating/suspended material observed. Waterway in general looking cloudier than usual.
			Early Warning 1	75	11:25	40	1.22	0	0	8.83	7.62	6.01		
			Early Warning 2	50	11:30	35	0	0	0	5.92	6.34	6.19		
			Compliance Point 1	150	11:20	45	4.96	1.19	1.31	6.61	7.61	5.91		
			Compliance Point 2	150	11:36	45	0	0	0	6.18	7.34	4.95		
	Tier II/Event 2	Dredging	Background	600	15:30	55	0	0	0	8.34	12.86	12.96	Ebb	No sheen, visible turbidity or floating/suspended material observed. Event 2, slightly more than 3 hours after Event 1 due to barge switch.
			Early Warning 1	75	15:46	40	0.81	1.35	2.65	5.71	12.85	14.32		
			Early Warning 2	50	15:55	35	1.86	1.72	1.8	8.06	7.04	10.8		
			Compliance Point 1	150	15:40	50	3.02	1.29	0.43	10.05	12.67	8.54		
			Compliance Point 2	150	16:00	45	1	2.58	3.14	6.1	6.26	9.22		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"–"= not measured

Tide Levels based no NOAA predictions
Low Tide = 4:15 PM 5.0 Ft MLLW
High Tide = 10:53 AM 9.0 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Dredging	Recorded By: Eloise
Project No.: MT-PT-2016-01	Weather Conditions: sunny	Date: 8/24/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II - Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	50		150	150	
Station Monitoring Time		0905	0914	0920		0930	0935	
Tidal Status (Ebb, Slack or Flood)		Flood but NO current	→	→		Flood/Slack	→	
Water Column Height (feet)		55	40	28		55	55	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	2.60	0	0.06		0	0	
	DO (mg/L)	9.63	8.24	8.25		6.33	6.78	
Mid-Water	Turbidity (NTUs)	2.27	0	2.24		3.65	0	
	DO (mg/L)	8.12	14.05	10.22		11.14	8.19	
Near-Bottom	Turbidity (NTUs)	0	0	2.41		0	6	
	DO (mg/L)	6.66	6.74	6.47		5.74	5.43	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	3 ships @ Port, 1 @ Pacific Terminal (PT)
Corrective Actions Required/Implemented:	—

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Tide Levels based no NOAA predictions
Low Tide = 4:15 PM 5.0 Ft MLLW
High Tide = 10:53 AM 9.0 Ft MLLW

WATER QUALITY MONITORING FORM

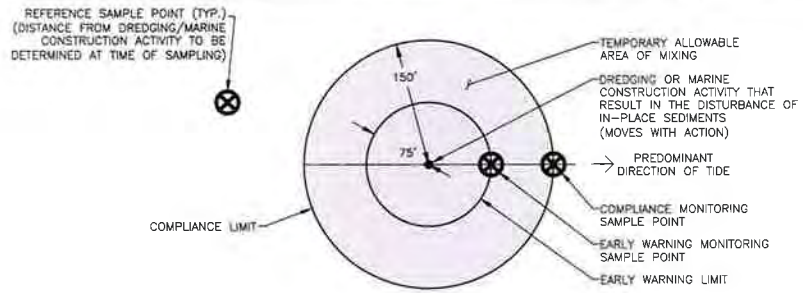
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 8/24/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II - Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	70	75		150	150	
Station Monitoring Time		1315	1330	1340		1325	1340	
Tidal Status (Ebb, Slack or Flood)		Slack/Ebb →	→			Slack →	→	
Water Column Height (feet)		55	50	55		50	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0.83	3.22	2.07		0.17	4.92	
	DO (mg/L)	6.83	6.28	5.32		7.08	6.27	
Mid-Water	Turbidity (NTUs)	0.72	1.5	0		3.83	0.0	
	DO (mg/L)	7.92	6.23	5.30		6.95	6.52	
Near-Bottom	Turbidity (NTUs)	1.11	0	0		0.46	0	
	DO (mg/L)	8.05	6.64	5.39		6.28	6.21	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	Notified to check BMPs

GeoEngineers

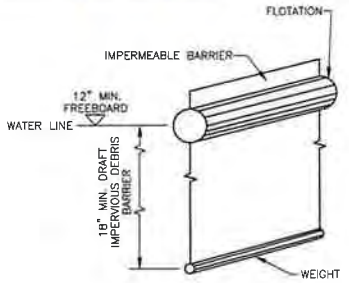
8/24/16



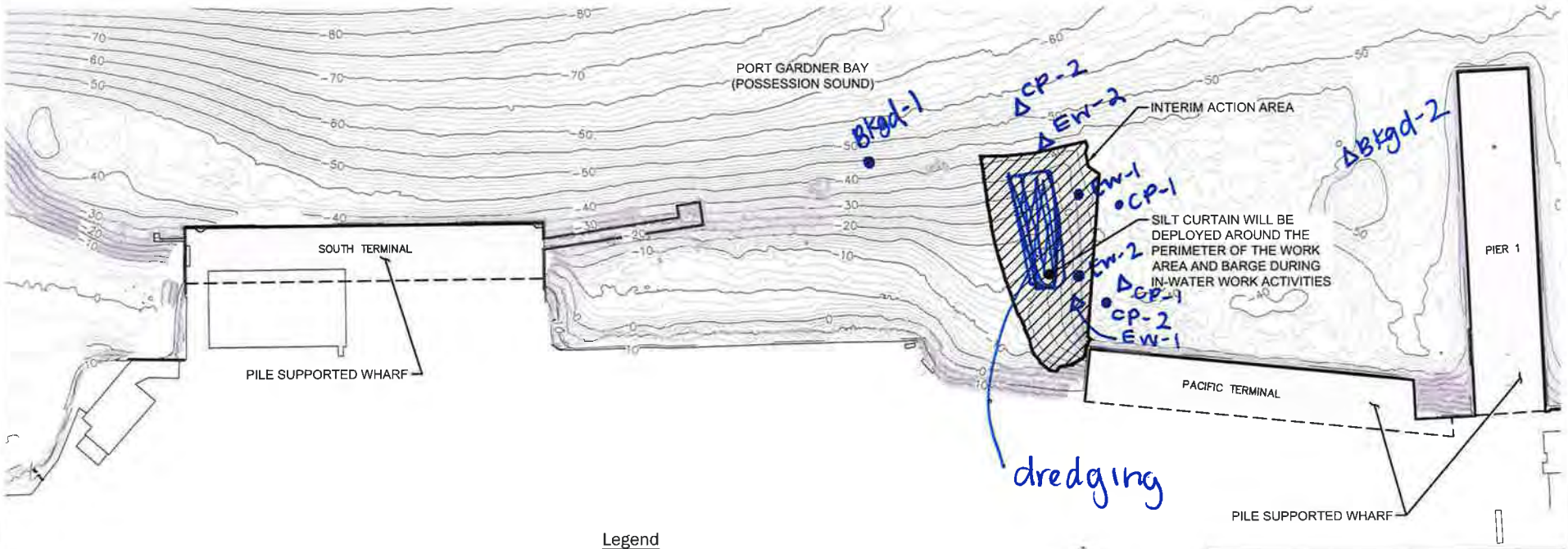
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1

Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

—30—	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

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Figure 2

P:\0106760201041CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TMCHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 5:22 PM 6.0 Ft MLLW
High Tide = 12:26 PM 9.0 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 8/25/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II - Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	50		150	150	
Station Monitoring Time		1110	1125	1130		1120	1136	
Tidal Status (Ebb, Slack or Flood)		Slack →	→			Slack →	→	
Water Column Height (feet)		55	40	35		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	9.28	1.22	0		4.96	0	
	DO (mg/L)	7.85	8.83	5.92		6.61	6.18	
Mid-Water	Turbidity (NTUs)	1.95	0	0		1.19	0	
	DO (mg/L)	8.95	7.62	6.34		7.61	7.34	
Near-Bottom	Turbidity (NTUs)	0	0	0		1.31	0	
	DO (mg/L)	5.79	6.01	6.19		5.91	4.95	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	waterway as a whole is looking more cloudy this morning
Corrective Actions Required/Implemented:	—

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 5:22 PM 6.0 Ft MLLW
High Tide = 12:26 PM 9.0 Ft MLLW

WATER QUALITY MONITORING FORM

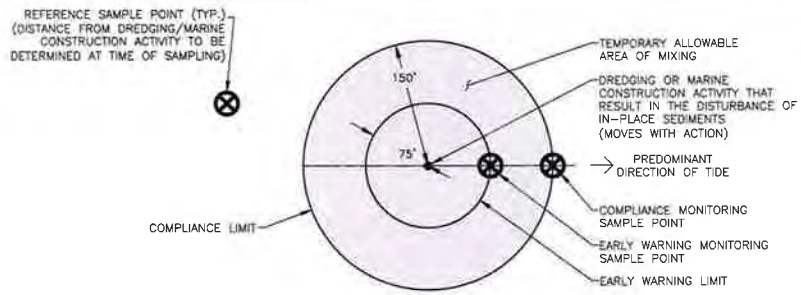
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 8/25/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II - Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	50		150	150	
Station Monitoring Time		1530	1546	1555		1540	1600	
Tidal Status (Ebb, Slack or Flood)		Ebb →		→		Ebb →	→	
Water Column Height (feet)		55	40	35		50	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0.81	1.86		3.02	1.00	
	DO (mg/L)	8.34	5.71	8.06		10.05	6.16	
Mid-Water	Turbidity (NTUs)	0	1.35	1.72		1.29	2.58	
	DO (mg/L)	12.86	12.85	7.04		12.67	6.26	
Near-Bottom	Turbidity (NTUs)	0	2.65	1.80		0.43	3.14	
	DO (mg/L)	12.96	14.32	10.80		8.54	9.22	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	No ships @ PT
Corrective Actions Required/Implemented:	~~NA~~

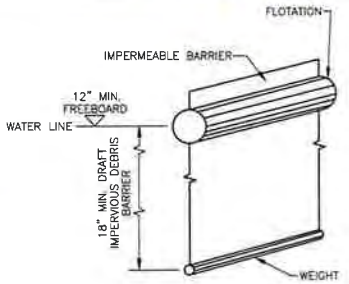
GeoEngineers

8/25/16

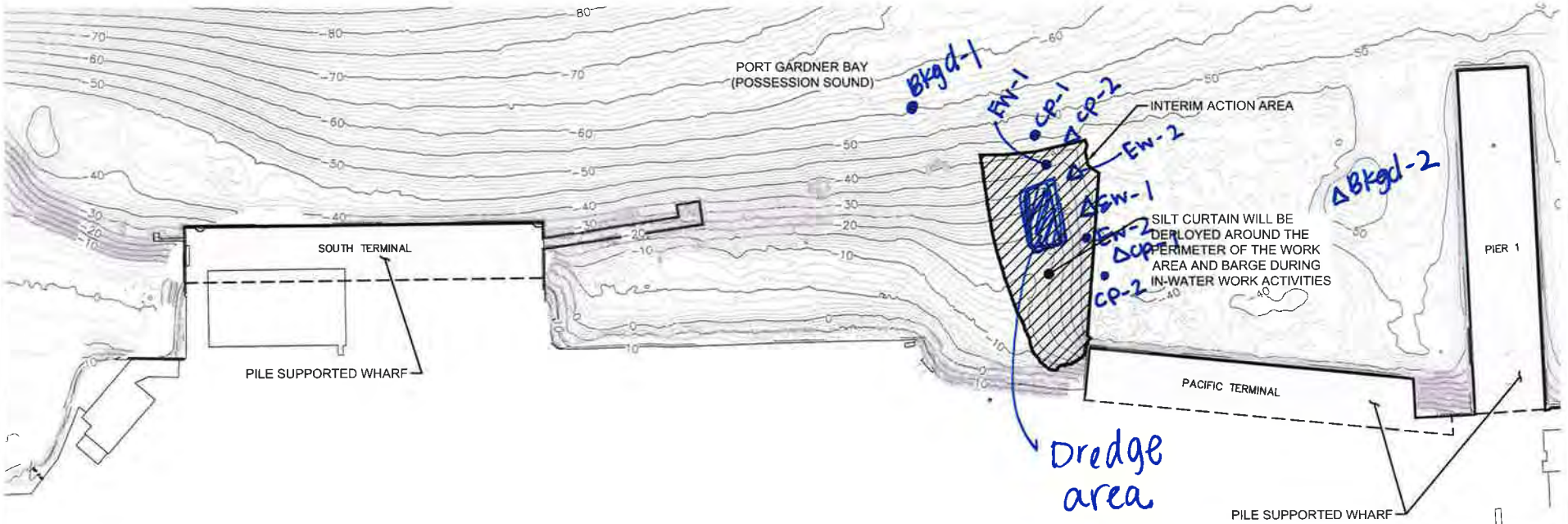


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\01\0676020\04\CAD\Interim Action Figures\0676020-04 Fig-02 Site Plan.dwg\TAB:1 to 200FT modified by thichaud on Jul 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
8/30/2016	Tier II/Event 1	Dredging	Background	700	10:20	55	0	0	0.97	10.48	9.7	6.42	Slack	No visible turbidity or floating/suspended material observed. Minor sheen within dredge area due to found creosote pile, Orion deployed absorbant boom to the area.
			Early Warning 1	50	10:40	40	2.29	0	1.07	5.74	5.06	6.44		
			Early Warning 2	75	11:00	35	0	0.85	2.77	5.19	5.85	4.93		
			Compliance Point 1	150	10:30	40	0	0.77	0.58	5.68	7.62	7.48		
			Compliance Point 2	150	10:50	40	0	1.66	0	4.98	10.09	5.93		
	Tier II/Event 2	Dredging	Background	600	14:50	45	4.98	1.5	0.6	6.67	5.91	4.8	Flood	No sheen, visible turbidity or floating/suspended material observed.
			Early Warning 1	75	15:00	35	0.3	0.01	0	4.71	4.59	4.58		
			Early Warning 2	75	15:30	40	0	2.73	0.24	3.14	2.85	2.68		
			Compliance Point 1	150	15:10	45	0	3.57	0	3.27	2.88	2.68		
			Compliance Point 2	150	15:20	50	0	0.09	0	3	3.03	2.38		
9/1/2016	Tier II/Event 1	Dredging	Background	700	10:35	55	2.89	0.59	0	10.19	7.68	8.29	Slack	No sheen, visible turbidity or floating/suspended material observed. Contractor notified to check and maintain BMPs.
			Early Warning 1	75	10:50	45	0	4.75	6.98	14.75	8.3	4.35		
			Early Warning 2	75	11:00	40	3.8	3.75	0	4.59	5.5	3.42		
			Compliance Point 1	150	10:45	50	0	0	3.49	8.75	9.02	5.51		
			Compliance Point 2	150	11:06	50	0	2.33	0	3.77	5.01	2.92		
	Tier II/Event 2	Dredging	Background	600	14:05	45	7.36	0	0	6.37	3.86	3.31	Flood	No sheen, visible turbidity or floating/suspended material observed.
			Early Warning 1	75	14:10	50	9.57	0	2.36	3.14	1.91	1.36		
			Early Warning 2	75	14:25	45	3.55	3.31	0	1.67	3.33	2.2		
			Compliance Point 1	150	14:15	50	2.11	2.71	3.55	1.59	2.74	1.95		
			Compliance Point 2	150	14:30	45	0	0	0	1.98	2.72	1.91		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based no NOAA predictions
Low Tide = 10:12 AM -0.5 Ft MLLW
High Tide = 5:19 PM 11.0 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy	Date: 8/30/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		700	50	75		150	150	
Station Monitoring Time		1020	1040	1100		1030	1050	
Tidal Status (Ebb, Slack or Flood)		Slack →	→	→		Slack →	→	
Water Column Height (feet)		55	40	35		40	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	2.29	0		0	0	
	DO (mg/L)	10.98	5.74	5.19		5.68	4.98	
Mid-Water	Turbidity (NTUs)	0	0	0.85		0.77	1.66	
	DO (mg/L)	9.7	5.06	5.85		7.62	10.09	
Near-Bottom	Turbidity (NTUs)	0.97	1.07	2.77		0.58	0	
	DO (mg/L)	6.42	6.44	4.93		7.48	5.93	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): ~~NO~~ → Minor sheen where a creosote pile was pulled, absorbant boom deployed

Evidence of Floating or Suspended Materials: NO

Visual Evidence of Discoloration or Turbidity: NO

Other Observations: —

Corrective Actions Required/Implemented: —

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 10:12 AM -0.5 Ft MLLW
High Tide = 5:19 PM 11.0 Ft MLLW

WATER QUALITY MONITORING FORM

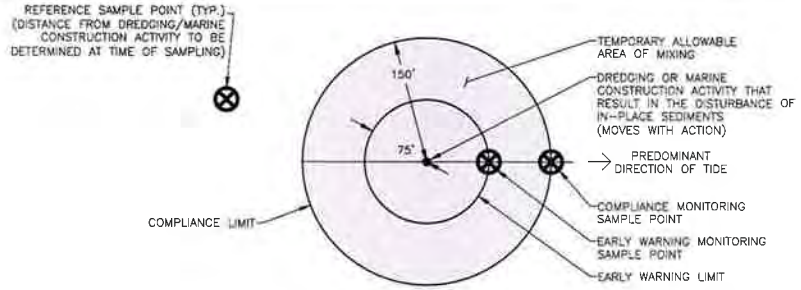
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy	Date: 8/30/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1450	1500	1530		1510	1520	
Tidal Status (Ebb, Slack or Flood)		Flood →		→		Flood →	→	
Water Column Height (feet)		45	35	40		45	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	4.98	0.3	0		0	0	
	DO (mg/L)	6.67	4.71	3.14		3.27	3.00	
Mid-Water	Turbidity (NTUs)	1.5	0.01	2.73		3.57	0.09	
	DO (mg/L)	5.91	4.59	2.85		2.98	3.03	
Near-Bottom	Turbidity (NTUs)	0.60	0	0.24		0	0	
	DO (mg/L)	4.80	4.59	2.68		2.68	2.38	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	—

GeoEngineers

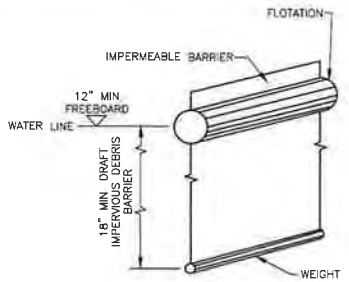
8/30/16



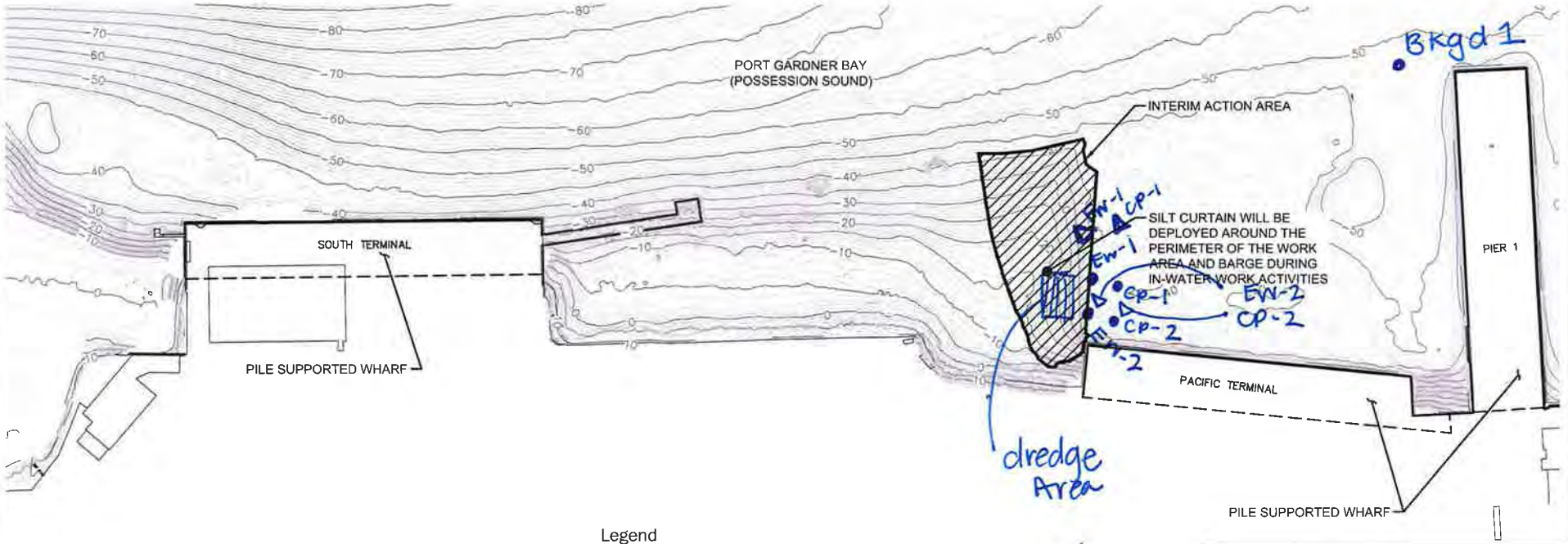
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1

Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

—30—	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY TMICHAND ON JUL 14, 2016 - 15:07

WATER QUALITY MONITORING FORM

Tide Levels based no NOAA predictions
Low Tide = 11:35 AM 0.1 Ft MLLW
High Tide = 6:21 PM 11.1 Ft MLLW

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy, rainy	Date: 9/1/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II event1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		700	75	75		150	150	
Station Monitoring Time		1035	1050	1100		1045	1106	
Tidal Status (Ebb, Slack or Flood)		slack →	→	→		slack →	→	
Water Column Height (feet)		55	45	40		50	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	2.89	0	3.80		0	0	
	DO (mg/L)	10.19	14.78	4.59		8.75	3.77	
Mid-Water	Turbidity (NTUs)	0.59	4.75	3.75		0	2.33	
	DO (mg/L)	7.68	8.30	5.5		9.02	5.01	
Near-Bottom	Turbidity (NTUs)	0	6.98	0		3.49	0	
	DO (mg/L)	8.29	4.35	3.42		5.51	2.92	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	check BMPs (EW-1)

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 11:35 AM 0.1 Ft MLLW
High Tide = 6:21 PM 11.1 Ft MLLW

WATER QUALITY MONITORING FORM

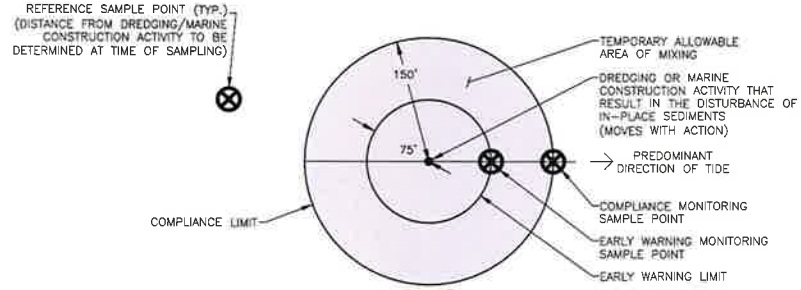
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy, rainy	Date: 9/1/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1405	1410	1425		1415	1430	
Tidal Status (Ebb, Slack or Flood)		Flood →	→			Flood	→	
Water Column Height (feet)		45	50	45		50	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	7.36	9.57	3.55		2.11	0	
	DO (mg/L)	6.37	3.14	1.67		1.59	1.98	
Mid-Water	Turbidity (NTUs)	0	0	3.31		2.71	0	
	DO (mg/L)	3.86	1.91	3.33		2.74	2.72	
Near-Bottom	Turbidity (NTUs)	0	2.36	0		3.55	0	
	DO (mg/L)	3.31	1.36	2.20		1.95	1.91	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	—

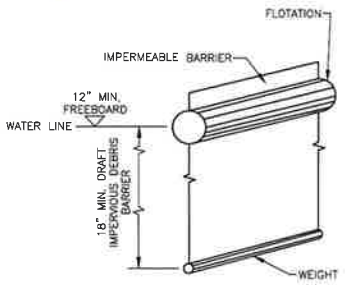
GeoEngineers

9/1/16

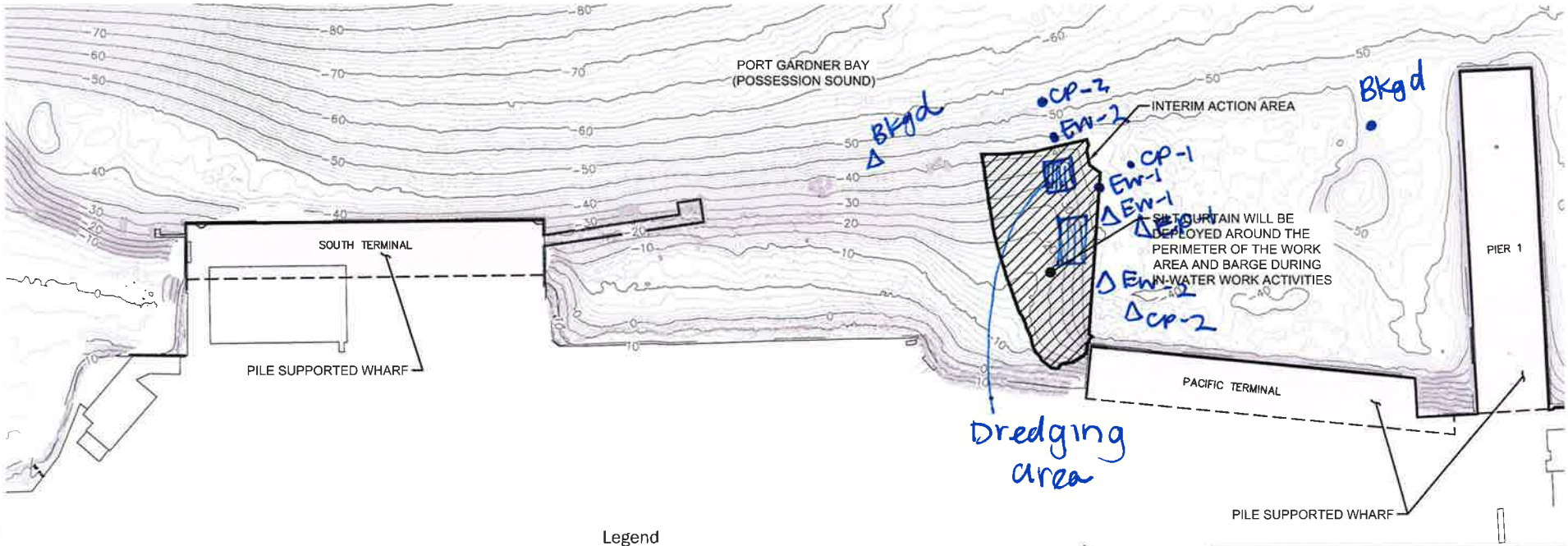


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

—30—	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

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Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
9/7/2016	Tier II/Event 1	Dredging	Background	700	10:25	55	3.64	1.65	0	8.57	6.84	5.81	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Overall waterway turbidity high. Contractor was notified to check and manitain BMPs, implement more if needed.
			Early Warning 1	75	10:40	45	8.91	4.05	3.08	3.95	2.98	3.1		
			Early Warning 2	75	10:45	40	12.5	1.54	0.66	2.62	2.91	2.58		
			Compliance Point 1	150	10:35	45	6.1	1.53	0.07	5.95	3.17	2.94		
			Compliance Point 2	150	10:50	45	5.05	1.65	0	2.57	2.84	3.6		
	Tier II/Event 2	--	Background	--	--	--	--	--	--	--	--	--	--	Contractor had to stop dredging at 1100 due to barge issues, did not restart today.
			Early Warning 1	--	--	--	--	--	--	--	--	--		
			Early Warning 2	--	--	--	--	--	--	--	--	--		
			Compliance Point 1	--	--	--	--	--	--	--	--	--		
			Compliance Point 2	--	--	--	--	--	--	--	--	--		
9/8/2016	Tier II/Event 1	Dredging	Background	700	10:45	45	14.7	5.71	8.6	7.7	4.9	3.89	Slack	No sheen, visible turbidity or floating/suspended material observed. Waterway was rough and choppy today.
			Early Warning 1	75	11:00	45	3.96	2.32	1.38	2.06	3.57	1.73		
			Early Warning 2	75	11:10	35	9.44	2.06	0	1.88	3.16	1.51		
			Compliance Point 1	150	10:55	45	2.7	0.25	11.8	3.04	4.03	1.91		
			Compliance Point 2	150	11:15	50	3.4	2.65	1.39	1.75	3.61	1.92		
	Tier II/Event 2	Dredging	Background	600	15:10	50	3.34	2.34	1.85	8.24	5.02	3.83	Slack	No sheen, visible turbidity or floating/suspended material observed. Contractor notified to check and maintain BMPs, implement more to reduce turbidity. Waterway as a whole looks more turbid than usual.
			Early Warning 1	75	15:25	40	6.53	8.51	5.23	1.89	2.48	1.32		
			Early Warning 2	50	15:35	40	3.95	2.34	4.37	1.61	2.59	1.43		
			Compliance Point 1	150	15:20	45	8	4.53	0.78	3.48	1.83	1.85		
			Compliance Point 2	150	15:40	50	4.8	1.25	1.8	3.2	2.8	1.79		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based no NOAA predictions
Low Tide = 3:31 PM 5.1 Ft MLLW
High Tide = 9:56 AM 8.6 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy, partly rainy	Date: 9/7/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		700	75	75		150	150	
Station Monitoring Time		1025	1040	1045		1035	1050	
Tidal Status (Ebb, Slack or Flood)		Slack →	→			Slack →	→	
Water Column Height (feet)		55	45	40		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	3.64	8.91	12.5		6.10	5.05	
	DO (mg/L)	8.57	3.95	2.62		5.95	2.57	
Mid-Water	Turbidity (NTUs)	1.65	4.05	1.54		1.53	1.65	
	DO (mg/L)	6.94	2.98	2.91		3.17	2.84	
Near-Bottom	Turbidity (NTUs)	0	3.08	0.66		0.07	0	
	DO (mg/L)	5.81	3.10	2.58		2.94	3.6	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	water murkier today overall
Other Observations:	2nd barge has a leak ~~so~~ and is taking on water. Dredging stopped at 1100 today,
Corrective Actions Required/Implemented:	only one event recorded. contractor notified to check BMPs

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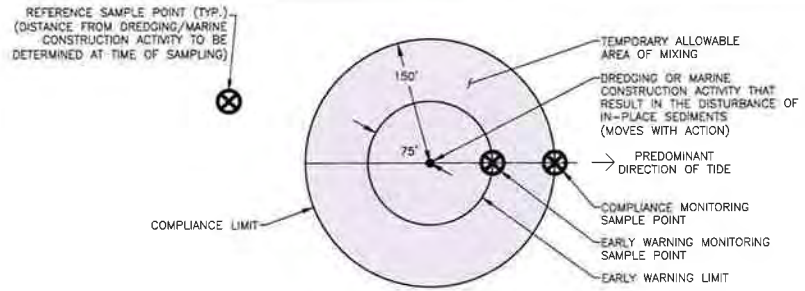
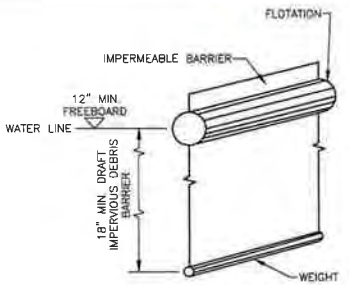
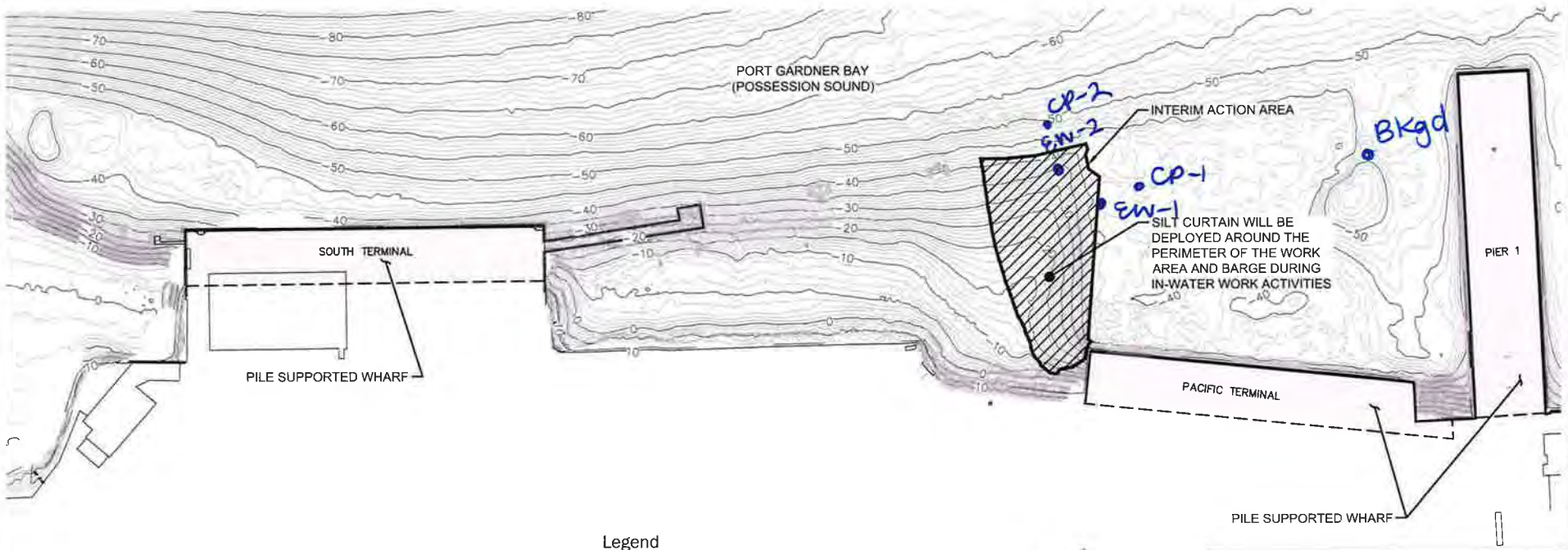
9/7/16



TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 4:23 PM 5.9 Ft MLLW
High Tide = 11:04 AM 8.4 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy	Date: 9/8/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		700	75	75		150	150	
Station Monitoring Time		1045	1100	1110		1055	1115	
Tidal Status (Ebb, Slack or Flood)		Slack →		→		Slack →		
Water Column Height (feet)		45	45	35		45	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	14.7	3.96	9.44		2.7	3.40	
	DO (mg/L)	7.70	2.06	1.98		3.04	1.75	
Mid-Water	Turbidity (NTUs)	5.71	2.32	2.06		0.25	2.65	
	DO (mg/L)	4.90	3.57	3.16		4.03	3.61	
Near-Bottom	Turbidity (NTUs)	8.6	1.38	0		11.8	1.39	
	DO (mg/L)	3.89	1.73	1.51		1.91	1.92	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO
Evidence of Floating or Suspended Materials: NO
Visual Evidence of Discoloration or Turbidity: entire waterway looking more turbid
Other Observations: rough waters
Corrective Actions Required/Implemented:

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 4:23 PM 5.9 Ft MLLW
High Tide = 11:04 AM 8.4 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: sunny	Date: 9/8/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	50		150	150	
Station Monitoring Time		1510	1525	1535		1520	1540	
Tidal Status (Ebb, Slack or Flood)		Ebb →				Ebb →		
Water Column Height (feet)		50	40	40		45	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	3.34	6.53	3.95		9.0	4.8	
	DO (mg/L)	8.24	1.89	1.61		3.48	3.2	
Mid-Water	Turbidity (NTUs)	2.34	8.51	2.34		4.53	1.25	
	DO (mg/L)	5.02	2.49	2.59		1.83	2.8	
Near-Bottom	Turbidity (NTUs)	1.85	5.23	4.37		0.78	1.8	
	DO (mg/L)	3.83	1.32	1.43		1.85	1.79	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO

Evidence of Floating or Suspended Materials: NO

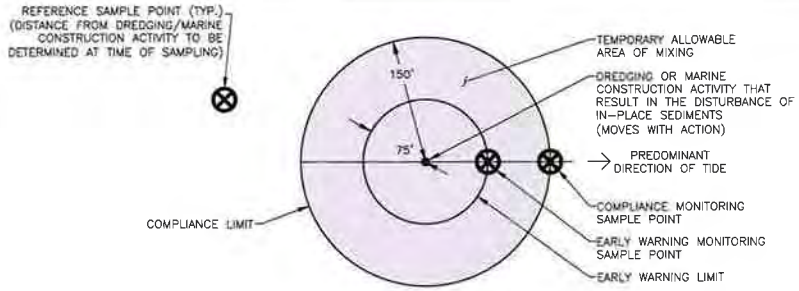
Visual Evidence of Discoloration or Turbidity: waterway looking murkier/turbid everywhere

Other Observations: —

Corrective Actions Required/Implemented: BMP checked, notified contractor to implement more

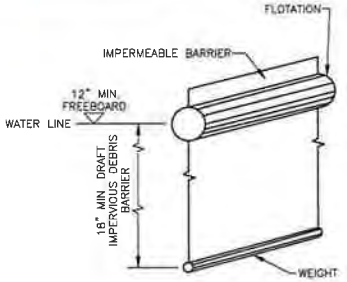
GeoEngineers

9/8/16

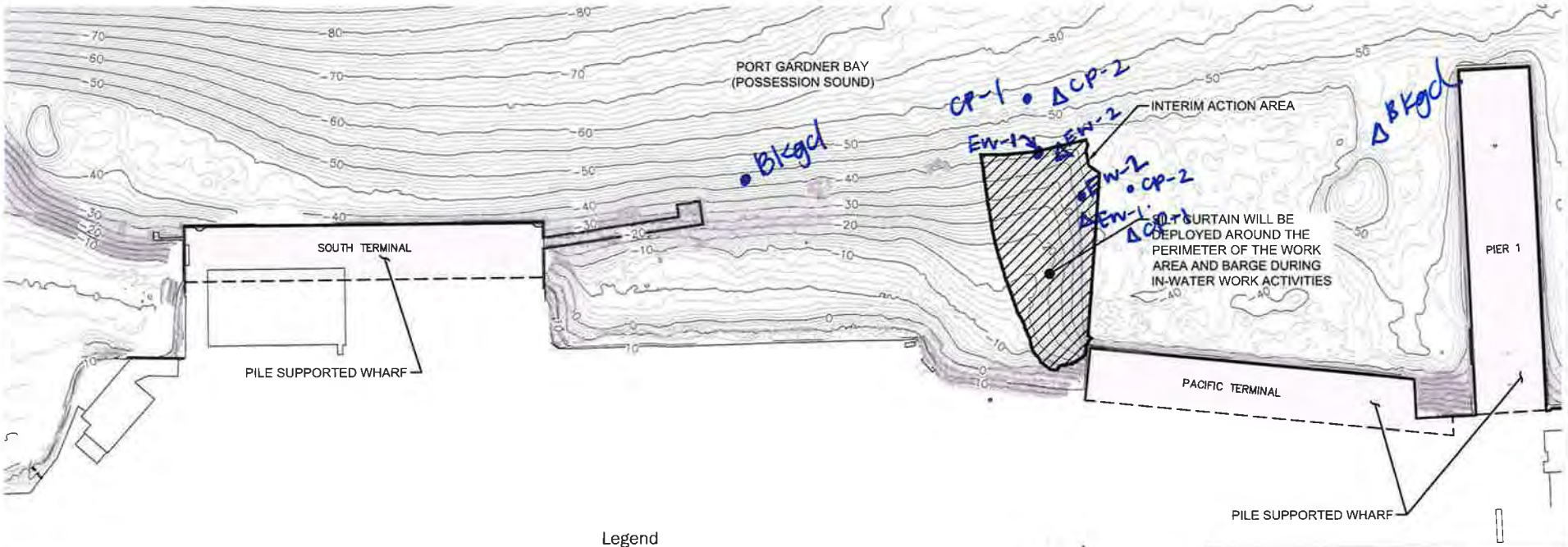


Monitoring
• Event1
Δ Event2

TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

—30—	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TNICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
9/13/2016	Tier II/Event 1	Dredging	Background	700	10:25	35	4.03	9.01	1.68	4.66	2.78	1.87	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Overall waterway was very murky.
			Early Warning 1	75	10:30	45	0	0	4.25	2.04	1.38	1.06		
			Early Warning 2	75	10:40	45	2.48	2.33	4.6	3.71	2.75	1.2		
			Compliance Point 1	150	10:50	45	0.57	4.02	4.24	1.62	1.97	1.13		
			Compliance Point 2	150	10:45	45	7.28	0.67	5.38	1.38	2.66	1.24		
	Tier II/Event 2	Dredging	Background	600	15:10	40	0.27	0	0	5.9	2.59	2.38	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Foss Tug brought in the Westwood ship to P1N.
			Early Warning 1	75	15:20	45	4.59	0.79	0.27	1.21	2.33	0.16		
			Early Warning 2	75	15:30	45	4.14	6.28	1.08	1.2	2.49	1.31		
			Compliance Point 1	150	15:15	45	4.31	1.73	0.46	4.58	3.07	0.96		
			Compliance Point 2	150	15:35	50	4.16	4.78	0.81	2.92	1.33	0.67		
9/15/2016	Tier II/Event 1	Dredging	Background	600	9:45	50	4.94	1.22	0	14.17	6.39	5.31	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Overall waterway was very murky. Contractor notified to check and maintain BMPs
			Early Warning 1	75	10:00	45	5.95	5.2	1.24	6.05	7.19	4.01		
			Early Warning 2	75	10:10	40	8.53	12.3	8.86	2.71	3.4	1.78		
			Compliance Point 1	150	9:55	45	0	0.2	0	8.85	7.33	3.93		
			Compliance Point 2	150	10:20	40	0	4.35	0.76	3.99	2.61	1.35		
	Tier II/Event 2	Dredging	Background	600	13:30	40	5.22	1.2	0.26	4.65	3.75	3.32	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Contractor notified to check and maintain BMPs
			Early Warning 1	75	13:45	35	2.11	2.23	1.61	3.3	4.62	1.37		
			Early Warning 2	75	13:55	40	0.93	5.54	0.29	4.84	5.43	2.02		
			Compliance Point 1	150	13:40	35	6.39	4.5	5.08	1.94	4.88	2.31		
			Compliance Point 2	150	14:10	45	1.57	0.71	0.04	1.93	5.65	1.95		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based no NOAA predictions
Low Tide = 8:54 AM 0.6 Ft MLLW
High Tide = 4:06 PM 10.3 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny 55°	Date: 9/13/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		700	75	75		150	150	
Station Monitoring Time		1025	1030	1040		1050	1045	
Tidal Status (Ebb, Slack or Flood)		Flood →		→		Flood →	→	
Water Column Height (feet)		35	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	4.03	0	2.48		0.57	7.28	
	DO (mg/L)	4.66	2.04	3.71		1.62	1.38	
Mid-Water	Turbidity (NTUs)	9.01	0	2.33		4.02	0.67	
	DO (mg/L)	2.78	1.38	2.75		1.97	2.66	
Near-Bottom	Turbidity (NTUs)	1.68	4.25	4.6		4.24	5.38	
	DO (mg/L)	1.87	1.06	1.20		1.13	1.24	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	waterway murky
Corrective Actions Required/Implemented:	N/A

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Tide Levels based no NOAA predictions
Low Tide = 8:54 AM 0.6 Ft MLLW
High Tide = 4:06 PM 10.3 Ft MLLW

WATER QUALITY MONITORING FORM

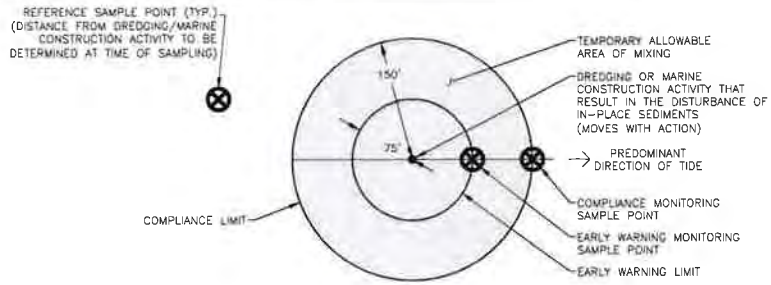
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions:	Date: 9/13/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1510	1520	1530		1515	1535	
Tidal Status (Ebb, Slack or Flood)		slack →				slack →		
Water Column Height (feet)		40	45	45		45	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0.27	4.59	4.14		4.31	4.16	
	DO (mg/L)	5.90	1.21	1.20		4.58	2.92	
Mid-Water	Turbidity (NTUs)	0	0.79	6.28		1.73	4.78	
	DO (mg/L)	2.59	2.33	2.49		3.07	1.33	
Near-Bottom	Turbidity (NTUs)	0	0.27	1.08		0.46	0.81	
	DO (mg/L)	2.38	0.96	1.31		0.96	0.67	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO
Evidence of Floating or Suspended Materials: NO
Visual Evidence of Discoloration or Turbidity: NO
Other Observations: Fossfug bringing in westwood to pier 1
Corrective Actions Required/Implemented: N/A

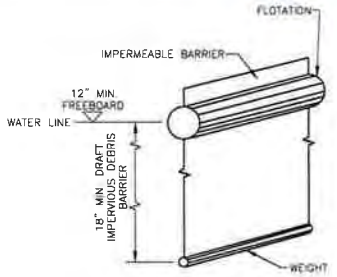
GeoEngineers

9/13/16

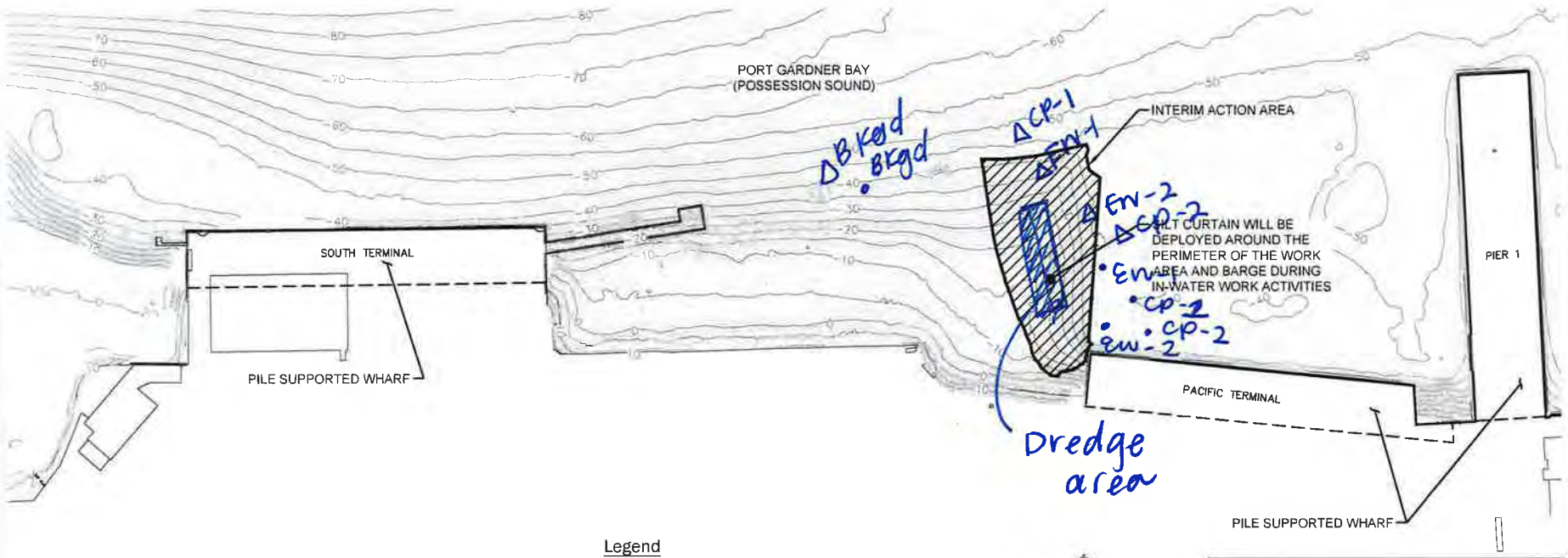


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:
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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

—30—	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0\06760201041CAD\INTERIM ACTION FIGURES\0676020-04 FIG-02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 10:29 AM 0.2 Ft MLLW
High Tide = 5:09 PM 11.1 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy	Date: 9/15/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		0945	1000	1010		0955	1020	
Tidal Status (Ebb, Slack or Flood)		Ebb →				Ebb →		
Water Column Height (feet)		50	45	40		45	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	4.94	5.95	8.53		0	0	
	DO (mg/L)	14.17	6.05	2.71		8.85	3.99	
Mid-Water	Turbidity (NTUs)	1.22	5.28	12.3		0.20	4.35	
	DO (mg/L)	6.39	7.19	3.40		7.33	2.61	
Near-Bottom	Turbidity (NTUs)	0	1.24	8.96		0	0.76	
	DO (mg/L)	5.31	4.01	1.78		3.93	1.35	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	Barge at PT, waterway murky
Corrective Actions Required/Implemented:	check & maintain BMPs

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Tide Levels based no NOAA predictions
Low Tide = 10:29 AM 0.2 Ft MLLW
High Tide = 5:09 PM 11.1 Ft MLLW

WATER QUALITY MONITORING FORM

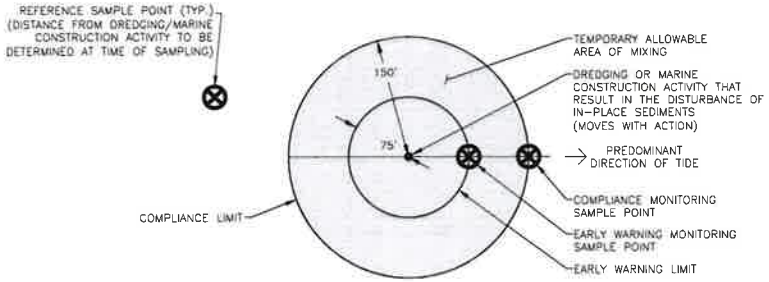
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: sunny	Date: 9/15/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1330	1345	1355		1340	1410	
Tidal Status (Ebb, Slack or Flood)		Flood →				Flood →		
Water Column Height (feet)		40	35	40		35	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	5.22	2.11	0.93		6.39	1.57	
	DO (mg/L)	4.65	3.30	4.84		1.94	1.93	
Mid-Water	Turbidity (NTUs)	1.2	2.23	5.54		4.5	0.71	
	DO (mg/L)	3.75	4.62	5.43		4.88	5.65	
Near-Bottom	Turbidity (NTUs)	0.26	1.61	0.29		5.08	0.04	
	DO (mg/L)	3.32	1.37	2.02		2.31	1.95	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	BMP check & maintain

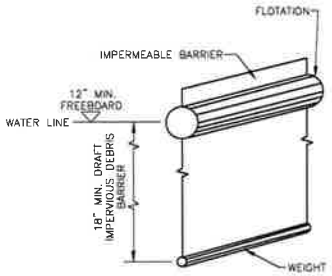
GeoEngineers

9/15/16

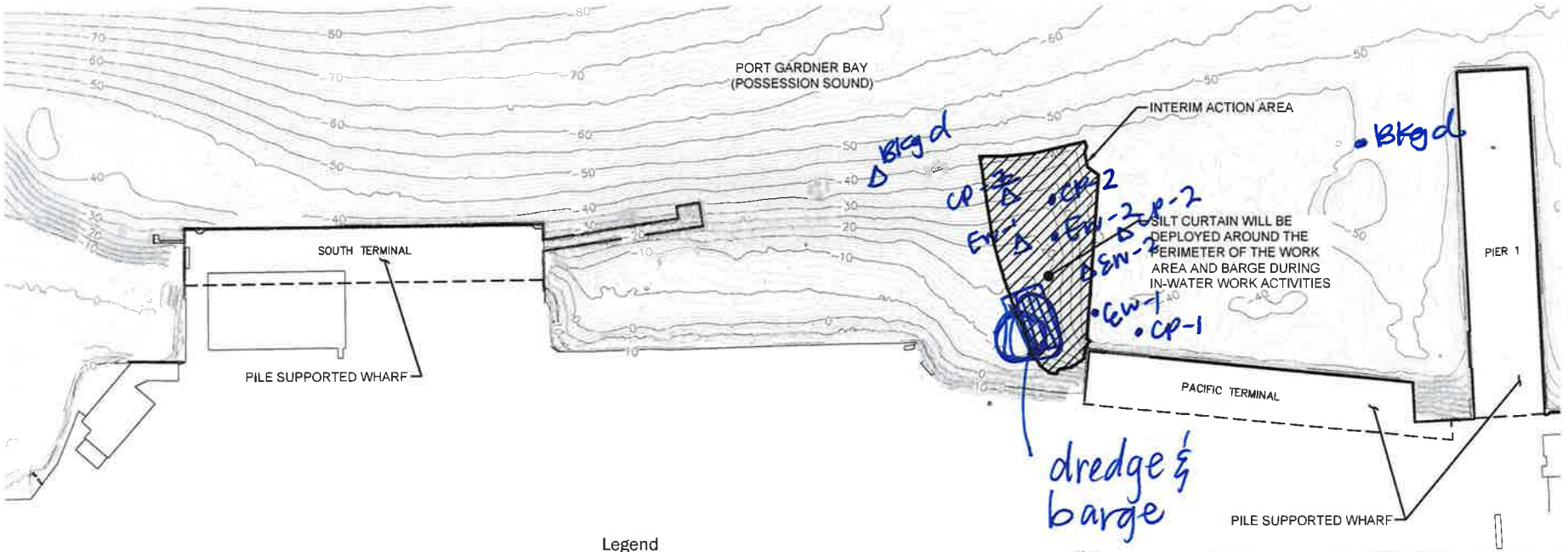


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

30 — Bathymetric Contours (Feet MLLW)

Interim Action Area (Limits of Dredging and Material Placement)

MLLW — Mean Lower Low Water

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
9/20/2016	Tier II/Event 1	Dredging	Background	600	14:30	40	0	0.18	0	3.71	1.79	1.79	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Large wave action occuring, Contractor notified to check and maintain BMPs
			Early Warning 1	75	14:45	45	6.06	5.36	1.14	1.82	5.97	2.26		
			Early Warning 2	75	14:55	40	0.61	5.97	0	2.55	7.76	2.77		
			Compliance Point 1	150	14:35	40	0	0	0	3.27	4.22	1.51		
			Compliance Point 2	150	15:00	45	0	3.39	0.44	3.72	9.41	3.15		
	Tier II/Event 2	-	Background	--	--	--	--	--	--	--	--	--	-	No dredging occurred on Monday 9/19, only spot dredging today. First full hour of dredging began at 13:30, only 1 event recorded today.
			Early Warning 1	--	--	--	--	--	--	--	--	--		
			Early Warning 2	--	--	--	--	--	--	--	--	--		
			Compliance Point 1	--	--	--	--	--	--	--	--	--		
			Compliance Point 2	--	--	--	--	--	--	--	--	--		
9/23/2016	Tier II/Event 1	Dredging	Background	550	9:20	45	5.16	1.31	0.19	7.87	6.77	3.41	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	9:25	45	0	0.36	0	5.08	4.3	3.73		
			Early Warning 2	75	9:35	45	1.77	0	2.11	4.1	3.76	3.39		
			Compliance Point 1	150	9:30	60	2.14	2.15	0.19	4.37	5.13	4.52		
			Compliance Point 2	150	9:40	45	1.05	0	0	3.06	2.98	2.89		
	Tier II/Event 2	Dredging	Background	600	12:50	50	3.71	2.28	0	6.66	6.51	6.89	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	12:55	50	2.03	0	0.24	5.65	5.04	5.8		
			Early Warning 2	75	13:05	35	0	0	0	3.89	4.26	4.4		
			Compliance Point 1	150	13:00	50	1.34	1.76	0	5	4.2	3.99		
			Compliance Point 2	150	13:10	40	1.16	0	1.24	8.49	8.39	5.13		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based no NOAA predictions
Low Tide = 2:17 PM 4.0 Ft MLLW
High Tide = 8:33 PM 10.7 Ft MLLW

WATER QUALITY MONITORING FORM

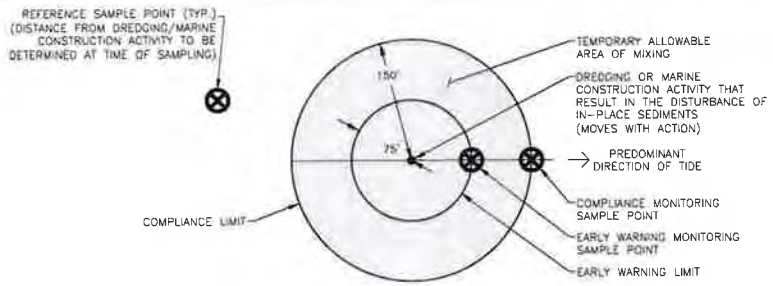
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: sunny cold	Date: 9/20/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1430	1445	1455		1435	1500	
Tidal Status (Ebb, Slack or Flood)		Slack →	→	→		Slack →	→	
Water Column Height (feet)		40	45	40		40	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	6.06	0.61		0	0	
	DO (mg/L)	3.71	1.82	2.55		3.27	3.72	
Mid-Water	Turbidity (NTUs)	0.18	5.36	5.97		0	3.39	
	DO (mg/L)	1.79	5.91	7.76		4.22	9.41	
Near-Bottom	Turbidity (NTUs)	0	1.14	0		0	0.44	
	DO (mg/L)	1.79	2.26	2.77		1.51	3.15	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	Huge waves
Corrective Actions Required/Implemented:	Maintain & check all BMPs

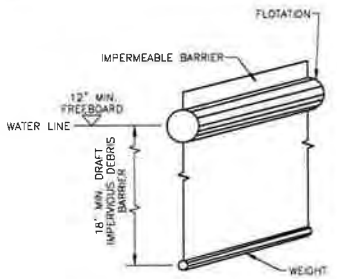
GeoEngineers

9/20/16

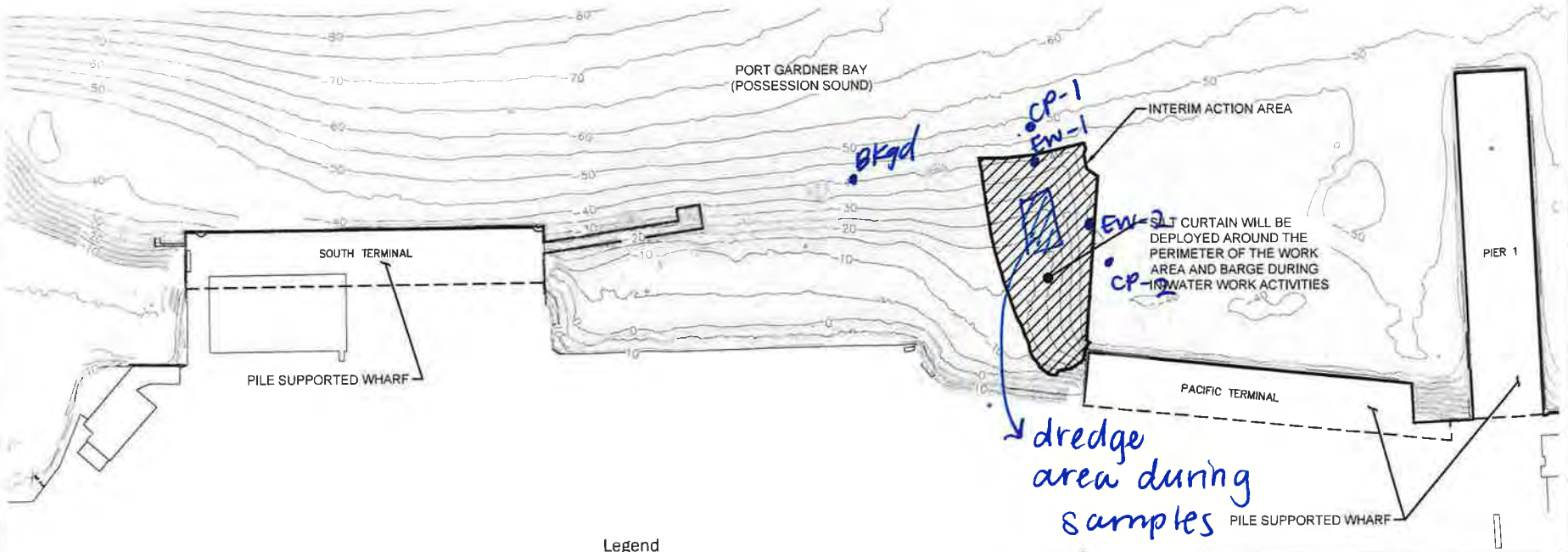


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:
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Data Source:
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Legend

-50-	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

P:\0\067602004\CAD\INTERIM ACTION FIGURES\067602004 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 5:25 PM 6.4 Ft MLLW
High Tide = 12:14 PM 9.9 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Dredging	Recorded By: Abhijit
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy	Date: 9/23/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		550	75	75		150	150	
Station Monitoring Time		920	925	935		930	940	
Tidal Status (Ebb, Slack or Flood)		Flood →		→		Flood →	→	
Water Column Height (feet)		45	45	45		60	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	5.16	0	1.77		2.14	1.05	
	DO (mg/L)	7.87	5.08	4.10		4.37	3.06	
Mid-Water	Turbidity (NTUs)	1.31	0.36	0		2.15	0	
	DO (mg/L)	6.77	4.30	3.76		5.13	2.98	
Near-Bottom	Turbidity (NTUs)	0.19	0	2.11		0.19	0	
	DO (mg/L)	3.41	3.73	3.39		4.52	2.89	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	ND
Evidence of Floating or Suspended Materials:	ND
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NA
Corrective Actions Required/Implemented:	None

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Tide Levels based no NOAA predictions
Low Tide = 5:25 PM 6.4 Ft MLLW
High Tide = 12:14 PM 9.9 Ft MLLW

