

# **CAVE CREEK AT CAP FCD GAGE ID# 19807**

## **STATION DESCRIPTION**

**LOCATION** – The station is located in north Phoenix at the Cave Creek crossing of the CAP. Latitude 33.69376°; Longitude -112.05096°. Located in S16 T4N R3E, in the Union Hills 7.5-minute quadrangle.

**ESTABLISHMENT** - The gage was installed April 14, 2014.

**DRAINAGE AREA** – 198 mi<sup>2</sup> via UGSG Streamstats

**GAGE** - The gage is a pressure transducer type instrument. The transducer diaphragm is at gage height 0.10 feet, levels of March 6, 2019.

There is one crest gage at this location, on the left bank wall. It is at elevation 0.25 feet gage height, levels of March 6, 2019.

There is no staff gage at this site.

**ZERO GAGE HEIGHT** – Zero gage height is defined as the ground at the transducer gage on the right bank. It is equivalent to 1,507.486 feet NAVD88, levels of March 6, 2019.

**HISTORY** – Gaging established on April 14, 2014. No previous gaging history at this location. A crest gage was added in 2018.

## **REFERENCE MARKS**

BM-4907 is an FCDMC brass cap located just north of the station tube on top of the left bank of the CAP canal and the right bank of the wash crossing. It is at elevation 9.691 feet gage height and 1,517.177 feet NAVD88, levels of March 6, 2019.

RM-1 is an FCDMC brass cap located on the right, upstream wing wall of the inlet to the over chute. It is at elevation 9.502 feet gage height and 1,516.988 feet NAVD88, levels of March 6, 2019.

RM-2 is a DOI Reclamation brass cap located on the right, upstream wing wall near RM-1. It is at elevation 9.509 feet gage height and 1,516.995 feet NAVD88, levels of March 6, 2019.

RP-1 is a chiseled 'X' at the ground at the transducer gage. It is at 0.001 feet gage height, levels of March 6, 2019.

RP-2 is a chiseled 'X' on top of the right upstream wingwall. It is at elevation 9.482 feet gage height, levels of March 6, 2019.

**CHANNEL AND CONTROL** – The channel is an engineered concrete overchute that crosses the CAP canal at grade.

The control for the gage is not defined at low flows. The channel is the control at higher stages.

**RATING** - The current rating is Rating #2, dated April 14, 2014. This newer rating is considered superior to the first rating and was applied back to the entire gage record since installation in April 2014. The current rating was developed from an HEC-RAS model developed from 13 cross sections collected on March 1, 2021.

**DISCHARGE MEASUREMENTS** – Direct measurements would be difficult at the gage site, but could be done elsewhere. Indirect measurements may be able to be taken upstream where the stream passes through two hills.

**POINT OF ZERO FLOW** - The PZF is at approximately 0.0 feet gage height.

**FLOODS** – The largest discharge of record occurred on August 20, 2014 with a peak stage of 0.92 feet gage height and peak discharge of 146 cfs.

**REGULATION** – Cave Buttes Dam upstream regulates natural flows in Cave Creek to a maximum of about 500 cfs. A secondary outlet comes online in the summer of 2021 which will add flow when the pool level at Cave Buttes Dam is above 40 feet. Spillway flows have the potential to cause much more water to pass by this gage.

**DIVERSIONS** - None known

**ACCURACY** - Fair

**JUSTIFICATION** – Monitor outflows occurring from and below Cave Buttes Dam.

**UPDATED** - May 25, 2021  
D E Gardner