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

INSPECTION OF DAM AND RESERVOIR IN CERTIFIED STATUS

3Name of Dam: Rattlesnake Canyon Dam No. 1029-3 County: Orange
Type of Dam: Earth Type of Spillway:
Water is 28.4 feet below spillway crest and 34.4 feet below dam crest.

Weather Conditions: Cool, Overcast
Contacts Made: Steve Habiger & Tyler Dillman with IRWD; Doug Harriman & Will Kulikowski with Genterra
Reason for Inspection: Annual Maintenance Inspection

Important Observations, Recommendations or Actions Taken

Remove the tree and clear woody vegetation on the left upstream groin by November 1, 2018.
Consider replacing the outlet works with a more efficient and reliable operating system in the future.

Conclusions

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

Observations and Comments

Dam	The AC paved crest was reasonably level and in satisfactory condition. The crest and upper portion of the upstream slope appeared to have been recently treated with an asphalt seal coat. There was some woody vegetation and a tree on the left upstream groin that needs to be removed. The remainder of the upstream slope is satisfactory. The downstream slope was well mowed, free of rodent activity, unfavorable vegetation, signs of seepage or instability, and appeared satisfactory overall.
Spillway	The side channel approach, weir, drop inlet, and trapezoidal shaped open channel were clear and in satisfactory condition. The grasses growing out of the cracks and joints in the concrete lining should be treated with plant retardant. The sediment and vegetation in the stilling basin should also be cleared and treated with plant retardant before Fish and Wildlife takes possession and converts it into a riparian/wildlife habitat.
Outlet	The outlet consists of four upstream gate valves and two downstream valves. The upstream valves were all fully cycled, with great difficulty. The high friction inherent in the design of the control assemblage would make operating the valves a realistic challenge in an emergency situation. If this dam is slated for long term future operations, a new system of valve controls is recommended for consideration in the District's long range plans. The downstream valves were not operated this time because work was in progress involving new outlet modifications taking place in the vault where the blowoff was located. This work was approved by the Division in March 2018 under the category of minor maintenance. As-built plans will be submitted upon completion.
Seepage	There was no seepage noted on the downstream slope, groins, or toe of the dam. The weeps in the spillway channel were all dry. The 6 seepage drain pipe outfalls in the drain vault were estimated as: #2 = trickle; #3 = 3 gpm; #4 = 1 gpm; #5 = dry; #8 = dry; #11 = dry. These measurements are all within normal limits. The flow points were not read at this time.

