Bonneville 2nd Powerhouse Fish Units Trash Rake

July 1997, Seven sediment samples were collected from the Bonneville Second Powerhouse forebay and water supply conduits. Two of the samples were taken from the downstream portion of the south Auxiliary Water Supply (AWS) conduit by divers inspecting the inside of the south AWS. Three additional samples were taken from the surface of the sediment deposits at the north end of the forebay. The final two samples were collected from the sediment and woody debris removed from the north AWS intake trash rack by clamshell and stockpiled on Cascade Island, at the south end of the Elevation 90 Deck crane way extension. Physical analysis, run on four sediments, indicated the material ranges from gravel to very fine sand, with largest fractions in the coarse to medium sand range. Chemical analysis, run on five sediment, included metals, pesticides/polychlorobiphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), total organic carbon (TOC), acid volatile sulfides (AVS), phenols and dioxin screen (P450). The samples represented the material to be dredged and disposed. All chemicals of concern were below their respective screening level and the material determined to be suitable for unconfined in-water disposal.

September 2003, This Tier I evaluation of the proposed dredge material from this project indicates that the material is acceptable for both unconfined in-water and upland disposal. No significant, adverse ecological impacts are expected from such disposal in terms of sediment toxicity. Sediment testing of the project area including physical and chemical analysis was conducted in 1997 and the material was found suitable for unconfined in-water disposal. In addition to the previous sediment evaluations, the proposed project meets the "No Test" volume for small projects as provided in DMEF Section 6.6.4 and Table 6-2.

The purpose of this report is to present information used in a Tier I evaluation of material to be dredged (~2,500 cy) including woody debris upstream of the auxiliary water supply (AWS) system which is a major component of the upstream fish passage system at the Bonneville 2nd Powerhouse. The AWS supplies attraction water to the adult fishway channels. The AWS is experiencing head loss due to buildup of debris across the fish unit intake racks and diffuser gratings. These losses are complimentary to the low discharge condition and inability of the AWS to operate within the criteria that requires one to one and half-foot head differential across the fishway entrances. Sedimentation of bed load material in front of the two main fish units and within the AWS channel also restricts the system capacity and ability to meet operating criteria.

Regional fisheries agencies and tribes asked Portland District to investigate the deficiencies of the AWS and AWS back-up systems. As a result it is purposed to modify the existing bottom row of the trash rake system for the Bonneville 2nd Powerhouse fish units. Solid plates will be placed over the existing trash racks to completely block trash and debris from entering the fish units at the bottom of the trash racks.

In order to accomplish this modification, dredging will be required to remove trash and sediment from in and around the fish units. It is estimated that approximately 2,500 cy of material including woody debris will require removal. Placement of this material including the woody debris is proposed for the in-water placement area approximately 4 miles below the dam at the placement site O-139.8-IW. This is the area used in 1997 for similar material dredged from this same area. During the 1997 removal, at the request of the National Marine Fisheries Service (now NOAA, Fisheries), the waterlogged wood and debris was not removed prior to discharge in the placement area. It is believed that the woody debris provides habitat opportunities beneficial to fish and would not pose any navigation hazard.

This Tier I evaluation was conducted following procedures set forth in the Inland Testing Manual (ITM) developed jointly by the Corps and EPA to assess dredged material. Guidelines used are those developed to implement the Clean Water Act (CWA). The methodology used are those adopted for use in the Dredge Material Evaluation Framework (DMEF) for the Lower Columbia River Management Area, November 1998.