

# 11416000 BOWMAN-SPAULDING CN INTAKE NR GRANITEVILLE CA

Updated 11-19-16 by J Erickson.

**LOCATION.**--Lat 39°26'26", long 120°39'30" referenced to North American Datum of 1927, Nevada County, CA, Hydrologic Unit 18020125, Tahoe National Forest on left bank 0.6 mi downstream from Bowman Dam, 4.2 mi east of Graniteville, and 8.5 mi south of Sierra City.

**ROAD LOG.**--0 - Start at Junction of Interstate 80 and Hwy 20 about 25 miles west of Truckee. Take Hwy 20 towards Nevada City.

3.6 - Cross Drum Canal.

4.0 - Turn right on Bowman Lake road.

7.6 - Approaching Fuller Lake on right, continue on paved road.

12.8 - Pavement ends near at Loney Meadow turnoff , continue straight on gravel road.

17.4 - Turn right on right bank levee of Bowman Spaulding Canal.

Drive 0.15 mi to measuring bridge and gage on canal.

Water-stage recorder in 8' block shelter on right bank.

**ESTABLISHMENT AND HISTORY.**--June 28, 1927 by Nevada Irrigation District at site 0.3 mi upstream. Station rebuilt by USGS July 1, 1965. Station and canal rebuilt by Nevada Irrigation District June 2016 and the CMP gage was replaced by concrete well and block house, located on the right side of the canal.

**GAGE.**--Float operated Design Analysis encoder and a Design Analysis H-500 XL datalogger connected to a Design Analysis H-222 DASE GOES satellite transmitter and a Tele Design radio, housed in concrete well and shelter on right bank. Gel cell battery with solar panel supplies power. Measuring bridge is located 10ft downstream from gage. The canal and gage were reconstructed in June, 2016.

Outside gage, is vertical staff opposite of gage well; limits 0 to 6.74 ft.

The inside staff the well is enamel with limits from 0 to 6.74 feet.

The PZF is -0.01 feet, however the GZF is 0.75 until a new hole can be drilled at a lower level. Both intakes are horizontal, not vertical at 0.75'.

Tape float drive with index.

Outside staff reads 0.07 ft low until it can be moved. Inside staff reads 0.13 ft low until it can be moved. Well tape down point is 8.081', a 12.25 ft measuring section and 8 ft house. Gage height of bottom of well 0.096 ft; top of instrument shelf 3.8 ft; top of house walls 10.0 ft.

Intakes	Size	Length	At Well	Out end	Device on end
No. 1	2"	1.0	0.75	0.75	Conduit through concrete
No. 2	2"	1.0	0.75	0.75	Conduit through concrete

Flushing system - none.

Gage is occasionally broken into.

Datum of gage is 5,390.39 ft above mean sea level.

**CONTROL.**—All flows, rectangular section, canal banks and channel. Some shifting is due to algae growth and rocks in channel. The canal and gage were reconstructed in June, 2016.

**DISCHARGE MEASUREMENTS.**—Make wading measurements at the bridge. The stationing is marked on the upstream side of the measuring bridge at 0.5 foot increments. High water measurements made from bridge. Use gage height for depths. Accuracy of discharge measurements should be good. There is a 50 C weight, special bridge boom and wading rod stored in the gage house for making discharge measurements. I.P. is left bank. Bridge marked each 0.50 ft.

#### CHANNEL CONDITIONS AT BRIDGE

Channel is a rectangular concrete section. One channel all stages. Use gage height as depth. Flow is fast at all stages. Horizontal angle corrections - none.

**POINT OR GAGE HEIGHT OF ZERO FLOW.**— 0.00 ft 6-27-16.

**WINTER FLOW.**—Rarely ice affected.

**REGULATION AND DIVERSIONS.**—Flow regulated by Bowman Dam.

Water is diverted to Bowman Lake from the Middle Yuba River via the Milton-Bowman tunnel.

**ACCURACY.**—Good.

**COOPERATION.**—Nevada Irrigation District operates this site. USGS reviews and publishes the data.

**JUSTIFICATION.**—Required under FERC license 2266 to record diversion from Bowman Lake to Spaulding Lake.

**MAP.**—Graniteville, 7 /2 minute.

#### REFERENCE MARKS.— Start levels at RM 2

RM 1 (Moved during construction of the new canal and gage June, 2016 and relocated as RM 10) is USGS brass tablet in left bank bridge abutment.

RM 2 is USGS brass tablet on left bank 54 ft upstream and 18 ft shoreward. Gage height, 8.637 ft. (Levels of 8-16-16).

RM 3 is rebar sticking up from gunite 3.1 ft shoreward and 4.6 ft upstream from measuring bridge. Gage height, 7.427 ft. (Levels of 8-8-13). DESTROYED 6/2016

RMs 4-8 were set up as temporary RMs incase RM2 was disturbed by the construction of the new gage and reconstructed canal.

RM 9 is a flat brass disc in the upstream left bank corner of the rectangular section, elevation 8.112 ft. (Established 6-27-2016, found 8.110 levels of 8/16/2016).

RM 10 is a USGS brass cap (formerly RM 1) in the left bank bridge step, elevation 8.099 (Established 6/27/2016, found 8.093 levels of 8/16/2016).

RM 11 is a carriage bolt in the left bank bridge step, near RM 10, elevation 8.389 (Established 8/16/2016).

Rm 12 is a carriage bolt in the right bank bridge step, elevation 8.433 ft. (Established 8/16/2016).

RM 13 is a flat brass disc on the right bank near railing, elevation 8.067 ft. (Established 8/16/2016).

RP for well elevation 8.081 ft. (Established 8/16/2016).

**QUALITY ASSURANCE PLAN.**--Make six to eight measurements. Read all reference gages, recorders and document them. Run levels every three to five years. These are MINIMUM requirements to ensure quality. More work may be needed as events dictate.

**LAND OWNERSHIP.**--Nevada Irrigation District.