

**ADOBE DAM POOL  
FCD GAGE ID# 65017**

**STATION DESCRIPTION**

**LOCATION** – The dam is located near what would be the intersection of Deer Valley Road and 43rd Avenue. The gage is located on the west end of the main dam structure across Skunk Creek. To reach the structure, drive north on 35th Avenue from Deer Valley Road. The gage house is on the top of the dam. Latitude N33° 40' 37", Longitude W112° 09' 12". Located in the SE1/4 SE1/4 NE1/4 S21 T4N R2E in the Hedgpeth Hills 7.5-minute quadrangle.

**ESTABLISHMENT** – The gage was established on October 28, 1982.

**DRAINAGE AREA** – 87.3 mi<sup>2</sup>

**GAGE** – The gage is a bubbler/orifice type instrument located at the outlet works in the dam pool. The orifice is at elevation 3.00 feet gage height, or 1,342.85 feet NAVD 1988, levels of January 23, 2025.

There are 14 staff gages located from the bottom of the pool area to the top of the dam. All staff gages read in gage height, or feet above the invert of the inlet. The bottom five gages were surveyed on May 4, 2017 and were found to be anywhere from 0.001 to 0.02 feet within their displayed values.

**ZERO GAGE HEIGHT** - The zero point is the invert of the outlet culvert through the dam. The zero elevation is 1,339.810 feet NAVD 1988, levels of May 4, 2017, and adjusted with 2013 survey data by others.

**HISTORY** – No history at this location prior to gage installation. Gaging was established at this location on October 28, 1982. The gage was a float and manometer type instrument. The float type gage was replaced with a pressure transducer on June 15, 1994. The pressure transducer was replaced with a gas purge system on August 9, 2000. The gage type is set in the database as a float type gage. Pool gage assigned a new id number 5534. The orifice elevation is 3.1 feet higher than the PT was.

**REFERENCE MARKS** –

RM1 is a brass cap on top of dam marked USCE SM-2 closest to the housing. Elevation 65.131 feet gage height, or 1,404.980 feet NAVD 1988, January 31, 2012.

RM2 is a brass cap on top of dam marked USCE SM-3 further from the housing. Elevation 65.14 feet gage height, or 1,404.97 feet NAVD 1988, January 23, 2025.

RM3 is a brass cap located close to the gate above the dam right and downstream of the housing looking downstream. Elevation 71.42 feet gage height, or 1,411.27 feet NAVD 1988, January 23, 2025.

RP-1 (labeled #2003) is a chiseled 'X' located on the left top of headwall on pool side of dam. Elevation is 1,355.85 feet NAVD 1988, or 16.00 feet gage height, levels of January 23, 2025.

RP-2 is a chiseled 'X' located on the left wingwall where it meets the headwall of the principal outlet. Elevation is 1,355.28 feet NAVD 1988, or 15.43 feet gage height, levels of January 23, 2025.

RP-3 (labeled #2006) is a chiseled 'X' located near the center of the headwall of the principal outlet. Elevation is 1,355.82 feet NAVD 1988, or 15.97 feet gage height, levels of January 23, 2025.

RP-4 (labeled #2002) is a chiseled 'X' located on the right top of the headwall of the principal outlet. Elevation is 1,355.83 feet NAVD 1988, or 15.98 feet gage height, levels of January 23, 2025.

RP-5 is a chiseled 'X' located on the right wingwall where it meets the headwall of the principal outlet. Elevation 1,355.30 feet NAVD 1988, or 15.45 feet gage height, levels of January 23, 2025.

RP-6 is a chiseled 'X' on the southwest portion of the stilling well pad. It is at elevation 2.83 feet gage height and 1,342.68 feet NAVD88, levels of January 23, 2025.

**CHANNEL AND CONTROL** – The principal outlet from the dam is a large concrete culvert 292 feet in length. The emergency spillway for the dam is located to the west of the main dam.

**PRINCIPAL OUTLET / EMERGENCY SPILLWAY** –

The principal outlet is a 6-foot wide by 8.83-foot tall concrete culvert. The invert at the inlet is at 0.00 feet gage height, or 1,339.810 feet NAVD 1988. The invert at the outlet is at -1.72 feet gage height, or 1,338.09 feet NAVD 1988. The culvert length is 292 feet. Flow begins through the culvert at 0.00 feet gage height.

The emergency spillway is located to the west of the gage and main dam. The spillway is blasted into the mountain and spills into the valley below. The bottom width of the spillway is 40 feet. The spillway crest is at 39.77 feet gage height, or 1,379.58 feet NAVD 1988.

The top of the dam elevation is 65.07 feet gage height, or 1,404.88 feet NAVD 1988.

**RATING** – The current discharge rating is Rating #4. This rating is a revision of the second rating at the low end of that rating based on measurements of the outlet gage. Rating #2 was developed by R. W. Cruft using HY-8 culvert analysis and the weir equation for the spillway. Rating #1 was from the original COE design modified with additional computations.

The current capacity rating is Rating #3. Rating #3 was developed from an analysis of the ACDC ADMS topography. Rating #1 was from the design capacities.

**DISCHARGE MEASUREMENTS** – Discharge measurements are made at the outlet channel to refine the rating for that gage. No other discharge measurements at the primary outlet would be possible.

**POINT OF ZERO FLOW** – Flow begins through the primary outlet at 0.00 feet gage height. Flow begins through the auxiliary spillway at approximately 40.0 feet gage height.

**FLOODS / SIGNIFICANT IMPOUNDMENTS** – An impoundment of 13.95 feet and 990 acre-feet occurred on August 19, 2014. An impoundment of 17.30 feet and 1,853 acre-feet occurred on January 22, 2010. An impoundment of 14.45 feet and 1,033 acre-feet occurred on August 16, 1990.

**REGULATION** – None known above the dam, possibly a stock tank or two in the upper watershed. Adobe dam regulates natural flows of Skunk Creek.

**DIVERSIONS** – None known

**ACCURACY** – Fair

**JUSTIFICATION** – Monitor water levels behind Adobe Dam for public safety.

**UPDATE** – January 23, 2025  
E S Thomas