

MARTINEZ WASH
FCD GAGE ID# 49507

STATION DESCRIPTION

LOCATION – The gage is located in Yavapai County approximately one mile upstream from the Scenic Loop Road crossing of the wash. The gage instrumentation is located on the left bank of the channel. Latitude N34° 01' 42.3", Longitude W112° 47' 30.5". Located in the NE1/4, NE1/4 S20, T8N R5W, in the Flores 7.5-minute quadrangle.

ESTABLISHMENT – November 23, 1994.

DRAINAGE AREA – 109.1 mi² via USGS Streamstats.

GAGE – The gage is a pressure transducer type located on the left bank of the channel approximately 1 mile upstream from Scenic Loop Road. The PT diaphragm is at 2.80 feet gage height, levels of September 25, 2002.

There are no staff gages at this location.

There are no crest gages at this location.

ZERO GAGE HEIGHT – Zero gage height is equal to 2,305.723 feet NAVD88. Zero gage height is also defined as a vertical point 2.80 feet below the pressure transducer as surveyed on September 6, 2017 and July 19, 2018.

HISTORY – Gage established on November 23, 1994. Due to significant channel degradation near the gage, the PT diaphragm was lowered 2.79 feet on August 31, 1999. Zero gage height datum also changed and was lowered 2.79 feet on August 31, 1999. PT raised 2.80 feet on July 10, 2002. A significant level loop survey of old and new references was done on September 6, 2017. The only common point among this and past level loop surveys is the pressure transducer. However, photographic evidence indicates the transducer housing was changed between 2006 and 2007 and may be up to 0.2 feet lower following the change. The gage station name was changed from Martinez 'Creek' to Martinez 'Wash' in 2022 to reflect the stream name as designated on USGS mapping. The 'Creek' designation is for the main watercourse upstream of the confluence with Antelope Creek.

REFERENCE MARKS –

BM-7013 is an FCDMC brass cap located high on the ledge near the station tube. It is at elevation 38.915 feet gage height and 2,344.638 feet NAVD88, levels of September 6, 2017 and July 19, 2018.

RM-1 (XS1LB) is an FCDMC brass cap located along the left bank downstream of the gage. It is at elevation 14.108 feet gage height and 2,319.831 feet NAVD88, levels of September 6, 2017 and July 19, 2018.

RM-2 (XS2LB) is an FCDMC brass cap located along the left bank downstream of the gage. It is at elevation 7.268 feet gage height and 2,312.991 feet NAVD88, levels of September 6, 2017 and July 19, 2018.

RM-3 (XS3LB) is an FCDMC brass cap located along the left bank downstream of the gage. It is at elevation 5.937 feet gage height and 2,311.660 feet NAVD88, levels of September 6, 2017 and July 19, 2018.

RM-R is a rebar located on the left bank about 50 feet downstream of the transducer gage. Elevation is 12.306 feet gage height and 2,318.029 feet NAVD88, levels of September 6, 2017 and July 19, 2018.

RM-X is a chiseled 'X' on a large rock on the left bank of a cross section about 500 feet upstream from the transducer gage. It is at elevation 18.495 feet gage height and 2,324.218 feet NAV88, levels of September 6, 2017. Previous Station Descriptions referred to this reference as "RP-1".

RM-Y is a rebar on the left bank of a cross section about 500 feet upstream of the transducer gage. It is at elevation 13.494 feet gage height and 2,319.217 feet NAVD88, levels of September 6, 2017.

RM-Z is a nail at the right bank rock outcrop of the cross section upstream about 500 feet from the transducer gage. It is at elevation 9.380 feet gage height and 2,315.103 feet NAVD88, levels of September 6, 2017.

RP-2 is the upper right bolt at the pressure transducer housing. It is at elevation 3.409 feet gage height, levels of September 6, 2017.

RP-3 is bolt approximately 2 feet left of the transducer housing. It is at elevation 2.507 feet gage height, levels of September 6, 2017.

RP-4 is a large nail located in the rock above the transducer. It is at elevation 7.297 feet gage height, levels of September 6, 2017.

Past References:

RM-MRTNZ – Formerly known as RM1. Metal pipe end located near the gage standpipe, up on the high ledge above the channel. Originally the monument was given an arbitrary

elevation of 1000.00 feet, and is equal to 38.82 feet gage height. Elevation is 2,344.63 feet NAVD88; Northing 1102822.974 feet; Easting 434796.967 feet.

RM-B – A bolt with a blue FCD tag attached to the PT conduit on channel wall. Arbitrary elevation of 964.66 feet, gage height elevation of 3.48 feet, and NAVD88 elevation of 2,309.29 feet, levels of August 31, 1999.

CHANNEL AND CONTROL – The channel is best described as a sand channel at the gage as well as up- and downstream. Cobbles exist, but are not prevalent. The channel makes a 90 degree turn at the gage location. For low flows < 1000 cfs, the channel is probably in control. Once flows get above 1000 cfs (?) the flow probably follows another path and doesn't necessarily stay within the main channel. High water marks indicate that water "piles up" against the rock wall where the gage is situated.

RATING – The current rating is Rating #6, developed from an HEC-RAS model of 5 surveyed cross sections, surveyed in February 2020. The data were used, along with interpolated cross sections to develop a rating. The channel is steep and spreads greatly as it flows downstream from the gage cross section. Significant channel changes can occur, and because of the sensor location, reported stage values can be inaccurate.

The current rating is Rating #5. It was developed to reflect the movement of the pressure transducer and the aggradation of the channel. Only the low end of the rating was affected. Flows above about 7 feet gage height are not impacted. Because the channel changes following each flow event, the rating is reevaluated after each event. The flow below 3,000 cfs is estimated. Rating #4 is based on a slope conveyance for an event of June 20, 2000 and a slope area computation for an event of August 1, 2000. The low end of the rating was refined. At 8.9 feet gage height and above, no modification of rating #3 was made. Rating #3 was developed using survey data from the August 31, 1999 survey, a slope-area survey of August 2, 1999, and the upper portion of Rating #2.

DISCHARGE MEASUREMENTS – Direct measurements could be made downstream of the gage cross section where the large bend has straightened out. Indirect measurements for smaller flows could be done in that area also. A slope area indirect discharge measurement was done near the road following the July 25, 1999 event because the channel near the gage had changed so much.

POINT OF ZERO FLOW – The PZF is at about 2.4 feet gage height, levels of February 13, 2020.

FLOODS The peak discharge of record occurred on July 18, 2015 with a peak stage of 11.42 feet gage height and 10,562 cfs. Another peak occurred on August 29, 2013 with a peak stage of 13.62 feet gage height and 10,000 cfs.

REGULATION – None known

DIVERSIONS – None known

ACCURACY – Poor due to gage location and frequent degradation/aggradation cycles following most events.

JUSTIFICATION – Monitor flows in Martinez Creek for city of Wickenburg flood warning. City to close Scenic Loop Road and Rincon Road. Also, monitor input to the Hassayampa River about one mile upstream of confluence with Sols Wash.

UPDATE – March 6, 2024
D E Gardner