

Medicine Creek near Curtis, Nebraska 06839970

LOCATION

Latitude and Longitude

40.63213, -100.5678

Road Log

The gaging station is 2.3 miles west of Curtis, Nebraska in Frontier County along Highway 18 on the north side of the highway, on the right bank.

Nearby Features

There is a railroad-crossing half a mile west from gaging station on Hwy 23.

Equipment Details

Recording Gage

The gage consists of a Sutron Constant Flow Bubbler and a Sutron SatLink II logger/transmitter. A 24" x 30" x 72" stainless steel building was installed to house the equipment. The Constant Flow Bubbler is connected to the stream by a single bubble line that is routed through 1¼ inch plastic tubing and 1¼ inch galvanized pipe that ends with an open orifice near the right bank.

External Gage

Wire weight attached to the upstream guard rail of Highway 23 bridge.

Bench Mark and Reference Marks

RM *locations* were set by the Lincoln Survey Department but *elevations* were surveyed by Cambridge Field Office. Elevations are based on a gage datum of RM #1 set to 40.00 ft. NAVD 88 = 2606.971 ft.

RM #1 = Brass tablet in northeast (NE) guard rail. Elevation 40.00 feet, levels July 26, 2022 (Origin).

RM #2 = Tablet in northwest (NW) guard rail. Elevation 41.61 feet, levels July 26, 2022.

RM #3 = Tablet in southwest (SW) guard rail. Elevation 41.65 feet, levels July 26, 2022.

RM #4 = Tablet in southeast (SE) guard rail. Elevation 40.04 feet, levels July 26, 2022.

RM #5 = 4.0 ft. rebar with aluminum cap located near east end of the northeast (left-upstream) guardrail of State Highway 23 Bridge over Medicine Creek. 30.5 ft. north from the centerline of State Highway 23; 7.4 ft. east from east end of the northeast guardrail; 0.3 ft. below the surface of the ground. Elevation 37.24 feet, levels July 26, 2022.

RM #6 = 4.0 ft. rebar with a NeDNR aluminum cap, placed near the west end of the southwest (right-downstream) guardrail. 32.3 ft. south from centerline of State Highway 23; 11.6 ft. west from the west end of the southwest guardrail; 0.3 ft. below the surface of the ground. Capped re-bar located west. Elevation 41.04 feet, levels July 26, 2022.

Wire weight check bar elevation is 39.34 by levels July 26, 2022.

Hydrology

Drainage Area

248.4 square miles, contributing drainage area is 93.4 square miles.

Channel and Control

The creek channel is fairly straight for about 500 feet upstream with a couple slight curves. Downstream from the gage the creek channel is fairly straight for 220 feet with a slight curve until a 90° corner to the right. The banks are overgrown with grass, weeds, and woody vegetation. The creek bed is composed of mostly sand, gravel, and rocks with silt deposits on the edges.

When the creek is at low stage there is a rock ripple about 20 feet downstream of the open orifice. When the creek is at medium and high stages there is no well-defined control.

Discharge Measurements

Measurements of low and medium stages are made by wading in the vicinity of the gage and at high stages the measurements are made from the highway bridge.

Extremes for Period of Record

Peak discharge 274 cubic feet per second on March 14, 2019, gage height 8.97 feet; minimum daily discharge 9.92 cubic feet per second August 13, 2022.

Point of Zero Flow

Latest collected are next: 3.02 ft. August 2, 2017. 3.20 ft. August 3, 2016.

Winter Flow

Stage discharge will be affected by ice during periods of extremely cold weather. When N-CORPE wells are pumping and augmenting Medicine Creek flows, it is less likely that stream flow will be affected by ice.

Regulation and Diversions

N-CORPE regulates stream flow while wells are turned on. No diversions.

Accuracy

Records of stage are generally good. Open water records are good and records affected by ice are poor.

Establishment and History

At one time a gage was located at Maywood, Nebraska. The gage was operated by the U.S.G.S. from April 25, 1951 to September 30, 1958. The gaging site Medicine Creek at Maywood, Nebraska was gage station number 06839000.

Established July 15, 2014 by Nebraska Department of Natural Resources.

Revision History

April 7, 2016 Original Description by D. Gunderson

Revised 12/27/2017 by D. Gunderson

Revised 02/04/2019 by S. Figuric

Revised 11/21/2022 by D. Gunderson