East Fork Cave Creek Basin #1
FCDMC Gage ID# 4648

Station Description

LOCATION – The gage is located along the north side of Beardsley Road at about 28th Street, or approximately 1/2 mile east of Cave Creek Road. The gage instrumentation is located at the outlet from the basin. Latitude N33° 40' 05", Longitude W 112° 01' 15". Located in the SE1/4 SE1/4 SW1/4 S26 T4N R3E in the Union Hills 7.5-minute quadrangle.

ESTABLISHMENT – The gage was installed on March 2, 1994.

DRAINAGE AREA – 1.18 mi^2

GAGE – The gage is a pressure transducer type instrument, located at 0.23 feet gage height, or 1,488.07 feet M.S.L., levels of July 23, 2002.

There is no visible staff gage at this location.

There are no crest gages at this location.

ZERO GAGE HEIGHT - Zero gage height is defined as the invert of the 48-inch culvert. Elevation 1,489.945 feet NAVD88.

HISTORY – No history prior to gage establishment. Gage was established on March 2, 1994. During a post-event survey on July 23, 2002, the transducer gage was found at elevation 0.23 feet gage height. There is no record of the PT being moved. The date of the PT move will be July 23, 2002. Also, a staff gage was found at the west wing wall of the outlet.

REFERENCE MARKS –

BM–4648 is an FCDMC brass cap located near the station tube. It is at elevation 5.505 feet gage height and 1,495.450 feet NAVD88, levels of December 22, 2015.

RM1 is a city of Phoenix brass tablet located at the intersection of Beardsley Road and 27th Place. Elevation 8.20 feet gage height, levels of March 11, 1994, or 1,496.04 feet M.S.L. This reference was not surveyed during the survey of December 22, 2015.

RP1 is the invert of the 48-inch outlet culvert. Elevation 0.000 feet gage height, as previously defined, and levels of December 22, 2015.

RP-2 is the top center of the headwall above the inlet. It is at elevation 5.987 feet gage height and 1,495.932 feet NAVD88, levels of December 22, 2015.

CHANNEL AND CONTROL – The principal outlets for this basin are a 48-inch diameter RCP and a 36-inch diameter RCP. The culvert lengths are both 124 feet. The emergency spillway for the basin is Beardsley Road at the primary outlet spilling southward into the East Fork Cave Creek channel.

PRINCIPAL OUTLET / AUXILLARY SPILLWAY –

The principal outlets are two culvert pipes. One culvert pipe is a 48-inch diameter RCP with inlet elevation of 0.00 feet gage height and outlet elevation of –0.10 feet gage height. The culvert length is 124 feet. A second culvert is a 36-inch diameter RCP with inlet elevation of 0.50 feet gage height and outlet elevation of –0.20 feet gage height. The culvert length is 124 feet.

The emergency spillway is Beardsley Road at the primary outlet. The crest elevation of Beardsley Road is at about 7.16 feet gage height, or 1,497.11 feet NAVD88, levels of March 11, 1994,

Top of the basin is at approximately 9.1 feet gage height, or 1,499.05 feet NAVD88.

RATING – The current rating is Rating #1 developed by T. M. Donaldson in 1994. The rating was developed using HY-8 culvert analysis for the primary outlets. The 'spillway' has not been rated.

The current capacity rating is Rating #1 from the design.

DISCHARGE MEASUREMENTS – Discharge measurements would be difficult at this site. Several storm drain culverts enter the East Fork Cave Creek channel under Beardsley Road. A direct measurement could be made provided no inflows were coming from the three storm drain inlets.

POINT OF ZERO FLOW – The PZF is the inlet invert of the 48-inch culvert. Elevation 0.00 feet gage height, levels of December 22, 2015.

FLOODS / SIGNIFICANT IMPOUNDMENTS – An event occurred on July 14, 2002 with magnitude 3.92 feet and 21 acre-feet.

REGULATION – Natural flows in the wash are impeded by the basin.

DIVERSIONS – None known

ACCURACY – Good

JUSTIFICATION – Monitor levels in basin.

UPDATE – March 3, 2016
D E Gardner