

**PHOENIX BASIN #4**  
**FCD GAGE ID# 4838**  
**ALERT2 STATION ID= 50122, DEVICE ID= 12207**

**STATION DESCRIPTION**

**LOCATION** – The dam is located north of Northern Avenue and east of 18th Street. The gage is located at the principal outlet of the dam. Latitude N 33° 33' 31.0" Longitude W 112° 02' 33.4". Located in the S34 T3N R3E in the Sunnyslope 7.5-minute quadrangle.

**ESTABLISHMENT** – The gage was established on July 6, 2009.

**DRAINAGE AREA** – 0.60 mi<sup>2</sup>, via USGS Streamstats

**GAGE** – The gage is a pressure transducer type instrument located at the principal outlet. The transducer diaphragm is at elevation 0.10 feet gage height, or 1,319.38 feet NAVD88, levels of February 24, 2016.

There are no staff gages at this dam.

There are no crest gages at this location.

**ZERO GAGE HEIGHT** - Zero is defined as the invert of the inlet, elevation 1,317.00 feet M.S.L., as designed, and 1,319.279 feet NAVD88, levels of February 24, 2016.

**HISTORY** – No history at this location prior to gage installation. Dam was constructed in 1978. Gaging established on July 6, 2009. The station was converted to ALERT2 on June 11, 2015.

**REFERENCE MARKS** –

BM-4838 is and FCDMC brass cap located on top of the dam near the station tube. It is at elevation 20.881 feet gage height, or 1,340.160 feet NAVD88, levels of February 24, 2016.

RP-1 is the concrete apron at the invert of the outlet. Elevation 0.00 feet gage height, levels of February 24, 2016.

RP-2 is the left rear corner of the top of the inlet headwall on the pool side of the structure. Elevation is 4.025 feet gage height, or 1,323.304 feet NAVD88, levels of February 24, 2016.

**CHANNEL AND CONTROL** – The principal outlet from the dam is a reinforced concrete pipe culvert. Diameter of the culvert is 27 inches with a 16-inch by 16-inch plate over the invert opening. The culvert length is 128 feet. The emergency spillway for the dam is located northeast of the principal outlet.

**PRINCIPAL OUTLET / EMERGENCY SPILLWAY** –

The principal outlet is a 27-inch diameter concrete culvert pipe, fitted with a metal plate with a 16-inch by 16-inch opening. The invert of the inlet is at 0.00 feet gage height, or 1,319.279 feet NAVD88. The invert of the outlet is at -1.14 feet gage height, or 1,318.139 feet NAVD88. The culvert length is 128 feet. Flow begins through the culvert at 0.00 feet gage height through a square orifice covering the culvert pipe. All elevations are from the survey of February 24, 2016.

The emergency spillway is located to the northeast of the principal outlet. The bottom width of the spillway is approximately 80 feet. The minimum spillway crest is at about 15.0 feet gage height, or 1,334.28 feet NAVD88, from As-Builts. During the survey of February 2016, no spillway sill was found. A visual approximation of the spillway crest yielded a surveyed elevation of 14.74 feet gage height.

The minimum top of the dam elevation is at about 21.0 feet gage height, or about 1,340.28 feet NAVD88, from As-Builts. The survey of February 2016 included about 8 spot elevations of the crest, ranging from 20.5 feet to 21.2 feet gage height.

**RATING** – The current discharge rating is Rating #1. The rating was taken from the design rating on the As-Builts. The spillway flows were computed using a broad-crested weir for spillway analysis.

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

**DISCHARGE MEASUREMENTS** – Direct measurements could be taken in the outlet wash/channel below the dam.

**POINT OF ZERO FLOW** – Flow begins through the principal outlet at 0.00 feet gage height. Flow begins through the emergency spillway at approximately 15.0 feet gage height.

**FLOODS / SIGNIFICANT IMPOUNDMENTS** – The peak volume recorded since gaging began occurred on September 8, 2014, where the peak stage was 11.35 feet gage height, and 17.8 acre-feet, or about 41.5 percent full.

**REGULATION** – None upstream of the dam. The dam regulates natural flows from the Phoenix Mountains Preserve in the Dreamy Draw area.

**DIVERSIONS** – None

**ACCURACY** – Fair

**JUSTIFICATION** – Monitor water levels behind dam for public safety.

**UPDATE** – February 25, 2016  
D E Gardner