05471500 SOUTH SKUNK RIVER NEAR OSKALOOSA, IA

LOCATION.--Lat 41°21'21", long 92°39'26"(revised), in NW¼ SW¼ sec.25, T.76 N., R.16 W., Mahaska County, Hydrologic Unit 07080105, on left bank downstream from bridge on U.S. Highway 63, 0.3 mi downstream from Painter Creek, 4.0 mi north of Oskaloosa, 52.0 mi upstream from confluence with North Skunk River, and at mile 147.3 upstream from mouth of Skunk River.

DRAINAGE AREA.--1,635 mi^2.

PERIOD OF RECORD.--October 1945 to current year. Prior to October 1966, published as "Skunk River near Oskaloosa." Prior to October 1948, monthly discharge only, published in WSP 1308.

REVISED RECORDS.--WSP 1438: Drainage area. WDR IA-95-1: Location.

GAGE.--Water-stage recorder. Datum of gage is 685.50 ft above NGVD of 1929. Prior to Nov. 21, 1947, nonrecording gage at site 400 ft downstream at same datum. Gage was moved to the left bank on downstream side of the Highway 63 bridge on May 3, 1995. Accubar pressure sensor installed at site on May 3, 1995.

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1944 reached a stage of 25.8 ft, from floodmarks, discharge, 37,000 ft^3/s, from rating curve extended above 18,000 ft^3/s on basis of velocity-area study.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	72	252	414	e231	2,380	1,940	e1,170	7,400	1,250	601	503
2	79	96	236	420	e272	2,290	1,730	e1,120	6,030	1,190	733	442
3	80	382	231	429	e249	2,220	1,600	e1,080	4,980	1,380	665	402
4	79	2,940	241	e278	e240	1,960	1,470	e1,040	4,020	1,950	1,680	377
5	77	3,430	254	e201	e251	3,010	1,370	995	3,390	1,700	1,300	351
6	74	1,560	253	e188	e251	3,800	1,300	956	2,980	1,770	1,380	388
7	73	1,020	245	e213	e240	3,930	1,250	915	2,640	2,310	1,240	649
8	72	790	243	e229	e249	2,930	1,190	862	2,390	1,840	983	827
9	71	640	262	e221	e260	2,340	1,120	848	2,130	1,590	832	563
10	70	543	403	e227	e274	1,960	1,050	869	1,980	1,970	731	455
11	69	507	e337	e236	e274	1,720	976	861	2,010	2,350	642	398
12	68	457	e478	e248	e258	1,530	930	859	1,890	5,160	579	356
13	74	409	e567	e252	e251	1,390	894	825	2,090	4,690	528	320
14	89	379	e608	e243	e252	1,340	874	922	3,110	3,450	486	296
15	113	371	e568	e235	e242	1,300	845	1,190	2,950	2,580	453	276
16	100	357	e464	e250	e249	1,280	818	1,340	2,360	2,200	425	270
17	88	327	e374	e345	e249	1,270	895	1,200	2,880	1,880	405	257
18	88	322	e323	e395	e264	1,360	969	1,870	3,010	1,630	506	245
19	85	326	e341	e315	e279	1,910	871	2,020	3,560	1,470	488	242
20	84	306	e377	e291	e1,010	2,210	900	1,690	2,670	1,340	436	231
21	81	293	e402	e294	e2,420	2,040	1,510	1,530	2,210	1,240	395	217
22	77	283	e445	e274	e2,620	1,770	2,010	1,460	2,540	1,210	367	209
23	75	299	e399	e268	e3,330	1,600	1,670	3,810	2,840	1,270	341	203
24	75	296	e355	e268	e3,740	1,500	1,480	6,970	2,500	1,120	347	197
25	77	256	e299	e268	e3,380	1,420	1,400	8,990	2,050	1,010	380	192
26	75	271	404	e268	e2,510	1,380	e1,450	10,700	1,800	910	367	187
27	73	271	587	e253	1,690	1,370	e1,400	11,300	1,660	839	364	185
28	73	262	538	e237	1,780	1,490	e1,340	11,500	1,540	778	1,890	183
29	73	233	402	e228	2,190	2,140	e1,280	10,900	1,430	717	1,210	179
30	75	245	392	e215	---	2,700	e1,220	9,770	1,330	709	817	170
31	72	---	400	e210	---	2,270	---	8,880	---	669	615	---
TOTAL	2,440	17,943	11,680	8,413	29,505	61,810	37,752	108,442	84,370	54,172	22,186	9,770
MEAN	78.7	598	377	271	1,017	1,994	1,258	3,498	2,812	1,747	716	326
MAX	113	3,430	608	429	3,740	3,930	2,010	11,500	7,400	5,160	1,890	827
MIN	68	72	231	188	231	1,270	818	825	1,330	669	341	170
AC-FT	4,840	35,590	23,170	16,690	58,520	122,600	74,880	215,100	167,300	107,500	44,010	19,380
CFSM	0.05	0.37	0.23	0.17	0.62	1.22	0.77	2.14	1.72	1.07	0.44	0.20
IN.	0.06	0.41	0.27	0.19	0.67	1.41	0.86	2.47	1.92	1.23	0.50	0.22