Electronic Signature:
Philip Lee, P.E.
Safety of Dams
9/5/2018; 3:00 pm

Photos taken? Yes X No
cc for Owner/Book

Inspected by: PW Lee
Date of Inspection: 5/2/2018
Date of Report: 6/6/2018

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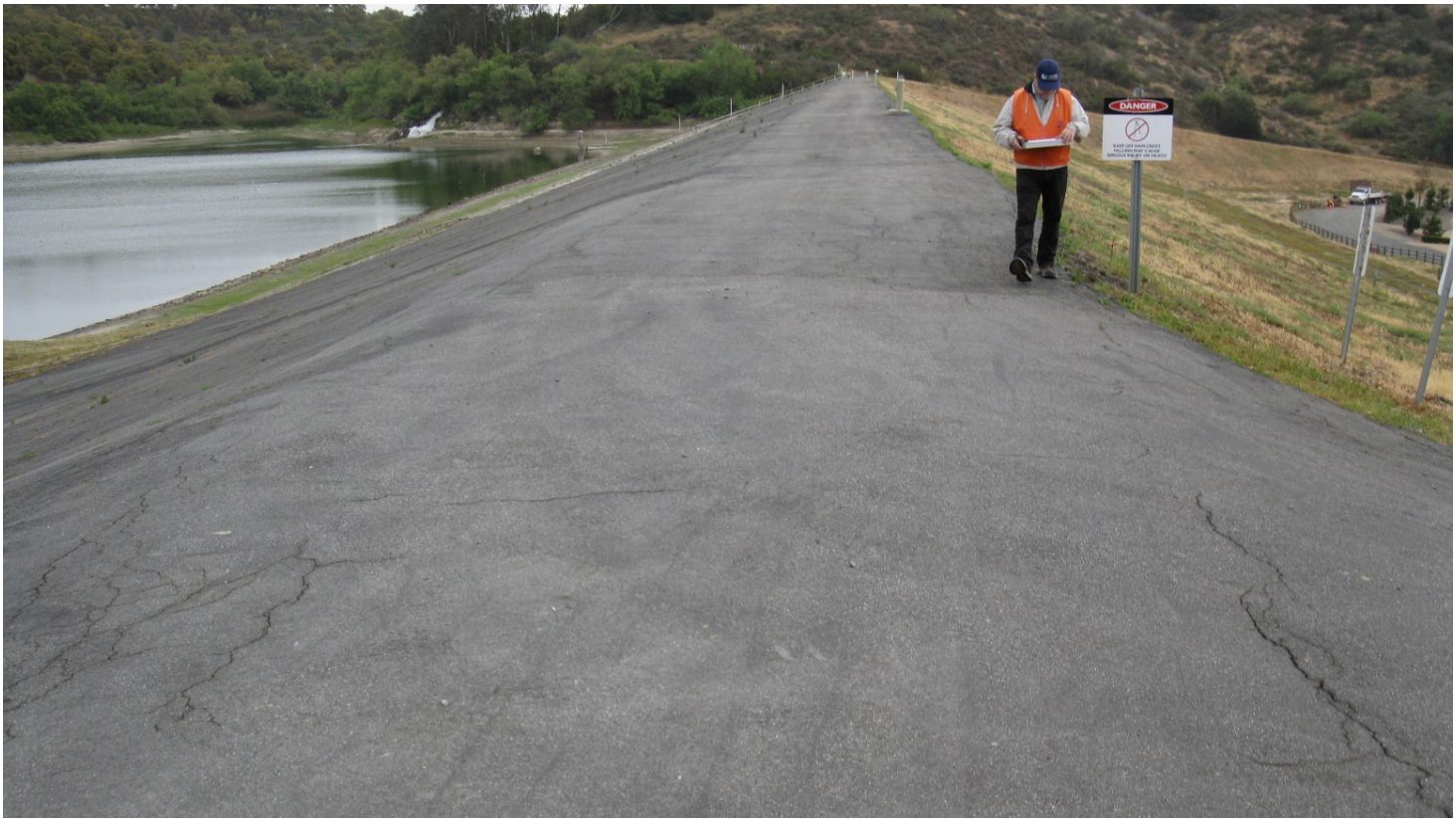
Date of Inspection 5/2/2018

Observations and Comments

Instr.	Instrumentation at this dam includes 16 piezometers, 3 observation wells, 8 drains, and 7 survey monuments. The most recent surveillance report submittal was dated August 25, 2017 and included data through the end of 2016. I reviewed the report and found all water and movement readings for this reporting period were within the boundaries of historical norms. No abnormal trends were observed. A few piezometers from the crest tend to be influenced by the reservoir level due to proximity, but all data points plotted within the expected phreatic zone and pore pressure gradients. The instrumentation data indicates the dam is performing satisfactorily and no additional instrumentation is judged necessary at this time.



