Water-Data Report 2012

05484500 Raccoon River at Van Meter, IA

Des Moines Basin
North Raccoon Subbasin

LOCATION.--Lat 41°32′02″, long 93°56′59″ referenced to North American Datum of 1927, in SE ¼ SW ¼ SW ¼ sec.22, T.78 N., R.27 W., Dallas County, IA, Hydrologic Unit 07100006, on right bank 160 ft downstream from bridge on County Highway R16, 0.3 mi northeast of Van Meter, 0.7 mi upstream from small left bank tributary, 1.2 mi downstream from confluence of North and South Raccoon Rivers, and 29.3 mi upstream from mouth.

DRAINAGE AREA.--3,441 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge records from April 1915 to current year. Prior to October 1933, monthly mean discharge for some periods published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1927 (M). WSP 1438: Drainage area. WSP 1508: 1915 (M), 1925 (M), 1926, 1933 (M), 1939 (M), 1947 (M), 1949 (M).

GAGE.--Water-stage recorder. Datum of gage is 841.16 ft above National Geodetic Vertical Datum of 1929. Prior to October 1, 1915, non-recording gage at same site at datum 2.00 ft higher. October 1, 1915, to May 30, 1923, non-recording gage, May 31, 1923, to September 30, 1927, water-stage recorder, and October 1, 1927, to August 8, 1934, non-recording gage, all at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage, U.S. Geological Survey data collection platform with satellite telemetry, and City of Des Moines alert radio system at station.

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

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	217	214	257	310	378	1,100	643	1,020	845	701	129	130
2	215	222	259	e266	381	887	592	1,170	776	614	122	129
3	221	269	328	e205	360	769	539	1,810	739	564	119	134
4	226	268	e386	e249	313	819	497	2,090	693	513	128	140
5	226	260	e343	e315	315	886	460	2,700	662	466	137	141
6	223	255	e265	337	363	746	433	4,510	616	434	137	128
7	224	250	e286	328	336	646	435	6,360	579	397	127	114
8	221	292	302	310	334	588	565	3,840	570	352	123	115
9	218	586	e296	299	e270	562	583	2,740	552	330	120	113
10	214	517	e274	314	e244	587	483	2,320	527	303	116	116
11	214	376	e301	295	e219	637	388	2,080	503	279	120	112
12	268	345	e338	e206	e228	643	355	1,800	477	266	108	108
13	273	333	366	e209	e244	642	421	1,590	484	258	107	117
14	271	317	435	e229	287	568	860	1,440	535	277	114	150
15	242	300	554	e253	300	521	6,560	1,350	503	259	110	155
16	227	282	459	e267	339	511	3,490	1,230	634	262	107	153
17	216	274	383	e246	327	505	2,270	1,120	658	240	110	147
18	213	272	379	e211	309	493	1,810	1,070	727	217	125	138
19	207	276	382	e193	301	487	1,580	1,030	2,090	200	117	141
20	204	271	378	e182	313	765	1,440	968	1,740	186	116	127
21	209	263	357	e170	429	802	1,280	925	1,490	185	111	119
22	212	266	344	e166	539	836	1,220	895	1,380	182	106	110
23	220	274	294	e168	532	972	1,300	870	1,310	182	100	104
24	222	282	248	e170	546	890	1,370	837	2,170	175	100	108
25	232	279	307	e189	502	787	1,280	797	1,910	167	113	115
26	215	291	309	e229	473	700	1,110	811	1,400	161	167	114
27	212	287	360	e229	492	643	963	822	1,150	144	189	108
28	204	273	352	e236	479	584	969	802	968	129	159	110
29	205	257	342	e240	960	554	948	809	842	134	157	114
30	211	257	346	e256	---	590	979	794	797	138	146	115
31	206	---	335	341	---	709	---	847	---	138	135	---
Total	6,888	8,908	10,565	7,618	11,113	21,429	35,823	51,447	28,327	8,853	3,875	3,725
Mean	222	297	341	246	383	691	1,194	1,660	944	286	125	124
Max	273	586	554	341	960	1,100	6,560	6,360	2,170	701	189	155
Min	204	214	248	166	219	487	355	794	477	129	100	104
Ac-ft	13,660	17,670	20,960	15,110	22,040	42,500	71,050	102,000	56,190	17,560	7,690	7,390
Cfsm	0.06	0.09	0.10	0.07	0.11	0.20	0.35	0.48	0.27	0.08	0.04	0.04
In.	0.07	0.10	0.11	0.08	0.12	0.23	0.39	0.56	0.31	0.10	0.04	0.04

