SALT RIVER AT 51ST AVENUE
FCD GAGE ID# 5307

STATION DESCRIPTION

LOCATION - The gage is located on the 51st Avenue bridge crossing of the Salt River. Latitude 33° 23' 54.6" North; Longitude 112° 10' 22.5" West. Located in S19 T1N R2E, in the Fowler 7.5-minute quadrangle.

ESTABLISHMENT - The FCDMC gage was installed April 27, 2011.

DRAINAGE AREA – 13,052 square miles, via USGS Streamstats.

GAGE - The gage is a non-submersible pressure transducer type instrument connected with a gas purge orifice. It is located on the downstream side of the first pier from the left bank. The bottom of the orifice pipe is at 1.60 feet gage height. Upon inspection, the orifice opening is at gage height 1.90 feet gage height, levels of February 27, 2019.

There are three crest-stage gages located on the pier with the orifice.

The lower crest gage has a pin elevation of 7.54 feet gage height, levels of February 27, 2019.

The middle staff gage has a pin elevation of 12.41 feet gage height, levels of February 27, 2019.

The upper staff gage has a pin elevation of 17.02 feet gage height, levels of February 27, 2019.

There is a staff plate pair on the pier with the orifice gage. A very short piece is installed on the base of the pier and has a range of 1.50 – 2.50 feet gage height. The upper staff plate has a range from about 2.45 – 13.60 feet gage height. Both are in gage height, levels of February 27, 2019.

There is also a painted staff gage on the same pier as the other instrumentation. The painted gage displays from 0 – 12 feet. It is offset by about 2.5 feet. For example, if the water surface is at 6 feet on the painted staff gage, the corresponding gage height elevation would be 8.48 feet gage height, levels of February 27, 2019.

ZERO GAGE HEIGHT – Zero gage height is defined with regard to the lower staff plate at the first downstream pier. It is equivalent to 986.611 feet NAVD88, levels of February 27, 2019.

HISTORY – FCDMC gaging established on April 27, 2011. The USGS had a gage at this location for several years prior.

REFERENCE MARKS –

BM-4753 is an FCDMC brass cap located south of the gage house on the top of the left bank, or the southwest corner of the bridge crossing of the river. It is at elevation 35.873 feet gage height and 1,022.484 feet NAVD88, levels of February 27, 2019.

RM-1 is a USGS brass cap located on the northwest corner of the station house pad. It is at elevation 34.451 feet gage height and 1,021.062 feet NAVD88, levels of February 27, 2019.

RM-2 is a rebar located south of the station house near a city of Phoenix storm drain manhole cover. It is at elevation 37.218 feet gage height and 1,023.829 feet NAVD88, levels of February 27, 2019.

RM-3 is a chiseled 'X' on the left upstream side of the bridge at the south headwall of the bridge just south of the bridge railing. It is at elevation 37.826 feet gage height and 1,024.437 feet NAVD88, levels of February 27, 2019.

RP-1 is a white paint spot on the shoreward side of the first downstream base of the pier with the instrumentation. It is at elevation 2.448 feet gage height, levels of February 27, 2019.

RP-2 is a bolt at the base of the staff plate on the base of the pier. It is at elevation 2.528 feet gage height, levels of February 27, 2019.

RP-3 is bolt on the base of the pier on the downstream side of the orifice housing. It is at elevation 2.597 feet gage height, levels of February 27, 2019.

CHANNEL AND CONTROL - The control for this gage is the main channel.

RATING - The current rating is Rating #1, dated April 27, 2011. The rating was developed by the USGS for their gage station.

DISCHARGE MEASUREMENTS – Direct measurements are not possible due to height of bridge crossing and wading is not safe.

POINT OF ZERO FLOW - The PZF is at approximately 1.5 feet gage height, levels of February 27, 2019.

FLOODS – A discharge of 39,432 cfs at 15.21 feet gage height occurred on March 23, 2023. Larger flows have passed by this location before the gaging was established.

REGULATION – A number of dams upstream regulate flow in the Salt River.

DIVERSIONS – Granite Reef Diversion structure diverts water to canals on the north and south sides of the river for irrigation and domestic purposes.

ACCURACY - Fair

JUSTIFICATION – Monitor flow in the river for MCDOT to manage low-flow road closures.

UPDATED - February 1, 2024
DE Gardner