# NEW RIVER DAM POOL
# FCD GAGE ID# 5614

## STATION DESCRIPTION

**LOCATION** – The dam is located north and west of the intersection of Jomax Road and 75th Avenue in Peoria. The gage is located on the upstream side of the dam near the primary outlet. Latitude N 33° 44' 09", Longitude W 112° 13' 31". Located in the SW1/4 SW1/4 NE1/4 S35 T5N R1E in the Hedgpeth Hills 7.5-minute quadrangle.

**ESTABLISHMENT** – The gage was established on April 15, 1986.

**DRAINAGE AREA** – 164 $mi^2$

**GAGE** – The gage is a bubbler orifice type instrument set up to act as a digital incremental counter type float gage. The orifice line is at 2.85 feet gage height, levels of May 24, 2016.

There are 20 staff gages on the dam on the upstream face pointed toward an observer on top of the dam. The staff gages were surveyed in May 2016 and it was found that the gages read in Mean Sea Level and read +/- 0.3 feet different from the displayed elevation.

There are no crest gages at this location.

**ZERO GAGE HEIGHT** - Zero is defined as the invert of the inlet of the outlet culvert. Elevation is 1,391.50 feet NAVD88, levels of May 24, 2016. The surveyed point in the invert was 1,391.464 feet NAVD88, but 1,391.50 feet is considered zero gage height.

**HISTORY** – Gaging began upon completion of the dam. The gage was established on April 15, 1986. Originally, the gage was a manometer type. A pressure transducer was connected to the orifice at an unknown date. A bubbler type instrument was installed on May 2, 2000.

**REFERENCE MARKS** –

RM1 is a USACE brass cap, SM-1, located east of the gage house on top of the dam at elevation 98.66 feet gage height, or 1,488.02 feet M.S.L., levels of February 1992. This was not found during the May 2016 survey.

RM2 is a USACE brass cap, SM-2, located west of the gage house on top of the dam at elevation 98.54 feet gage height, or 1,487.90 feet M.S.L., levels of February 1992. This was not found during the May 2016 survey.

SM-3 is a settlement marker on top of the dam, west of the station house. It is at elevation 98.555 feet gage height and 1,490.019 feet NAVD88, levels of May 24, 2016.

SM-4 is a settlement marker on top of the dam, west of the station house. It is at elevation 98.573 feet gage height and 1,490.037 feet NAVD88, levels of May 24, 2016.

RP-2 is the top of the most downstream bolt (northwest bolt) on top of the CMP that secures the cover of the stilling well. It is at elevation 7.029 feet gage height and 1,398.493 feet NAVD88, levels of May 24, 2016.

RP-4 is the top of the northwest bolt at the bottom of the CMP. It is at elevation 3.069 feet gage height and 1,394.533 feet NAVD88, levels of May 24, 2016.

RP-2000 is a chiseled 'X' on the bottom of the left wingwall. It is at elevation 9.416 feet gage height and 1,400.880 feet NAVD88, levels of May 24, 2016.

RP-2003 is a chiseled 'X' on the left top of the outlet headwall. It is at elevation 17.997 feet gage height and 1,409.461 feet NAVD88, levels of May 24, 2016.

RP-2004 is a chiseled 'X' on the right top of the outlet headwall. It is at elevation 18.013 feet gage height and 1,409.477 feet NAVD88, levels of May 24, 2016.

RP-2008 is a chiseled 'X' on the center top of the outlet headwall. It is at elevation 17.990 feet gage height and 1,409.454 feet NAVD88, levels of May 24, 2016.

**CHANNEL AND CONTROL** – The primary outlet is a rectangular box culvert with dimensions 6.3 feet wide by 9.5 feet high by 436 feet in length. The auxiliary spillway is located to the west of the main dam. Flow begins over the auxiliary spillway at approximately 67.0 feet gage height.

**PRINCIPAL OUTLET / EMERGENCY SPILLWAY** –

The principal outlet is a rectangular box culvert with dimensions of 6.3 feet wide by 9.5 feet high and 436 feet in length. The culvert inlet invert elevation is 0.000 feet gage height. The culvert outlet invert elevation is –3.056 feet gage height. Both elevations are from levels of May 24, 2016.

The emergency spillway is located west of the main structure. The crest of the spillway is about 67.0 feet gage height, or 1,458.5 feet NAVD88. The width of the spillway is 74 feet and has 1:2 sideslopes.

The top of dam elevation is about 98.0 feet gage height or 1,489.5 feet NAVD88. Several points on the crest of the dam were surveyed on May 24, 2016 and were found to be at about 98.6 feet gage height.

**RATING** – The current rating is Rating #2. The rating is based on a 1992 HY-8 analysis by R. W. Cruff and modified in 1997 by T. W. Lehman to account for flows in the outlet channel. The spillway rating was developed by R. W. Cruff for a broad crested weir using a weir coefficient of 2.9.

The current storage rating is Rating #2 taken from the original design memorandum.

**DISCHARGE MEASUREMENTS** – None. The primary outlet discharge is maintained by the outlet gage #5613.

**POINT OF ZERO FLOW** – The PZF for the principal outlet is at 0.000 feet gage height. The PZF for the emergency spillway is 67.0 feet gage height.

**REGULATION** – New River dam regulates natural flows on New River.

**DIVERSIONS** – None known

**ACCURACY** – Fair

**JUSTIFICATION** – Monitor water levels behind New River Dam for operations and maintenance and for the Department of Emergency Management.

**UPDATE** - May 25, 2016
D E Gardner