WATER QUALITY MONITORING FORM

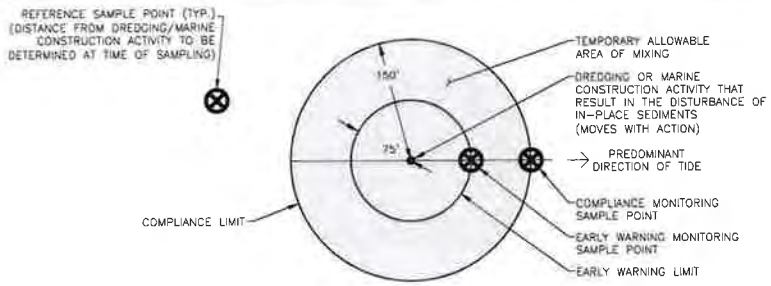
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Abhijit (GeoEngineers)
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy	Date: 9/23/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1250	1255	1305		1300	1310	
Tidal Status (Ebb, Slack or Flood)		Slack →	→			Slack →	→	
Water Column Height (feet)		50	50	35		50	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	3.71	2.03	0		1.34	1.16	
	DO (mg/L)	6.66	5.65	3.89		5.0	8.49	
Mid-Water	Turbidity (NTUs)	2.28	0	0		1.76	0	
	DO (mg/L)	6.51	5.04	4.26		4.20	8.39	
Near-Bottom	Turbidity (NTUs)	0	0.24	0		0	1.24	
	DO (mg/L)	6.89	5.8	4.4		3.99	5.13	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	NO

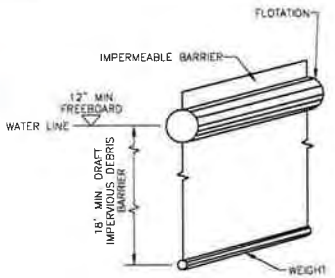
GeoEngineers

9123/16

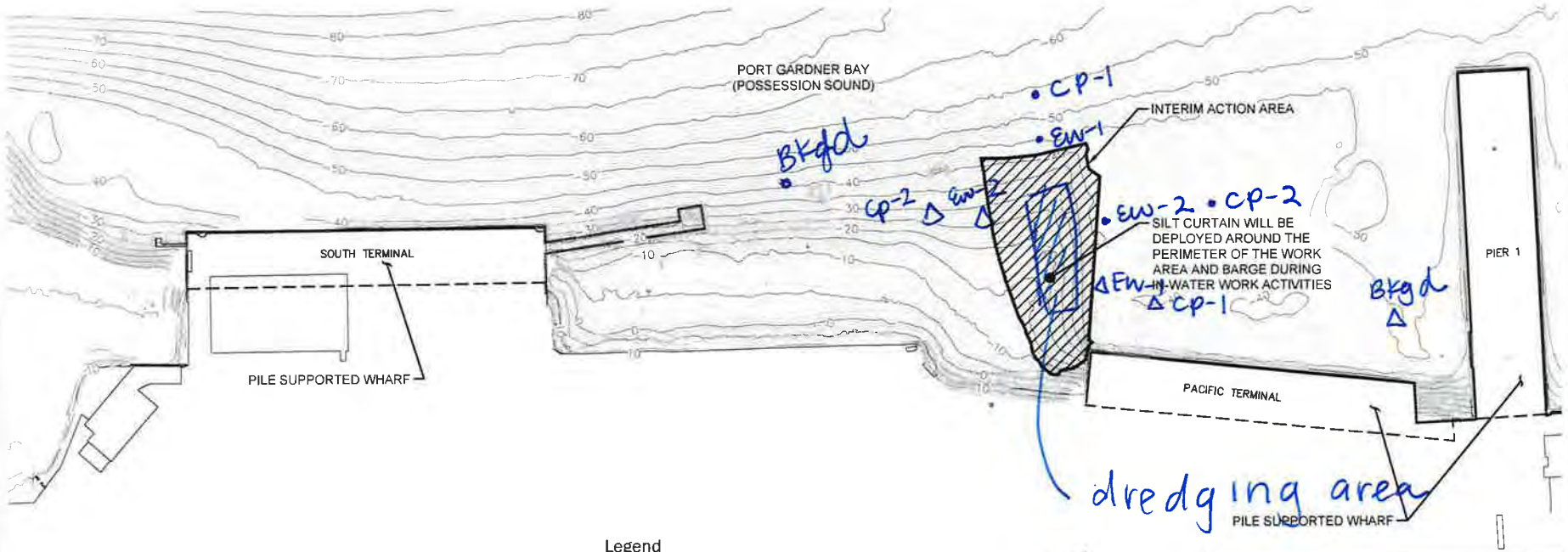


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

Monitoring
- Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:
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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's, Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

—30—	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

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FEET

Site Plan	
Weyerhauser Mill A Former Site Everett, Washington	
GeoEngineers	Figure 2

P:\10\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
9/29/2016	Tier II/Event 1	Dredging	Background	650	10:20	50	4.98	0	2.55	2.61	2.01	2.59	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Contractor notified to check and maintain BMPs. Westwood ship at Pacific Terminal
			Early Warning 1	75	10:35	45	9.13	6.81	5.39	4.3	2.68	4.03		
			Early Warning 2	75	10:45	40	7.57	2.21	2.4	4.1	3.33	3.56		
			Compliance Point 1	150	10:30	45	4.56	4.03	2.68	3.88	2.52	3.9		
			Compliance Point 2	150	10:55	45	4.64	3.32	1.01	5.97	6.78	4.51		
	Tier II/Event 2	-	Background	--	--	--	--	--	--	--	--	--	-	Dredging completed at 1200 today.
			Early Warning 1	--	--	--	--	--	--	--	--	--		
			Early Warning 2	--	--	--	--	--	--	--	--	--		
			Compliance Point 1	--	--	--	--	--	--	--	--	--		
			Compliance Point 2	--	--	--	--	--	--	--	--	--		
9/30/2016	Tier II/Event 1	Dredging	Background	600	9:45	55	4.57	1.79	0.43	8.98	9.47	5.74	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Pacific/South Terminal waterway were generally observed to be turbid. Contractor notified to check and maintain BMPs. Conducted second Background after EW-1, no other exceedances.
			Background - 2	550	10:10	45	6.44	7.09	6.89	6.55	7.08	6.15		
			Early Warning 1	75	10:05	40	0	0	20.5	8.87	5.87	5.05		
			Early Warning 2	75	10:20	40	1.37	3.49	7.34	8.87	10.15	7.88		
			Compliance Point 1	150	9:55	45	2.23	2.35	3.92	5.04	8.57	5.22		
			Compliance Point 2	150	10:30	40	3.75	2.89	1.8	6.17	7.9	5.52		
	Tier II/Event 2	Dredging	Background	600	14:00	40	3.05	5.7	1.34	7.83	8.71	6.98	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Contractor notified to check and maintain BMPs. Turbidity meter ran out of battery during the near-bottom measurement at CP-2
			Early Warning 1	75	14:15	30	3.75	3.06	3.5	8.16	10.39	9.52		
			Early Warning 2	75	14:25	40	4.91	1.82	1.11	10.21	9.26	8.53		
			Compliance Point 1	150	14:10	30	3.57	5.51	3.59	6.77	7.25	8.44		
			Compliance Point 2	150	14:30	45	6.26	3.26	-	9.94	11.36	-		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based no NOAA predictions
Low Tide = 10:32 AM 1.7 Ft MLLW
High Tide = 5:04 PM 10.8 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: cont. dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy, cold	Date: 9/29/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		650	75	75		150	150	
Station Monitoring Time		1020	1035	1045		1030	1055	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		50	45	40		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	4.98	9.13	7.57		4.56	4.64	
	DO (mg/L)	2.61	4.30	4.10		3.58	5.97	
Mid-Water	Turbidity (NTUs)	0	6.81	2.21		4.06	3.32	
	DO (mg/L)	2.01	2.68	3.33		2.52	6.78	
Near-Bottom	Turbidity (NTUs)	2.55	5.39	2.40		2.68	1.01	
	DO (mg/L)	2.59	4.03	3.56		3.9	4.51	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	Weswood (~650 ft ship) at Pacific Terminal, contractor finished dredging for day @ 1200
Corrective Actions Required/Implemented:	Check & Maintain BMPs

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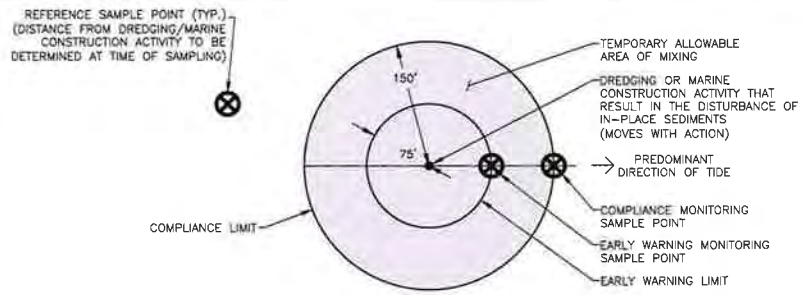
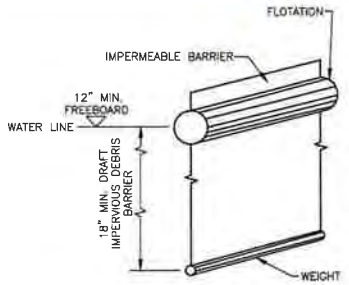
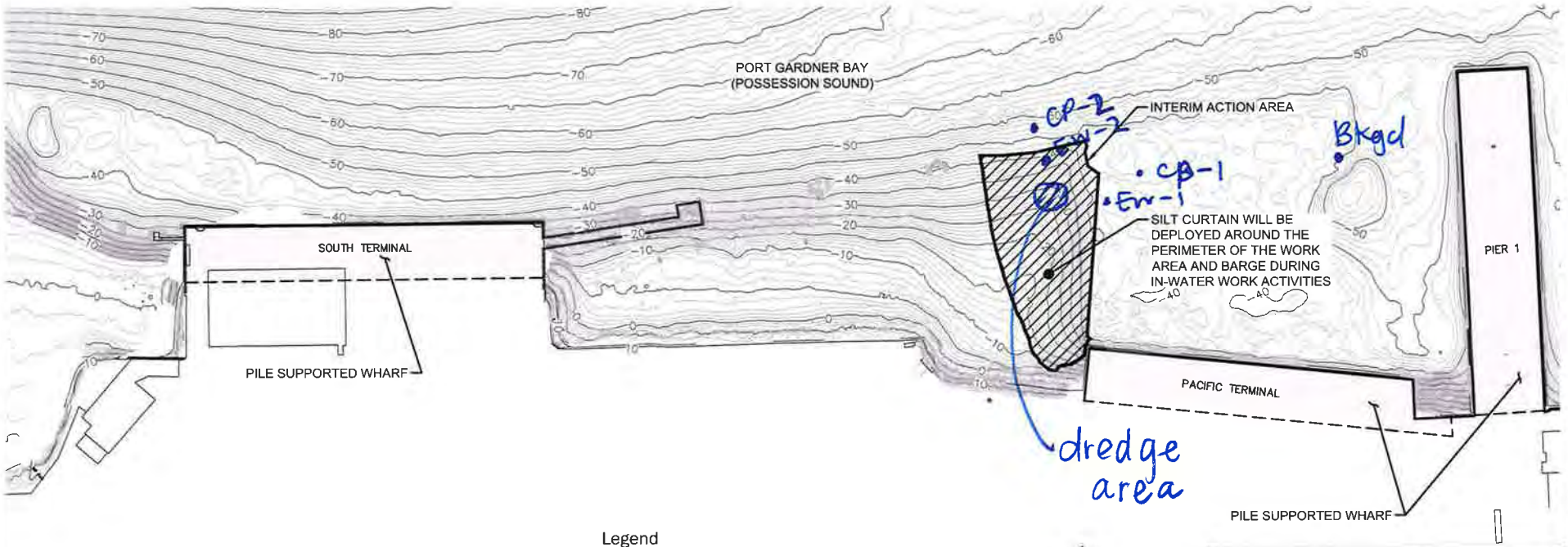
9/29/16



TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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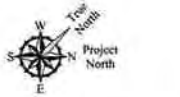
Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

—30—	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



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Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG-02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 11:12 AM 2.1 Ft MLLW
High Tide = 5:31 PM 10.7 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: sunny 50°	Date: 9/30/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 1

Monitoring Station		Ambient/ Background	Early Warning Point		Background ~~EW-3~~ #2	Point of Compliance		
			EW-1	EW-2		CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75	550	150	150	
Station Monitoring Time		0945	1005	1020	1010	0955	1030	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		55	40	40	45	45	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	4.57	0	1.37	6.44	2.23	3.75	
	DO (mg/L)	8.98	8.87	8.87	6.55	5.04	6.17	
Mid-Water	Turbidity (NTUs)	1.79	0	3.49	7.09	2.35	2.89	
	DO (mg/L)	9.47	5.87	10.15	7.08	8.57	7.90	
Near-Bottom	Turbidity (NTUs)	0.43	20.5	7.34	6.89	3.92	1.80	
	DO (mg/L)	5.74	5.05	7.88	6.16	5.22	5.52	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	waterway turbid
Other Observations:	~~After~~ EW-1, did background again due to unusually high Near-bottom, NO other high readings. Unsure why, due to EW-2, CP-1, CP-2, EW-1 measurement may not be associated w/dredging.
Corrective Actions Required/Implemented:	Had contractor check BMPs & slow down bucket

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 11:12 AM 2.1 Ft MLLW
High Tide = 5:31 PM 10.7 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny 60°	Date: 9/30/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1400	1415	1425		1410	1430	
Tidal Status (Ebb, Slack or Flood)		Flood →				Flood →		
Water Column Height (feet)		40	30	40		30	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	3.05	3.75	4.91		3.57	6.26	
	DO (mg/L)	7.83	8.16	10.21		6.77	9.94	
Mid-Water	Turbidity (NTUs)	5.70	3.06	1.82		5.51	3.26	
	DO (mg/L)	8.71	10.39	9.26		7.25	11.36	
Near-Bottom	Turbidity (NTUs)	1.34	3.5	1.11		3.59	—	
	DO (mg/L)	6.98	9.52	8.53		8.44	—	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	Turbidity meter ran out of battery on last measurement
Corrective Actions Required/Implemented:	Check/maintain BMPs

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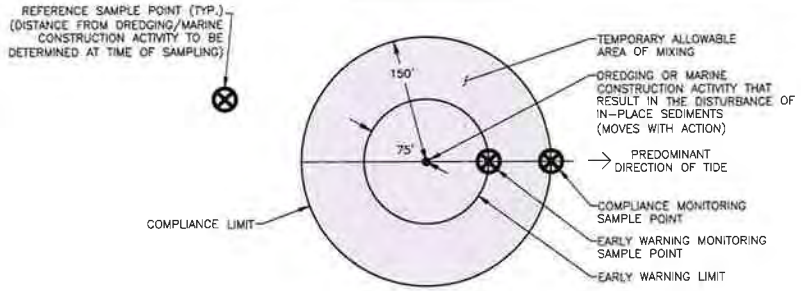
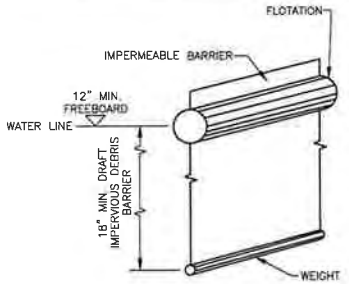
9/30/16

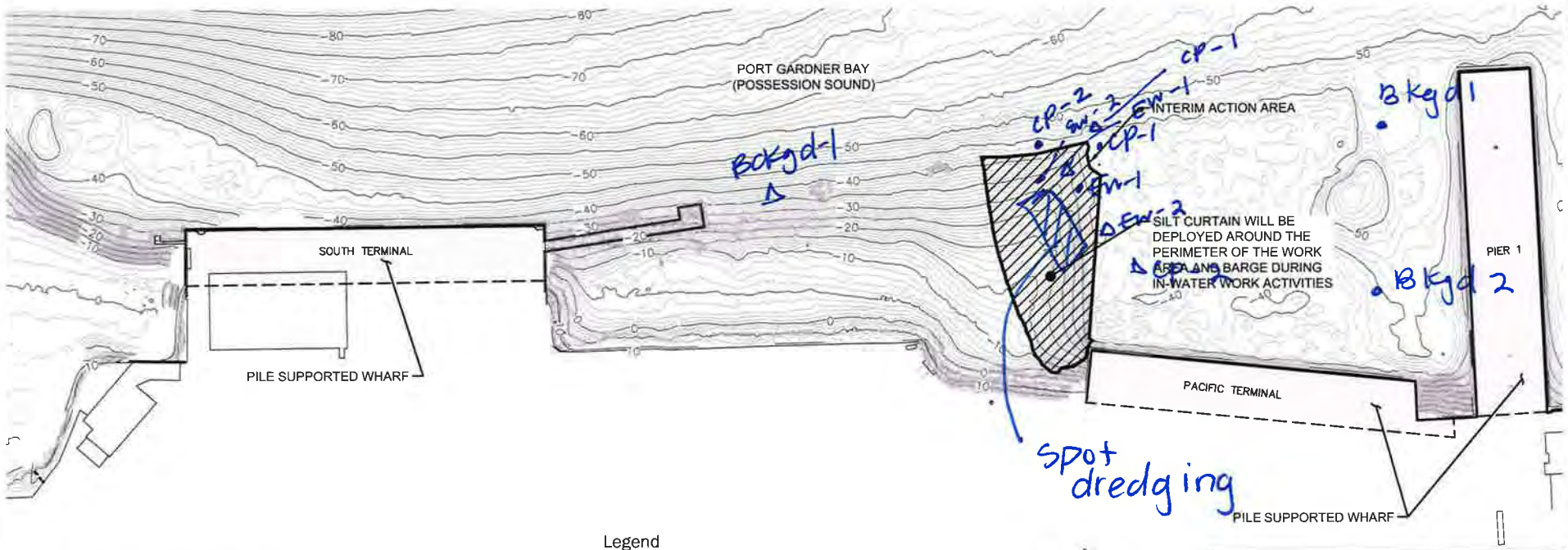


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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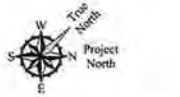
Legend

——30——	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



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FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN.DWG\TAB:I TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
10/3/2016	Tier II/Event 1	Dredging	Background	650	10:45	50	0	1.33	0	13.82	15.38	7.29	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Checked DO meter and re-calibrated after monitoring event.
			Early Warning 1	75	11:00	40	0	0	0	16.2	22	18.38		
			Early Warning 2	75	11:10	40	0	0	0	16.32	34.46	9.24		
			Compliance Point 1	150	10:55	45	1.71	0	0	8.71	13.5	8.82		
			Compliance Point 2	150	11:15	40	2	4.02	1.48	20.6	9.61	9.43		
	Tier II/Event 2	Dredging	Background	600	15:45	45	4.68	1.15	0	11.16	14.7	7.02	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	16:00	35	1.46	0	0	9.02	18.46	7.23		
			Early Warning 2	75	16:10	35	5.42	0.73	0	6.57	10.58	5.95		
			Compliance Point 1	150	15:55	40	7.42	0.01	0	6.21	13.99	5.97		
			Compliance Point 2	150	16:20	40	4.11	2.84	0.97	11.38	16.83	11.72		
10/5/2016	Tier II/Event 1	Dredging	Background	700	9:45	60	0	0	0	10.61	9.97	6.03	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	9:50	50	0	0	0	6.5	6.56	5.99		
			Early Warning 2	75	10:05	25	0	0	0.73	6.26	6.76	4.73		
			Compliance Point 1	150	10:00	50	0	0	0	5.59	5.72	5.94		
			Compliance Point 2	150	10:10	50	0	0	0	5.98	7.12	6.48		
	Tier II/Event 2	-	Background	--	--	--	--	--	--	--	--	--	-	Dredging completed within a few hours today
			Early Warning 1	--	--	--	--	--	--	--	--	--		
			Early Warning 2	--	--	--	--	--	--	--	--	--		
			Compliance Point 1	--	--	--	--	--	--	--	--	--		
			Compliance Point 2	--	--	--	--	--	--	--	--	--		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based no NOAA predictions
Low Tide = 1:05 PM 3.9 Ft MLLW
High Tide = 7:19 AM 10.2 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Partly Sunny 55°	Date: 10/3/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1045	1100	1110		1055	1115	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→	→		Ebb →	→	
Water Column Height (feet)		50	40	40		45	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		1.71	2.00	
	DO (mg/L)	13.82	16.20	16.32		8.71	20.60	
Mid-Water	Turbidity (NTUs)	1.33	0	0		0	4.02	
	DO (mg/L)	15.38	22	34.46		13.50	9.61	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	1.46	
	DO (mg/L)	7.29	18.38	9.24		8.82	9.43	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	1 barge @ PT, DO meter reading high → check & recalibrated
Corrective Actions Required/Implemented:	N/A

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 1:05 PM 3.9 Ft MLLW
High Tide = 7:19 AM 10.2 Ft MLLW

WATER QUALITY MONITORING FORM

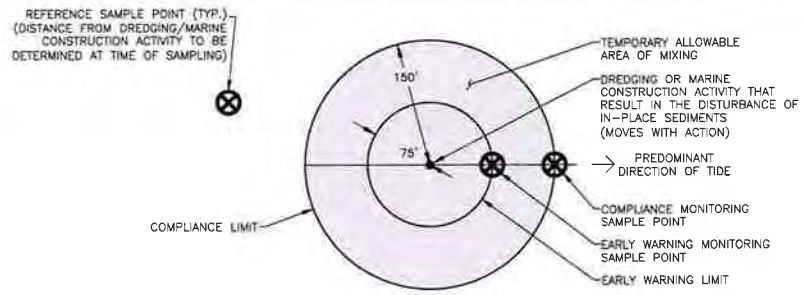
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy	Date: 10/3/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1545	1600	1610		1555	1620	
Tidal Status (Ebb, Slack or Flood)		Flood →				Flood →		
Water Column Height (feet)		45	35	35		40	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	4.68	1.46	5.42		7.42	4.11	
	DO (mg/L)	11.16	9.02	6.57		6.21	11.38	
Mid-Water	Turbidity (NTUs)	1.15	0	0.73		0.01	2.84	
	DO (mg/L)	14.70	18.96	10.58		13.99	16.83	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0.97	
	DO (mg/L)	7.02	7.26	5.95		5.97	11.72	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	ND
Evidence of Floating or Suspended Materials:	ND
Visual Evidence of Discoloration or Turbidity:	ND
Other Observations:	1 barge @ PT
Corrective Actions Required/Implemented:	N/A

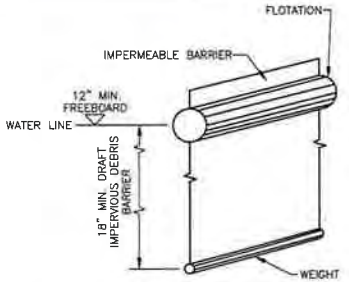
GeoEngineers

10/3/16

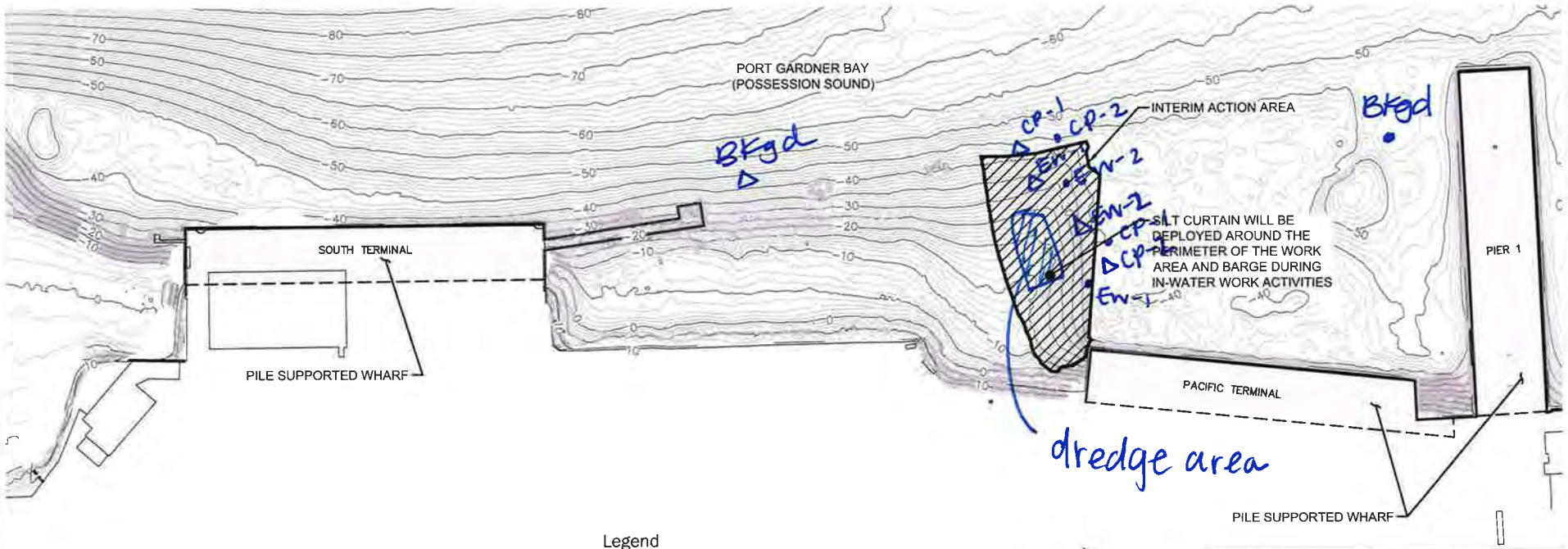


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0 0' mean lower low water.

Legend

-30-	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\01\06760201\04\CAD\INTERIM ACTION FIGURES\06760201-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 2:27 PM 5.3 Ft MLLW
High Tide = 8:48 AM 9.9 Ft MLLW

WATER QUALITY MONITORING FORM

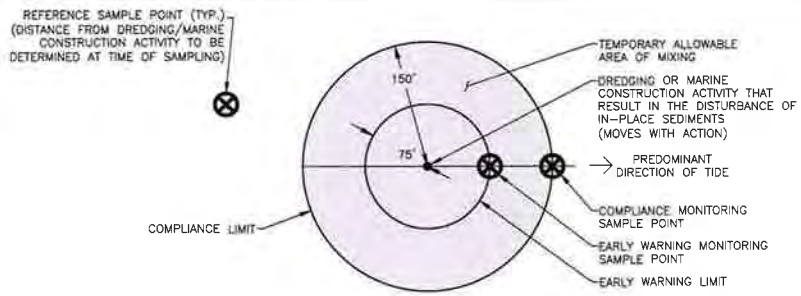
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Dredging	Recorded By: Abhijit Joshi
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy 57°	Date: 10/05/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		700	75	75		150	150	
Station Monitoring Time		945	950	1005		1000	1010	
Tidal Status (Ebb, Slack or Flood)		Slack →				Slack →		
Water Column Height (feet)		60	50	25		50	30	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	10.61	6.50	6.26		5.59	5.98	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.97	6.56	6.76		5.72	7.12	
Near-Bottom	Turbidity (NTUs)	0	0	0.73		0	0	
	DO (mg/L)	6.03	5.99	4.73		5.94	6.98	

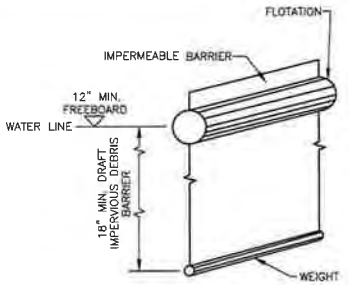
Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	N/A
Corrective Actions Required/Implemented:	N/A

GeoEngineers

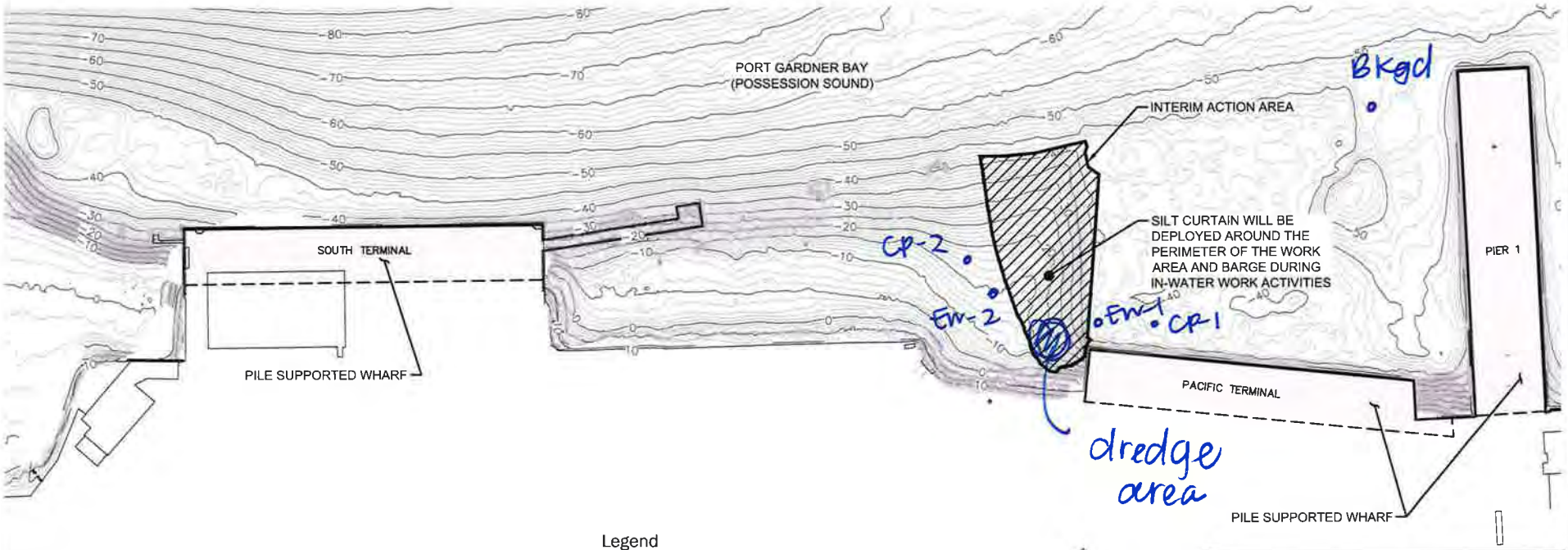
10/05/16



TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Data Source:
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Legend

—30—	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

True North / Project North

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\01\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG-02 SITE PLAN.DWG\TAB:I TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
10/17/2016	Tier I/Event 1	Dredging	Background	600	11:05	55	8.75	3.75	0.16	18.75	18.36	10.64	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Contractor notified to check and maintain BMPs. Waterway murky, large storms passed through area over weekend.
			Early Warning 1	75	11:20	45	14.5	4.12	0.81	10.3	7.46	7.52		
			Early Warning 2	75	11:25	45	12.4	5.25	1.64	7.35	8.27	5.07		
			Compliance Point 1	150	11:15	45	10.5	5.34	2.1	9.41	11.24	11.03		
			Compliance Point 2	150	11:10	50	1.54	3.97	2.62	9.07	9.39	9.72		
	Tier I/Event 2	Dredging	Background	500	14:40	35	9.02	3.87	2.39	6.88	10.02	8.45	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Contractor notified to check and maintain BMPs. Waterway murky, large storms passed through area over weekend.
			Early Warning 1	75	14:50	35	11.1	7.09	5.35	4.64	9.16	4.88		
			Early Warning 2	75	15:15	40	14	2.92	4.79	5.49	7.31	3.28		
			Compliance Point 1	150	15:00	40	5.28	4.15	3.8	7.49	7.36	7.11		
			Compliance Point 2	150	15:05	40	6.72	3.35	2.15	4.54	8.33	3.61		
10/18/2016	Tier I/Event 1	Dredging	Background	500	10:00	55	7.24	6.29	6.26	3.68	3.93	2.99	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	10:20	40	9.05	6.91	2.11	4.12	7.99	2.96		
			Early Warning 2	75	10:30	40	3.59	1.09	0.15	2.74	8.37	4.48		
			Compliance Point 1	150	10:15	45	7.08	8.39	1.44	1.98	3.05	2.57		
			Compliance Point 2	150	10:35	45	9.75	4.68	2.09	7.63	7.29	3.51		
	Tier I/Event 2	Dredging	Background	500	14:00	40	3.61	7.25	3.03	7.76	4.76	2.15	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	14:10	40	3.09	2.62	5.58	4.55	4.29	3.72		
			Early Warning 2	75	14:15	40	1.91	1.56	2.88	2.75	6.72	4.01		
			Compliance Point 1	150	14:25	45	2.6	3.44	4.98	6.33	7.71	3.98		
			Compliance Point 2	150	14:20	45	3.88	2.25	0.52	2.24	6.62	3.95		
10/19/2016	Tier I/Event 1	Dredging	Background	500	10:00	55	3.57	0	0	12.92	8.13	7.79	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	10:15	40	1	1.94	0	4.95	7.62	3.2		
			Early Warning 2	75	10:25	0	0.51	0	1.6	4.58	10.1	4.34		
			Compliance Point 1	150	10:10	50	2.95	0.25	0	5.23	8.6	3.79		
			Compliance Point 2	150	10:30	55	1.65	0.86	0	8.47	8.95	3.15		
	Tier I/Event 2	Dredging	Background	--	--	--	--	--	--	--	--	--	--	Water quality meter DO membrane wore out, rental unit ordered and will be delivered tomorrow morning. Meter will not funciton if a sensor is down. Contractor stopped dredging soon afterwards.
			Early Warning 1	--	--	--	--	--	--	--	--	--		
			Early Warning 2	--	--	--	--	--	--	--	--	--		
			Compliance Point 1	--	--	--	--	--	--	--	--	--		
			Compliance Point 2	--	--	--	--	--	--	--	--	--		

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
10/20/2016	Tier I/Event 1	Dredging	Background	600	12:55	50	2.7	1.7	1.6	8.28	7	6.59	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Rental meter beign used, model YSI Pro DSS.
			Early Warning 1	75	13:05	40	3.7	3	2.4	8.5	7.65	7.07		
			Early Warning 2	75	13:10	40	3.4	2.8	2.3	8.78	7.64	6.96		
			Compliance Point 1	150	13:00	45	3.5	2.9	1.9	8.72	7.53	6.8		
			Compliance Point 2	150	13:15	45	2.5	2.8	1.7	8.79	7.6	6.8		
	Tier I/Event 2	Dredging	Background	600	15:00	55	1.4	1.2	0.9	8.1	6.89	6.54	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Rental meter beign used, model YSI Pro DSS.
			Early Warning 1	75	15:10	45	1.4	1.3	1.5	8.3	6.92	6.4		
			Early Warning 2	75	15:25	25	5	3.7	2.6	7.77	7.23	6.72		
			Compliance Point 1	150	15:05	45	1.5	1.7	2.2	8.27	7.04	6.32		
			Compliance Point 2	150	15:20	23	2.3	1.4	0.6	8.27	7.19	6.81		
10/21/2016	Tier I/Event 1	Dredging	Background	500	9:10	45	1.8	1.8	1.5	7.24	6.37	9.17	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Rental meter beign used, model YSI Pro DSS.
			Early Warning 1	75	9:20	45	1.6	1.5	1.4	7.28	6.49	6.17		
			Early Warning 2	75	9:25	45	4.2	1.5	1.4	7.25	6.55	6.23		
			Compliance Point 1	150	9:35	45	2	1.6	1.3	7.42	6.56	6.14		
			Compliance Point 2	150	9:30	50	4	1.7	1.4	7.57	6.47	6.15		
	Tier I/Event 2	Dredging	Background	600	13:20	50	7	2.4	1.7	8.85	7.48	6.47	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Rental meter beign used, model YSI Pro DSS.
			Early Warning 1	75	13:35	40	9.5	2.5	2.9	8.78	8.03	6.87		
			Early Warning 2	75	13:40	40	7.7	2.1	3.9	8.68	7.59	6.72		
			Compliance Point 1	150	13:30	45	8.2	3.7	2.5	8.53	7.77	6.79		
			Compliance Point 2	150	13:45	45	7.4	2	2.3	8.61	7.51	7.15		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based no NOAA predictions
Low Tide = 12:25 PM 3.8 Ft MLLW
High Tide = 6:41 AM 11.8 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Rainy 55°	Date: 10/17/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1105	1120	1125		1115	1110	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		55	45	45		45	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	8.75	14.5	12.4		10.5	1.54	
	DO (mg/L)	18.75	10.3	7.35		9.41	9.07	
Mid-Water	Turbidity (NTUs)	3.75	4.12	5.25		5.34	3.97	
	DO (mg/L)	18.36	7.46	8.27		11.24	9.39	
Near-Bottom	Turbidity (NTUs)	0.16	0.81	1.64		2.10	2.62	
	DO (mg/L)	10.64	7.52	5.07		11.03	9.72	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO ships @ PT
Corrective Actions Required/Implemented:	check & maintain BMPs

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 12:25 PM 3.8 Ft MLLW
High Tide = 6:41 AM 11.8 Ft MLLW

WATER QUALITY MONITORING FORM

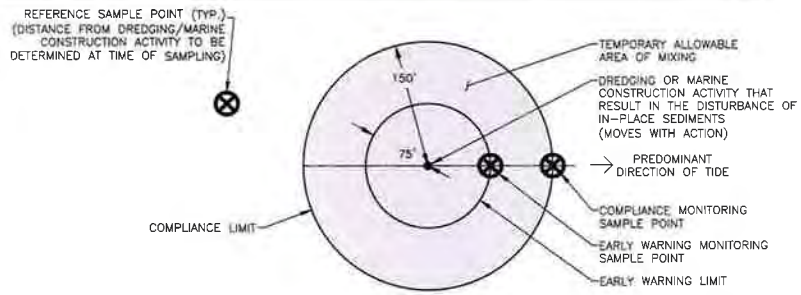
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: cleandredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: partly cloudy	Date: 10/17/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	75		150	150	
Station Monitoring Time		1440	1450	1515		1500	1505	
Tidal Status (Ebb, Slack or Flood)		Flood →				Flood →		
Water Column Height (feet)		35	35	40		40	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	9.02	11.1	14.0		5.28	6.72	
	DO (mg/L)	6.88	4.64	5.49		7.49	4.54	
Mid-Water	Turbidity (NTUs)	3.87	7.09	2.92		4.15	3.35	
	DO (mg/L)	10.02	9.16	7.31		7.36	8.33	
Near-Bottom	Turbidity (NTUs)	2.39	5.35	4.79		3.80	2.15	
	DO (mg/L)	8.45	4.88	3.28		7.11	3.61	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	Check & Maintain BMPs

GeoEngineers

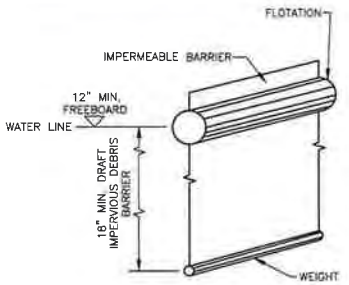
10/17/16



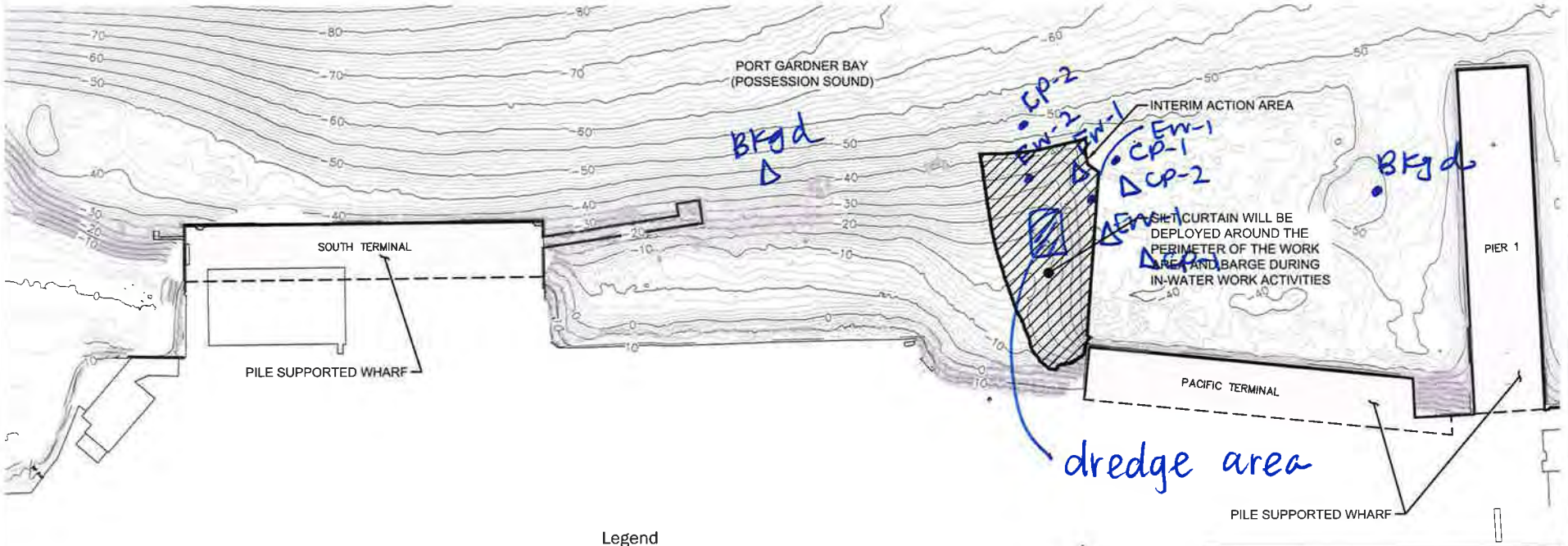
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

∘ Event 1

Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Data Source:
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Legend

-30- Bathymetric Contours (Feet MLLW)

Interim Action Area (Limits of Dredging and Material Placement)

MLLW Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

P:\0106760201\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 1:14 PM 4.6 Ft MLLW
High Tide = 7:36 AM 11.9 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy	Date: 10/18/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1 Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	75		150	150	
Station Monitoring Time		1000	1020	1030		1015	1035	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		55	40	40		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	7.24	9.05	3.59		7.08	9.75	
	DO (mg/L)	3.68	4.12	2.74		1.98	7.63	
Mid-Water	Turbidity (NTUs)	6.29	6.91	1.09		8.39	4.68	
	DO (mg/L)	3.93	7.99	8.37		3.05	7.29	
Near-Bottom	Turbidity (NTUs)	6.26	2.11	0.15		1.44	2.09	
	DO (mg/L)	2.99	2.96	4.48		2.57	3.51	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO Ships
Corrective Actions Required/Implemented:	N/A

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Tide Levels based no NOAA predictions
Low Tide = 1:14 PM 4.6 Ft MLLW
High Tide = 7:36 AM 11.9 Ft MLLW

WATER QUALITY MONITORING FORM

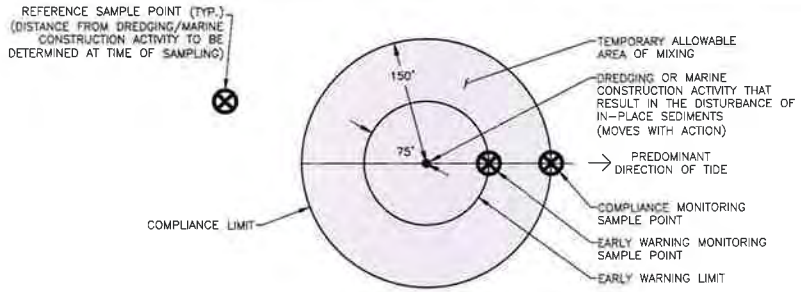
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: partly cloudy	Date: 10/18/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, Event 11

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	75		150	150	
Station Monitoring Time		1400	1410	1415		1425	1420	
Tidal Status (Ebb, Slack or Flood)		Flood →	→	→		Flood →	→	
Water Column Height (feet)		40	40	40		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	3.61	3.09	1.91		2.60	3.88	
	DO (mg/L)	7.76	4.55	2.75		6.33	2.24	
Mid-Water	Turbidity (NTUs)	7.25	2.62	1.56		3.44	2.25	
	DO (mg/L)	4.75	4.29	6.72		7.71	6.62	
Near-Bottom	Turbidity (NTUs)	3.03	5.58	2.88		4.98	0.52	
	DO (mg/L)	2.15	3.72	4.01		3.98	3.95	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	N/A

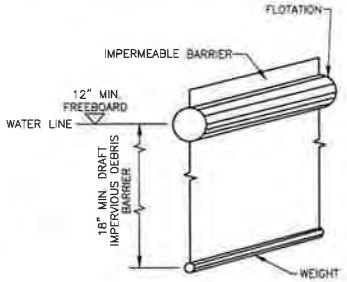
GeoEngineers

10/18/16

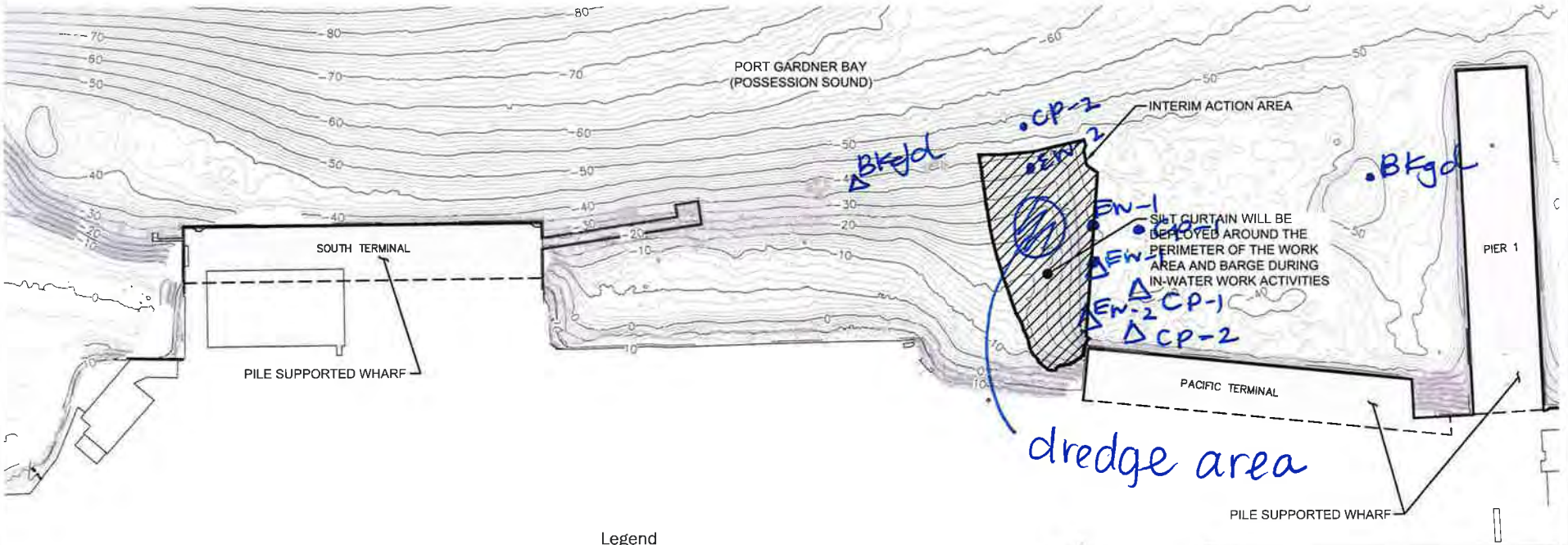


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

—30—	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0\06760201\04\CAD\INTERIM ACTION FIGURES\06760201-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 2:07 PM 5.4 Ft MLLW
High Tide = 8:34 AM 11.8 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clear dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy 50°	Date: 10/19/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	75		150	150	
Station Monitoring Time		10 00	1015	1025		1010	1030	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		55	40	40		50	55	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	3.57	1.0	0.51		2.95	1.65	
	DO (mg/L)	12.92	4.95	4.58		5.23	8.47	
Mid-Water	Turbidity (NTUs)	0	1.94	0		0.25	0.86	
	DO (mg/L)	8.13	7.62	10.10		8.60	8.95	
Near-Bottom	Turbidity (NTUs)	0	0	1.6		0	0	
	DO (mg/L)	7.79	3.20	4.34		3.79	3.15	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	N/A

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Tide Levels based no NOAA predictions
Low Tide = 2:07 PM 5.4 Ft MLLW
High Tide = 8:34 AM 11.8 Ft MLLW

WATER QUALITY MONITORING FORM

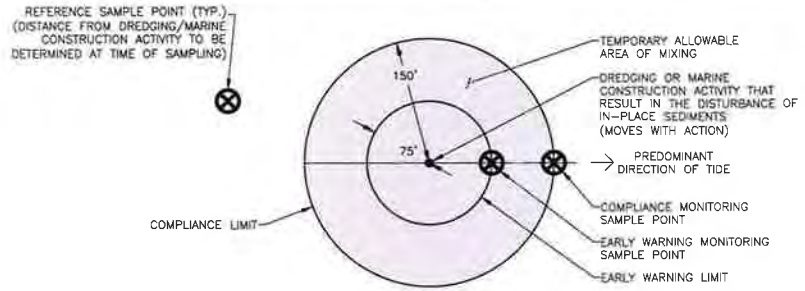
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy 50	Date: 10/19/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing								
Longitude/Easting								
Distance From In-Water Activity (feet)		500						
Station Monitoring Time		1430						
Tidal Status (Ebb, Slack or Flood)		Slack						
Water Column Height (feet)		45						
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	14.2						
	DO (mg/L)	3.08						
Mid-Water	Turbidity (NTUs)							
	DO (mg/L)							
Near-Bottom	Turbidity (NTUs)							
	DO (mg/L)							

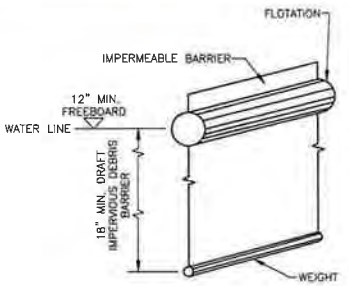
Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):
Evidence of Floating or Suspended Materials:
Visual Evidence of Discoloration or Turbidity:
Other Observations: Turbidity meter died, replaced batteries & ordered rental
Corrective Actions Required/Implemented: Unit, to be here 10/20 by 0900

GeoEngineers

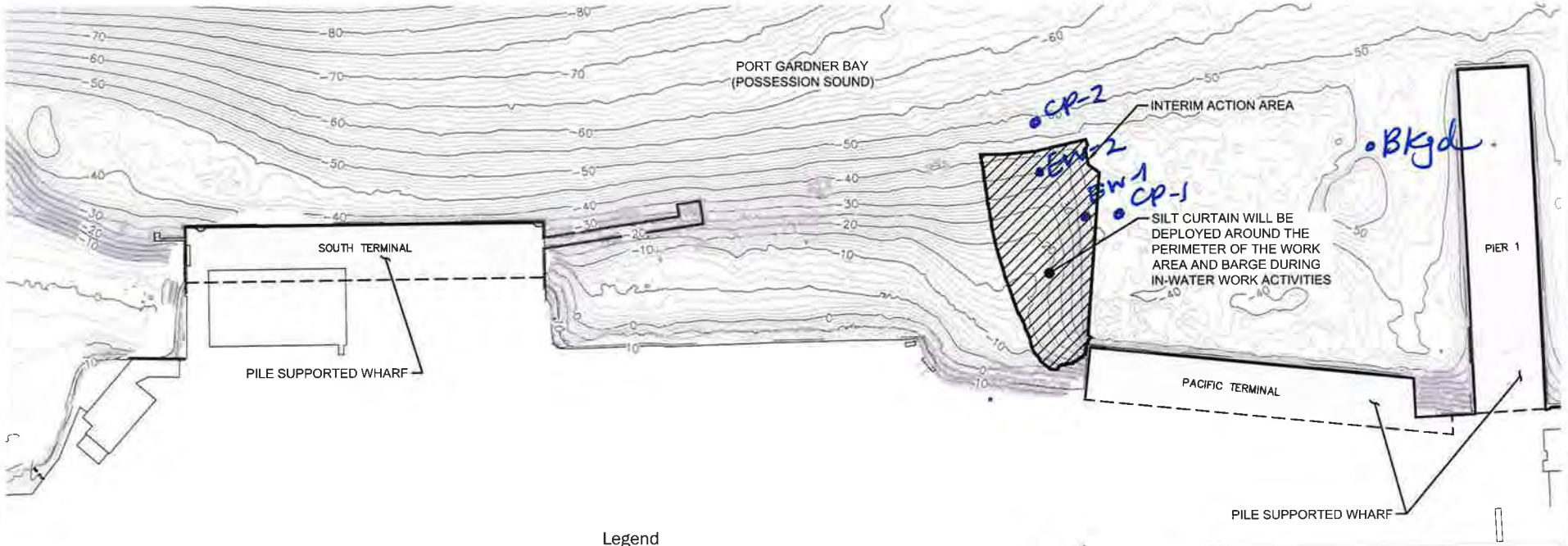
10/19/16



TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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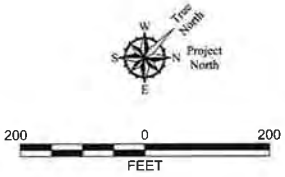
Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



Site Plan	
Weyerhauser Mill A Former Site Everett, Washington	
GeoEngineers	Figure 2

P:\0\06760201\04\CAD\INTERIM ACTION FIGURES\06760201-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 3:05 PM 6.0 Ft MLLW
High Tide = 9:34 AM 11.5 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy/rainy	Date: 10/20/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: ~~Horiba U-52~~ YSI Pro DSS	Monitoring Type/Tier: Type 1, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1255	1305	1310		1300	1315	
Tidal Status (Ebb, Slack or Flood)		ebb →	→			ebb →	→	
Water Column Height (feet)		50	40	40		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	2.7	3.7	3.4		3.5	2.5	
	DO (mg/L)	8.28	8.5	8.78		8.77	8.79	
Mid-Water	Turbidity (NTUs)	1.7	3.0	2.8		2.9	2.8	
	DO (mg/L)	7	7.65	7.64		7.53	7.6	
Near-Bottom	Turbidity (NTUs)	1.6	2.4	2.3		1.9	1.7	
	DO (mg/L)	6.59	7.07	6.96		6.8	6.8	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	N/A

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 3:05 PM 6.0 Ft MLLW
High Tide = 9:34 AM 11.5 Ft MLLW

WATER QUALITY MONITORING FORM

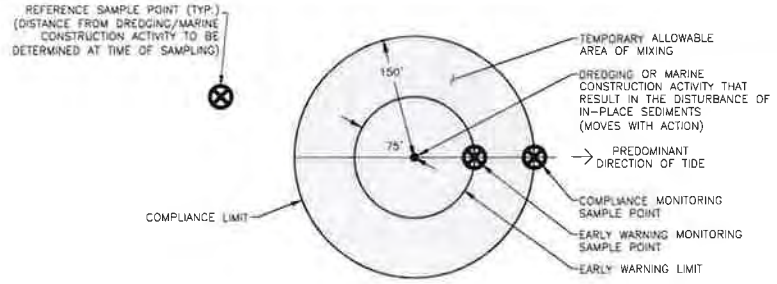
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Clean Dredge	Recorded By: Abhijit (Geo)
Project No.: MT-PT-2016-01	Weather Conditions: cloudy	Date: 10/20/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: ~~Horiba U-52~~ YSI Pro DSS	Monitoring Type/Tier: Type 1, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1500	1510	1525		1505	1520	
Tidal Status (Ebb, Slack or Flood)		Slack →	→			Slack →	→	
Water Column Height (feet)		55	45	25		45	23	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	1.4	1.4	5.0		1.5	2.3	
	DO (mg/L)	8.1	8.3	7.77		8.27	8.27	
Mid-Water	Turbidity (NTUs)	1.2	1.3	3.7		1.7	1.4	
	DO (mg/L)	6.89	6.92	7.23		7.04	7.19	
Near-Bottom	Turbidity (NTUs)	0.9	1.5	2.6		2.2	0.6	
	DO (mg/L)	6.54	6.40	6.72		6.32	6.81	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	No
Evidence of Floating or Suspended Materials:	ND
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	N/A

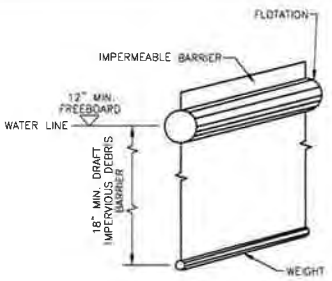
GeoEngineers

10/20/16

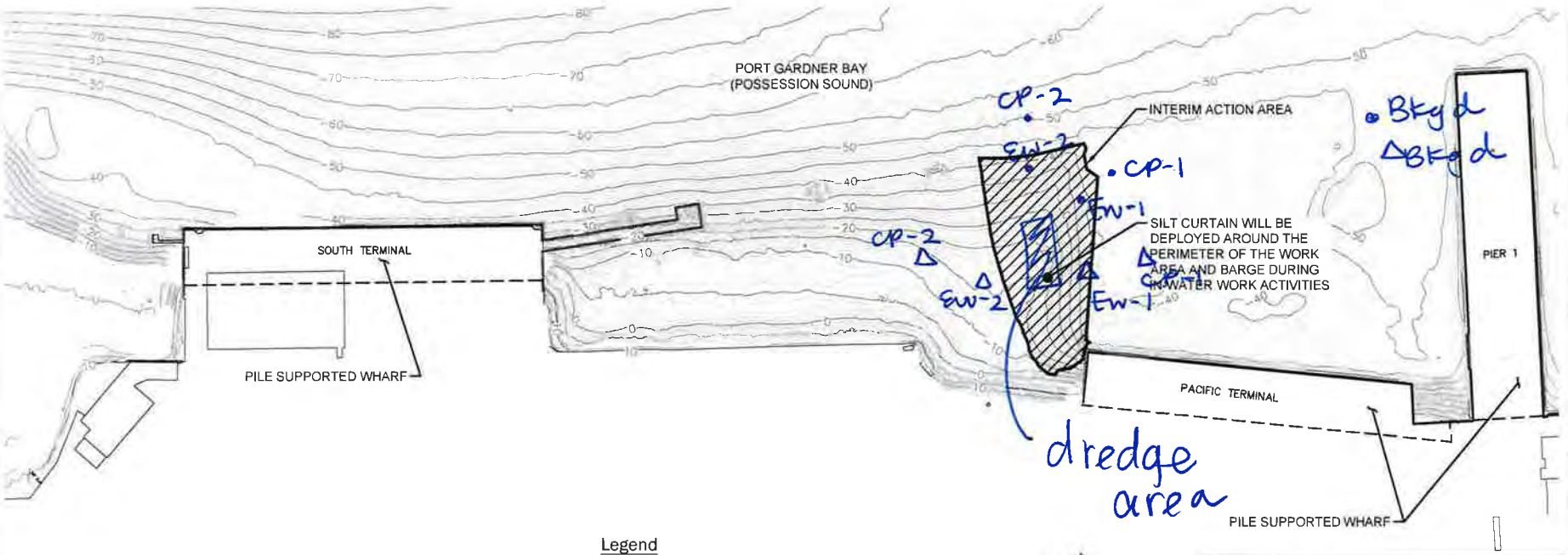


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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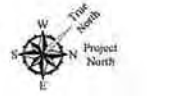
Legend

30	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



200 0 200
FEET

Site Plan	
Weyerhauser Mill A Former Site Everett, Washington	
GeoEngineers	Figure 2

P:\0106760201\04\CAD\INTERIM ACTION FIGURES\0676020-04_FIG_02 SITE PLAN BW6\TAB1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 4:10 PM 6.3 Ft MLLW
High Tide = 10:39 AM 11.1 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Clean Dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy 52°	Date: 10/21/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: ~~Horiba U-52~~ YSI Pro DSS	Monitoring Type/Tier: Tier 1, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	75		150	150	
Station Monitoring Time		910	920	925		935	930	
Tidal Status (Ebb, Slack or Flood)		Slack →		→		Slack →	→	
Water Column Height (feet)		45	45			45	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	1.8	1.6	4.2		2.0	4.0	
	DO (mg/L)	7.24	7.28	7.25		7.42	7.57	
Mid-Water	Turbidity (NTUs)	1.8	1.5	1.5		1.6	1.5	
	DO (mg/L)	6.37	6.49	6.55		6.56	6.47	
Near-Bottom	Turbidity (NTUs)	1.5	1.4	1.4		1.3	1.4	
	DO (mg/L)	6.87	6.17	6.13		6.14	6.15	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	ND
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	–
Corrective Actions Required/Implemented:	N/A

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 4:10 PM 6.3 Ft MLLW
High Tide = 10:39 AM 11.1 Ft MLLW

WATER QUALITY MONITORING FORM

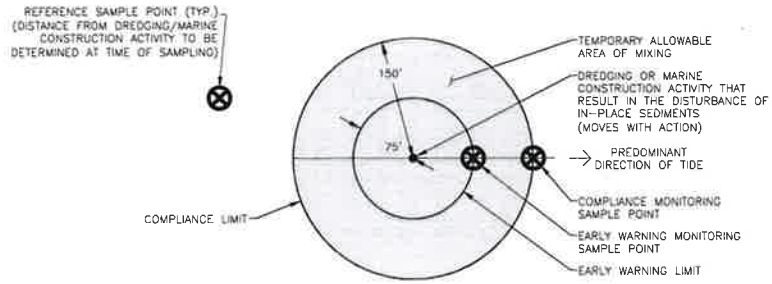
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: partly sunny	Date: 10/21/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: ~~Horiba U-52~~ YSI Pro DSS	Monitoring Type/Tier: Tier 1, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1320	1335	1340		1330	1345	
Tidal Status (Ebb, Slack or Flood)		Ebb →				Ebb →		
Water Column Height (feet)		50	40	40		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	7	9.5	7.7		8.2	7.4	
	DO (mg/L)	8.85	8.78	8.68		8.53	8.61	
Mid-Water	Turbidity (NTUs)	2.4	2.5	2.1		3.7	2	
	DO (mg/L)	7.48	8.03	7.59		7.77	7.51	
Near-Bottom	Turbidity (NTUs)	1.7	2.9	3.9		2.5	2.3	
	DO (mg/L)	6.47	6.87	6.72		6.79	7.15	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	Waterway turbid
Other Observations:	N/A
Corrective Actions Required/Implemented:	N/A

GeoEngineers

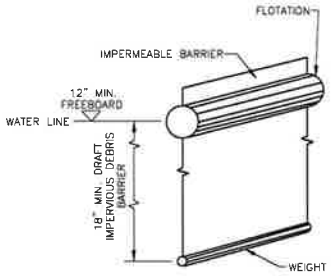
10/21/16



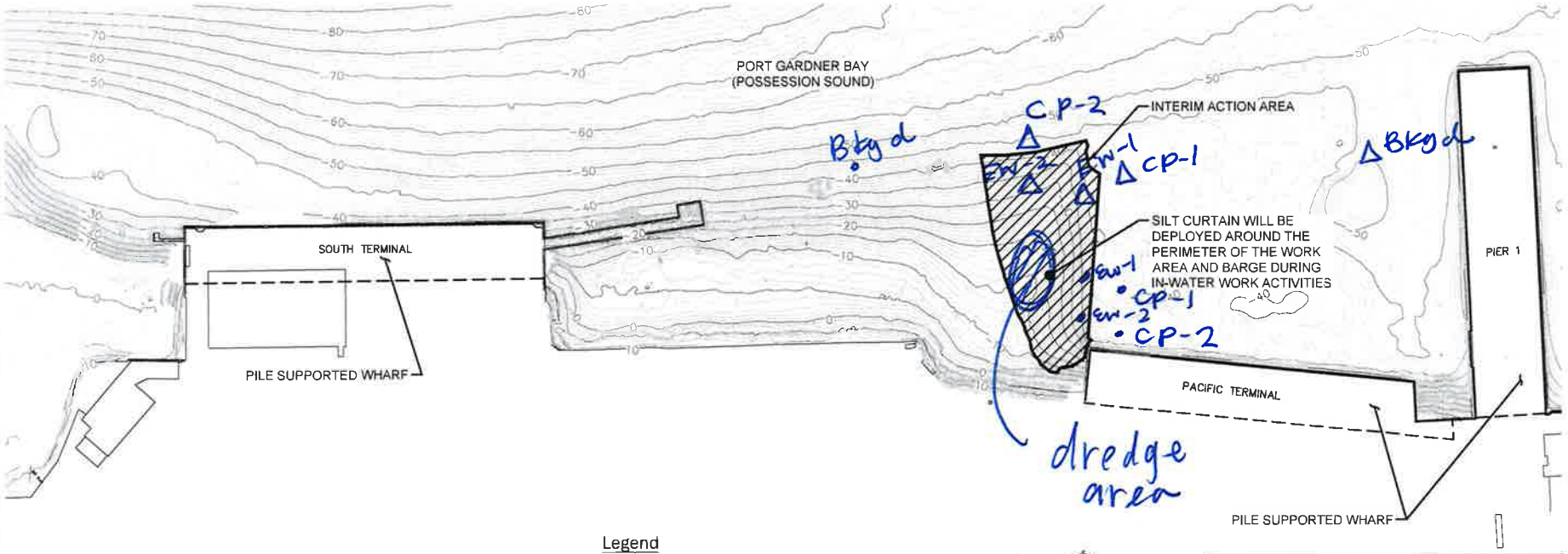
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1

Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

——30——	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
10/25/2016	Tier II/Event 1	Dredging	Background	600	11:20	43	5.74	4.06	0.1	14.28	12.3	9.3	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Waterway looks murky as a whole.
			Early Warning 1	75	11:25	18	3.91	3.5	4.9	8.99	8.12	6.79		
			Early Warning 2	75	11:35	45	1.45	8.48	0.94	7.3	6.49	5.71		
			Compliance Point 1	150	11:30	15	1.2	7.48	2.3	7.62	8.59	7.13		
			Compliance Point 2	150	11:40	45	1.43	2.65	1.29	6.85	8.3	7.79		
	Tier II/Event 2	Dredging	Background	600	14:30	60	2.33	0	0.98	24.4	17.7	11.26	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Waterway looks murky as a whole, windy and wavy conditions. Contractor notified to check and maintain BMPs.
			Early Warning 1	75	14:35	50	9.34	2.72	1.2	8.33	8.97	8.1		
			Early Warning 2	75	14:55	45	4.31	2.53	0.62	8.69	9.02	7.64		
			Compliance Point 1	150	14:40	50	0	1.33	0	9.76	9.58	8.21		
			Compliance Point 2	150	15:00	52	6.64	4.26	1.87	8.29	8.49	6.85		
10/27/2016	Tier II/Event 1	Dredging	Background	600	9:00	50	4.59	1.99	1.82	21.22	17.02	15.53	Ebb/Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	9:15	40	5.62	5.34	0.74	21.29	16.18	17.16		
			Early Warning 2	75	9:25	35	0.22	0.68	8.6	19.65	15.18	13.77		
			Compliance Point 1	150	9:10	45	3.09	3.9	1.02	35.36	14.9	14.32		
			Compliance Point 2	150	9:30	50	0	0.77	1.46	23.42	13.62	13.2		
	Tier II/Event 2	Dredging	Background	500	13:05	35	9.47	3.02	0.49	20.27	17.58	14.89	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	13:15	35	1.87	1.73	1.17	20.18	20.82	15.15		
			Early Warning 2	75	13:30	35	2.77	4.5	0	21.72	22.32	27.55		
			Compliance Point 1	150	13:20	40	5.51	6.15	4.77	19.79	13.13	11.39		
			Compliance Point 2	150	13:25	45	3.16	3.41	1.62	21.36	14.81	12.78		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based no NOAA predictions
Low Tide = 7:25 AM 2.3 Ft MLLW
High Tide = 2:34 PM 10.7 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Clean Dredging	Recorded By: Abhijit
Project No.: MT-PT-2016-01	Weather Conditions: clear, sunny	Date: 10/25/2016
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1120	1125	1135		1130	1140	
Tidal Status (Ebb, Slack or Flood)		Flood →	→			Flood →	→	
Water Column Height (feet)		43	18	45		15	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	5.74	3.91	1.45		1.2	1.43	
	DO (mg/L)	14.28	8.99	7.3		7.62	6.85	
Mid-Water	Turbidity (NTUs)	4.06	3.5	8.48		7.48	2.65	
	DO (mg/L)	12.6	8.12	6.49		8.59	8.3	
Near-Bottom	Turbidity (NTUs)	0.1	4.9	0.94		2.3	1.29	
	DO (mg/L)	9.30	6.79	5.71		7.13	7.79	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	ND
Evidence of Floating or Suspended Materials:	ND
Visual Evidence of Discoloration or Turbidity:	ND
Other Observations:	Bay wide turbidity seems to be higher than normal.
Corrective Actions Required/Implemented:	None

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Tide Levels based no NOAA predictions
Low Tide = 7:25 AM 2.3 Ft MLLW
High Tide = 2:34 PM 10.7 Ft MLLW

WATER QUALITY MONITORING FORM

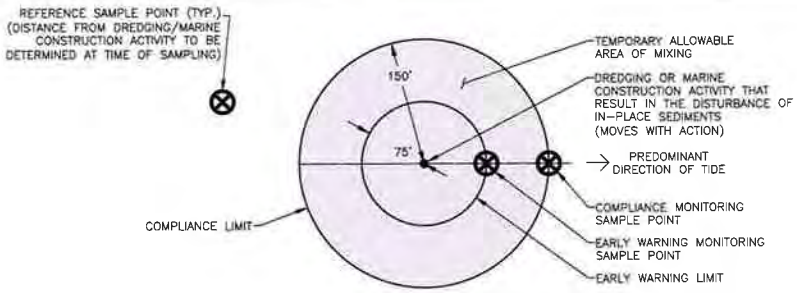
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredging	Recorded By: Abhijit
Project No.: MT-PT-2016-01	Weather Conditions: sunny, windy	Date: 10/25/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1430	1435	1455		1440	1500	
Tidal Status (Ebb, Slack or Flood)		Slack →	→			Slack →		
Water Column Height (feet)		60	50	45		50	52	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	2.33	9.34	4.31		0	6.64	
	DO (mg/L)	24.4	8.33	8.69		9.76	8.29	
Mid-Water	Turbidity (NTUs)	0	2.72	2.53		1.33	4.26	
	DO (mg/L)	17.7	8.97	9.02		9.58	8.49	
Near-Bottom	Turbidity (NTUs)	0.98	1.2	0.62		0	1.87	
	DO (mg/L)	11.26	8.10	7.64		8.21	6.85	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	windy & wavy conditions
Corrective Actions Required/Implemented:	Notified contractor to check & maintain BMPs.

