

**SANTA ROSA WASH AT SR84
FCD GAGE ID# 0798**

STATION DESCRIPTION

LOCATION — This gage is located on Santa Rosa Wash approximately one mile east of Stanfield, Arizona. The instrumentation is located on the left bank on the downstream side of the State Route 84 bridge. Latitude N 32° 52' 49", Longitude W 111° 56' 46". Located in the SW1/4 SW1/4 SW1/4 S21 T6S R4E in the Stanfield 7.5-minute quadrangle.

ESTABLISHMENT — The gage was established March 16, 1994 by the Flood Control District of Maricopa County.

DRAINAGE AREA — 1,941 mi² vis USGS Streamstats. Tat Momolikot Dam controls 1,730 mi². The effective drainage area is 211 mi².

GAGE — The gage is a pressure transducer type water level sensor located on the center pier of the highway bridge. The PT diaphragm elevation is at 2.10 feet gage height, levels of March 30, 2016.

The staff gage on the bridge pier has faded and deteriorated so that it's unreadable. Furthermore, it has not been repainted since the channel changes have occurred, so it may not represent field conditions any longer.

There is one approximately 5-foot crest gage located on the pier with the pressure transducer. The pin elevation is 4.23 feet gage height, levels of March 30, 2016.

ZERO GAGE HEIGHT - Zero is defined as the concrete bottom of the center of the low flow channel near the transducer gage. It is at elevation 1,292.42 feet NAVD88, levels of March 30, 2016.

HISTORY — The USGS maintained a gage approximately 10 miles upstream from this location at Cockleburr for many years. The gage was discontinued following closure of Tat Momolikot Dam. This station was originally installed March 16, 1994 by the FCDMC. The original gage datum was defined using the PZF from the Aug. 30, 1994 survey as 0.0 feet gage height. Two 4-foot crest stage gages were installed on July 23, 1997. The gage datum was redefined to correspond with the painted staff gage (white with black numbers incremented in tenths) after the August 20, 1997 survey. The new datum was applied to the gage record back to the beginning of Water Year 1997. The new datum is 2.43 ft lower than the previous datum from March 1994 through Sept. 1996. Slope area survey markers were added in three cross sections just downstream of the gage and were installed on May 18, 2000. Transducer lowered about 1.5 feet as of December 1, 2008. A low flow channel was established well below the previous

earthen bottom. The station was removed for construction of the low flow and other bridge work from May 29 through October 29, 2012. Following construction, the transducer was relocated to a lower elevation, and a single crest gage was installed. The changes were surveyed on March 30, 2016, and the zero gage height datum was adjusted with the zero now being the bottom of the concrete low flow channel. Elevations were shifted up 5.36 feet gage height to accommodate these changes. Also, the datum was updated from NGVD29 to NAVD88.

REFERENCE MARKS –

BM-798 is an FCDMC brass cap located near the station tube. It is at elevation 16.041 feet gage height and 1,308.460 feet NAVD88, levels of March 30, 2016.

BM-1 is an ADOT Brass Cap on the southwest corner of the SR 84 bridge. Elevation = 18.677 feet gage height and 1,311.096 feet NAVD88, levels of March 30, 2016.

RP-1 is likely destroyed with the construction in 2012.

RP-2 is a chiseled 'X' on the concrete abutment near the transducer pier. It is at elevation 3.830 feet gage height and 1,296.249 feet NAVD88, levels of March 30, 2016.

RATINGS – The current rating is Rating #2, which is essentially the same as rating #1 accounting for a datum shift. T. M. Donaldson developed rating #1 in September 1994 from a 7 cross section step backwater model. Cross sections were taken from field surveys by TMD and TWL in September 1994. In August 1997, the gage datum was redefined by T. W. Lehman to match the staff gage painted on the bridge pier with the pressure transducer. Consequently, the rating was also adjusted to fit the new datum. These datum changes were made effective for the entire 1997 Water Year. The new datum is 2.43 ft lower than the datum used from March 1994 to September 1996.

CHANNEL AND CONTROL – The channel at this location is trapezoidal in shape with leveed earthen banks both up and downstream of the gage. The bottom is earthen also, with some vegetation growth. The control for this site is relatively insensitive and is channel control through the range of stages until the bridge becomes impacted at higher stages.

DISCHARGE MEASUREMENTS – Wading measurements can be made in the channel downstream of the bridge. High flow measurements can be taken from the bridge, traffic permitting. A suitable indirect measurement location is located approximately 100 feet downstream from the bridge.

POINT OF ZERO FLOW – The PZF was found at 0.00 feet gage height, levels of March 30, 2016.

FLOODS — At the USGS gage approximately 10 miles upstream, a peak discharge of 53,100 cfs occurred on September 27, 1962. A peak discharge of 10,000 cfs occurred on November 1, 1957. A peak discharge of 6,760 cfs occurred on July 25, 1964. A peak discharge of 6,110 cfs

occurred on August 4, 1971. A peak discharge of 4,180 cfs occurred on September 14, 1963. A peak discharge of 4,120 occurred on July 13, 1959.

REGULATION – Lake Saint Clair and Tat Momolikot Dam approximately 15 miles upstream controls a significant amount of water. Water release from this structure will be rare. Most flows that will be measured by this gage will be inflows downstream of the dam.

DIVERSIONS – Tat Momolikot Dam can act as a supplementary water supply to the Vaiva Vo irrigation district on the downstream side of the dam. Usually, there is not enough water at the dam to supply any irrigation water.

ACCURACY – Fair

JUSTIFICATION — Monitor significant inflows to Gila River below Maricopa Road for better estimation of impacts on Holly Acres area of lower Gila upstream of Estrella Parkway.

UPDATE – March 31, 2016
D E Gardner