VINEYARD FRS
FCD GAGE ID# 6688

STATION DESCRIPTION

LOCATION – The dam outlet is located approximately two miles south of Baseline Road and one mile east of Ironwood Road (Vineyard Road.) The gage is located at the primary outlet on the north end of the dam. Latitude N 33° 20' 18", Latitude W 111° 32' 06". Located in the SW1/4 NW1/4 SW1/4 S09 T1S R8E in the Desert Well 7.5-minute quadrangle.

ESTABLISHMENT – The gage was established on November 2, 1983.

DRAINAGE AREA – 52.7 mi^2

GAGE – The gage is a pressure transducer type instrument located at the principal outlet on the north end of the dam. Elevation 0.20 feet gage height, or 1,564.40 feet NAVD88, levels of April 28, 2008.

There are three staff gages near the principal outlet. All read about 0.2 feet low.

There is no crest gage at this location.

ZERO GAGE HEIGHT - Zero gage height is defined as the invert of the principal outlet. As of Water Year 2008, zero gage height is equal to 1,564.20 feet NAVD 1988.

HISTORY – No previous history at this location. Based on 2003 survey data, the zero definition is redefined. Previously, the elevation of the invert of the principal outlet was 1,564.81 feet NAVD 1988. The survey information indicated that the elevation of the principal outlet is at 1,564.40 feet NAVD 1988. The change is effective October 1, 2002. PT elevation was adjusted when the PT housing was replaced. The elevation changed to 0.20 feet gage height. Based on 2014 data, zero gage height is now defined as 1,564.40 feet NAVD88.

REFERENCE MARKS –

A number of older reference points were not found in recent surveys. Information about these references not listed is available in previous station descriptions.

NORTH END OF DAM

RM-1 is defined as a brass cap stamped A-28. Elevation 1,579.75 feet NAVD 1988, or 15.55 feet gage height, levels of April 28, 2008. It is located at the north end of the structure.

A-27 is an SCS brass cap set in concrete as described above. Elevation 19.23 feet gage height or 1,583.63 feet NAVD88, levels of February 19, 1997. It was not surveyed during the April 2008 survey.

RP1 is the top of the headwall over the principal outlet at the north end of the dam. Elevation 6.49 feet gage height, levels of April 28, 2008.

RP2 is the inlet invert at the principal outlet. Elevation 0.00 feet gage height.

SOUTH END OF DAM

RM-2 is a brass cap stamped A-1 atop the south end of Vineyard FRS. Elevation 1,580.23 feet NAVD 1988, or 16.03 feet gage height, levels of April 28, 2008.

RM-3 is a brass cap in concrete marked A-16. It is located atop the north end of Rittenhouse FRS. Elevation 1,602.89 feet NAVD 1988. Gage height elevation is 38.69 feet.

CHANNEL AND CONTROL – The principal outlet is a 54-inch diameter concrete culvert with length 105 feet. There are two spillways for this dam. One is located on the south end and one is located on the north end. The primary outlet is the control (culvert control) to about 11.3 feet gage height when the south emergency spillway crest is reached. The north emergency spillway crest is at about 11.8 feet gage height.

PRINCIPAL OUTLET / EMERGENCY SPILLWAYS

The principal outlet is an ungated concrete 54-inch diameter culvert of 105-foot length. Invert of the inlet is at 0.00 feet gage height (1,564.20 feet NAVD88).

There are two emergency spillways, one at the north end and one at the south end of the dam. The south emergency spillway crest is at about 11.3 feet gage height. The north emergency spillway crest is at about 11.8 feet gage height. The bottom width of both emergency spillways is approximately 300 feet. The maximum depth of flow in either emergency spillway is limited to approximately 4.5 feet.

Top of dam elevation is at approximately 16.2 feet gage height.

RATING – The current discharge rating is Rating #6 from JE Fuller Hydrology and Geomorphology, Inc.

The current capacity rating is Rating #4 from JE Fuller Hydrology and Geomorphology, Inc.

DISCHARGE MEASUREMENTS – Low flow measurements could be made from the principal outlet channel on the downstream side of the outlet. Low flow measurements could also be made in the spillways at the monumented cross sections for each.

POINT OF ZERO FLOW – The PZF for the principal outlet is 0.00 feet gage height. The PZF for the south emergency spillway is at approximately 11.3 feet gage height. The PZF for the north emergency spillway is at approximately 11.8 feet gage height.

FLOODS / SIGNIFICANT IMPOUNDMENTS – January 11, 1993 a peak of 4.80 feet and 573 acre-feet.

REGULATION – Vineyard FRS regulates flows in the numerous small drainages originating from the Superstition Mountains.

DIVERSIONS – Some water is contained upstream for stock watering. Furthermore, there are low spots behind the dam that retain water below the outlet PZF.

ACCURACY – Good

JUSTIFICATION – Monitor impoundment behind Vineyard FRS for operations and maintenance and for dam breach. Monitor inputs into the Powerline Floodway which flows to the EMF near Ray and Power Roads.

UPDATE – July 6, 2016
David Gardner