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	876	806	580	506	983	2,656	2,708	2,889	3,569	2,029	1,097	876
Max	6,840	4,774	3,085	3,461	5,438	11,080	10,630	9,409	16,830	17,260	10,790	7,222
(WY)	(1974)	(1973)	(1983)	(1932)	(1984)	(2010)	(1983)	(2007)	(2008)	(1993)	(2010)	(1926)
Min	48.6	51.5	31.0	17.2	31.5	146	125	121	112	68.1	28.1	43.1
(WY)	(1940)	(1938)	(1938)	(1940)	(1940)	(1931)	(1956)	(1934)	(1977)	(1936)	(1936)	(1939)

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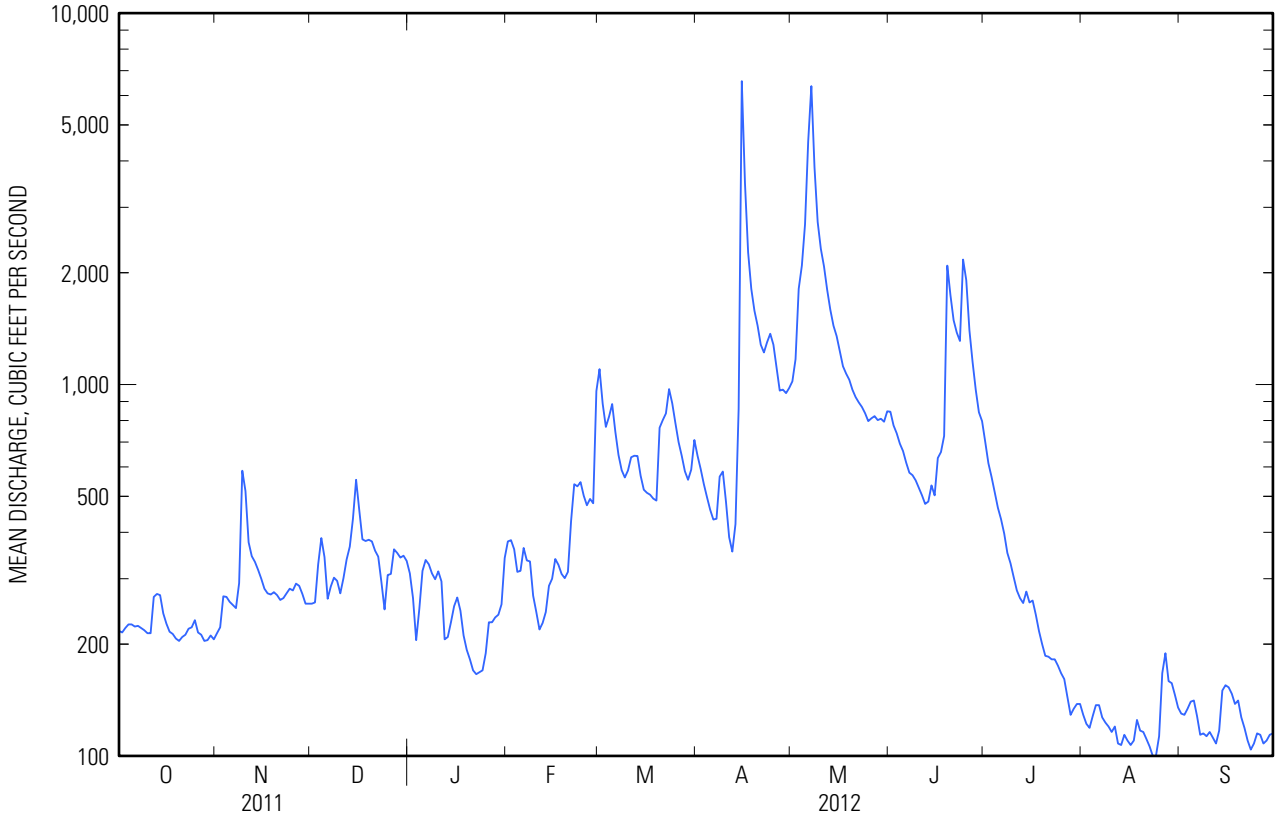
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1916 - 2012	
Annual total	685,180		198,571			
Annual mean	1,877		543		1,632	
Highest annual mean					5,717	1993
Lowest annual mean					166	1956
Highest daily mean	12,400	Jun 10	6,560	Apr 15	57,500	Jul 10, 1993
Lowest daily mean	204	Oct 20	100	Aug 23[a]	10	Jan 22, 1940[b]
Annual seven-day minimum	210	Oct 26	109	Aug 19	10	Jan 22, 1940
Maximum peak flow			8,740	May 6	70,100	Jul 10, 1993
Maximum peak stage			9.01	May 6	26.34	Jul 10, 1993
Instantaneous low flow			88	Aug 17[c]		
Annual runoff (ac-ft)	1,359,000		393,900		1,182,000	
Annual runoff (cfsm)	0.546		0.158		0.474	
Annual runoff (inches)	7.41		2.15		6.44	
10 percent exceeds	5,630		1,110		4,130	
50 percent exceeds	770		310		640	
90 percent exceeds	248		124		123	