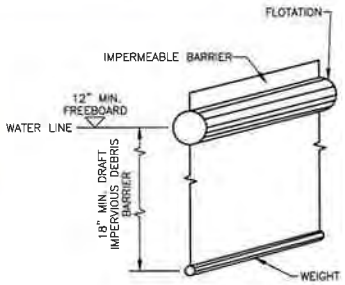
GeoEngineers

10/25/2016

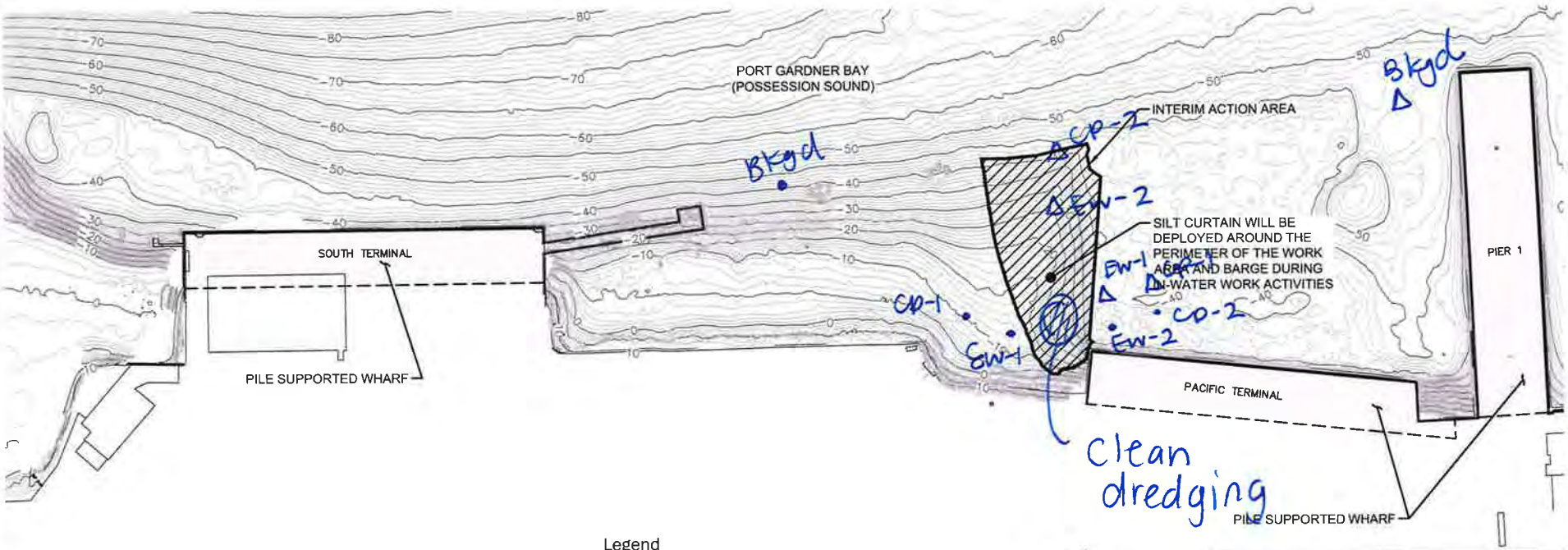


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

True North / Project North

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

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Tide Levels based no NOAA predictions
Low Tide = 9:16 AM 3.3 Ft MLLW
High Tide = 3:43 PM 10.7 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy	Date: 10/27/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		0900	0915	0925		0910	0930	
Tidal Status (Ebb, Slack or Flood)		Ebb/slack →				slack/Ebb →		
Water Column Height (feet)		50	40	35		45	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	4.59	5.62	0.22		3.09	0	
	DO (mg/L)	21.22	21.29	19.65		35.36	23.42	
Mid-Water	Turbidity (NTUs)	1.99	5.34	0.68		3.9	0.77	
	DO (mg/L)	17.02	16.18	15.18		14.90	13.62	
Near-Bottom	Turbidity (NTUs)	1.82	0.74	8.6		1.02	1.46	
	DO (mg/L)	15.53	17.16	13.77		14.32	13.20	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	ND
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	N/A

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Tide Levels based no NOAA predictions
Low Tide = 9:16 AM 3.3 Ft MLLW
High Tide = 3:43 PM 10.7 Ft MLLW

WATER QUALITY MONITORING FORM

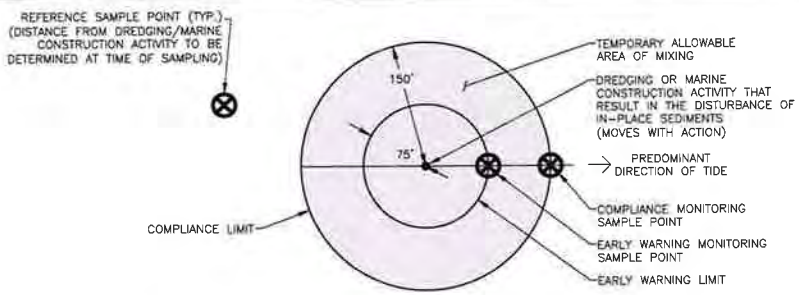
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Clean dredging	Recorded By: Elise G.
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy	Date: 10/27/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	75		150	150	
Station Monitoring Time		1305	1315	1330		1320	1325	
Tidal Status (Ebb, Slack or Flood)		Flood →				Flood →		
Water Column Height (feet)		35	35	35		40	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	9.47	1.87	2.77		5.51	3.16	
	DO (mg/L)	20.27	20.18	21.72		19.79	21.36	
Mid-Water	Turbidity (NTUs)	3.02	1.73	4.5		6.15	3.41	
	DO (mg/L)	17.58	20.82	22.32		13.13	14.81	
Near-Bottom	Turbidity (NTUs)	0.49	1.17	0		4.77	1.62	
	DO (mg/L)	14.89	15.15	27.55		11.39	12.78	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	NO

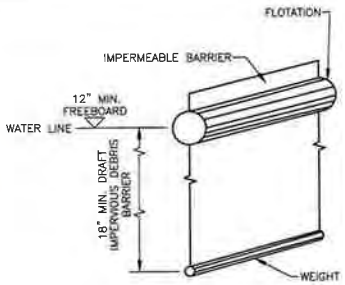
GeoEngineers

10/27/16

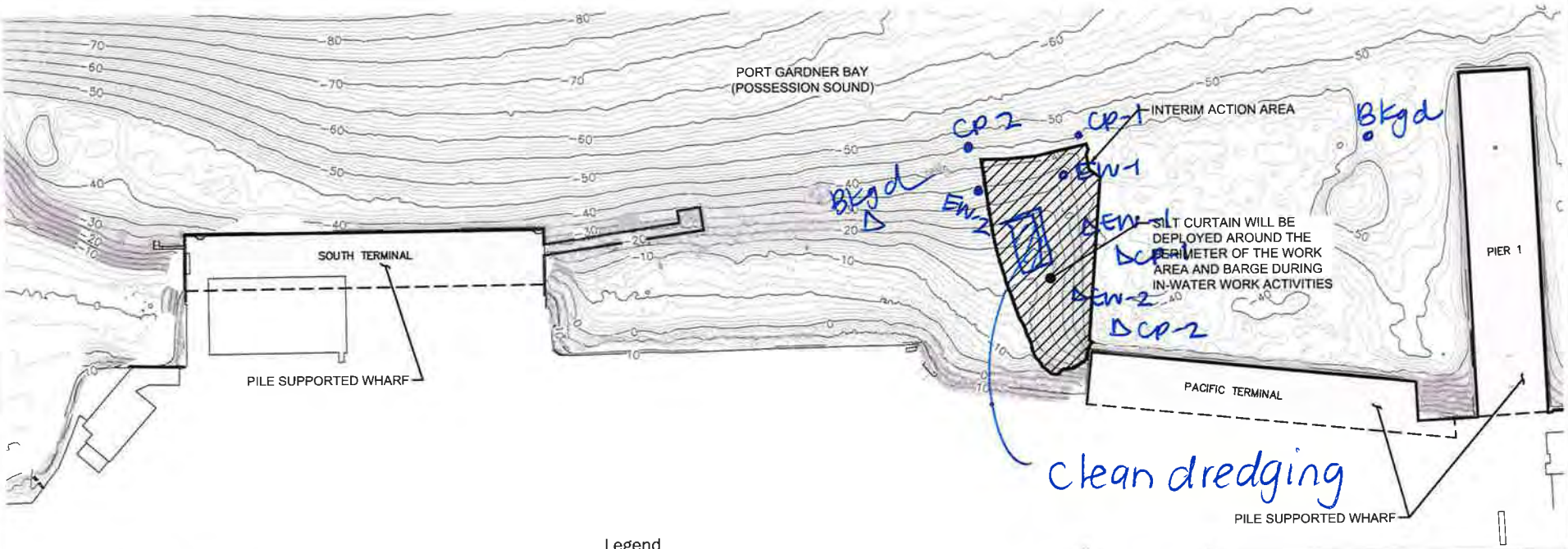


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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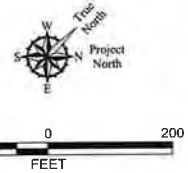
Legend

—30—	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 Fig_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date[2]	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[3]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[4]			Dissolved Oxygen[4] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
11/1/2016	Tier II/Event 1	Dredging	Background	600	10:50	50	1.59	0.21	0	23.91	26.14	25.24	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	11:00	45	0.89	2.42	0	19.87	13.5	14.18		
			Early Warning 2	75	11:10	40	2.21	1.59	0	19.48	13.53	15.21		
			Compliance Point 1	150	10:55	45	1.42	1.66	0.29	21.24	14.93	15.02		
			Compliance Point 2	150	11:00	50	2.89	1.82	0	21.95	21.35	23.17		
	Tier II/Event 2	Dredging	Background	500	14:50	45	1.3	2.56	2.33	24.15	18.68	16.82	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Ship incoming to Pier 1 during monitoring.
			Early Warning 1	75	15:05	40	1.32	1.66	4.91	19.43	12.37	13.1		
			Early Warning 2	75	15:10	45	1.24	1.21	5.3	19.75	13.24	14.08		
			Compliance Point 1	150	14:55	45	3.78	3.15	0.87	14.73	14.54	14.05		
			Compliance Point 2	150	15:15	45	1.01	1.01	5	19.63	14.4	15.83		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Second round of Tier II monitoring for the week was planned to be completed on 11/03/2017; however, contractor's dredge bucket broke late 11/02/2017 and no dredging was performed on 11/03/2017 and 11/04/2017. Therefore only one round of Tier II monitoring was completed for this week.

[3]Approximate location shown on the figure prepared for each monitoring event.

[4]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based no NOAA predictions
Low Tide = 12:45 PM 5.5 Ft MLLW
High Tide = 7:16 AM 10.9 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Raining	Date: 11/1/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 2, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1050	1100	1110		1055	1115	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→	→		Ebb →	→	
Water Column Height (feet)		50	45	40		45	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	1.59	0.89	2.21		1.42	2.89	
	DO (mg/L)	23.91	19.87	19.48		21.24	21.95	
Mid-Water	Turbidity (NTUs)	0.21	2.42	1.59		1.66	1.82	
	DO (mg/L)	26.14	13.50	13.55		14.93	21.35	
Near-Bottom	Turbidity (NTUs)	0	0	0		0.29	0	
	DO (mg/L)	25.24	14.18	15.21		15.02	23.17	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	N/A

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 12:45 PM 5.5 Ft MLLW
High Tide = 7:16 AM 10.9 Ft MLLW

WATER QUALITY MONITORING FORM

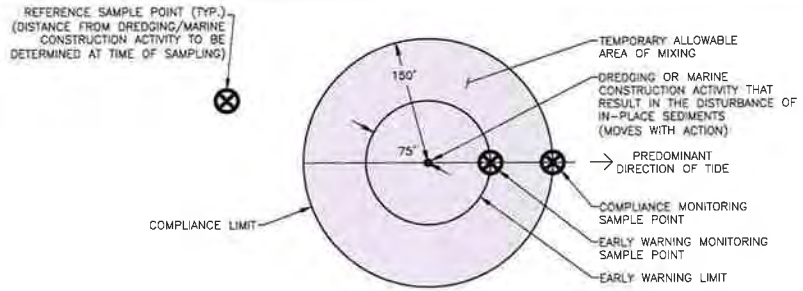
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Rain	Date: 11/1/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		500	75	75		150	150	
Station Monitoring Time		1450	1505	1510		1455	1515	
Tidal Status (Ebb, Slack or Flood)		Flood →				Flood →		
Water Column Height (feet)		45	40	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	1.3	1.32	1.24		3.70	1.01	
	DO (mg/L)	24.15	19.43	19.75		14.73	19.63	
Mid-Water	Turbidity (NTUs)	2.56	1.66	1.21		3.15	1.01	
	DO (mg/L)	18.68	12.37	13.24		14.54	14.4	
Near-Bottom	Turbidity (NTUs)	2.35	4.91	5.30		0.87	5.00	
	DO (mg/L)	16.82	13.10	14.08		14.05	15.83	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	Ship coming into Pier 1
Corrective Actions Required/Implemented:	N/A

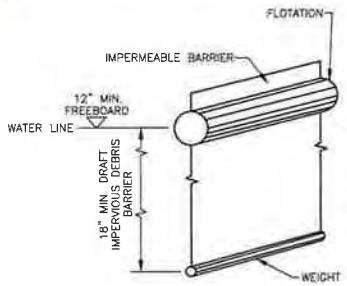
GeoEngineers

11/1/16

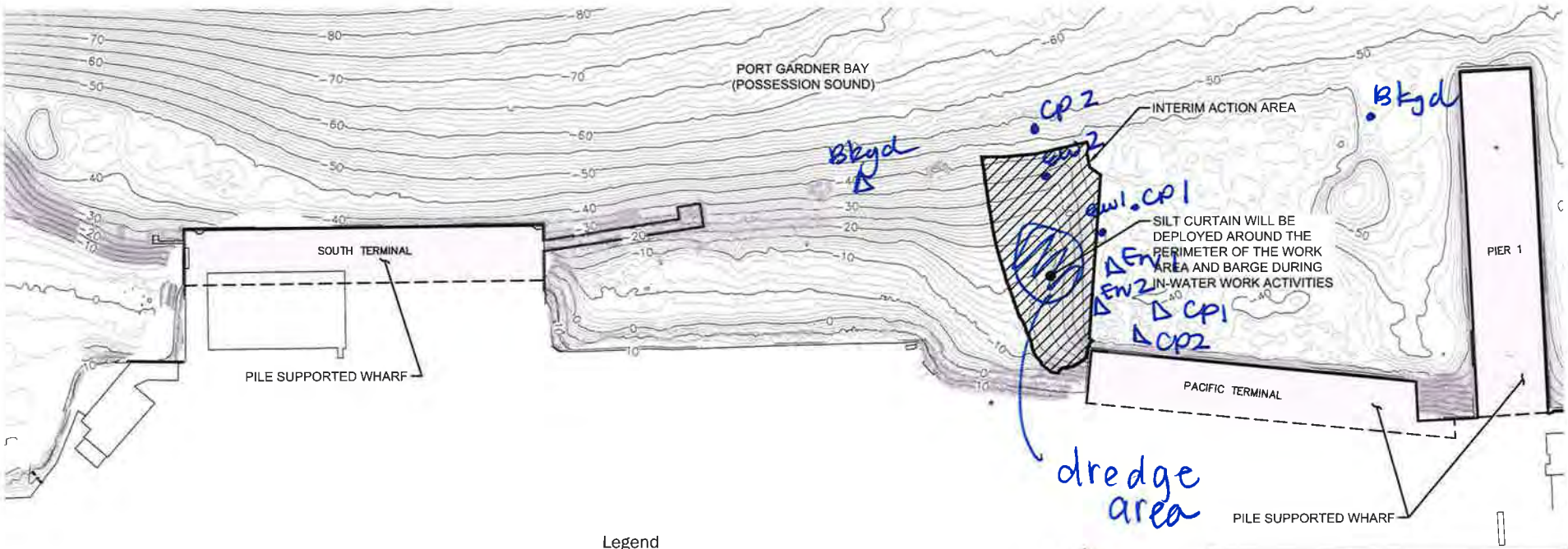


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event1
Δ Event2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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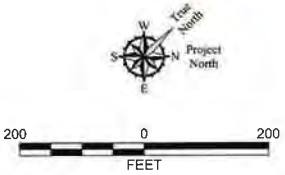
Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's Mill A Bathymetric and Vessel Mounted LIDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water

Legend

—30—	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0\06760201\04\CAD\INTERIM ACTION FIGURES\06760201-04 Fig_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
11/8/2016	Tier II/Event 1	Dredging	Background	600	10:10	48	3.13	9.34	1.19	23.17	19.33	14.46	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	10:20	45	3.88	12.9	4.27	20.13	15.75	15.43		
			Early Warning 2	75	10:25	45	6.74	1.42	4.37	20.78	14.59	12.25		
			Compliance Point 1	150	10:40	45	3.84	5.47	0	19.43	14.02	12.43		
			Compliance Point 2	150	10:30	50	7.79	2.56	0	19.25	14.39	12.6		
	Tier II/Event 2	Dredging	Background	600	13:00	55	3.88	0.81	0	19.81	21.09	19.04	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	13:15	45	3.77	1.06	0	19.77	23.62	31.38		
			Early Warning 2	75	13:20	40	5.75	1.87	0	19.95	14.53	14.62		
			Compliance Point 1	150	13:10	45	0.94	2.95	0	20.05	16.25	14.96		
			Compliance Point 2	150	13:30	50	4.16	1.65	0	9.19	13.98	13.6		
11/10/2016	Tier II/Event 1	Dredging	Background	600	11:30	45	4.49	0.36	0	15.68	12.18	7.62	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	11:45	45	1.4	0	0	10.87	8.37	6.65		
			Early Warning 2	75	11:50	45	1.09	0	2.68	10.9	8.57	6.66		
			Compliance Point 1	150	11:35	45	2.67	0	0	10.96	8.22	6.77		
			Compliance Point 2	150	11:55	45	0.54	0	0	11.69	9.52	9.6		
	Tier II/Event 2	Dredging	Background	600	14:50	50	2.72	0	0	1.22	8.68	6.72	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	15:00	45	0.54	0	0	7.9	7.9	6.5		
			Early Warning 2	75	15:10	40	0	0	0	10.73	2.89	6.58		
			Compliance Point 1	150	14:55	45	3.41	0	0	10.95	8.1	6.63		
			Compliance Point 2	150	15:15	50	3	0	0	10.73	7.69	7.08		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"–"= not measured

Tide Levels based no NOAA predictions
Low Tide = 06:10 PM 5.1 Ft MLLW
High Tide = 11:44 AM 10.7 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 11/8/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1010	1020	1025		1040	1030	
Tidal Status (Ebb, Slack or Flood)		Slack →	→			Slack →		
Water Column Height (feet)		48	45	45		45	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	3.13	3.88	6.74		3.84	7.79	
	DO (mg/L)	23.17	20.13	20.78		19.43	19.25	
Mid-Water	Turbidity (NTUs)	9.34	12.9	1.42		5.47	2.56	
	DO (mg/L)	19.33	15.75	14.69		14.02	14.39	
Near-Bottom	Turbidity (NTUs)	1.19	4.27	4.37		0	0	
	DO (mg/L)	14.46	15.43	12.25		12.43	12.60	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	N/A

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Tide Levels based no NOAA predictions
Low Tide = 06:10 PM 5.1 Ft MLLW
High Tide = 11:44 AM 10.7 Ft MLLW

WATER QUALITY MONITORING FORM

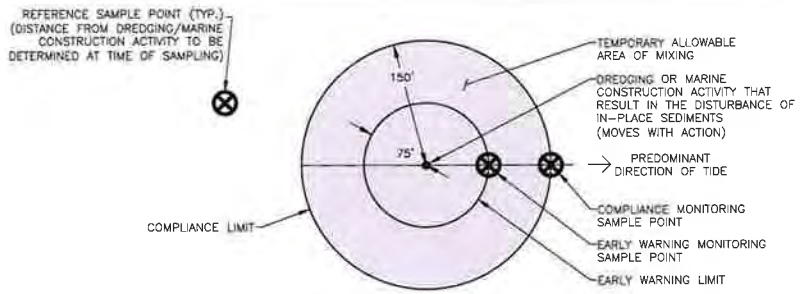
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 11/8/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1300	1315	1320		1310	1330	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→	→		Ebb →	→	
Water Column Height (feet)		55	45	40		45	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	3.88	3.77	5.75		0.94	4.16	
	DO (mg/L)	19.81	19.77	19.95		20.05	9.19	
Mid-Water	Turbidity (NTUs)	0.81	1.06	1.87		2.95	1.65	
	DO (mg/L)	21.09	23.62	14.53		16.25	13.98	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	19.04	31.38	14.62		14.96	13.6	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	N/A

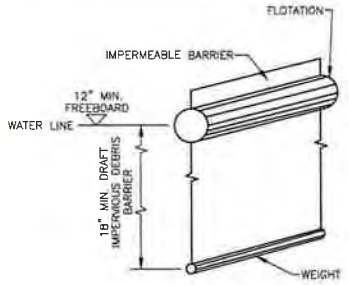
GeoEngineers

11/8/16

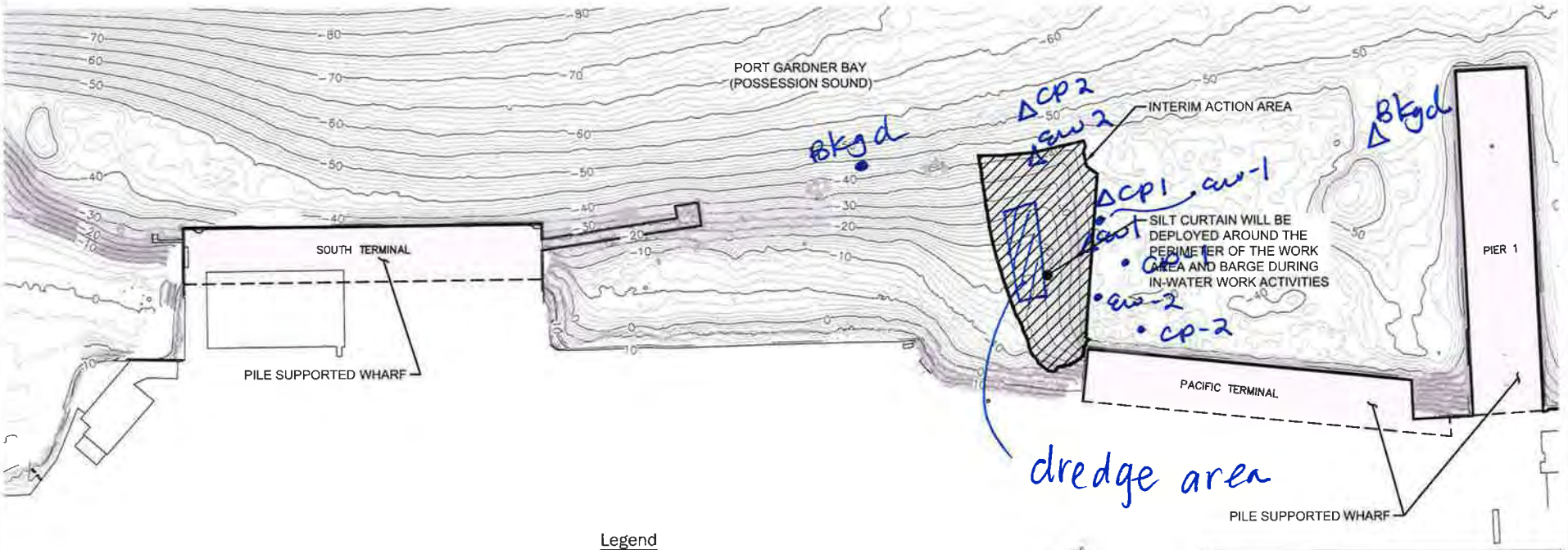


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• event 1
Δ event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:
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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

—30—	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

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Tide Levels based no NOAA predictions
Low Tide = 06:31 PM 3.1 Ft MLLW
High Tide = 1:08 PM 11.1 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: mostly sunny	Date: 11/10/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1130	1145	1150		1135	1155	
Tidal Status (Ebb, Slack or Flood)		Flood →	→			Flood →	→	
Water Column Height (feet)		45	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	4.49	1.40	1.09		2.67	0.54	
	DO (mg/L)	15.68	10.87	10.90		10.96	11.69	
Mid-Water	Turbidity (NTUs)	0.36	0	0		0	0	
	DO (mg/L)	12.18	8.37	8.57		8.22	9.52	
Near-Bottom	Turbidity (NTUs)	0	0	2.68		0	0	
	DO (mg/L)	7.62	6.65	6.66		6.77	9.60	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	ND
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	N/A

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 06:31 PM 3.1 Ft MLLW
High Tide = 1:08 PM 11.1 Ft MLLW

WATER QUALITY MONITORING FORM

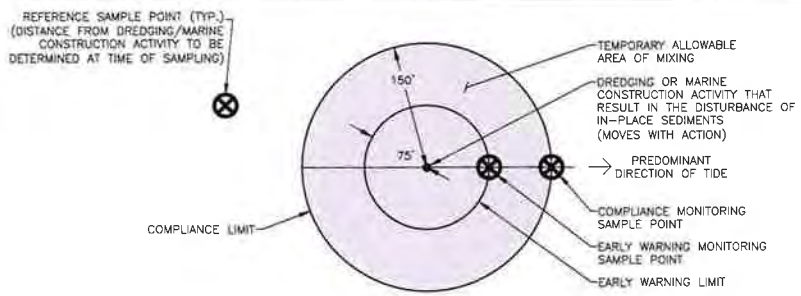
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: mostly cloudy	Date: 11/10/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1450	1500	1510		1455	1515	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→	→		Ebb →	→	
Water Column Height (feet)		50	45	40		45	50	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	2.72	0.54	0		3.41	3	
	DO (mg/L)	1.22	7.90	10.73		10.95	10.73	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	8.68	7.90	2.89		8.16	7.69	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	6.72	6.50	6.58		6.63	7.08	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	–
Corrective Actions Required/Implemented:	N/A

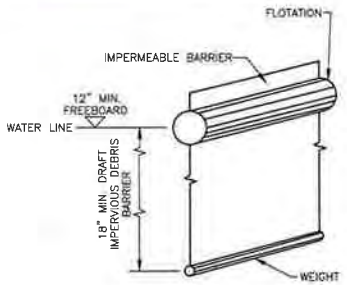
GeoEngineers

11/10/16

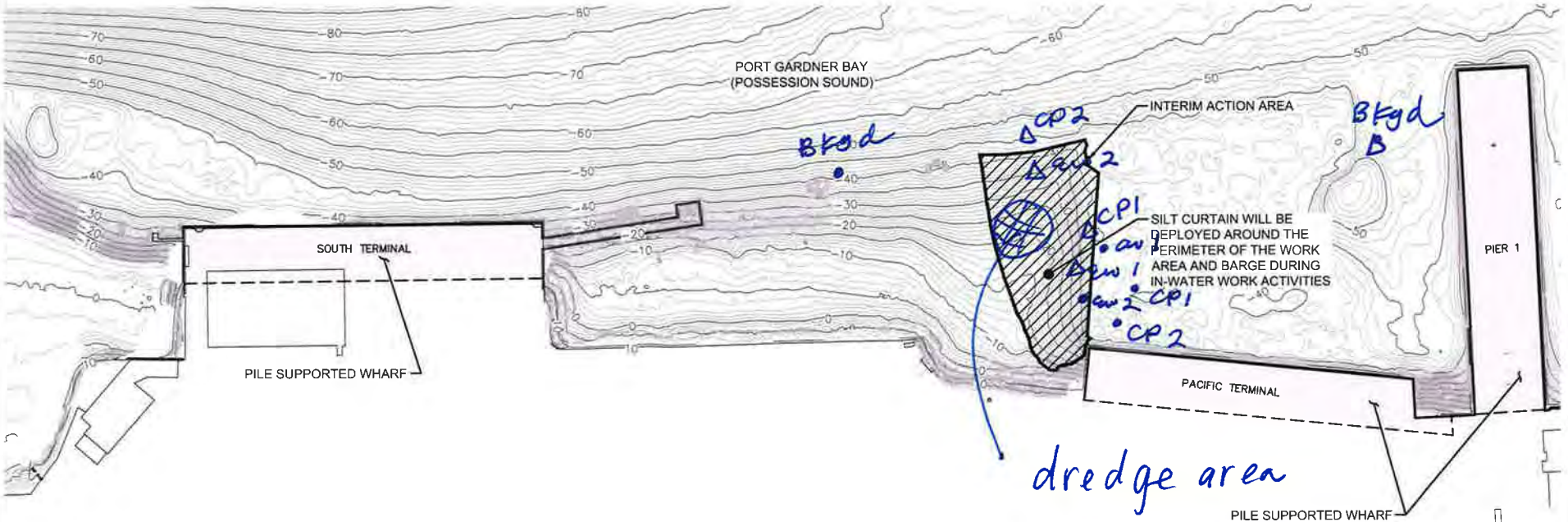


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

----30----	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN.DWG\TAB:I TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
11/16/2017	Tier II/Event 1	Dredging	Background	600	9:55	50	0.53	0	0	10	8.63	6.86	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	10:10	40	2.69	0	0	6.62	7.33	7.46		
			Early Warning 2	75	10:15	45	2.72	0	0	7.88	8.45	8.41		
			Compliance Point 1	150	10:05	45	0.22	0	0	10.87	7.21	7.42		
			Compliance Point 2	150	10:20	45	1.99	0	0	10.7	7.04	7.49		
	Tier II/Event 2	Dredging	Background	600	13:45	40	2.54	0.17	0	12.28	8.15	7.43	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	13:50	45	0.21	2.12	0	10.85	7.08	6.95		
			Early Warning 2	75	14:10	45	0.82	2.29	4.37	10.16	6.99	7.26		
			Compliance Point 1	150	13:55	45	0.34	0	0	10.79	6.91	7.03		
			Compliance Point 2	150	14:00	45	0	2.01	2.57	10.71	7	6.79		
11/17/2016	Tier II/Event 1	Dredging	Background	600	10:20	50	0.25	0	0	21.68	11.33	9.81	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	10:35	45	0.97	0	0	10.82	7.69	7.69		
			Early Warning 2	75	10:40	45	0	0	0	10.39	7.01	6.68		
			Compliance Point 1	150	10:30	45	0.06	0	0	11.26	8.29	7.54		
			Compliance Point 2	150	10:50	48	0.2	0	0	10.6	6.87	6.91		
	Tier II/Event 2	Dredging	Background	600	14:10	35	0	0	0	12.97	8.81	8.1	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	14:15	40	4.22	1.76	0	10.89	7.85	7.91		
			Early Warning 2	75	14:35	40	0.26	3.99	2.14	10.68	7.16	6.83		
			Compliance Point 1	150	14:20	45	0.89	0.38	0	10.76	7.45	7.01		
			Compliance Point 2	150	14:30	45	0.66	0	0	10.8	7.73	6.74		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"–"= not measured

Tide Levels based no NOAA predictions
Low Tide = 12:01 PM 6.0 Ft MLLW
High Tide = 05:10 PM 11.2 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: mostly cloudy	Date: 11/16/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		955	1010	1015		1005	1020	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		50	40	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0.53	2.69	2.72		0.22	1.99	
	DO (mg/L)	10	6.62	7.88		10.87	10.7	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	8.63	7.33	8.45		7.21	7.04	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	6.86	7.46	8.41		7.42	7.49	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	ship @ P1N, 2 barges at PT
Corrective Actions Required/Implemented:	—

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 12:01 PM 6.0 Ft MLLW
High Tide = 05:10 PM 11.2 Ft MLLW

WATER QUALITY MONITORING FORM

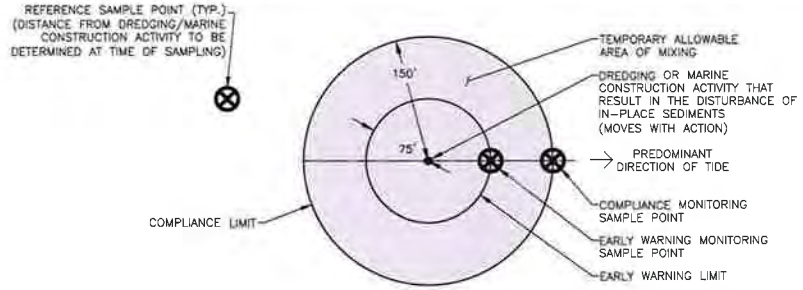
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: mostly cloudy	Date: 11/16/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1345	1350	1410		1355	1400	
Tidal Status (Ebb, Slack or Flood)		Flood →	→	→		Flood →	→	
Water Column Height (feet)		40	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	2.54	0.21	0.82		0.34	0	
	DO (mg/L)	12.28	10.85	10.16		10.79	10.71	
Mid-Water	Turbidity (NTUs)	0.17	2.12	2.29		0	2.01	
	DO (mg/L)	8.15	7.08	6.99		6.91	7	
Near-Bottom	Turbidity (NTUs)	0	0	4.37		0	2.57	
	DO (mg/L)	7.43	6.95	7.26		7.03	6.79	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	1 ship @ PIN, 2 barges @ PT
Corrective Actions Required/Implemented:	—

GeoEngineers

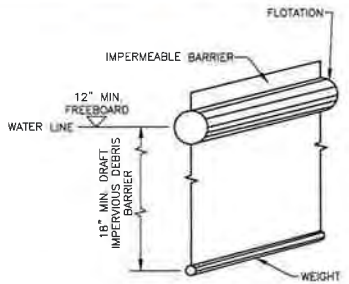
11/16/16



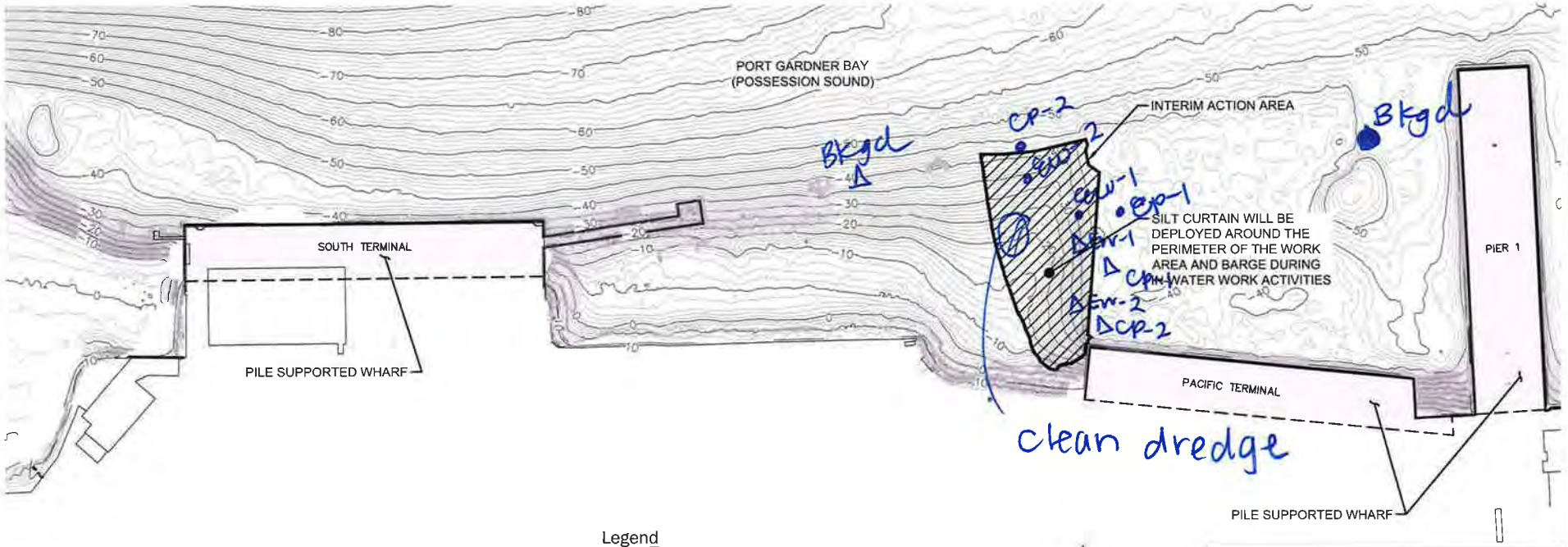
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• event+1

Δ event+2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:
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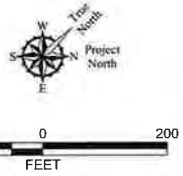
Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 6, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



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FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201041CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 12:57 PM 6.3 Ft MLLW
High Tide = 07:29 AM 12.6 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: mostly cloudy	Date: 11/17/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1020	1035	1040		1030	1050	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→	→		Ebb →	→	
Water Column Height (feet)		50	45	45		45	48	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0.25	0.97	0		0.06	0.2	
	DO (mg/L)	21.68	10.82	10.39		11.26	10.60	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.33	7.69	7.01		8.29	6.87	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.81	7.69	6.68		7.54	6.91	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO

Evidence of Floating or Suspended Materials: NO

Visual Evidence of Discoloration or Turbidity: NO

Other Observations: 1 barge @ PT

Corrective Actions Required/Implemented: —

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 12:57 PM 6.3 Ft MLLW
High Tide = 07:29 AM 12.6 Ft MLLW

WATER QUALITY MONITORING FORM

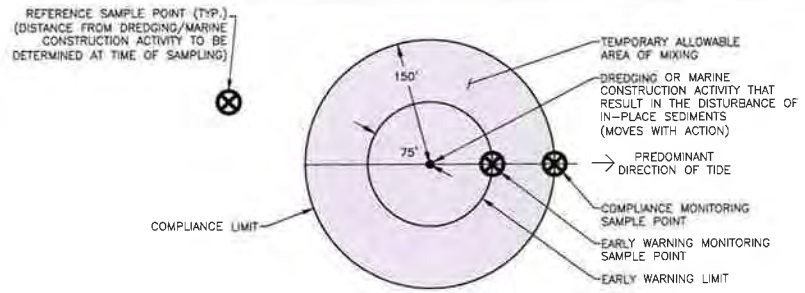
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy - 50°	Date: 11/17/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1410	1415	1435		1420	1430	
Tidal Status (Ebb, Slack or Flood)		Flood →				Flood →		
Water Column Height (feet)		35	40	40		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	4.22	0.26		0.89	0.66	
	DO (mg/L)	12.97	10.89	10.68		10.76	10.80	
Mid-Water	Turbidity (NTUs)	0	1.76	3.99		0.38	0	
	DO (mg/L)	9.81	7.85	7.16		7.45	7.73	
Near-Bottom	Turbidity (NTUs)	0	0	2.14		0	0	
	DO (mg/L)	8.10	7.91	6.83		7.01	6.74	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	1 barge @ PT
Corrective Actions Required/Implemented:	—

GeoEngineers

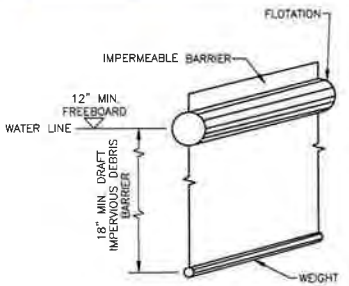
11/17/16



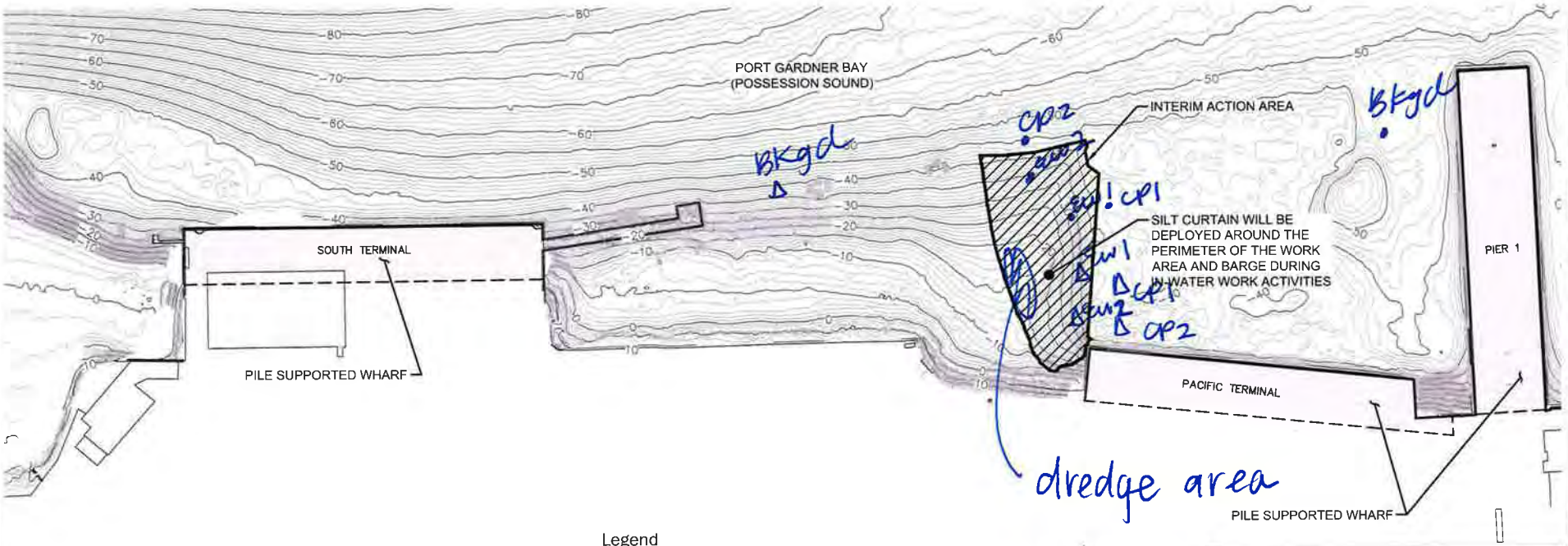
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1

Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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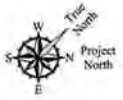
Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's Mill A Bathymetric and Vessel Mounted LIDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water

Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



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Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

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Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
12/7/2016	Tier I/Event 1	Clean Dredging	Background	600	11:45	60	1.74	0	0	13.86	11.32	10.15	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	11:50	50	4.27	0	0	10.05	10.56	9.21		
			Early Warning 2	75	12:10	60	3.52	0.4	0	10.27	10.83	9.81		
			Compliance Point 1	150	11:55	50	1.28	0	0	10.22	10.87	9.56		
			Compliance Point 2	150	12:15	70	4.14	0	0	10.58	10.35	10.11		
	Tier I/Event 2	Clean Dredging	Background	600	15:45	50	0	0	0	14.88	10.08	7.73	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Contractor informed to check and maintain BMPs.
			Early Warning 1	75	16:00	40	7.81	0	0	11.95	9.17	8.27		
			Early Warning 2	75	16:10	35	5.96	2.72	0.55	12.84	9.1	8.8		
			Compliance Point 1	150	16:05	45	1.22	0.45	0	12.26	6.44	8.49		
			Compliance Point 2	150	16:15	40	0.61	0	0	12.9	8.24	8.62		
12/8/2016	Tier I/Event 1	Clean Dredging	Background	600	10:45	40	0	0	0	20.22	15.37	10.46	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	11:00	40	1.95	0	0	12.17	8.7	7.46		
			Early Warning 2	75	11:10	35	0.12	0	0	13.61	9.81	7.82		
			Compliance Point 1	150	10:55	45	0.13	0	0	11.11	10.63	7.92		
			Compliance Point 2	150	11:15	40	0	0	0	12.17	8.46	7.16		
	Tier I/Event 2	Rock Placement - No Monitoring, past sunset	Background	–	–	–	–	–	–	–	–	–	–	Clean dredge completed for the day prior to Event 2, next activity was rock placement, which began after sunset. No monitoring in dark conditions.
			Early Warning 1	–	–	–	–	–	–	–	–	–		
			Early Warning 2	–	–	–	–	–	–	–	–	–		
			Compliance Point 1	–	–	–	–	–	–	–	–	–		
			Compliance Point 2	–	–	–	–	–	–	–	–	–		
12/9/2016	Tier I/Event 1	Dredging	Background	600	11:10	40	0	0	0	12.65	9.76	8.82	Slack/Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	11:25	40	0	0	0	14.25	7.45	5.94		
			Early Warning 2	75	11:30	45	0	0	0	10.89	9.01	6.89		
			Compliance Point 1	150	11:20	40	0	0	0	13.24	9.21	9.39		
			Compliance Point 2	150	11:35	45	0	0	0	10.71	9.26	8.22		
	Tier I/Event 2	Dredging	Background	600	15:15	55	0	0	0	11.38	8.38	8.07	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	15:25	40	1.62	0	0	9.84	8.43	7.49		
			Early Warning 2	75	15:30	50	0	0	0	11.07	9.72	7.54		
			Compliance Point 1	150	15:20	40	3	0	0	10.99	9.5	10.29		
			Compliance Point 2	150	15:35	45	0	0	0	11.43	7.86	6.62		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"–"= not measured

Tide Levels based no NOAA predictions
Low Tide = 05:34 PM 4.3 Ft MLLW
High Tide = 10:48 AM 11.4 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: dredging clean	Recorded By: Abhijit Joshi
Project No.: MT-PT-2016-01	Weather Conditions: Sunny ~ 30°F	Date: 12/7/2016
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1145	1150	1210		1155	1215	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			ebb →	→	
Water Column Height (feet)		60	50	60		50	70	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	1.74	4.27	3.52		1.28	4.14	
	DO (mg/L)	13.86	10.05	10.27		10.22	10.58	
Mid-Water	Turbidity (NTUs)	0	0	0.40		0	0	
	DO (mg/L)	11.32	10.56	10.83		10.87	10.35	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	10.15	9.21	9.81		9.56	10.11	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	NA

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Tide Levels based no NOAA predictions
Low Tide = 05:34 PM 4.3 Ft MLLW
High Tide = 10:48 AM 11.4 Ft MLLW

WATER QUALITY MONITORING FORM

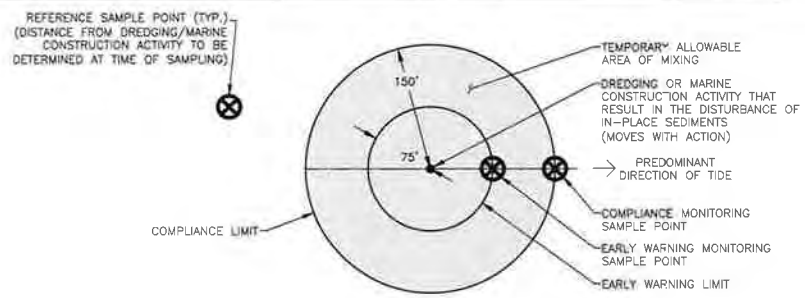
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Clean dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: sunny - 32° snowing	Date: 12/7/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1545	1600	1610		1605	1615	
Tidal Status (Ebb, Slack or Flood)		Ebb →		→		Ebb →		
Water Column Height (feet)		50	40	35		45	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	7.81	5.96		1.22	0.61	
	DO (mg/L)	14.98	11.95	12.84		12.26	12.9	
Mid-Water	Turbidity (NTUs)	0	0	2.72		0.45	0	
	DO (mg/L)	10.08	9.17	9.10		6.44	8.24	
Near-Bottom	Turbidity (NTUs)	0	0	0.55		0	0	
	DO (mg/L)	7.73	8.27	8.8		8.49	8.62	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	Check & Maintain BMPs

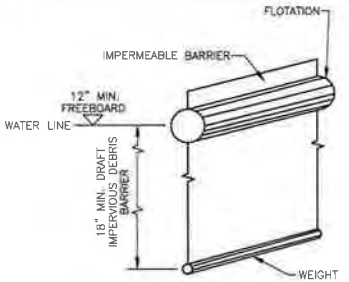
GeoEngineers

12/7/16

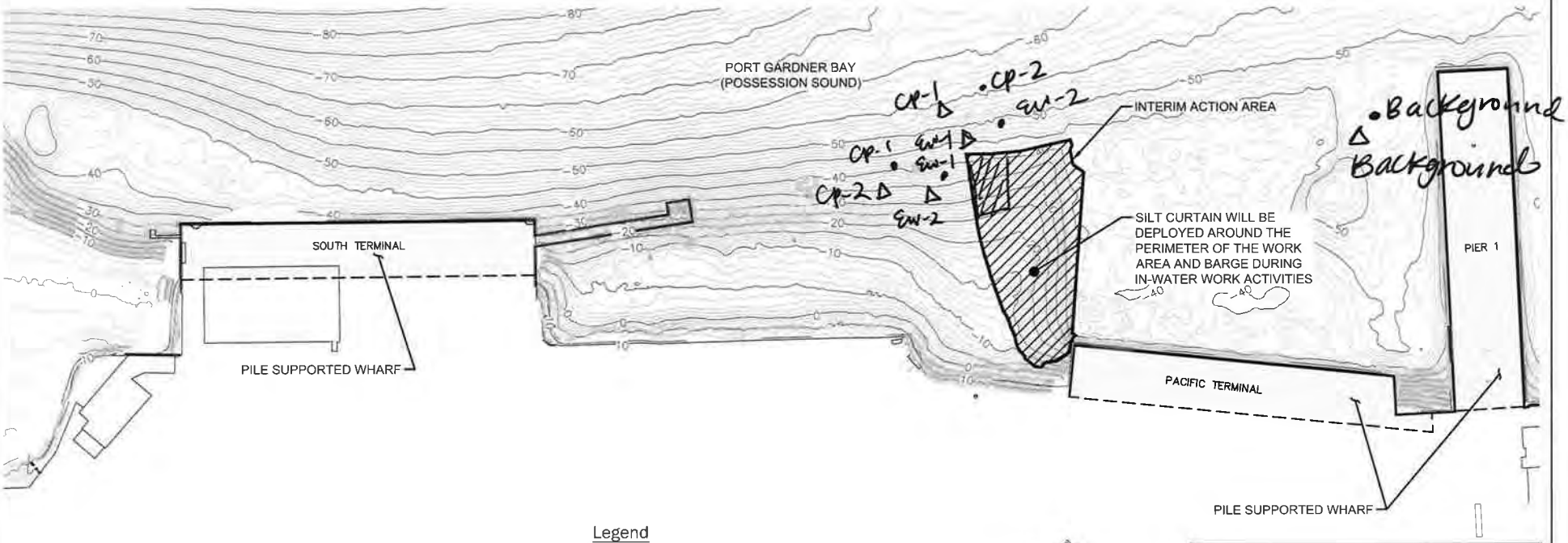


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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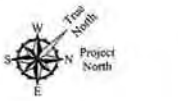
Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0 0' mean lower low water.

