06813500 Missouri River at Rulo, NE

Missouri-Nishnabotna Basin
Tarkio-Wolf Subbasin

LOCATION.--Lat 40°03′13″, long 95°25′19″ referenced to North American Datum of 1927, in NW ¼ NW ¼ sec.17, T.1 N., R.18 E., Richardson County, NE, Hydrologic Unit 10240005, on right bank on downstream side of bridge on U.S. Highway 159 in Rulo, 3.2 mi upstream from Big Nemaha River, and 498.0 mi upstream from mouth.

DRAINAGE AREA.--414,900 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge records from October 1949 to current year. Stage-only records collected at site 80 ft upstream from January 1886 to December 1899 in reports of Missouri River Commission, and from September 1929 to September 1950 in files of Kansas City office of the U.S. Army Corps of Engineers.

GAGE.--Water-stage recorder. Datum of gage is 837.23 ft above National Geodetic Vertical Datum of 1929. October 1, 1949, to September 12, 1950, non-recording gage at site 80 ft upstream at same datum; September 13, 1950, to April 19, 1983, water-stage recorder on downstream end of middle pier at same datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by upstream main-stem reservoirs. Fort Randall Dam was completed in July 1952, with storage beginning in December 1952. Gavins Point Dam was completed in July 1955, with storage beginning in December 1955. U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1881 reached a stage of 22.9 ft, from floodmark, discharge not determined.

EXTREMES FOR PERIOD PRIOR TO REGULATION.--Maximum discharge, 358,000 ft³/s, April 22, 1952, gage height, 25.60 ft.

Suggested citation: U.S. Geological Survey, 2013, Water-resources data for the United States, Water Year 2012: U.S. Geological Survey Water-Data Report WDR-US-2012, site 06813500, accessed at http://wdr.water.usgs.gov/wy2012/pdfs/06813500.2012.pdf

06813500 Missouri River at Rulo, NE—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	88,300	55,500	54,300	39,700	36,900	40,600	43,500	43,300	60,100	40,900	37,200	38,000
2	84,200	55,600	54,400	39,700	39,300	42,300	42,900	43,600	58,700	40,500	37,000	38,300
3	79,200	55,600	55,500	39,500	39,400	44,800	42,400	45,000	58,900	40,500	36,800	38,700
4	74,300	55,500	58,100	39,000	39,600	44,800	42,000	45,900	58,700	40,300	37,200	38,600
5	69,400	55,600	56,100	37,900	40,600	43,600	42,600	44,700	57,700	39,900	37,100	38,900
6	65,800	55,300	54,900	37,500	39,300	43,000	42,900	45,400	56,300	39,400	37,400	38,900
7	64,200	55,200	54,000	38,000	37,900	41,600	41,200	49,600	54,700	38,700	38,000	38,900
8	62,900	55,800	53,000	38,000	38,600	40,500	41,300	51,300	52,900	39,000	38,400	39,200
9	61,900	57,500	52,500	37,000	37,600	40,600	41,400	48,300	51,400	38,800	38,700	39,300
10	62,000	57,000	51,600	37,500	36,900	42,200	41,100	47,900	49,400	38,600	39,100	39,400
11	61,400	56,100	49,800	37,900	35,700	42,800	40,500	49,300	49,000	38,400	38,600	39,400
12	61,700	55,800	48,400	37,600	35,200	42,400	40,300	49,100	50,400	38,200	38,700	39,400
13	62,600	55,900	47,600	36,900	34,800	42,200	41,000	47,300	47,000	37,900	38,800	40,400
14	63,100	56,200	47,600	35,100	34,400	41,300	42,100	54,500	45,400	38,000	38,700	42,700
15	62,000	56,200	49,800	33,100	34,000	40,900	63,800	56,800	46,400	38,700	38,800	41,600
16	61,100	56,000	48,200	33,700	34,300	40,500	76,200	55,500	53,300	38,900	38,900	41,100
17	60,200	56,000	45,600	34,100	33,700	40,200	59,600	52,700	53,100	38,500	38,800	40,100
18	59,700	55,700	43,500	33,500	34,400	39,500	54,900	50,100	49,200	38,000	38,800	39,800
19	58,800	55,500	41,800	34,500	36,600	39,300	51,800	48,300	46,500	38,000	38,900	40,000
20	57,600	55,300	42,400	35,000	37,300	38,900	46,500	47,000	45,000	38,200	39,000	39,800
21	57,400	55,100	42,300	34,000	37,900	39,200	43,600	46,900	44,800	37,800	39,200	39,700
22	58,000	55,200	41,400	32,500	39,100	39,800	43,400	47,900	46,800	37,600	39,300	39,500
23	57,900	54,800	39,800	31,500	39,600	40,000	43,500	46,700	47,000	37,500	39,200	39,400
24	57,500	54,400	40,500	30,900	39,500	40,900	42,900	44,900	45,900	37,400	39,500	39,400
25	57,400	54,800	39,800	31,500	39,200	42,300	43,100	45,000	43,900	37,600	41,200	39,500
26	57,000	55,200	38,300	32,800	38,600	43,000	41,700	47,100	42,800	37,500	48,900	39,700
27	56,600	55,500	38,800	33,900	38,200	42,500	41,500	48,800	42,200	37,100	44,000	39,700
28	56,400	55,900	39,300	35,000	37,500	41,800	41,400	50,900	41,400	37,200	42,100	39,600
29	56,300	55,600	39,400	35,600	38,000	41,600	41,700	52,200	40,900	37,000	41,600	39,500
30	56,000	54,400	39,600	36,000	---	43,500	42,300	55,800	40,900	36,700	40,700	39,600
31	55,600	---	39,400	35,800	---	44,900	---	62,400	---	37,000	39,100	---
Total	1,946,500	1,668,200	1,447,700	1,104,700	1,084,100	1,291,500	1,363,100	1,524,200	1,480,700	1,189,800	1,219,700	1,188,100
Mean	62,790	55,610	46,700	35,640	37,380	41,660	45,440	49,170	49,360	38,380	39,350	39,600
Max	88,300	57,500	58,100	39,700	40,600	44,900	76,200	62,400	60,100	40,900	48,900	42,700
Min	55,600	54,400	38,300	30,900	33,700	38,900	40,300	43,300	40,900	36,700	36,800	38,000
Ac-ft	3,861,000	3,309,000	2,872,000	2,191,000	2,150,000	2,562,000	2,704,000	3,023,000	2,937,000	2,360,000	2,419,000	2,357,000
Cfsm	0.15	0.13	0.11	0.09	0.09	0.10	0.11	0.12	0.12	0.09	0.09	0.10
In.	0.17	0.15	0.13	0.10	0.10	0.12	0.12	0.14	0.13	0.11	0.11	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	44,220	39,940	27,340	23,260	28,700	41,000	50,590	52,510	59,300	52,980	46,800	45,370
Max	80,050	83,880	57,380	42,280	53,140	87,530	106,100	98,580	169,000	220,600	184,600	113,300
(WY)	(1998)	(1998)	(1998)	(1973)	(1997)	(2010)	(1997)	(2011)	(2011)	(2011)	(2011)	(2011)
Min	24,520	17,000	9,953	10,800	13,220	15,380	21,820	33,790	33,710	29,650	29,320	30,350
(WY)	(2007)	(1962)	(1956)	(1957)	(1957)	(1957)	(1957)	(1956)	(1956)	(2002)	(2003)	(2008)

