NEBRASKA
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DEPT. OF NATURAL RESOURCES

Platte River near Odessa, Nebraska
06770000

LOCATION

Latitude and Longitude

40.6649, -99.25595

Road Log

Located on right bank 15 feet downstream of Odessa Rd bridge. 2.5 mi (4.0 km) south of Odessa or 0.75 mi south of I-80 and 5 mi (8 km) downstream from Elm Creek.

Equipment Details

Recording Gage

Sutron CBS recorder equipment connected to the stream thru a sand point orifice. Instrument housed in a 5'x 5' x 8' pre-cut metal shelter.

External Gage

Instrument is referenced to water surface with a wire-weight gage located on downstream side of bridge. Base gage is a Type A wire-weight.

Bench Mark and Reference Marks

PRESENT GAGE DATUM: 2195.067 ft. NGVD29 / 2195.923 ft. NAVD88.

R.M. No. 1, R.M. No. 2, R.M. No. 3, R.M. No. 4, R.M. No. 5: Destroyed

R.M. No. 6: is an "X" on bridge deck 20 feet downstream from right downstream end of bridge. Elevation of 15.27 ft. from levels dated 04/18/2018.

R.M. No. 7: is an "X" on top right downstream end of bridge rail. Elevation of 17.45 ft. from levels dated 04/18/2018. (ORIGIN)

R.M. No. 8: is an "X" on top right upstream end of bridge rail. Elevation of 17.58 ft. from levels dated 04/18/2018.

R.M. No. 9: is a bronze tablet in left downstream bridge rail. Elevation 17.46 feet from levels dated April 5, 1988. (Elevation 2212.527 ft. NGVD29, NE Dept. of Roads).

Wire-Weight Check-Bar: Elevation 17.69 feet to gage datum. By levels dated 04/18/2018

Hydrology

Drainage Area

58,100 sq. mi (160,839 km), approximately, of which about 53,300 sq. mi contributes directly to surface runoff. Revised March 1968.

Channel and Control

There will be one channel 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. Point of zero flow variable.

Discharge Measurements

Wading measurements can be made in vicinity of gage up to a stage of 4.50 feet. High flow measurements above 4.50 feet are made by cabling or hand lining from Highway Bridge. Low flow measurements will find the flow in many small channels separated by sandbars. Fair to poor results can be expected from measurements due to no stable low and medium stage control.

Extremes for Period of Record

Maximum discharge, 22,900 cfs June 29, 1983 (gage height, 7.82 ft present datum); maximum gage height, 7.94 June 10, 1995.
No flow for periods in each year prior to 1947 and in 1953 – 57, 1963.

Seasonal Flow

Flow is regulated by diversions and releases for irrigation and power. The Kearney Power and Irrigation Canal diverts about 5 miles above the gage, and the water used for power is returned to the river 14 miles below this gage.

Cooperation

Central Platte Natural Resources District.

Accuracy

Record during monthly measurement schedule is fair. Record during two-week measurement schedule for summer months also fair, but could be good if conditions are stable. Record for extremely low stages and ice effect cannot be considered better than poor.

Establishment and History

Established Dec. 30, 1936, by the State of Nebraska. A vertical enameled staff gage was attached to the downstream side of the first pier from the right bank. Records published by the State for period Dec. 30, 1936 to Oct. 7, 1938, referenced to this staff.

On Oct. 7, 1938, a continuous Stevens recorder was installed in a wooden look-in type shelter over an 18-inch corrugated metal pipe well attached to downstream side of first pier from the right bank. No change in datum made. An auxiliary chain gage was placed at the same location.

On Oct. 22, 1942, the gage datum was lowered 1.00 foot.

On July 24, 1984 a Sta-Com manometer installed in a 5'x 5' x 8' pre-cut metal shelter 1500 feet downstream from bridge on right bank. Manometer referenced to water-surface by an outside staff gage in stream near orifice.

Datum lowered 2.00 foot on July 24, 1984.

On April 5, 1988 a Wire-Weight gage was installed on downstream side of newly constructed county highway bridge.

On April 6, 1988 gage was moved 1500 feet upstream to right bank and 15 feet downstream from newly constructed county highway bridge. No change in datum.

On Sept. 28, 1993 a Fluid Data System G-2 Balance beam manometer replaced Sta-Com manometer.

On April 4, 1995 an ISCO Model 4230 Bubbler Flow Meter replaced Fluid Data System G-2 Balance Beam manometer, A-71 water-stage recorder and Handar data logger.

On Oct. 10, 2005 the Type A wire-weight (Base gage) was moved from the right downstream side to the center of the downstream bridge rail. The wire-weight check-bar elevation from levels changed from 16.95 ft. to 17.66 ft. above gage datum.

On Jan. 31, 2007 the Type A wire-weight's (Base gage) damaged bracket was repaired and the check-bar elevation from levels changed from 17.66 ft. to 17.69 ft. above gage datum.

On February 23, 2016 the ISCO equipment was removed and the Sutron CBS unit along with the SatLink DCP transmitter was installed. This station is now on the real time status with 1 hour transmissions being uploaded to the world.

Revision History

Original description prepared by: A. W. Hall and Robert Follansbee 12/20/1938

Revised by:	A. W. Hall and Robert Follansbee	04/10/1939
Revised by:	L. F. Hanks	12/01/1942
Revised by:	C. V. Burns	08/26/1952
Revised by:	J. W. Vassos	04/10/1979
Revised by:	J. W. Vassos	04/01/1985
Revised by:	J. W. Vassos	02/01/1989
Revised by:	J. W. Vassos	03/11/1994
Revised by:	J. W. Vassos	03/17/1996
Revised by:	J. C. Retchless	10/27/1999
Revised by:	J. C. Retchless	10/12/2001
Revised by:	J. C. Retchless	11/05/2002
Revised by:	J. C. Retchless	09/24/2003
Revised by: J	. C. Retchless	11/08/2005

Revised by:	Andrew S. Leisy	10/06/2009
Revised by:	S. Wright	03/01/2013
Revised by:	S. Wright	07/09/2014
Revised by:	S. Figuric	02/22/2017
Revised by:	T. Massey	12/21/2017
Revised by:	K. Schwager	03/11/2019
Reformatted by:	S. Figuric	03/12/2019