

Republican River at Riverton, NE 06851090

LOCATION

Latitude and Longitude

40.08907, -98.76485

Road Log

Gage is located on the West side of Riverton. The gage can be reached by driving on US Highway 136 to Main Street (aka County Road). Turn South on Main Street and travel 0.09 miles the gage is located on the West side of the road. 0.4 mile upstream from Thompson Creek located in Franklin County.

Nearby Features

The close proximity of Thompson Creek at Riverton will produce back water conditions depending on timing of events. Gage is 26 river miles downstream from Harlan County Dam

Equipment Details

Recording Gage

Sutron Constant Flow Bubbler (CFB) with SatLink satellite transmitter. The gage is also equipped with a tipping bucket rain gage (provided by the National Weather Service).

External Gage

The base gage consists of a wire weight attached to the downstream guardrail of the county road bridge at about the midpoint. Check bar reads 23.07 feet, gage datum. (May 31, 2017)

Bench Mark and Reference Marks

The datum of the gage is 1,749.768 feet above National Geodetic Vertical Datum of 1929 or 1,750.506 (NAVD88).

RM #2, #3, and #4: Destroyed.

BM-N-169: On the Burlington Northern Inc., one block east of the railroad station, at a street crossing, 54 feet north of the centerline of the track and 42 feet west of the centerline of the street. A standard disk stamped "N 169 1934" and set in the top of a concrete post. Elevation, 20.141 feet, gage datum. *This could not be located in 1988.*

RM #1: Chiseled square on top face of river end of concrete foundation for steel pier supporting Burlington Northern Inc. overpass near the left bank end of the highway bridge. Elevation, 16.23 feet, gage datum. (May 13, 2003)

RM #5: Brass tablet in the left upstream wing wall. Elevation 21.375 feet, gage datum. (6/23/21) origin.

RM #6: Brass tablet in the right downstream wing wall. Elevation 19.925 feet, gage datum. (6/23/21)

RM #7: Chiseled square on the downstream left wing wall. Elevation 21.395 feet (6/23/21)

RM #8: A chiseled square on the northeast corner of deck: 4 feet southwest from end and 3 feet northwest of edge. Elevation 21.415 feet, gage datum (6/23/21).

RM #9: A chiseled square on the southwest corner of deck: 4 feet northeast from end and 3 feet south east from edge. Elevation 20.04 feet, gage datum (6/23/21).

Wire weight check bar: Elevation 23.08 feet, gage datum (6/23/21).

Hydrology

Drainage Area

21,260 sq. miles, of which 14,020 sq. miles contributes directly to surface runoff.

Channel and Control

A gradual curve begins about 150 feet upstream from gage and continues for about 500 feet. The streambed is composed of fine shifting sand. Thompson Creek will produce backwater at the gage but generally channel control will prevail at the gage.

Discharge Measurements

Made by wading or from the bridge at the gage. Maximum wading stage is about 4.2 feet. Flood stage is about 9.0 feet., based on an inspection made on 3-8-62.

Floods

The flood of June 1, 1935, reached a stage of 19.0 feet, gage datum, as determined by a flood mark set one block west of the Burlington Northern Inc., depot at Riverton.

Extremes for Period of Record

Peak discharge 3,580 cubic feet per second May 5, 2007, gage height 9.62 feet; minimum daily discharge zero on August 27, 28, and September 1 - 22, 2004 and August 11, 2005.

Point of Zero Flow

Variable.

Winter Flow

Partial to complete ice cover depending on duration of cold temperatures.

Regulation and Diversions

Flow partially regulated by 7 upstream reservoirs with a total storage capacity of about 1,600,000 acre-feet.

There are 9 principle diversions the station for irrigation of about 86,000 acres. There are also numerous small diversions above the station.

Accuracy

Records are fair, except estimated records are poor.

Establishment and History

Non-recording gage established by the National Weather Service on March 8, 1962.

On June 25, 2002, State of Nebraska Department of Natural Resources installed a Sutron 8200 with pressure transducer and satellite telemetry in a 48" CMP gage house.

Installed Sutron Constant Flow Bubbler (CFB) with SatLink satellite transmitter.

November 10, 2015 the 48" CMP gage house was replaced with a 24" x 30" x 72" stainless steel, cabinet style gage house.

COOPERATION:

The US Army Corps. of Engineers has requested the establishment of a stage-discharge relation at the site and has asked for at least one discharge measurement each year, preferably on a peak or at least during a period of higher than low water runoff.

The Bureau of Reclamation provides the Sutron DCP equipment.

The National Weather Service provides a tipping bucket rain gage.

Revision History

Original description prepared May 1972 by E.W. Beckman

Revised 05-19-1988 by B.D Edgerton

Revised 04-24-2003 by D. Gunderson

Revised 12-11-2003 by J.A. Marburger

Revised 01-16-2007 by J.A. Marburger

Revised 12-08-2010 by J.A. Marburger

Revised 08-10-2015 by D. Gunderson

Revised 01-04-2017 by D. Gunderson

Revised 01-11-2018 by D. Gunderson

Revised 10-19-2021 by D. Gunderson