

STATE OF CALIFORNIA  
CALIFORNIA NATURAL RESOURCES AGENCY  
DEPARTMENT OF WATER RESOURCES  
DIVISION OF SAFETY OF DAMS

**INSPECTION OF DAM AND RESERVOIR IN CERTIFIED STATUS**

Name of Dam Lagunitas Dam No. 33-2 County Marin  
 Type of Dam ERTH Type of Spillway Concrete weir with steel and timber flume  
 Water is 0.1 feet below the spillway crest and 7.6 feet below the dam crest.  
 Weather Conditions Clear and mild  
 Contacts Made Alex Anaya and Ronnie Chasteen during the inspection  
 Reason for Inspection Periodic Evaluation

**Important Observations, Recommendations or Actions Taken**

Vegetation control along the upstream face needs improvement, and numerous small trees, bushes, and other woody vegetation that have accumulated along the waterline and upstream groins require removal.

A single gauge monitors pressure for the upstream outlet control hydraulic system. The gauge does not appear to provide any meaningful information, and I've asked Mr. Anaya to replace the single gauge with opening and closing pressure gauges for each of the two valves.

**Conclusions**

From the known information and visual inspection, the dam, reservoir, and the appurtenances are judged safe for continued use.

**Observations and Comments**

<u>Dam</u>	<p>The visible portions of the upstream face, downstream face, crest and abutments are in satisfactory condition with no indication of significant surficial distress or instability. The low concrete retaining wall along the upstream side of the crest is in satisfactory condition.</p> <p>Vegetation control along the upstream face needs improvement, and numerous small trees, bushes, and other woody vegetation that have accumulated along the waterline and upstream groins require removal. Vegetation control along the downstream face is satisfactory, and access for inspection and monitoring for seepage and other defects is good.</p> <p>Rodent control remains satisfactory, and only minor indications of rodent activity were observed.</p>
<u>Spillway</u>	<p>The approach, control section, chute, and flume were clear and unobstructed.</p> <p>Pressure treated timbers supporting the flume appear to be in good condition, as does the stainless steel flume sheathing, the under flume supports, and flume foundation connections.</p> <p>Total freeboard is 7.5 feet and the residual freeboard for the design storm is 1.8 feet. Freeboard is satisfactory.</p>
<u>Outlet</u>	<p>A 16-inch butterfly valve at elevation 759.0', and a 12-inch butterfly valve at elevation 747.0', provides upstream control for the fully encased normally unpressurized outlet. A 10-inch gate valve near the right downstream toe provides downstream control.</p> <p>A single gauge monitors pressure for the upstream outlet control hydraulic system. The gauge does not appear to provide any meaningful information, and I've asked Mr. Anaya to replace the gauge</p>

Photos taken? Yes  No   
 cc for Owner/Book

Inspected by J. Lowe  
 Date of Inspection 7 April 2016  
 Date of Report 11 April 2016

# INSPECTION OF DAM AND RESERVOIR IN CERTIFIED STATUS

Name of Dam Lagunitas Dam No. 33-2

Date of Inspection 7 April 2016

## Observations and Comments

with opening and closing pressure gauges for each of the two valves.

The 16-inch upstream control and the 10-inch downstream control were fully cycled during the first full-head test of this outlet in at least 15 years. The 12-inch upstream control was partially cycled. Other than a lack of feedback from the single hydraulic pressure gauge monitoring the upstream control actuator, all outlet control valves and hydraulic actuators appear to function well.

Seepage The downstream face, groins, and abutments were dry and free of overland seepage.

Seepage from two sources along the left abutment, identified as the "Upper" and "Lower" leaks, is monitored from the lower left groin. Clear seepage through the Upper and Lower left abutment leaks were estimated at 4 gpm, and 2 gpm, respectively; seepage flows are within historical limits.

A more detailed description of the left abutment seepage is presented in the Instrumentation section of this report.

Instr. Instrumentation consists of two seepage measurement locations. Both seeps originate from the left abutment and are designated the "Upper" and "Lower" leaks.

The Upper leak originates within a pea gravel backfilled shallow adit in the upper left abutment. The source of the upper leak is believed to be within the vicinity of the upstream end of the spillway and adjacent fractured rock abutment. The Lower leak collects seepage believed to originate in fractured rock in the lower left abutment. Both leaks are collected and delivered within 3" PVC pipes to the recently repaired and improved seepage collection vault. Valves at the end of the delivery pipes allow the observer to isolate, and by doing so measure, seepage from one source or the other.

The latest instrumentation data was received from the owner on December 16, 2015.

Seepage data for the period between January 2006 and July 2015 was reviewed prior to the inspection. Within the period reviewed the average Upper leak seepage remains approximately 15 gpm. Seepage from the Upper leak had a maximum reported value of 22 gpm over the interval between February 2007 and July 2008. Average seepage from the Lower leak has decreased over time and is now on the order of 8 gpm or less. The maximum reported seepage from the lower leak was 25 gpm in the fall of 2001. Seepage from both sources is clear, and seepage rates are lower than average and remain within historic limits

Based on the data submitted the dam appears to be performing satisfactorily, and no additional instrumentation is believed necessary at this time.

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The upstream face as viewed from the left abutment, above, and as viewed from the right abutment, below. Vegetation control along the upstream face needs improvement, and numerous small trees, bushes, and other woody vegetation that have accumulated along the waterline and upstream groins require removal.





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The downstream face as viewed from the left abutment, above, and as viewed from the right abutment, below. Vegetation control along the downstream face is satisfactory, and access for inspection and monitoring is good.





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Flow from the full head outlet test of the 16-inch upstream control and 10-inch downstream control is visible in the lower half of the photograph. Flow from the spillway outfall can be seen in the top center of the photograph.



The right side of the wood timber spillway flume looking in the upstream direction. Pressure treated timbers supporting the flume appear to be in good condition, as does the stainless steel flume sheathing, the under flume supports, and flume foundation connections.