Legend

--30--	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



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FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0\06760201\04\CAD\INTERIM ACTION FIGURES\06760201-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 06:26 PM 2.9 Ft MLLW
High Tide = 11:32 AM 11.5 Ft MLLW

WATER QUALITY MONITORING FORM

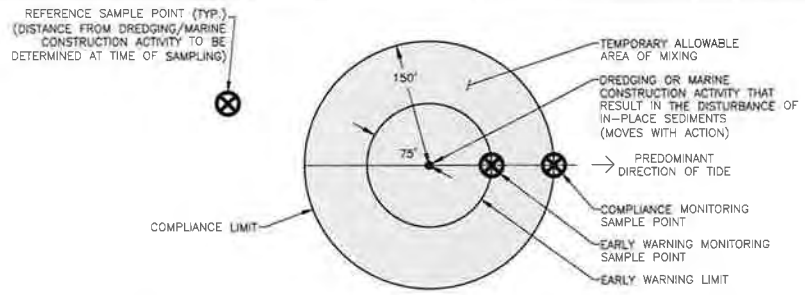
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredging	Recorded By: Elise G.
Project No.: MT-PT-2016-01	Weather Conditions: Sunny, cold - 30°	Date: 12/8/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1045	1100	1110		1055	1115	
Tidal Status (Ebb, Slack or Flood)		Flood →		→		flood →		
Water Column Height (feet)		40	40	35		45	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	1.95	0.12		0.13	0	
	DO (mg/L)	20.22	12.17	13.61		11.11	12.17	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	15.37	8.70	9.81		10.63	8.46	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	10.46	7.46	7.82		7.92	7.16	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	contractor completed dredging before next round completed.
Corrective Actions Required/Implemented:	Rock placement began after dark - no monitoring

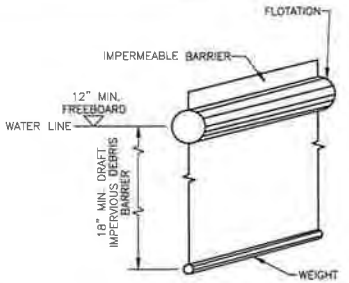
GeoEngineers

12/8/16

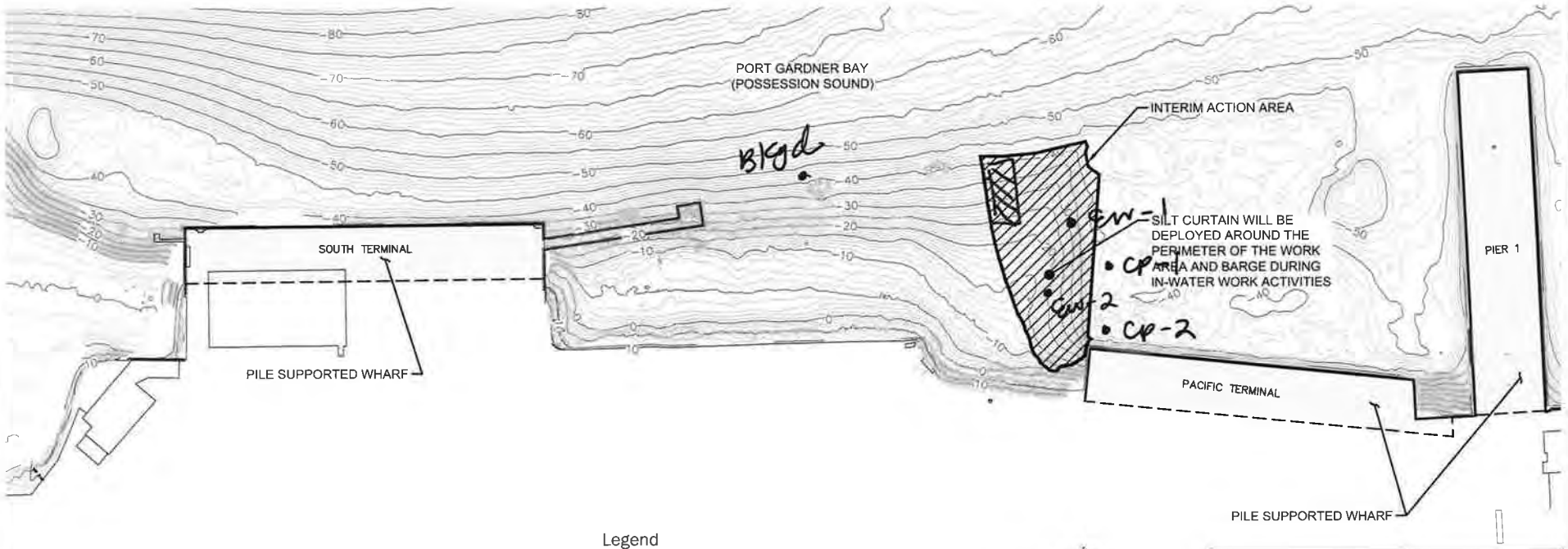


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:
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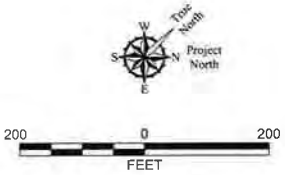
Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

Tide Levels based no NOAA predictions
Low Tide = 07:15 PM 1.4 Ft MLLW
High Tide = 12:15 PM 11.6 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Snowing	Date: 12/9/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1110	1125	1130		1120	1135	
Tidal Status (Ebb, Slack or Flood)		Slack/Flood →	→			Flood/Slack →		
Water Column Height (feet)		40	40	45		40	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	12.65	11.25	10.89		13.24	10.71	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.76	7.45	9.01		9.21	9.26	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	8.82	5.94	6.89		9.39	8.27	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NA
Corrective Actions Required/Implemented:	NA

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 07:15 PM 1.4 Ft MLLW
High Tide = 12:15 PM 11.6 Ft MLLW

WATER QUALITY MONITORING FORM

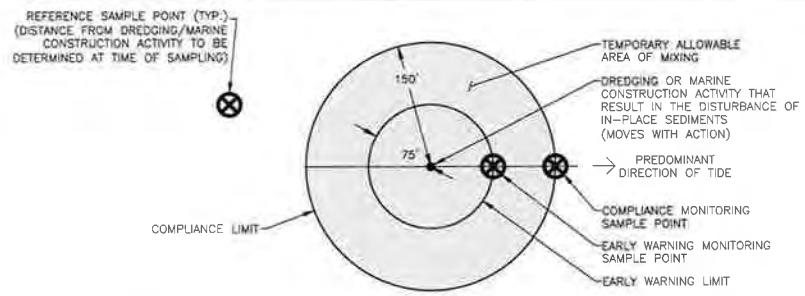
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: snowing	Date: 12/9/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1515	1525	1530		1520	1535	
Tidal Status (Ebb, Slack or Flood)		Ebb →		→		Ebb →	→	
Water Column Height (feet)		55	40	50		40	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	1.62	0		3.0	0	
	DO (mg/L)	11.38	9.84	11.07		10.99	11.43	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	8.38	8.43	9.72		9.50	7.86	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	8.07	7.49	7.54		10.29	6.62	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	NO
Corrective Actions Required/Implemented:	N/A

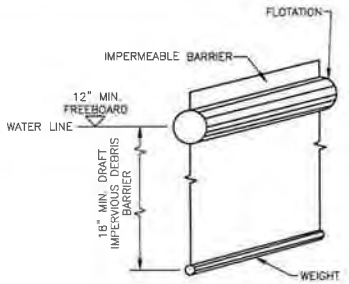
GeoEngineers

12/9/16

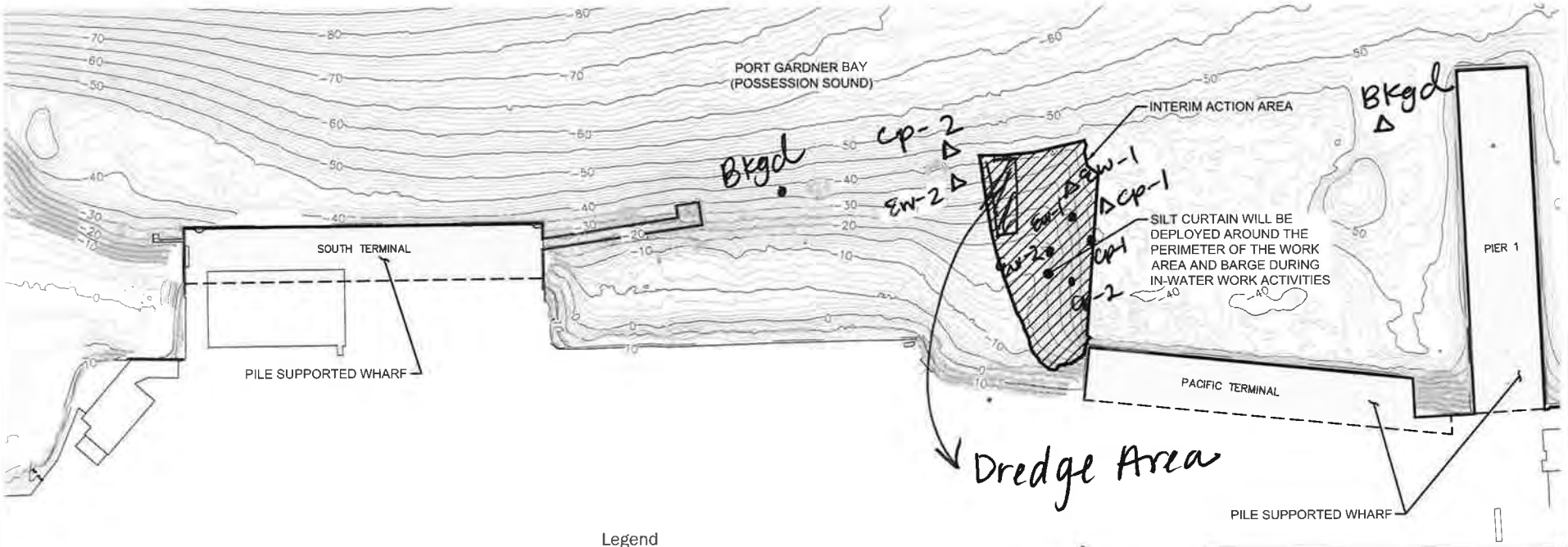


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Data Source:
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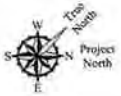
Legend

—30—	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
12/12/2016	Tier I/Event 1	Rock Placement	Background	600	10:00	40	0.81	0	0	14.24	9.66	8.91	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Contractor asked to check and maintain BMPs.
			Early Warning 1	75	10:15	45	0	0	6.84	8.59	7.95	7.63		
			Early Warning 2	75	10:20	45	0	0	7.21	11.2	8.14	8.81		
			Compliance Point 1	150	10:10	45	0	0	4.5	11.79	7.94	7.79		
			Compliance Point 2	150	10:30	45	0	0	0	11.01	8.58	7.53		
	Tier I/Event 2	Clean Dredging	Background	600	16:00	50	0	0	0	20.67	14.74	13.85	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	16:20	35	0	0	0	10.98	11.32	8.55		
			Early Warning 2	75	16:25	35	0.42	0	0	12.15	11.64	9.05		
			Compliance Point 1	150	16:10	45	0	0	0	11.38	9.56	8.9		
			Compliance Point 2	150	16:15	30	0	0	0	4.97	12.69	11.44		
12/13/2016	Tier I/Event 1	Clean Dredging	Background	600	10:10	45	4.24	0.75	0	11.77	13.04	11.77	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	10:25	45	6.45	1.26	0	12.22	10.7	10.42		
			Early Warning 2	75	10:30	45	4.79	0.78	0	12.35	10.88	11.54		
			Compliance Point 1	150	10:20	45	5.47	1.25	0	12.74	10.01	10.33		
			Compliance Point 2	150	10:35	45	4.97	0.69	0	11.88	9.33	8.73		
	Tier I/Event 2	Clean Dredging	Background	600	13:20	20	2.3	0	4.21	21.05	15.38	11.28	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	13:30	40	0.76	0	0	11.95	10.97	8.92		
			Early Warning 2	75	13:35	40	0	0	0	9.56	8.98	8.44		
			Compliance Point 1	150	13:25	40	0	0	0	12.11	11	8.86		
			Compliance Point 2	150	13:40	45	2.57	0	0	11.88	10.61	8.28		
12/14/2016	Tier I/Event 1	Clean Dredging	Background	600	10:00	50	0	0	0	15	13.2	10.36	Ebb/Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	10:15	30	4.63	0	0	11.28	10.36	11.07		
			Early Warning 2	75	10:20	25	0.57	0	0	11.22	10.3	9.67		
			Compliance Point 1	150	10:10	40	0.81	0	0	11.42	10.61	9.79		
			Compliance Point 2	150	10:30	35	2.09	0	0	10.52	10.39	9.73		
	Tier I/Event 2	Rock Placement	Background	600	16:00	50	0	0	0	-	-	-	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	16:15	30	0	0	0	13.35	10.61	10.09		
			Early Warning 2	75	16:20	30	0.74	0	0	23.78	17.62	13.58		
			Compliance Point 1	150	16:10	35	1.34	0	0	23.56	15.9	11.85		
			Compliance Point 2	150	16:25	30	1.73	0.12	0	9.69	10.32	9.85		

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
12/15/2016	Tier I/Event 1	Rock Placement	Background	600	9:40	50	0.44	0	0	14.34	11.4	9.96	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	9:55	40	0.48	0	0	11.32	11.07	11.03		
			Early Warning 2	75	10:00	30	0	0	0	11.24	10.39	8.39		
			Compliance Point 1	150	9:50	45	0	0	0	11.71	9.1	9.08		
			Compliance Point 2	150	10:05	45	1.75	0	0	11.43	9.78	8.19		
	Tier I/Event 2	Rock Placement	Background	600	13:00	40	3.82	0	0	13	13.68	14.76	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	13:15	40	0	0	0	12.1	12.16	13.22		
			Early Warning 2	75	13:20	40	0.84	0	0	12.7	10.93	9.96		
			Compliance Point 1	150	13:10	45	2.09	0	0	11.7	9.71	9.5		
			Compliance Point 2	150	13:25	45	1.21	0	0	10.7	10.08	8.28		
12/16/2016	Tier I/Event 1	Rock Placement	Background	600	9:30	50	0	0	0	13.44	9.42	7.53	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	9:45	325	0	0	0	10.51	11.2	8.41		
			Early Warning 2	75	9:50	35	0	0	0.46	11.83	10.88	8.66		
			Compliance Point 1	150	9:40	40	0	0	0	12.18	9.98	8.01		
			Compliance Point 2	150	9:55	35	3.68	0.05	0	11.18	9.32	8.77		
	Tier I/Event 2	Rock Placement	Background	600	13:00	35	4.71	4.3	0	11.21	10.78	12.32	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	13:10	30	2.18	4.8	2.9	12.82	11.8	12.66		
			Early Warning 2	75	13:20	40	1.95	1.23	0	11.59	9.9	9.71		
			Compliance Point 1	150	13:05	30	3.91	2.39	2.43	12.13	11.44	11.5		
			Compliance Point 2	150	13:25	45	4.02	0.94	1.64	9.29	10.36	10.46		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based no NOAA predictions
Low Tide = 09:04 AM 6.3 Ft MLLW
High Tide = 2:29 PM 12.0 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Rainy	Date: 12/12/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1000	1015	1020		1010	1030	
Tidal Status (Ebb, Slack or Flood)		Flood →		→		Flood	→	
Water Column Height (feet)		40	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0.81	0	0		0	0	
	DO (mg/L)	14.24	8.59	11.2		11.79	11.01	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.66	7.95	8.14		7.94	8.58	
Near-Bottom	Turbidity (NTUs)	0	6.84	7.21		4.5	0	
	DO (mg/L)	8.91	7.63	8.81		7.79	7.53	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	check & maintain BMPs

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 09:04 AM 6.3 Ft MLLW
High Tide = 2:29 PM 12.0 Ft MLLW

WATER QUALITY MONITORING FORM

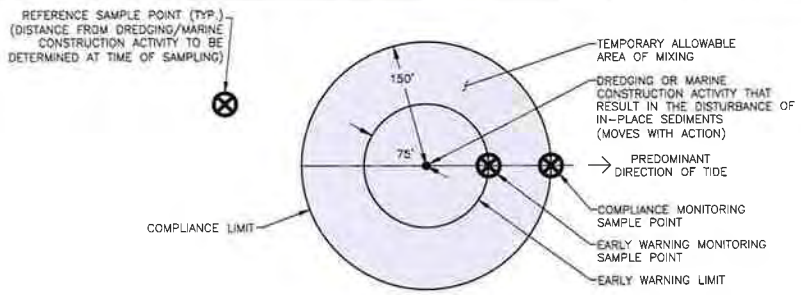
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy - windy	Date: 12/12/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1600	1620	1625		1610	1615	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		50	35	35		45	30	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0.42		0	0	
	DO (mg/L)	20.67	10.98	12.15		11.38	4.97	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	14.74	11.32	11.64		9.56	12.69	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	13.85	8.55	9.05		8.90	11.44	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

GeoEngineers

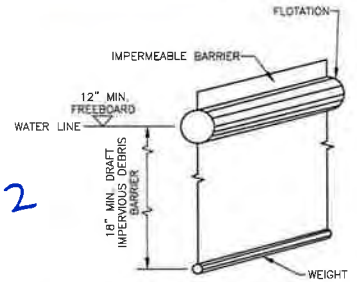
12/12/16



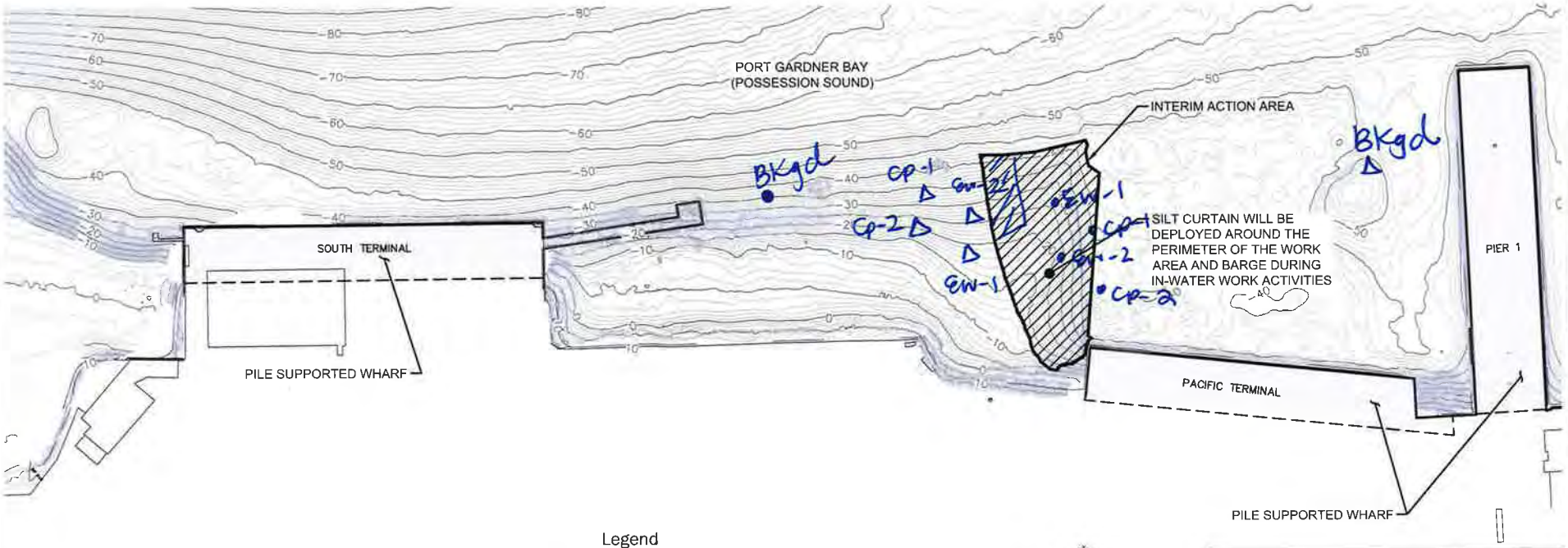
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

○ Event 1

△ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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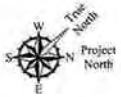
Legend

——30——	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



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FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201\04\CAD\INTERIM ACTION FIGURES\06760201-04 FIG. 02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 10:01 AM 6.6 Ft MLLW
High Tide = 3:15 PM 11.9 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elese
Project No.: MT-PT-2016-01	Weather Conditions: Sunny, cold	Date: 12/13/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1010	1025	1030		1020	1035	
Tidal Status (Ebb, Slack or Flood)		slack →	→	→		slack →	→	
Water Column Height (feet)		45	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	4.24	6.45	4.79		5.47	4.97	
	DO (mg/L)	11.77	12.22	12.35		12.74	11.88	
Mid-Water	Turbidity (NTUs)	0.75	1.26	0.78		1.25	0.69	
	DO (mg/L)	13.04	10.70	10.88		10.01	9.33	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.77	10.42	11.54		10.33	8.73	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	1 barge @ PT
Corrective Actions Required/Implemented:	—

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 10:01 AM 6.6 Ft MLLW
High Tide = 3:15 PM 11.9 Ft MLLW

WATER QUALITY MONITORING FORM

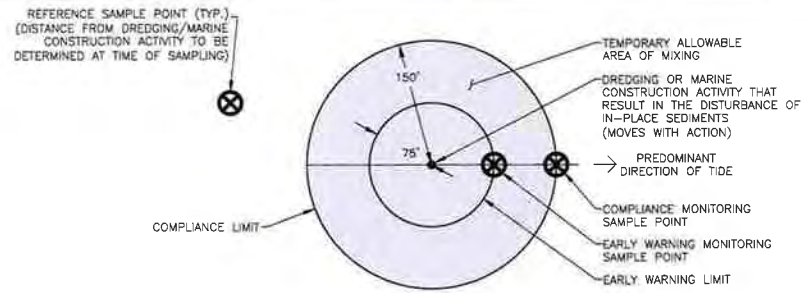
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: windy, cold	Date: 12/13/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		1,00	75	75		150	150	
Station Monitoring Time		1320	1330	1335		1325	1340	
Tidal Status (Ebb, Slack or Flood)		Flood →	→			Flood →	→	
Water Column Height (feet)		20	40	40		40	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	2.3	0.76	0		0	2.57	
	DO (mg/L)	21.65	11.95	9.56		12.11	11.88	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	15.38	10.97	8.98		11.0	10.61	
Near-Bottom	Turbidity (NTUs)	4.21	0	0		0	0	
	DO (mg/L)	11.28	8.92	8.44		8.86	8.28	

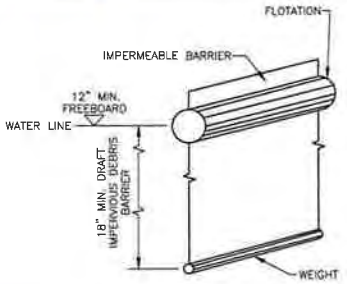
Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	ND
Evidence of Floating or Suspended Materials:	ND
Visual Evidence of Discoloration or Turbidity:	ND
Other Observations:	—
Corrective Actions Required/Implemented:	—

GeoEngineers

12/13/16

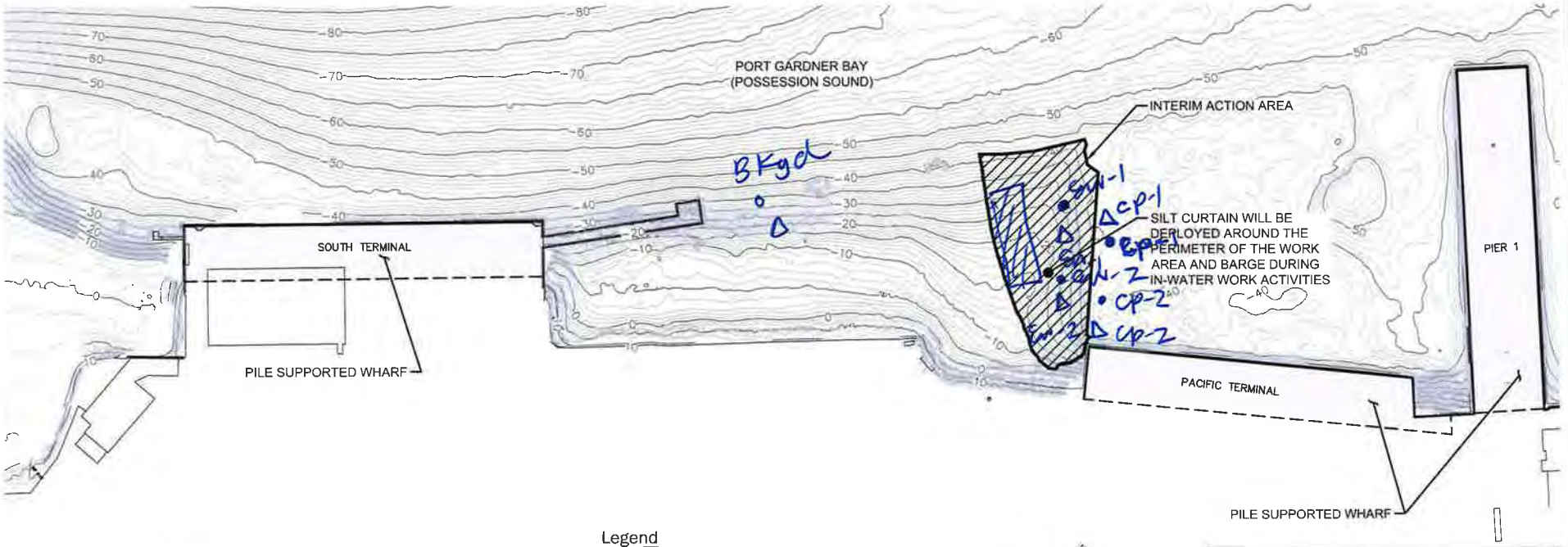


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)

○ Event 1
△ Event 2



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Data Source:
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Legend

—30—	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

Tide Levels based no NOAA predictions
Low Tide = 10:55 AM 6.6 Ft MLLW
High Tide = 4:02 PM 11.7 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cold, sunny 30°	Date: 12/14/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1000	1015	1020		1010	1030	
Tidal Status (Ebb, Slack or Flood)		Ebb/Slack →	→			Ebb →	→	
Water Column Height (feet)		50	30	25		40	35	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	4.63	0.57		0.91	2.09	
	DO (mg/L)	15.00	11.28	11.22		11.42	10.52	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	13.2	10.36	10.30		10.61	10.39	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	10.36	11.07	9.67		9.79	9.73	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	1 barge @ PT
Corrective Actions Required/Implemented:	—

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 10:55 AM 6.6 Ft MLLW
High Tide = 4:02 PM 11.7 Ft MLLW

WATER QUALITY MONITORING FORM

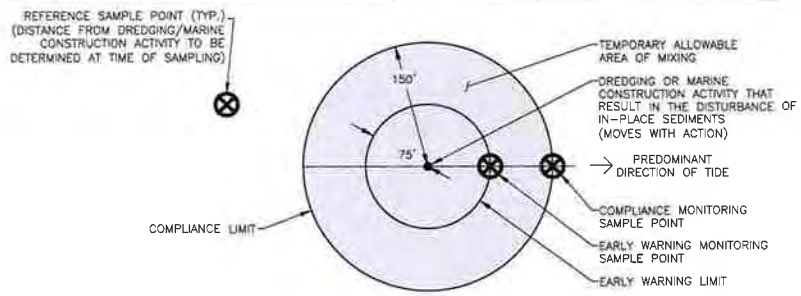
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: mndy, cold	Date: 12/14/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1600	1615	1620		1610	1625	
Tidal Status (Ebb, Slack or Flood)		Slack →	→	→		Slack →	→	
Water Column Height (feet)		50	30	30		35	30	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0.74		1.34	1.73	
	DO (mg/L)	—	13.35	23.78		23.56	9.69	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0.12	
	DO (mg/L)	—	10.61	17.62		15.90	10.32	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	—	10.09	13.58		11.85	9.85	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

GeoEngineers

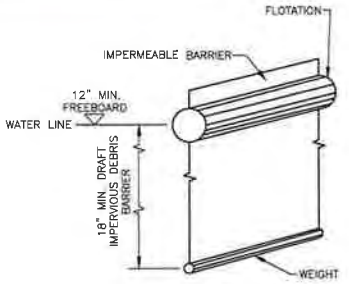
12/14/16



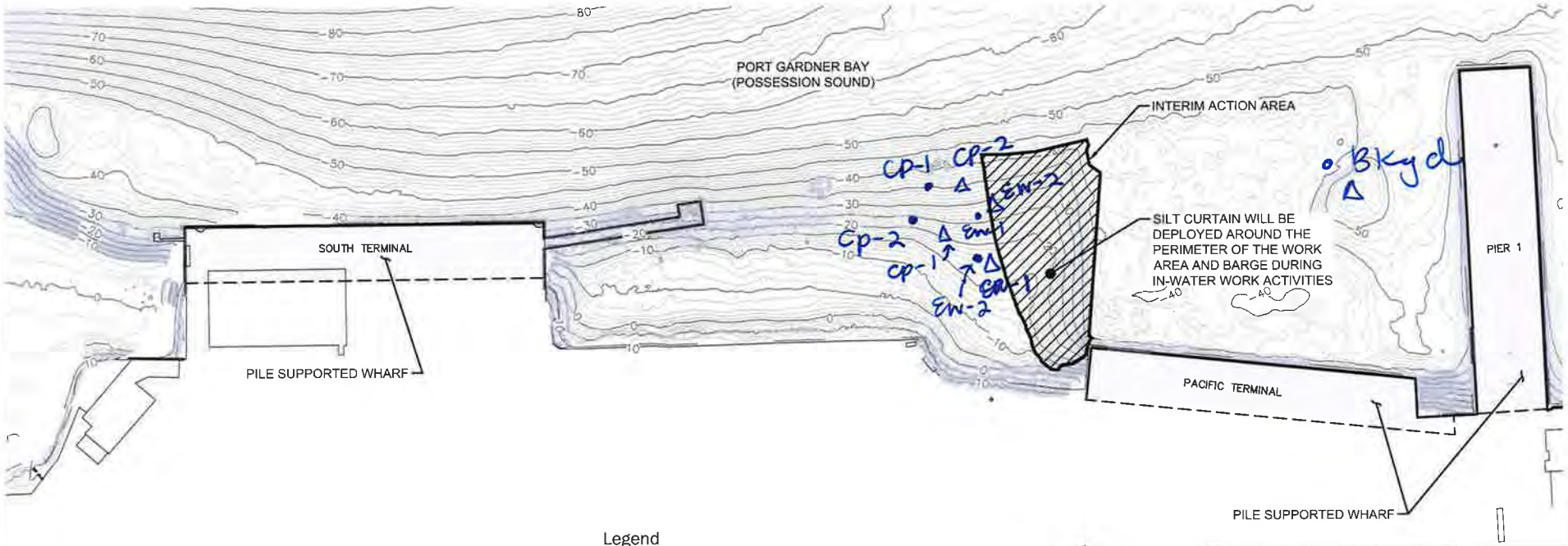
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1

Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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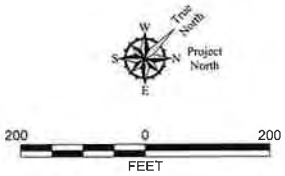
Legend

——30——	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

P:\0\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 11:49 AM 6.6 Ft MLLW
High Tide = 4:49 PM 11.3 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: ROCK Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cold, 32°	Date: 12/15/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		0940	0955	1000		0950	1005	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		50	40	30		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0.44	0.48	0		0	1.75	
	DO (mg/L)	14.34	11.32	11.24		11.71	11.43	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.40	11.07	10.39		9.10	9.78	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.96	11.03	8.39		9.08	8.19	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 11:49 AM 6.6 Ft MLLW
High Tide = 4:49 PM 11.3 Ft MLLW

WATER QUALITY MONITORING FORM

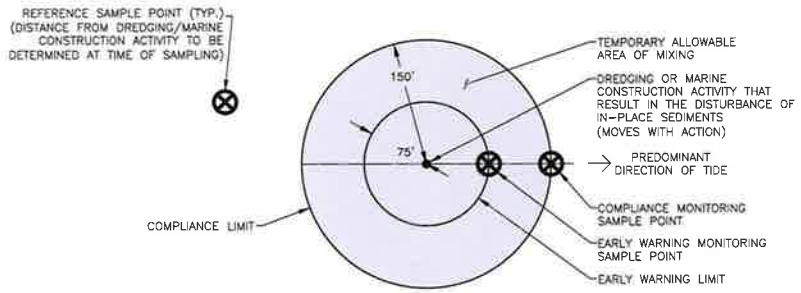
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy, cold 32°	Date: 12/15/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1300	1315	1320		1310	1325	
Tidal Status (Ebb, Slack or Flood)		Flood →		→		Flood →		
Water Column Height (feet)		40	40	40		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	3.82	0	0.84		2.09	1.21	
	DO (mg/L)	13.6	12.16	12.70		11.70	10.70	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	13.68	12.16	10.93		9.71	10.08	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	14.76	13.22	9.96		9.5	8.28	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

GeoEngineers

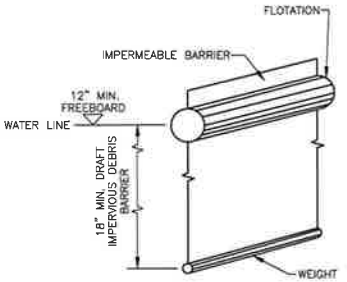
12/15/16



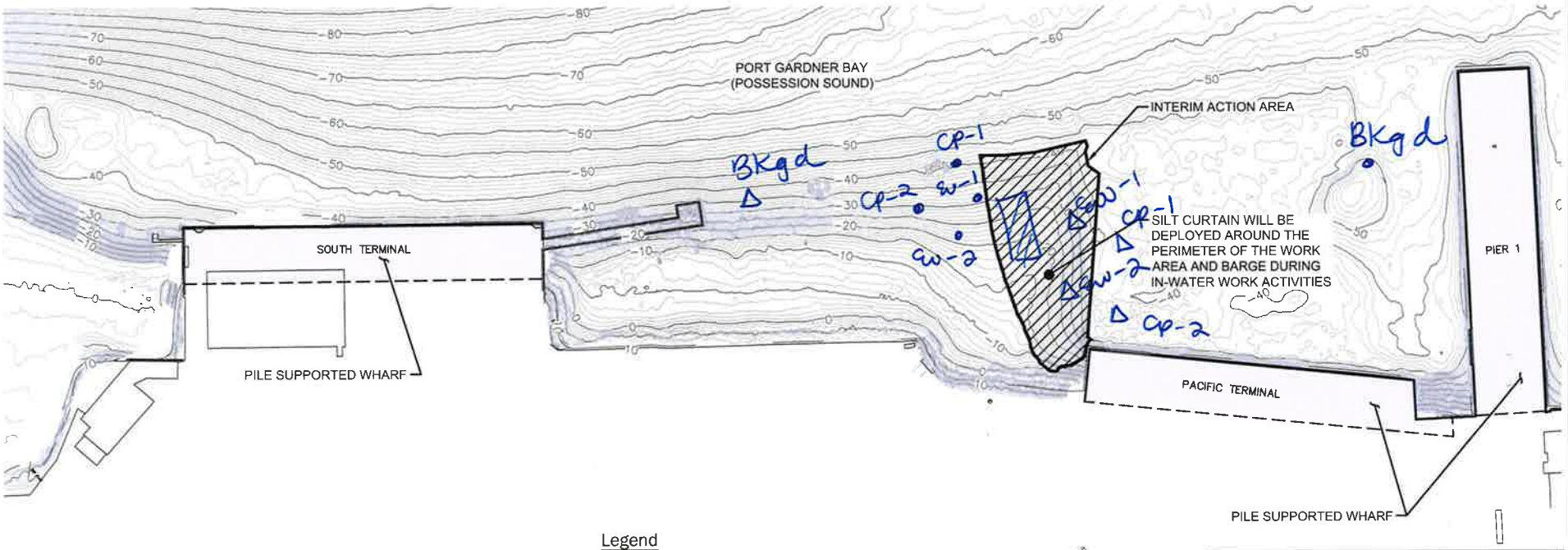
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

∘ Event 1

Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

—30—	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 12:44 PM 6.5 Ft MLLW
High Tide = 5:39 PM 10.6 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Cold, sunny 25°	Date: 12/16/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		0930	0945	0950		0940	0955	
Tidal Status (Ebb, Slack or Flood)		ebb →	→			ebb →		
Water Column Height (feet)		50	35	35		40	35	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	3.68	
	DO (mg/L)	13.44	10.51	11.83		12.18	11.18	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0.05	
	DO (mg/L)	9.42	11.2	10.88		9.98	9.32	
Near-Bottom	Turbidity (NTUs)	0	0	0.46		0	0	
	DO (mg/L)	7.53	8.41	8.66		8.01	8.77	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 12:44 PM 6.5 Ft MLLW
High Tide = 5:39 PM 10.6 Ft MLLW

WATER QUALITY MONITORING FORM

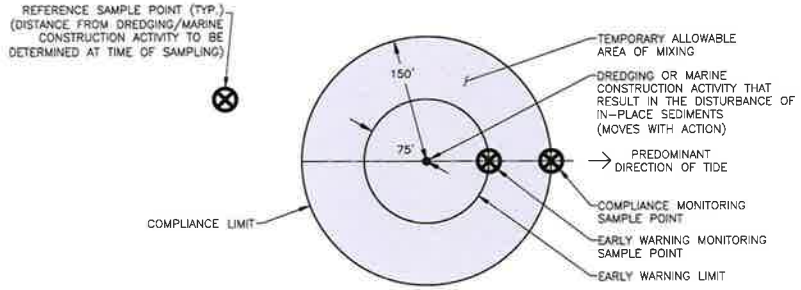
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cold, 34° sunny	Date: 12/16/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 1, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1300	1310	1320		1305	1325	
Tidal Status (Ebb, Slack or Flood)		Slack →		→		Slack →	→	
Water Column Height (feet)		35	30	40		30	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	4.71	2.18	1.95		3.91	4.02	
	DO (mg/L)	11.21	12.82	11.59		12.13	9.29	
Mid-Water	Turbidity (NTUs)	4.3	4.8	1.23		2.39	0.94	
	DO (mg/L)	10.78	11.80	9.90		11.44	10.36	
Near-Bottom	Turbidity (NTUs)	0	2.9	0		2.43	1.64	
	DO (mg/L)	12.32	12.66	9.71		11.50	10.46	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	~2 barges @ PT
Corrective Actions Required/Implemented:	—

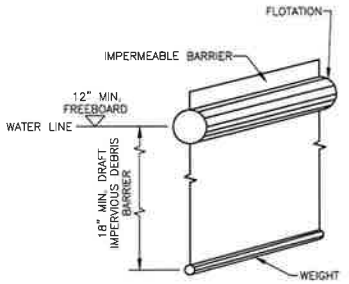
GeoEngineers

12/16/16

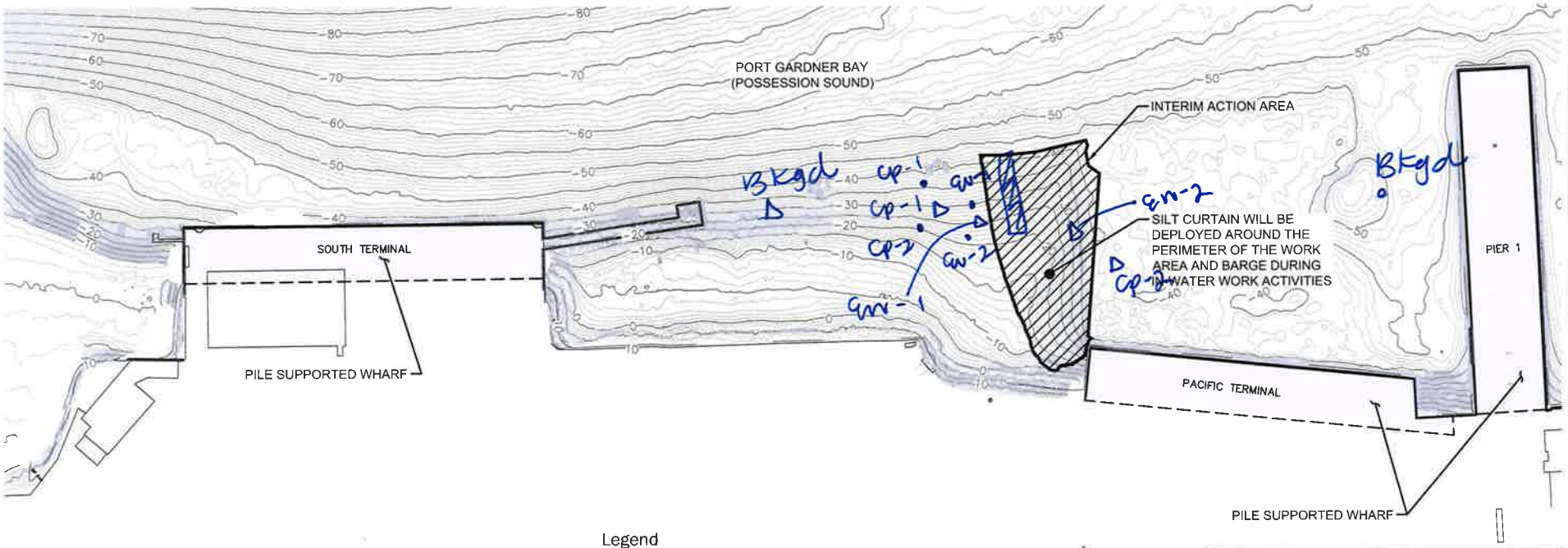


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

P:\01\06760201\04\CAD\INTERIM ACTION FIGURES\06760201-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
12/20/2016	Tier II/Event 1	Clean Dredging	Background	600	10:10	50	4.43	0	0	15.43	11.17	8.1	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	10:25	45	1.87	1.58	0	11.66	9.22	7.96		
			Early Warning 2	75	10:35	30	0	0	0	13.72	9.57	7.2		
			Compliance Point 1	150	10:20	45	1.77	3.29	0	11.55	8.37	8.15		
			Compliance Point 2	150	10:30	35	0	0	0	11.61	7.89	7.93		
	Tier II/Event 2	Clean Dredging	Background	600	14:30	50	0	0	0	23.72	10.8	9.81	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	14:45	40	0	0.16	0	11.34	9.31	7.67		
			Early Warning 2	75	14:50	35	0.12	0	0	11.7	9.32	6.74		
			Compliance Point 1	150	14:40	40	0	0.9	0	12	9.57	7.77		
			Compliance Point 2	150	14:55	35	0	0	0	9.78	9.68	6.98		
12/22/2016	Tier II/Event 1	Rock Placement	Background	600	10:10	40	0	0	0	13.67	10.49	9.77	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	10:15	40	0	0	0	9.91	9.44	8.78		
			Early Warning 2	75	10:20	40	0	0	0	15.25	9.26	8.43		
			Compliance Point 1	150	10:10	45	0	0	0	12.11	9.82	8.93		
			Compliance Point 2	150	10:25	45	0	0	0	12.64	8.48	8.22		
	Tier II/Event 2	Rock Placement	Background	600	13:30	50	0	0	0	11.83	9.58	9.43	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	13:45	40	0	0	0	11.13	9.54	8.11		
			Early Warning 2	75	13:50	30	0	0	0	11.09	8.99	7.96		
			Compliance Point 1	150	13:40	40	0	0	0	11.52	8.54	8.36		
			Compliance Point 2	150	13:55	40	0	0	0	11.03	9.34	7.56		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"–"= not measured

Tide Levels based no NOAA predictions
Low Tide = 10:12 AM 11.6 Ft MLLW
High Tide = 4:50 PM 4.6 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredging	Recorded By: Elese
Project No.: MT-PT-2016-01	Weather Conditions: cloudy 40°	Date: 12/20/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1010	1025	1035		1020	1030	
Tidal Status (Ebb, Slack or Flood)		slack →	→			slack →		
Water Column Height (feet)		50	45	30		45	35	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	4.43	1.97	0		1.77	6	
	DO (mg/L)	15.43	11.66	13.72		11.55	11.61	
Mid-Water	Turbidity (NTUs)	0	1.58	0		3.29	0	
	DO (mg/L)	11.17	9.22	9.57		8.37	7.89	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	8.10	7.96	7.20		8.15	7.93	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO

Evidence of Floating or Suspended Materials: NO

Visual Evidence of Discoloration or Turbidity: NO

Other Observations: water very choppy

Corrective Actions Required/Implemented: —

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 10:12 AM 11.6 Ft MLLW
High Tide = 4:50 PM 4.6 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredging	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: sunny	Date: 12/20/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1430	1445	1450		1440	1455	
Tidal Status (Ebb, Slack or Flood)		Ebb →		→		Ebb →	→	
Water Column Height (feet)		50	40	35		40	35	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	6	0.12		6	0	
	DO (mg/L)	23.72	11.34	11.7		12.0	9.78	
Mid-Water	Turbidity (NTUs)	0	0.16	0		0.9	0	
	DO (mg/L)	10.38	9.31	9.32		9.57	9.68	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.81	7.67	6.74		7.77	6.98	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO

Evidence of Floating or Suspended Materials: NO

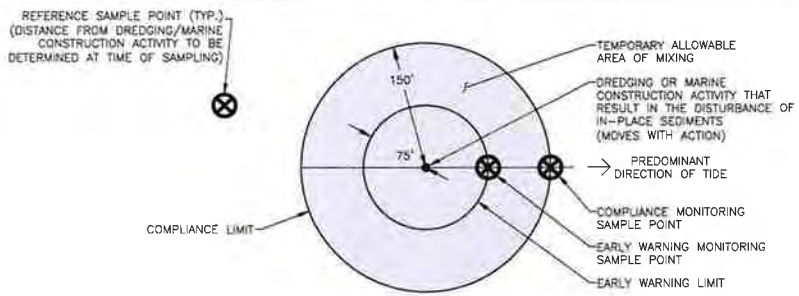
Visual Evidence of Discoloration or Turbidity: NO

Other Observations: —

Corrective Actions Required/Implemented: —

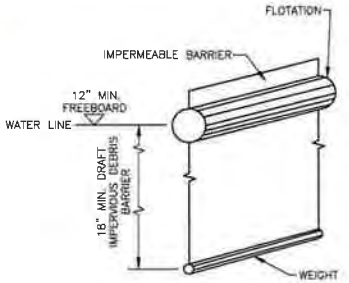
GeoEngineers

12/20/16

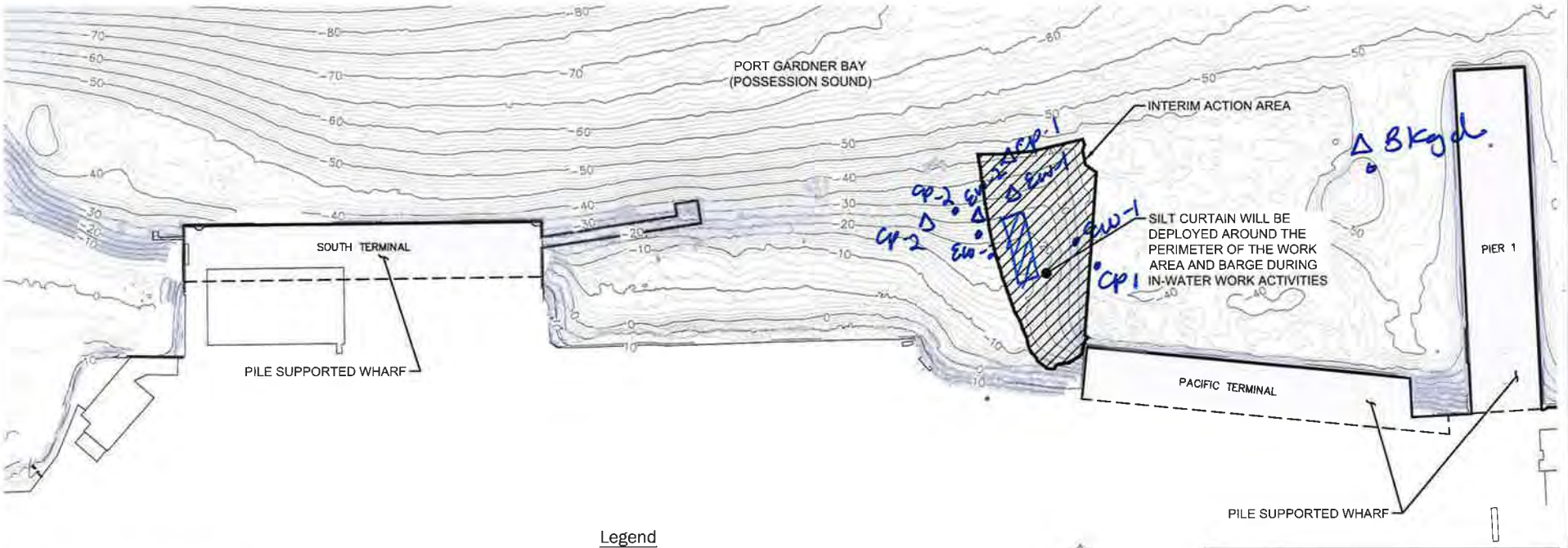


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)

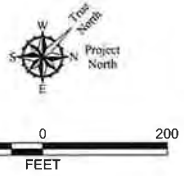


Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc and will serve as the official record of this communication.

Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's, Mill A Bathymetric and Vessel Mounted LIDAR Survey File dated December 6, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0 0' mean lower low water

Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



Site Plan	
Weyerhauser Mill A Former Site Everett, Washington	
GeoEngineers	Figure 2

P:\01\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based no NOAA predictions
Low Tide = 11:34 AM 11.1 Ft MLLW
High Tide = 6:42 PM 2.9 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elese
Project No.: MT-PT-2016-01	Weather Conditions: windy/cloudy	Date: 12/22/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1000	1015	1020		1010	1025	
Tidal Status (Ebb, Slack or Flood)		Flood →	→	→		Flood →		
Water Column Height (feet)		40	40	40		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	13.67	9.91	15.25		12.11	12.64	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	10.49	9.44	9.26		9.82	8.48	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.77	8.78	8.43		8.93	8.22	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO

Evidence of Floating or Suspended Materials: NO

Visual Evidence of Discoloration or Turbidity: NO

Other Observations: 1 Ship @ PT

Corrective Actions Required/Implemented: —

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 11:34 AM 11.1 Ft MLLW
High Tide = 6:42 PM 2.9 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: 12/22/16
Project No.: MT-PT-2016-01	Weather Conditions: cloudy	Date: Eleise
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1300	1345	1350		1340	1355	
Tidal Status (Ebb, Slack or Flood)		Ebb →				Ebb →		
Water Column Height (feet)		50	40	30		40	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.83	11.13	11.09		11.52	11.03	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.58	9.54	8.99		8.54	9.34	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.43	8.11	7.96		8.36	7.56	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO

Evidence of Floating or Suspended Materials: NO

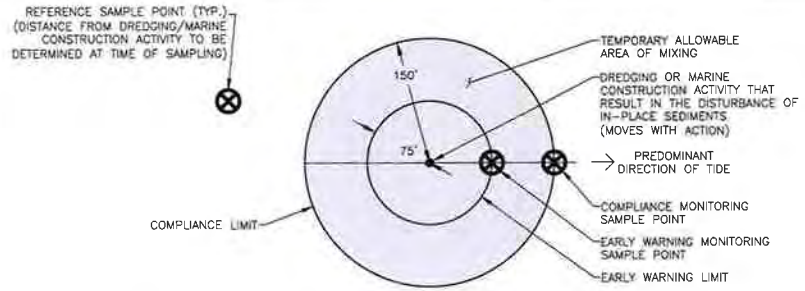
Visual Evidence of Discoloration or Turbidity: NO

Other Observations: 1 Ship @ PT

Corrective Actions Required/Implemented: —

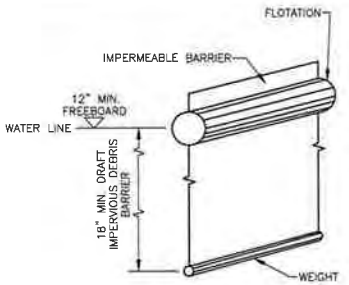
GeoEngineers

12/22/16

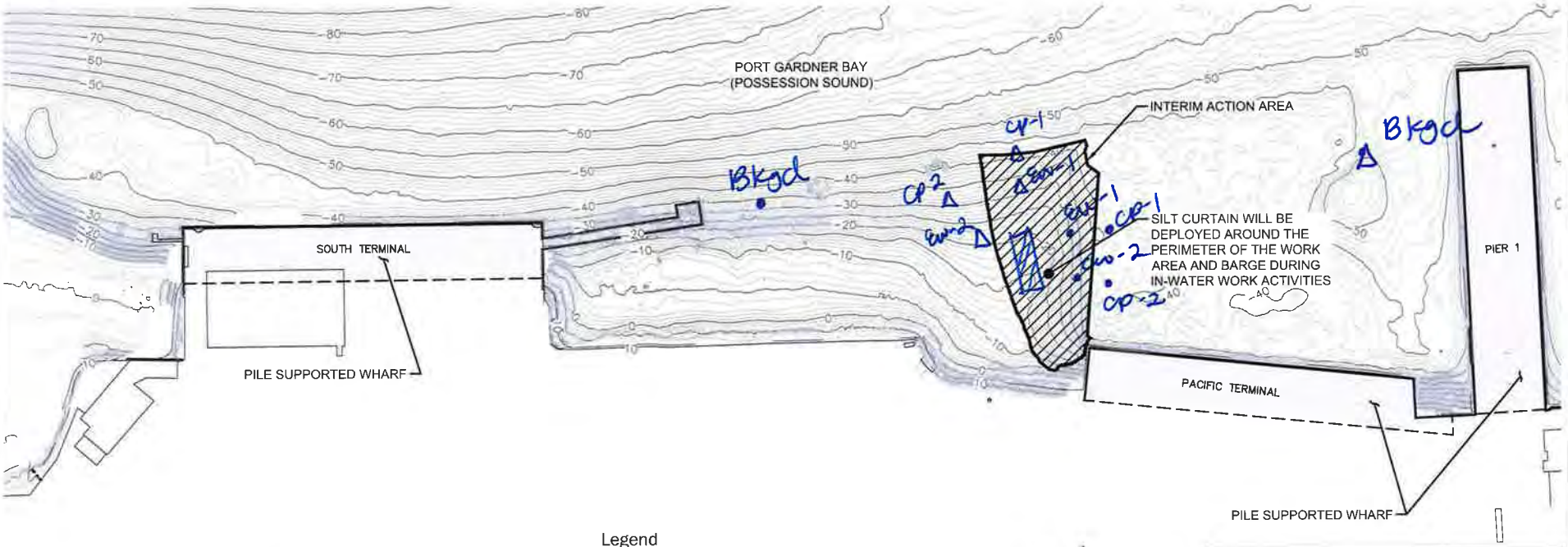


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• event 1
Δ event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:
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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

—30—	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

P:\01\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
12/27/2016	Tier II/Event 1	Clean Dredging	Background	600	9:45	35	0	0	0	17.04	14.77	13.18	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area. Contractor reminded to check and maintain BMPs.
			Early Warning 1	75	10:00	20	0	0	0	11.2	9.38	8.94		
			Early Warning 2	75	10:15	40	0	0	5.39	12.55	9.04	8.01		
			Compliance Point 1	150	9:50	30	0	0	0	12.26	10.11	9.16		
			Compliance Point 2	150	10:10	40	0	0	0	10.26	9.07	8.09		
	Tier II/Event 2	Clean Dredging	Background	600	14:20	30	0	0	0	12.22	11.5	9.41	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	14:30	20	1.06	0	0	12.5	10.08	8.32		
			Early Warning 2	75	14:40	20	0	0	0	10.6	10.17	7.77		
			Compliance Point 1	150	14:45	35	0	0	0	15.26	10.34	7.32		
			Compliance Point 2	150	14:30	30	0	0	0	13.63	9.62	8.56		
12/29/2016	Tier II/Event 1	Rock Placement	Background	600	9:15	50	0	0	0	15.32	10.92	9.08	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	9:30	35	0	0	0	15.86	7.61	7.21		
			Early Warning 2	75	9:35	30	0	0	0	13.76	7.43	7.53		
			Compliance Point 1	150	9:25	35	0	0	0	15.95	8.02	7.73		
			Compliance Point 2	150	9:40	35	0	0	0	8.62	7.98	7.3		
	Tier II/Event 2	Rock Placement	Background	600	12:45	40	0	0	0	19.28	11	9.93	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	13:05	45	0	0	0	10.77	10.83	7.09		
			Early Warning 2	75	13:00	45	0	0.1	0	10.2	9.28	6.26		
			Compliance Point 1	150	12:50	45	0	0	0	11.59	8.97	8.15		
			Compliance Point 2	150	12:55	45	0	0	0	11.42	8.86	7.47		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"–"= not measured

Tide Levels based no NOAA predictions
Low Tide = 9:39 AM 7.1 Ft MLLW
High Tide = 2:47 PM 10.6 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy 41°	Date: 12/27/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		0945	1000	1015		0950	1010	
Tidal Status (Ebb, Slack or Flood)		Slack →	→	→		Slack →	→	
Water Column Height (feet)		35	20	40		30	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	17.04	11.2	12.55		12.26	10.26	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	14.77	9.38	9.04		10.11	9.07	
Near-Bottom	Turbidity (NTUs)	0	0	5.39		0	0	
	DO (mg/L)	13.18	8.94	8.01		9.16	8.09	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	1 ship @ PT
Corrective Actions Required/Implemented:	check & maintain BMPs

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 9:39 AM 7.1 Ft MLLW
High Tide = 2:47 PM 10.6 Ft MLLW

WATER QUALITY MONITORING FORM

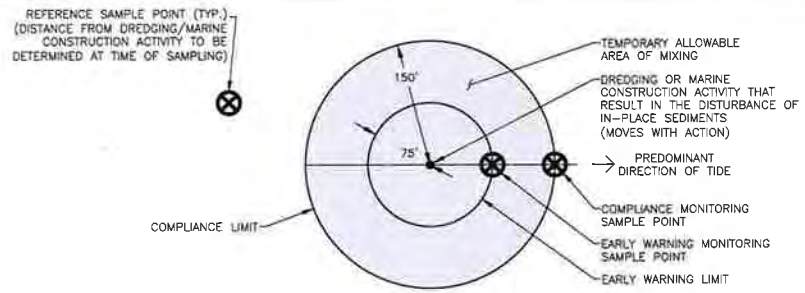
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy/Raining/Hail very choppy	Date: 12/27/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1420	1430	1440		1445	1430	
Tidal Status (Ebb, Slack or Flood)		Slack →	→	→		Slack →	→	
Water Column Height (feet)		30	20	20		35	30	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	1.06	0		0	0	
	DO (mg/L)	12.22	12.5	10.60		15.26	13.63	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.50	10.08	10.17		10.34	9.62	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.41	8.32	7.77		7.32	8.56	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—

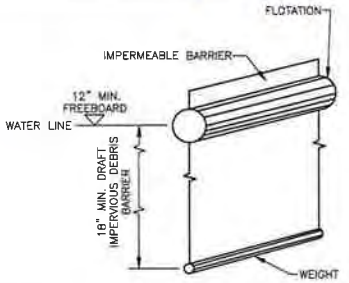
GeoEngineers

12/27/16

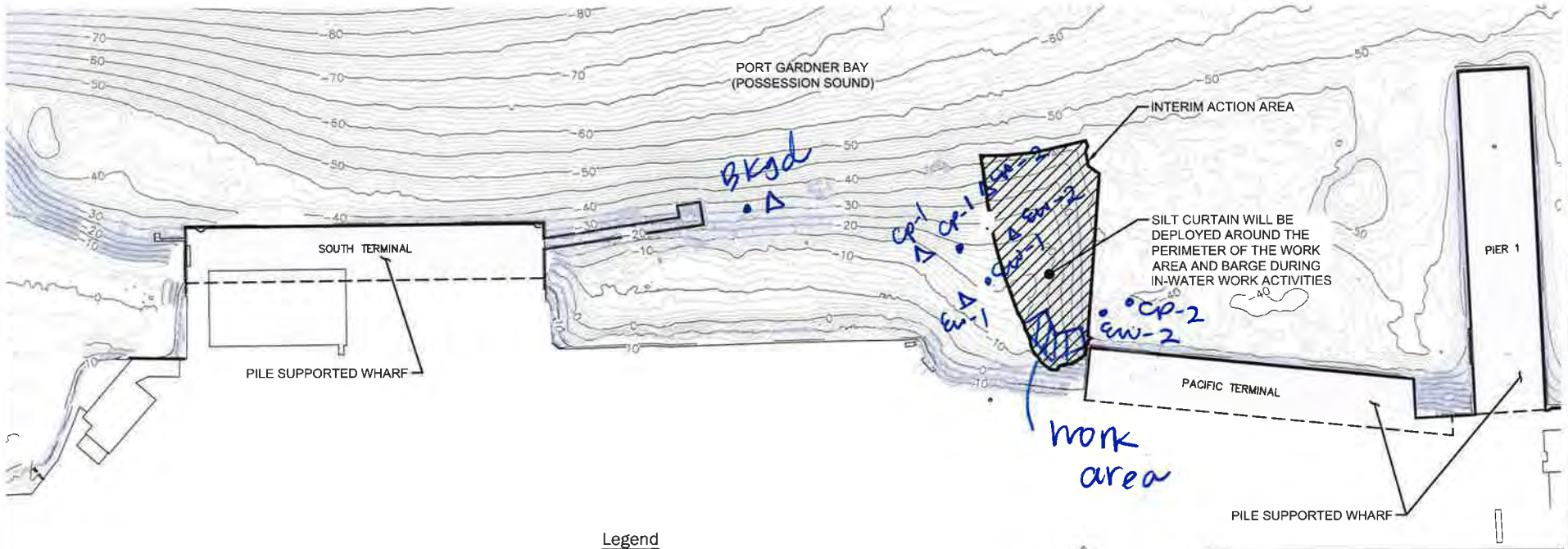


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• event 1
Δ event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:
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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

—30—	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

Tide Levels based no NOAA predictions
Low Tide = 11:08 AM 7.0 Ft MLLW
High Tide = 4:02 PM 10.4 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elese
Project No.: MT-PT-2016-01	Weather Conditions: cloudy	Date: 12/29/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		0915	0930	0935		0925	0940	
Tidal Status (Ebb, Slack or Flood)		ebb →	→			ebb →	→	
Water Column Height (feet)		50	35	30		35	35	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	15.32	15.96	13.76		15.95	8.62	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	10.92	7.61	7.43		8.02	7.98	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.09	7.21	7.53		7.73	7.30	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	–

GeoEngineers

Tide Levels based no NOAA predictions
Low Tide = 11:08 AM 7.0 Ft MLLW
High Tide = 4:02 PM 10.4 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy	Date: 12/29/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1245	1305	1300		1250	1255	
Tidal Status (Ebb, Slack or Flood)		Flood →	→	→		Flood →	→	
Water Column Height (feet)		40	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	19.28	10.77	10.20		11.59	11.42	
Mid-Water	Turbidity (NTUs)	0	0	0.10		0	0	
	DO (mg/L)	11.00	10.83	9.28		8.97	8.86	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.93	7.09	6.26		8.15	7.47	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO
Evidence of Floating or Suspended Materials: NO
Visual Evidence of Discoloration or Turbidity: NO
Other Observations: —

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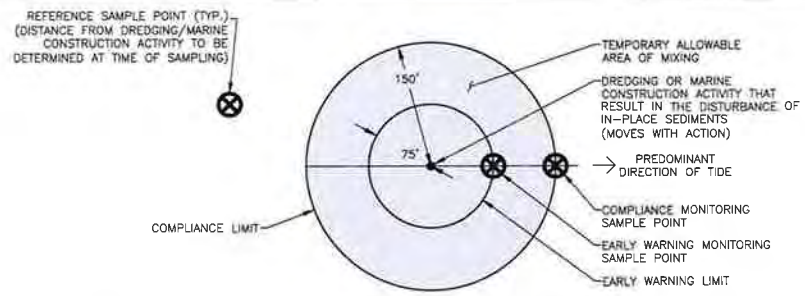
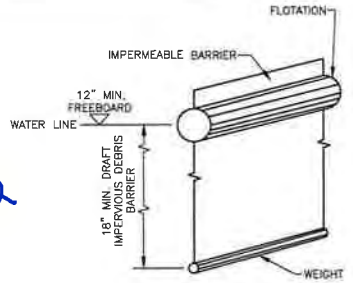
12/29/16