Crest

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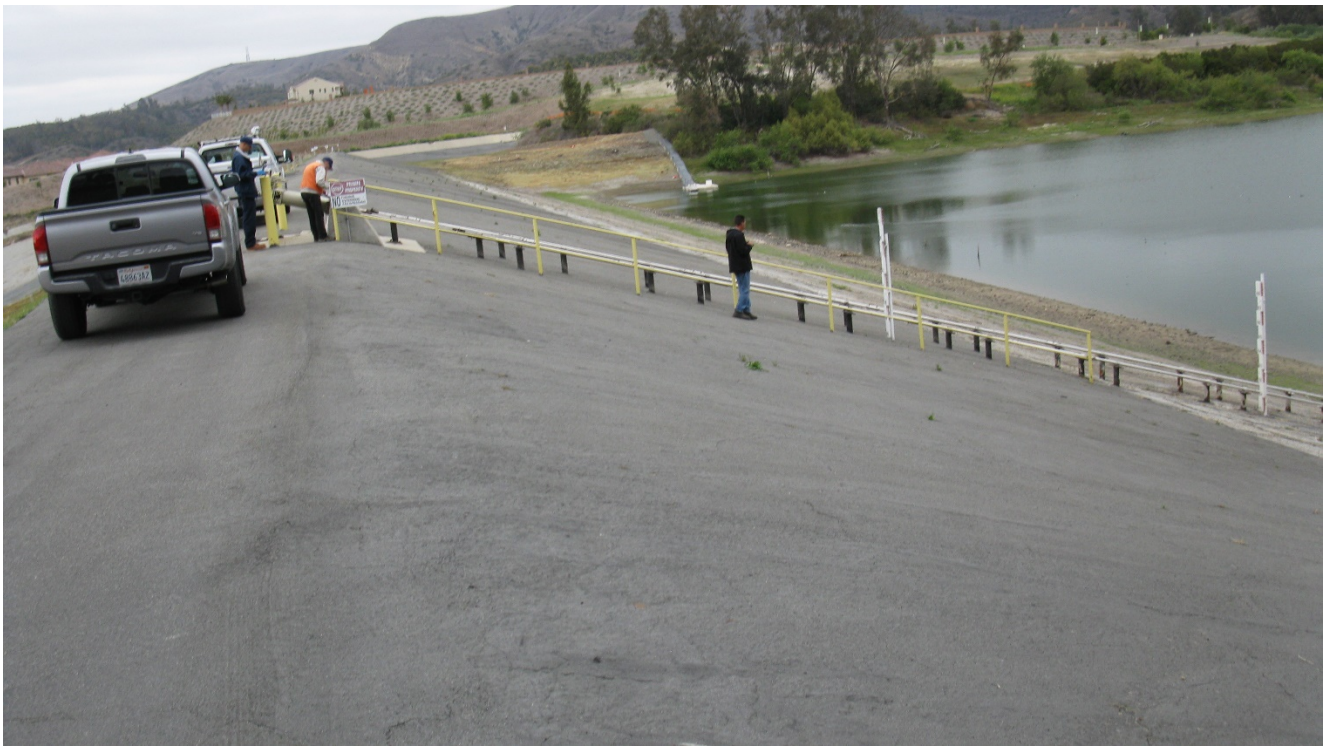

Upstream Slope and Crest

Trees and Woody Vegetation on Left Upstream Groin must be removed.

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Downstream Slope

Rodent Activity on left side of Spillway Channel

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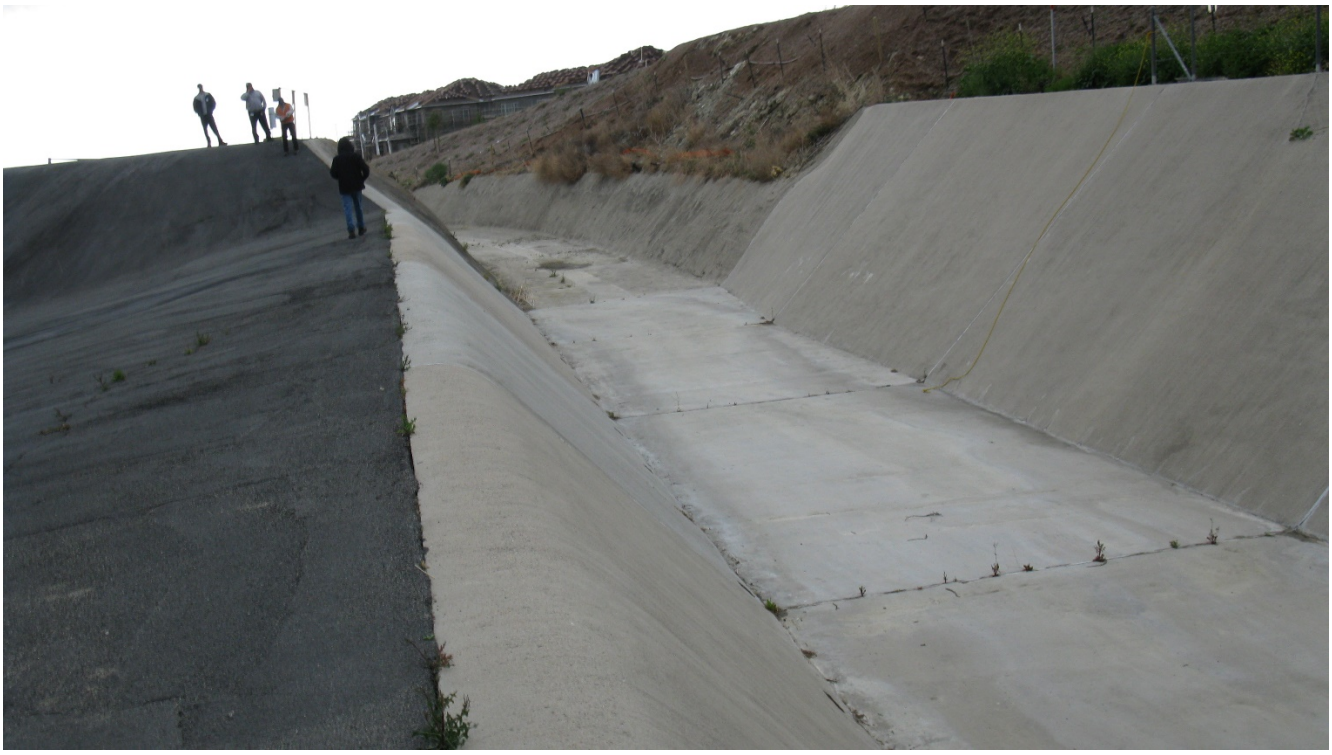

