



Milltown Dam Removal-Sediment Impact Assessment

Milltown dam is located on the Clark Fork just upstream of Missoula, Montana. It is slated for removal in 2005 due in part to declining structural integrity, and groundwater problems related to the relatively high concentration of contaminants in the reservoir sediment. Roughly 7 million cubic yards of sediment have deposited in the Milltown Dam Reservoir since its construction in 1907. WEST Consultants addressed the sediment impacts of implementing the “river-erosion” alternative of removing deposited sediments from behind the dam. A complete erosion alternative along with an erosion/bypass channel alternative over three drawdown events spanning a period of over three years were modeled using HEC-6.

HEC-6 was used to estimate the amount of sediment scoured, the concentration of suspended sediment at the dam site, and the sediment deposition and dilution in the reach just below the dam. It was found that the highest peaks in sediment concentration coincided with the drawdown events. In addition, the magnitude of the sediment peaks were highly influenced by the hydrologic cycle. Higher discharges during a drawdown event were likely to dilute the sediment, bringing down the concentration values. However, if the discharge was too high, more sediment was mobilized, reducing the amount of dilution. It was determined that the timing of the drawdown events is very important in maintaining low sediment concentrations.

For this site, deposition of sands and smaller particles in the downstream reach were not an issue, in a general sense. The hydraulic characteristics of the downstream reach are such that sands will remain in suspension throughout the study area even for low flow conditions. Exceptions to this are slow moving backwater eddies, point bars and upstream of constrictions such as bridges. HEC-6 is not able to model the first two exceptions, but significant deposition of sediment at a bridge site was indicated by the model.

The total volume of sediment eroded from the reservoir varied between alternatives, but all were between 1 and 2 million cubic yards, or about 15 to 30 percent of the deposited material.

Project Owner:
Envirocon, Inc.
651 Corporate Circle
Golden, CO 80401
Contact: Dale W. Evans
(303) 215-0187

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