

**HASSAYAMPA RIVER AT INTERSTATE 10  
FCD GAGE ID# 5283**

**STATION DESCRIPTION**

**LOCATION** – The gage site is at the Interstate 10 highway crossing of the Hassayampa River, approximately fifteen miles west of the town of Buckeye. The gage instrumentation is located near the center of the riverbed on the eastbound bridge. Latitude N 33° 27' 33", Longitude W 112° 45' 46". Located in the SW1/4 SW1/4 NW1/4 S03 T1N R5W in the Wintersburg 7.5-minute quadrangle.

**ESTABLISHMENT** – The stage gage was established November 9, 1994.

**DRAINAGE AREA** – 1,450 mi<sup>2</sup> (approximate)

**GAGE** – The gage is a pressure transducer type instrument at gage height 2.402 feet, or 1,021.124 feet NAVD 1988 levels of February 22, 2012.

There are two staff gages at this location.

The first is a staff plate located near the former pressure transducer instrument. This gage reads in gage height, and is the datum for this site, levels of February 22, 2012.

A second staff gage is painted on the west face of the first pier from the right bank on the westbound I-10 highway. The gage does not read in gage height according to gage datum. Add 3.3 feet to the painted staff gage to get readings in gage datum gage height.

There are three crest gages at this location.

CSG#1 is the lower of the two crest-stage gages located west of the pressure transducer. It has pin elevation of 4.115 feet gage height, or 1,022.837 feet NAVD 1988, levels of February 22, 2012.

CSG#2 is the upper of the two crest-stage gages located west of the pressure transducer. It has pin elevation of 7.493 feet gage height, or 1,026.215 feet NAVD 1988, levels of February 22, 2012.

The old crest gages #3 and #4 are gone.

CSG#3 is the new third crest-stage gage located just upstream of the pressure transducer near the center of the river. It has a pin elevation of 2.966 feet gage height, or 1,021.688 feet NAVD 1988, levels of February 22, 2012.

**ZERO GAGE HEIGHT** is equivalent to 1,018.722 feet NAVD 88.

**HISTORY** – No previous gaging at this location. Pressure transducer gage established November 9, 1994 by the Flood Control District. PT raised from 0.9 feet to 3.0 feet gage height on October 23, 1997. Crest gages were also installed on October 23, 1997. Cross section markers at each bank at the gage cross section were installed and surveyed on October 4, 2000. Transducer gage moved about 300 feet east in the channel to near the low flow channel as it exists in April 2002. Gage was moved on April 3, 2002. The streamgage was removed due to bridge construction from February 15, 2011 to January 30, 2012. Streamgage was re-installed on January 31, 2012 at a different location.

**REFERENCE MARKS** –

ERM45 is a brass tablet (Stamped Arizona Highway Department, Elev. 1,041.16, 1974) set on the west end of a high bridge abutment at the east end of the upstream side of the eastbound highway bridge. Gage height of 24.43 feet, levels of March 5, 1998 and 1,042.608 feet NAVD 1988, levels of October 4, 2000. Northing 894895.817, Easting 443546.734.

RM1 is a chiseled 'X' in the concrete near the end of the rail at the west end of the downstream side of the eastbound highway bridge. Elevation = 20.89 feet gage height, or 1,037.85 feet M.S.L., levels of March 5, 1998.

RM-HASS-I10 is an FCD brass cap installed inside the fenced area near the weather station. Monument was established on November 20, 2000. Elevation 1,033.79 feet NAVD 1988 or 15.068 feet gage height, levels of February 22, 2012. Northing 895147.302, Easting 442380.405.

RP-1 and RP-2 are presumed destroyed.

RP-3 is the left, second from the bottom, bolt of the strap holding the pressure transducer. Elevation is 4.794 feet gage height, or 1,023.516 feet NAVD 1988, levels of February 22, 2012.

RP-4 is the right, bottom most bolt on strap holding CSG #3. Elevation is 3.903 feet gage height, or 1,022.625 feet NAVD 1988, levels of February 22, 2012.

There are two cross section markers set on the downstream side of the east bound bridge.

XSGLB is a rebar on the east bank of the river. Elevation 1,034.824 feet NAVD 1988 or 16.646 feet gage height, levels of October 4, 2000. Northing 894844.365, Easting 443542.289.

XSGRB is a rebar on the west bank of the river. Elevation 1,035.003 feet NAVD 1988 or 16.825 feet gage height, levels of October 4, 2000.

**CHANNEL AND CONTROL** – The channel is a very wide sand and cobble channel with a loose trapezoidal shape. The channel is approximately 1,200 feet in width at the bridge. The channel is relatively straight up and downstream of the gage. Several small channels exist within the main river channel. Each has its own channel control until all low flow channels are submerged. At that time, the main channel is the control.

**RATING** – There have been several ratings at this location since installation, all based on the original HEC-2 analysis by T. M. Donaldson. The current rating is Rating #4, which is a modification of the previous rating to account for a lower level sensor elevation. No changes to the rating were made above 3.0 feet gage height. The Manning equation was used to develop a stage discharge relationship below 3.0 feet gage height. The original rating by Donaldson was based on the 1989 Cella Barr HEC-2 analysis for the Hassayampa River.

**DISCHARGE MEASUREMENTS** – Low flow measurements could be made by wading the channel. Higher discharges should be measured by indirect methods, as no suitable location is available to set up a bridge crane.

**POINT OF ZERO FLOW** – The PZF is approximately 0.26 feet gage height, from levels of May 29, 2002. Shifting beds during floods causes the PZF to change during events.

**FLOODS** – A flood with discharge of about 40,000 cfs and 7.15 feet gage height occurred on October 27, 2000. Peak recorded from crest gage #4.

**REGULATION** – Hassayampa Lake in the uppermost watershed regulates flows in the first several square miles.

**DIVERSIONS** – There are several small irrigation diversions in the river above Wickenburg.

**ACCURACY** – Fair

**JUSTIFICATION** – Monitor flows in the Hassayampa for unbridged crossings downstream of I-10.

**UPDATE** - February 23, 2012  
D Gardner