[a] Also Aug 24.
[b] Also Jan 23-31, 1940.
[c] Also Aug 23.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974-1979, 1987-1994.

PERIOD OF DAILY RECORD.--
NITRATE + NITRITE: March to September 2012.
WATER TEMPERATURE: March to September 2012.

NITRATE PLUS NITRITE, WATER, UNFILTERED, MILLIGRAMS PER LITER AS NITROGEN
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES

[<, less than]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	---	---	---	---	---	---	3.21	5.28	5.83	6.45	<0.10	<0.10
2	---	---	---	---	---	4.20	3.07	5.00	6.30	5.78	<0.10	<0.10
3	---	---	---	---	---	4.30	2.89	5.50	6.11	4.84	<0.10	<0.10
4	---	---	---	---	---	3.98	2.75	6.22	5.93	3.99	<0.10	<0.10
5	---	---	---	---	---	3.82	2.71	7.22	5.65	3.30	<0.10	0.10
6	---	---	---	---	---	3.82	2.66	5.72	5.34	2.67	<0.10	<0.10
7	---	---	---	---	---	4.09	2.64	3.77	5.25	2.00	<0.10	<0.10
8	---	---	---	---	---	3.84	2.44	8.59	5.15	1.42	<0.10	<0.10
9	---	---	---	---	---	3.52	2.08	9.38	4.85	1.07	<0.10	<0.10
10	---	---	---	---	---	3.45	2.18	9.56	4.47	0.78	<0.10	<0.10
11	---	---	---	---	---	3.54	2.21	9.29	4.08	0.41	<0.10	<0.10
12	---	---	---	---	---	3.42	2.52	9.05	3.68	0.14	<0.10	<0.10
13	---	---	---	---	---	3.14	2.59	8.97	3.25	<0.10	<0.10	<0.10
14	---	---	---	---	---	2.84	---	8.90	3.01	0.10	<0.10	0.22
15	---	---	---	---	---	2.77	0.60	8.61	2.96	<0.10	<0.10	0.30
16	---	---	---	---	---	2.40	7.34	8.44	2.98	<0.10	<0.10	0.23
17	---	---	---	---	---	2.15	8.42	8.36	2.91	0.10	<0.10	0.19
18	---	---	---	---	---	2.01	7.57	8.26	2.91	<0.10	<0.10	0.18
19	---	---	---	---	---	1.77	7.19	8.01	6.47	<0.10	<0.10	0.21
20	---	---	---	---	---	1.75	6.86	7.73	10.04	<0.10	<0.10	0.18
21	---	---	---	---	---	2.60	6.74	7.36	8.88	<0.10	<0.10	0.17
22	---	---	---	---	---	2.80	6.82	7.17	6.82	<0.10	<0.10	0.19
23	---	---	---	---	---	3.37	6.55	6.97	6.35	<0.10	<0.10	0.17
24	---	---	---	---	---	3.78	6.42	6.87	6.98	<0.10	<0.10	0.17
25	---	---	---	---	---	3.52	6.67	6.66	8.26	<0.10	<0.10	0.18
26	---	---	---	---	---	3.17	6.94	6.40	9.69	<0.10	<0.10	0.21
27	---	---	---	---	---	2.94	6.94	6.19	9.89	<0.10	0.26	0.20
28	---	---	---	---	---	2.95	6.55	5.97	9.27	<0.10	0.17	0.20
29	---	---	---	---	---	2.73	6.20	5.85	8.33	<0.10	<0.10	---
30	---	---	---	---	---	2.67	5.79	5.52	7.13	<0.10	<0.10	---
31	---	---	---	---	---	2.85	---	5.33	---	<0.10	<0.10	---
Mean	---	---	---	---	---	---	---	7.17	5.96	1.12	0.11	---
Max	---	---	---	---	---	---	---	9.56	10.04	6.45	0.26	---
Min	---	---	---	---	---	---	---	3.77	2.91	0.10	0.10	---

