

APPENDIX A

PRE-DESIGN INVESTIGATION REPORT

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1 INTRODUCTION

This Pre-design Investigation (PDI) Report summarizes pre-design investigations that informed remedial design in Port Gamble Bay, Washington, as generally described in the accompanying *Engineering Design Report*. Under the terms of Consent Decree 13-2-02720-0, Pope Resources, LP/Olympic Property Group, LLC (PR/OPG) developed and Washington State Department of Ecology (Ecology) approved the *Remedial Design and Adaptive Management Work Plan* (RD Work Plan; Anchor QEA 2014), including amendments, addressing data gaps to support remedial design and permitting activities. The results of the sampling and analysis activities described herein were completed in accordance with the *Dredge Material Management Program Sampling and Analysis Plan* (DMMP SAP), *Data Gaps Investigation Sampling and Analysis Plan* (Data Gaps SAP), and *Quality Assurance Project Plan* (QAPP) that were appended (Appendices A, B, and C, respectively) to the RD Work Plan (Anchor QEA 2014), as approved by Ecology.

1.1 Overview of Pre-design Investigation Data

PDI sampling and other Site investigations occurred from May to September 2014, and included the following activities:

- Surveys of Site physical conditions, including bathymetry
- Porewater sampling and analysis, including diffusive gradient thin sheet (DGT) in situ passive sampling to characterize surface and shallow subsurface porewater hydrogen sulfide concentrations
- Intertidal and subtidal sediment sampling including geoprobe and diver-deployed Mudmole™ coring, sediment physical and chemical analyses, DMMP characterization, dredging elutriate testing, and surface sediment natural recovery sampling (chemical and bioassay analyses)
- Eelgrass (*Zostera marina*) and habitat surveys in sediment management area (SMA)-1 and SMA-2

1.2 Organization of the Pre-design Investigation Report

The remainder of this PDI Report consists of four attachments, organized as follows:

- **Attachment A-1 – Physical Surveys:** summarizes test pit observations, visual surveys,

and high-definition bathymetric surveys

- **Attachment A-2 – Porewater Data Report:** summarizes porewater sampling and analysis using DGT samplers and water quality monitoring probes
- **Attachment A-3 – Soil and Sediment Data Report:** summarizes bank soil direct-push sampling, intertidal sediment direct-push sampling, subsurface sediment coring, and surface sediment grab sampling
- **Attachment A-4 – Eelgrass and Habitat Survey Report:** summarizes the eelgrass and habitat survey that was performed to inform cleanup actions in the intertidal and shallow subtidal areas of SMA-1 and SMA-2

2 REFERENCES

Anchor QEA, LLC, 2014. *Remedial Design and Adaptive Management Work Plan*. Prepared for Pope Resources LP and Olympic Property Group LLC and Washington State Department of Ecology. May.