

**Project:** Albeni Falls Total Dissolved Gas Study

**PI:** Mike Schneider

**Branch/Group:** Inland Hydraulic Structures Branch, Environmental Hydraulics Group

**Project Description/Activities/Capabilities:**

The purpose of the TDG study is to more clearly understand total dissolved gas exchange processes associated with the operation of Albeni Falls Dam and the resultant transport and mixing in the Pend Oreille River immediately below the project. In particular, this study will sample TDG saturations in the Pend Oreille River above and below Albeni Falls Dam during May and June of 2003 and will be used to estimate the change in TDG loading associated with project operations.

**Sponsor:** Seattle District, POC - Kent Easthouse

**CHL Personnel:** Mike Schneider

**Project Location and Description:**

The dam was built at the site of a natural falls called Albeni Falls, named after an early settler, Albeni Poirier. Albeni Falls Dam was authorized for construction under the Flood Control Act of 1950. This Act was signed by the United States Congress in response to a great flood that swept over the river valleys of the Columbia basin in 1948. Albeni Falls Dam was built from January 1951 to December of 1955 at a total cost of 34 million dollars. Today, it produces over 200 million kilowatt hours of electrical energy each year. When running at top capacity, the three Kaplan generators can generate 42.6 megawatts. Albeni Falls Dam has a unique feature that no other dam has--a log chute. During the 1940's, there was a lot of logging activity in Idaho. Logs were trucked to or floated down the Pend Oreille River to the sawmills. When the dam was built, a log chute was included in the design to enable the logs to pass through. Albeni Falls Dam is made up of two different parts: the powerhouse and the spillway. The powerhouse contains powerful turbines and generators that convert gravity-driven river water into hydroelectricity. The spillway can either store water for downstream power production and irrigation at other dams along the Pend Oreille and Columbia Rivers, or release water for upstream flood control. Albeni Falls Dam wasn't designed for water to flow over the spillway, but to flow under a series of 10 gates that are lifted and lowered by the gantry crane on top of the spillway.

**Facilities:** Field Study

**Related Topic Areas:** Hydraulic Structures, Environmental Studies, Spillway Flow Deflectors, Total Dissolved Gas, Hydropower, reservoir