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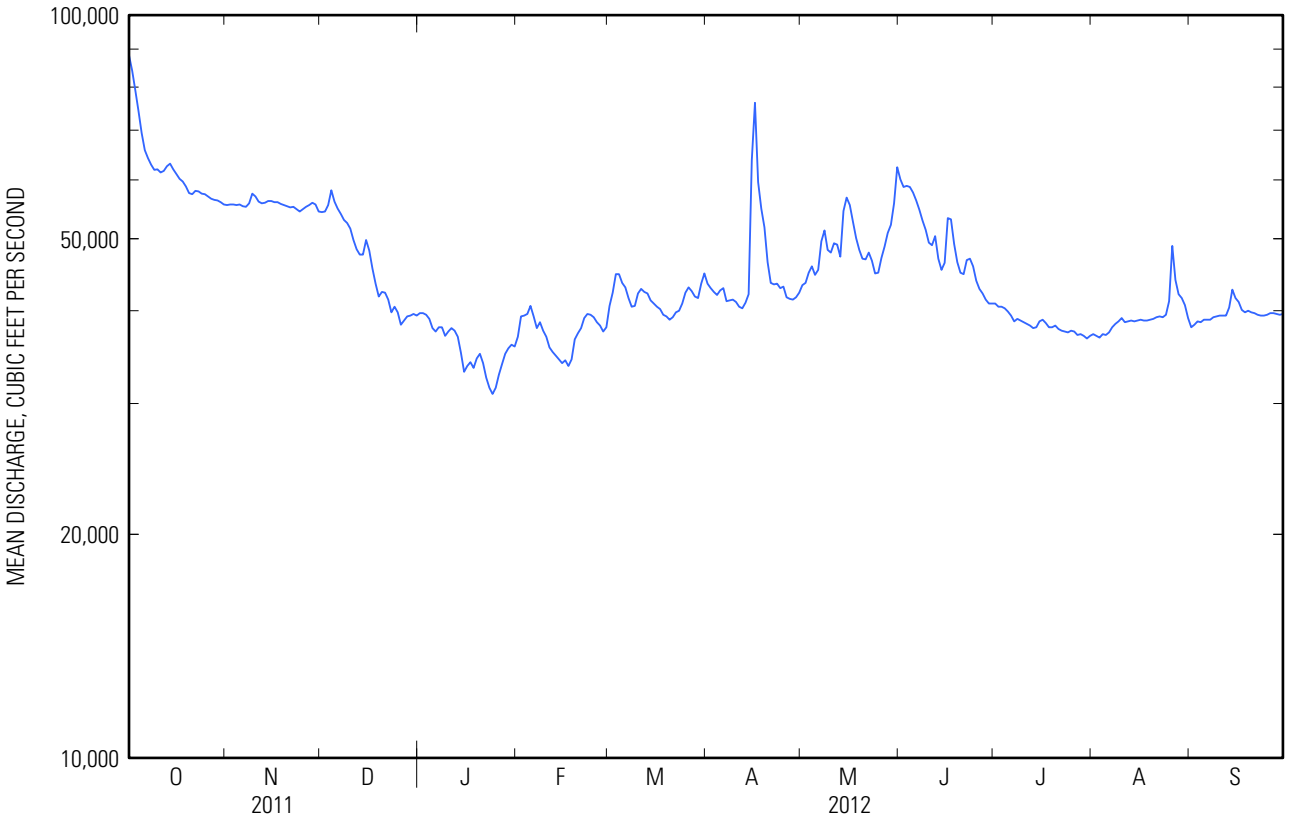
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1953 - 2012[a]	
Annual total	35,719,000		16,508,300			
Annual mean	97,860		45,100		42,700	
Highest annual mean					100,100	2011
Lowest annual mean					26,340	1957
Highest daily mean	302,000	Jun 27	88,300	Oct 1	302,000	Jun 27, 2011
Lowest daily mean	31,600	Jan 12	30,900	Jan 24	4,420	Jan 13, 1957
Annual seven-day minimum	32,400	Jan 8	32,400	Jan 21	5,560	Nov 30, 1955
Maximum peak flow			[b]84,000	Apr 15	328,000	Jun 27, 2011
Maximum peak stage			[b]17.06	Apr 15	27.26	Jun 27, 2011
Instantaneous low flow			30,800	Jan 24		
Annual runoff (ac-ft)	70,850,000		32,740,000		30,940,000	
Annual runoff (cfsm)	0.236		0.109		0.103	
Annual runoff (inches)	3.20		1.48		1.40	
10 percent exceeds	207,000		57,100		67,600	
50 percent exceeds	74,400		41,600		38,400	
90 percent exceeds	34,800		37,100		19,800	