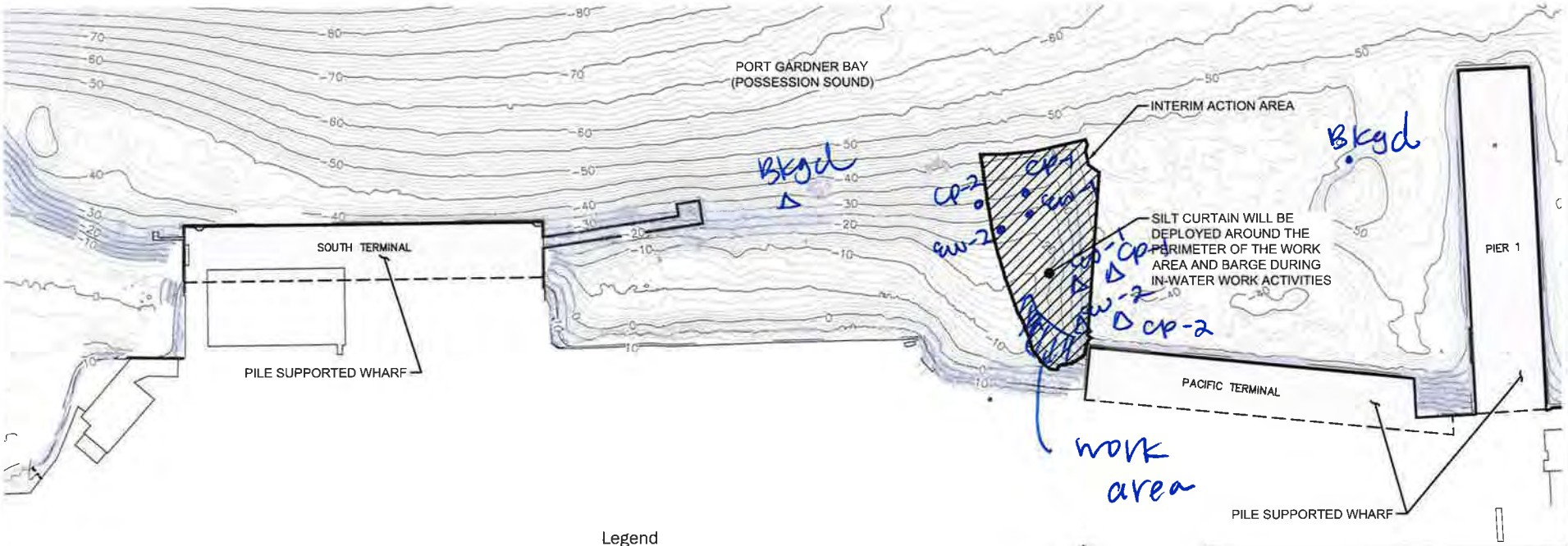


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• event 1
△ event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



Notes:
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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

——30——	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

P:\0\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
1/3/2017	Tier II/Event 1	Clean Dredging	Background	600	10:05	50	0	0	0	13.57	11.01	9.29	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	10:15	40	0	0	0	11.09	8.3	8.34		
			Early Warning 2	75	10:30	35	0	0	0	11.19	8.35	7.6		
			Compliance Point 1	150	10:20	40	0	0	0	8.4	8.96	8.09		
			Compliance Point 2	150	10:25	35	0	0	0	11.1	7.96	7.91		
	Tier II/Event 2	Rock Placement	Background	600	12:30	50	0	0	0	14.12	10.29	9.25	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	12:35	45	0.27	0	0	11.88	8.56	8.05		
			Early Warning 2	75	12:50	45	0	0.66	0	11.8	8.51	7.37		
			Compliance Point 1	150	12:40	45	0	0	0	9.28	8.75	8		
			Compliance Point 2	150	12:43	45	0	1.84	0	11.11	7.94	7.56		
1/5/2017	Tier II/Event 1	Rock Placement	Background	600	9:00	40	0	0	0	13.14	12.57	11.37	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	9:15	30	0	0	0	11.51	8.81	6.94		
			Early Warning 2	75	9:20	45	0.32	0	0	13.87	7.36	6.86		
			Compliance Point 1	150	9:10	35	0	0	0	12.36	8.62	7.05		
			Compliance Point 2	150	9:25	45	0	0	0	10.85	9.65	8.23		
	Tier II/Event 2	Rock Placement	Background	600	12:00	50	0	0	0	11.24	9.24	9.03	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	12:10	45	1.11	0	0	10.87	8.48	8.16		
			Early Warning 2	75	12:25	45	0	0	0	10.47	7.78	7.08		
			Compliance Point 1	150	12:15	45	0	0	0	10.27	8.22	8		
			Compliance Point 2	150	12:20	45	0	0	0	11	8.27	7.05		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"–"= not measured

Tide Levels based on NOAA prediction
Low Tide = 3:02 PM 5.5 Ft MLLW
High Tide = 8:49 AM 11.9 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: clean Dredge	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cold 20°	Date: 1/3/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 2, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1005	1015	1030		1020	1025	
Tidal Status (Ebb, Slack or Flood)		Ebb →		→		Ebb	→	
Water Column Height (feet)		50	40	35		40	35	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	13.57	11.09	11.19		8.40	11.16	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.01	8.30	8.35		8.96	7.96	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.29	8.34	7.60		8.09	7.91	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

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Tide Levels based on NOAA prediction
Low Tide = 3:02 PM 5.5 Ft MLLW
High Tide = 8:49 AM 11.9 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 1/3/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 2, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1230	1235	1250		1240	1243	
Tidal Status (Ebb, Slack or Flood)		ebb →	→	→		ebb →	→	
Water Column Height (feet)		50	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0.27	0		0	6	
	DO (mg/L)	14.12	11.88	11.80		9.28	11.11	
Mid-Water	Turbidity (NTUs)	0	0	0.66		0	1.84	
	DO (mg/L)	10.29	8.56	8.51		8.75	7.94	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.25	8.05	7.37		8.00	7.56	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	ND
Evidence of Floating or Suspended Materials:	ND
Visual Evidence of Discoloration or Turbidity:	ND
Other Observations:	—
Corrective Actions Required/Implemented:	—

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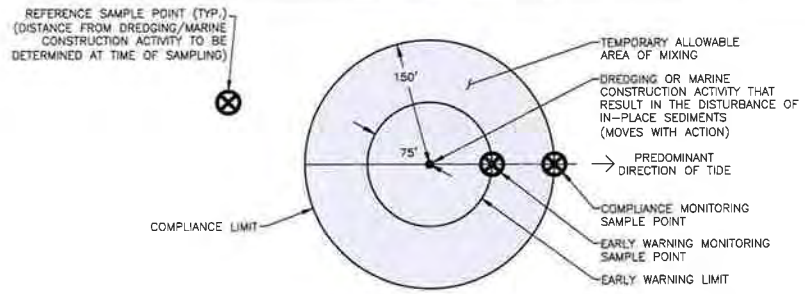
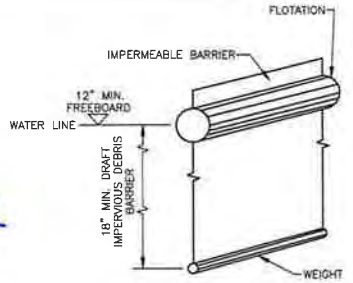
1/3/17

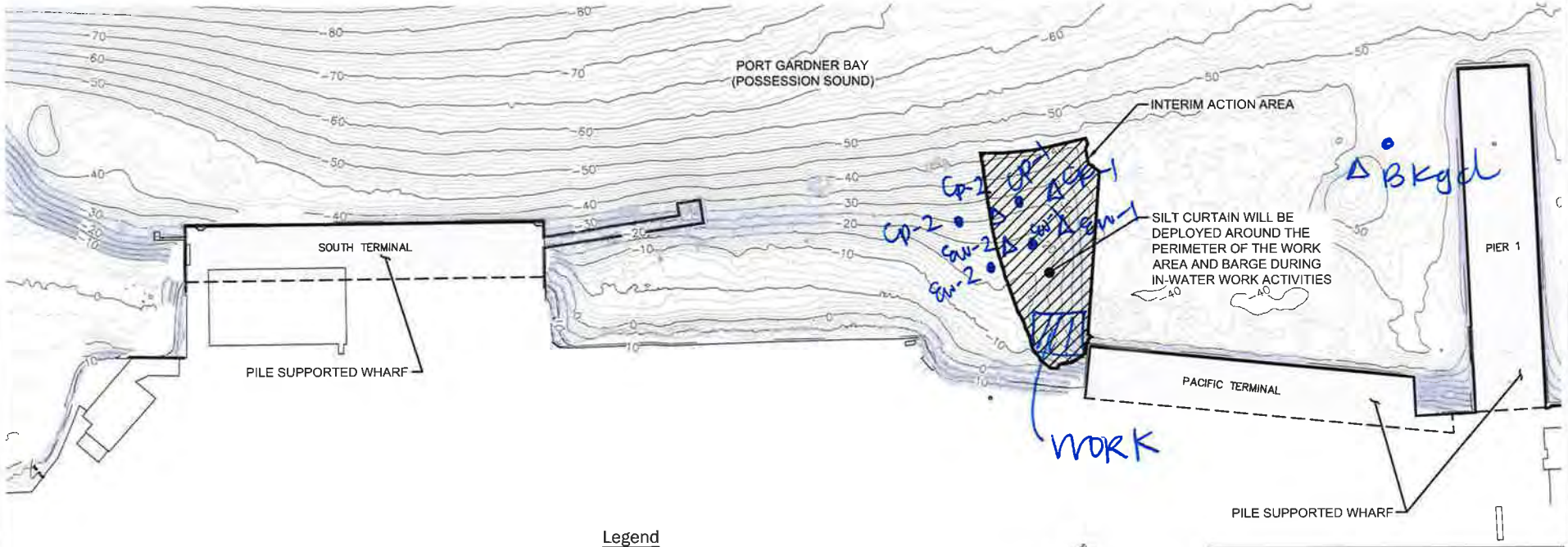


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)

○ Event 1
△ Event 2



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Data Source:
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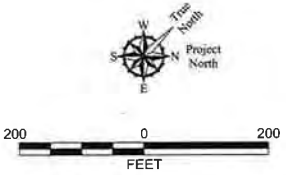
Legend

—30—	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY THICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based on NOAA prediction
Low Tide = 4:55 PM 3.6 Ft MLLW
High Tide = 10:04 AM 11.7 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cold, 21°	Date: 1/5/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 2, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		1600	75	75		150	150	
Station Monitoring Time		0900	0915	0920		0910	0925	
Tidal Status (Ebb, Slack or Flood)		Slack →	→	→		Slack →	→	
Water Column Height (feet)		40	30	45		35	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0.32		0	0	
	DO (mg/L)	13.14	11.51	13.87		12.36	10.85	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	12.57	8.81	7.36		8.62	9.65	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.37	6.94	6.86		7.05	8.23	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

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Tide Levels based on NOAA prediction
Low Tide = 4:55 PM 3.6 Ft MLLW
High Tide = 10:04 AM 11.7 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 1/5/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 2, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1200	1210	1225		1215	1220	
Tidal Status (Ebb, Slack or Flood)		ebb →		→		ebb →		
Water Column Height (feet)		50	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	1.11	0		0	0	
	DO (mg/L)	11.24	10.87	10.47		10.27	11.0	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.24	8.48	7.78		8.22	8.27	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.03	8.16	7.08		8.00	7.05	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

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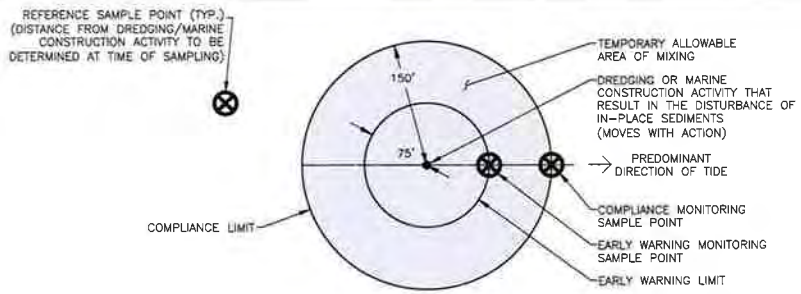
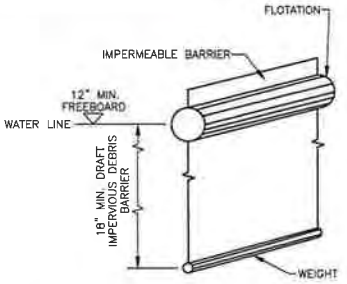
1/5/17

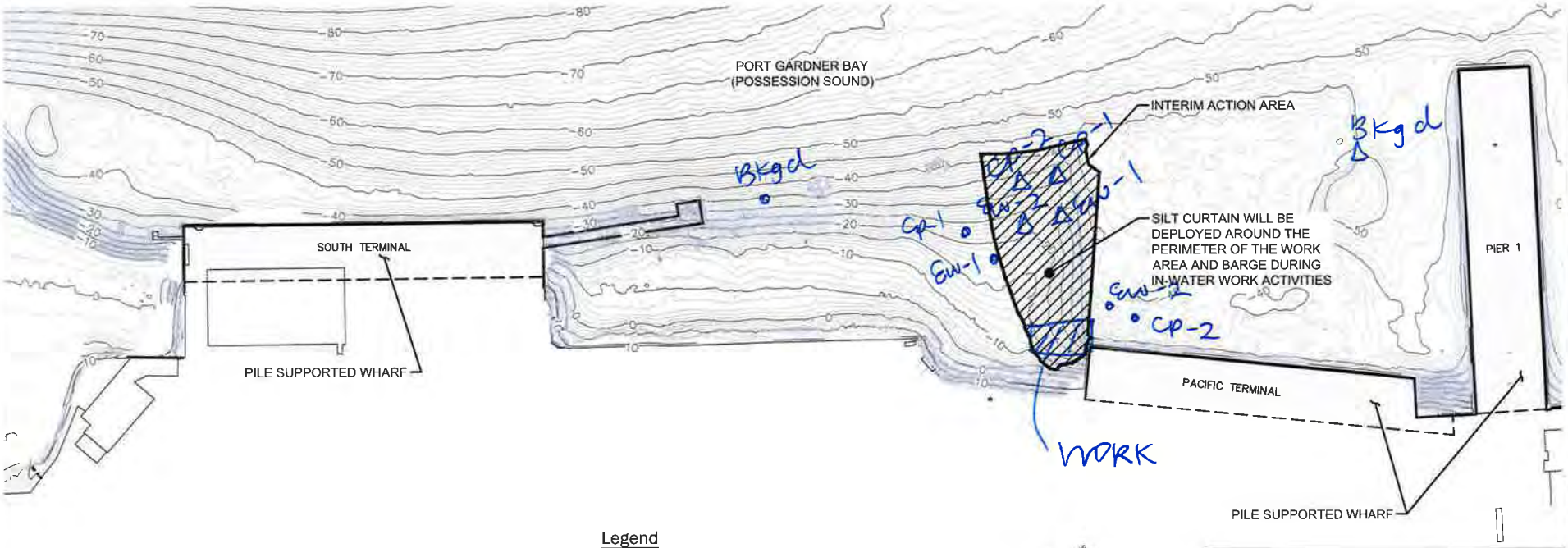


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)

○ Event 1
△ Event 2



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Legend

——30——	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

P:\0\06760200\0A\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
1/10/2017	Tier II/Event 1	Rock Placement	Background	600	9:15	40	0	0	0	23.55	14.52	12.39	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	9:30	40	0	0	0	10.89	8.71	8.56		
			Early Warning 2	75	9:35	40	0	0	0	8.35	8.34	8.7		
			Compliance Point 1	150	9:25	45	0	0	0	11.21	8.31	8.64		
			Compliance Point 2	150	9:40	45	0	0	0	10.47	7.93	7.73		
	Tier II/Event 2	Rock Placement	Background	600	12:30	–	0	0	0	–	–	–	Flood	Water extremely choppy, could not get background location due to unsafe conditions. Zero NTU used as background conditions. No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	12:50	45	0	0	0	12.37	9.06	7.2		
			Early Warning 2	75	12:55	45	3.56	0	0	15.18	9.19	7.2		
			Compliance Point 1	150	12:40	45	0	0	0	10.82	9.6	7.81		
			Compliance Point 2	150	12:45	45	0	0	0	8.27	8.16	7.91		
1/13/2017	Tier II/Event 1	Rock Placement	Background	600	12:40	45	0	0	0	14.5	9.85	9.21	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	12:50	45	0	0	0	12.27	8.34	9.49		
			Early Warning 2	75	12:55	45	0	0	0	11.37	8.28	8.24		
			Compliance Point 1	150	12:45	45	0	0	0	12.81	9.07	10.09		
			Compliance Point 2	150	13:00	45	0	0	0	12	9.11	8.23		
	Tier II/Event 2	Rock Placement	Background	600	15:10	45	0	0	0	11.13	16.54	9.52	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	15:20	45	0	0	0	9.73	8.72	8.52		
			Early Warning 2	75	15:25	45	0	0	0	12.09	8.4	8.5		
			Compliance Point 1	150	15:15	45	0	0	0	20.3	9.07	8.75		
			Compliance Point 2	150	15:30	45	0	0	0	9.01	8.36	8.27		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"–"= not measured

Tide Levels based on NOAA prediction
Low Tide = 8:51 AM 7.2 Ft MLLW
High Tide = 2:05 PM 11.7 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock placement	Recorded By: Elese
Project No.: MT-PT-2016-01	Weather Conditions: sunny cold, windy	Date: 1/10/16
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 2, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		0915	0930	0935		0925	0940	
Tidal Status (Ebb, Slack or Flood)		slack →	→	→		slack →	→	
Water Column Height (feet)		40	40	40		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0.80	0		0	0	
	DO (mg/L)	23.55	10.89	8.35		11.21	10.47	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	14.52	8.71	8.34		8.31	7.93	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	12.39	8.56	8.70		8.64	7.73	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	ND
Evidence of Floating or Suspended Materials:	No
Visual Evidence of Discoloration or Turbidity:	ND
Other Observations:	—
Corrective Actions Required/Implemented:	—

GeoEngineers

Tide Levels based on NOAA prediction
Low Tide = 8:51 AM 7.2 Ft MLLW
High Tide = 2:05 PM 11.7 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elsea
Project No.: MT-PT-2016-01	Weather Conditions: Rain high wind	Date: 1/10/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Event 2, Tier II

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1230	1250	1255		1240	1245	
Tidal Status (Ebb, Slack or Flood)		Flood →	→			Flood →		
Water Column Height (feet)		too choppy	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)		0	3.56		0	0	
	DO (mg/L)		12.37	15.18		10.82	8.27	
Mid-Water	Turbidity (NTUs)		0	0		0	6	
	DO (mg/L)		9.06	9.19		9.60	8.16	
Near-Bottom	Turbidity (NTUs)		0	0		0	0	
	DO (mg/L)		7.20	7.20		7.81	7.91	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): ND

Evidence of Floating or Suspended Materials: ND

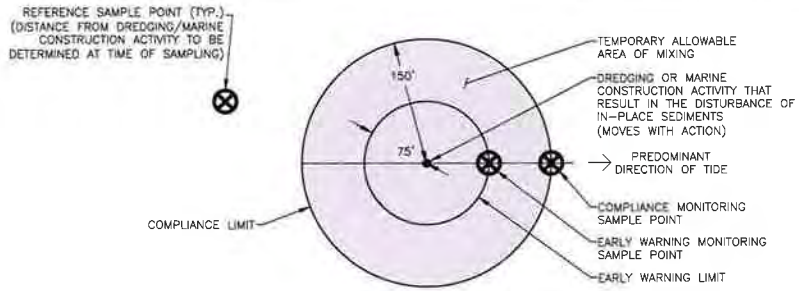
Visual Evidence of Discoloration or Turbidity: ND

Other Observations: water extremely chopping, points taken down wind of barge, background w/ open water area unsafe

Corrective Actions Required/Implemented:

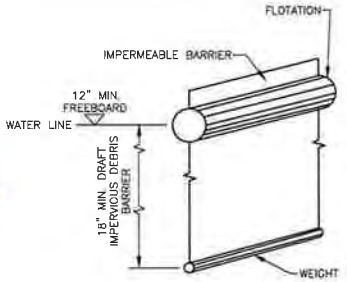
GeoEngineers

1/10/17

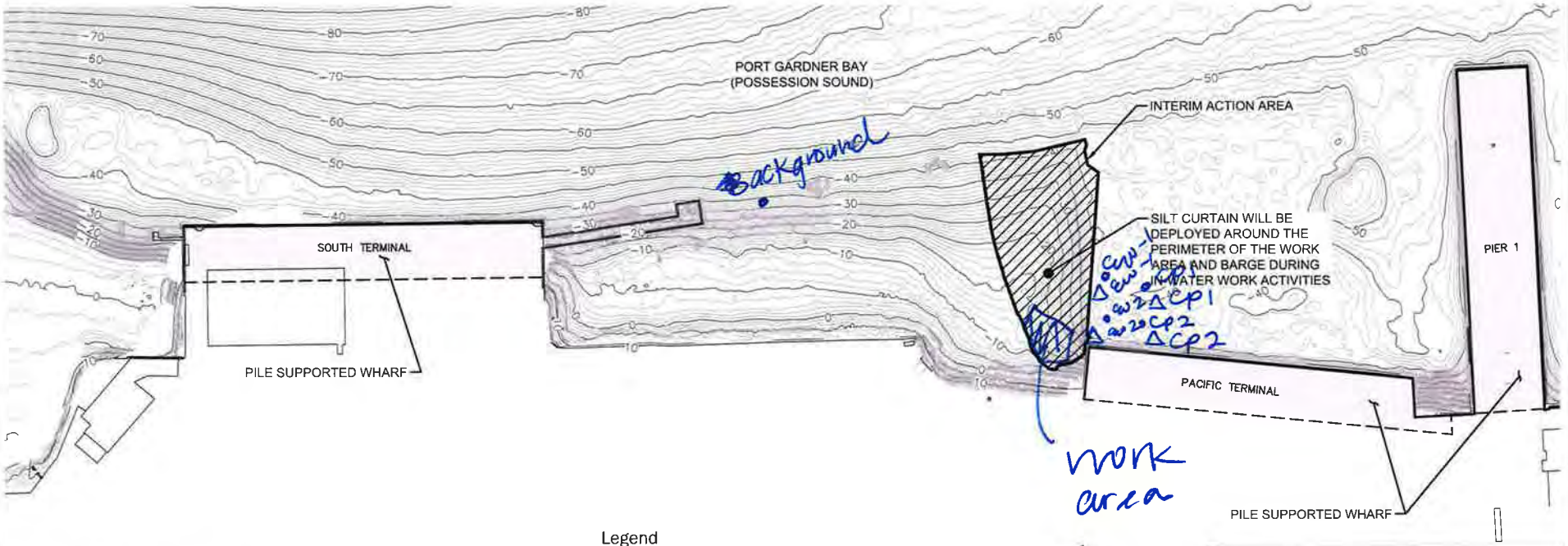


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's. Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

——30——	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201\04\CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based on NOAA prediction
Low Tide = 11:37 AM 6.4 Ft MLLW
High Tide = 4:40 PM 11.1 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Sunny 31°	Date: 1/13/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1240	1250	1255		1245	1300	
Tidal Status (Ebb, Slack or Flood)		Flood →	→			Flood →	→	
Water Column Height (feet)		45	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	14.50	12.27	11.37		12.81	12.00	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.85	8.34	8.28		9.07	9.11	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.21	9.49	8.24		10.09	8.23	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

GeoEngineers

Tide Levels based on NOAA prediction
Low Tide = 11:37 AM 6.4 Ft MLLW
High Tide = 4:40 PM 11.1 Ft MLLW

WATER QUALITY MONITORING FORM

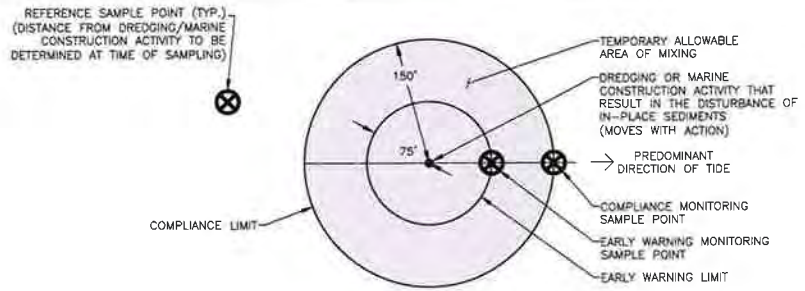
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy 34°	Date: 1/13/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1510	1520	1525		1515	1530	
Tidal Status (Ebb, Slack or Flood)		Flood →	→			Flood →	→	
Water Column Height (feet)		45	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.13	9.73	12.09		20.30	9.01	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	16.54	8.72	8.40		9.07	8.36	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.52	8.52	8.50		8.75	8.27	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	–
Corrective Actions Required/Implemented:	–

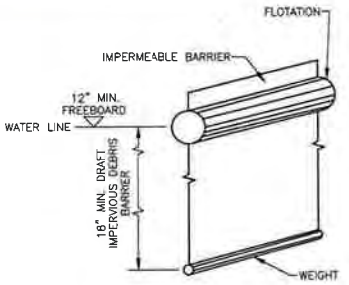
GeoEngineers

1/13/17

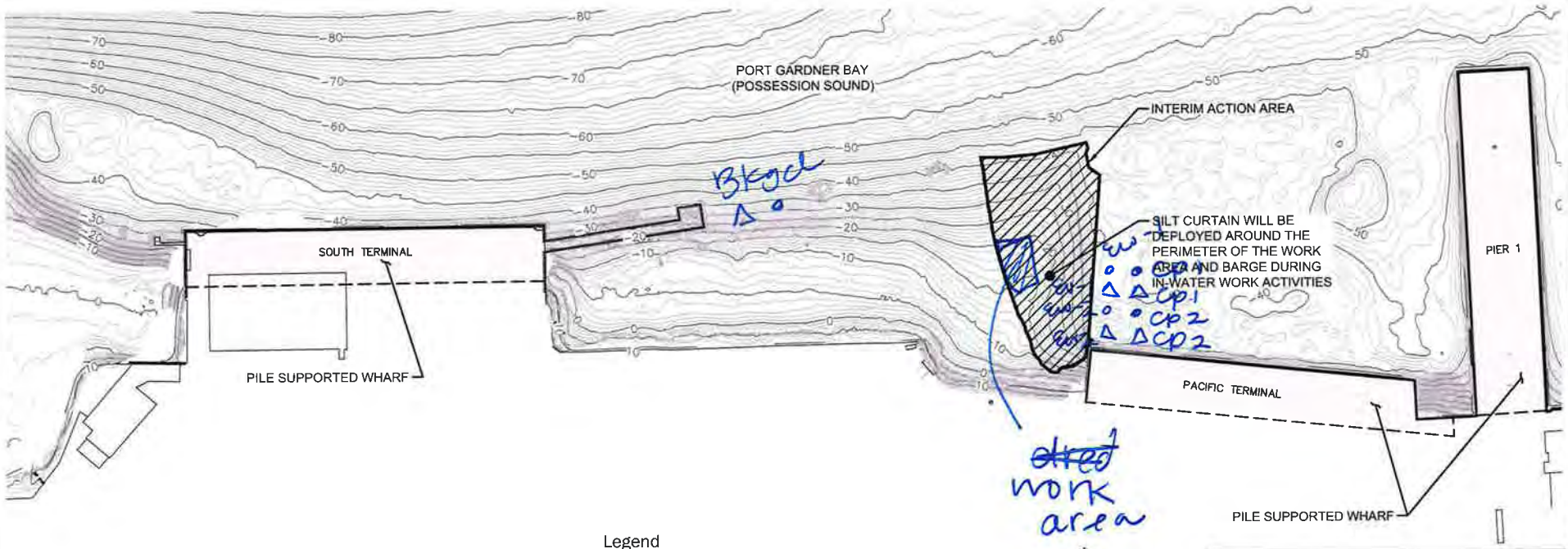


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

○ event 1
△ event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Data Source:
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's Mill A Bathymetric and Vessel Mounted LIDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

—30—	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0\06760201\04\CAD\INTERIM ACTION FIGURES\06760201-04 FIG_02 SITE PLAN.DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
1/18/2017	Tier II/Event 1	Rock Placement	Background	600	9:00	35	0	0	0	12.26	11.42	10.3	Slack	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	9:10	30	0	0	0	10.34	7.42	7.67		
			Early Warning 2	75	9:25	40	0	0	0	15.97	8.89	9.64		
			Compliance Point 1	150	9:15	35	0	0	0	12.72	8.12	8.48		
			Compliance Point 2	150	9:30	40	0.54	0	0	11.62	8.09	8.99		
	Tier II/Event 2	Rock Placement	Background	600	13:40	50	0	0	0	14.08	9.9	9.15	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	13:50	40	0	0	0	11.55	9.2	10.43		
			Early Warning 2	75	14:00	35	0	0	0	11.18	8	7.5		
			Compliance Point 1	150	13:55	45	0	0	0	12.17	7.5	7.78		
			Compliance Point 2	150	14:05	40	0	0.45	0	7.41	7.2	7.43		
1/20/2017	Tier II/Event 1	Rock Placement	Background	600	12:50	50	0	0	0	12.04	10.23	9.28	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	13:00	40	0	0	0	11.34	7.64	7.97		
			Early Warning 2	75	13:05	35	0	0	0	7.29	7.7	7.94		
			Compliance Point 1	150	12:55	45	0	0	0	12.12	8.13	8.27		
			Compliance Point 2	150	13:10	35	0	0	0	10.87	6.45	8.55		
	Tier II/Event 2	Rock Placement	Background	600	14:40	50	9.53	0	0	11.82	8.88	9.32	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	14:50	45	4.2	0	0	8.23	8.56	7.63		
			Early Warning 2	75	14:55	40	12.3	2.3	0	11.81	7.95	7.62		
			Compliance Point 1	150	14:45	45	8.78	0	0	11.91	8.35	2.78		
			Compliance Point 2	150	15:00	35	7.24	0	0	12.12	8.44	8		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based on NOAA prediction
Low Tide = 3:57 PM 4.1 Ft MLLW
High Tide = 8:45 AM 11.9 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Rainy 40°	Date: 1/18/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		0900	0910	0925		0915	0930	
Tidal Status (Ebb, Slack or Flood)		Slack →	→	→	→	Slack →	→	
Water Column Height (feet)		35	30	40		35	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0.54	
	DO (mg/L)	12.26	10.34	15.97		12.72	11.62	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.42	7.42	8.89		8.12	8.09	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	10.30	7.67	9.64		8.48	8.99	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO

Evidence of Floating or Suspended Materials: NO

Visual Evidence of Discoloration or Turbidity: NO

Other Observations: —

Corrective Actions Required/Implemented: —

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Tide Levels based on NOAA prediction
Low Tide = 3:57 PM 4.1 Ft MLLW
High Tide = 8:45 AM 11.9 Ft MLLW

WATER QUALITY MONITORING FORM

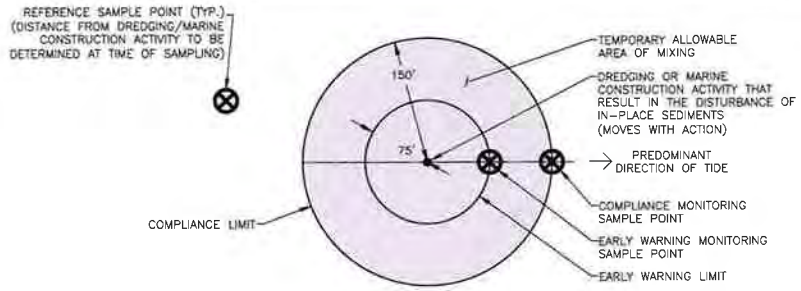
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Rainy	Date: 1/19/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1340	1350	1400		1355	1405	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		50	40	35		45	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	14.08	11.55	11.18		12.17	7.41	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0.45	
	DO (mg/L)	9.90	9.20	8.00		7.50	7.20	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.15	10.43	7.50		7.78	7.43	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—
Corrective Actions Required/Implemented:	—

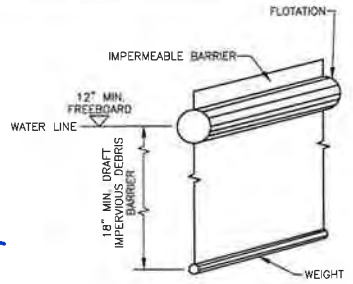
GeoEngineers

1/18/17

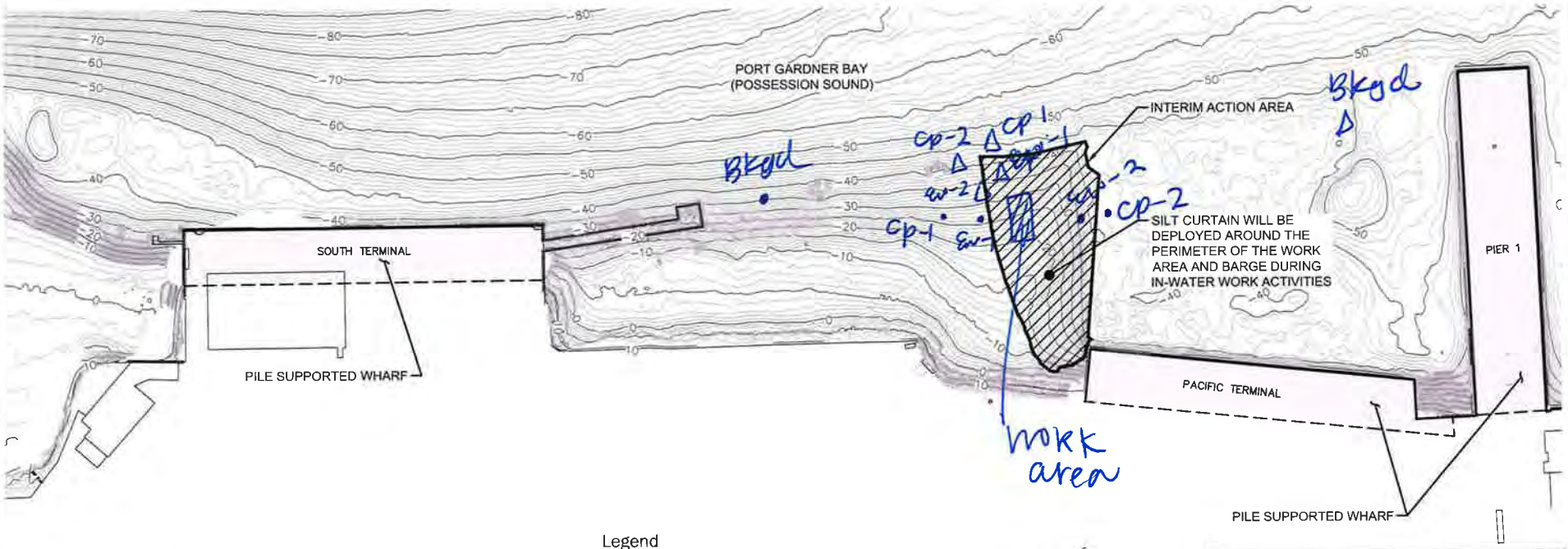


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

∘ Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

----30----	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0106760201041CAD\INTERIM ACTION FIGURES\0676020-04 FIG_02 SITE PLAN DWG\TAB.1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Tide Levels based on NOAA prediction
Low Tide = 5:48 PM 2.9 Ft MLLW
High Tide = 10:34 AM 10.8 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy	Date: 1/20/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1250	1300	1305		1255	1310	
Tidal Status (Ebb, Slack or Flood)		ebb →	→	→		ebb →	→	
Water Column Height (feet)		50	40	35		45	35	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	12.04	11.34	7.29		12.12	10.87	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	10.23	7.64	7.70		8.13	6.45	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.29	7.97	7.94		8.27	8.55	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO

Evidence of Floating or Suspended Materials: NO

Visual Evidence of Discoloration or Turbidity: NO

Other Observations: —

Corrective Actions Required/Implemented: —

GeoEngineers

Tide Levels based on NOAA prediction
Low Tide = 5:48 PM 2.9 Ft MLLW
High Tide = 10:34 AM 10.8 Ft MLLW

WATER QUALITY MONITORING FORM

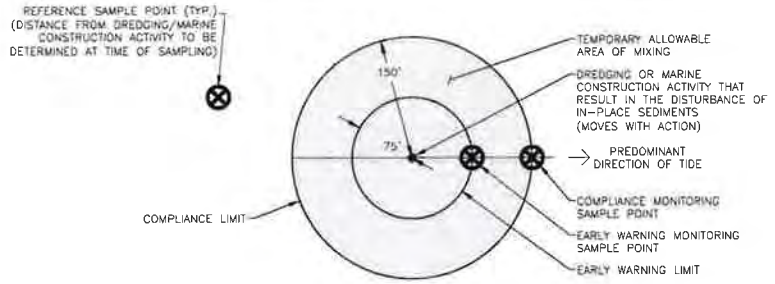
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy	Date: 1/20/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		14:40	1450	1455		1445	1500	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→	→		Ebb →	→	
Water Column Height (feet)		50	45	40		45	35	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	9.53	4.20	12.3		8.78	7.24	
	DO (mg/L)	11.92	8.23	11.91		11.91	12.12	
Mid-Water	Turbidity (NTUs)	0	0	2.3		0	0	
	DO (mg/L)	8.88	8.56	7.95		8.35	8.44	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.32	7.63	7.62		2.78	8.00	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	ND
Evidence of Floating or Suspended Materials:	ND
Visual Evidence of Discoloration or Turbidity:	ND
Other Observations:	—
Corrective Actions Required/Implemented:	—

GeoEngineers

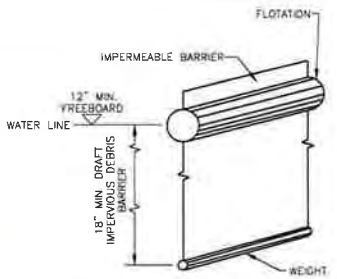
1/20/17



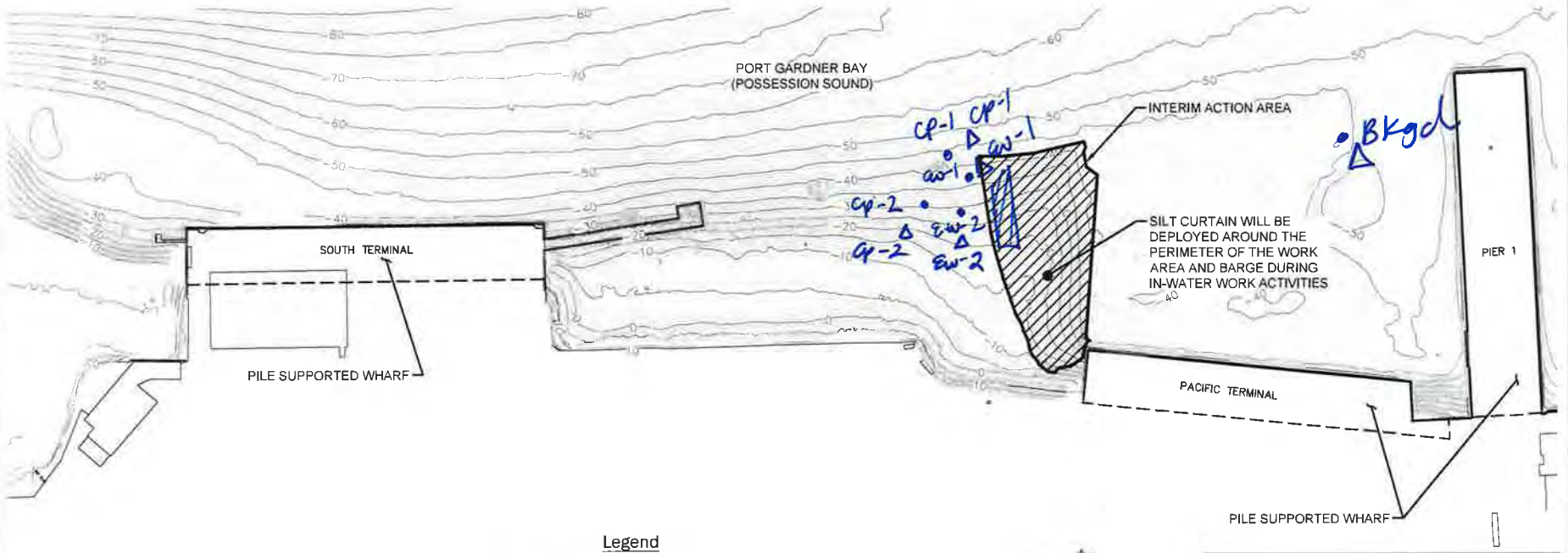
TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• event 1

Δ event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Data Source
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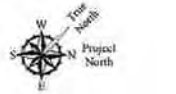
Legend

30	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

P:\0\0676020\04\CAD\INTERIM ACTION FIGURES\0676020-04 Fig_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TMICHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
1/25/2017	Tier II/Event 1	Rock Placement	Background	600	10:55	40	0	0	0	10.75	16.05	17.58	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	11:00	40	0	0	0	12.33	8.69	9.25		
			Early Warning 2	75	11:15	40	1.39	0	0	12.03	8.48	8.66		
			Compliance Point 1	150	11:10	40	0	0	0	8.42	8.66	9.08		
			Compliance Point 2	150	11:20	40	0	0	0	13.1	9.22	8.68		
	Tier II/Event 2	Rock Placement	Background	600	12:50	42	0	0	0	14.87	10.6	9.21	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	13:05	45	0	0	0	8.25	8	8.3		
			Early Warning 2	75	13:10	45	0	0	0	11.36	10.24	8.36		
			Compliance Point 1	150	13:00	45	0	0	0	12.12	8.98	8.78		
			Compliance Point 2	150	13:15	45	0	0	0	7.99	7.4	8.07		
1/26/2017	Tier II/Event 1	Rock Placement	Background	600	8:40	50	0	0	0	15.11	11.16	9.91	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	8:45	45	0	0	0	12.16	9.39	10.43		
			Early Warning 2	75	8:55	45	0	0	0	14.88	11.46	14.51		
			Compliance Point 1	150	8:50	45	0	0	0	10.12	10.74	10.54		
			Compliance Point 2	150	9:00	45	0	0	0	14.48	16.57	16.46		
	Tier II/Event 2	Rock Placement	Background	600	11:30	40	0	0	0	13.8	8.92	8.13	Flood	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	11:40	45	0	0	0	13.64	8.44	8.06		
			Early Warning 2	75	11:50	45	0	0	0	11.44	10.13	8.21		
			Compliance Point 1	150	11:45	45	0	0	0	8.23	7.23	7.75		
			Compliance Point 2	150	11:55	45	0	0	0	10.66	8.99	7.75		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based on NOAA prediction
Low Tide = 9:17 AM 7.3 Ft MLLW
High Tide = 2:19 PM 10.4 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elsie
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy	Date: 1/25/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		10:55	11:00	11:15		11:10	11:20	
Tidal Status (Ebb, Slack or Flood)		Flood →	→	→		Flood →	→	
Water Column Height (feet)		40	40	40		40	40	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	1.39		0	0	
	DO (mg/L)	10.75	12.33	12.03		8.92	13.10	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	16.05	8.69	8.48		8.66	9.22	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	17.58	9.25	8.66		9.08	8.68	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—

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Tide Levels based on NOAA prediction
Low Tide = 9:17 AM 7.3 Ft MLLW
High Tide = 2:19 PM 10.4 Ft MLLW

WATER QUALITY MONITORING FORM

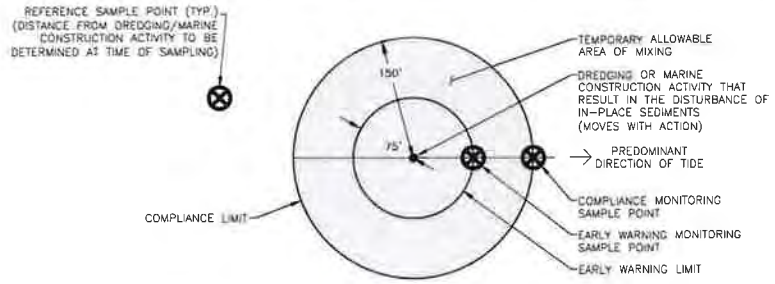
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise
Project No.: MT-PT-2016-01	Weather Conditions: cloudy/Rainy	Date: 11/25/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1250	1305	1310		1300	1315	
Tidal Status (Ebb, Slack or Flood)		Flood →	→	→		Flood →	→	
Water Column Height (feet)		42	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	14.87	8.25	11.36		12.12	7.99	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	10.60	8.00	10.24		8.98	7.40	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.21	8.30	8.36		8.78	8.07	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	ND
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—

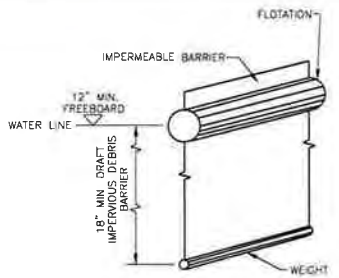
GeoEngineers

1/25/17

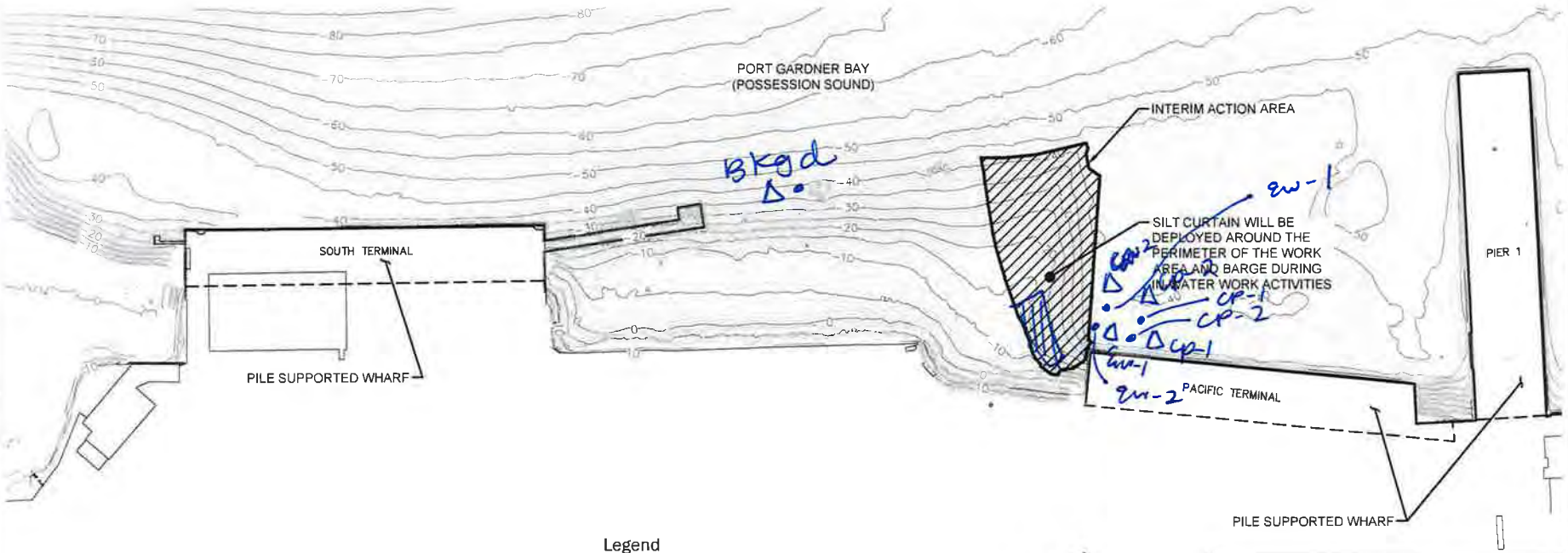


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

—30—	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

200 0 200
FEET

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

Tide Levels based on NOAA prediction
Low Tide = 10:04 AM 7.0 Ft MLLW
High Tide = 3:04 PM 10.4 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elese
Project No.: MT-PT-2016-01	Weather Conditions: Cloudy	Date: 1/26/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		8:40	845	855		850	900	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		50	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	15.11	12.16	14.88		10.12	14.48	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.16	9.39	11.46		10.74	16.57	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.91	10.43	14.51		10.54	16.46	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—

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Tide Levels based on NOAA prediction
Low Tide = 10:04 AM 7.0 Ft MLLW
High Tide = 3:04 PM 10.4 Ft MLLW

WATER QUALITY MONITORING FORM

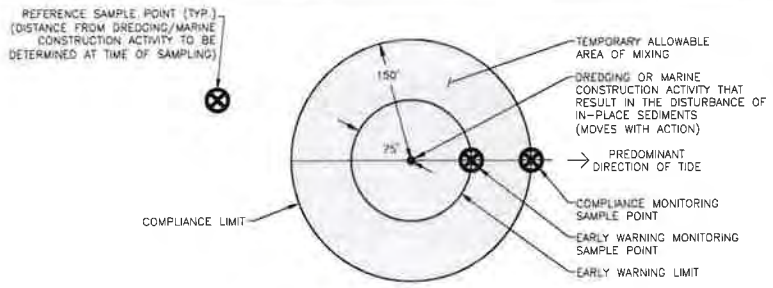
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock placement	Recorded By: Elese
Project No.: MT-PT-2016-01	Weather Conditions: Sunny	Date: 11/26/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, Event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1130	1140	1150		1145	1155	
Tidal Status (Ebb, Slack or Flood)		Flood →	→	→		Flood →	→	
Water Column Height (feet)		40	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	13.80	13.64	11.44		8.23	10.66	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	8.92	8.44	10.13		7.23	8.99	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	8.13	8.06	8.21		7.75	7.75	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—

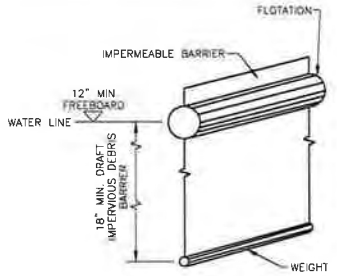
GeoEngineers

1/26/17

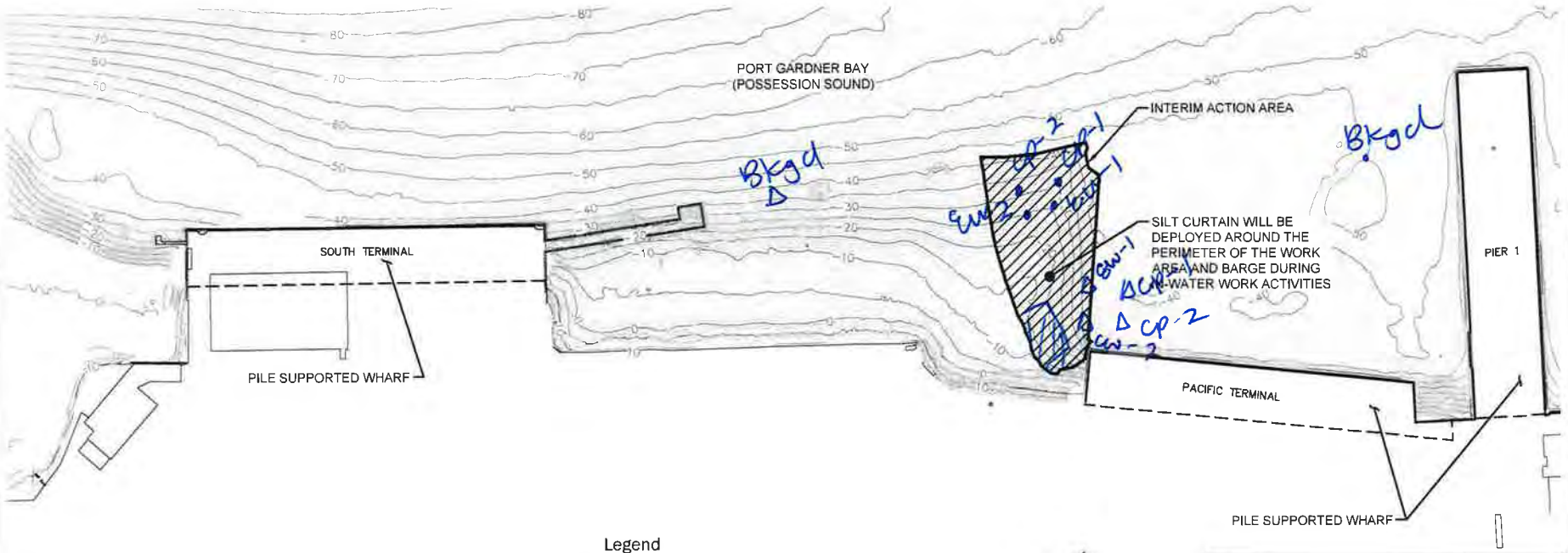


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• event 1
Δ event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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Legend

-30-	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water

Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers

Figure 2

P:\0\06760201\04\CAD\INTERIM ACTION FIGURES\06760201-04 FIG_02 SITE PLAN DWG\TAB:1 TO 200FT MODIFIED BY TMCHAUD ON JUL 14, 2016 - 15:07

Summary of Water Quality Monitoring Results[1]

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Date	Monitoring Event Tier/Type	In-Water Construction Activity	Water Quality Monitoring Location[2]	Distance from In-Water Construction Activity (feet)	Time	Water Column Height (feet)	Turbidity (NTU)[3]			Dissolved Oxygen[3] (mg/L)			Tide Conditions (Ebb/Slack or Flood)	Comments
							Near-Surface	Mid-Water	Near-Bottom	Near-Surface	Mid-Water	Near-Bottom		
2/2/2017	Tier II/Event 1	Rock Placement	Background	600	11:00	50	0	0	0	12.17	11.05	9.21	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	11:10	45	0	0	0	12.12	10.09	8.87		
			Early Warning 2	75	11:20	20	0	0	2.24	14.16	9.88	10.74		
			Compliance Point 1	150	11:15	45	0	0	0	8.66	8.14	8.49		
			Compliance Point 2	150	11:25	20	0	0	0	13.9	10.8	8.99		
	Tier II/Event 2	N/A	Background	--	--	--	--	--	--	--	--	--	--	Crew stopped work at 12:45 today, no second WQM Event
			Early Warning 1	--	--	--	--	--	--	--	--	--		
			Early Warning 2	--	--	--	--	--	--	--	--	--		
			Compliance Point 1	--	--	--	--	--	--	--	--	--		
			Compliance Point 2	--	--	--	--	--	--	--	--	--		
2/3/2017	Tier II/Event 1	Rock Placement	Background	600	12:00	50	0	0	0	12.71	10.51	9.68	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	12:10	45	2.06	0	0	11.51	8.39	8.97		
			Early Warning 2	75	12:20	45	1.99	0	0	13.46	9.19	9.89		
			Compliance Point 1	150	12:15	45	0	0	0	7.99	8.27	8.77		
			Compliance Point 2	150	12:25	45	0	0	0	9.32	10.32	10.27		
	Tier II/Event 2	Rock Placement	Background	600	14:00	45	0	0	0	12.16	11.17	11.58	Ebb	No sheen, visible turbidity or floating/suspended material observed from the dredge area.
			Early Warning 1	75	14:10	45	0	0	0	13.66	7.74	7.97		
			Early Warning 2	75	14:20	35	0	0	0	15.05	8.8	9.98		
			Compliance Point 1	150	14:15	45	0	0	0	7.78	7.79	7.97		
			Compliance Point 2	150	14:25	45	0	0	0	10.74	7.87	8.04		

Notes:

[1]Additional details are presented in the water quality monitoring form and figure prepared for each monitoring event.

[2]Approximate location shown on the figure prepared for each monitoring event.

[3]Turbidity is measured in nephelometric turbidity units (NTU) and dissolved oxygen is measured in milligrams per liter using a submersible-probe water quality instrument (Horiba U-52).

Water Quality Satandards - Turbidity shall not exceed 5 NTU over background conditions when the background is 50 NTU or less, or a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

mg/L = milligrams per liter

"--"= not measured

Tide Levels based on NOAA prediction
High Tide = 8:39 AM 11.7 Ft MLLW
Low Tide = 3:17 PM 3.1 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock placement	Recorded By: Glese
Project No.: MT-PT-2016-01	Weather Conditions: Cold, sunny	Date: 2/2/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier II, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1100	1110	1120		1115	1125	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→	→		Ebb →	→	
Water Column Height (feet)		50	45	20		45	20	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		6	0	
	DO (mg/L)	12.17	12.12	14.16		8.66	13.9	
Mid-Water	Turbidity (NTUs)	0	6	0		0	0	
	DO (mg/L)	11.05	10.09	9.88		8.14	10.8	
Near-Bottom	Turbidity (NTUs)	0	0	2.24		0	0	
	DO (mg/L)	9.21	8.87	10.74		8.49	8.99	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation): NO

Evidence of Floating or Suspended Materials: NO

Visual Evidence of Discoloration or Turbidity: NO

Other Observations: - Crew stopped work @ 1245, no second round of monitoring conducted

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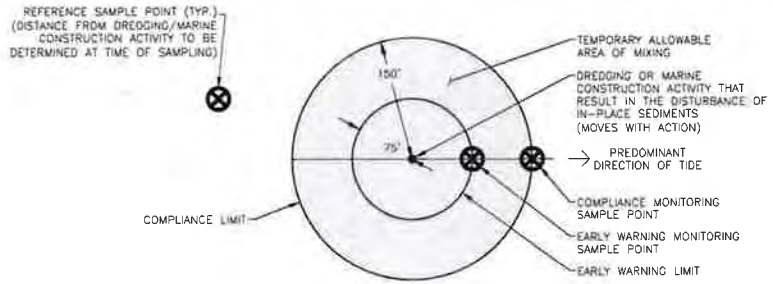
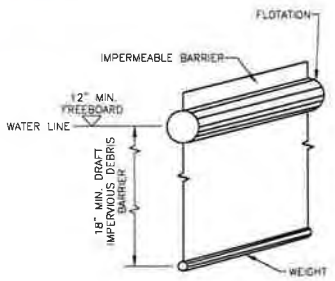
2/2/17

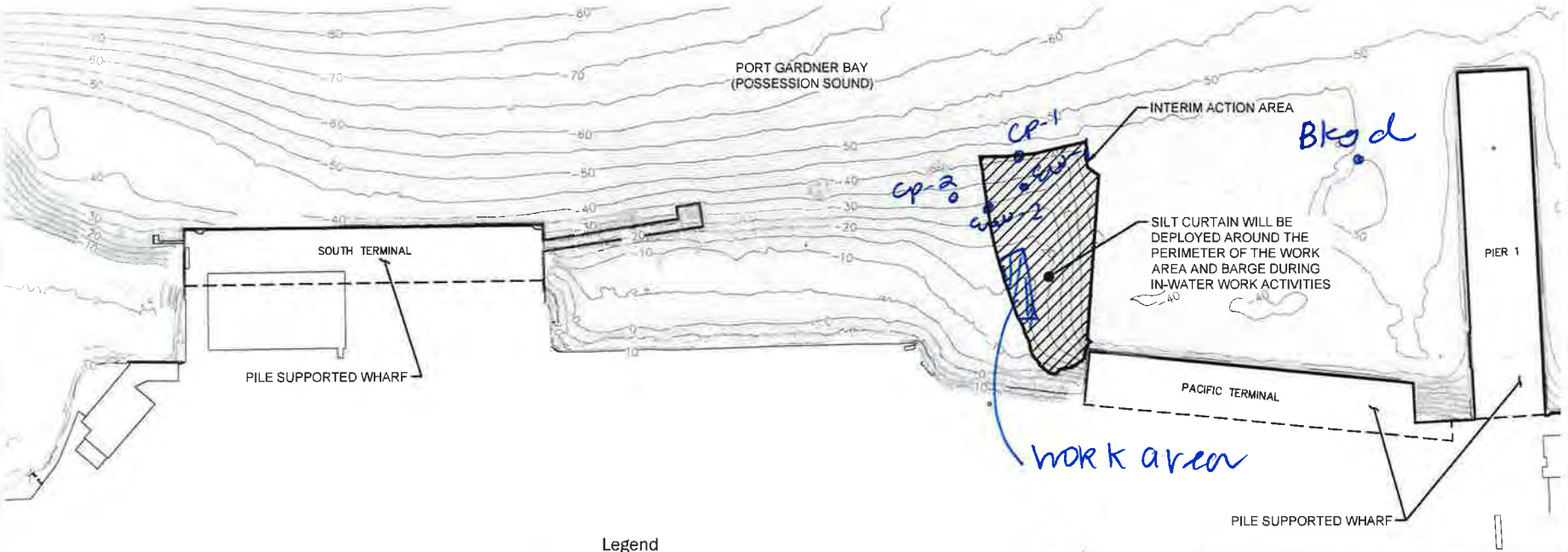


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)



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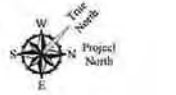
Legend

-30-	Bathymetric Contours (Feet MLLW)
	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



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Site Plan	
Weyerhauser Mill A Former Site Everett, Washington	
GeoEngineers	Figure 2

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Tide Levels based on NOAA prediction
High Tide = 9:17 AM 11.5 Ft MLLW
Low Tide = 4:14 PM 2.3 Ft MLLW

WATER QUALITY MONITORING FORM

Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Glose
Project No.: MT-PT-2016-01	Weather Conditions: cold/sunny	Date: 2/3/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 2, event 1

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1200	1210	1220		1215	1225	
Tidal Status (Ebb, Slack or Flood)		ebb →	→	→		ebb →	→	
Water Column Height (feet)		50	45	45		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	2.06	1.99		0	0	
	DO (mg/L)	12.71	11.51	13.96		7.99	9.32	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	10.51	8.39	9.19		8.27	10.32	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	9.69	8.97	9.89		8.77	10.27	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	–

GeoEngineers

Tide Levels based on NOAA prediction
High Tide = 9:17 AM 11.5 Ft MLLW
Low Tide = 4:14 PM 2.3 Ft MLLW

WATER QUALITY MONITORING FORM

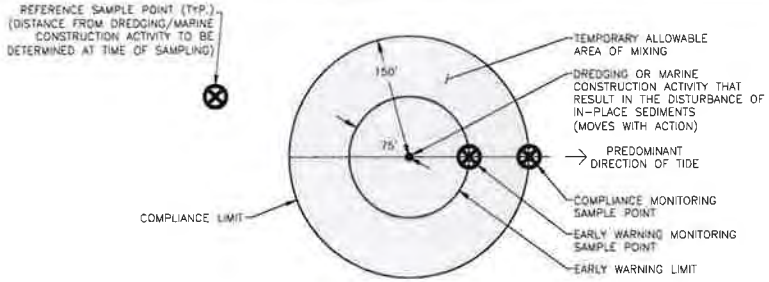
Job Name: Mill-A Cleanup Site Interim Action Dredging	In-Water Work Activity: Rock Placement	Recorded By: Elise G.
Project No.: MT-PT-2016-01	Weather Conditions: Raining / hail / snow	Date: 2/3/17
Permit No.: Order No. 13125, Corps Ref No. NWS-2014-0890	Sampling Equipment: Horiba U-52	Monitoring Type/Tier: Tier 2, event 2

Monitoring Station		Ambient/ Background	Early Warning Point			Point of Compliance		
			EW-1	EW-2	EW-3	CP-1	CP-2	CP-3
Latitude/Northing		See attached figure for approximate location of monitoring points →						
Longitude/Easting		See attached figure for approximate location of monitoring points →						
Distance From In-Water Activity (feet)		600	75	75		150	150	
Station Monitoring Time		1400	1410	1420		1415	1425	
Tidal Status (Ebb, Slack or Flood)		Ebb →	→			Ebb →	→	
Water Column Height (feet)		45	45	35		45	45	
Water Quality Measurements								
Near-Surface	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	12.16	13.66	15.05		7.78	10.74	
Mid-Water	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.17	7.74	8.80		7.79	7.87	
Near-Bottom	Turbidity (NTUs)	0	0	0		0	0	
	DO (mg/L)	11.58	7.97	9.98		7.97	8.04	

Evidence of Oil/Petroleum Sheen (Thickness, Contiguous, Size, Rate of Dissipation):	NO
Evidence of Floating or Suspended Materials:	NO
Visual Evidence of Discoloration or Turbidity:	NO
Other Observations:	—

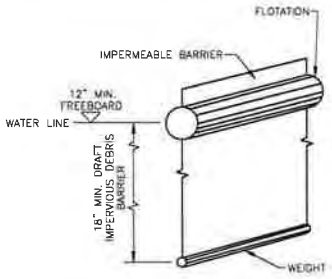
GeoEngineers

2/3/17

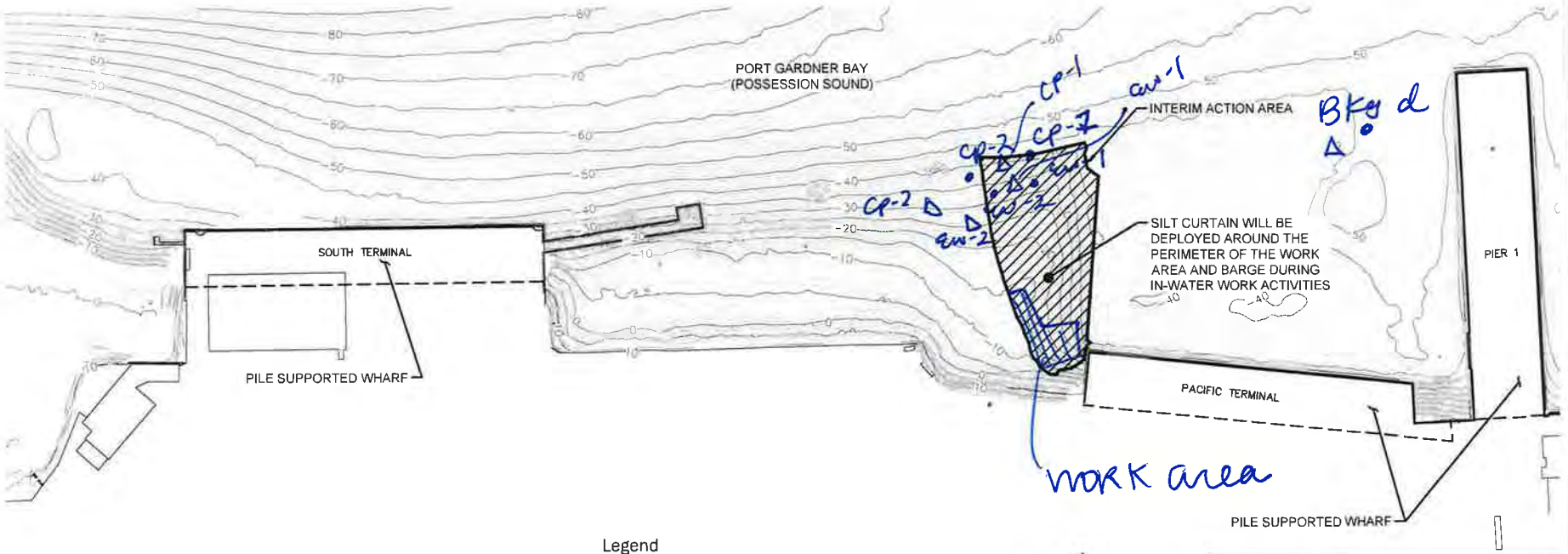


TEMPORARY ALLOWABLE AREA OF MIXING AND WATER QUALITY MONITORING DETAIL (NOT TO SCALE)

• Event 1
Δ Event 2



DEBRIS BOOM/SILT CURTAIN DETAIL (NOT TO SCALE)

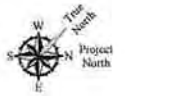


Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source
Bathymetric contours shown are based on Pacific GeoMatic Services, Inc's Mill A Bathymetric and Vessel Mounted LiDAR Survey File dated December 8, 2014. Horizontal datum is North American Datum (NAD) 83/91 and Vertical datum is 0.0' mean lower low water.

