

**05385000 ROOT RIVER NEAR HOUSTON, MN**

Upper Mississippi Basin  
Root Subbasin

LOCATION.--Lat 43°46'07", long 91°34'11" referenced to North American Datum of 1927, in SW ¼ NW ¼ sec.33, T.104 N., R.6 W., Houston County, MN, Hydrologic Unit 07040008, on right bank 0.2 mi north of Houston and 1.6 mi upstream from South Fork and 18.2 mi upstream from mouth.

DRAINAGE AREA.--1,250 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--May 1909 to September 1917, May to November 1929, March 1930 to 1983, 1991 to September 2000, January 2004 to September 2008, and October 2012 to present (daily-discharge record). Operated as high-flow partial-record station October 1983 to September 1990 and October 2000 to December 2003, and October 2008 to September 2012. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1508: 1911-12. WSP 1628: 1948(P).

GAGE.--Water-stage recorder. Datum of gage is 667.00 ft above sea level (NGVD of 1929). May 28, 1909 to Sept. 30, 1917, non-recording gage at site 1.3 mi downstream at different datum. May 4, 1929 to Sept. 27, 1933, non-recording gage and Sept. 28, 1933 to June 26, 1980, recording gage at site 0.9 mi upstream at datum 671.86 ft.

REMARKS.--Records good except for Dec. 18 to 24 which is fair, Dec. 25 to Apr. 15 which is poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,000 ft<sup>3</sup>/s (from rating curve extended above 28,000 ft<sup>3</sup>/s), Aug. 17, 2007, gage height, 18.15 ft (from highwater mark); maximum gage height, 18.32 ft, (backwater from ice, site located 0.9 miles upstream).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft<sup>3</sup>/s and (or) maximum (\*):

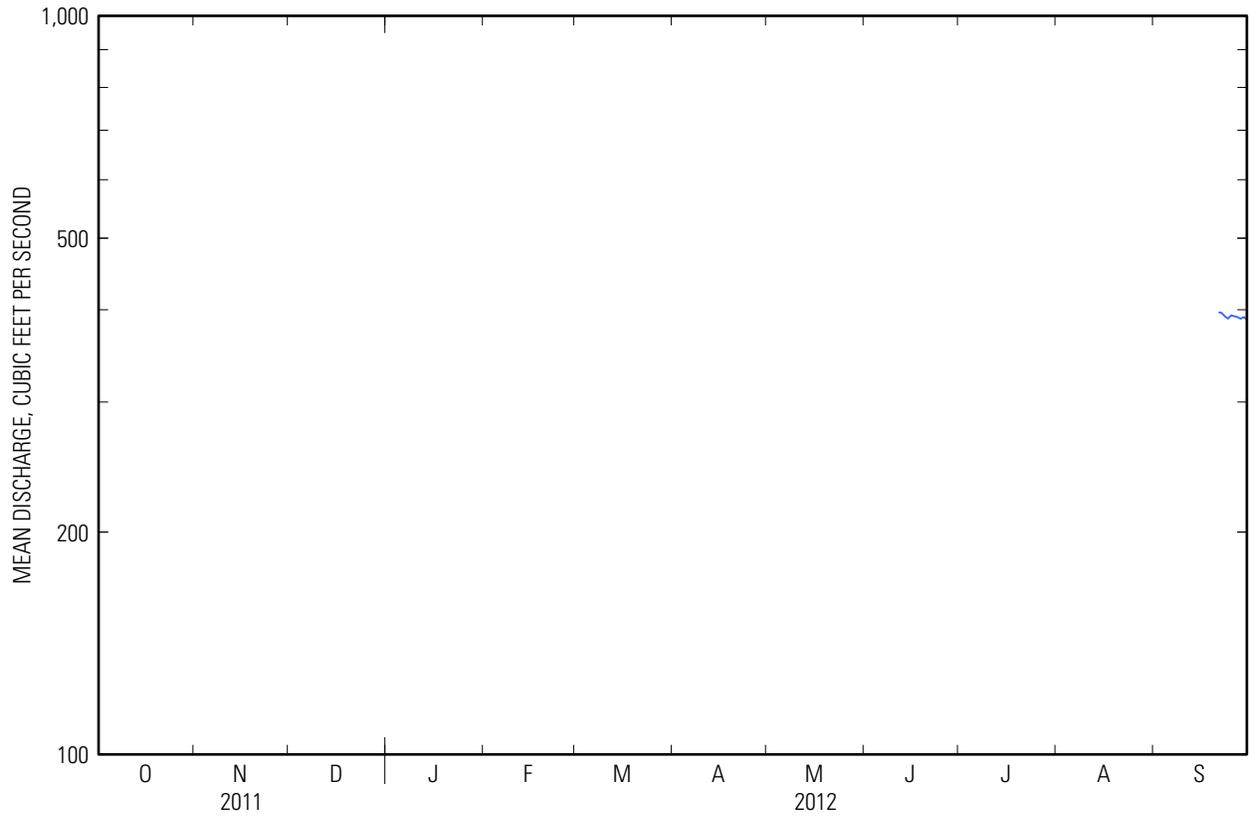
Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar 11	0945	4,440	8.65
Mar 31	1745	12,300	14.31
Apr 5	0730	7,910	11.66
Apr 7	1230	4,230	8.41
Apr 10	2215	8,750	12.23
Apr 15	1930	11,800	14.03
May 6	1445	6,530	10.52
May 21	1830	*22,800	*16.37
May 31	0415	9,240	12.45
Jun 23	1400	12,200	14.19