[a] Post regulation.

[b] A flow of 90,300 ft³/s, gage height 17.96 ft, was recorded on Oct 1, 2011, on the recession from a peak flow of 328,000 ft³/s, gage height 27.26 ft, recorded on Jun 27, 2011, during the 2011 water year.



06813500 Missouri River at Rulo, NE—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 2008.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June to Septmeber 2012.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	---	---	---	---	---	---	---	---	---	28.5	29.0	26.4
2	---	---	---	---	---	---	---	---	---	28.8	29.1	26.7
3	---	---	---	---	---	---	---	---	---	29.2	29.7	27.1
4	---	---	---	---	---	---	---	---	---	28.9	29.7	27.1
5	---	---	---	---	---	---	---	---	---	28.9	29.0	27.2
6	---	---	---	---	---	---	---	---	---	29.6	28.5	26.7
7	---	---	---	---	---	---	---	---	---	30.1	28.4	25.9
8	---	---	---	---	---	---	---	---	---	30.1	28.3	24.7
9	---	---	---	---	---	---	---	---	---	29.6	27.9	24.1
10	---	---	---	---	---	---	---	---	---	29.2	27.7	23.4
11	---	---	---	---	---	---	---	---	---	29.2	27.6	22.9
12	---	---	---	---	---	---	---	---	---	29.1	27.4	22.6
13	---	---	---	---	---	---	---	---	---	28.9	26.6	21.6
14	---	---	---	---	---	---	---	---	---	29.0	25.8	20.8
15	---	---	---	---	---	---	---	---	---	29.3	25.6	20.7
16	---	---	---	---	---	---	---	---	23.4	29.2	25.2	20.9
17	---	---	---	---	---	---	---	---	23.1	29.2	24.7	20.5
18	---	---	---	---	---	---	---	---	23.9	29.5	24.7	20.3
19	---	---	---	---	---	---	---	---	25.1	29.9	24.2	20.1
20	---	---	---	---	---	---	---	---	25.8	30.1	24.0	20.2
21	---	---	---	---	---	---	---	---	25.5	30.1	23.9	20.1
22	---	---	---	---	---	---	---	---	25.7	30.2	24.2	19.5
23	---	---	---	---	---	---	---	---	25.5	30.1	24.0	18.8
24	---	---	---	---	---	---	---	---	25.8	30.1	24.2	18.7
25	---	---	---	---	---	---	---	---	26.2	29.9	24.0	18.8
26	---	---	---	---	---	---	---	---	26.6	30.0	23.8	18.9
27	---	---	---	---	---	---	---	---	27.0	30.4	24.7	18.5
28	---	---	---	---	---	---	---	---	27.7	30.0	25.5	18.5
29	---	---	---	---	---	---	---	---	28.5	29.3	25.9	18.6
30	---	---	---	---	---	---	---	---	28.8	29.2	26.0	18.9
31	---	---	---	---	---	---	---	---	---	28.9	26.3	---
Mean	---	---	---	---	---	---	---	---	---	29.5	26.3	22.0
Max	---	---	---	---	---	---	---	---	---	30.4	29.7	27.2
Min	---	---	---	---	---	---	---	---	---	28.5	23.8	18.5