BUCKEYE #1 FRS
FCD GAGE ID# 44007

STATION DESCRIPTION

LOCATION – The gage site is located near the Hassayampa River crossing of Interstate Highway 10. The gaging equipment is located at the principal outlet, which discharges directly into the Hassayampa River. The structure is about seven miles in length. Latitude 33° 27' 36" N, Longitude 112° 44' 02" W. Located in the SW1/4 SE1/4 NE1/4 S03 T1N R5W in the Buckeye NW 7.5-minute quadrangle.

ESTABLISHMENT – The gage was installed on July 26, 1983.

DRAINAGE AREA – 76.6 mi^2 not including area from Buckeye #2 and #3 FRS.

GAGE – The recording gage is a pressure transducer type instrument located on the right side of the outlet structure. It is at elevation 0.20 feet gage height, levels of July 29, 2020.

There are 6 staff gages in the pool of the dam near the outlet. They display in 5-foot sections from 0 – 30 feet. All display in feet gage height above the inlet invert.

There are no crest gages at this location.

ZERO GAGE HEIGHT - is defined as the elevation of the invert of the inlet on the left side of the outlet. It is equal to 1,062.000 feet NAVD88, levels June 28, 2017.

HISTORY – No previous history at this location. Zero gage height has been redefined as being the invert of the outlet to 0.0 on the staff gage mounted to the trash rack. Transducer raised to -2.30 feet gage height, March 5, 2010. The elevations in this station description were updated on July 7, 2016 to match more recent elevations from dam safety surveys. Pressure transducer was moved from the trash rack to a point upstream about 300 feet on the inlet channel. It was done to accommodate Phase 2 construction and reconstruction of the principal outlet. A new principal outlet was constructed in the first half of 2017. It is an NRCS riser design. Level monitoring was reestablished at this outlet on June 15, 2017. The transducer gage was found not at its expected location during the 2020 annual visit and was re-secured at a changed elevation on June 1, 2020.

REFERENCE MARKS –

RM-1 is a chiseled ‘X’ at the southeast corner of the concrete pad on the left side of the outlet. It is at elevation -0.009 feet gage height and 1,061.991 feet NAVD88, levels of June 28, 2017.

RM-2 is a chiseled 'X' on the southwest corner of the concrete box west of the NRCS riser. It is at elevation 4.553 feet gage height and 1,066.553 feet NAVD88, levels of June 28, 2017.

RM-3 is a chiseled 'X' on the northeast corner of the concrete box west of the NRCS riser. It is at elevation 3.612 feet gage height and 1,065.612 feet NAVD88, levels of June 28, 2017.

RM-4 is a chiseled 'X' on the concrete at the base of a fence post just south of the gate upslope of the outlet. It is at elevation 21.498 feet gage height and 1,083.498 feet NAVD88, levels of June 28, 2017.

RM-5 is a rebar at the top of the dam, about 20 feet north of the station house. It is at elevation 28.280 feet gage height and 1,090.280 feet NAVD88, levels of June 28, 2017.

RM-6 is a chiseled 'X', marked "PO-1" and is located on top of the outlet box in the pool. 3.633 feet gage height and 1,065.633 feet NAVD88, levels of March 22, 2018.

RP-1 is a white paint spot on the southeast corner of the concrete pad upon which the station house is set. It is at elevation 27.193 feet gage height and 1,089.193 feet NAVD88, levels of June 28, 2017.

The following references are unknown whether they exist.

RM58 is a 1/2-inch rod set at the northeast corner of the Hassayampa River spillway, per the McLain Harbers survey under contract FCD93-51. Elevation 19.85 feet gage height, or 1,081.95 feet NAVD 1988, levels of December 21, 1995.

RM-60 is a 1/2-inch rod set at the bend of the dam from east-west to north-south. Set per the McLain-Harbers survey contract FCD93-51. Elevation 27.78 feet gage height, or 1,089.88 feet NAVD 1988, levels of March 18, 2004.

A-33 is an FCDMC brass cap settlement monument located south of the station standpipe. Elevation 27.09 feet gage height, or 1,089.19 feet NAVD 1988, levels of March 18, 2004. NAVD elevation for A-33 is tied to the Maricopa County G-DACS system.

CHANNEL AND CONTROL – The principal outlet is an ungated 60-inch diameter RCP, 1,120 feet in length. The emergency spillway for the dam is located on the west end of the dam.

PRINCIPAL OUTLET / EMERGENCY SPILLWAY –

The principal outlet is a 60-inch diameter pipe that is 1,150 feet in length. The invert of the pipe is at -2.500 feet gage height and 1,059.500 feet NAVD88. It has a capacity of about 445 cfs.

The emergency spillway crest is at elevation 20.00 feet gage height and 1,082.00 feet NAVD88, levels of 2025. The spillway is rated by computing flow over a broad-crested weir.

Top of dam elevation is approximately 27.7 feet gage height and 1,089.70 feet NAVD88. A survey of June 28, 2017 showed the minimum top of dam to be at about 28.2 feet gage height.

RATING – The current discharge rating is Rating #3. The outlet was rated by computing flow through the lower and upper orifices in the riser, with the maximum flow in the outlet pipe being 449 cfs.

The current capacity rating is Rating #3 developed in 2025.

DISCHARGE MEASUREMENTS – Indirect measurements could be made of the spillway, though it is very wide (800 feet.)

POINT OF ZERO FLOW –

Flow into the outlet begins at 0.00 feet gage height and flow through the emergency spillway begins at about 18.7 feet gage height.

FLOODS / SIGNIFICANT IMPOUNDMENTS –

REGULATION – The dam is a regulation of natural flows upstream from the White Tank Mountains to the east and northeast.

DIVERSIONS – None known

ACCURACY – Good

JUSTIFICATION – Monitor levels behind Buckeye #1 FRS for public safety.

UPDATE – August 11, 2025
E S Thomas