Legend

-30-	Bathymetric Contours (Feet MLLW)
▨	Interim Action Area (Limits of Dredging and Material Placement)
MLLW	Mean Lower Low Water



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Site Plan

Weyerhauser Mill A Former Site
Everett, Washington

GeoEngineers | Figure 2

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APPENDIX D
Certificate of Disposal for Contaminated Sediment

REPUBLIC SERVICES

Certificate of Disposal

December 7, 2016
Port of Everett
Between Pier 1 and Pigion Creek Road off Terminal Ave.
Everett, WA
Job # LW-16158

This is to certify that 22952.13 tons of Dredge Sediment was shipped from jobsite BETWEEN PIER 1 AND PIGION CREEK ROAD OF TERMINAL AVE. Everett Wa.by Orion Marine and received by Regional Disposal Company (Republic Services). The waste was shipped by rail to Roosevelt Regional Landfill, 500 Roosevelt Grade Road, Roosevelt WA 98356 for final disposal. The above-described NON-DANGEROUS WASTE was managed in compliance with all Permits and Laws Regulating this Facility.
Final Disposition: **Subtitle D and WAC 173-351 MSW Landfill**

Heidi Whiteman
Signature

For Regional Disposal Company

54 South Dawson Street
Seattle, WA 98134
206.332.7700 • Fax 206.764.1234
www.republicservices.com

datein	tknumb	roll	cust	job	weii	weio	qty
8/20/2016	240226	GCEU435543	16258	LW-16158	100320	45200	27.56
8/20/2016	240228	AWIU200002	16258	LW-16158	104120	49460	27.33
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8/20/2016	240232	TOLU458915	16258	LW-16158	102440	46400	28.02
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8/20/2016	240244	EGTU420206	16258	LW-16158	94780	45680	24.55
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8/20/2016	240254	GCEU425312	16258	LW-16158	89260	46280	21.49
8/20/2016	240257	TRLU901853	16258	LW-16158	105840	46160	29.84
8/20/2016	240262	TOLU422708	16258	LW-16158	99460	46020	26.72
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8/31/2016	1000676	EGTU420667	16258	LW-16158	100580	45660	27.46
8/31/2016	1000677	GCEU431837	16258	LW-16158	113580	46640	33.47
8/31/2016	1000678	TOLU466526	16258	LW-16158	108420	47000	30.71
8/31/2016	1000679	TOLU453027	16258	LW-16158	99760	45400	27.18
8/31/2016	1000680	TOLU457824	16258	LW-16158	110480	46380	32.05
8/31/2016	1000681	GCEU435343	16258	LW-16158	105880	46880	29.5
8/31/2016	1000682	GCEU430388	16258	LW-16158	110340	45320	32.51
8/31/2016	1000683	TOLU466636	16258	LW-16158	114440	45180	34.63
8/31/2016	1000684	TOLU468313	16258	LW-16158	111740	45760	32.99
9/1/2016	1000688	RBSU200291	16258	LW-16158	105660	46560	29.55
9/1/2016	1000694	RBSU200293	16258	LW-16158	105300	46700	29.3
9/1/2016	1000695	TOLU468788	16258	LW-16158	106140	45380	30.38
9/1/2016	1000698	GCEU430450	16258	LW-16158	109600	47760	30.92
9/1/2016	1000703	GCEU445001	16258	LW-16158	109140	45320	31.91
9/1/2016	1000709	TOLU452257	16258	LW-16158	110680	48540	31.07
9/1/2016	1000711	RBSU200259	16258	LW-16158	108000	46460	30.77
9/1/2016	1000712	GCEU425366	16258	LW-16158	113260	46560	33.35
9/1/2016	1000721	TOLU459751	16258	LW-16158	108840	46160	31.34
9/1/2016	1000728	UPCU411506	16258	LW-16158	104880	46680	29.1
9/6/2016	1000988	GCEU440046	16258	LW-16158	99940	46820	26.56
9/6/2016	1000992	TRLU900955	16258	LW-16158	105060	47360	28.85
9/6/2016	1001000	TOLU422672	16258	LW-16158	106520	49280	28.62
9/6/2016	1001002	GCEU426709	16258	LW-16158	99560	44760	27.4
9/6/2016	1001003	TOLU422708	16258	LW-16158	108440	46600	30.92
9/6/2016	1001004	AWIU8083	16258	LW-16158	102180	47200	27.49
9/6/2016	1001005	RBSU200216	16258	LW-16158	106360	46540	29.91
9/6/2016	1001007	TOLU453362	16258	LW-16158	110260	47260	31.5
9/6/2016	1001009	AWIU8214	16258	LW-16158	102120	47900	27.11
9/6/2016	1001010	GCEU431710	16258	LW-16158	103600	47280	28.16
9/6/2016	1001012	TOLU455039	16258	LW-16158	110880	46380	32.25
9/6/2016	1001013	AWIU8037	16258	LW-16158	100080	47580	26.25
9/6/2016	1001014	RBSU200323	16258	LW-16158	106500	47100	29.7

9/6/2016	1001015	EGTU420782	16258	LW-16158	105140	46900	29.12
9/6/2016	1001016	EGTU420308	16258	LW-16158	103340	46660	28.34
9/6/2016	1001018	UPCU411427	16258	LW-16158	101000	46740	27.13
9/6/2016	1001020	TOLU456617	16258	LW-16158	113660	47320	33.17
9/6/2016	1001023	AWIU200008	16258	LW-16158	109820	48080	30.87
9/6/2016	1001024	GCEU426526	16258	LW-16158	106040	44600	30.72
9/6/2016	1001026	RBSU200391	16258	LW-16158	106580	46800	29.89
9/6/2016	1001027	GCEU435366	16258	LW-16158	106140	47440	29.35
9/6/2016	1001029	TOLU456155	16258	LW-16158	104440	45020	29.71
9/6/2016	1001031	GCEU435543	16258	LW-16158	106220	46140	30.04
9/6/2016	1001032	TOLU466664	16258	LW-16158	104260	46360	28.95
9/6/2016	1001034	GCEU432073	16258	LW-16158	100560	45420	27.57
9/6/2016	1001035	GCEU430789	16258	LW-16158	110060	49700	30.18
9/6/2016	1001036	EGTU420334	16258	LW-16158	98280	45720	26.28
9/6/2016	1001037	UPCU411544	16258	LW-16158	100060	46420	26.82
9/6/2016	1001039	UPCU411451	16258	LW-16158	103640	45880	28.88
9/6/2016	1001040	AWIU8275	16258	LW-16158	107300	49020	29.14
9/6/2016	1001041	TOLU460463	16258	LW-16158	105360	48480	28.44
9/6/2016	1001043	TRLU900694	16258	LW-16158	109400	42120	33.64
9/6/2016	1001045	UPCU411538	16258	LW-16158	98860	43520	27.67
9/6/2016	1001048	EGTU420661	16258	LW-16158	100240	47300	26.47
9/6/2016	1001049	GCEU435150	16258	LW-16158	101520	46220	27.65
9/6/2016	1001056	TOLU475411	16258	LW-16158	106540	46440	30.05
9/6/2016	1001057	TRLU903644	16258	LW-16158	98900	46860	26.02
9/6/2016	1001058	UPCU411545	16258	LW-16158	110860	46860	32
9/6/2016	1001060	EGTU420134	16258	LW-16158	107600	46240	30.68
9/6/2016	1001061	GCEU435175	16258	LW-16158	109240	45960	31.64
9/6/2016	1001062	RBSU200328	16258	LW-16158	108120	47160	30.48
9/6/2016	1001064	GCEU440215	16258	LW-16158	111640	46520	32.56
9/6/2016	1001067	EGTU420003	16258	LW-16158	105460	46640	29.41
9/6/2016	1001071	RBSU200415	16258	LW-16158	108040	45740	31.15
9/6/2016	1001072	TOLU424496	16258	LW-16158	116420	47500	34.46
9/6/2016	1001073	AWIU200002	16258	LW-16158	98120	49600	24.26
9/6/2016	1001081	TOLU458915	16258	LW-16158	107420	45880	30.77
9/6/2016	1001082	TRLU901855	16258	LW-16158	102680	46380	28.15
9/6/2016	1001083	GCEU425312	16258	LW-16158	107180	46660	30.26
9/6/2016	1001084	AWIU8241	16258	LW-16158	107140	47760	29.69
9/6/2016	1001092	TRLU900772	16258	LW-16158	103220	47240	27.99
9/6/2016	1001093	RBSU200378	16258	LW-16158	109600	46680	31.46
9/6/2016	1001094	GCEU431326	16258	LW-16158	106040	46700	29.67
9/6/2016	1001095	RBSU200223	16258	LW-16158	100940	46580	27.18
9/6/2016	1001096	GCEU426213	16258	LW-16158	105660	46680	29.49
9/6/2016	1001097	RBSU200403	16258	LW-16158	107040	47080	29.98
9/6/2016	1001098	TOLU458045	16258	LW-16158	106500	45640	30.43
9/6/2016	1001099	AWIU200014	16258	LW-16158	108080	49200	29.44
9/6/2016	1001100	TOLU457112	16258	LW-16158	110460	45020	32.72
9/6/2016	1001101	RBSU200208	16258	LW-16158	106480	46560	29.96

9/6/2016	1001102	AWIU8378	16258	LW-16158	107720	47440	30.14
9/6/2016	1001103	TOLU469915	16258	LW-16158	106160	46660	29.75
9/6/2016	1001104	TOLU459552	16258	LW-16158	105380	46340	29.52
9/6/2016	1001105	RBSU200344	16258	LW-16158	110140	46600	31.77
9/6/2016	1001107	TOLU468768	16258	LW-16158	112640	49340	31.65
9/6/2016	1001108	GCEU432240	16258	LW-16158	114120	48980	32.57
9/7/2016	1001113	TOLU459482	16258	LW-16158	105180	46560	29.31
9/7/2016	1001114	GCEU430438	16258	LW-16158	103980	47700	28.14
9/7/2016	1001115	TOLU469235	16258	LW-16158	103980	46440	28.77
9/7/2016	1001116	GCEU425038	16258	LW-16158	106060	46320	29.87
9/7/2016	1001117	GCEU431875	16258	LW-16158	105160	46220	29.47
9/7/2016	1001118	EGTU420223	16258	LW-16158	102120	47560	27.28
9/7/2016	1001119	UPCU411408	16258	LW-16158	106920	47320	29.8
9/8/2016	1001182	TOLU452257	16258	LW-16158	111960	48040	31.96
9/8/2016	1001183	GCEU435018	16258	LW-16158	115720	46420	34.65
9/8/2016	1001184	GCEU445001	16258	LW-16158	107440	46220	30.61
9/8/2016	1001185	TOLU459362	16258	LW-16158	110000	46260	31.87
9/8/2016	1001186	UPCU411507	16258	LW-16158	110900	47320	31.79
9/8/2016	1001187	EGTU420695	16258	LW-16158	110620	47980	31.32
9/8/2016	1001188	EGTU420763	16258	LW-16158	109380	46540	31.42
9/8/2016	1001189	RBSU200293	16258	LW-16158	105380	47300	29.04
9/8/2016	1001191	GCEU425315	16258	LW-16158	106500	45120	30.69
9/8/2016	1001193	TOLU468788	16258	LW-16158	109940	46320	31.81
9/8/2016	1001194	UPCU411592	16258	LW-16158	101300	47160	27.07
9/8/2016	1001195	TOLU456958	16258	LW-16158	101880	46300	27.79
9/8/2016	1001196	GCEU425426	16258	LW-16158	101640	46420	27.61
9/8/2016	1001198	RBSU200291	16258	LW-16158	108340	46040	31.15
9/8/2016	1001202	TOLU456052	16258	LW-16158	108420	46340	31.04
9/8/2016	1001207	TPHU252006	16258	LW-16158	107620	47160	30.23
9/8/2016	1001212	GCEU430285	16258	LW-16158	104960	46340	29.31
9/8/2016	1001216	AWIU8207	16258	LW-16158	112220	48360	31.93
9/8/2016	1001221	TOLU443076	16258	LW-16158	112660	45100	33.78
9/8/2016	1001225	GCEU430340	16258	LW-16158	111260	45980	32.64
9/8/2016	1001226	AWIU8245	16258	LW-16158	113640	48160	32.74
9/8/2016	1001231	TOLU452244	16258	LW-16158	109020	46500	31.26
9/8/2016	1001232	GCEU435407	16258	LW-16158	109360	46600	31.38
9/8/2016	1001240	TOLU468514	16258	LW-16158	106920	46720	30.1
9/8/2016	1001243	TOLU466718	16258	LW-16158	104560	45160	29.7
9/8/2016	1001245	GCEU425109	16258	LW-16158	103300	46500	28.4
9/8/2016	1001246	TOLU466825	16258	LW-16158	110360	46380	31.99
9/8/2016	1001250	UPCU411486	16258	LW-16158	108340	46880	30.73
9/8/2016	1001251	EGTU420560	16258	LW-16158	109620	46600	31.51
9/8/2016	1001252	GCEU440091	16258	LW-16158	110980	46700	32.14
9/8/2016	1001253	EGTU420715	16258	LW-16158	96920	45760	25.58
9/8/2016	1001254	UPCU411499	16258	LW-16158	107560	46480	30.54
9/8/2016	1001256	AWIU8045	16258	LW-16158	114000	47760	33.12
9/10/2016	1001347	GCEU431710	16258	LW-16158	110600	48480	31.06

9/10/2016	1001355	EGTU420588	16258	LW-16158	111960	47240	32.36
9/10/2016	1001356	EGTU420348	16258	LW-16158	110840	47320	31.76
9/10/2016	1001357	RBSU200109	16258	LW-16158	113040	47500	32.77
9/10/2016	1001358	EGTU420523	16258	LW-16158	103900	47200	28.35
9/10/2016	1001359	GCEU440046	16258	LW-16158	105600	46600	29.5
9/10/2016	1001360	EGTU420425	16258	LW-16158	105620	47480	29.07
9/10/2016	1001361	RBSU200235	16258	LW-16158	112780	47280	32.75
9/10/2016	1001362	GCEU426622	16258	LW-16158	109400	47360	31.02
9/10/2016	1001363	EGTU420782	16258	LW-16158	112280	46480	32.9
9/10/2016	1001367	UPCU411575	16258	LW-16158	110200	47660	31.27
9/10/2016	1001374	UPCU411553	16258	LW-16158	102140	47160	27.49
9/10/2016	1001377	TOLU422672	16258	LW-16158	105520	48700	28.41
9/10/2016	1001385	TOLU456617	16258	LW-16158	108160	47180	30.49
9/10/2016	1001392	AWIU200002	16258	LW-16158	116600	49960	33.32
9/10/2016	1001398	AWIU8492	16258	LW-16158	113400	47960	32.72
9/10/2016	1001402	EGTU420710	16258	LW-16158	107100	46820	30.14
9/10/2016	1001410	RBSU200323	16258	LW-16158	113560	47000	33.28
9/10/2016	1001417	RBSU200278	16258	LW-16158	107260	47560	29.85
9/10/2016	1001421	RBSU200280	16258	LW-16158	105820	47340	29.24
9/10/2016	1001425	TOLU422708	16258	LW-16158	108700	46900	30.9
9/10/2016	1001426	GCEU426526	16258	LW-16158	106340	48240	29.05
9/10/2016	1001430	TOLU452118	16258	LW-16158	112780	46860	32.96
9/10/2016	1001433	TOLU456155	16258	LW-16158	110300	46620	31.84
9/10/2016	1001434	GCEU432046	16258	LW-16158	114080	48400	32.84
9/10/2016	1001436	GCEU435543	16258	LW-16158	108020	45560	31.23
9/10/2016	1001437	TOLU453362	16258	LW-16158	109720	47620	31.05
9/12/2016	1001506	TOLU424496	16258	LW-16158	111940	48320	31.81
9/12/2016	1001507	GCEU431233	16258	LW-16158	112040	47200	32.42
9/12/2016	1001508	TOLU456838	16258	LW-16158	98700	45860	26.42
9/12/2016	1001509	AWIU200001	16258	LW-16158	107120	49660	28.73
9/12/2016	1001510	TRLU900694	16258	LW-16158	117960	46320	35.82
9/12/2016	1001515	RBSU200248	16258	LW-16158	110680	46880	31.9
9/12/2016	1001516	GCEU440215	16258	LW-16158	104880	44780	30.05
9/12/2016	1001525	TOLU459482	16258	LW-16158	102800	46320	28.24
9/12/2016	1001536	RBSU200328	16258	LW-16158	105660	47160	29.25
9/12/2016	1001537	GCEU431875	16258	LW-16158	113740	44940	34.4
9/12/2016	1001542	RBSU200415	16258	LW-16158	109220	47300	30.96
9/12/2016	1001555	RBSU200358	16258	LW-16158	107440	47540	29.95
9/12/2016	1001556	RBSU200226	16258	LW-16158	107000	45980	30.51
9/12/2016	1001562	RBSU200113	16258	LW-16158	112520	48300	32.11
9/12/2016	1001567	AWIU8037	16258	LW-16158	104920	48020	28.45
9/13/2016	1001569	TOLU457070	16258	LW-16158	76740	46360	15.19
9/13/2016	1001570	TOLU424173	16258	LW-16158	106800	48280	29.26
9/13/2016	1001571	GCEU432053	16258	LW-16158	101080	46360	27.36
9/13/2016	1001572	GCEU445109	16258	LW-16158	100740	40780	29.98
9/13/2016	1001573	AWIU200011	16258	LW-16158	110580	49500	30.54
9/13/2016	1001574	AWIU8132	16258	LW-16158	104900	44060	30.42

9/13/2016	1001575	TOLU460481	16258	LW-16158	108000	46040	30.98
9/13/2016	1001576	GCEU420172	16258	LW-16158	104900	46300	29.3
9/13/2016	1001577	TOLU440437	16258	LW-16158	101140	47360	26.89
9/13/2016	1001578	TOLU460463	16258	LW-16158	110460	48040	31.21
9/13/2016	1001579	RBSU200384	16258	LW-16158	108980	47000	30.99
9/13/2016	1001580	TRLU900194	16258	LW-16158	101100	46120	27.49
9/13/2016	1001581	TOLU468988	16258	LW-16158	100720	43400	28.66
9/13/2016	1001582	GCEU425216	16258	LW-16158	100040	46480	26.78
9/13/2016	1001583	GCEU430438	16258	LW-16158	106420	47460	29.48
9/13/2016	1001584	GCEU425038	16258	LW-16158	97340	41060	28.14
9/13/2016	1001585	UPCU411427	16258	LW-16158	102180	46520	27.83
9/13/2016	1001586	EGTU420308	16258	LW-16158	103220	46820	28.2
9/13/2016	1001587	AWIU200008	16258	LW-16158	101580	49080	26.25
9/13/2016	1001588	GCEU432072	16258	LW-16158	110300	42900	33.7
9/13/2016	1001590	TRLU903644	16258	LW-16158	110320	46060	32.13
9/13/2016	1001591	TOLU469150	16258	LW-16158	112920	46380	33.27
9/13/2016	1001593	GCEU425968	16258	LW-16158	114140	47280	33.43
9/13/2016	1001594	TOLU468379	16258	LW-16158	107360	42900	32.23
9/13/2016	1001595	RBSU200273	16258	LW-16158	99340	47820	25.76
9/13/2016	1001597	TOLU456216	16258	LW-16158	112460	46540	32.96
9/13/2016	1001598	TRLU900263	16258	LW-16158	104440	46240	29.1
9/13/2016	1001600	AWIU8214	16258	LW-16158	114560	46540	34.01
9/13/2016	1001603	TOLU459264	16258	LW-16158	101840	46120	27.86
9/13/2016	1001604	GCEU425035	16258	LW-16158	105700	43280	31.21
9/13/2016	1001605	GCEU432170	16258	LW-16158	103740	45560	29.09
9/13/2016	1001606	GCEU430744	16258	LW-16158	102220	47680	27.27
9/13/2016	1001607	AWIU8495	16258	LW-16158	103260	43900	29.68
9/13/2016	1001609	GCEU445042	16258	LW-16158	104840	47640	28.6
9/13/2016	1001610	GCEU425043	16258	LW-16158	101960	45560	28.2
9/13/2016	1001612	UPCU411570	16258	LW-16158	106940	46300	30.32
9/13/2016	1001613	RBSU200426	16258	LW-16158	100340	43140	28.6
9/13/2016	1001614	GCEU431157	16258	LW-16158	100880	45460	27.71
9/13/2016	1001617	TPHU252086	16258	LW-16158	118460	47300	35.58
9/13/2016	1001618	GCEU425021	16258	LW-16158	106580	46740	29.92
9/13/2016	1001619	TOLU457801	16258	LW-16158	106740	47480	29.63
9/13/2016	1001620	EGTU420597	16258	LW-16158	103900	45620	29.14
9/13/2016	1001621	TOLU468481	16258	LW-16158	110860	46460	32.2
9/13/2016	1001622	GCEU435506	16258	LW-16158	113640	48380	32.63
9/13/2016	1001623	TRLU900070	16258	LW-16158	108100	48120	29.99
9/13/2016	1001624	AWIU8026	16258	LW-16158	110620	47300	31.66
9/13/2016	1001625	GCEU426701	16258	LW-16158	107440	45780	30.83
9/13/2016	1001626	EGTU420135	16258	LW-16158	102560	45760	28.4
9/13/2016	1001627	UPCU411451	16258	LW-16158	106580	43100	31.74
9/13/2016	1001628	RBSU200158	16258	LW-16158	108260	47200	30.53
9/13/2016	1001629	TPHU252450	16258	LW-16158	99660	47060	26.3
9/13/2016	1001630	GCEU426709	16258	LW-16158	108460	48200	30.13
9/13/2016	1001631	TRLU900475	16258	LW-16158	108660	45820	31.42

9/13/2016	1001632	EGTU420661	16258	LW-16158	99300	42640	28.33
9/13/2016	1001633	TOLU422405	16258	LW-16158	102780	45780	28.5
9/13/2016	1001634	UPCU411504	16258	LW-16158	107180	46660	30.26
9/13/2016	1001635	AWIU8457	16258	LW-16158	105180	47520	28.83
9/13/2016	1001636	AWIU8130	16258	LW-16158	102900	47440	27.73
9/14/2016	1001637	TOLU458708	16258	LW-16158	116160	47800	34.18
9/14/2016	1001638	TOLU452257	16258	LW-16158	113480	49620	31.93
9/14/2016	1001661	TOLU457079	16258	LW-16158	101080	46500	27.29
9/14/2016	1001689	AWIU9501	16258	LW-16158	108160	49160	29.5
9/14/2016	1001690	GCEU425315	16258	LW-16158	103540	41380	31.08
9/14/2016	1001691	RBSU200293	16258	LW-16158	106780	47140	29.82
9/14/2016	1001692	TOLU460663	16258	LW-16158	110800	47040	31.88
9/14/2016	1001693	RBSU200227	16258	LW-16158	107380	46740	30.32
9/15/2016	1001710	TOLU457097	16258	LW-16158	105740	46960	29.39
9/15/2016	1001711	GCEU435218	16258	LW-16158	108080	46400	30.84
9/15/2016	1001713	EGTU420715	16258	LW-16158	100580	45060	27.76
9/15/2016	1001715	TOLU422672	16258	LW-16158	107640	48640	29.5
9/15/2016	1001718	UPCU411553	16258	LW-16158	103800	47340	28.23
9/15/2016	1001719	EGTU420588	16258	LW-16158	100480	47000	26.74
9/15/2016	1001720	EGTU420348	16258	LW-16158	103220	46900	28.16
9/15/2016	1001723	TOLU467943	16258	LW-16158	107520	46920	30.3
9/15/2016	1001724	RBSU200109	16258	LW-16158	102640	47240	27.7
9/15/2016	1001725	GCEU431598	16258	LW-16158	109980	46040	31.97
9/15/2016	1001726	GCEU431457	16258	LW-16158	114040	47900	33.07
9/15/2016	1001727	EGTU420002	16258	LW-16158	105740	46580	29.58
9/15/2016	1001728	EGTU420248	16258	LW-16158	103860	46420	28.72
9/15/2016	1001729	EGTU420782	16258	LW-16158	106980	45220	30.88
9/15/2016	1001730	EGTU420523	16258	LW-16158	98520	46740	25.89
9/15/2016	1001731	GCEU440046	16258	LW-16158	106780	46240	30.27
9/15/2016	1001732	RBSU200235	16258	LW-16158	116440	47100	34.67
9/15/2016	1001736	GCEU431710	16258	LW-16158	106720	48000	29.36
9/15/2016	1001738	GCEU425687	16258	LW-16158	112520	47040	32.74
9/15/2016	1001740	TOLU456702	16258	LW-16158	108440	48160	30.14
9/15/2016	1001741	EGTU420425	16258	LW-16158	102000	47260	27.37
9/15/2016	1001743	EGTU420560	16258	LW-16158	101860	44980	28.44
9/15/2016	1001747	UPCU411575	16258	LW-16158	101500	46900	27.3
9/15/2016	1001749	UPCU411499	16258	LW-16158	102300	46460	27.92
9/15/2016	1001753	TOLU459362	16258	LW-16158	116620	45920	35.35
9/15/2016	1001754	GCEU430226	16258	LW-16158	112500	48520	31.99
9/15/2016	1001756	TOLU457898	16258	LW-16158	106060	47500	29.28
9/15/2016	1001757	TRLU901828	16258	LW-16158	111720	46140	32.79
9/15/2016	1001760	GCEU445001	16258	LW-16158	115080	45920	34.58
9/16/2016	1001819	TOLU468313	16258	LW-16158	108720	45520	31.6
9/16/2016	1001820	RBSU200347	16258	LW-16158	114060	46680	33.69
9/16/2016	1001821	GCEU431113	16258	LW-16158	111460	48240	31.61
9/16/2016	1001822	TOLU425092	16258	LW-16158	106500	45220	30.64
9/16/2016	1001823	TOLU457465	16258	LW-16158	109220	46260	31.48

9/16/2016	1001824	TOLU460599	16258	LW-16158	108080	45140	31.47
9/16/2016	1001825	GCEU426382	16258	LW-16158	117780	48200	34.79
9/16/2016	1001826	GCEU440180	16258	LW-16158	108160	44800	31.68
9/16/2016	1001827	GCEU431545	16258	LW-16158	110740	47440	31.65
9/16/2016	1001828	GCEU420274	16258	LW-16158	111280	46180	32.55
9/16/2016	1001829	TOLU456493	16258	LW-16158	104140	44720	29.71
9/16/2016	1001830	TOLU458869	16258	LW-16158	105220	45080	30.07
9/16/2016	1001831	TOLU467061	16258	LW-16158	109100	45540	31.78
9/16/2016	1001832	GCEU425056	16258	LW-16158	115180	45800	34.69
9/16/2016	1001833	GCEU435263	16258	LW-16158	111760	45160	33.3
9/16/2016	1001834	TOLU466825	16258	LW-16158	108620	46600	31.01
9/16/2016	1001835	TOLU469915	16258	LW-16158	100480	45400	27.54
9/16/2016	1001836	GCEU432045	16258	LW-16158	109160	46520	31.32
9/16/2016	1001837	GCEU426104	16258	LW-16158	91400	46060	22.67
9/16/2016	1001838	TOLU455168	16258	LW-16158	102560	46660	27.95
9/16/2016	1001839	GCEU440175	16258	LW-16158	110720	48620	31.05
9/16/2016	1001840	UPCU411507	16258	LW-16158	108700	46740	30.98
9/16/2016	1001841	GCEU435018	16258	LW-16158	113300	46280	33.51
9/16/2016	1001842	RBSU200314	16258	LW-16158	106800	45840	30.48
9/16/2016	1001843	RBSU200370	16258	LW-16158	102460	47220	27.62
9/16/2016	1001844	RBSU200320	16258	LW-16158	107500	47360	30.07
9/16/2016	1001845	RBSU200291	16258	LW-16158	98360	46280	26.04
9/16/2016	1001846	RBSU200154	16258	LW-16158	102300	48060	27.12
9/16/2016	1001849	GCEU435010	16258	LW-16158	101040	45780	27.63
9/16/2016	1001852	RBSU200344	16258	LW-16158	103720	47060	28.33
9/16/2016	1001854	GCEU426418	16258	LW-16158	110520	46340	32.09
9/16/2016	1001859	GCEU435079	16258	LW-16158	105980	47080	29.45
9/16/2016	1001864	TOLU468938	16258	LW-16158	105460	46640	29.41
9/16/2016	1001868	EGTU420763	16258	LW-16158	107320	46380	30.47
9/16/2016	1001870	UPCU411592	16258	LW-16158	108020	47120	30.45
9/16/2016	1001871	TOLU458725	16258	LW-16158	109920	46660	31.63
9/16/2016	1001877	RBSU200133	16258	LW-16158	111820	49420	31.2
9/19/2016	1002036	TPHU252136	16258	LW-16158	107940	47780	30.08
9/19/2016	1002045	AWIU200001	16258	LW-16158	106580	48400	29.09
9/20/2016	1002107	GCEU426058	16258	LW-16158	100700	46640	27.03
9/20/2016	1002108	TOLU456114	16258	LW-16158	93980	47460	23.26
9/20/2016	1002109	GCEU430038	16258	LW-16158	100860	45980	27.44
9/20/2016	1002110	GCEU432248	16258	LW-16158	101160	46620	27.27
9/20/2016	1002111	GCEU430663	16258	LW-16158	96560	45660	25.45
9/20/2016	1002112	TOLU459438	16258	LW-16158	99220	47800	25.71
9/20/2016	1002113	UPCU411476	16258	LW-16158	100780	47640	26.57
9/20/2016	1002114	TOLU456617	16258	LW-16158	101780	47320	27.23
9/20/2016	1002115	EGTU420326	16258	LW-16158	100320	46040	27.14
9/20/2016	1002116	RBSU200226	16258	LW-16158	107260	46780	30.24
9/20/2016	1002117	UPCU411464	16258	LW-16158	99380	47240	26.07
9/20/2016	1002118	GCEU440215	16258	LW-16158	107040	45540	30.75
9/20/2016	1002119	GCEU426461	16258	LW-16158	111060	47060	32

9/20/2016	1002120	AWIU8497	16258	LW-16158	107760	48140	29.81
9/20/2016	1002121	UPCU411570	16258	LW-16158	110260	46280	31.99
9/20/2016	1002122	AWIU8438	16258	LW-16158	106780	47720	29.53
9/20/2016	1002123	TRLU900382	16258	LW-16158	108180	47060	30.56
9/20/2016	1002124	TOLU466654	16258	LW-16158	108720	45280	31.72
9/20/2016	1002125	GCEU420126	16258	LW-16158	109440	46400	31.52
9/20/2016	1002126	TOLU469316	16258	LW-16158	106900	45520	30.69
9/20/2016	1002127	UPCU411486	16258	LW-16158	112160	47100	32.53
9/20/2016	1002128	AWIU8492	16258	LW-16158	113660	47620	33.02
9/20/2016	1002129	EGTU420710	16258	LW-16158	104620	46460	29.08
9/20/2016	1002130	TRLU901576	16258	LW-16158	109760	46220	31.77
9/20/2016	1002131	GCEU431751	16258	LW-16158	110440	45000	32.72
9/20/2016	1002132	GCEU431875	16258	LW-16158	107060	46320	30.37
9/20/2016	1002133	RBSU200328	16258	LW-16158	105060	47280	28.89
9/20/2016	1002134	TOLU458381	16258	LW-16158	108900	46400	31.25
9/20/2016	1002136	SCXU297728	16258	LW-16158	103860	46200	28.83
9/20/2016	1002139	GCEU425648	16258	LW-16158	109280	46420	31.43
9/20/2016	1002142	GCEU426263	16258	LW-16158	106800	46820	29.99
9/20/2016	1002144	TOLU467693	16258	LW-16158	109380	46620	31.38
9/20/2016	1002145	GCEU431837	16258	LW-16158	109400	48120	30.64
9/20/2016	1002146	GCEU430734	16258	LW-16158	107440	48380	29.53
9/20/2016	1002147	GCEU430285	16258	LW-16158	113820	46640	33.59
9/20/2016	1002148	TPHU252006	16258	LW-16158	100860	46500	27.18
9/20/2016	1002149	AWIU8207	16258	LW-16158	103120	48060	27.53
9/20/2016	1002150	GCEU435259	16258	LW-16158	109180	45540	31.82
9/20/2016	1002151	EGTU420695	16258	LW-16158	106240	46560	29.84
9/20/2016	1002152	GCEU426143	16258	LW-16158	110660	46020	32.32
9/20/2016	1002153	GCEU425224	16258	LW-16158	107720	46320	30.7
9/20/2016	1002154	UPCU411483	16258	LW-16158	100940	46820	27.06
9/20/2016	1002156	GCEU431233	16258	LW-16158	108220	46200	31.01
9/20/2016	1002157	GCEU431988	16258	LW-16158	110220	47420	31.4
9/20/2016	1002158	TOLU468379	16258	LW-16158	105380	47320	29.03
9/20/2016	1002159	RBSU200248	16258	LW-16158	106320	47180	29.57
9/20/2016	1002161	RBSU200323	16258	LW-16158	112300	46980	32.66
9/20/2016	1002162	AWIU200002	16258	LW-16158	104220	49580	27.32
9/20/2016	1002163	AWIU200012	16258	LW-16158	108720	48540	30.09
9/20/2016	1002164	AWIU200010	16258	LW-16158	105900	48780	28.56
9/20/2016	1002165	AWIU8439	16258	LW-16158	110980	47840	31.57
9/20/2016	1002166	TRLU900772	16258	LW-16158	107760	48020	29.87
9/20/2016	1002167	GCEU426056	16258	LW-16158	106260	47540	29.36
9/20/2016	1002168	AWIU8280	16258	LW-16158	107240	48020	29.61
9/21/2016	1002174	RBSU200339	16258	LW-16158	102480	46760	27.86
9/21/2016	1002175	TOLU476859	16258	LW-16158	97840	46500	25.67
9/21/2016	1002176	TPHU252184	16258	LW-16158	109920	47840	31.04
9/21/2016	1002177	TOLU453454	16258	LW-16158	107380	44940	31.22
9/21/2016	1002178	UPCU411465	16258	LW-16158	102500	46580	27.96
9/21/2016	1002179	UPCU411462	16258	LW-16158	107680	48220	29.73

9/21/2016	1002180	EGTU420618	16258	LW-16158	100120	48080	26.02
9/21/2016	1002181	TOLU443076	16258	LW-16158	107280	44920	31.18
9/21/2016	1002182	TOLU425276	16258	LW-16158	101660	46400	27.63
9/21/2016	1002183	TOLU467881	16258	LW-16158	109080	47180	30.95
9/21/2016	1002184	TOLU457282	16258	LW-16158	105260	47760	28.75
9/21/2016	1002185	UPCU411524	16258	LW-16158	96560	46660	24.95
9/21/2016	1002187	GCEU425626	16258	LW-16158	111700	48080	31.81
9/21/2016	1002188	GCEU432073	16258	LW-16158	91380	46620	22.38
9/21/2016	1002189	TOLU466664	16258	LW-16158	89600	46200	21.7
9/21/2016	1002190	AWIU8275	16258	LW-16158	98560	47900	25.33
9/21/2016	1002191	EGTU420206	16258	LW-16158	103700	46400	28.65
9/21/2016	1002192	TOLU468692	16258	LW-16158	107660	45920	30.87
9/21/2016	1002193	TOLU466628	16258	LW-16158	105480	45780	29.85
9/21/2016	1002194	AWIU8190	16258	LW-16158	103220	47500	27.86
9/21/2016	1002195	AWIU8214	16258	LW-16158	110740	47980	31.38
9/21/2016	1002196	EGTU420027	16258	LW-16158	103060	47100	27.98
9/21/2016	1002197	TRLU901194	16258	LW-16158	103260	47600	27.83
9/21/2016	1002198	TOLU453437	16258	LW-16158	103040	45480	28.78
9/21/2016	1002199	TOLU475894	16258	LW-16158	101300	47340	26.98
9/21/2016	1002200	TOLU474109	16258	LW-16158	110540	47300	31.62
9/21/2016	1002201	TRLU900263	16258	LW-16158	102480	44960	28.76
9/21/2016	1002202	TOLU453223	16258	LW-16158	110020	48580	30.72
9/21/2016	1002203	TOLU467347	16258	LW-16158	111400	44980	33.21
9/21/2016	1002204	GCEU432170	16258	LW-16158	103120	44660	29.23
9/21/2016	1002205	TRLU902611	16258	LW-16158	109160	47280	30.94
9/21/2016	1002206	TOLU454046	16258	LW-16158	107340	47200	30.07
9/21/2016	1002207	AWIU8500	16258	LW-16158	102240	47640	27.3
9/21/2016	1002208	AWIU8378	16258	LW-16158	111160	47480	31.84
9/21/2016	1002209	RBSU200273	16258	LW-16158	110520	47060	31.73
9/21/2016	1002210	TRLU900694	16258	LW-16158	111700	45840	32.93
9/21/2016	1002211	RBSU200278	16258	LW-16158	103220	45860	28.68
9/21/2016	1002212	RBSU200280	16258	LW-16158	98480	47260	25.61
9/21/2016	1002213	GCEU430753	16258	LW-16158	112400	47460	32.47
9/21/2016	1002214	GCEU425968	16258	LW-16158	104700	46920	28.89
9/21/2016	1002217	TRLU903644	16258	LW-16158	96240	44980	25.63
9/22/2016	1002218	GCEU435263	16258	LW-16158	104940	46000	29.47
9/22/2016	1002219	TOLU456493	16258	LW-16158	69160	45920	11.62
9/22/2016	1002221	GCEU420274	16258	LW-16158	102700	44580	29.06
9/22/2016	1002338	EGTU420370	16258	LW-16158	91800	46000	22.9
9/22/2016	1002339	AWIU8495	16258	LW-16158	114560	47860	33.35
9/22/2016	1002340	TOLU476396	16258	LW-16158	100620	47220	26.7
9/22/2016	1002341	TOLU465715	16258	LW-16158	100240	47220	26.51
9/22/2016	1002342	TOLU453460	16258	LW-16158	98680	46580	26.05
9/22/2016	1002343	TOLU460440	16258	LW-16158	98940	46460	26.24
9/22/2016	1002344	TOLU456368	16258	LW-16158	98340	44920	26.71
9/22/2016	1002346	TOLU459032	16258	LW-16158	95940	46540	24.7
9/22/2016	1002347	GCEU430018	16258	LW-16158	97400	46520	25.44

9/22/2016	1002363	GCEU431150	16258	LW-16158	111200	47260	31.97
9/22/2016	1002364	TOLU469150	16258	LW-16158	108120	46020	31.05
9/22/2016	1002365	TPHU252034	16258	LW-16158	113040	46360	33.34
9/22/2016	1002371	GCEU432053	16258	LW-16158	110380	45380	32.5
9/22/2016	1002372	GCEU425255	16258	LW-16158	114560	46640	33.96
9/22/2016	1002373	TOLU456052	16258	LW-16158	114860	46400	34.23
9/22/2016	1002376	TOLU422718	16258	LW-16158	107120	46600	30.26
9/22/2016	1002377	TOLU466636	16258	LW-16158	103800	46420	28.69
9/22/2016	1002378	GCEU425056	16258	LW-16158	101340	45880	27.73
9/22/2016	1002379	TOLU469589	16258	LW-16158	100320	44900	27.71
9/27/2016	1002590	TOLU469237	16258	LW-16158	115760	46540	34.61
9/27/2016	1002591	TOLU456114	16258	LW-16158	103040	46860	28.09
9/27/2016	1002592	GCEU426058	16258	LW-16158	106200	45940	30.13
9/27/2016	1002593	EGTU420135	16258	LW-16158	102000	45160	28.42
9/27/2016	1002594	EGTU420003	16258	LW-16158	106920	48460	29.23
9/27/2016	1002597	TOLU458607	16258	LW-16158	105080	46260	29.41
9/27/2016	1002600	TOLU467524	16258	LW-16158	102140	46400	27.87
9/27/2016	1002608	UPCU411451	16258	LW-16158	105160	47560	28.8
9/27/2016	1002610	GCEU426509	16258	LW-16158	102300	46800	27.75
9/27/2016	1002612	TOLU457465	16258	LW-16158	107860	46960	30.45
9/27/2016	1002614	TOLU460599	16258	LW-16158	111620	44060	33.78
9/27/2016	1002615	TOLU467061	16258	LW-16158	102200	45800	28.2
9/27/2016	1002618	TOLU422134	16258	LW-16158	96740	45780	25.48
9/27/2016	1002621	ICSU464551	16258	LW-16158	99780	45740	27.02
9/27/2016	1002631	TOLU425233	16258	LW-16158	101400	45660	27.87
9/27/2016	1002634	GCEU432088	16258	LW-16158	102220	45180	28.52
9/27/2016	1002638	TOLU468764	16258	LW-16158	103720	48000	27.86
9/27/2016	1002641	GCEU425636	16258	LW-16158	97580	46100	25.74
9/27/2016	1002642	TOLU443480	16258	LW-16158	97240	45420	25.91
9/27/2016	1002647	AWIU8261	16258	LW-16158	104480	47220	28.63
9/27/2016	1002670	GCEU430038	16258	LW-16158	102280	46560	27.86
9/27/2016	1002671	TOLU468788	16258	LW-16158	101760	45740	28.01
9/27/2016	1002672	GCEU432248	16258	LW-16158	108060	47620	30.22
9/27/2016	1002673	AWIU8457	16258	LW-16158	104460	46640	28.91
9/27/2016	1002674	GCEU431372	16258	LW-16158	110780	46400	32.19
9/27/2016	1002675	TOLU468812	16258	LW-16158	105980	45720	30.13
9/27/2016	1002676	GCEU425116	16258	LW-16158	93400	45420	23.99
9/27/2016	1002677	TRLU902653	16258	LW-16158	93760	45440	24.16
9/27/2016	1002678	TPHU252450	16258	LW-16158	101340	45860	27.74
9/27/2016	1002679	UPCU411467	16258	LW-16158	95820	46780	24.52
9/27/2016	1002680	TOLU468514	16258	LW-16158	101200	47180	27.01
9/27/2016	1002681	TOLU452265	16258	LW-16158	107840	45880	30.98
9/28/2016	1002687	TOLU466807	16258	LW-16158	95460	46340	24.56
9/28/2016	1002688	AWIU8470	16258	LW-16158	105140	47800	28.67
9/28/2016	1002707	GCEU435285	16258	LW-16158	105240	44560	30.34
9/28/2016	1002711	UPCU411478	16258	LW-16158	90840	46200	22.32
9/28/2016	1002712	GCEU426157	16258	LW-16158	103980	48420	27.78

9/28/2016	1002734	TRLU900349	16258	LW-16158	103180	45960	28.61
9/28/2016	1002735	TOLU466709	16258	LW-16158	104640	45980	29.33
9/28/2016	1002750	GCEU420366	16258	LW-16158	107740	45060	31.34
9/28/2016	1002751	GCEU435186	16258	LW-16158	90420	46440	21.99
9/28/2016	1002752	TRLU900694	16258	LW-16158	108100	45480	31.31
9/28/2016	1002753	GCEU435239	16258	LW-16158	100960	46160	27.4
9/28/2016	1002754	TOLU422268	16258	LW-16158	103260	45700	28.78
9/28/2016	1002755	TOLU459281	16258	LW-16158	91120	46980	22.07
9/28/2016	1002756	TOLU452951	16258	LW-16158	95740	47140	24.3
9/28/2016	1002757	GCEU426548	16258	LW-16158	107100	47060	30.02
9/28/2016	1002758	EGTU420799	16258	LW-16158	90140	46380	21.88
10/3/2016	1003003	GCEU432123	16258	LW-16158	112040	48320	31.86
10/3/2016	1003004	RBSU200226	16258	LW-16158	111360	47100	32.13
10/3/2016	1003005	EGTU420027	16258	LW-16158	108380	47340	30.52
10/3/2016	1003006	TOLU468751	16258	LW-16158	110760	46460	32.15
10/3/2016	1003007	AWIU8500	16258	LW-16158	89520	47740	20.89
10/4/2016	1003030	GCEU435218	16258	LW-16158	101500	46760	27.37
10/4/2016	1003031	UPCU411553	16258	LW-16158	91220	46180	22.52
10/4/2016	1003032	RBSU200286	16258	LW-16158	105280	49740	27.77
10/4/2016	1003033	TOLU422672	16258	LW-16158	107980	48640	29.67
10/4/2016	1003035	TOLU457097	16258	LW-16158	106500	47560	29.47
10/4/2016	1003036	GCEU435079	16258	LW-16158	106180	47740	29.22
10/4/2016	1003037	RBSU200158	16258	LW-16158	106600	47660	29.47
10/4/2016	1003038	GCEU425789	16258	LW-16158	107140	46180	30.48
10/4/2016	1003039	GCEU420172	16258	LW-16158	104680	46160	29.26
10/4/2016	1003040	TOLU458915	16258	LW-16158	109200	45740	31.73
10/4/2016	1003041	RBSU200344	16258	LW-16158	104200	47220	28.49
10/4/2016	1003042	GCEU435010	16258	LW-16158	109560	45160	32.2
10/4/2016	1003045	TOLU459438	16258	LW-16158	109600	47880	30.86
10/4/2016	1003046	TOLU453227	16258	LW-16158	109200	46220	31.49
10/4/2016	1003048	UPCU411476	16258	LW-16158	91960	47800	22.08
10/4/2016	1003050	GCEU425315	16258	LW-16158	105000	45900	29.55
10/4/2016	1003052	AWIU200010	16258	LW-16158	107080	49840	28.62
10/4/2016	1003056	RBSU200154	16258	LW-16158	96640	47560	24.54
10/4/2016	1003059	RBSU200291	16258	LW-16158	106380	47000	29.69
10/4/2016	1003060	RBSU200370	16258	LW-16158	96720	46720	25
10/4/2016	1003065	TOLU469915	16258	LW-16158	108920	46620	31.15
10/4/2016	1003066	RBSU200314	16258	LW-16158	105440	46080	29.68
10/4/2016	1003069	AWIU8176	16258	LW-16158	100180	48780	25.7
10/4/2016	1003073	GCEU435018	16258	LW-16158	111400	46040	32.68
10/4/2016	1003076	GCEU426104	16258	LW-16158	109500	46700	31.4
10/4/2016	1003079	TOLU455168	16258	LW-16158	102880	47380	27.75
10/4/2016	1003080	UPCU411507	16258	LW-16158	105700	46940	29.38
10/4/2016	1003084	GCEU425216	16258	LW-16158	96540	46360	25.09
10/4/2016	1003086	EGTU420308	16258	LW-16158	97180	45200	25.99
10/4/2016	1003087	AWIU8360	16258	LW-16158	107460	48000	29.73
10/4/2016	1003094	TRLU901575	16258	LW-16158	98760	46520	26.12

10/4/2016	1003095	GCEU432072	16258	LW-16158	100780	45860	27.46
10/4/2016	1003096	GCEU425933	16258	LW-16158	98680	49240	24.72
10/4/2016	1003102	TOLU457052	16258	LW-16158	114780	45760	34.51
10/4/2016	1003103	AWIU8245	16258	LW-16158	111600	47160	32.22
10/4/2016	1003104	TRLU902854	16258	LW-16158	102760	46360	28.2
10/4/2016	1003107	RBSU200259	16258	LW-16158	112800	47260	32.77
10/4/2016	1003108	TOLU455138	16258	LW-16158	107380	45640	30.87
10/4/2016	1003110	RBSU200245	16258	LW-16158	115380	46640	34.37
10/4/2016	1003114	RBSU200179	16258	LW-16158	99480	46100	26.69
10/4/2016	1003119	TRLU900271	16258	LW-16158	109200	46920	31.14
10/4/2016	1003120	GCEU425209	16258	LW-16158	103900	49620	27.14
10/4/2016	1003121	TPHU252136	16258	LW-16158	109020	46680	31.17
10/4/2016	1003123	TRLU900477	16258	LW-16158	103720	46380	28.67
10/4/2016	1003125	RBSU200391	16258	LW-16158	111120	46560	32.28
10/4/2016	1003126	AWIU200001	16258	LW-16158	111200	49400	30.9
10/4/2016	1003127	TOLU466825	16258	LW-16158	94420	46760	23.83
10/4/2016	1003128	AWIU9501	16258	LW-16158	111360	51500	29.93
10/4/2016	1003129	GCEU435366	16258	LW-16158	112200	47400	32.4
10/4/2016	1003132	GCEU445104	16258	LW-16158	112120	46080	33.02
10/4/2016	1003133	GCEU435263	16258	LW-16158	110520	46080	32.22
10/4/2016	1003134	AWIU8083	16258	LW-16158	111420	47500	31.96
10/4/2016	1003136	AWIU8218	16258	LW-16158	110740	47420	31.66
10/4/2016	1003138	AWIU8335	16258	LW-16158	111200	47340	31.93
10/4/2016	1003139	GCEU435484	16258	LW-16158	105140	47860	28.64
10/4/2016	1003140	GCEU425626	16258	LW-16158	109740	47740	31
10/4/2016	1003141	GCEU430852	16258	LW-16158	106640	46000	30.32
10/4/2016	1003142	GCEU425968	16258	LW-16158	101760	46840	27.46
10/4/2016	1003145	TOLU456216	16258	LW-16158	94300	46320	23.99
10/4/2016	1003151	TOLU458869	16258	LW-16158	104060	45500	29.28
10/4/2016	1003152	TOLU456493	16258	LW-16158	108440	46400	31.02
10/4/2016	1003153	RBSU200227	16258	LW-16158	112960	46040	33.46
10/4/2016	1003154	TOLU452871	16258	LW-16158	110100	46680	31.71
10/4/2016	1003155	GCEU420274	16258	LW-16158	110580	46120	32.23
10/4/2016	1003156	RBSU200268	16258	LW-16158	113180	46880	33.15
10/4/2016	1003157	RBSU200216	16258	LW-16158	109700	46180	31.76
10/5/2016	1003236	TOLU460663	16258	LW-16158	103440	46980	28.23
10/5/2016	1003237	RBSU200426	16258	LW-16158	109560	47360	31.1
10/5/2016	1003238	TOLU458663	16258	LW-16158	102240	46100	28.07
10/5/2016	1003239	GCEU426319	16258	LW-16158	106360	47820	29.27
10/5/2016	1003240	UPCU411544	16258	LW-16158	102940	46540	28.2
10/10/2016	1003477	AWIU8197	16258	LW-16158	98320	47580	25.37
10/10/2016	1003478	GCEU431430	16258	LW-16158	107780	46360	30.71
10/11/2016	1003484	TOLU459264	16258	LW-16158	109620	44940	32.34
10/11/2016	1003485	GCEU432143	16258	LW-16158	99900	45820	27.04
10/11/2016	1003486	TOLU456958	16258	LW-16158	115680	45280	35.2
10/11/2016	1003487	GCEU432072	16258	LW-16158	110460	47420	31.52
10/11/2016	1003488	TOLU422644	16258	LW-16158	112400	45720	33.34

10/11/2016	1003489	AWIU8131	16258	LW-16158	116180	47200	34.49
10/11/2016	1003490	AWIU8245	16258	LW-16158	106340	46680	29.83
10/11/2016	1003491	RBSU200109	16258	LW-16158	112020	46000	33.01
10/11/2016	1003493	RBSU200245	16258	LW-16158	116200	47600	34.3
10/11/2016	1003494	TRLU900271	16258	LW-16158	102820	46380	28.22
10/11/2016	1003497	RBSU200236	16258	LW-16158	106680	45980	30.35
10/11/2016	1003502	GCEU440070	16258	LW-16158	115000	45300	34.85
10/11/2016	1003511	TOLU459032	16258	LW-16158	114880	47200	33.84
10/11/2016	1003512	TOLU468764	16258	LW-16158	112560	46920	32.82
10/11/2016	1003515	TOLU455168	16258	LW-16158	111520	45600	32.96
10/11/2016	1003518	TOLU453227	16258	LW-16158	106000	45260	30.37
10/11/2016	1003528	TRLU903644	16258	LW-16158	113360	46460	33.45
10/11/2016	1003529	RBSU200291	16258	LW-16158	107020	46580	30.22
10/11/2016	1003534	RBSU200370	16258	LW-16158	105980	46620	29.68
10/11/2016	1003541	AWIU8360	16258	LW-16158	107900	46700	30.6
10/11/2016	1003548	TRLU901575	16258	LW-16158	110300	45220	32.54
10/11/2016	1003551	AWIU8280	16258	LW-16158	113740	47860	32.94
10/11/2016	1003555	EGTU420308	16258	LW-16158	109420	46700	31.36
10/11/2016	1003556	TOLU426049	16258	LW-16158	108760	44800	31.98
10/11/2016	1003558	RBSU200389	16258	LW-16158	108600	46080	31.26
10/11/2016	1003559	RBSU200403	16258	LW-16158	117200	46500	35.35
10/11/2016	1003560	TOLU467943	16258	LW-16158	101220	45320	27.95
10/11/2016	1003561	EGTU420348	16258	LW-16158	111220	47040	32.09
10/11/2016	1003562	RBSU200113	16258	LW-16158	105480	46700	29.39
10/11/2016	1003563	RBSU200208	16258	LW-16158	112600	46240	33.18
10/11/2016	1003564	TOLU469911	16258	LW-16158	110560	46640	31.96
10/11/2016	1003565	RBSU200223	16258	LW-16158	115300	45480	34.91
10/11/2016	1003566	EGTU420715	16258	LW-16158	113560	44900	34.33
10/12/2016	1003580	TOLU452051	16258	LW-16158	101160	45180	27.99
10/19/2016	1003972	TOLU422134	16258	LW-16158	115120	46520	34.3
10/19/2016	1003974	GCEU426509	16258	LW-16158	102080	46740	27.67
10/19/2016	1003981	ICSU464551	16258	LW-16158	113420	46220	33.6
10/19/2016	1003986	GCEU431150	16258	LW-16158	110220	48820	30.7
10/19/2016	1003995	TOLU469221	16258	LW-16158	108680	46340	31.17
10/19/2016	1003997	UPCU411504	16258	LW-16158	112600	48200	32.2
10/19/2016	1004008	TOLU459498	16258	LW-16158	112940	45460	33.74
10/19/2016	1004009	TPHU252202	16258	LW-16158	114460	47700	33.38
10/19/2016	1004013	GCEU431113	16258	LW-16158	111400	47980	31.71
10/19/2016	1004015	TOLU469150	16258	LW-16158	105200	46840	29.18
10/19/2016	1004019	TOLU422718	16258	LW-16158	112840	46900	32.97
10/19/2016	1004024	TOLU467061	16258	LW-16158	109840	44720	32.56
10/19/2016	1004026	TOLU457465	16258	LW-16158	110800	48000	31.4
10/19/2016	1004027	GCEU425636	16258	LW-16158	115900	46520	34.69
10/19/2016	1004028	GCEU435285	16258	LW-16158	104040	44700	29.67
10/19/2016	1004029	UPCU411451	16258	LW-16158	108900	46720	31.09
10/19/2016	1004030	TOLU468514	16258	LW-16158	113940	47920	33.01
10/19/2016	1004239	TPHU252034	16258	LW-16158	112800	45440	33.68

11/10/2016	1005168	GCEU431988	16258	LW-16158	101560	48500	26.53
11/10/2016	1005169	TOLU425092	16258	LW-16158	107220	46200	30.51
11/10/2016	1005170	TRLU900772	16258	LW-16158	112260	49040	31.61
11/10/2016	1005173	GCEU431768	16258	LW-16158	110640	47760	31.44
11/10/2016	1005175	GCEU426709	16258	LW-16158	109520	49120	30.2
11/10/2016	1005176	AWIU8439	16258	LW-16158	112860	48120	32.37
11/10/2016	1005226	GCEU426831	16258	LW-16158	112400	48200	32.1
11/10/2016	1005228	TOLU466636	16258	LW-16158	108200	47040	30.58
11/10/2016	1005233	GCEU431966	16258	LW-16158	111580	48400	31.59
11/10/2016	1005234	GCEU440179	16258	LW-16158	104580	45100	29.74
11/16/2016	1005473	AWIU8130	16258	LW-16158	115440	49120	33.16
11/16/2016	1005483	EGTU420661	16258	LW-16158	115120	47980	33.57
11/16/2016	1005492	GCEU435498	16258	LW-16158	114900	47000	33.95
11/16/2016	1005499	AWIU8190	16258	LW-16158	114500	48740	32.88
11/16/2016	1005506	TOLU424194	16258	LW-16158	115120	49840	32.64
11/16/2016	1005514	TOLU424168	16258	LW-16158	109960	46540	31.71
11/19/2016	1005694	TOLU468379	16258	LW-16158	107540	47200	30.17
11/21/2016	1005821	AWIU8470	16258	LW-16158	106460	47780	29.34
11/21/2016	1005822	GCEU425255	16258	LW-16158	105680	46020	29.83
11/21/2016	1005823	EGTU420003	16258	LW-16158	112340	48920	31.71
11/21/2016	1005824	TOLU456052	16258	LW-16158	109440	46420	31.51
11/21/2016	1005825	TRLU900755	16258	LW-16158	112860	45200	33.83
11/21/2016	1005826	TOLU458607	16258	LW-16158	112580	47500	32.54
11/21/2016	1005827	TOLU467524	16258	LW-16158	102780	46640	28.07

22952.13

APPENDIX E
Open Water Disposal Site Use Authorization

PETER GOLDMARK
COMMISSIONER OF PUBLIC LANDS

OPEN WATER DISPOSAL SITE USE AUTHORIZATION NO. 20-522034

The STATE OF WASHINGTON, acting by and through the Department of Natural Resources, hereinafter called State, does hereby permit the PORT OF EVERETT (Grantee), a Washington State Special Purpose District (Port District), to use certain lands owned by the state of Washington situated in Snohomish County and designated as follows:

That area encompassed within a 600 foot radius of a point which is 47° 58.85 North Latitude and 122° 16.74 West Longitude (1983 North American Datum), also known as the Port Gardner non-dispersive VTS open water disposal site.

