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DEPT. OF NATURAL RESOURCES

Platte River near Shelton, Nebraska
00229300

LOCATION

Latitude and Longitude

40.71669 -98.74075

Road Log

Gage is located on Shelton Road approximately 0.40 miles south of the Interstate I-80 Exit 291 or approximately 4.50 miles south of Shelton, NE (US Highway 30) on the north (left) bank approximately 15 feet west (upstream) of the Shelton Road bridge.

Nearby Features

Platte River Recovery Program gage.

Equipment Details

Recording Gage

SUTRON CBS Flow meter connected to stream with an open-end orifice. A SATLINK DCP radio provides 1-hour data transmissions for near real time data retrieval. Instrument powered from 12-volt gel cell battery connected to solar panel. All equipment housed in a 3-foot x 2.5-foot box shelter on a pipe.

Real-time data accessed through the internet at https://nednr.nebraska.gov/RealTime

External Gage

Type-A Wire-Weight attached to the west (upstream) bridge rail. Elevation of 16.39 from levels dated April 23. 2018.

Bench Mark and Reference Marks

2009.057 ft. NGVD29 / 2009.890 ft. NAVD88.

R.M. No. 2 and R.P. #1 have been destroyed.

R.M. No. 1: X chiseled in concrete left downstream end of bridge. Elevation of 15.00 feet from levels dated 09/08/2015. (Origin)

Elevation of 15.00 feet from levels dated April 23, 2018. (Origin)

R.M. No. 3: X in left upstream steel guardrail post 6th from left end. Elevation of 17.17 feet from levels dated April 23. 2018.

R.M. No. 4: X in top of 7th steel downstream guardrail post 32 feet from the north (left) end. Elevation of 17.20 ft. from levels dated April 23. 2018.

Wire-Weight Check-Bar: Base reference gage on the upstream bridge rail with a Check-Bar elevation of 16.39 from levels dated April 23. 2018.

Hydrology

Drainage Area

Not established.

Channel and Control

There will be two channels at high stages, which is fairly straight for a considerable distance above and below the gage. At low and medium stages there will be several meandering channels with numerous sandbars separating flow. The streambed is composed of shifting sand with no stable control. Some diurnal fluctuation will occur as a result of the generating cycle of an upstream power plant.

Discharge Measurements

Wading measurements can be made in vicinity of gage. High flow measurements are made by cabling or hand lining from Highway Bridge. Low flow measurements will find the flow in many small channels separated by sandbars.

Floods

Highest measurement made was on July 10, 2019 with a discharge of 20,100 cubic feet per second with a 7.41 gage height.

Lowest measurement made was on September 5, 2013 with a discharge of 59.7 cubic feet per second with a 1.82 gage height.

Extremes for Period of Record

Not Determined.

Point of Zero Flow

Variable due to soft shifting streambed.

Winter Flow

Ice conditions expected to be severe during extended cold periods.

Regulation and Diversions

Flow is regulated by diversions and releases for irrigation and power.

Accuracy

Record can be considered fair to good except during ice conditions and equipment malfunctions which would constitute a poor accuracy rating.

Establishment and History

October 15, 2008 a 3-foot x 3-foot shelter containing a Teledyne ISCO 4230 Bubbler Flow Meter and referenced to a Staff Gage was installed. This site is a cooperative agreement between the State of Nebraska DNR and The Platter River recovery program.

February 18, 2016 replaced shelter to prepare for Sutron installation.

February 23, 2016 the ISCO equipment was removed and the Sutron CBS unit along with the SatLink DCP transmitter was installed.

December 13, 2016 the open end orifice line was switched to an orifice line in a sand point.

May 22, 2023 CF bubbler replaced with new bubbler due to some kind of malfunctioning.

Revision History

Original description prepared by: Andrew S. Leisy 08/01/2011

Revised by: S. Wright 07/17/2014

Revised by: J.A. Marburger 03/30/2017

Revised by: J.A. Marburger 03/18/2019

Revised by: K. Schwager 11/17/2023