Spillway Approach and Side Channel Drop Inlet

Spillway Channel

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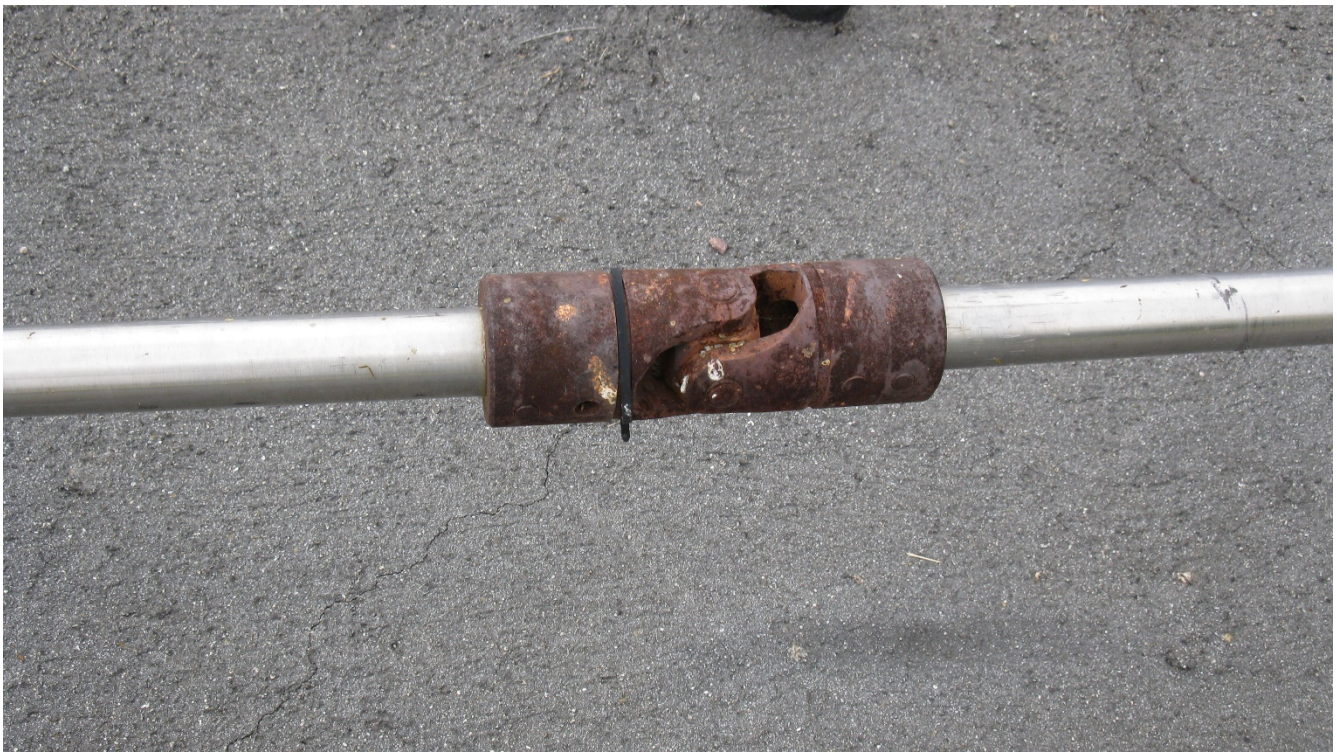
Upstream Valve Controls – High inherent friction made operating the valves very difficult



