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MONTANA STATE DEPARTMENT OF FISH AND GAME
FEDERAL AID IN FISH RESTORATION SECTION
HELENA, MONTANA

JOB COMPLETION REPORT
DEVELOPMENT PROJECT

State of Montana

Project No. F-19-D-1

Title of Project: Johnson Dam

Objectives:

Johnson Reservoir is one of the primary recreational fishing locations in the Glendive, Montana area. The upstream face of the dam was being badly damaged by water and ice erosion. The objective of this project was to riprap the upstream face of the dam as protection against this erosion so that the dam would not wash out.

Description of the Area:

Johnson Dam, located in Section 16, Township 18 North, Range 52 East, Dawson County, is a small irrigation reservoir built under permit issued by the State Board of Land Commissioners to the State Water Conservation Board. The dam was constructed by the W.P.A. at a nominal cost to the Water Conservation Board. The reservoir has never been utilized for irrigation and is now used extensively for wildlife purposes, principally for fishing and hunting. The Montana Fish and Game Department has purchased and controls all water rights and access over land.

The following two outlines give the physical features of the dam, reservoir and drainage area:

Physical Features of Reservoir:

a. Drainage area -- 16 square miles.
b. Stream -- The dam is located on the Middle Fork of Deer Creek. While the stream is intermittent, deriving its flow from run-off water, nevertheless, flows are sufficient to fill the reservoir and maintain desirable water levels.
c. Reservoir area -- 31 acres.
d. Reservoir capacity -- 236 acre-feet.
e. Rainfall records taken at Glendive for a 40-year period show an annual average precipitation of 14.03 inches.
f. Air temperature extremes vary from 117°F. to -50°F., with the mean January and July temperatures averaging 14.1° and 73.2°F., respectively.

Physical Features of Dam:

a. Type -- earth filled dam, containing approximately 12,625 cubic yards of material.
b. Length of crest is approximately 800 feet.
c. Maximum height -- 24 feet at centerline of dike.
d. Diversion features --- 108 feet of 18-inch CMC pipe with gates and cat walk. Ice and wave action have wrecked the cat walk and gate supports for the diversion structure. These were not repaired.
e. Overflow spillway -- an excavated channel at the upper end of the reservoir to by-pass excess flow.

Work Accomplished Under This Project:

The following work was accomplished in the repair of the Johnson Dam near Glendive, Montana. It was necessary to make a back fill of 200 feet by 5 feet high on the 4 to 1 slope. Three hundred seventy cubic yards of dirt with an allowance of 20 percent for settlement, 75 cubic yards, or a total of 445 cubic yards were moved. The face of the dam was riprapped with rock around the 380 foot dam face, twelve foot side or 253 cubic yards of rock. These rocks were picked up from outcroppings on the surrounding terrain within one mile of Johnson Dam.

After the job was completed it was inspected by the Fish and Game Department Engineer, C. K. Dalton and, according to his judgment, the work to be done was accomplished.

Summary:

As the Fish and Game Department owns the property and controls the water, this project was considered one that would benefit many people over a large area in eastern Montana. Annual picnics and fishing contests utilize this most sought-after water in the semi-arrid terrain. The benefits resulting from this project will be lasting and will continue until siltation will eventually make the reservoir too shallow to sustain fish life. This condition is not expected to develop for a number of years.

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Approved by: A. A. O'Claire
State Fish and Game Director

Date: February 15, 1956