

**RAINBOW WASH AT SR85**  
**FCD GAGE ID# 6953**

**STATION DESCRIPTION**

**LOCATION** – The gage station is located just east of State Route 85 on Rainbow Wash, which is located approximately 10 miles south of the town of Buckeye. The station is located on the north (right) bank of the channel. Latitude N 33° 46' 51", Longitude W 113° 01' 44". Located in the SW1/4 NW1/4 SE1/4 S23 T2S R4W, in the Cotton Center NW 7.5-minute quadrangle.

**ESTABLISHMENT** – Gaging was established on November 6, 2000 by the Flood Control District of Maricopa County.

**DRAINAGE AREA** – 17.6 mi<sup>2</sup> approximately

**GAGE** – The gage is a pressure transducer type instrument. The PT diaphragm is at 0.07 feet gage height, levels of July 20, 2006.

There is no staff gage at this location.

There is one crest gage at this location. Pin elevation is at 0.68 feet gage height, levels of July 20, 2006.

**ZERO GAGE HEIGHT** – Is defined as the diaphragm of the PT, elevation 900.06 feet NAVD 1988

**HISTORY** – No previous gaging at this location. Gaging established November 6, 2000. Crest gage was installed on February 21, 2001. PT appears to be migrating as its absolute distance difference from the RM-RAIN85 has changed from 4.72 feet in November 2000 to 5.31 feet in June 2001 to 5.13 feet in July 2004.

**REFERENCE MARKS** –

RM-RAIN85 is an FCD brass cap located about 40 feet northwest of the station standpipe. Elevation is 905.370 feet NAVD88, or 5.31 feet gage height, levels of July 20, 2006. Northing 814020.806, Easting 479057.17.

RP-CSG is the top of a stainless steel bolt in the concrete base of the crest gage. Elevation 900.150 feet NAVD88, levels of January 18, 2001.

RP-BRIDGE is a chiseled 'X' in the top of the left upstream wingwall of the SR85 bridge. Elevation 908.557, levels of January 18, 2001.

**CHANNEL AND CONTROL** – The channel at the gage has a sandy bottom with mostly trapezoidal shape. The top of the main bank at the gage is steep, maybe 1.5:1. The channel upstream from the gage is essentially the same with sand bottom and steep side. Downstream from the gage is the SR 85 bridge. There is not much contraction of the main channel through the bridge. Downstream of the bridge, the channel widens significantly for approximately 700 feet, where it then contracts quite a bit. A split of the channel occurs just downstream of the bridge, however, that would likely only convey flow during very high discharge. Another split in the main channel occurs about 200 feet downstream. The main channel upstream of the bridge is well defined with no vegetation. The main channel immediately downstream of the bridge is broader with some vegetation in the channel in the split areas. The overbank areas are heavily vegetated in most places.

The control for low flows is likely riffle flow. Flow up to about 5 feet gage height would be channel control. Flows above this level would spill out of the main channel into the overbanks. Flow would likely back up at higher levels as it passes through the bridge.

**RATING** – The current rating is Rating #3. It was developed from existing rating information and from indirect measurement data acquired since installation. The rating is effective from the beginning of Water Year 2010.

Rating #2 is based on three indirect discharge measurements. It was found that rating #1 overestimated flow during a flood in August 2001. At that time there were not enough data to warrant a rating revision. A recent flow was also somewhat different from the rating #1. Rating #2 will be the rating for the entire gage record because one of the points was obtained from a flood measurement that occurred before gage installation and was used in development of rating #1.

Rating #1 was developed from survey data and a HEC-RAS model. The rating is valid to about 2,500 cfs or about 5 feet gage height. Above this level, flow will begin to spill out of the channel into the unconfined right overbank. Flows in the channel are subcritical. Channel slope in the reach considered is 0.0045 ft/ft.

**DISCHARGE MEASUREMENTS** – Low flow measurements could be made by wading the channel. Higher flow measurements can be done by indirect methods in a three cross section reach located with the gage cross section as the middle cross section.

**POINT OF ZERO FLOW** – The PZF at the gage cross section is near the PT and is at -0.3 feet gage height, levels of October 3, 2005.

**FLOODS** – A flood event occurred just prior to gage installation in October 2000. Computed discharge was about 2,350 cfs at approximately 5.2 feet gage height.

**REGULATION** – None

**DIVERSIONS** – None

**ACCURACY** – Fair

**JUSTIFICATION** – Provide warning to MCDOT for road closure at Old US80.

**UPDATE** – April 12, 2011  
D E Gardner