SECTION 1 TERMS

1.01 Term. This use authorization shall be effective on August 15, 2016, and will expire at 11:59 pm on February 15, 2017, or as otherwise specified herein.

1.02 Renewal. State may extend this use authorization upon whatever terms and conditions it may prescribe, providing an extension is in the public interest.

1.03 Cancellation. This use authorization may be suspended or terminated for violation of any of the terms stated in this use authorization or any amendments thereto or if such action is found to be in the public interest.

1.04 Termination. This use authorization shall terminate upon the expiration, cancellation, or suspension of State's shoreline permit authorizing the site. If State does obtain a renewed shoreline permit for said site, this use authorization may be reinstated upon terms then in effect, but shall include any additional application fees associated with increased costs for management of the site. This use authorization or reinstated use authorization will terminate upon the use authorization expiration date shown above.

SECTION 2 USE OF PREMISES

2.01 Permitted Use. Grantee shall have non-exclusive use of the premises only for the disposal of approved dredged material of a volume not to exceed 17,210 cubic yards, as authorized by federal, state, and local regulatory agencies for the Port of Everett's Pacific Terminal Berth. This volume will be determined based on pre- and post- dredging site measurements using procedures established by State. If such procedures are not established by State, then volume will be based on the barge volume times the number of trips to the site.

2.02 Positioning. Grantee, its contractor, or operator shall fix and record exact position (latitude and longitude to the nearest one-thousandths of a minute) at the initiation and completion of discharge and shall concentrate the dumping of material at the center of the site, unless otherwise specified. The vessel's position shall be fixed by using a global positioning system (GPS), the Coast Guard Puget Sound Vessel Traffic Service (PSVTS), Radar, LORAN-C, SATNAV, or any other methods approved by State. Grantee, its contractor, or operator shall also record the reading on the vessel's fathometer at the time of discharge of the material. In areas where the Coast Guard PSVTS is available, Grantee, its contractor, or operator shall notify PSVTS ("Seattle Traffic" on VHF-FM Channel 14) prior to arriving at the disposal site and shall obtain US Coast Guard notification that the barge is on site at the time of dumping. If such notification is not received the material shall not be dumped. Position and fathometer recordings shall be made on Disposal Site Use Report forms (see Subsection 4.02) provided by State.

2.03 Cleanup. All floatable debris coming from material disposed of at the site shall be collected and disposed of on land by Grantee. Grantee shall comply with all federal, state, and local laws, regulations, rules or ordinances in disposing of any such debris.

2.04 Other. From time-to-time, if it is determined that additional environmental conditions or benefits to the public are necessary, State reserves the right to amend this use authorization to include such conditions.

2.05 Disposal Method. All disposals of approved dredged materials shall be done in accordance with the specifications set forth in the Plan of Operations (Attachment A). In addition to any requirements described in the Plan of Operations, Grantee must only use bottom dump barges to dispose of the approved dredged material at this site. Use of any type of barge other than a bottom dump barge is prohibited, unless expressly approved in a separate writing by the State before the commencement of any disposal activity.

SECTION 3 PAYMENT

The payment of these fees to State is the essence of this use authorization, and the same shall be, and is, a condition precedent to the execution and continuance of this use authorization or any rights thereunder.

3.01 Minimum Fee. Grantee shall pay State a fee of $2,000.00 or $0.45 for each cubic yard dumped, whichever is larger as provided in WAC 332-30-166(9) or as hereafter amended, with the initial $2,000.00 per permit being a minimum nonrefundable fee.

3.02 Payment. The payment of the minimal nonrefundable fee to State is a condition precedent to the execution of this permit. Failure to pay any required fees in addition to the nonrefundable fee shall be grounds for termination or suspension of the permit. Payment is to be made to the Department of Natural Resources, Financial Management Division, PO Box 47041, Olympia, Washington 98504-7041, in the following manner:

$2,000.00 is due and payable at time of application. Additional payments, as provided by Subsection 3.01; if any, due monthly not more than thirty (30) days after completion of each calendar month's dredging. Payments to be based on either actual amounts dumped or estimates based on barge volume.

3.03 Records. Grantee shall keep an accurate record and account of all materials deposited at the above described site, including but not limited to those records required by Section 2.02 of this use authorization on the Disposal Site Use Report (see Subsection 4.02). State shall be allowed to inspect and audit books, contracts and accounts of Grantee to determine whether State is being paid the full amount payable to it for the disposal of such material, and to ensure that the material discharged at the open water disposal site originated at an approved dredging site.

3.04 Application Fee Adjustments. The fees stated herein may be reviewed and adjusted annually or more often as needed in accordance with WAC 332-30-166(9) as enacted and as hereafter amended.

SECTION 4 REQUIREMENTS

4.01 Notification. Grantee shall observe the completed Plan of Operation (Attachment A) submitted in writing to State at least five working days in advance of first use. State must be notified of, and approve any changes in the Plan of Operations at least twenty-four (24) hours before the changes are implemented. Notification by Grantee, and subsequent approval by State, may be made verbally. However, the verbal notification must be followed by submission of a revised Plan of Operation within five (5) working days. State shall be notified by telephone at (360) 902-1735, twenty-four (24) hours prior to each startup of dredging operations. Grantee also shall notify State by letter immediately upon completing use of the site.

4.02 Disposal Site Use Report. The tug captain shall fill out a Disposal Site Use Report (provided by State) at the time of each disposal event. It is the responsibility of Grantee to ensure that the completed forms are forwarded to State at the completion of each week's disposal operations.

4.03 Volume Reporting. Within twenty (20) days of completing dredging operations for a calendar month, Grantee shall forward a summary of that month's disposal information to State. The summary shall include the volumes of material deposited at the site or volumes estimated from barge volume, and shall be provided on a Monthly Disposal Statement form provided by State.

4.04 Compliance. Grantee shall conform to any applicable law, regulation, permit, or license of any public authority affecting the disposal site premises and the use thereof, and shall correct at Grantee's own expense any failure of compliance created through Grantee's fault or by reason of Grantee's use. If any other permit or license condition changes during the term of this use authorization, those changed conditions shall apply to Grantee.

4.05 Permits. Procurement of the necessary permits and licenses, excepting the shoreline permit for the disposal site, shall be solely the responsibility of Grantee.

4.06 Indemnity. Grantee shall indemnify and save harmless State, its employees, officers and agents from any and all liability, damages (including environmental damages, damages to land, aquatic life, and other natural resources), expenses, causes of action, suits, claims, costs, fees (including attorneys' fees and costs), penalties (civil or criminal), and response, clean-up, and habitat restoration costs assessed, imposed or incurred as a result of the use, occupation or control of the site by Grantee's employees, agents, assigns, contractors, subcontractors, licensees, or invitees. This indemnity shall not extend to liability arising solely out of the willful or grossly negligent act of State or State's agents.

4.07 Damages. In addition to other remedies available to it under the law, State may charge Grantee a fee of $5.00 per cubic yard for all dumping not in conformance with the use authorization, WAC 332-30-166 or other statute, rule, regulation or ordinance governing the activity, including, but not limited to, materials not approved for open water disposal, failure to give proper notification, dumping without valid permits and/or dumping outside the disposal zone.

4.08 Shoreline Permit. This Open Water Disposal Site Use Authorization is subject to the conditions contained in the shoreline permit issued for the aforementioned site and any conditions and/or provisions contained therein.

4.09 Breach. In addition to any other remedies available, if any condition of this use authorization is violated by Grantee, State may suspend or terminate this use authorization. Any action by a contractor, operator, or agent of Grantee may be imputed to Grantee.

4.10 Survival. All obligations of Grantee to be performed prior to the expiration or earlier termination shall not cease upon termination or expiration of this use authorization, and shall continue as obligations until fully performed. All clauses of this use authorization (including but not limited to 4.06 (Indemnity)), which require performance beyond the termination or expiration date shall survive the termination or expiration date of this use authorization.

Grantee expressly agrees to all covenants herein and binds itself for the payment hereinbefore specified.

PORT OF EVERETT

Dated: July 5, 2016

Les Reardanz

By: LES REARDANZ
Title: Chief Executive Officer
Address: PO Box 538
Everett, WA 98206

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Dated: July 8, 2016

Blair Reeves for

By: KRISTIN SWENDDAL
Title: Division Manager
Address: PO Box 47027
Olympia, WA 98504-7027

REPRESENTATIVE ACKNOWLEDGMENT

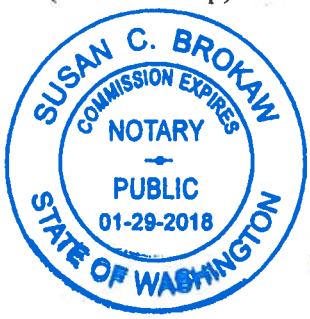
STATE OF WASHINGTON)
) ss.
County of Snohomish)

I certify that I know or have satisfactory evidence that LES REARDANZ is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument, on oath stated that (he/she) was authorized to execute the instrument and acknowledged it as the Chief Executive Officer of the Port of Everett to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated: July 5, 2016

Susan C. Brokaw
(Signature)

(Seal or stamp)



Susan C. Brokaw
(Print Name)

Notary Public in and for the State of Washington, residing at Everett

My appointment expires 1-29-2018

STATE ACKNOWLEDGMENT

STATE OF WASHINGTON)
) ss.
County of Thurston)

I certify that I know or have satisfactory evidence that KRISTIN SWENDDAL is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as the ~~Division Manager~~ acting of the Department of Natural Resources of the State of Washington to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Blair Reeves for

Dated: 7-8-, 2016

(Signature)

(Seal or stamp)

Andrea Wagner

(Print Name)

Notary Public in and for the State of Washington, residing at Olympia, WA

My appointment expires 9-16-18

ANDREA WAGNER NOTARY PUBLIC COMMISSION EXPIRES 09-16-18 STATE OF WASHINGTON

APPENDIX F
Daily and Monthly Open Water Disposal Site Use Reports

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: MON OCT 17 2016

NAME OF TUG/TUG CAPTAIN: PHIL BLAND

COMPANY/PHONE NUMBER: ORION

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 1

FATHOMETER READING: 400

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

B H

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1920 , 47° 58' 48.60 N , 122° 16' 38.20 W

TIME LATITUDE LONGITUDE

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1943 , 47° 58' ~~48.60~~ 47.42 N , 122° 16' 43.57 W

TIME LATITUDE LONGITUDE

ESTIMATED DISPOSAL QUANTITY: 896 CY (how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PH. L BLAND

SIGNATURE: Phil Bland

47° 58.85'

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: Port Gardner NonDispersive

DATE OF DISPOSAL: 10-18-16

NAME OF TUG/TUG CAPTAIN: Fidalgo / Matt Branscome

COMPANY/PHONE NUMBER: Dunlap Towing Company / 425-259-4163

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 2

FATHOMETER READING: 402'

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

MRZ

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1735 (TIME) , 47° 58.868' N (LATITUDE) , 122° 16.693' W (LONGITUDE)

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1800 (TIME) , 47° 58.868' N (LATITUDE) , 122° 16.797' W (LONGITUDE)

ESTIMATED DISPOSAL QUANTITY: 756 yd^3

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

Ø

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

Matt Branscome / Captain / 425-345-2433

SIGNATURE: Matt Branscome

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: Port Gardner NonDispersive

DATE OF DISPOSAL: 10/19/16

NAME OF TUG/TUG CAPTAIN: Port Gardner, Dave Alvord

COMPANY/PHONE NUMBER: Dunlap Towing Co. 425-259-4163

NAME OF BARGE/TYPE: ORION 2001/Dump Scow

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 3

FATHOMETER READING: NA

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

K A G

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1736 , 47° 58' 857" , 122° 16' 753"

TIME LATITUDE LONGITUDE

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1800 , 47° 58' 852" , 122° 16' 721"

TIME LATITUDE LONGITUDE

ESTIMATED DISPOSAL QUANTITY: 788 Cubic Yards

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

None

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

Dave Alvord 360 540 3987

SIGNATURE: Dave Alvord

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: 10-20-16

NAME OF TUG/TUG CAPTAIN: Port Gardner / Matt Bransome

COMPANY/PHONE NUMBER: Dunlap Towing Company / 425-259-4163

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 4

FATHOMETER READING: 400

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

JAC

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1814 (TIME) , 47° 58.856'N (LATITUDE) , 122° 16.690'W (LONGITUDE)

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1845 (TIME) , 47° 58.822'N (LATITUDE) , 122° 16.813'W (LONGITUDE)

ESTIMATED DISPOSAL QUANTITY: 706 yd^3 (how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

Ø

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

Matt Bransome / Captain / 425-345-2433

SIGNATURE: Matt Bransome

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: 10-21-16

NAME OF TUG/TUG CAPTAIN: Port Gardner / Matt Brassoma

COMPANY/PHONE NUMBER: Dunlap Towing Company / 425-254-4163

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 5

FATHOMETER READING: 401

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

PFT

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1717 , 47° 58.842'N , 122° 16.710'W

TIME LATITUDE LONGITUDE

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1755 , 47° 58.837'N , 122° 16.820'W

TIME LATITUDE LONGITUDE

ESTIMATED DISPOSAL QUANTITY: 858 yd^3

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

Ø

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

Matt Brassoma / Captain / 425-345-2433

SIGNATURE: Matt Brassoma

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: 10-24-16

NAME OF TUG/TUG CAPTAIN: Skagit PHIL BLAND

COMPANY/PHONE NUMBER: Orion

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 6

FATHOMETER READING: 397

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

JE

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1745 , 47° 58' 30"N , 122 16' 35.80" W

TIME LATITUDE LONGITUDE

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1830 , 47° 58.49.96 , 122 16' 46.00" W

TIME LATITUDE LONGITUDE

ESTIMATED DISPOSAL QUANTITY: 1076

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND

SIGNATURE: Phil Bland

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: 10-25-16

NAME OF TUG/TUG CAPTAIN: Skagit Phil BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 7

FATHOMETER READING: 400

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

NMM

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1730 , 47° 58' 53.37" N , 122° 16' 41.41" W

TIME — LATITUDE — LONGITUDE

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1753 , 47° 58' 52.12" N , 122° 16' 40.80" W

TIME — LATITUDE — LONGITUDE

ESTIMATED DISPOSAL QUANTITY: 884

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

Phil BLAND Capt

SIGNATURE: Phil Bland

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: 10-26-16

NAME OF TUG/TUG CAPTAIN: SKAGIT PHIL BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 8

FATHOMETER READING: 402

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

GAV

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1720 , 47° 58' 48.41" N , 122° 16' 42.44" W

TIME LATITUDE LONGITUDE

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1737 , 47° 58' 48.80" N , 122° 16' 40.84" W

TIME LATITUDE LONGITUDE

ESTIMATED DISPOSAL QUANTITY: 690

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: phil bl

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: 10-28-16

NAME OF TUG/TUG CAPTAIN: SKAGIT PHIL BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 9

FATHOMETER READING: 406

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

JJE

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1705 (TIME) , 47° 58' 49.60" N (LATITUDE) , 122° 16' 36.10" W (LONGITUDE)

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1740 (TIME) , 47° 58' 48.35" N (LATITUDE) , 122 16' 47.44" W (LONGITUDE)

ESTIMATED DISPOSAL QUANTITY: 1331 CY

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: Phil Bland

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: ~~10-29-16~~ 11-2-16

NAME OF TUG/TUG CAPTAIN: SKAGIT PHIL BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: ~~2800 CY~~ ~~1440 CY~~ 1750 CY

BARGE LOAD NUMBER: 10

FATHOMETER READING: 404

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

JJE

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

0728 , 47° 58' 49.10" N , 122° 16' 45.78" W

TIME LATITUDE LONGITUDE

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

0800 , 47° 58' 5060 N , 122° 16' 4935" W

TIME LATITUDE LONGITUDE

ESTIMATED DISPOSAL QUANTITY: 1440

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: Phil Bland

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: 11-3-16

NAME OF TUG/TUG CAPTAIN: SKAGIT PHIL BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 11

FATHOMETER READING:

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

EMG

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

0730 (TIME) , 47° 50' 49.25" N (LATITUDE) , 122° 16' 40.063" W (LONGITUDE)

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

0821 (TIME) , 47° 58' 50.153" N (LATITUDE) , 122° 16' 46.072" W (LONGITUDE)

ESTIMATED DISPOSAL QUANTITY: 678

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: phil Bland

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: NOV 7TH 2016

NAME OF TUG/TUG CAPTAIN: SKAGIT PHIL BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 12

FATHOMETER READING: 408

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

SG

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

0913 (TIME), 47° 58' 50.102" N (LATITUDE), 122° 16' 48.735" W (LONGITUDE)

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

0945 (TIME), 47° 58' 47.803" N (LATITUDE), 122° 41.862" W (LONGITUDE)

ESTIMATED DISPOSAL QUANTITY: 478

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: phil bland

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: NOV 9TH 2016

NAME OF TUG/TUG CAPTAIN: SKAGIT PHIL BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 13

FATHOMETER READING: 400

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

JAS

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

TIME	LATITUDE	LONGITUDE
0730	47° 58' 50.903" N	122° 16' 41.422" W

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

TIME	LATITUDE	LONGITUDE
0802	47° 58' 50.926" N	122° 16' 48.202" W

ESTIMATED DISPOSAL QUANTITY: 491

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: Phil Bland

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: NOV 10 2016

NAME OF TUG/TUG CAPTAIN: SKAGIT PHIL BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 14

FATHOMETER READING: 401

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

JMB

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

TIME	LATITUDE	LONGITUDE
0804	47° 58' 50.521" N	122° 16' 35.458" W

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

TIME	LATITUDE	LONGITUDE
0835	47° 58' 49.577" N	122° 16' 39.843

ESTIMATED DISPOSAL QUANTITY: 247

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: Phil Bland

Last Updated 12/08/2011

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.976871S N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: NOV 16 2016

NAME OF TUG/TUG CAPTAIN: Skagit Phil BLAND

COMPANY/PHONE NUMBER: ORION

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 15

FATHOMETER READING: 406

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

MAA

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

0700 , 47° 58' 47.841 N , 122° 16' 39.001 W

TIME — LATITUDE — LONGITUDE

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

0745 , 47° 58' 50.150 N , 122° 16' 44.040 W

TIME — LATITUDE — LONGITUDE

ESTIMATED DISPOSAL QUANTITY: 1118 Cu Yd

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: Phil Bland

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: NOV 18 2016

NAME OF TUG/TUG CAPTAIN: SKAGIT PHIL BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 16

FATHOMETER READING: 409

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

WHJ

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1102 (TIME) , 47° 58 51.020 N (LATITUDE) , 122° 16 38.377 W (LONGITUDE)

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1125 (TIME) , 47° 58' 44281 N (LATITUDE) , 122° 16' 41266" W (LONGITUDE)

ESTIMATED DISPOSAL QUANTITY: 833

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: Phil Bland

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: DEC 21ST 2016

NAME OF TUG/TUG CAPTAIN: SKAGIT PHIL BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 17

FATHOMETER READING: 404

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

JJE

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

TIME	LATITUDE	LONGITUDE
1024	47° 58' 50.021" N	122° 16' 42.456" W

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

TIME	LATITUDE	LONGITUDE
1112	47° 58' 51.522" N	122° 16' 50.501" W

ESTIMATED DISPOSAL QUANTITY: 522

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: Phil Bland

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: Dec 28 2016

NAME OF TUG/TUG CAPTAIN: SKAGIT PHIL BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 18

FATHOMETER READING: 408 FT

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

KR

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1518 | 47°58'51.432" N | 122°16'40.505" W

TIME | LATITUDE | LONGITUDE

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1635 | 47°58'53.127" N | 122°16'43.183" W

TIME | LATITUDE | LONGITUDE

ESTIMATED DISPOSAL QUANTITY: 756 yds

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

-0-

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: Phil Bland

RLH

DISPOSAL SITE USE REPORT

WASHINGTON STATE DEPARTMENT OF Natural Resources

INSTRUCTIONS TO TUG CAPTAINS: This disposal site use report MUST be completed in its entirety at the time of each disposal for both VTS and non VTS monitored sites. Position coordinates read from the approved positioning aid MUST be recorded to the NEAREST THOUSANDTH of a minute e.g., 47° 56.556', 122° 16.786'.

Note: The site use report must be submitted by the Wednesday after disposal. Site use reports can be emailed (preferred method) to dmmp@dnr.wa.gov or faxed to 360-902-1786

DNR PERMIT NO.: 20-522034

CORPS OF ENGINEERS PERMIT NUMBER NWS-2014-890

DREDGING SITE (Lat/Long): 47.9768715 N / 122.224934 W

DISPOSAL SITE: PORT GARDNER NONDISPERSIVE

DATE OF DISPOSAL: Jan 7 2017

NAME OF TUG/TUG CAPTAIN: Skagit PHIL BLAND

COMPANY/PHONE NUMBER:

NAME OF BARGE/TYPE: ORION 2001 / DUMP SCOW

VOLUME OF BARGE: 1750 CY

BARGE LOAD NUMBER: 19

FATHOMETER READING: 403

FOR VTS SITES, AUTHORIZATION OBTAINEDFROM COAST GUARD: (First and Last name), initials after VTS officer's name has been written in full once. Once shift change to a new officer, then full name, followed by initials.

RLH

AS BARGE STARTS TO OPEN FOR DISPOSAL: (Required) (Also recorded for barge orientation schematic due with monthly report)

1109 TIME ; 47° 58' 50.162" N LATITUDE ; 122° 16' 39.437" W LONGITUDE

AS BARGE COMPLETES CLOSING AFTER DISPOSAL: (Required) (Same, will be recorded for barge orientation schematic)

1207 TIME ; 47° 58' 52.300" N LATITUDE ; 122° 16' 49.178" W LONGITUDE

ESTIMATED DISPOSAL QUANTITY: 437

(how calculated required on monthly report)

DESCRIBE PERCENTAGE FLOATABLE MATERIAL REMOVED/DISPOSITION or other observations:

0

NAME/TITLE OF PERSON FILLING OUT REPORT/CONTACT NUMBER:

PHIL BLAND CAPT

SIGNATURE: Phil Bland

MONTHLY DISPOSAL STATEMENT

WASHINGTON STATE DEPARTMENT OF Natural Resources

Month/Day/Year - to - Month/Day/Year: 10/17/16 - 10/31/16

Site: PORT GARDNER NONDISPERSIVE

Grantee Name: PORT OF EVERETT **DNR SUA #:** 20-522034

Contractor name/Contact number: ORION MARINE CONTRACTORS, INC.
CASEY SHAW - (253) 298-2243
MATT CUTTINGHAM - (253) 905-1806

Barge Load	Date	Vessel/Barge Name	Cubic Yards
1	10/17/16	ORION 2001/TUG SKAGIT	896
2	10/18/16	ORION 2001/TUG FIDALGO	756
3	10/19/16	ORION 2001/TUG PORT GARDNER	788
4	10/20/16	ORION 2001/TUG PORT GARDNER	706
5	10/21/16	ORION 2001/TUG PORT GARDNER	858
6	10/24/16	ORION 2001/TUG SKAGIT	1076
7	10/25/16	ORION 2001/TUG SKAGIT	884
8	10/26/16	ORION 2001/TUG SKAGIT	690
9	10/28/16	ORION 2001/TUG SKAGIT	1331

Clarify/Elaborate how cubic yards (CY) of volume disposed were measured:
ORION MARINE USES DISPLACEMENT TABLES FOR THE 2001 BARGE. WE MEASURE EMPTY AND FULL FREEBOARDS, AND COMPARE THE TONNAGE OF WATER DISPLACED. EACH BARGE WE WEIGH ONE CUBIC FOOT OF THE MATERIAL, AND USE THAT DENSITY TO CONVERT TONNAGE TO CUBIC YARDS.

, SENIOR PROJECT ENGINEER/SITE SUPERINTENDENT
Authorized Representative Signature and Title

TOTAL VOLUME 7985 CY

MONTHLY DISPOSAL STATEMENT

WASHINGTON STATE DEPARTMENT OF Natural Resources

Month/Day/Year - to - Month/Day/Year: 11/1/16 - 11/30/16

Site: PORT GARDNER NONDISPERSIVE

Grantee Name: PORT OF EVERETT **DNR SUA #:** 20 - 522034

Contractor name/Contact number: ORION MARINE CONTRACTORS, INC.
CASEY SHAW - (253) 298-2243
MATT CUTTINGHAM - (253) 905-1806

Barge Load	Date	Vessel/Barge Name	Cubic Yards
10	11/2/16	ORION 2001 / TUG SKAGIT	1440
11	11/3/16	ORION 2001 / TUG SKAGIT	678
12	11/7/16	ORION 2001 / TUG SKAGIT	478
13	11/9/16	ORION 2001 / TUG SKAGIT	491
14	11/10/16	ORION 2001 / TUG SKAGIT	247
15	11/16/16	ORION 2001 / TUG SKAGIT	1118
16	11/18/16	ORION 2001 / TUG SKAGIT	833

Clarify/Elaborate how cubic yards (CY) of volume disposed were measured:
ORION MARINE USES DISPLACEMENT TABLES FOR THE 2001 BARGE. WE MEASURE EMPTY AND FULL FREEBOARDS, AND COMPARE THE TONNAGE OF WATER DISPLACED. EACH BARGE WE WEIGH ONE CUBIC FOOT OF THE MATERIAL, AND USE THAT DENSITY TO CONVERT TONNAGE TO CUBIC YARDS.

SENIOR PROJECT ENGINEER / SITE SUPERVISOR
Authorized Representative Signature and Title

TOTAL VOLUME 5285 CY

Email completed forms to: DMMP@DNR.WA.GOV

MONTHLY DISPOSAL STATEMENT

WASHINGTON STATE DEPARTMENT OF Natural Resources

Month/Day/Year - to - Month/Day/Year: 12/1/16-12/31/16

Site: PORT GARDNER NONDISPERSIVE

Grantee Name: PORT OF EVERETT **DNR SUA #:** 20-522034

Contractor name/Contact number: ORION MARINE CONTRACTORS, INC.
CASEY SHAW - (253) 298-2243
MATT CUTTINGHAM - (253) 905-1806

Barge Load	Date	Vessel/Barge Name	Cubic Yards
17	12/21/16	ORION 2001/TUG SKAGIT	522
18	12/28/16	ORION 2001/TUG SKAGIT	756

Clarify/Elaborate how cubic yards (CY) of volume disposed were measured:
ORION MARINE USES DISPLACEMENT TABLES FOR THE 2001 BARGE. WE MEASURE EMPTY AND FULL FREEBOARDS, AND COMPARE THE TONNAGE OF WATER DISPLACED. EACH BARGE WE WEIGH ONE CUBIC FOOT OF THE MATERIAL, AND USE THAT DENSITY TO CONVERT TONNAGE TO CUBIC YARDS.

SENIOR PROJECT ENGINEER/SITE SUPERINTENDENT
Authorized Representative Signature and Title

TOTAL VOLUME 1278 CY

MONTHLY DISPOSAL STATEMENT

WASHINGTON STATE DEPARTMENT OF Natural Resources

Month/Day/Year - to - Month/Day/Year: _____

Site: PORT GARDNER NONDISPERSIVE

Grantee Name: PORT OF EVERETT **DNR SUA #:** 20 - 522034

Contractor name/Contact number: ORION MARINE CONTRACTORS, INC.
CASEY SHAW - (253)298-2243
MATT CUTTINGHAM - (253)905-1806

Barge Load	Date	Vessel/Barge Name	Cubic Yards
19	1/7/2017	ORION 2001/TUG SKAGIT	437

Clarify/Elaborate how cubic yards (CY) of volume disposed were measured:
ORION MARINE USES DISPLACEMENT TABLES FOR THE 2001 BARGE. WE MEASURE EMPTY AND FULL FREEBOARDS, AND COMPARE THE TONNAGE OF WATER DISPLACED. EACH BARGE WE WEIGH ONE CUBIC FOOT OF THE MATERIAL, AND USE THAT DENSITY TO CONVERT TONNAGE TO CUBIC YARDS.

Matt Cuttingham PROJECT ENGINEER
Authorized Representative Signature and Title

TOTAL VOLUME 437 CY

APPENDIX G
Import Material Chemical Criteria and Testing Results

Chemical Import Criteria and Results of the Iron Mountain Quarry Sample

Mill A Cleanup Site Interim Action Dredging
Everett, Washington

Analyte	Analyses	Chemical Import Criteria				Results (Iron Mountain Quarry Sample)	
		Organic Carbon (0.5% to 3.5%)		Organic Carbon (<0.5% or >3.5%)			
Organic Carbon	PSEP 1986	NA		NA		0.20%	
Metals							
Arsenic	EPA 6010/6020	11	mg/kg	11	mg/kg	**8.77**	mg/kg
Cadmium	EPA 6010/6020	0.8	mg/kg	0.8	mg/kg	**0.021**	mg/kg
Chromium	EPA 6010/6020	260	mg/kg	260	mg/kg	**21.6**	mg/kg
Copper	EPA 6010/6020	390	mg/kg	390	mg/kg	**31.2**	mg/kg
Lead	EPA 6010/6020	21	mg/kg	21	mg/kg	**8.12**	mg/kg
Mercury	EPA 7470A/7471A	0.2	mg/kg	0.2	mg/kg	0.0052 U	mg/kg
Silver	EPA 6010/6020	6.1	mg/kg	6.1	mg/kg	0.207 U	mg/kg
Zinc	EPA 6010/6020	410	mg/kg	410	mg/kg	**49.8**	mg/kg
Low Molecular Weight Polycyclic Aromatic Hydrocarbons (LPAHs)							
Total LPAH	--	370	mg/kg OC	5.2	mg/kg	0.0677 U	mg/kg
Naphthalene	EPA 8270 SIM	99	mg/kg OC	2.1	mg/kg	0.0677 U	mg/kg
Acenaphthylene	EPA 8270 SIM	66	mg/kg OC	1.3	mg/kg	0.00339 U	mg/kg
Acenaphthene	EPA 8270 SIM	16	mg/kg OC	0.5	mg/kg	0.00339 U	mg/kg
Fluorene	EPA 8270 SIM	23	mg/kg OC	0.54	mg/kg	0.00339 U	mg/kg
Phenanthrene	EPA 8270 SIM	100	mg/kg OC	1.5	mg/kg	0.00339 U	mg/kg
Anthracene	EPA 8270 SIM	220	mg/kg OC	0.96	mg/kg	0.00339 U	mg/kg
2-Methylnaphthalene	EPA 8270 SIM	38	mg/kg OC	0.67	mg/kg	0.00339 U	mg/kg
High Molecular Weight Polycyclic Aromatic Hydrocarbons (HPAHs)							
Total HPAH	--	960	mg/kg OC	12	mg/kg	0.00339 U	mg/kg
Fluoranthene	EPA 8270 SIM	160	mg/kg OC	1.7	mg/kg	0.00339 U	mg/kg
Pyrene	EPA 8270 SIM	1000	mg/kg OC	2.6	mg/kg	0.00339 U	mg/kg
Benzo(a)anthracene	EPA 8270 SIM	110	mg/kg OC	0.6	mg/kg	0.00339 U	mg/kg
Chrysene	EPA 8270 SIM	110	mg/kg OC	1.4	mg/kg	0.00339 U	mg/kg
Total Benzofluoranthenes	--	230	mg/kg OC	0.6	mg/kg	0.00339 U	mg/kg
Benzo(a)pyrene	EPA 8270 SIM	99	mg/kg OC	0.06	mg/kg	0.00339 U	mg/kg
Indeno(1,2,3-cd)pyrene	EPA 8270 SIM	34	mg/kg OC	0.6	mg/kg	0.00339 U	mg/kg
Dibenzo(a,h)anthracene	EPA 8270 SIM	12	mg/kg OC	0.23	mg/kg	0.00339 U	mg/kg
Benzo(ghi)perylene	EPA 8270 SIM	31	mg/kg OC	0.67	mg/kg	0.00339 U	mg/kg
Total carcinogenic PAHs – TEQ	--	21	µg/kg	21	µg/kg	4.9 U	µg/kg

Chemical Import Criteria and Results of the Iron Mountain Quarry Sample

Mill A Cleanup Site Interim Action Dredging

Everett, Washington

Analyte	Analyses	Chemical Import Criteria				Results (Iron Mountain Quarry Sample)	
		Organic Carbon (0.5% to 3.5%)		Organic Carbon (<0.5% or >3.5%)			
Chlorinated Organic Compounds							
1,2-Dichlorobenzene	EPA 8270	2.3	mg/kg OC	0.035	mg/kg	0.0001 U	mg/kg
1,4-Dichlorobenzene	EPA 8270	3.1	mg/kg OC	0.11	mg/kg	0.0677 U	mg/kg
1,2,4-Trichlorobenzene	EPA 8270	0.81	mg/kg OC	0.031	mg/kg	0.0001 U	mg/kg
Hexachlorobenzene	EPA 8081B	0.38	mg/kg OC	0.022	mg/kg	0.0001 U	mg/kg
Phthalates							
Dimethyl phthalate	EPA 8270	53	mg/kg OC	0.071	mg/kg	0.00339 U	mg/kg
Diethyl phthalate	EPA 8270	61	mg/kg OC	0.2	mg/kg	0.00339 U	mg/kg
Dibutyl phthalate	EPA 8270	220	mg/kg OC	1.4	mg/kg	0.00339 U	mg/kg
Butyl benzyl phthalate	EPA 8270	4.9	mg/kg OC	0.063	mg/kg	0.00339 U	mg/kg
Bis(2-Ethylhexyl) Phthalate	EPA 8270	47	mg/kg OC	1.3	mg/kg	**0.0125**	mg/kg
Di-N-Octyl Phthalate	EPA 8270	58	mg/kg OC	6.2	mg/kg	0.00339 U	mg/kg
Miscellaneous Extractables							
Dibenzofuran	EPA 8270	15	mg/kg OC	0.54	mg/kg	0.0677 U	mg/kg
Hexachlorobutadiene	EPA 8081B	3.9	mg/kg OC	0.011	mg/kg	0.0001 U	mg/kg
N-Nitrosodiphenylamine	EPA 8270	11	mg/kg OC	0.028	mg/kg	0.0001 U	mg/kg
Benzyl Alcohol	EPA 8270	57	µg/kg	57	µg/kg	0.1 U	µg/kg
Benzoic Acid	EPA 8270	650	µg/kg	650	µg/kg	33.9 U	µg/kg
Polychlorinated Biphenyls (PCBs)							
Total Dioxin-Like PCBs - human health TEQ	EPA 1668A	2	ng/kg	2	ng/kg	**1.53**	ng/kg
Total PCBs (Total for Congeners)	EPA 1668A	0.21	mg/kg	0.21	mg/kg	**0.000875**	mg/kg
Phenols							
Phenol	EPA 8270	420	µg/kg	420	µg/kg	67.7 U	µg/kg
2-methylphenol	EPA 8270	63	µg/kg	63	µg/kg	0.1 U	µg/kg
4-methylphenol	EPA 8270	670	µg/kg	670	µg/kg	67.7 U	µg/kg
2,4-Dimethylphenol	EPA 8270 SIM	29	µg/kg	29	µg/kg	0.1 U	µg/kg
Pentachlorophenol	EPA 8270	360	µg/kg	360	µg/kg	16.9 U	µg/kg
Dioxins and Furans							
Total dioxins/furans - TEQ	EPA 1613	5	ng/kg	5	ng/kg	**4.6**	ng/kg

Notes:

mg/kg = milligrams per kilogram

mg/kg OC = milligrams per kilogram normalized to organic carbon

µg/kg = micrograms per kilogram

ng/kg = nanograms per kilogram

TEQ = Toxicity Equivalence (https://fortress.wa.gov/ecy/clarc/FocusSheets/tef.pdf)

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

Iron Mountain Quarry
22121 17th Ave. SE
Bothell, WA 98021
Attention: LEE LANGLEY
All results reported on a dry weight basis.

Date Received: 08/03/16
Date Reported: 11/28/16

AMTEST Identification Number **16-A020515**
Client Identification **MILL A CLEANUP**
Sampling Date **08/03/16, 09:00**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	96.6	%		0.1	SM 2540B	CO	08/17/16

Demand

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Organic Carbon	0.20	%		0.05	SW 846 9060	CO	09/09/16

Total Metals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Acid Digestion	Y				SW-846 3050B	MH	08/11/16
Silver	< 0.207	ug/g		0.207	EPA 6010C	MH	08/15/16
Arsenic	8.77	ug/g		0.414	EPA 6010C	MH	08/15/16
Cadmium	< 0.021	ug/g		0.021	EPA 6010C	MH	08/15/16
Chromium	21.6	ug/g		0.207	EPA 6010C	MH	08/15/16
Copper	31.2	ug/g		0.207	EPA 6010C	MH	08/15/16
Lead	8.12	ug/g		0.414	EPA 6010C	MH	08/15/16
Zinc	49.8	ug/g		0.083	EPA 6010C	MH	08/15/16
Mercury	< 0.0052	ug/g		0.01	SW-846 7471A	AY	08/16/16

Iron Mountain Quarry
Project Name:
AmTest ID: 16-A020515

Semi-Volatiles

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
1,2,4-Trichlorobenzene	< 0.1	ug/kg		0.10	EPA 8270	NNL	10/27/16
1,2-Dichlorobenzene	< 0.1	ug/kg		0.10	EPA 8270	NNL	10/27/16
1,3-Dichlorobenzene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
1,4-Dichlorobenzene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
1-Methylnaphthalene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
2,4,5-Trichlorophenol	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
2,4,6-Trichlorophenol	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
2,4-Dichlorophenol	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
2,4-Dimethylphenol	< 0.1	ug/kg		0.10	EPA 8270	NNL	10/27/16
2,4-Dinitrophenol	< 339	ug/kg		340	EPA 8270	NNL	09/02/16
2,4-Dinitrotoluene	< 169	ug/kg		170	EPA 8270	NNL	09/02/16
2,6-Dinitrotoluene	< 169	ug/kg		170	EPA 8270	NNL	09/02/16
2-Chloronaphthalene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
2-Chlorophenol	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
2-Methylphenol	< 0.1	ug/kg		0.10	EPA 8270	NNL	10/27/16
2-Nitroaniline	< 169	ug/kg		170	EPA 8270	NNL	09/02/16
2-Nitrophenol	< 169	ug/kg		170	EPA 8270	NNL	09/02/16
3,3-Dichlrobenzidine	< 102	ug/kg		100	EPA 8270	NNL	09/02/16
3-Nitroaniline	< 169	ug/kg		170	EPA 8270	NNL	09/02/16
4,6-Dinitro-2-methylpheno	< 169	ug/kg		170	EPA 8270	NNL	09/02/16
4-Bromophenyl-phenyl ethe	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
4-Chloro-3-methylphenol	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
4-Chloroaniline	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
4-Chlorophenyl-phenyl eth	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
4-Methylphenol (cresol)	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
4-Nitroaniline	< 169	ug/kg		170	EPA 8270	NNL	09/02/16
4-Nitrophenol	< 339	ug/kg		340	EPA 8270	NNL	09/02/16
Aniline	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Azobenzene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Benzidine	< 1690	ug/kg		1700	EPA 8270	NNL	09/02/16
Benzoic Acid	< 33.9	ug/kg		34.	EPA 8270	NNL	09/02/16
Benzyl Alcohol	< 0.1	ug/kg		0.10	EPA 8270	NNL	10/27/16
bis(2-Chloroethoxy)methan	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
bis(2-Chloroethyl)ether	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
bis(2-Chloroisopropyl)eth	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16

Iron Mountain Quarry
Project Name:
AmTest ID: 16-A020515

Semi-Volatiles continued...

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
bis(2-Ethylhexyl)phthalat	12.5	ug/kg		3.4	EPA 8270-SIM	NNL	09/06/16
Butylbenzylphthalate	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Carbazole	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Chlorpyrifos	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Diazinon	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Dibenzofuran	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Dichlobenil	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Diethylphthalate	< 3.39	ug/kg		3.4	EPA 8270-SIM	NNL	09/06/16
Dimethylphthalate	< 3.39	ug/kg		3.4	EPA 8270-SIM	NNL	09/06/16
Di-n-butylphthalate	< 3.39	ug/kg		3.4	EPA 8270-SIM	NNL	09/06/16
Di-n-octylphthalate	< 3.39	ug/kg		3.4	EPA 8270-SIM	NNL	09/06/16
Hexachlorobenzene	< 0.1	ug/kg		0.10	EPA 8270	NNL	10/27/16
Hexachlorobutadiene	< 0.1	ug/kg		0.10	EPA 8270	NNL	10/27/16
Hexachlorocyclopentadiene	< 169	ug/kg		170	EPA 8270	NNL	09/02/16
Hexachloroethane	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Isophorone	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Malathion	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Nitrobenzene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
N-Nitrosodimethylamine	< 169	ug/kg		170	EPA 8270	NNL	09/02/16
N-Nitroso-di-n-propylamin	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
N-nitrosodiphenylamine	< 0.1	ug/kg		0.10	EPA 8270	NNL	10/27/16
Pentachlorophenol	< 16.9	ug/kg		17.	EPA 8270-SIM	NNL	09/06/16
Phenol	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Prometon	< 16.9	ug/Kg		17.	EPA 8270-SIM	NNL	09/06/16

Semi-Volatiles - SIM

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
2-Methylnaphthalene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Acenaphthene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Acenaphthylene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Anthracene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Benzo(a)anthracene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Benzo(a)pyrene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Benzo(b)fluoranthene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Benzo(ghi)perylene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16

Iron Mountain Quarry
Project Name:
AmTest ID: 16-A020515

Semi-Volatiles - SIM continued...

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Benzo(k)fluoranthene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Chrysene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Dibenzo(ah)anthracene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Fluoranthene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Fluorene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Indeno(123-cd)pyrene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Naphthalene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Phenanthrene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16
Pyrene	< 3.39	ug/Kg		3.4	EPA 8270-SIM	NNL	09/06/16

Semi-Volatiles

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
bis(2-Ethylhexyl)phthalat	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Butylbenzylphthalate	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Diethylphthalate	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Dimethylphthalate	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Di-n-butylphthalate	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Pentachlorophenol	< 169	ug/kg		170	EPA 8270	NNL	09/02/16

Polynuclear Aromatic Hydrocarbons (PAH)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
2-Methylnaphthalene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Acenaphthene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Acenaphthylene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Anthracene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Benzo(a)anthracene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Benzo(a)pyrene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Benzo(b)fluoranthene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Benzo(g,h,i)perylene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Benzo(k)fluoranthene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Chrysene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Dibenzo(a,h)anthracene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Di-n-octylphthalate	< 33.9	ug/kg		34.	EPA 8270	NNL	09/02/16
Fluoranthene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Fluorene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16

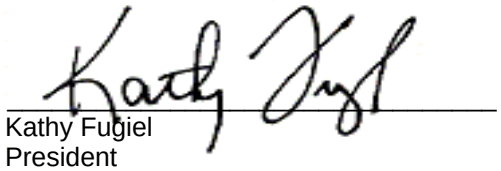
Iron Mountain Quarry
Project Name:
AmTest ID: 16-A020515

Polynuclear Aromatic Hydrocarbons (PAH) continued...

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Indeno(1,2,3-cd)pyrene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Naphthalene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Phenanthrene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16
Pyrene	< 67.7	ug/kg		68.	EPA 8270	NNL	09/02/16

Semi-Volatile Surrogates

ANALYTE	% RECOVERY	LIMITS
2-Fluorophenol	57.8 %	26.5 - 120.
D6-Phenol	65.1 %	23.0 - 135.
D5-Nitrobenzene	68.3 %	25.0 - 128.
2-Fluorobiphenyl	73.0 %	27.0 - 134.
2,4,6-Tribromophenol	71.9 %	23.0 - 137.
D14-Terphenyl	155. %	18.0 - 192.



Kathy Fugiel
President

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

September 15, 2016

Kathy Fugiel
Amtest
13600 NE 126th Pl. Suite C
Kirkland, WA 98034
TEL: 425-885-1664
FAX: 425-820-0245

RE: 20515

Dear Kathy Fugiel:

Order No.: 16080562

Summit Environmental Technologies, Inc. received 1 sample(s) on 8/9/2016 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Holly Florea

Project Manager

3310 Win St.
Cuyahoga Falls, Ohio 44223

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Case Narrative

WO#: **16080562**
Date: **9/15/2016**

CLIENT: Amtest
Project: 20515

This report in its entirety consists of the documents listed below. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Paginated Level I Report including Cover Letter, Case Narrative, Analytical Results, Applicable Quality Control Summary Reports, and copies of the Chain of Custody Documents are supplied with this sample set.

Concentrations reported with a J-Flag in the Qualifier Field are values below the Limit of Quantitation (LOQ) but greater than the established Method Detection Limit (MDL).

Method numbers, unless specified as SM (Standard Methods) or ASTM, are EPA methods.

Estimated uncertainty values are available upon request.

Analysis performed by DBM, VRM, or SFG were performed at Summit Labs 2704 Eatonton Highway Haddock, GA 31033

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

This report is believed to meet all of the requirements of NELAC or the accrediting / certifying agency. Any comments or problems with the analytical events associated with this report are noted below.

Summit Environmental does not hold certification for EPA1668.

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Case Narrative

WO#: **16080562**
Date: **9/15/2016**

CLIENT: Amtest
Project: 20515

Analytical Comments for PctSolid_S(2540), Sample 16080562-001A, Batch ID R58591 : Sample analyzed past hold time for Percent Solids Analysis.

Revised report isued 11Oct16. The LOD for Total TEQ was added to the report. (HLF)

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Workorder Sample Summary

WO#: **16080562**

11-Oct-16

CLIENT: Amtest
Project: 20515

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
16080562-001	20515		8/3/2016 9:00:00 AM	8/9/2016 10:25:00 AM	Solid

SUMMIT ENVIRONMENTAL TECHNOLOGIES, INC. Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Analytical Report

(consolidated)

WO#: **16080562**

Date Reported: **9/15/2016**

CLIENT: Amtest **Collection Date:** 8/3/2016 9:00:00 AM

Project: 20515

Lab ID: 16080562-001 **Matrix:** SOLID

Client Sample ID 20515

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
DIOXIN 1613 FULL-LIST SOLIDS				**E1613**	**E1613**	Analyst: **AJG**
HRMS DIOXIN ANALYSIS - FULL LIST (1613-B)						
2378-TCDF	< 1.15	1.15		ng/Kg-dry	1	8/30/2016 5:52:00 AM
12378-PeCDF	< 2.31	2.31		ng/Kg-dry	1	8/30/2016 5:52:00 AM
23478-PeCDF	< 2.31	2.31		ng/Kg-dry	1	8/30/2016 5:52:00 AM
123478-HxCDF	< 2.31	2.31		ng/Kg-dry	1	8/30/2016 5:52:00 AM
123678-HxCDF	< 2.31	2.31		ng/Kg-dry	1	8/30/2016 5:52:00 AM
234678-HxCDF	< 2.31	2.31		ng/Kg-dry	1	8/30/2016 5:52:00 AM
123789-HxCDF	< 2.31	2.31		ng/Kg-dry	1	8/30/2016 5:52:00 AM
1234678-HpCDF	3.31	2.31	BMB+	ng/Kg-dry	1	8/30/2016 5:52:00 AM
1234789-HpCDF	< 2.31	2.31		ng/Kg-dry	1	8/30/2016 5:52:00 AM
OCDF	5.18	4.62	BMB+	ng/Kg-dry	1	8/30/2016 5:52:00 AM
2378-TCDD	< 1.15	1.15		ng/Kg-dry	1	8/30/2016 5:52:00 AM
12378-PeCDD	< 2.31	2.31		ng/Kg-dry	1	8/30/2016 5:52:00 AM
123478-HxCDD	< 2.31	2.31		ng/Kg-dry	1	8/30/2016 5:52:00 AM
123678-HxCDD	< 2.31	2.31		ng/Kg-dry	1	8/30/2016 5:52:00 AM
123789HxCDD	< 2.31	2.31		ng/Kg-dry	1	8/30/2016 5:52:00 AM
1234678-HpCDD	< 2.31	2.31	MB+	ng/Kg-dry	1	8/30/2016 5:52:00 AM
OCDD	14.3	4.62	BMB+	ng/Kg-dry	1	8/30/2016 5:52:00 AM
Totals-Tetrafurans	< 4.62	4.62		ng/Kg-dry	1	8/30/2016 5:52:00 AM
Totals-Tetradioxins	< 4.62	4.62		ng/Kg-dry	1	8/30/2016 5:52:00 AM
Totals-Pentafurans	< 4.62	4.62		ng/Kg-dry	1	8/30/2016 5:52:00 AM
Totals-Pentadioxins	< 4.62	4.62		ng/Kg-dry	1	8/30/2016 5:52:00 AM
Totals-Hexafurans	< 4.62	4.62		ng/Kg-dry	1	8/30/2016 5:52:00 AM
Totals-Hexadioxins	< 4.62	4.62		ng/Kg-dry	1	8/30/2016 5:52:00 AM
Totals-Heptafurans	6.45	4.62	BMB+	ng/Kg-dry	1	8/30/2016 5:52:00 AM
Totals-Heptadioxins	< 4.62	4.62	MB+	ng/Kg-dry	1	8/30/2016 5:52:00 AM
TEQ	5.79			ng/Kg-dry	1	8/30/2016 5:52:00 AM
DIOXIN 1613 FULL-LIST SOLIDS				**A2540B**		Analyst: **CXS**
PERCENT SOLIDS (2540)						
Percent Solids	96.6		H	%	1	8/29/2016 6:30:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
M	Manual Integration used to determine area response
PL	Permit Limit
W	Sample container temperature is out of limit as specified at testcode

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016 **Batch #** PCB-130
Analysis Date: 8/31/2016 **Instrument:** HRMS-1
Method 1668B LOD = 2015_Q4
Analyst AJG LOQ = 2015_Q4

Analyte	16080562-001 ng/kg dry	Qualifier	Adj. LOD (ng/kg)	Adj. LOQ (ng/kg)
PCB-1	0.0	U	18.2	22.3
PCB-3	0.0	U	17.3	22.5
PCB-4/10	0.0	U	72.0	87.8
PCB-15	21.3	U	181.0	194.4
PCB-19	0.0	U	39.9	42.9
PCB-37	34.4	U	155.5	164.6
PCB-54	0.0	U	23.6	33.3
PCB-104	0.0	U	22.1	32.4
PCB-81	0.0	U	28.1	41.6
PCB-77	0.0	U	60.0	60.0
PCB-155	0.0	U	12.8	32.9
PCB-107/123	0.0	U	50.0	73.3
PCB-118	31.2	U	116.6	121.1
PCB-114	0.0	U	21.0	27.5
PCB-105	17.2	U	64.9	73.9
PCB-126	0.0	U	23.1	35.0
PCB-167	0.0	U	28.1	41.2
PCB-156	0.0	U	29.6	42.6
PCB-157	0.0	U	19.8	29.5
PCB-169	0.0	U	24.2	33.7
PCB-188	0.0	U	20.2	31.8
PCB-202	0.0	U	32.1	48.4
PCB-189	0.0	U	22.5	33.6
PCB-205	0.0	U	34.0	51.7
PCB-208	0.0	U	34.0	45.7
PCB-206	0.0	U	32.3	48.6
PCB-209	0.0	U	37.9	55.9
PCB-2	0.0	U	6.5	13.0
PCB-9/7	0.0	U	28.4	38.7
PCB-6	0.0	U	39.7	45.6
PCB-8/5	16.3	U	201.1	222.0

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016 **Batch #** PCB-130
Analysis Date: 8/31/2016 **Instrument:** HRMS-1
Method 1668B LOD = 2015_Q4
Analyst AJG LOQ = 2015_Q4

Analyte	16080562-001 ng/kg dry	Qualifier	Adj. LOD (ng/kg)	Adj. LOQ (ng/kg)
PCB-14	0.0	U	3.0	6.8
PCB-11	90.6	U	589.2	589.2
PCB-12	0.0	U	6.0	12.5
PCB-13	0.0	U	13.6	17.7
PCB-30	0.0	U	3.0	9.9
PCB-18	40.5	U	269.7	269.7
PCB-17	19.0	U	116.7	127.1
PCB-27	0.0	U	18.7	29.2
PCB-24	0.0	U	7.7	14.3
PCB-16/32	15.7	U	116.8	226.4
PCB-34	0.0	U	6.3	17.7
PCB-29	0.0	J	10.1	24.2
PCB-26	4.1	U	72.0	97.6
PCB-25	0.0	U	21.5	23.7
PCB-31	28.4	U	222.2	225.7
PCB-33/20/21	27.7	U	193.1	195.4
PCB-22	23.2	U	102.5	109.6
PCB-36	0.0	U	4.4	9.1
PCB-39	0.0	U	4.5	8.5
PCB-38	0.0	U	3.2	8.1
PCB-35	2.9	U	45.0	45.0
PCB-50	0.0	U	26.4	41.6
PCB-53	4.6	U	74.5	91.3
PCB-51	0.0	U	51.7	63.9
PCB-45	0.0	U	103.3	124.2
PCB-46	0.0	U	53.2	68.7
PCB-52/43	41.2	U	494.6	639.7
PCB-49	14.2	U	306.1	340.1
PCB-75/47/65	0.0	U	205.7	248.9
PCB-44	35.9	U	354.5	459.4
PCB-59	9.5	U	62.6	92.9
PCB-71	10.9	U	129.3	152.9

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016 **Batch #** PCB-130
Analysis Date: 8/31/2016 **Instrument:** HRMS-1
Method 1668B LOD = 2015_Q4
Analyst AJG LOQ = 2015_Q4

Analyte	16080562-001 ng/kg dry	Qualifier	Adj. LOD (ng/kg)	Adj. LOQ (ng/kg)
PCB-41/72	0.0	U	123.8	172.4
PCB-68/64	22.9	U	265.1	312.7
PCB-40	0.0	U	99.8	137.5
PCB-57	0.0	U	9.1	26.2
PCB-58/67	0.0	U	18.1	44.4
PCB-96	0.0	U	29.5	42.6
PCB-103	0.0	U	33.1	47.6
PCB-100	0.0	U	26.7	35.9
PCB-94	0.0	U	18.6	29.5
PCB-63/61	0.0	U	72.8	122.7
PCB-76/74	22.2	U	109.1	168.5
PCB-70	41.3	U	182.8	239.7
PCB-66	24.9	U	161.3	205.5
PCB-55	0.0	U	10.6	25.9
PCB-56	20.0	U	82.7	113.3
PCB-60	13.7	U	50.6	61.9
PCB-79	0.0	U	22.1	33.5
PCB-78	0.0	U	23.9	37.3
PCB-102	0.0	U	30.7	38.3
PCB-98	0.0	U	24.4	32.8
PCB-95/121	13.5	U	170.8	186.7
PCB-91	0.0	U	57.1	70.8
PCB-92	0.0	U	34.3	47.5
PCB-89	19.4	U	41.3	52.2
PCB-113/101	0.0	U	106.2	133.2
PCB-99	0.0	U	52.7	70.7
PCB-119	0.0	U	21.0	30.9
PCB-83/112	8.0	U	19.2	51.3
PCB-108	0.0	U	4.1	18.1
PCB-116/117	0.0	U	23.9	29.6
PCB-85	32.8	U	50.4	58.8
PCB-120	0.0	U	8.6	27.3

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016 **Batch #** PCB-130
Analysis Date: 8/31/2016 **Instrument:** HRMS-1
Method 1668B LOD = 2015_Q4
Analyst AJG LOQ = 2015_Q4

Analyte	16080562-001 ng/kg dry	Qualifier	Adj. LOD (ng/kg)	Adj. LOQ (ng/kg)
PCB-82	0.0	U	34.5	43.3
PCB-150	0.0	U	11.1	27.5
PCB-152	0.0	U	28.0	39.7
PCB-145	0.0	U	11.3	31.9
PCB-148	0.0	U	29.7	40.2
PCB-136	0.0	U	43.8	72.2
PCB-154	0.0	U	32.2	44.4
PCB-151	0.0	U	69.9	82.2
PCB-135	0.0	U	44.1	48.2
PCB-143	0.0	U	46.1	57.0
PCB-140	0.0	U	21.9	44.8
PCB-124	0.0	U	28.2	43.1
PCB-109	0.0	U	19.8	28.0
PCB-106	0.0	U	22.8	34.9
PCB-122	0.0	U	33.9	50.5
PCB-127	0.0	U	18.9	29.5
PCB-149	12.9	U	155.0	159.7
PCB-147/144	0.0	U	53.4	68.2
PCB-134	0.0	U	36.3	47.1
PCB-142/133/131	0.0	U	0.0	125.3
PCB-165	0.0	U	11.5	32.4
PCB-168	0.0	U	6.5	20.9
PCB-141	0.0	U	39.4	47.8
PCB-137	0.0	U	26.7	36.0
PCB-130	0.0	U	33.8	45.5
PCB-163/138	19.6	U	119.4	135.2
PCB-160/158	0.0	U	29.8	66.1
PCB-166	0.0	U	25.3	37.0
PCB-159	0.0	U	22.1	32.2
PCB-162/128	0.0	U	45.2	56.8
PCB-184	0.0	U	11.4	28.5
PCB-179	0.0	U	25.1	38.4

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016 **Batch #** PCB-130
Analysis Date: 8/31/2016 **Instrument:** HRMS-1
Method 1668B LOD = 2015_Q4
Analyst AJG LOQ = 2015_Q4

Analyte	16080562-001 ng/kg dry	Qualifier	Adj. LOD (ng/kg)	Adj. LOQ (ng/kg)
PCB-176	0.0	U	31.7	42.0
PCB-186	0.0	U	14.7	22.7
PCB-178	0.0	U	25.9	36.9
PCB-175/182	0.0	U	44.2	59.0
PCB-183	0.0	U	29.7	40.6
PCB-185	0.0	U	21.9	31.2
PCB-174	6.9	U	30.8	38.8
PCB-181	0.0	U	12.9	27.6
PCB-177	0.0	U	28.4	39.8
PCB-171	0.0	U	25.9	38.2
PCB-173	0.0	U	19.6	29.4
PCB-172	0.0	U	19.6	28.7
PCB-192	0.0	U	7.1	19.2
PCB-180/193	11.3	U	46.2	58.6
PCB-191	0.0	U	21.8	31.3
PCB-170	0.0	U	24.7	34.2
PCB-190	0.0	U	22.1	31.6
PCB-201	0.0	U	64.0	97.9
PCB-197	0.0	U	40.6	63.6
PCB-200	0.0	U	63.4	95.6
PCB-198	0.0	U	55.7	87.2
PCB-196	0.0	U	46.1	73.2
PCB-195	0.0	U	68.2	97.8
PCB-194	0.0	U	67.2	98.3
PCB-207	0.0	U	57.7	85.9
PCB-110	0.0	U	126.5	139.8
PCB-80	0.0	U	7.2	25.2
PCB-23	0.0	U	3.6	11.5
PCB-28	64.2	U	319.8	319.8
PCB-73	0.0	U	26.5	42.6
PCB-69	0.0	U	30.2	46.9
PCB-62	0.0	U	21.6	41.6

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016
Analysis Date: 8/31/2016
Method 1668B
Analyst AJG

Batch # PCB-130
Instrument: HRMS-1
LOD = 2015_Q4
LOQ = 2015_Q4

Analyte	16080562-001 ng/kg dry	Qualifier	Adj. LOD (ng/kg)	Adj. LOQ (ng/kg)
PCB-42	0.0	U	219.8	262.1
PCB-139	0.0	U	26.4	37.3
PCB-93	0.0	U	30.2	42.7
PCB-88	0.0	U	45.5	45.5
PCB-84	0.0	U	6.9	23.9
PCB-90	0.0	U	13.8	24.8
PCB-125	0.0	U	12.2	22.1
PCB-97	20.4	U	52.6	73.6
PCB-115	0.0	U	18.7	26.5
PCB-146	0.0	U	32.6	43.0
PCB-161	0.0	U	26.1	38.1
PCB-153/132	20.3	U	155.6	173.1
PCB-164	0.0	U	16.8	32.8
PCB-129	0.0	U	35.6	51.2
PCB-187	0.0	U	29.7	37.9
PCB-204	0.0	U	59.4	87.9
PCB-199	0.0	U	42.8	62.7
PCB-203	0.0	U	21.0	53.8
PCB-86	0.0	U	6.2	23.4
PCB-48	11.8	U	154.2	191.0
PCB-111/87	0.0	U	76.8	102.1

TOTAL MONOCHLORO	0 ng/kg
TOTAL DICHLORO	128 ng/kg
TOTAL TRICHLORO	260 ng/kg
TOTAL TETRACHLORO	273 ng/kg
TOTAL PENTACHLORO	143 ng/kg
TOTAL HEXACHLORO	53 ng/kg
TOTAL HEPTACHLRO	18 ng/kg
TOTAL OCTACHLORO	0 ng/kg
TOTAL NONACHLORO	0 ng/kg

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016 **Batch #** PCB-130
Analysis Date: 8/31/2016 **Instrument:** HRMS-1
Method 1668B LOD = 2015_Q4
Analyst AJG LOQ = 2015_Q4

Analyte	16080562-001 ng/kg dry	Qualifier	Adj. LOD (ng/kg)	Adj. LOQ (ng/kg)
TOTAL DECACHLORO	0 ng/kg			
TOTAL PCB	875 ng/kg			
TOTAL TEQ	**0.00** ng/kg		TEQ (DL/2)	**2.27** ng/kg

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016
Analysis Date: 8/31/2016
Method: 1668B
Analyst: AJG

