

## *Hydropower Project Summary*

### **WEST ROSEBUD CREEK, MONTANA**

MYSTIC LAKE HYDROELECTRIC PROJECT (P-2301)

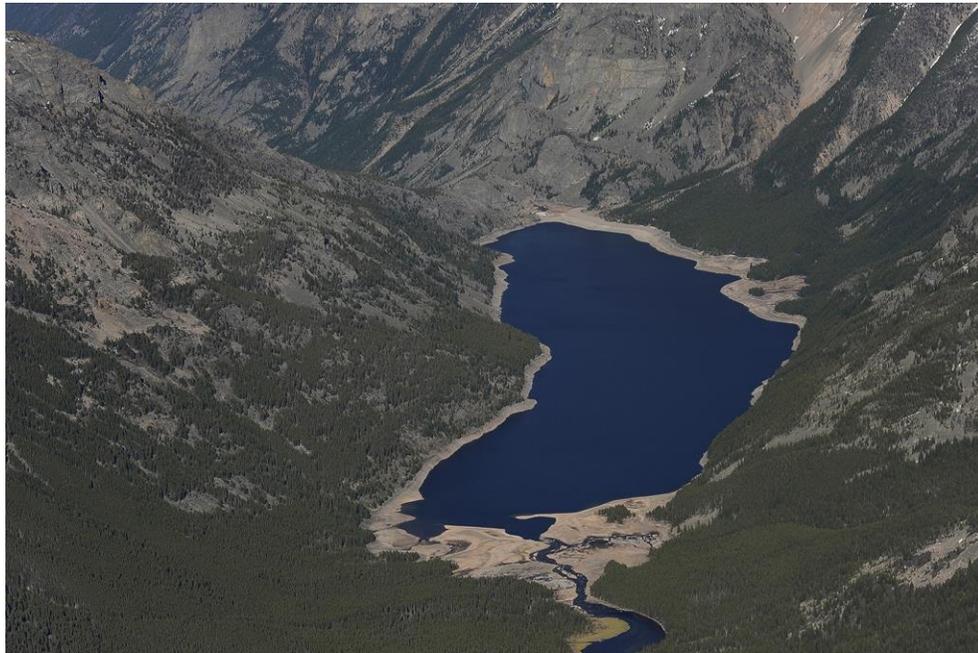


Photo: PPL Montana

*This summary was produced by the*

Hydropower Reform Coalition

*and*

River Management Society

## **WEST ROSEBUD CREEK, MONTANA**

### MYSTIC LAKE HYDROELECTRIC PROJECT (P-2301)

***DESCRIPTION:***

The Mystic Lake Hydroelectric Project is located on West Rosebud Creek, in Stillwater and Carbon counties about 75 miles southwest of Billings, in southern Montana. The project began operation in 1925 and received its last operating license in 2007 and became the first project to do so using the Federal Energy Regulatory Commission's Integrated Licensing Process (ILP.)

PPL Montana operates the project in both base load and peaking modes depending on water availability, electric demands, and license constraints. In general, Mystic Lake is used to store water during heavy runoff months May through July, and then is used to augment flows during the rest of the year. [FERC]

The East and the West forks of the Rosebud Creek, which together flow into the Stillwater River, are very popular for fishing, especially for small cutthroat trout, brook trout and rainbow trout in its upper, mountainous sections. Depending on the flows, these 'creeks' provide great whitewater boating opportunities, often Class II-IV in some sections.

#### **A. SUMMARY**

1. License application filed: December 15, 2006
2. License issued: December 17, 2007
3. License effective: January 1, 2010
4. License expiration: December 31, 2050
5. Waterway: West Rosebud Creek
6. Capacity: 11.25 MW
7. Licensee: PPL Montana
8. Counties: Stillwater and Carbon
9. Project Website: <http://www.mysticlakeproject.com/>
10. Project area: The project is located within the US Forest Service administered Custer National Forest and occupies 673.54 acres of lands.
11. Project Facilities:
  - a. Mystic Lake impounded by Mystic Lake dam
    - Mystic Lake Dam -45-foot-high and 368-foot-long concrete arch-type dam
    - 47,000 acre-feet
    - Powerhouse containing two Pelton turbines with installed capacity of 11.25 MW

- b. West Rosebud Lake
  - Serves as re-regulation dam
  - 19-foot-high and 420-foot-long earth-filled dam

## **B. IMPORTANT PROVISIONS AND REQUIREMENTS IN LICENSE**

The license requires a number of measures to protect and enhance fish, wildlife, recreation, cultural, and aesthetic resources at the project.

**1. Instream Flows** [Reference: Appendix A: MT DEQ Section 401 Terms and Conditions, Appendix B: US Forest Service Section 4(e) Terms and Conditions] To protect aquatic life in the “Mystic bypass reach” (between Mystic Lake and the powerhouse), PPL is required to provide the minimum flows as follows:

June 1 – August 31: 10 cfs

September 1 – May 31: 5 cfs (see note below)

(Note: PPL Montana has the option of providing 4 cfs for up to 11 random days)

Downstream from the West Rosebud re-regulation dam, PPL is required to provide a minimum flow of 20 cfs except when the natural flow is less than 20 cfs or when maintenance does not allow release of 20 cfs.

