

**File Code:** 7510**Date:** OCT 19 2015**Route To:****Subject:** Canyon Creek Meadows Dam**To:** Forest Supervisor, Malheur National Forest

It has come to my attention that the Oregon Department of Water Resources, Dam Safety Office (OWRD), has provided a letter to the Malheur NF Forest Supervisor informing of an unsafe dam condition at the Canyon Creek Meadows Dam, further labeled as an unacceptable health and safety risk. Based on our records, the dam is on NFS lands, but owned and operated by the Oregon Department of Fish & Wildlife (ODFW). Our records also indicate the dam is administered by the Forest under a MOU agreement from 1955 and 1961. Although the ODFW holds a copy of a recent Special Use Permit, no signature copies of an agreement have been found in the records of either agency. As a non-federally owned dam, the OWRD claims jurisdiction for dam safety.

Both the State Dam Safety Office and our records classify the dam as High Hazard, which is a rating based on if a dam and reservoir failure would occur, there would be downstream probable loss of human life and property damage. The communities that are at risk include Canyon City and John Day. The dam has a long history of documented reservoir leakage since construction in 1962-63 and first filling of reservoir in 1964. Initial attempts at repair were made within the reservoir and on the dam to the left side (looking downstream). Increasing seepage in 1988 led to regular monitoring of a settlement area on the lower upstream right abutment area. Continued settlement of a leakage area near the lower right abutment led to a recommendation in 1997 by OWRD to limit the reservoir impoundment to the absolute minimum by maintaining the 18-inch diameter outlet pipe, at the bottom of the dam, in a continuously open condition. Some reservoir filling still occurs as a result of inflow exceeding the culvert capacity, especially in years of high precipitation or runoff.

As a result of the 2015 Canyon Creek Complex Wildfire, the fire burned the watershed around the dam, as well as burning across the dam itself. Recent 2014 fire impacts in Washington State have shown major changes are expected at dams impacted by wildfire, such that Washington Department of Ecology (WA-DOE) added a public website concerning dams and wildfire impacts; the website can be accessed at: www.ecy.wa.gov/programs/wr/dams/wildfire-dam.html

Our regional Geotechnical and Dam Safety Engineer, René Renteria, has been in recent discussions with ODFW, ODWR, and forest staff regarding the current condition state of the dam. The OWRD considers a dam impacted by wildfire as a Level 1 condition (unusual condition), where the actions by the dam owner are defined within the Emergency Action Plan (EAP). The responsibility for action remains with the dam owner, in this case the ODFW; and based on the risk and timing available for action, the ODFW has decided for an emergency action of dam removal. This action has been noted and included in the Canyon Creek Complex BAER report, Addendum 1.

Our Forest Service national policy for dams is provided in Forest Service Manual (FSM) 7500. Subsection FSM 7504.6 presents the responsibilities of the Forest Supervisor, including:

- 5. As soon as practicable, addressing all dam safety deficiencies identified during inspections that pose a threat to human life or property and, when these deficiencies cannot be addressed*



promptly, requiring that operational actions be taken to reduce risk to human life and property, such as imposing reservoir restrictions, closing administrative and recreational facilities located within the dam inundation zone, draining the reservoir, or dam removal.

Subsection FSM 7504.5 outlines the responsibilities of the Director of Engineering, including:

1. *Reviewing and approving dam safety evaluation reports.*
3. *Reviewing and approving designs for dams to be operated by the holder of a special use authorization, including checking for compliance with Forest Service construction standards and criteria per approved plans and specifications.*

My Geotechnical Engineering & Dam Safety staff has provided a review of the following submittals from ODFW to the Malheur NF Forest Supervisor:

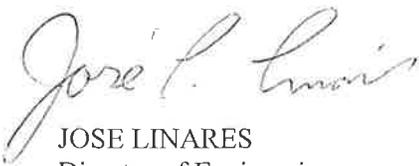
- *Canyon Creek Meadows Dam Evaluation Report*, Cascade Earth Sciences, August 2012 (including drawings, specifications, and appendices)
- Conceptual Erosion Control Drawings (dated October 9, 2015)
- Conceptual work zone isolation and preliminary schedule (dated October 14, 2015)

We recommend approval of the Dam Evaluation Report and the Plans and Specifications for construction of dam removal, with the following conditions related to the dam removal action:

- a. Signature of the Plans & Specifications by a Professional Engineer registered in Oregon
- b. Proper Best Management Practices (BMP) erosion control plans, and implementation actions per Forest requirements
- c. An updated construction calendar schedule outlining time in shifts for: BMP implementation, daily excavation production and stockpiling, fueling and storage locations, winter closure, and protection of water resources.
- d. Identify an alternate work crew with ability to supplement or replace original crew if work production falls behind schedule, and changes in weather threaten the completion of the dam removal
- e. Provide a plan to optimize the utilization of armor rock, filter aggregate, and core soil materials from the dam based on considering the need for drainage, slope protection, slope stability and topsoil for reclamation – NOTE: core (fine-grained) soil material shall not be placed as the base layer of the stockpiles
- f. Daily diaries of inspection are recorded and provided to the Forest
- g. Provide as-built drawings to document actual construction and approved changes.

Additional comments to the specifications will be provided by separate correspondence by my dam safety staff to ODFW.

Questions or additional information requests can be directed to Rene' Renteria at 503-808-2503 or rrenteria@fs.fed.us.



JOSE LINARES
Director of Engineering

cc: Becki Heath, Christina Kniffin, Christy Covington, Christy Darden, Rene' Renteria, Dave Halemeier, Mike Montgomery