McMICKEN DAM AT BELL ROAD
FCD GAGE ID# 5443

STATION DESCRIPTION

LOCATION – The gage is located at the McMicken Dam crossing at Bell Road in Surprise, Arizona. The station is on the south side of Bell Road and is located within the left culvert crossing under Bell Road. Located in S03 T3N R2W and at Latitude N 33° 38' 17.4" and Longitude W 112° 27' 41.1" in the McMicken Dam 7.5-minute USGS quadrangle.

ESTABLISHMENT - The gage was installed on March 4, 2009.

DRAINAGE AREA – About 247 mi^2 at the outlet.

GAGE - The gage is a pressure transducer type instrument. The PT diaphragm is at gage height 0.35 feet, as found on May 28, 2014. Level valid beginning with water year 2014.

There is no crest stage gage at this location.

There are no staff gages at this site.

ZERO GAGE HEIGHT – Zero gage height is defined as 0.00 feet gage height, or the bottom floor of the upstream side of the culvert crossing of Bell Road.

HISTORY – No previous history at this location. Gaging established on March 4, 2009. PT raised, and made effective October 1, 2013.

REFERENCE MARKS

RP-1 is the ground at the PT. Elevation 0.00 feet gage height, levels of June 16, 2009.

RP-2 is the concrete at the center of the pier on the upstream side of the culvert crossing. Elevation 0.13 feet gage height, levels of June 16, 2009.

CHANNEL AND CONTROL – This gage location measures stage and predicts flow within the dam itself. It does not directly measure flow out of the dam.

The gage site is a culvert under Bell Road that conveys water from the impoundment area south of Bell Road north to the principal outlet approximately 3 miles north of Bell Road.

Several types of flow could be seen here. If an impoundment forms south of Bell Road, then water would flow through the culverts as streamflow. If a major impoundment occurred, water in the culvert would likely be measuring a level pool. However, the size of the principal outlet has a similar capacity to this culvert which may keep water in continuous flow. Under extreme hydrologic conditions, the pool may contain so much water that the culvert would operate under pressure flow. Most likely, the flow through the culvert will mimic open channel flow.

There is no control for flows under a foot or so. At some level, the culvert mimics an engineered channel and it is the control.

RATING – The current rating is Rating #1, dated March 4, 2009. The rating is a Manning solution using surveyed slope and channel geometry. The flow mimics open channel flow.

DISCHARGE MEASUREMENTS – Direct measurements may be difficult to obtain.

POINT OF ZERO FLOW - The low point in the gage cross section of the channel was found at 0.00 feet gage height, levels of June 16, 2009.

FLOODS – No floods recorded since installation.

REGULATION – The dam is a regulation of normal drainage.

DIVERSIONS - None known

ACCURACY - Fair

JUSTIFICATION – Monitor flow and level at this location for Dam Safety Group.

UPDATED - July 2, 2014
DE Gardner