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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	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	397
22	---	---	---	---	---	---	---	---	---	---	---	396
23	---	---	---	---	---	---	---	---	---	---	---	392
24	---	---	---	---	---	---	---	---	---	---	---	389
25	---	---	---	---	---	---	---	---	---	---	---	393
26	---	---	---	---	---	---	---	---	---	---	---	392
27	---	---	---	---	---	---	---	---	---	---	---	391
28	---	---	---	---	---	---	---	---	---	---	---	389
29	---	---	---	---	---	---	---	---	---	---	---	391
30	---	---	---	---	---	---	---	---	---	---	---	388
31	---	---	---	---	---	---	---	---	---	---	---	---
<b>Total</b>	---	---	---	---	---	---	---	---	---	---	---	---
<b>Mean</b>	---	---	---	---	---	---	---	---	---	---	---	---
<b>Max</b>	---	---	---	---	---	---	---	---	---	---	---	---
<b>Min</b>	---	---	---	---	---	---	---	---	---	---	---	---
<b>Ac-ft</b>	---	---	---	---	---	---	---	---	---	---	---	---
<b>Cfsm</b>	---	---	---	---	---	---	---	---	---	---	---	---
<b>In.</b>	---	---	---	---	---	---	---	---	---	---	---	---

**05385000 ROOT RIVER NEAR HOUSTON, MN—Continued**



## 05385000 ROOT RIVER NEAR HOUSTON, MN—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	388	426	390	e312	e377	e316	8,810	1,350	5,700	2,550	1,010	653
2	388	422	386	e304	e342	e304	4,050	1,450	6,700	2,360	991	642
3	387	419	384	e302	e326	e321	3,050	1,860	4,320	2,170	970	634
4	386	411	382	e297	e323	e319	4,410	2,360	3,500	2,020	943	628
5	378	408	375	e297	e323	e299	6,760	3,860	3,150	1,880	953	625
6	371	414	377	e321	e325	e302	3,790	6,370	2,940	1,760	960	621
7	368	417	381	e305	e328	e303	3,660	5,560	2,720	1,660	944	616
8	371	410	376	e291	e328	e307	2,430	3,740	2,520	1,580	910	608
9	383	407	384	e290	e312	e323	2,380	2,980	2,350	1,530	884	603
10	391	407	391	e312	e334	e665	6,340	2,840	2,250	1,490	864	602
11	384	440	378	e335	e410	e3,020	5,080	3,180	2,140	1,450	868	588
12	377	468	368	e433	e415	2,320	2,850	2,780	2,050	1,390	865	579
13	395	429	385	e426	e361	1,700	2,230	2,390	2,100	1,350	845	568
14	448	420	392	e385	e387	1,310	1,940	2,120	1,990	1,340	811	560
15	460	417	412	e401	e482	1,120	8,990	1,930	1,910	1,310	790	609
16	439	410	451	e347	e519	1,040	5,150	1,750	1,840	1,270	774	624
17	431	404	431	e315	e487	941	2,840	1,700	1,750	1,230	756	603
18	423	401	425	e323	e427	836	2,380	2,360	1,670	1,200	745	596
19	412	402	419	e316	e379	761	2,460	5,030	1,590	1,160	737	596
20	404	398	424	e326	e328	656	2,480	6,640	1,520	1,120	734	597
21	398	394	399	e332	e306	585	2,130	17,000	1,600	1,100	728	573
22	396	394	335	e332	e314	571	1,920	9,360	2,480	1,110	785	560
23	400	388	e327	e326	e314	566	2,000	4,860	9,790	1,110	808	551