Batch # PCB-130
Sample ID: 16080562

Sample # 16080562-01

Surrogate	% Recovery	Limits
13C-PCB-1	20.3	25-150
13C-PCB-3	24.4	25-150
13C-PCB-4/10	24.0	25-150
13C-PCB-15	33.5	25-150
13C-PCB-19	27.5	25-150
13C-PCB-37	59.5	25-150
13C-PCB-54	42.6	25-150
13C-PCB-81	66.7	25-150
13C-PCB-77	66.2	25-150
13C-PCB-104	47.2	25-150
13C-PCB-107/123	101.2	25-150
13C-PCB-114	107.7	25-150
13C-PCB-118	111.6	25-150
13C-PCB-105	117.0	25-150
13C-PCB-126	145.5	25-150
13C-PCB-155	22.7	25-150
13C-PCB-156	60.3	25-150
13C-PCB-157	62.2	25-150
13C-PCB-167	58.8	25-150
13C-PCB-169	68.3	25-150
13C-PCB-188	31.8	25-150
13C-PCB-189	72.4	25-150
13C-PCB-202	38.5	25-150
13C-PCB-205	57.3	25-150
13C-PCB-206	46.5	25-150
13C-PCB-208	50.6	25-150
13C-PCB-209	47.9	25-150
13C-PCB-28	75.2	30-135
13C-PCB-111	84.4	30-135
13C-PCB-178	36.4	30-135
13C-PCB-9	114.4	30-135
13C-PCB-52	62.9	30-135
13C-PCB-101	44.2	30-135
13C-PCB-138	100.0	30-135
13C-PCB-194	106.5	30-135

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016
Analysis Date: 8/31/2016
Method 1668B
Analyst AJG

Batch # PCB-130
Instrument: HRMS-1
LOD = 2015_Q4
LOQ = 2015_Q4

Analyte	BLANK ng/kg dry	Qualifier	LOD (ng/kg)	LOQ (ng/kg)
PCB-1	0.0	U	8.0	9.8
PCB-3	0.0	U	7.6	9.9
PCB-4/10	0.0	U	31.7	38.7
PCB-15	11.6	U	79.8	85.7
PCB-19	0.0	U	17.6	18.9
PCB-37	16.4	U	68.5	72.5
PCB-54	0.0	U	10.4	14.7
PCB-104	0.0	U	9.7	14.3
PCB-81	0.0	U	12.4	18.3
PCB-77	0.0	U	26.4	26.4
PCB-155	0.0	U	5.6	14.5
PCB-107/123	0.0	U	22.0	32.3
PCB-118	11.1	U	51.4	53.4
PCB-114	0.0	U	9.3	12.1
PCB-105	5.0	U	28.6	32.6
PCB-126	0.0	U	10.2	15.4
PCB-167	0.0	U	12.4	18.2
PCB-156	0.0	U	13.1	18.8
PCB-157	0.0	U	8.7	13.0
PCB-169	0.0	U	10.7	14.9
PCB-188	0.0	U	8.9	14.0
PCB-202	0.0	U	14.2	21.3
PCB-189	0.0	U	9.9	14.8
PCB-205	0.0	U	15.0	22.8
PCB-208	0.0	U	15.0	20.1
PCB-206	0.0	U	14.3	21.4
PCB-209	0.0	U	16.7	24.6
PCB-2	0.0	U	2.9	5.7
PCB-9/7	0.0	U	12.5	17.0
PCB-6	0.0	U	17.5	20.1
PCB-8/5	7.5	U	88.6	97.8

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016
Analysis Date: 8/31/2016
Method 1668B
Analyst AJG

Batch # PCB-130
Instrument: HRMS-1
LOD = 2015_Q4
LOQ = 2015_Q4

Analyte	BLANK ng/kg dry	Qualifier	LOD (ng/kg)	LOQ (ng/kg)
PCB-14	0.0	U	1.3	3.0
PCB-11	42.8	U	259.7	259.7
PCB-12	0.0	U	2.6	5.5
PCB-13	0.0	U	6.0	7.8
PCB-30	0.0	U	1.3	4.4
PCB-18	18.4	U	118.9	118.9
PCB-17	8.1	U	51.4	56.0
PCB-27	0.6	U	8.3	12.9
PCB-24	0.0	U	3.4	6.3
PCB-16/32	5.2	U	51.5	99.8
PCB-34	0.0	U	2.8	7.8
PCB-29	0.0	U	4.5	10.7
PCB-26	1.8	U	31.7	43.0
PCB-25	1.1	U	9.5	10.5
PCB-31	12.5	U	97.9	99.5
PCB-33/20/21	12.5	U	85.1	86.1
PCB-22	10.8	U	45.2	48.3
PCB-36	0.0	U	2.0	4.0
PCB-39	0.0	U	2.0	3.7
PCB-38	0.0	U	1.4	3.6
PCB-35	1.6	U	19.8	19.8
PCB-50	0.0	U	11.7	18.3
PCB-53	0.0	U	32.8	40.2
PCB-51	0.0	U	22.8	28.2
PCB-45	0.0	U	45.5	54.7
PCB-46	0.0	U	23.4	30.3
PCB-52/43	15.6	U	218.0	281.9
PCB-49	5.6	U	134.9	149.9
PCB-75/47/65	0.0	U	90.6	109.7
PCB-44	15.3	U	156.3	202.5
PCB-59	3.9	U	27.6	40.9
PCB-71	4.8	U	57.0	67.4

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016
Analysis Date: 8/31/2016
Method 1668B
Analyst AJG

Batch # PCB-130
Instrument: HRMS-1
LOD = 2015_Q4
LOQ = 2015_Q4

Analyte	BLANK ng/kg dry	Qualifier	LOD (ng/kg)	LOQ (ng/kg)
PCB-41/72	0.0	U	54.6	76.0
PCB-68/64	10.3	U	116.8	137.8
PCB-40	0.0	U	44.0	60.6
PCB-57	0.0	U	4.0	11.5
PCB-58/67	0.0	U	8.0	19.6
PCB-96	0.0	U	13.0	18.8
PCB-103	0.0	U	14.6	21.0
PCB-100	0.0	U	11.8	15.8
PCB-94	0.0	U	8.2	13.0
PCB-63/61	0.0	U	32.1	54.1
PCB-76/74	9.9	U	48.1	74.2
PCB-70	18.5	U	80.6	105.7
PCB-66	10.9	U	71.1	90.6
PCB-55	0.0	U	4.7	11.4
PCB-56	8.9	U	36.4	49.9
PCB-60	5.5	U	22.3	27.3
PCB-79	0.0	U	9.8	14.8
PCB-78	0.0	U	10.6	16.4
PCB-102	0.0	U	13.5	16.9
PCB-98	0.0	U	10.7	14.5
PCB-95/121	6.6	U	75.3	82.3
PCB-91	0.0	U	25.2	31.2
PCB-92	0.0	U	15.1	20.9
PCB-89	10.5	U	18.2	23.0
PCB-113/101	5.1	U	46.8	58.7
PCB-99	0.0	U	23.2	31.2
PCB-119	0.0	U	9.2	13.6
PCB-83/112	4.4	U	8.5	22.6
PCB-108	0.0	U	1.8	8.0
PCB-116/117	4.9	U	10.5	13.0
PCB-85	15.1	U	22.2	25.9
PCB-120	0.0	U	3.8	12.0

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016
Analysis Date: 8/31/2016
Method 1668B
Analyst AJG

Batch # PCB-130
Instrument: HRMS-1
LOD = 2015_Q4
LOQ = 2015_Q4

Analyte	BLANK ng/kg dry	Qualifier	LOD (ng/kg)	LOQ (ng/kg)
PCB-82	0.0	U	15.2	19.1
PCB-150	0.0	U	4.9	12.1
PCB-152	0.0	U	12.3	17.5
PCB-145	0.0	U	5.0	14.1
PCB-148	0.0	U	13.1	17.7
PCB-136	0.0	U	19.3	31.8
PCB-154	0.0	U	14.2	19.6
PCB-151	0.0	U	30.8	36.2
PCB-135	0.0	U	19.4	21.2
PCB-143	0.0	U	20.3	25.1
PCB-140	0.0	U	9.7	19.7
PCB-124	0.0	U	12.4	19.0
PCB-109	0.0	U	8.7	12.3
PCB-106	0.0	U	10.0	15.4
PCB-122	0.0	U	14.9	22.3
PCB-127	0.0	U	8.3	13.0
PCB-149	6.3	U	68.3	70.4
PCB-147/144	0.0	U	23.5	30.0
PCB-134	0.0	U	16.0	20.8
PCB-142/133/131	0.0	U	0.0	55.2
PCB-165	0.0	U	5.1	14.3
PCB-168	0.0	U	2.9	9.2
PCB-141	0.0	U	17.4	21.1
PCB-137	0.0	U	11.8	15.9
PCB-130	0.0	U	14.9	20.1
PCB-163/138	5.6	U	52.6	59.6
PCB-160/158	0.0	U	13.1	29.1
PCB-166	0.0	U	11.2	16.3
PCB-159	0.0	U	9.7	14.2
PCB-162/128	0.0	U	19.9	25.0
PCB-184	0.0	U	5.0	12.6
PCB-179	0.0	U	11.1	16.9

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016 **Batch #** PCB-130
Analysis Date: 8/31/2016 **Instrument:** HRMS-1
Method 1668B LOD = 2015_Q4
Analyst AJG LOQ = 2015_Q4

Analyte	BLANK ng/kg dry	Qualifier	LOD (ng/kg)	LOQ (ng/kg)
PCB-176	0.0	U	14.0	18.5
PCB-186	0.0	U	6.5	10.0
PCB-178	0.0	U	11.4	16.3
PCB-175/182	0.0	U	19.5	26.0
PCB-183	0.0	U	13.1	17.9
PCB-185	0.0	U	9.7	13.7
PCB-174	0.0	U	13.6	17.1
PCB-181	0.0	U	5.7	12.2
PCB-177	0.0	U	12.5	17.5
PCB-171	0.0	U	11.4	16.8
PCB-173	0.0	U	8.7	12.9
PCB-172	0.0	U	8.6	12.7
PCB-192	0.0	U	3.1	8.5
PCB-180/193	0.0	U	20.4	25.8
PCB-191	0.0	U	9.6	13.8
PCB-170	0.0	U	10.9	15.1
PCB-190	0.0	U	9.7	13.9
PCB-201	0.0	U	28.2	43.1
PCB-197	0.0	U	17.9	28.0
PCB-200	0.0	U	27.9	42.1
PCB-198	0.0	U	24.6	38.4
PCB-196	0.0	U	20.3	32.3
PCB-195	0.0	U	30.1	43.1
PCB-194	0.0	U	29.6	43.3
PCB-207	0.0	U	25.4	37.9
PCB-110	0.0	U	55.8	61.6
PCB-80	0.0	U	3.2	11.1
PCB-23	0.0	U	1.6	5.1
PCB-28	29.3	U	140.9	140.9
PCB-73	0.0	U	11.7	18.8
PCB-69	0.0	U	13.3	20.7
PCB-62	0.0	U	9.5	18.3

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Extraction Date: 8/20/2016 **Batch #** PCB-130
Analysis Date: 8/31/2016 **Instrument:** HRMS-1
Method 1668B LOD = 2015_Q4
Analyst AJG LOQ = 2015_Q4

Analyte	BLANK ng/kg dry	Qualifier	LOD (ng/kg)	LOQ (ng/kg)
PCB-42	0.0	U	96.9	115.5
PCB-139	0.0	U	11.6	16.4
PCB-93	0.0	U	13.3	18.8
PCB-88	0.0	U	20.0	20.0
PCB-84	0.0	U	3.0	10.5
PCB-90	0.0	U	6.1	10.9
PCB-125	0.0	U	5.4	9.8
PCB-97	0.0	U	23.2	32.4
PCB-115	0.0	U	8.2	11.7
PCB-146	0.0	U	14.3	18.9
PCB-161	0.0	U	11.5	16.8
PCB-153/132	7.7	U	68.6	76.3
PCB-164	0.0	U	7.4	14.4
PCB-129	0.0	U	15.7	22.6
PCB-187	0.0	U	13.1	16.7
PCB-204	0.0	U	26.2	38.7
PCB-199	0.0	U	18.9	27.7
PCB-203	0.0	U	9.2	23.7
PCB-86	0.0	U	2.7	10.3
PCB-48	5.4	U	68.0	84.2
PCB-111/87	0.0	U	33.9	45.0

TOTAL MONOCHLORO	0 ng/kg
TOTAL DICHLORO	62 ng/kg
TOTAL TRICHLORO	118 ng/kg
TOTAL TETRACHLORO	115 ng/kg
TOTAL PENTACHLORO	63 ng/kg
TOTAL HEXACHLORO	20 ng/kg
TOTAL HEPTACHLRO	0 ng/kg
TOTAL OCTACHLORO	0 ng/kg
TOTAL NONACHLORO	0 ng/kg

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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Extraction Date: 8/20/2016 **Batch #** PCB-130
Analysis Date: 8/31/2016 **Instrument:** HRMS-1
Method 1668B LOD = 2015_Q4
Analyst AJG LOQ = 2015_Q4

Analyte	BLANK ng/kg dry	Qualifier	LOD (ng/kg)	LOQ (ng/kg)
TOTAL DECACHLORO	0 ng/kg			
TOTAL PCB	377 ng/kg			
TOTAL TEQ	**0.00** ng/kg	TEQ (DL/2)		**1.00** ng/kg

SUMMIT
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Analytical Laboratories

Extraction Date: 8/20/2016
Analysis Date: 8/31/2016
Method 1668B
Analyst AJG

Batch # PCB-130
Instrument: HRMS-1
LOD = 2015_Q4
LOQ = 2015_Q4

Analyte	LCS-130 % Recovery	LCSD-130 % Recovery	RPD
PCB-1	111.2	112.1	0.8%
PCB-3	106.8	106.5	0.3%
PCB-4	111.6	108.3	3.0%
PCB-15	107.6	106.0	1.5%
PCB-19	98.5	94.4	4.3%
PCB-37	119.4	120.5	0.9%
PCB-54	97.0	96.4	0.7%
PCB-104	104.8	104.3	0.6%
PCB-81	98.5	97.7	0.8%
PCB-77	99.7	94.2	5.7%
PCB-155	104.0	105.1	1.0%
PCB-123	99.0	100.9	1.8%
PCB-118	109.7	105.3	4.0%
PCB-114	100.5	99.4	1.2%
PCB-105	112.9	113.0	0.1%
PCB-126	107.8	112.9	4.7%
PCB-167	98.5	98.1	0.4%
PCB-156	98.4	98.1	0.3%
PCB-157	98.2	96.8	1.5%
PCB-169	98.4	96.4	2.0%
PCB-188	108.0	108.3	0.3%
PCB-202	98.1	93.4	5.0%
PCB-189	103.9	102.9	0.9%
PCB-205	105.4	104.8	0.5%
PCB-208	95.8	94.4	1.5%
PCB-206	102.6	104.1	1.5%
PCB-209	108.0	102.1	5.6%

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Analytical Laboratories

Extraction Date: 8/20/2016
Analysis Date: 8/31/2016
Method 1668B
Analyst AJG

Batch # PCB-130
Instrument: HRMS-1
LOD = 2015_Q4
LOQ = 2015_Q4

Analyte	16080562-001 ng/kg dry	Qualifier	Adj. LOD (ng/kg dry)	Adj. LOQ (ng/kg dry)
TOTAL TETRACHLORO	273	ng/kg dry		
TOTAL PENTACHLORO	143	ng/kg dry		
TOTAL HEXACHLORO	53	ng/kg dry		
TOTAL HEPTACHLRO	18	ng/kg dry		
TOTAL OCTACHLORO	0	ng/kg dry		
TOTAL NONACHLORO	0	ng/kg dry		
TOTAL DECACHLORO	0	ng/kg dry		
TOTAL PCB	875	ng/kg dry		

TOTAL TEQ (ND = 0)	**0.00**	ng/kg dry	
TEQ (DL/2 using LOD)			**1.53** ng/kg dry
TEQ (DL/2 using LOQ)			**2.27** ng/kg dry

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Qualifiers and Acronyms

WO#: **16080562**
Date: **9/15/2016**

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*****	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B/MB+	The analyte was detected in the associated blank.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	**RL**	Reporting Limit
QC	Quality Control	**MDL**	Method Detection Limit
MB	Method Blank	**LOD**	Level of Detection
LCS	Laboratory Control Sample	**LOQ**	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	**PQL**	Practical Quantitation Limit
QCS	Quality Control Sample	**CRQL**	Contract Required Quantitation Limit
DUP	Duplicate	**PL**	Permit Limit
MS	Matrix Spike	**RegLvl**	Regulatory Limit
MSD	Matrix Spike Duplicate	**MCL**	Maximum Contamination Limit
RPD	Relative Percent Different	**MinCL**	Minimum Compound Limit
ICV	Initial Calibration Verification	**RA**	Reanalysis
ICB	Initial Calibration Blank	**RE**	Reextraction
CCV	Continuing Calibration Verification	**TIC**	Tentatively Identified Compound
CCB	Continuing Calibration Blank	**RT**	Retention Time
RLC	Reporting Limit Check	**CF**	Calibration Factor
DF	Dilution Factor	**RF**	Response Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.

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QC SUMMARY REPORT

WO#: **16080562**

11-Oct-16

Client: Amtest
Project: 20515 **BatchID:** **22528**

Sample ID **16070359-001AMSD** SampType: **MSD** TestCode: **DX-Full_S(16** Units: **ng/Kg** Prep Date: **8/22/2016** RunNo: **58623**
Client ID: **BatchQC** Batch ID: **22528** TestNo: **E1613** **E1613** Analysis Date: **8/30/2016** SeqNo: **954120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2378-TCDF	23.6	0.281	22.44	0	105	15	128	23.77	0.854	20	
12378-PeCDF	114	0.561	112.2	0	102	80	134	107.7	5.85	20	
23478-PeCDF	119	0.561	112.2	0	106	68	160	116.7	1.97	20	
123478-HxCDF	123	0.561	112.2	0	109	73	134	121.0	1.43	20	
123678-HxCDF	119	0.561	112.2	0	106	84	130	118.3	0.387	20	
234678-HxCDF	120	0.561	112.2	0	107	70	156	117.1	2.62	20	
123789-HxCDF	117	0.561	112.2	0	105	78	130	114.1	2.90	20	
1234678-HpCDF	123	0.561	112.2	0	110	82	122	121.4	1.69	20	BMB+
1234789-HpCDF	121	0.561	112.2	0	107	78	138	118.1	2.03	20	
OCDF	240	1.12	224.4	0	107	63	170	230.9	3.72	20	BMB+
2378-TCDD	24.3	0.281	22.44	0	108	67	158	24.42	0.702	20	
12378-PeCDD	134	0.561	112.2	0	119	70	130	130.7	2.42	20	
123478-HxCDD	128	0.561	112.2	0	114	70	164	128.3	0.155	20	
123678-HxCDD	126	0.561	112.2	0	112	70	134	125.3	0.256	20	
123789HxCDD	115	0.561	112.2	0	102	64	162	105.7	8.29	20	
1234678-HpCDD	119	0.561	112.2	0	106	70	140	118.3	0.736	20	BMB+
OCDD	252	1.12	224.4	2.576	111	78	144	244.6	3.17	20	BMB+

Sample ID **LCS-22528** SampType: **LCS** TestCode: **DX-Full_S(16** Units: **ng/Kg** Prep Date: **8/22/2016** RunNo: **58623**
Client ID: **LCSS** Batch ID: **22528** TestNo: **E1613** **E1613** Analysis Date: **8/29/2016** SeqNo: **954126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
P	Second column confirmation exceeds	PL	Permit Limit	R	RPD outside accepted recovery limits

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QC SUMMARY REPORT

WO#: **16080562**

11-Oct-16

Client: Amtest
Project: 20515 **BatchID:** **22528**

Sample ID **LCS-22528**	SampType: **LCS**	TestCode: **DX-Full_S(16**	Units: **ng/Kg**	Prep Date: **8/22/2016**	RunNo: **58623**
Client ID: **LCSS**	Batch ID: **22528**	TestNo: **E1613**	**E1613**	Analysis Date: **8/29/2016**	SeqNo: **954126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2378-TCDF	82.3	1.00	80.00	0	103	15	128				
12378-PeCDF	369	2.00	400.0	0	92.3	80	134				
23478-PeCDF	398	2.00	400.0	0	99.6	68	160				
123478-HxCDF	407	2.00	400.0	0	102	73	134				
123678-HxCDF	404	2.00	400.0	0	101	84	130				
234678-HxCDF	403	2.00	400.0	0	101	70	156				
123789-HxCDF	388	2.00	400.0	0	97.1	78	130				
1234678-HpCDF	417	2.00	400.0	0	104	82	122				BMB+
1234789-HpCDF	412	2.00	400.0	0	103	78	138				
OCDF	796	4.00	800.0	0	99.5	63	170				BMB+
2378-TCDD	84.1	1.00	80.00	0	105	67	158				
12378-PeCDD	459	2.00	400.0	0	115	70	130				
123478-HxCDD	440	2.00	400.0	0	110	70	164				
123678-HxCDD	437	2.00	400.0	0	109	70	134				
123789HxCDD	363	2.00	400.0	0	90.9	64	162				
1234678-HpCDD	396	2.00	400.0	0	99.1	70	140				BMB+
OCDD	863	4.00	800.0	0	108	78	144				BMB+

Sample ID **LCSD-22528**	SampType: **LCSD**	TestCode: **DX-Full_S(16**	Units: **ng/Kg**	Prep Date: **8/22/2016**	RunNo: **58623**
Client ID: **LCSS02**	Batch ID: **22528**	TestNo: **E1613**	**E1613**	Analysis Date: **8/29/2016**	SeqNo: **954127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
P	Second column confirmation exceeds	PL	Permit Limit	R	RPD outside accepted recovery limits

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QC SUMMARY REPORT

WO#: **16080562**

11-Oct-16

Client: Amtest
Project: 20515 **BatchID:** **22528**

Sample ID **LCSD-22528** SampType: **LCSD** TestCode: **DX-Full_S(16** Units: **ng/Kg** Prep Date: **8/22/2016** RunNo: **58623**
Client ID: **LCSS02** Batch ID: **22528** TestNo: **E1613** **E1613** Analysis Date: **8/29/2016** SeqNo: **954127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2378-TCDF	80.5	1.00	80.00	0	101	15	128	82.26	2.14	20	
12378-PeCDF	376	2.00	400.0	0	93.9	80	134	369.1	1.78	20	
23478-PeCDF	398	2.00	400.0	0	99.6	68	160	398.4	0.0301	20	
123478-HxCDF	413	2.00	400.0	0	103	73	134	407.3	1.49	20	
123678-HxCDF	390	2.00	400.0	0	97.4	84	130	404.4	3.71	20	
234678-HxCDF	406	2.00	400.0	0	102	70	156	403.3	0.757	20	
123789-HxCDF	401	2.00	400.0	0	100	78	130	388.3	3.31	20	
1234678-HpCDF	420	2.00	400.0	0	105	82	122	416.9	0.818	20	BMB+
1234789-HpCDF	420	2.00	400.0	0	105	78	138	411.8	2.06	20	
OCDF	804	4.00	800.0	0	100	63	170	795.9	0.948	20	BMB+
2378-TCDD	85.1	1.00	80.00	0	106	67	158	84.13	1.12	20	
12378-PeCDD	457	2.00	400.0	0	114	70	130	458.7	0.463	20	
123478-HxCDD	439	2.00	400.0	0	110	70	164	440.2	0.315	20	
123678-HxCDD	422	2.00	400.0	0	105	70	134	436.6	3.42	20	
123789HxCDD	298	2.00	400.0	0	74.4	64	162	363.5	20.0	20	
1234678-HpCDD	406	2.00	400.0	0	101	70	140	396.4	2.29	20	BMB+
OCDD	854	4.00	800.0	0	107	78	144	863.3	1.11	20	BMB+

Sample ID **16070359-001AMS** SampType: **MS** TestCode: **DX-Full_S(16** Units: **ng/Kg** Prep Date: **8/22/2016** RunNo: **58623**
Client ID: **BatchQC** Batch ID: **22528** TestNo: **E1613** **E1613** Analysis Date: **8/30/2016** SeqNo: **954128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
P	Second column confirmation exceeds	PL	Permit Limit	R	RPD outside accepted recovery limits

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QC SUMMARY REPORT

WO#: **16080562**

11-Oct-16

Client: Amtest
Project: 20515 **BatchID:** **22528**

Sample ID **16070359-001AMS** SampType: **MS** TestCode: **DX-Full_S(16** Units: **ng/Kg** Prep Date: **8/22/2016** RunNo: **58623**
Client ID: **BatchQC** Batch ID: **22528** TestNo: **E1613** **E1613** Analysis Date: **8/30/2016** SeqNo: **954128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2378-TCDF	23.8	0.281	22.44	0	106	15	128				
12378-PeCDF	108	0.561	112.2	0	96.0	80	134				
23478-PeCDF	117	0.561	112.2	0	104	68	160				
123478-HxCDF	121	0.561	112.2	0	108	73	134				
123678-HxCDF	118	0.561	112.2	0	105	84	130				
234678-HxCDF	117	0.561	112.2	0	104	70	156				
123789-HxCDF	114	0.561	112.2	0	102	78	130				
1234678-HpCDF	121	0.561	112.2	0	108	82	122				BMB+
1234789-HpCDF	118	0.561	112.2	0	105	78	138				
OCDF	231	1.12	224.4	0	103	63	170				BMB+
2378-TCDD	24.4	0.281	22.44	0	109	67	158				
12378-PeCDD	131	0.561	112.2	0	116	70	130				
123478-HxCDD	128	0.561	112.2	0	114	70	164				
123678-HxCDD	125	0.561	112.2	0	112	70	134				
123789HxCDD	106	0.561	112.2	0	94.2	64	162				
1234678-HpCDD	118	0.561	112.2	0	105	70	140				BMB+
OCDD	245	1.12	224.4	2.576	108	78	144				BMB+

Sample ID **MB-22528** SampType: **MBLK** TestCode: **DX-Full_S(16** Units: **ng/Kg** Prep Date: **8/22/2016** RunNo: **58623**
Client ID: **PBS** Batch ID: **22528** TestNo: **E1613** **E1613** Analysis Date: **8/29/2016** SeqNo: **954130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
P	Second column confirmation exceeds	PL	Permit Limit	R	RPD outside accepted recovery limits

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QC SUMMARY REPORT

WO#: **16080562**

11-Oct-16

Client: Amtest
Project: 20515 **BatchID:** **22528**

Sample ID **MB-22528**	SampType: **MBLK**	TestCode: **DX-Full_S(16**	Units: **ng/Kg**	Prep Date: **8/22/2016**	RunNo: **58623**
Client ID: **PBS**	Batch ID: **22528**	TestNo: **E1613**	**E1613**	Analysis Date: **8/29/2016**	SeqNo: **954130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2378-TCDF	< 1.00	1.00									
12378-PeCDF	< 2.00	2.00									
23478-PeCDF	< 2.00	2.00									
123478-HxCDF	< 2.00	2.00									
123678-HxCDF	< 2.00	2.00									
234678-HxCDF	< 2.00	2.00									
123789-HxCDF	< 2.00	2.00									
1234678-HpCDF	4.66	2.00									
1234789-HpCDF	< 2.00	2.00									
OCDF	9.50	4.00									
2378-TCDD	< 1.00	1.00									
12378-PeCDD	< 2.00	2.00									
123478-HxCDD	< 2.00	2.00									
123678-HxCDD	< 2.00	2.00									
123789HxCDD	< 2.00	2.00									
1234678-HpCDD	4.77	2.00									
OCDD	14.2	4.00									
Totals-Tetrafurans	< 4.00	4.00									
Totals-Tetradioxins	< 4.00	4.00									
Totals-Pentafurans	< 4.00	4.00									
Totals-Pentadioxins	< 4.00	4.00									
Totals-Hexafurans	< 4.00	4.00									
Totals-Hexadioxins	< 4.00	4.00									

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
P	Second column confirmation exceeds	PL	Permit Limit	R	RPD outside accepted recovery limits

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

QC SUMMARY REPORT

WO#: **16080562**

11-Oct-16

Client: Amtest
Project: 20515 **BatchID:** **22528**

Sample ID	**MB-22528**	SampType:	**MBLK**	TestCode:	**DX-Full_S(16**	Units:	**ng/Kg**	Prep Date:	**8/22/2016**	RunNo:	**58623**
Client ID:	**PBS**	Batch ID:	**22528**	TestNo:	**E1613**	**E1613**		Analysis Date:	**8/29/2016**	SeqNo:	**954130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Totals-Heptafurans	6.46	4.00									
Totals-Heptadioxins	4.77	4.00									

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
P	Second column confirmation exceeds	PL	Permit Limit	R	RPD outside accepted recovery limits

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QC SUMMARY REPORT

WO#: **16080562**

11-Oct-16

Client: Amtest
Project: 20515 **BatchID:** **R58591**

Sample ID	**LCS-R58591**	SampType: **LCS**	TestCode: **PctSolid_S(2**	Units: **%**	Prep Date:	RunNo: **58591**
Client ID:	**LCSS**	Batch ID: **R58591**	TestNo: **A2540B**		Analysis Date: **8/29/2016**	SeqNo: **953475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Solids	100		100.0	0	100	90	110				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
P	Second column confirmation exceeds	PL	Permit Limit	R	RPD outside accepted recovery limits

AMTEST LABORATORIES

Summit

AmTest Chain of Custody Record

13600 NE 126th PL, Suite C, Kirkland, WA 98034
Ph (425) 885-1664 Fx (425) 820-0245
www.amtestlab.com

Chain of Custody No. 27756

Client Name & Address:	Invoice To:
AmTest Lab	
Contact Person: ~~Aaron~~ Kathy Fugiel	Invoice Contact:
Phone No:	PO Number: 16-420
Fax No:	Invoice Ph/Fax:
E-mail: Kathyf@amtestlab.com	Invoice E-mail:
Report Delivery: (Choose all that apply) Mail / Fax / (Email) / Posted Online	Data posted to online account: YES / NO Web Login ID:
Special Instructions: * see attachment *	
Requested TAT: **(Rush must be pre-approved by lab)** (Standard) RUSH (5 Day / 3 Day / 48 HR / 24 HR)	Temperature upon Receipt:

Project Name: Iron Mtn

Project Number:

AmTest ID	Client ID (35 characters max)	Date Sampled	Time Sampled	Matrix	No. of containers	Analysis Requested: Dioxin/Furan EPA 1613	Analysis Requested: EPA Method 8A (PCB)	Analysis Requested	Analysis Requested	Analysis Requested	Analysis Requested	Analysis Requested	Analysis Requested	Analysis Requested	QA/QC
	20515	8/3/16	9:00	Soil	1	X	X								

1608056 2-001 SV

Collected/Relinquished By:	Date	Time	Received By:	Date	Time
	8/3/16	14:30			
Relinquished By:	Date	Time	Received By:	Date	Time
			Sue Campden	8-9-16	1025
Relinquished By:	Date	Time	Received By:	Date	Time

COMMENTS:

Dibenzo(a,h)anthracene	EPA 8270 SIM	12	mg/kg OC	0.23	mg/kg
Benzo(ghi)perylene	EPA 8270 SIM	31	mg/kg OC	0.67	mg/kg
Total carcinogenic PAHs – TEQ	--	21	µg/kg	21	µg/kg
Chlorinated Organic Compounds					
1,2-Dichlorobenzene	EPA 8270	2.3	mg/kg OC	0.035	mg/kg
1,4-Dichlorobenzene	EPA 8270	3.1	mg/kg OC	0.11	mg/kg
1,2,4-Trichlorobenzene	EPA 8270	0.81	mg/kg OC	0.031	mg/kg
Hexachlorobenzene	EPA 8081B	0.38	mg/kg OC	0.022	mg/kg
Phthalates					
Dimethyl phthalate	EPA 8270	53	mg/kg OC	0.071	mg/kg
Diethyl phthalate	EPA 8270	61	mg/kg OC	0.2	mg/kg
Dibutyl phthalate	EPA 8270	220	mg/kg OC	1.4	mg/kg
Butyl benzyl phthalate	EPA 8270	4.9	mg/kg OC	0.063	mg/kg
Bis(2-Ethylhexyl) Phthalate	EPA 8270	47	mg/kg OC	1.3	mg/kg
Di-N-Octyl Phthalate	EPA 8270	58	mg/kg OC	6.2	mg/kg
Miscellaneous Extractables					
Dibenzofuran	EPA 8270	15	mg/kg OC	0.54	mg/kg
Hexachlorobutadiene	EPA 8081B	3.9	mg/kg OC	0.011	mg/kg
N-Nitrosodiphenylamine	EPA 8270	11	mg/kg OC	0.028	mg/kg
Benzyl Alcohol	EPA 8270	57	µg/kg	57	µg/kg
Benzoic Acid	EPA 8270	650	µg/kg	650	µg/kg
Polychlorinated Biphenyls (PCBs)					
Total Dioxin-Like PCBs - human health TEQ	EPA 1668A	2	ng/kg	2	ng/kg
Total PCBs (Total for Congeners)	EPA 1668A	0.21	mg/kg	0.21	mg/kg
Phenols					

Phenol	EPA 8270	420	µg/kg	420	µg/kg
2-methylphenol	EPA 8270	63	µg/kg	63	µg/kg
4-methylphenol	EPA 8270	670	µg/kg	670	µg/kg
2,4-Dimethylphenol	EPA 8270 SIM	29	µg/kg	29	µg/kg
Pentachlorophenol	EPA 8270	360	µg/kg	360	µg/kg
Dioxins and Furans					
Total dioxins/furans - TEQ	EPA 1613	5	ng/kg	5	ng/kg

mg/kg = milligrams per kilogram
mg/kg OC = milligrams per kilogram normalized to organic carbon
µg/kg = micrograms per kilogram
ng/kg = nanograms per kilogram
TEQ = Toxicity Equivalence (https://fortress.wa.gov/ecy/clarc/FocusSheets/tef.pdf)

2.07 INSPECTION

A. Material Source. The material source shall be inspected by the CONTRACTOR in order to assure that the materials to be delivered to the site will meet the appropriate specifications.

B. Project Site. Truckloads or barges of imported material shall be visually inspected by the CONTRACTOR upon delivery to the site. Materials shall be inspected for presence of foreign, recycled or reprocessed material. The ENGINEER may at any and all times perform an independent inspection. Material may be rejected if identified as substandard or test results show it to be substandard. Materials may be segregated for testing based on appearance or odor.

PART 3 – EXECUTION

3.01 GENERAL

A. The CONTRACTOR shall conduct all material placement activities using water-based equipment. No equipment shall be allowed to operate on the sediment surface.

B. Placing of materials shall be suspended when adverse wave, weather, and tidal conditions will not allow proper placement.

C. Should any exceedances of water quality compliance criteria be observed during the material placement activities, the CONTRACTOR shall immediately adjust their operations and/or implement necessary BMPs to ensure compliance with the water quality criteria and permit conditions.

D. Material shall not be placed outside the placement limits. The CONTRACTOR will not be paid for any material placed outside the placement limits as indicated on the Contract Drawings and/or as directed by the PORT/ENGINEER.

Summit Environmental Technologies, Inc.
Cooler Receipt Form

Client: Amtest

Initials of person inspecting cooler and samples: SL

Order Number: 160805G2

Date Received: 8-9-16 Time Received: 1025 Date cooler(s) opened and samples inspected: 8-9-16

Number of Coolers/Boxes: 1 N/A

Shipper: FED EX (UPS) DHL Airborne US Postal Walk-in Pickup Other: _____

Packaging: Peanuts (Bubble Wrap) Paper Foam None Other: _____

Tape on cooler/box:	(Y)	N	N/A
Custody Seals intact	Y	N	(N/A)
C-O-C in plastic	(Y)	N	N/A
Ice X Blue ice _____	(present) / absent / melted		N/A
Sample Temperature IR Gun #16020459 CF 0.0 °C	4.1 °C		N/A
Radiological Testing Instrument serial #35127 (see page 2 for scan results)	Y	(N)	N/A

****Use 1 sheet per sample for Radiological Testing. If sample is HOT, the Radiological Safety Officer must be notified immediately.**

C-O-C filled out properly	(Y)	N	N/A
Samples in separate bags	(Y)	N	N/A
Sample containers intact*	(Y)	N	N/A

*If no, list broken sample(s): _____

Sample label(s) complete (ID, date, etc.)	(Y)	N	N/A
Label(s) agree with C-O-C	(Y)	N	N/A
Correct containers used	(Y)	N	N/A
Sufficient sample received	(Y)	N	N/A
Samples received within holding time	(Y)	N	
Bubbles absent from 40 mL vials**	Y	N	(N/A)

** Samples with bubbles <6mm are acceptable. Indicate bubble size if >6mm. _____

Was client contacted about samples	Y	N
Will client send new samples	Y	N

Client contact: _____

Date/Time: _____

Logged in by: _____

Comments: _____

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
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Website: http://www.settek.com

November 16, 2016

Kathy Fugiel
Amtest
13600 NE 126th Pl. Suite C
Kirkland, WA 98034
TEL: 425-885-1664
FAX: 425-820-0245

RE: Iron Mountain Quarry

Dear Kathy Fugiel:

Order No.: 16101360

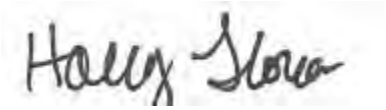
Summit Environmental Technologies, Inc. received 1 sample(s) on 10/25/2016 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,



Holly Florea

Project Manager

3310 Win St.
Cuyahoga Falls, Ohio 44223

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
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Case Narrative

WO#: **16101360**
Date: **11/16/2016**

CLIENT: Amtest
Project: Iron Mountain Quarry

Paginated Report including Cover Letter, Case Narrative, Analytical Results, Applicable Quality Control Summary Reports, and copies of the Chain of Custody Documents are supplied with this sample set.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report.

 The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

This report is believed to meet all of the requirements of NELAC or the accrediting / certifying agency. Any comments or problems with the analytical events associated with this report are noted below.

Analytical Comments for DX-Full_S(8290), Sample LCS-24058, Batch ID 24058 : Recoveries above acceptance limits in the LCS for 2,3,4,7,8-PeCDF, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 2,3,4,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDF, 1,2,3,4,6,7,8-HpCDF, and OCDF

Analytical Comments for DX-Full_S(8290), Sample LCSD-24058, Batch ID 24058 : Recoveries above acceptance limits in the LCSD for 2,3,4,7,8-PeCDF, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, and 1,2,3,4,6,7,8-HpCDF

Analytical Comments for DX-Full_S(8290), Sample 16101360-001A, Batch ID 24058 : OCDD detected in the MB at low concentration; Recoveries above acceptance limits for 2,3,4,7,8-PeCDF, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 1,2,3,4,6,7,8-HpCDF in the LCS and LCSD, and for 2,3,4,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDF, and OCDF in the LCS. The TEQ is based on the EDLs calculated at a method-defined 2.5 signal to noise ratio.

Revised report provided 16Nov16.
TEQ results were corrected. HLF

Summit Environmental Technologies, Inc.
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Case Narrative

WO#: **16101360**
Date: **11/16/2016**

CLIENT: Amtest
Project: Iron Mountain Quarry

Revised report provided 18Nov16.
TEQ results were revised to report to the EDL. HLF

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
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Website: http://www.settek.com

Workorder Sample Summary

WO#: **16101360**

18-Nov-16

CLIENT: Amtest
Project: Iron Mountain Quarry

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
16101360-001	27069		10/13/2016 9:00:00 AM	10/25/2016 10:45:00 AM	Solid

SUMMIT ENVIRONMENTAL TECHNOLOGIES, INC. Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Analytical Report

(consolidated)

WO#: **16101360**

Date Reported: **11/16/2016**

CLIENT: Amtest **Collection Date:** 10/13/2016 9:00:00 AM

Project: Iron Mountain Quarry

Lab ID: 16101360-001 **Matrix:** SOLID

Client Sample ID 27069

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
DIOXIN 8290 FULL-LIST SOLIDS				**SW8290**	**SW8290**	Analyst: **CxA**
HRMS DIOXIN ANALYSIS - FULL LIST (8290-A)						
2378-TCDF	ND	3.74		ng/Kg-dry	1	11/15/2016 12:55:00 PM
12378-PeCDF	ND	7.47		ng/Kg-dry	1	11/15/2016 12:55:00 PM
23478-PeCDF	ND	7.47	QL+	ng/Kg-dry	1	11/15/2016 12:55:00 PM
123478-HxCDF	ND	7.47	QL+	ng/Kg-dry	1	11/15/2016 12:55:00 PM
123678-HxCDF	ND	7.47	QL+	ng/Kg-dry	1	11/15/2016 12:55:00 PM
234678-HxCDF	ND	7.47	QL+	ng/Kg-dry	1	11/15/2016 12:55:00 PM
123789-HxCDF	ND	7.47	QL+	ng/Kg-dry	1	11/15/2016 12:55:00 PM
1234678-HpCDF	9.24	7.47	QL+	ng/Kg-dry	1	11/15/2016 12:55:00 PM
1234789-HpCDF	ND	7.47		ng/Kg-dry	1	11/15/2016 12:55:00 PM
OCDF	16.2	14.9	QL+	ng/Kg-dry	1	11/15/2016 12:55:00 PM
2378-TCDD	ND	3.74		ng/Kg-dry	1	11/15/2016 12:55:00 PM
12378-PeCDD	ND	7.47		ng/Kg-dry	1	11/15/2016 12:55:00 PM
123478-HxCDD	ND	7.47		ng/Kg-dry	1	11/15/2016 12:55:00 PM
123678-HxCDD	ND	7.47		ng/Kg-dry	1	11/15/2016 12:55:00 PM
123789-HxCDD	ND	7.47		ng/Kg-dry	1	11/15/2016 12:55:00 PM
1234678-HpCDD	21.6	7.47		ng/Kg-dry	1	11/15/2016 12:55:00 PM
OCDD	73.8	14.9	BMB+	ng/Kg-dry	1	11/15/2016 12:55:00 PM
Totals-Tetrafurans	ND	14.9		ng/Kg-dry	1	11/15/2016 12:55:00 PM
Totals-Tetradioxins	ND	14.9		ng/Kg-dry	1	11/15/2016 12:55:00 PM
Totals-Pentafurans	ND	14.9		ng/Kg-dry	1	11/15/2016 12:55:00 PM
Totals-Pentadioxins	ND	14.9		ng/Kg-dry	1	11/15/2016 12:55:00 PM
Totals-Hexafurans	ND	14.9		ng/Kg-dry	1	11/15/2016 12:55:00 PM
Totals-Hexadioxins	ND	14.9		ng/Kg-dry	1	11/15/2016 12:55:00 PM
Totals-Heptafurans	ND	14.9		ng/Kg-dry	1	11/15/2016 12:55:00 PM
Totals-Heptadioxins	42.0	14.9		ng/Kg-dry	1	11/15/2016 12:55:00 PM
TEQ	4.60			ng/Kg-dry	1	11/15/2016 12:55:00 PM
DIOXIN 8290 FULL-LIST SOLIDS				**A2540B**		Analyst: **DHC**
PERCENT SOLIDS (2540)						
Percent Solids	99.9			%	1	10/26/2016 3:10:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
W	Sample container temperature is out of limit as specified at testcode
M	Manual Integration used to determine area response
PL	Permit Limit
RL	Reporting Detection Limit

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*****	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B/MB+	The analyte was detected in the associated blank.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	**RL**	Reporting Limit
QC	Quality Control	**MDL**	Method Detection Limit
MB	Method Blank	**LOD**	Level of Detection
LCS	Laboratory Control Sample	**LOQ**	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	**PQL**	Practical Quantitation Limit
QCS	Quality Control Sample	**CRQL**	Contract Required Quantitation Limit
DUP	Duplicate	**PL**	Permit Limit
MS	Matrix Spike	**RegLvl**	Regulatory Limit
MSD	Matrix Spike Duplicate	**MCL**	Maximum Contamination Limit
RPD	Relative Percent Different	**MinCL**	Minimum Compound Limit
ICV	Initial Calibration Verification	**RA**	Reanalysis
ICB	Initial Calibration Blank	**RE**	Reextraction
CCV	Continuing Calibration Verification	**TIC**	Tentatively Identified Compound
CCB	Continuing Calibration Blank	**RT**	Retention Time
RLC	Reporting Limit Check	**CF**	Calibration Factor
DF	Dilution Factor	**RF**	Response Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.

Summit Environmental Technologies, Inc.
Method 8290
TEQ Report

Parameter	TEF	Result 16101360-01	EDL	TEQ		
2,3,7,8-TCDF	0.1	1.095018	2.190035	0.10950177	1	
1,2,3,7,8-PeCDF	0.03	1.306555	2.61311	0.03919666	2	
2,3,4,7,8-PeCDF	0.3	1.418546	2.837091	0.42556369	3	
1,2,3,4,7,8-HxCDF	0.1	1.231895	2.46379	0.12318949	4	
1,2,3,6,7,8-HxCDF	0.1	1.182121	2.364243	0.11821213	5	
2,3,4,6,7,8-HxCDF	0.1	1.256782	2.513563	0.12567816	6	
1,2,3,7,8,9-HxCDF	0.1	1.368772	2.737544	0.13687721	7	
1,2,3,4,6,7,8-HpCDF	0.01	9.24	1.667413	0.0924	8	
1,2,3,4,7,8,9-HpCDF	0.01	0.983027	1.966054	0.00983027	9	
OCDF	0.0003	16.23	3.757902	0.004869	10	
2,3,7,8-TCDD	1	1.119904	2.239809	1.11990443	11	
1,2,3,7,8-PeCDD	1	1.667413	3.334827	1.66741327	12	
1,2,3,4,7,8-HxCDD	0.1	1.368772	2.737544	0.13687721	13	
1,2,3,6,7,8-HxCDD	0.1	1.294112	2.588224	0.12941118	14	
1,2,3,7,8,9-HxCDD	0.1	1.256782	2.513563	0.12567816	15	
1,2,3,4,6,7,8-HpCDD	0.01	21.64	1.941168	0.2164	16	
OCDD	0.0003	73.84	3.45926	0.022152	17	
TEQ				**4.60**		**0.00**

LOQ
0.088
0.105
0.114
0.099
0.095
0.101
0.11
0.067
0.079
0.151
0.09
0.134
0.11
0.104
0.101
0.078
0.139
2832.04
2839.04
2948.36
3101.32
3123.12
3089.28
3268.4
3316.04
3156.12
4000
2802.04
2889.36
3139.52
3167.4
3304.8
7538
4000
343.72
66.16

0
569.52
0
1988.72
104.4
3202.48
1465.28
0

AMTEST LABORATORIES

SUMMIT

AmTest Chain of Custody Record

13600 NE 126th PL, Suite C, Kirkland, WA 98034
Ph (425) 885-1664 Fx (425) 820-0245
www.amtestlab.com

Chain of Custody No. 28294

Client Name & Address: AMTEST LABS	Invoice To:
Contact Person: KATHY FUGIEL	Invoice Contact:
Phone No:	PO Number:
Fax No:	Invoice Ph/Fax:
E-mail: KATHYF@AMTESTLAB.COM	Invoice E-mail:
Report Delivery: (Choose all that apply) Mail / Fax / (Email) / Posted Online	Data posted to online account: YES / NO Web Login ID:
Special Instructions:	

Requested TAT: (Rush must be pre-approved by lab)
(Standard) RUSH (5 Day / 3 Day / 48 HR / 24 HR)

Temperature upon Receipt:

Project Name: IRON MOUNTAIN QUARRY

Project Number:

AmTest ID	Client ID (35 characters max)	Date Sampled	Time Sampled	Matrix	No. of containers	Analysis Requested: TOTAL DIOXIN / FURAN TEQ	QA/QC
	27069	10/13/16	9:00AM			X	

1610136O-001sc

Collected/Relinquished By:	Date	Time	Received By:	Date	Time
	10/18/16	2:00			
Relinquished By:	Date	Time	Received By:	Date	Time
			Stu Campbell	10-25-16	1045
Relinquished By:	Date	Time	Received By:	Date	Time

COMMENTS:

AMTEST LABORATORIES

AmTest Chain of Custody Record

13600 NE 126th PL, Suite C, Kirkland, WA 98034
Ph (425) 885-1664 Fx (425) 820-0245
www.amtestlab.com

Chain of Custody No. 27701

Client Name & Address:	Invoice To:
Iron Mountain Quarry 22121 17th Ave SE Suite 117 Bothell WA 98021-7404	
Contact Person: Lee Langley	Invoice Contact:
Phone No: 206 953 2626	PO Number:
Fax No: 425 486 3346	Invoice Ph/Fax:
E-mail: lee@ironmt.net	Invoice E-mail:
Report Delivery: (Choose all that apply) Mail / Fax / Email / Posted Online	Data posted to online account: YES / NO Web Login ID:
Special Instructions:	
Requested TAT: **(Rush must be pre-approved by lab)** Standard RUSH (5 Day / 3 Day / 48 HR / 24 HR)	Temperature upon Receipt:

Project Name: Mill A Cleanup

Project Number:

AmTest ID	Client ID (35 characters max)	Date Sampled	Time Sampled	Matrix	No. of containers	Analysis Requested: Total / Dioxin Furan TEQ	QA/QC
27069	Chip rock	10/13/16	9:00 AM				

Collected/Relinquished By:	Date	Time	Received By:	Date	Time
[signature]	10/13/16	1330	[signature]	10/13/16	13:30
Relinquished By:	Date	Time	Received By:	Date	Time
Relinquished By:	Date	Time	Received By:	Date	Time

COMMENTS: CLIENT

DC-7
Rev. 16

Effective Date: 07/14/16

Summit Environmental Technologies, Inc.
Cooler Receipt Form

Initials of person inspecting cooler and samples: SL

Client: Amtest Order Number: 16101360

Date Received: 10-25-16 Time Received: 1045 Date cooler(s) opened and samples inspected: 10-25-16

Number of Coolers/Boxes: 1 N/A

Shipper: FED EX (UPS) DHL Airborne US Postal Walk-in Pickup Other: _____

Packaging: Peanuts (Bubble Wrap) Paper Foam None (Other) _____

Tape on cooler/box:	(Y)	N	N/A
Custody Seals intact	Y	N	(N/A)
C-O-C in plastic	(Y)	N	N/A
Ice_____ Blue ice _____	present / (absent) / melted		N/A
Sample Temperature IR Gun #16020459 CF 0.0 °C	12.9 °C		N/A
Radiological Testing Instrument serial #35127 (see page 2 for scan results)	Y	(N)	N/A

**Use 1 sheet per sample for Radiological Testing. If sample is HOT, the Radiological Safety Officer must be notified immediately.

C-O-C filled out properly	(Y)	N	N/A
Samples in separate bags	(Y)	N	N/A
Sample containers intact*	(Y)	N	N/A

*If no, list broken sample(s): _____

Sample label(s) complete (ID, date, etc.)	(Y)	N	N/A
Label(s) agree with C-O-C	(Y)	N	N/A
Correct containers used	(Y)	N	N/A
Sufficient sample received	(Y)	N	N/A
Samples received within holding time	(Y)	N	
Bubbles absent from 40 mL vials**	Y	N	(N/A)

** Samples with bubbles <6mm are acceptable. Indicate bubble size if >6mm. _____

Was client contacted about samples	Y	N
Will client send new samples	Y	N

Client contact: _____

Date/Time: _____

Logged in by: _____

Comments: _____

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

QC SUMMARY REPORT

WO#: **16101360**

18-Nov-16

Client: Amtest
Project: Iron Mountain Quarry **BatchID:** **24058**

Sample ID **MB-24058**	SampType: **MBLK**	TestCode: **DX-Full_S(82**	Units: **ng/Kg**	Prep Date: **11/8/2016**	RunNo: **61876**
Client ID: **PBS**	Batch ID: **24058**	TestNo: **SW8290**	**SW8290**	Analysis Date: **11/11/2016**	SeqNo: **1018169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2378-TCDF	ND	1.00									
12378-PeCDF	ND	2.00									
23478-PeCDF	ND	2.00									
123478-HxCDF	ND	2.00									
123678-HxCDF	ND	2.00									
234678-HxCDF	ND	2.00									
123789-HxCDF	ND	2.00									
1234678-HpCDF	ND	2.00									
1234789-HpCDF	ND	2.00									
OCDF	ND	4.00									
2378-TCDD	ND	1.00									
12378-PeCDD	ND	2.00									
123478-HxCDD	ND	2.00									
123678-HxCDD	ND	2.00									
123789-HxCDD	ND	2.00									
1234678-HpCDD	ND	2.00									
OCDD	5.85	4.00									
Totals-Tetrafurans	ND	4.00									
Totals-Tetradioxins	ND	4.00									
Totals-Pentafurans	ND	4.00									
Totals-Pentadioxins	ND	4.00									
Totals-Hexafurans	ND	4.00									
Totals-Hexadioxins	ND	4.00									

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
P	Second column confirmation exceeds	PL	Permit Limit	R	RPD outside accepted recovery limits

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QC SUMMARY REPORT

WO#: **16101360**

18-Nov-16

Client: Amtest

Project: Iron Mountain Quarry **BatchID:** **24058**

Sample ID **MB-24058** SampType: **MBLK** TestCode: **DX-Full_S(82** Units: **ng/Kg** Prep Date: **11/8/2016** RunNo: **61876**

Client ID: **PBS** Batch ID: **24058** TestNo: **SW8290** **SW8290** Analysis Date: **11/11/2016** SeqNo: **1018169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Totals-Heptafurans	ND	4.00									
Totals-Heptadioxins	ND	4.00									

Sample ID **LCS-24058** SampType: **LCS** TestCode: **DX-Full_S(82** Units: **ng/Kg** Prep Date: **11/8/2016** RunNo: **61876**

Client ID: **LCSS** Batch ID: **24058** TestNo: **SW8290** **SW8290** Analysis Date: **11/11/2016** SeqNo: **1018170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2378-TCDF	96.3	1.00	80.00	0	120	70	130				
12378-PeCDF	506	2.00	400.0	0	126	70	130				
23478-PeCDF	555	2.00	400.0	0	139	70	130				S
123478-HxCDF	546	2.00	400.0	0	136	70	130				S
123678-HxCDF	565	2.00	400.0	0	141	70	130				S
234678-HxCDF	523	2.00	400.0	0	131	70	130				S
123789-HxCDF	527	2.00	400.0	0	132	70	130				S
1234678-HpCDF	532	2.00	400.0	0	133	70	130				S
1234789-HpCDF	519	2.00	400.0	0	130	70	130				
OCDF	1040	4.00	800.0	0	130	70	130				S
2378-TCDD	92.6	1.00	80.00	0	116	70	130				
12378-PeCDD	508	2.00	400.0	0	127	70	130				
123478-HxCDD	501	2.00	400.0	0	125	70	130				
123678-HxCDD	488	2.00	400.0	0	122	70	130				
123789-HxCDD	425	2.00	400.0	0	106	70	130				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
P	Second column confirmation exceeds	PL	Permit Limit	R	RPD outside accepted recovery limits

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QC SUMMARY REPORT

WO#: **16101360**

18-Nov-16

Client: Amtest

Project: Iron Mountain Quarry **BatchID:** **24058**

Sample ID **LCS-24058** SampType: **LCS** TestCode: **DX-Full_S(82** Units: **ng/Kg** Prep Date: **11/8/2016** RunNo: **61876**

Client ID: **LCSS** Batch ID: **24058** TestNo: **SW8290** **SW8290** Analysis Date: **11/11/2016** SeqNo: **1018170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1234678-HpCDD	486	2.00	400.0	0	122	70	130				
OCDD	944	4.00	800.0	0	118	70	130				BMB+

Sample ID **LCSD-24058** SampType: **LCSD** TestCode: **DX-Full_S(82** Units: **ng/Kg** Prep Date: **11/8/2016** RunNo: **61876**

Client ID: **LCSS02** Batch ID: **24058** TestNo: **SW8290** **SW8290** Analysis Date: **11/11/2016** SeqNo: **1018171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2378-TCDF	95.6	1.00	80.00	0	120	70	130	96.26	0.659	20	
12378-PeCDF	485	2.00	400.0	0	121	70	130	505.5	4.25	20	
23478-PeCDF	531	2.00	400.0	0	133	70	130	555.2	4.40	20	S
123478-HxCDF	534	2.00	400.0	0	134	70	130	545.9	2.19	20	S
123678-HxCDF	542	2.00	400.0	0	136	70	130	565.5	4.22	20	S
234678-HxCDF	517	2.00	400.0	0	129	70	130	523.3	1.13	20	
123789-HxCDF	512	2.00	400.0	0	128	70	130	526.6	2.73	20	
1234678-HpCDF	527	2.00	400.0	0	132	70	130	532.2	1.05	20	S
1234789-HpCDF	511	2.00	400.0	0	128	70	130	518.8	1.56	20	
OCDF	1010	4.00	800.0	0	127	70	130	1041	2.59	20	
2378-TCDD	92.8	1.00	80.00	0	116	70	130	92.57	0.224	20	
12378-PeCDD	488	2.00	400.0	0	122	70	130	507.5	3.84	20	
123478-HxCDD	499	2.00	400.0	0	125	70	130	500.8	0.459	20	
123678-HxCDD	477	2.00	400.0	0	119	70	130	487.6	2.13	20	
123789-HxCDD	417	2.00	400.0	0	104	70	130	425.0	1.83	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
P	Second column confirmation exceeds	PL	Permit Limit	R	RPD outside accepted recovery limits

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QC SUMMARY REPORT

WO#: **16101360**

18-Nov-16

Client: Amtest
Project: Iron Mountain Quarry **BatchID:** **24058**

Sample ID **LCSD-24058** SampType: **LCSD** TestCode: **DX-Full_S(82** Units: **ng/Kg** Prep Date: **11/8/2016** RunNo: **61876**
Client ID: **LCSS02** Batch ID: **24058** TestNo: **SW8290** **SW8290** Analysis Date: **11/11/2016** SeqNo: **1018171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1234678-HpCDD	473	2.00	400.0	0	118	70	130	486.0	2.63	20	
OCDD	928	4.00	800.0	0	116	70	130	944.5	1.76	20	BMB+

Sample ID **16101402-003AMS** SampType: **MS** TestCode: **DX-Full_S(82** Units: **ng/Kg** Prep Date: **11/8/2016** RunNo: **61876**
Client ID: **BatchQC** Batch ID: **24058** TestNo: **SW8290** **SW8290** Analysis Date: **11/11/2016** SeqNo: **1018177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2378-TCDF	88.7	0.979	78.31	0	113	70	130				
12378-PeCDF	451	1.96	391.5	0	115	70	130				
23478-PeCDF	506	1.96	391.5	0	129	70	130				
123478-HxCDF	505	1.96	391.5	0	129	70	130				
123678-HxCDF	512	1.96	391.5	0	131	70	130				S
234678-HxCDF	472	1.96	391.5	0	121	70	130				
123789-HxCDF	468	1.96	391.5	0	119	70	130				
1234678-HpCDF	486	1.96	391.5	2.445	123	70	130				
1234789-HpCDF	457	1.96	391.5	2.135	116	70	130				
OCDF	918	3.92	783.1	4.564	117	70	130				
2378-TCDD	83.0	0.979	78.31	0	106	70	130				
12378-PeCDD	450	1.96	391.5	0	115	70	130				
123478-HxCDD	424	1.96	391.5	0	108	70	130				
123678-HxCDD	433	1.96	391.5	0	111	70	130				
123789-HxCDD	256	1.96	391.5	0	65.5	70	130				S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
P	Second column confirmation exceeds	PL	Permit Limit	R	RPD outside accepted recovery limits

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Website: http://www.settek.com

QC SUMMARY REPORT

WO#: **16101360**

18-Nov-16

Client: Amtest
Project: Iron Mountain Quarry **BatchID:** **24058**

Sample ID **16101402-003AMS** SampType: **MS** TestCode: **DX-Full_S(82** Units: **ng/Kg** Prep Date: **11/8/2016** RunNo: **61876**
Client ID: **BatchQC** Batch ID: **24058** TestNo: **SW8290** **SW8290** Analysis Date: **11/11/2016** SeqNo: **1018177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1234678-HpCDD	466	1.96	391.5	41.16	109	70	130				
OCDD	2550	3.92	783.1	1696	109	70	130				BMB+

Sample ID **16101402-003AMSD** SampType: **MSD** TestCode: **DX-Full_S(82** Units: **ng/Kg** Prep Date: **11/8/2016** RunNo: **61876**
Client ID: **BatchQC** Batch ID: **24058** TestNo: **SW8290** **SW8290** Analysis Date: **11/11/2016** SeqNo: **1018178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2378-TCDF	84.8	0.980	78.38	0	108	70	130	88.75	4.54	20	
12378-PeCDF	439	1.96	391.9	0	112	70	130	450.7	2.74	20	
23478-PeCDF	481	1.96	391.9	0	123	70	130	506.1	5.11	20	
123478-HxCDF	497	1.96	391.9	0	127	70	130	504.7	1.62	20	
123678-HxCDF	507	1.96	391.9	0	129	70	130	512.1	0.916	20	
234678-HxCDF	469	1.96	391.9	0	120	70	130	472.4	0.656	20	
123789-HxCDF	468	1.96	391.9	0	119	70	130	467.5	0.153	20	
1234678-HpCDF	468	1.96	391.9	2.445	119	70	130	485.7	3.62	20	
1234789-HpCDF	457	1.96	391.9	2.135	116	70	130	457.2	0.0277	20	
OCDF	895	3.92	783.8	4.564	114	70	130	918.2	2.54	20	
2378-TCDD	79.4	0.980	78.38	0	101	70	130	83.03	4.44	20	
12378-PeCDD	432	1.96	391.9	0	110	70	130	450.1	4.01	20	
123478-HxCDD	427	1.96	391.9	0	109	70	130	423.9	0.841	20	
123678-HxCDD	424	1.96	391.9	0	108	70	130	432.7	1.94	20	
123789-HxCDD	361	1.96	391.9	0	92.1	70	130	256.3	33.8	20	R

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
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QC SUMMARY REPORT

WO#: **16101360**

18-Nov-16

Client: Amtest

Project: Iron Mountain Quarry **BatchID:** **24058**

Sample ID	**16101402-003AMSD**	SampType:	**MSD**	TestCode:	**DX-Full_S(82**	Units:	**ng/Kg**	Prep Date:	**11/8/2016**	RunNo:	**61876**
Client ID:	**BatchQC**	Batch ID:	**24058**	TestNo:	**SW8290**	**SW8290**		Analysis Date:	**11/11/2016**	SeqNo:	**1018178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1234678-HpCDD	457	1.96	391.9	41.16	106	70	130	466.2	2.04	20	
OCDD	2900	3.92	783.8	1696	153	70	130	2549	12.9	20	BSMB+

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine
MC	Value is below Minimum Compound Limit.	ND	Not Detected at the Reporting Limit	O	RSD is greater than RSDlimit
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GeoEngineers