

CAVE CREEK AT ASHDALE RANGER STATION
FCD GAGE ID# 21307

STATION DESCRIPTION

LOCATION - The gage is located on the site of the unused Ashdale Ranger Station, approximately one mile west of the Seven Springs Campgrounds. Latitude 33° 57' 44.3" North; Longitude 111° 52' 34.2" West. Located in S07 T7N R5E, in the New River Mesa 7.5-minute quadrangle.

ESTABLISHMENT - The gage was installed on February 25, 2009.

DRAINAGE AREA – 34.4 mi² via USGS Streamstats.

GAGE – The gage is a pressure transducer type instrument located near the low part of the channel. Elevation of the transducer is 1.24 feet gage height, levels of February 7, 2018.

There is one crest-stage gage at this location. It is on the right bank, just uphill from the transducer gage. It has a pin elevation of 5.15 feet gage height, levels of January 29, 2020.

There are no staff gages at this site.

ZERO GAGE HEIGHT – Zero gage height is defined as a point 2.2 feet below the pressure transducer at the time of installation. It is defined as 3,256.778 feet NAVD88, levels of January 29, 2020.

HISTORY – Gaging established on February 25, 2009. No previous history at this location. Equipment and gage cross section surveyed June 23, 2009. Level sensor destroyed during January 21, 2010 event. Level sensor re-established at new elevation on February 11, 2010.

REFERENCE MARKS

NOTE: All previous references from 2009 and 2010 were not found during the survey of February 7, 2018, and are considered destroyed. Elevations in this survey are based on the assumption that the previous RP-1, top of a rock, was found during this survey because levels matched reasonably close to the transducer elevation among all surveys. All references below were established on February 7, 2018.

BM-4947 is an FCDMC brass cap located on top of the right bank near the flat parking area right of the fence. It is at elevation 23.815 feet gage height and 3,280.593 feet NAVD88, levels of January 11, 2019 and January 29, 2020.

BM-1 is a rebar located on top of the right bank about 12 feet from the station tube. It is at elevation 22.297 feet gage height and 3,279.075 feet NAVD88, levels of February 7, 2018.

RM-1 is a rebar along the footpath on the right bank along the buried transducer run. It is at elevation 9.799 feet gage height and 3,266.577 feet NAVD88, levels of February 7, 2018.

RM-2 is a rebar located on the right bank about 40 feet downstream of the transducer run near the footpath. It is at elevation 9.448 feet gage height and 3,266.226 feet NAVD88, levels of February 7, 2018.

RM-3 is a rebar that is left of the footpath along the transducer run. It is at elevation 7.263 feet gage height and 3,264.041 feet NAVD88, levels of February 7, 2018.

RM-4 is a sign rail on the right side of the footpath, near RM-1. It is at elevation 9.858 feet gage height, levels of February 7, 2018.

RP-1 is the top of the transducer pull box as found during the survey. It is at elevation 2.473 feet gage height, levels of February 7, 2018.

RP-2 is the sign rail securing the transducer conduit, left of the footpath. It is at elevation 5.608 feet gage height, levels of February 7, 2018.

RP-3 is a chiseled 'X' on top of a rock about 15 feet to the right of the transducer gage. It is at elevation 5.679 feet gage height, levels of February 7, 2018.

CHANNEL AND CONTROL – The channel at the gage site is natural and is heavily vegetated. The right bank of the channel is steep at about 30 degrees from top of bank to low flow of channel. The left half of the channel is less vegetated and relatively flat.

Low flow control is mostly non-existent. Higher flows up to about 7.5 feet are controlled by the main channel. Levels above 7.5 feet will spill into the left high flow channel. Some transitional flows with various controls occur between about 8 and 10 feet gage height. Above about 10 feet gage height, the entire channel is the control.

RATING – The most recent rating was developed from a survey of two cross sections, one at the gage and a second about 750 feet downstream. The cross sections were used in an HEC-RAS model. Additional cross sections were interpolated between the two. The model was run for various flows up to about 25,000 cfs which appears to be the channel

capacity before spilling into open flat overbank on the right. Higher discharge values compared well to the previous rating.

The previous rating is Rating #1, dated February 25, 2009. The rating was computed using a Manning evaluation. Channel geometry at the gage and channel slope from the USGS quadrangle was used. The lower end of the rating was revised following the January 2010 event to accommodate the change in the channel.

DISCHARGE MEASUREMENTS - Direct measurements would be difficult except for small flows. Indirect measurements also would be difficult due to heavy vegetation.

POINT OF ZERO FLOW - The low point in the gage cross section of the channel was found at 0.0 feet gage height, levels of February 7, 2018.

FLOODS – The largest flow recorded was 8,735 cfs at 11.24 feet gage height on August 19, 2014. .

REGULATION - There may be stock ponds located in the northern part of the watershed.

DIVERSIONS – Perhaps there are small diversion or storage for cattle watering.

ACCURACY - Poor

JUSTIFICATION - Monitor flows in Cave Creek for potential high runoff caused by the Cave Creek Complex fire in June 2005. Early warning for town of Cave Creek.

UPDATED - June 14, 2021
 DE Gardner