

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 Seeger (Nicasio) Dam No. 33-8 County Marin  
 Type of Dam ERTH Type of Spillway Concrete side channel ogee  
 Water is 0.1 feet above the spillway crest and 15 feet below the dam crest.  
 Weather Conditions Clear and mild  
 Contacts Made Alex Anaya, Carl Sanders, and Ronnie Chasteen during the inspection  
 Reason for Inspection Periodic Evaluation

**Important Observations, Recommendations or Actions Taken**

Vegetation control remains quite good, and continues to improve, but some additional clearing of the downstream toe and lower right downstream groin is desirable to improve access for monitoring by MMWD staff.

The downstream most 24-inch outlet control valve is inoperative. I directed Mr. Anaya to repair or replace the valve as quickly as possible, to restore the outlet to full function.

The seepage weir and drainage channel beyond the weir have been cleared of sediment, leaves, and other debris, as requested.

Ruts within the lower access road across the downstream face of the dam should be filled and graded to drain away from the downstream face.

**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, crest, downstream face, and abutments are in satisfactory condition with no indication of surficial distress or instability. The upstream face is armored with large boulder riprap that remains in satisfactory condition. Ruts within the lower access road across the downstream face of the dam should be filled and graded to drain away from the downstream face.</p> <p>Vegetation control is generally quite good, and the crest, groins, and both faces of the embankment are covered with ankle tall grass and other low ground cover that protect against erosion without hindering inspection and monitoring for seepage and other defects. Some additional clearing of the downstream toe and lower right downstream groin is desirable to improve access for monitoring by MMWD staff.</p> <p>Similar to the previous inspections, rodent control also remains satisfactory and little indication of rodent activity was observed within the embankment footprint. Rodent activity is abundant within the adjacent natural ground but the embankment surface appears to be too rocky to attract burrowers.</p>
<u>Spillway</u>	<p>The approach, control section, and exit channel were open and clear. The spillway concrete structure remains in satisfactory condition, and is free of significant cracks or spalls indicative of excessive stress or deterioration.</p>

Photos taken? Yes  No   
 cc for Owner/Book

Inspected by J. Lowe *6 Apr 2016*  
 Date of Inspection 5 April 2016  
 Date of Report 6 April 2016 *D K/11/16*

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Date of Inspection 5 April 2016

## Observations and Comments

	<p>Total freeboard is 15 feet and the residual freeboard for the design storm is 8.6 feet. Freeboard is satisfactory.</p>
<u>Outlet</u>	<p>Four 24-inch diameter butterfly valves on the inclined inlet structure provide upstream control for the fully encased normally pressurized outlet. The four mechanically operated valves are located at elevations 157.0', 146.0', 126.0', and 90.0'. A pair of geared head drive 24-inch butterfly valves arrayed in series provides downstream control.</p> <p>All upstream and downstream controls were partially cycled, and all except for the downstream most 24-inch butterfly valve function properly. The downstream most outlet control valve is inoperative due to an apparent failure of the geared head drive. I directed Mr. Anaya to repair or replace the valve as quickly as possible, to restore the outlet to full function.</p>
<u>Seepage</u>	<p>The downstream face, groins, and abutments were dry and free of evidence of any seepage.</p> <p>The seepage weir and drainage channel beyond the weir have been cleared of sediment, leaves, and other debris, as requested. Clear seepage flow at the toe weir was roughly 5 gpm and is within historic values.</p>
<u>Instr.</u>	<p>Instrumentation consists of:</p> <ul style="list-style-type: none"><li>• Ten (10) survey monuments. Survey monuments were installed to monitor post construction settlement of the crest and settlement and displacement of the crest following significant seismic events. Survey monuments have been read at irregular intervals.</li><li>• One (1) seepage-measuring weir. The seepage-monitoring weir was installed to monitor flow beneath the toe of the embankment and is read monthly.</li></ul> <p>The ten survey monuments consist of seven (7) crest monuments, two (2) auxiliary monuments, and one (1) spillway monument. The seven survey monuments are located along the centerline of the embankment crest. Two (2) benchmarks are used to locate and reference the survey monuments.</p> <p>The latest instrumentation data was received from the owner on December 16, 2015; survey data covers the reporting period between January 1982 and September 2015. There is no indication of increasing settlement of the embankment in the past fifteen years, and the apparent movement indicated by the survey data is most likely instrumentation or reading error. Lateral displacement data shows quite a bit of scatter, but again, there does not appear to be any continuing long-term trend of displacement. The owner reports that, "<i>Seeger Dam (Nicasio Lake) is trending toward stabilization: settlement of -0.13 ft. (maximum) and alignment of -0.13 ft. (downstream direction; maximum).</i>"</p> <p>Clear seepage measured at the monitoring weir correlates closely to rainfall; in the absence of rainfall seepage drops to essentially zero. Normal peak seepage, in the range of 40 or more gpm, quickly falls to near zero following the secession of winter storms.</p> <p>Based on the data submitted the dam appears to be performing satisfactorily, and no additional instrumentation is believed necessary at this time.</p>

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The upstream face as viewed from the upstream end of the spillway channel. The large boulder riprap face protection remains in good condition.



The downstream face, spillway outflow channel, and stilling basin. The outlet discharges into the stilling basin just upstream of the drain pipe visible in the bottom center of the photograph.

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A closer look at the lower right downstream face and downstream toe. Overhanging vegetation indicated by the yellow line should be removed to improve access for monitoring by MMWD staff.



The spillway channel looking in the downstream direction. The spillway concrete structure remains in satisfactory condition, and is free of significant cracks or spalls indicative of excessive stress or deterioration.