NEBRASKA
Good Life. Great Water.
DEPT. OF NATURAL RESOURCES

Platte River near Maxwell, Nebraska
00228500

LOCATION

Latitude and Longitude

41.06182 -100.5253

Road Log

Lincoln County, on right bank 20 feet upstream of the Nebraska Highway S56A Bridge over the Platte River, and approximately 1 mile south of Maxwell, NE.

Equipment Details

Recording Gage

Sutron Accubar (CFB) unit along with the SatLink DCP transmitter installed. Recording equipment housed in a 5 feet x 5 feet x 8 feet pre-cut metal shelter on right upstream bank 21 feet west of state spur S56A highway bridge approximately 1mile south of Maxwell, Ne. Instrument connects to stream via either sand-point\open end orifice depending on conditions. This station is now on the real time status with 1-hour transmissions uploaded to the internet.

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

External Gage

Instrument referenced to a wire-weight gage attached to upstream bridge rail 40 feet north from corner of shelter. Elevation of wire-weight check bar is 18.79 feet 03/08/2018.

Bench Mark and Reference Marks

2693.827 FT NGVD29 / 2694.939 FT NAVD88 (04/16/2013 DNR Survey Crew)

R.M. #1: An X on top of cement Bridge rail 21 feet east of southeast corner of shelter with an elevation of 19.62 feet by levels dated 10/02/2013 NAVD88 determination and 10/02/2013 **(ORIGIN).**

R.M. #2: An X on downstream wing wall 56 feet east of Northeast corner of shelter with an elevation of 17.13 feet by levels dated 03/08/2018.

R.M. #3: An X on downstream top of bridge rail 56 feet east of Northeast corner of shelter and 145 feet north with an elevation 20.03 feet by levels dated 03/08/2018.

(AR2428)BM 15-23: Established April 16, 2013 with an elevation of 2712.655 feet. NAVD88/2711.543 feet NGVD29 (17.716 feet above Gage Datum) by the DNR Survey Crew a chiseled square with a punched mark in the center located on the bridge deck 176.0 feet north from the south end of the bridge deck and 2.1 feet east from the west bridge railing by the Wire-Weight.

Elevation 17.72 feet levels dated 03/08/2018.

Wire-Weight Check-Bar: On the upstream side of bridge rail 21 feet east of southeast corner of shelter and 145 ft. north with a Check-Bar elevation of 18.79 feet by levels 03/08/2018.

Hydrology

Drainage Area

56,200 square mile, approximately.

Channel and Control

Flow approaches the gage at an angle; however, the highway bridge causes the angels to lessen on downstream side of the bridge. Banks are low and covered with heavy brush and tree growth. Small islands and sandbars will form during low flows. Terrain adjacent to the stream is gentle sloping farmland. Streambed composed of fine silt and sand and subject to moderate shifting. Considerable stage fluctuation expected during summer months owing to the large canal diversion 12 miles upstream. Channel control will prevail under most conditions.

Discharge Measurements

At low stage, measurements made by wading the channel or multiple channels a short distance either above or below the gage. Medium and high flows measured from the downstream side of the bridge at the gage. Bridge rail is marked at 10-foot intervals with the initial point on the left bridge abutment.

Floods

Maximum discharge recorded 16,400 cubic feet per second on September 23, 2013.

Extremes for Period of Record

Peak discharge 16,400 cubic feet per second on September 23, 2013, gage height 10.79 feet; minimum daily discharge 0.00 cubic feet per second September 18, 2013.

Point of Zero Flow

Variable with the shifting-sand channel. PZF 3.50 feet September 4, 2018.

Winter Flow

Backwater from ice occurs during most winters. High flows can be expected May thru September as result of releases from Lake McConaughy for downstream irrigation demand. Environment Account (EA) releases from Lake McConaughy will also increase flows anytime from February through the irrigation season.

Regulation and Diversions

Natural flow of stream affected by trans mountain diversion, storage reservoir, power developments, diversions, and ground-water withdrawals for irrigation and return flow from irrigated areas.

Accuracy

The stage-discharge relation is subject to moderate shifting but good records expected with bi-weekly measurements, good gage-height record, and additional measurements during high-water periods. Ice conditions expected to be severe during extended cold periods, producing poor results.

Establishment and History

On April 20, 1999, an ISCO Model 4230 Bubbler Flow Meter enclosed in a 5 feet x 5 feet x 8 feet pre-cut metal shelter and a Wire-Weight gage installed with the Check-Bar elevation established at 19.07 ft. RM #1, #2, and #3 established using a staff located on the first pier on south end of bridge as the origin.

On March 13, 2001, the Wire-Weight relocated due to channel change with a change in Check-Bar elevation from 19.07 ft. to 18.83 ft.

On October 17, 2006, the Wire-Weight was relocated on the upstream side of bridge rail 45 feet east of southeast corner of shelter and 40 feet north with a change in Check-Bar elevation from 18.83 ft. to 19.21 ft..

On April 16, 2013, DNR Survey Crew established a surveyed Gage Datum of 2693.827 FT NGVD29 / 2694.939 FT NAVD88. Previous Gage Datum documented as 2700 FT NGVD29 acquired from topographic map Maxwell Quadrangle, 7.5-minute series, U.S. Department of Interior, Geological Survey.

On January 27, 2015, the Wire Weight was repaired and remounted after being hit and damaged. Levels run to re-establish the check bar elevation. New check bar elevation is now 20.12.

On February 25, 2016, the ISCO equipment removed and the Sutron Accubar Constant Flow Bubbler (CFB) unit along with the SatLink DCP transmitter installed.

Revision History

Original Description Prepared by: J.C. Retchless 09/01/2000

Revised by: J.C. Retchless 11/09/2001

Revised by: J.C. Retchless 10/09/2002

Revised by: J.C. Retchless 01/19/2004

Revised by: J.C. Retchless 09/14/2005

Revised by: A.S. Leisy 05/13/2010

Revised by: A.S. Leisy 08/01/2011

Revised by: S. Wright 05/28/2014

Revised by: S. Figuric 02/21/2016

Revised by: J A Marburger 03/20/2017

Revised by: J A Marburger 12/11/2017

Revised by: J A Marburger 02/25/2019