

TO: John Falk, Dam Safety Program Manager
CC: Doug Jones, Northern Region Manager
FROM: Manuel Rauhut, Staff Engineer
DATE: December 24, 2020
SUBJECT: Water Rights Review for Nixon No. 1 Dam – Water Right 98-2136

Water right license 98-2136 allows for 240 acre-feet irrigation storage and irrigation from storage. The water right record indicates that the storage capacity of the reservoir is 240 acre-feet. I could not find how this volume was calculated in the water right file. This volume may include the water that is not held back by the dam (i.e. the existing natural lake that would exist without the dam). Per the 1950 application for water right permit, the natural lake level was at one point higher, and a notch was cut in the rock “many years” before 1950. The dam essentially raised the water level to approximately its original elevation and included an outlet to divert water for beneficial use. Sometime between 2015 and 2016 the dam was rehabilitated and raised by 1.0 feet (hydraulic height). With a surface area of approximately 37.4 acres, this means that the storage capacity of the reservoir increased by 15 acre feet or more. There was no water right application associated with this increase in storage. Based on our standard formula (hydraulic height x surface area x 0.4) the volume of water impounded behind the dam (including the 1.0 ft raise) is approximately 127 ac-ft. Note that this volume does not include the water contained in the natural lake (the lake volume that would exist without the dam).

Conclusion:

On paper, it appears that the increased storage that occurred as a result of the 2015 rehabilitation is covered by water right license 98-2136 (240 acre-feet irrigation storage and irrigation from storage). The calculated volume of water that is physically impounded in the reservoir above the ground surface elevation is approximately 127 acre-feet.

Recommendation:

IDWR has no record of complaints from other water users regarding the increased storage in the water right file and the existing water right covers the volume of water stored behind the dam. Basin 98 is not included in the North Idaho Adjudication. If at some point Basin 98 will be adjudicated, the water right record should be updated to reflect the actual storage capacity associated with the dam. In the meantime, IDWR Dam Safety should use the lesser volume of 127 acre-feet; a value that more accurately describes the physical volume of stored water in the reservoir behind this concrete dam. Further, due to the Low hazard classification and hydraulic height less than 10 feet, this structure can be removed from the list of dams that require regular inspection for benefit of public safety.

This memo has been added to the dam safety and water rights file.