ACDC AT 36TH STREET (CUDIA CITY WASH BASIN) FCD GAGE ID# 10007

STATION DESCRIPTION

LOCATION – The gage is located on the left bank of the sediment pool where Cudia City Wash enters the Arizona Canal Diversion Channel (ACDC) (start of ACDC.) The gage is northwest of the intersection of Camelback Road and 40th Street. Located at Latitude N 33° 30' 49.5"; Longitude W 111° 59' 58.9". Located in SE1/4 SE1/4 S13 T2N R3E in the Paradise Valley 7.5-minute USGS quad map.

ESTABLISHMENT – The gage was installed on February 24, 1994.

DRAINAGE AREA – 4.82 mi²

<u>GAGE</u> – The gage is a pressure transducer type instrument with the diaphragm at 1237.82 NAVD88 or 0.12 feet gage height relative to the culvert invert of the low flow sediment basin outlet at 0.00 feet gage height, 1237.70 NAVD88, levels of June 26, 2018

There is one staff gage, located near the transducer gage. It displays gage height levels, within 0.02 feet.

There are two crest gages at this location.

The lower crest gage pin is at elevation 1.92 feet gage height, levels of June 26, 2018.

The upper crest gage pin is at elevation 5.99 feet gage height, levels of June 26, 2018.

ZERO GAGE HEIGHT – Is defined as the invert of the inlet to the Arizona Canal Diversion Channel and the outlet of the Cudia City Wash basin. It is equivalent to 1,237.924 feet NAVD88, levels of June 26, 2018.

<u>HISTORY</u> – Gaging established on February 24, 1994. The two crest stage gages and the 0-5 foot enamel staff plate were installed in 1996.

REFERENCE MARKS

BM-10007 is an FCDMC brass cap located near the top of the left bank ramp into the basin. It is at elevation 12.806 feet gage height and 1,250.503 feet NAVD88, levels of June 26, 2018. It has coordinates Northing 914433.186, Easting 674698.881.

RM-1 is a Corps of Engineers brass tablet, COE Cudia #3, on north bank of basin. Previously, it was given as elevation 1,251.58 feet MSL or 15.63 feet gage height. It was not located during the survey of June 26, 2018.

RM-2 is a chiseled 'X' on top of the upstream principal outlet box. It is at elevation 3.996 feet gage height and 1,241.693 feet NAVD88, levels of June 26, 2018.

RM-3 is a chiseled 'X' at the center of the weir. It is at elevation 7.028 feet gage height and 1,244.725 feet NAVD88, levels of June 26, 2018.

RM-4 is a chiseled 'X' on top of the outlet headwall, downstream of the weir. It is at elevation 3.475 feet gage height and 1,241.172 feet NAVD88, levels of June 26, 2018.

RP-1 is the invert on the inlet of the principal outlet of the basin. It is at elevation 0.00 feet gage height, and 1,237.697 feet NAVD88, levels of June 26, 2018.

RP-2 is the invert of the outlet of the principal outlet of the basin. It is at elevation -1.044 feet gage height and 1,236.653 feet NAVD88, levels of June 26, 2018.

RP-3 is the center of the invert of the inlet to the ACDC. It is at elevation -10.020 feet gage height and 1,227.677 feet NAVD88, levels of June 26, 2018.

RP-4 is the bolt on the lower CSG bracket on support post. It is at elevation 4.995 feet gage height, levels of June 26, 2018.

RP-5 is the ground at the transducer gage as found on June 26, 2018. It is at elevation 0.000 feet gage height, levels of June 26, 2018.

<u>CHANNEL AND CONTROL</u> – The control is a 36-inch pipe up to approximately 7.00 feet gage height, after which flow begins over a 200-foot wide sharp-crested weir.

<u>RATING</u> – The current rating is Rating #2 and is dated October 1, 2017. The rating is a combination of an HY8 culvert analysis for culvert flows and an HEC-RAS analysis for the weir and channel flow. The HEC-RAS model was compared with an Ogee weir with weir coefficient of about 4.8, and the results were comparable.

DISCHARGE MEASUREMENTS – Generally not possible. Very difficult and dangerous for most or all flows.

POINT OF ZERO FLOW – The PZF is defined as the invert of the inlet of the principal outlet of the basin to the ACDC and is at elevation 0.00 feet gage height.

FLOODS – The peak discharge recorded to date was 919cfs at 7.89 feet gage height, and occurred on October 2, 2018.

<u>REGULATION</u> – The sediment basin regulates flows from Cudia City Wash into the Arizona Canal Diversion Channel.

DIVERSIONS – None known

ACCURACY - Fair

JUSTIFICATION – Monitor inflows into the upper ACDC.

UPDATEJanuary 21, 2021DE Gardner