Typical Corroded U-Joints

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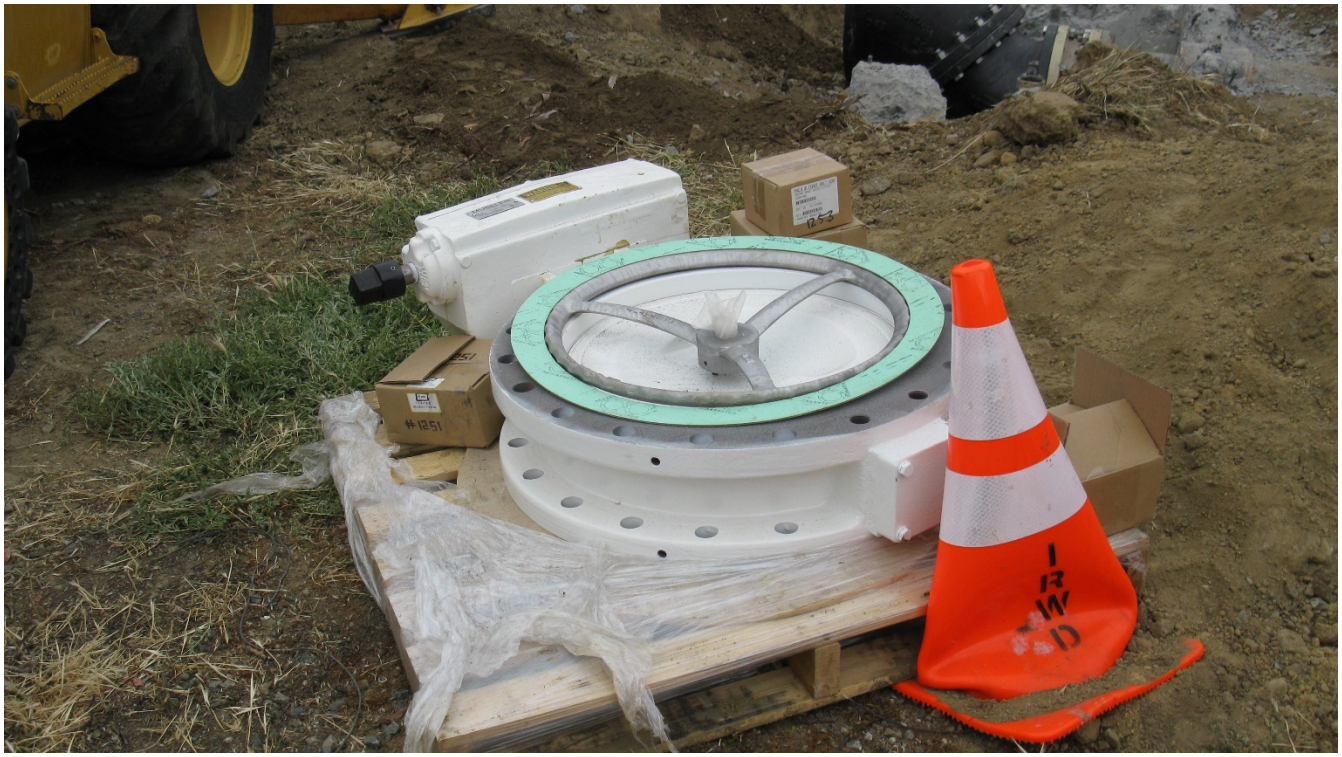
New Outlet Works in progress at downstream vault



New Valve and Actuator