### **2. Water Quality** [Reference: Appendix A: MT DEQ Section 401 Terms and Conditions]

PPL is required to develop a schedule and format for submitting water quality data to MT DEQ by January 1, 2011. At a minimum of ten year intervals, PPL will also review and evaluate the water quality data for water quality trends, temperate effects on fish assemblage and condition of aquatic resources within the water bodies and modify monitoring plan, based on the review and evaluation.

In the event of un-authorized discharge of any pollutants (such as spills) into the water bodies, PPL is required to notify the MT DEQ within 24 hours.

### **3. Resource Management Plans** [Reference: License Article 401, Appendix A: MT DEQ Section 401 Terms and Conditions, Appendix B: US Forest Service Section 4(e) Terms and Conditions]

The Montana Department of Environmental Quality (DEQ) under its authority under the Clean Water Act to issue a Section 401 certification required PPL Montana to prepare and file the following plans:

- a. **Water Quality Monitoring Plan:** The schedule and format for submitting water quality data is due by January 1, 2011. (See 2. Water Quality Above)

- b. Chemical Storage and Spill Containment Plan** due January 1, 2011.
- c. Septic System Maintenance Plan** due January 1, 2011.
- d. Emergency Flow Plan** due on January 1, 2015.

The US Forest Service under its authority under Section 4(e) of the Federal Power Act required PPL Montana, as a condition of the license, to prepare and file the following plans with the Federal Energy Regulatory Commission after approval by the Forest Service:

- a. Scenery Management Plan** due January 1, 2011 or 60 days prior to any ground-disturbing activity. The plan's objective is to include Forest Plan scenery management objectives during maintenance or new construction. At a minimum, the plan shall include details of physical modifications to the project, schedule, a mitigation plan, and species to be planted, if any.
- b. Public Access Management Plan** due January 1, 2011 shall provide unrestricted access to Forest Service personnel to project land, motorized and non-motorized access to the public and schedule for road maintenance.
- c. Recreation Plan** due January 1, 2011 shall address the recreational resources at the project. At a minimum, the plan shall provide a general description of recreational sites, means for monitoring and reporting recreational use, means to conduct consultation with stakeholders, and Minimum pool level at Mystic Lake (7,663.5 ft, USGS datum) for seasonal recreational use. PPL is also required to file PM&E (protection, mitigation and enhancement) measures that shall address and include the following:
  - Information and educational materials
  - Parking facilities throughout the project area; handicapped accessible fishing opportunities
  - Development of a Mystic Lake Whitewater Flow Plan.
  - Establishment of an annual consultation process to forecast whitewater boating flows and enhance whitewater flows as conditions permit.
  - Implementation of Recreational Use Surveys (initiate in 2013, then every 6 years).
- d. Wildlife Protection** [Reference: Appendix B: US Forest Service Section 4(e) Terms and Conditions, Condition No. 12]

PPL is required to begin consultation with the Forest Service by January 1, 2011 to implement the wildlife species protection, mitigation, and enhancement (PM&E) measures. Among others, specific measures include the following:

- Installation of bear-resistant containers and solid waste collection in camps and recreational sites
- Update of transmission and distribution lines to reduce potential for mortality of bald eagles and other raptors
- Conduct bald eagle monitoring for 2010 to 2013 and immediately file a report and additional reports every five years after that
- Conduct surveys to determine presence of or non-detection of Harlequin ducks from 2010 to 2015 and file a report at the end of the survey

**e. Fisheries Management** [Reference: Appendix B: US Forest Service Section 4(e) Terms and Conditions, Condition No. 16]

By January 1, 2011, PPL Montana is required to file a Fisheries Monitoring Plan to assess fisheries and aquatic habitat conditions in the project area. The plan, which requires approval of Mystic Lake Fisheries, Aquatic Habitats and Water Quality Technical Advisory Committee (Forest Service, MT Division of Environmental Quality, and MT Fish, Wildlife, and Parks), will be conducted every six years for the duration of the license.

### **C. MAP**

There are two convenient ways to become familiar with this project on the Hydropower Reform Coalition website, [www.hydroreform.org](http://www.hydroreform.org).

- Go directly to the project page <http://www.hydroreform.org/projects/mystic-lake-p-2301>
- To understand the geographical context of the project, visit the *On Your River* section of the site. This link (<http://www.hydroreform.org/on-your-river/Northwest>) will take you to the section for rivers in the Northwest. Zoom in towards the Gallatin National Forest in southwestern Montana. Located the area between Bozeman and Billings. Mystic lake project is shown by the marker south of the area but north of the state border.