

**PHOENIX EAST PARK DAM
FCD GAGE ID# 4848**

STATION DESCRIPTION

LOCATION – The dam is located near the intersection of Peoria and Seventh Avenues. The gage is located at the principal outlet of the dam. Latitude N 33° 40' 37", Longitude W 112° 09' 12". Located in the NE1/4 NW1/4 S29 T3N R3E in the Sunnyslope 7.5-minute quadrangle.

ESTABLISHMENT – The gage was established on November 28, 2001.

DRAINAGE AREA – 0.09 mi² via USGS Streamstats.

GAGE – The gage is a pressure transducer type instrument located at the outlet from the dam pool. The orifice is at elevation 0.10 feet gage height, or 1,350.27 feet NAVD88, levels of March 8, 2016.

There is a split staff gage at the outlet, in a 4-10 foot section and a 10-21 foot section. The staff gages both read about 0.4 feet low. When the water level on the staff gage is at 5.0 feet, the actual gage height elevation is 5.4 feet, levels of March 8, 2016.

There are no crest gages at this location.

ZERO GAGE HEIGHT - Zero gage height is defined as the invert of the principal outlet culvert pipe. Elevation is 1,350.172 feet NAVD88.

HISTORY – No history at this location prior to gage installation. The dam was constructed in the mid-1970's. The staff gages were added in 2010 or 2011.

REFERENCE MARKS –

BM-4848 is an FCD brass cap located at the top of the dam south of the standpipe. Elevation 25.078 feet gage height and 1,374.850 feet NAVD88, levels of March 8, 2016.

RP-1 is the ground at the invert of the entrance to the outlet culvert. Elevation 0.00 feet gage height, levels of March 8, 2016.

RP-2 is the southwest corner of the headwall of the principal outlet. It is at elevation 3.960 feet gage height and 1,354.132 feet NAVD88, levels of March 8, 2016.

CHANNEL AND CONTROL – The principal outlet from the dam is a reinforced concrete pipe culvert. The culvert length is 125 feet. The emergency spillway for the dam is located to the southeast of the principal outlet.

PRINCIPAL OUTLET / EMERGENCY SPILLWAY –

The principal outlet is a 27-inch diameter concrete culvert pipe. There is a steel plate with a 16-inch by 16-inch square opening that is covering the inlet. The invert of the inlet is at 0.00 feet gage height, or 1,350.17 feet NAVD88. The invert of the outlet is at – 6.50 feet gage height, or 1,343.67 feet NAVD88. The culvert length is 125 feet. Flow begins through the culvert at 0.00 feet gage height through a one-foot square orifice covering the culvert pipe.

The emergency spillway is located to the southeast of the principal outlet. The bottom width of the spillway is 50 feet. The spillway crest was found to be at 20.60 feet gage height, or 1,370.77 feet NAVD88, levels of March 8, 2016. The design says the crest is at about 19.8 feet gage height, or 1,370.17 feet NAVD88.

The top of the dam elevation from the design is at about 24.8 feet gage height. The survey of March 8, 2016 indicated that the top of dam near the spillway is at about 25.1 feet gage height, or 1,375.27 feet NAVD88.

RATING – The current discharge rating is Rating #1. The rating was developed using the HY8 culvert application to determine flows through the principal spillway, and the weir equation for a broad-crested weir for the auxiliary spillway.

The current capacity rating is Rating #1. Rating #1 was taken from the As-Built design plans.

DISCHARGE MEASUREMENTS – Direct measurements could be made in the outlet channel just below the dam.

POINT OF ZERO FLOW – Flow begins through the primary outlet at 0.00 feet gage height. Flow begins through the auxiliary spillway at approximately 19.8 feet gage height.

FLOODS / SIGNIFICANT IMPOUNDMENTS – The peak event occurred on August 19, 2014 with a peak stage of 5.10 feet gage height, and 1.8 acre-feet and 8.4 percent full.

REGULATION – None upstream of the dam. The dam regulates natural flows on from drainage from the slopes of North Mountain.

DIVERSIONS – None

ACCURACY – Fair

JUSTIFICATION – Monitor water levels behind dam for public safety.

UPDATE – March 16, 2016
D E Gardner