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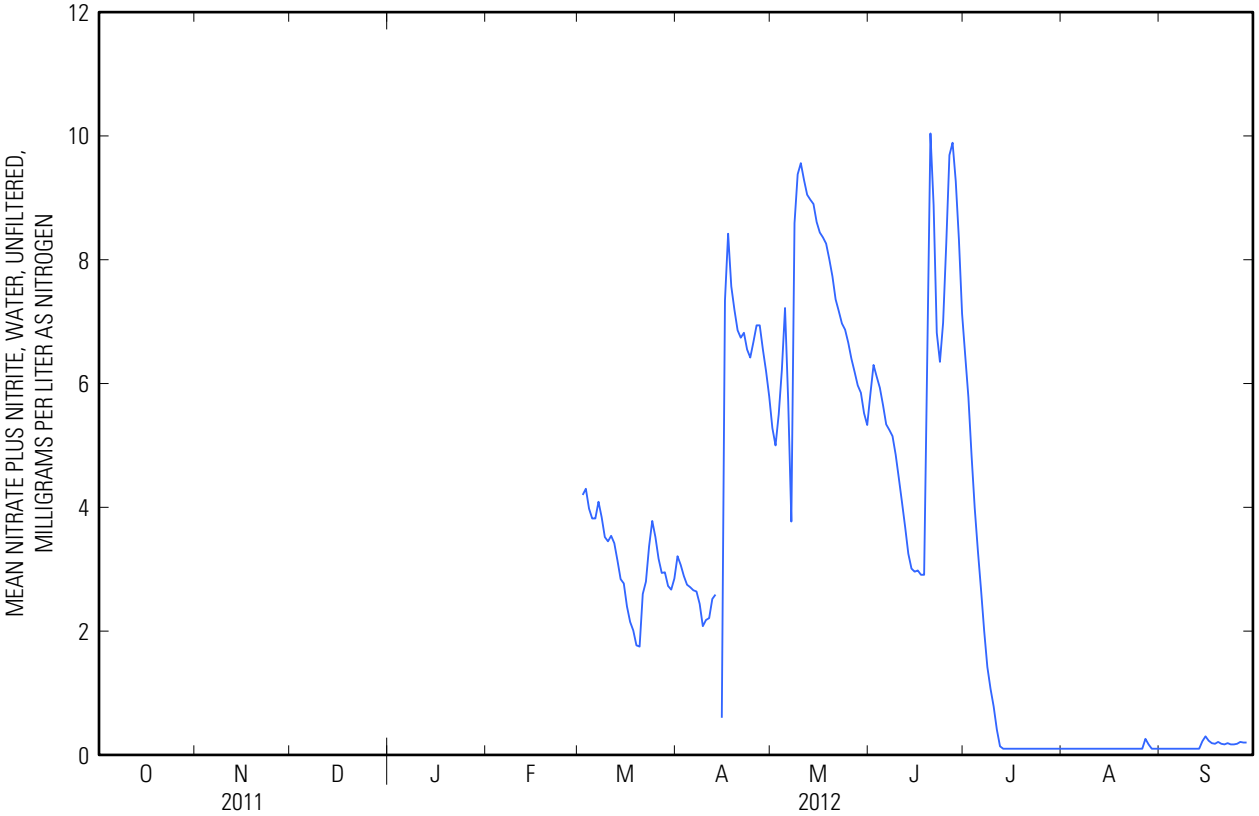