24	404	384	e310	e310	e306	542	2,330	3,930	8,860	1,050	775	543
25	574	383	e297	e299	e304	513	2,260	3,190	6,540	1,050	732	535
26	583	383	e319	e298	e308	504	1,940	2,760	7,000	1,230	710	533
27	517	366	e330	e303	e312	542	1,730	2,610	4,690	1,280	699	529
28	480	372	e306	e310	e316	638	1,590	2,870	3,670	1,220	688	531
29	455	384	e315	e364	---	805	1,480	3,210	3,130	1,150	679	531
30	440	391	e318	e487	---	2,600	1,400	5,820	2,800	1,090	671	522
31	431	---	e318	e424	---	10,800	---	7,760	---	1,050	660	---
<b>Total</b>	13,062	12,169	11,485	10,423	9,993	35,829	100,860	125,620	105,270	44,260	25,289	17,560
<b>Mean</b>	421	406	370	336	357	1,156	3,362	4,052	3,509	1,428	816	585
<b>Max</b>	583	468	451	487	519	10,800	8,990	17,000	9,790	2,550	1,010	653
<b>Min</b>	368	366	297	290	304	299	1,400	1,350	1,520	1,050	660	522
<b>Ac-ft</b>	25,910	24,140	22,780	20,670	19,820	71,070	200,100	249,200	208,800	87,790	50,160	34,830
<b>Cfsm</b>	0.34	0.32	0.30	0.27	0.29	0.92	2.69	3.24	2.81	1.14	0.65	0.47
<b>In.</b>	0.39	0.36	0.34	0.31	0.30	1.07	3.00	3.74	3.13	1.32	0.75	0.52

05385000 ROOT RIVER NEAR HOUSTON, MN—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1910 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	546	528	443	419	513	1,399	1,260	907	1,044	848	713	612
<b>Max</b>	2,052	1,494	1,671	1,152	1,742	3,512	4,963	4,052	4,389	3,252	3,918	2,105
<b>(WY)</b>	(2008)	(1983)	(1992)	(1973)	(2005)	(1961)	(1965)	(2013)	(2000)	(1978)	(2007)	(1938)
<b>Min</b>	193	218	189	172	168	251	274	234	261	236	231	243
<b>(WY)</b>	(1934)	(1934)	(1934)	(1959)	(1959)	(1931)	(1931)	(1934)	(1934)	(1964)	(1958)	(1933)

SUMMARY STATISTICS

	Water Year 2013	Water Years 1910 - 2013
<b>Annual total</b>	511,820	
<b>Annual mean</b>	1,402	773
<b>Highest annual mean</b>		1,590 1993
<b>Lowest annual mean</b>		294 1931
<b>Highest daily mean</b>	17,000 May 21	31,100 Apr 1, 1952
<b>Lowest daily mean</b>	<sup>a</sup> 290 Jan 9	82 Nov 28, 1937
<b>Annual seven-day minimum</b>	300 Jan 3	113 Dec 25, 1933
<b>Maximum peak flow</b>	22,800 May 21	<sup>b</sup> 46,000 Aug 19, 2007
<b>Maximum peak stage</b>	16.37 May 21	<sup>c</sup> 18.32 Mar 2, 1965
<b>Instantaneous low flow</b>	<sup>a</sup> 290 Jan 9	<sup>d</sup> 65 Dec 26, 1933
<b>Annual runoff (ac-ft)</b>	1,015,000	560,200
<b>Annual runoff (cfsm)</b>	1.12	0.619
<b>Annual runoff (inches)</b>	15.23	8.41
<b>10 percent exceeds</b>	3,160	1,400
<b>50 percent exceeds</b>	596	493
<b>90 percent exceeds</b>	318	270

<sup>a</sup> Estimated daily-mean, backwater from ice.

<sup>b</sup> From rating curve extended above 28,000 ft<sup>3</sup>/s.

<sup>c</sup> Backwater from ice. Site located 0.9 mi upstream.

<sup>d</sup> Also occurred Feb. 25, 1935.

05385000 ROOT RIVER NEAR HOUSTON, MN—Continued

