North Platte River at Lisco, Nebraska
06686000

LOCATION

Latitude and Longitude

41.4901, -102.6248

Road Log

Located on left bank 40 feet downstream of Road 151 bridge, 0.5 mile south of Lisco, NE.

Nearby Features

Equipment Details

Recording Gage

Sutron CBS recorder and satellite DCP station housed in a 5'x 5'x 8' pre-cut metal shelter on left bank 40 feet below Road 151 bridge; 0.5 mile south of Lisco NE. Instrument connects to water in stream with a sand point. Operation of orifice subject to change with river flows and changes in the channel.

External Gage

Instrument referenced to a wire-weight attached to downstream bridge rail 40 feet upstream from instrument. Elevation of wire-weight check bar is 14.60 feet.

Bench Mark and Reference Marks

R.M. No. 1 – 4 have been destroyed.

R.M. No. 5 is marked by a [] in bridge abutment 39.7 feet west of northeast corner of shelter. Elevation: 9.60 feet (gage datum). R.M. No. 5 was established on 10/31/1988 and serves as the origin. Elevation shot 9.60 as of 05/24/2018. Elevation shot 9.60 as of March 29, 2021. **Origin**

R.M. No. 6 is a standard bronze tablet on the northeast corner of shelter base. Elevation: 4.97 feet (gage datum). Elevation shot 4.98 on Levels run 05/24/2018. Elevation shot 4.98 on March 29, 2021.

R.M. No. 7 is a standard bronze tablet 39.5 feet north of door latch on shelter. Elevation: 4.97 feet (gage datum). Elevation not shot on Levels run 05/24/2018. Elevation not shot on Levels run March 29, 2021.

The NeDNR survey crew ran levels and established the gage datum to the North American Vertical Datum of 1988 on 06/01/2011. The gage datum elevation is 3,477.160 ft. NAVD 88 and 3,475.441 NGVD 29.

Datum of gage was 3,475.5 feet above National Geodetic Vertical Datum of 1929.

Wire-weight on downstream bridge rail 40 feet upstream from shelter. Elevation of check bar = 14.59 feet (gage datum). Elevation shot 14.59 on Levels run 05/24/2018. Elevation shot 14.59 on Levels run March 29, 2021.

Hydrology

Drainage Area

Approximately 26,700 mi².

Channel and Control

There are two channels at the bridge that merge into one channel about 150 feet downstream of the bridge. No well-defined control with the natural shifting-sand channel. The low banks are vertical and subject to overflow at stages above 4.5 feet.

Discharge Measurements

At low stage, measurements are made by wading the channel or a short distance below the gage. Medium and high flows are measured from the downstream side of the bridge at the gage. Bridge rail is marked at 5-foot intervals with the initial point on the left bridge abutment.

Floods

Maximum discharge: 20,100 cfs June 27, 29, 1917, from graph based on daily gage readings, from rating curve extended above 15,000 cfs. Highest flow since reservoir development began occurred on June 3, 1971, with a discharge of 13,200 cfs (gage height, 4.05 ft.) (at datum 1.0 ft. higher).

Extremes for Period of Record

Peak discharge 20,100 cubic feet per second June 27, 29 1917 from rating extended above 15.0 ft.

Minimum daily discharge 8 cubic feet per second August 4, 1934.

Point of Zero Flow

The point of zero flow is variable because of shifting-sands within the channel.

Seasonal Flow

Backwater from ice occurs during most winters. Highest flows can be expected in May and June as a result of rain events.

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 can be expected during open water periods with bi-weekly measurements, good gage-height record, and additional measurements during high-water events. Discharge record during ice periods should be considered poor.

Establishment and History

Staff gage was established by Bureau of Irrigation in April 1916 at site 600 feet south of left bridge abutment on downstream side of bridge pier. This gage was established at a different datum than is presently used. Only summer records were obtained until October 1917.

September 8, 1931 to May 3, 1932: A non-recording gage 600 feet south on downstream side of pier at datum 1.0 foot higher than present datum.

May 4, 1932 to May 28, 1974: Water-stage recorder 600 feet south on downstream side of bridge pier at datum 1.0 foot higher than present datum.

May 29, 1974 to October 31, 1988: Water-stage recorder 600 feet south on downstream side of bridge pier at present datum (3475.5 ft.)

November 1, 1988 to November 30, 1988: A-35 water-stage recorder in 5'x5'x8' precut metal shelter at present site.

December 1, 1988 to October 6, 1996: Leupold-Stevens data logger and A-35 water-stage recorder at present site.

October 7, 1996 to March 8, 2016: ISCO Model 4230 Bubbler Flow meter at present site.

March 8, 2016 the ISCO Model 4230 Bubbler Flow meter was removed from service and the gage was updated to a Sutron CBS recorder and satellite DCP station. The gage transmits data every hour to the world.

Revision History

Original Description Prepared by:	F.F.LeFever	09/06/1932
Revised by:	C.V.Burns	04/16/1952
	J.W.Vassos & G.G.Jamison	03/28/1973
	J.W.Vassos	11/15/1989
	J.W.Vassos	03/26/1996
	J.W.Vassos	11/12/1996
	J.W.Vassos	02/02/1998
	J.C.Retchless	10/01/1998
	J.C.Retchless	11/03/2000
	J.W.Vassos	10/11/2002

	J.W.Vassos	10/17/2003
	A.Leisy	08/01/2011
	T.J.Massey	02/28/2013
	P. J. Breitkreutz	04/11/2017
	J.A. Marburger	2/04/2017
	J. Nichols	02/26/2019
Reformatted by:	S. Figuric	03/04/2019
	K.Schwager	11/02/2021