05484500 Raccoon River at Van Meter, IA—Continued

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	---	---	---	---	---	---	19.3	17.2	17.6	30.0	29.4	25.3
2	---	---	---	---	---	---	20.9	20.1	20.1	30.6	29.5	25.0
3	---	---	---	---	---	---	20.3	21.2	21.4	30.8	29.8	25.2
4	---	---	---	---	---	---	17.4	22.8	24.1	31.0	27.5	26.7
5	---	---	---	---	---	---	15.9	23.7	25.5	30.9	26.0	26.5
6	---	---	---	---	---	---	14.8	22.6	25.3	31.2	26.2	24.0
7	---	---	---	---	---	---	13.7	19.7	23.7	31.7	27.5	21.9
8	---	---	---	---	---	---	13.5	18.5	24.3	29.5	27.3	19.6
9	---	---	---	---	---	---	14.4	17.4	25.4	28.6	25.9	20.3
10	---	---	---	---	---	---	13.4	18.2	26.1	28.1	24.0	20.5
11	---	---	---	---	---	---	12.8	20.0	25.9	27.7	24.2	21.5
12	---	---	---	---	---	---	11.7	19.6	24.4	28.2	22.8	21.5
13	---	---	---	---	---	---	11.5	19.5	23.3	27.7	22.7	17.8
14	---	---	---	---	---	14.1	13.7	20.2	24.5	28.6	24.0	18.0
15	---	---	---	---	---	15.3	14.8	21.3	25.3	29.3	25.0	19.1
16	---	---	---	---	---	16.8	14.7	21.3	25.1	30.2	24.0	19.7
17	---	---	---	---	---	18.5	14.1	21.1	25.4	30.6	22.4	18.6
18	---	---	---	---	---	19.3	15.3	21.9	27.5	30.8	20.7	16.3
19	---	---	---	---	---	19.1	15.2	22.3	27.6	30.6	20.7	17.5
20	---	---	---	---	---	16.7	13.8	21.6	26.9	29.8	22.3	17.3
21	---	---	---	---	---	15.6	12.8	20.9	26.1	29.0	23.2	17.8
22	---	---	---	---	---	16.1	12.2	21.8	26.3	29.2	23.8	15.7
23	---	---	---	---	---	16.1	13.2	22.3	24.5	30.1	24.5	14.5
24	---	---	---	---	---	16.3	16.0	22.6	25.1	30.6	25.4	15.1
25	---	---	---	---	---	17.2	18.1	20.2	27.0	30.5	23.4	17.9
26	---	---	---	---	---	16.6	19.0	20.9	25.9	29.7	24.3	17.8
27	---	---	---	---	---	16.4	16.1	24.6	26.9	28.2	26.1	16.4
28	---	---	---	---	---	16.9	13.2	25.7	29.4	26.3	26.5	16.4
29	---	---	---	---	---	16.8	12.2	23.7	29.0	27.4	26.0	16.6
30	---	---	---	---	---	16.7	13.2	21.8	28.6	28.9	26.2	17.3
31	---	---	---	---	---	17.1	---	18.6	---	29.7	25.9	---
Mean	---	---	---	---	---	---	14.9	21.1	25.3	29.5	25.1	19.6
Max	---	---	---	---	---	---	20.9	25.7	29.4	31.7	29.8	26.7
Min	---	---	---	---	---	---	11.5	17.2	17.6	26.3	20.7	14.5