

**WHITE TANKS FRS #3
FCD GAGE ID #5418**

STATION DESCRIPTION

LOCATION – The structure is located north of the Bethany Home Road alignment and west of the Beardsley Canal. The gage is near the southeast corner of the structure. Latitude N 33° 31' 59.1", Longitude W 112° 28' 18.7". Located in the SE1/4 NW1/4 S09 T2N R2W in the Waddell 7.5-minute quadrangle.

ESTABLISHMENT – March 12, 1986.

DRAINAGE AREA – 20.5 mi²

GAGE – The gage is a pressure transducer type instrument. The PT is at gage height 1.50 feet, or 1,192.50 feet NAVD 1988.

There are several staff gages located at the principal outlet. The gages are 5-foot staffs located along the upstream slope of the dam. There is a 0 – 5 foot range, 5 – 10 foot range, 10 – 15 foot range, 15 – 20 foot range, 20 – 25 foot range. The gages read directly in gage height. Additionally, there is a staff gage painted on the top outlet control structure near the top of the dam, that has a range from 25 – 27 feet.

There are no crest gages at this location.

ZERO GAGE HEIGHT - Zero gage height is defined as the lip of the invert of the gated inlet in the principal outlet. Elevation is 1,191.00 feet NAVD 1988.

HISTORY – The pressure transducer was moved March 10, 1992 to 1,190.07 feet MSL = 0.00 feet gage height. The previous PT elevation is not known for certain. From the first capacity table, it appears that the elevation was 1,186.60 feet MSL (which was 0.00 feet gage height prior to March 10, 1992.) The spillway minimum was lowered approximately 3 feet in 2002 to provide for the 4-foot freeboard requirement of ADWR. Settling in the dam crest forced the need to lower the spillway crest. Level gage was removed for dam reconstruction in December 2005. Station was moved and reinstalled at the new outlet works on June 18, 2008. The three old outlets were removed. A new principal outlet with an 18-inch gated inlet was built during the dam reconstruction. The PT was moved to a spot near the northeast corner of the outlet on November 14, 2013. As a result of the construction and move of the principal outlet, zero gage height was redefined, as of November 14, 2013, to the lip of the inlet in the outlet structure. Staff gages were installed at the principal outlet in the spring of 2014. With the installation of the staff gages, zero gage height was adjusted from 1190.900 feet NAVD88 to 1191.000 feet NAVD88.

REFERENCE MARKS –

PSI-01 is a chiseled X on the top of the east most bypass outlet. It has a GPS surveyed elevation of 1,202.532 feet NAVD 1988. This point is surveyed at 11.510 feet gage height, levels of June 19, 2014.

PSI-02 is a chiseled X on top of the west bypass outlet. It has a GPS surveyed elevation of 1,202.501 feet NAVD 1988. This point is surveyed at 11.516 feet gage height, levels of June 19, 2014.

PSI-03 is a chiseled X on top of the outlet structure. It has a GPS surveyed elevation of 1,204.652 feet NAVD 1988. This point is surveyed at 13.639 feet gage height, levels of June 19, 2014.

PSI-04 is a chiseled X on top of the outlet structure. It has a GPS surveyed elevation of 1,204.610 feet NAVD 1988. This point is surveyed at 13.610 feet gage height, levels of June 19, 2014.

CHANNEL AND CONTROL – There is a gated 18-inch pipe located at the intake tower. The lip of the gated inlet is at elevation 0.00 feet gage height, or 1,191.00 feet NAVD 1988. There is one uncontrolled primary outlet at this structure. It is currently blocked by steel plates. The elevation of this outlet is 9.00 feet gage height, or 1,200.00 feet NAVD 1988. There are two identical gated bypass outlets near the primary outlet. The left gated bypass outlet has a separate outlet pipe from the principal outlet. The right gated outlet is a bypass outlet connected to the principal spillway. Both the gated outlet spillway and the primary spillway are 48-inch metal conduit pipes. The inlet elevation for both gated bypass outlets is 6.00 feet gage height, or 1,197.00 feet NAVD 1988.

PRIMARY / AUXILIARY OUTLET –

The primary outlet is a gated, 18-inch pipe located on the north side of the inlet to the outlet structure. The lip of the inlet is at elevation 1,191.00 feet NAVD 1988, or 0.00 feet gate height. There is an uncontrolled inlet at elevation 1,200.00 feet NAVD 1988, or 9.00 feet gage height. The uncontrolled outlet is currently blocked (as of 11/21/13). There are two gated bypass outlets near the principal outlet. The left outlet has its own 48-inch culvert. The right outlet is a bypass for the principal outlet. The principal spillway culvert is a 48-inch concrete pipe. Both gated inlets are at elevation 6.0 feet gage height, or 1,197.0 feet NAVD 1988.

The auxiliary spillway is at about 21.0 feet gage height or 1,212.0 feet NAVD 1988.

The top of the dam elevation is approximately 27.0 feet gage height or 1,218.0 feet NAVD 1988.

RATING –

The current outflow rating is rating #3 and is from Design Report Volume One, by URS Corporation. This rating is for the gated outlet and the bypass outlet and the spillway before reconstruction. Rating updated with new information from a February 2011 Emergency Action Plan.

The current capacity rating is rating #4 developed by URS and based on the new spillway configuration. It will be effective as of March 1, 2011. Previous rating (#3) was developed from DTM in 1996. Rating #3 is effective from October 1, 1996 to present. Rating #2 was developed from rating #1. Rating #1 was developed from the White Tanks ADMS in 1989. Rating #2 modified rating #1 to account for the change in datum of the stage gage. There was no net change between rating 1 and 2.

DISCHARGE MEASUREMENTS – Outlets could be measured by current meter. Spillway could be measured by wading for low flows.

POINT OF ZERO FLOW - The point where flow begins over the lip of the gated outlet in the principal outlet structure. Elevation 0.00 feet gage height.

FLOODS – None

REGULATION – The gated outlets regulate flow from the structure. Gates are usually closed and opened manually by FCDMC O&M personnel.

DIVERSIONS – None

ACCURACY – Fair to Good

JUSTIFICATION – Monitor levels in White Tanks #3 FRS for public safety.

UPDATED – July 8, 2014
D E Gardner