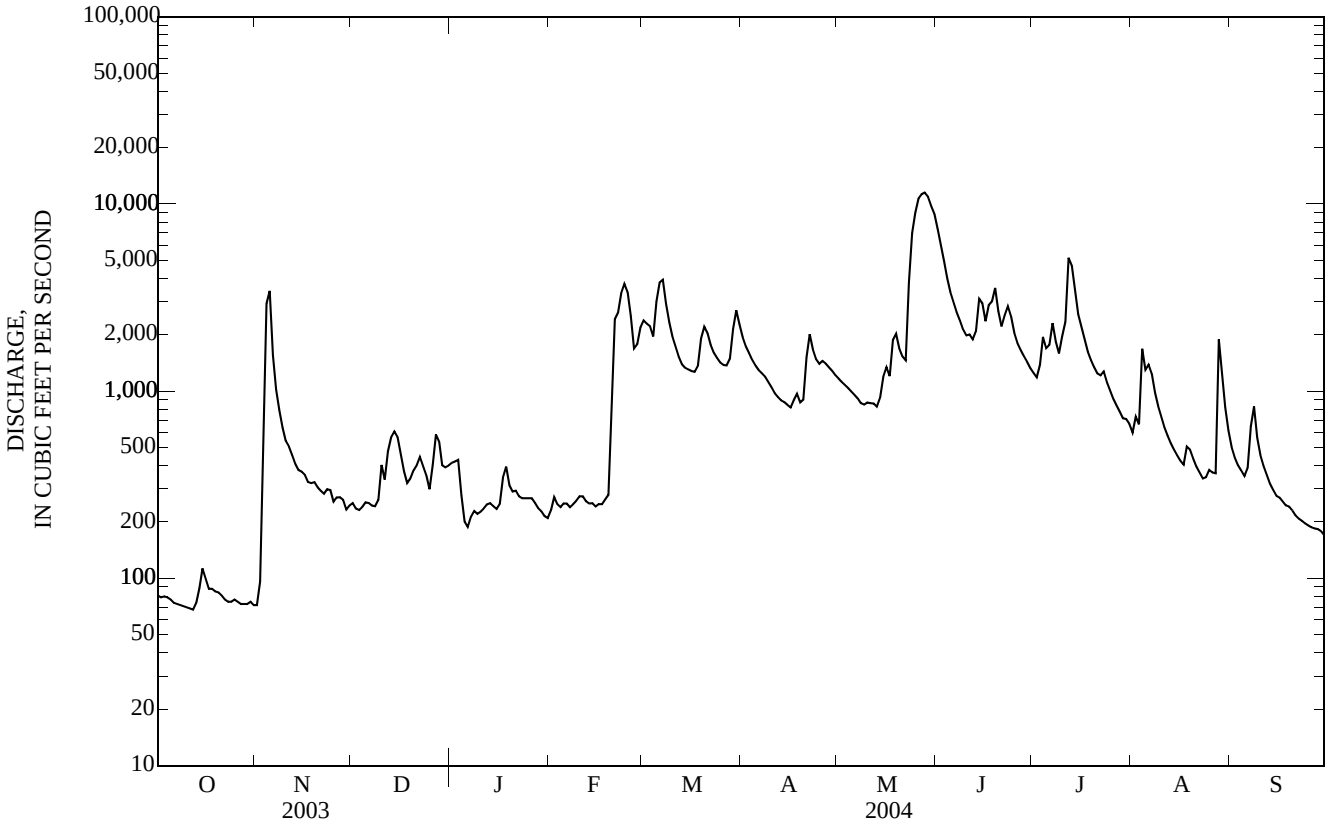
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2004, BY WATER YEAR (WY)

MEAN	482	536	440	441	800	1,594	1,598	1,767	2,157	1,418	646	457
MAX	3,646	3,576	2,322	3,906	3,587	4,841	5,366	6,168	9,222	11,770	7,772	5,140
(WY)	(1987)	(1984)	(1983)	(1973)	(1973)	(1979)	(1983)	(1974)	(1947)	(1993)	(1993)	(1993)
MIN	8.47	14.5	7.55	5.30	42.9	45.9	42.1	74.2	39.4	27.3	43.3	27.8
(WY)	(1957)	(1957)	(1956)	(1956)	(1954)	(1954)	(1956)	(1956)	(1977)	(1977)	(1988)	(1956)

05471500 SOUTH SKUNK RIVER NEAR OSKALOOSA, IA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1946 - 2004	
ANNUAL TOTAL	267,125		448,483			
ANNUAL MEAN	732		1,225		1,028	
HIGHEST ANNUAL MEAN					3,884	1993
LOWEST ANNUAL MEAN					40.1	1956
HIGHEST DAILY MEAN	7,810	May 10	11,500	May 28	20,400	Jul 15, 1993
LOWEST DAILY MEAN	41	Feb 16	68	Oct 12	1.8	Oct 11, 1956
ANNUAL SEVEN-DAY MINIMUM	48	Feb 12	71	Oct 6	2.0	Oct 7, 1956
MAXIMUM PEAK FLOW			11,500	May 28	20,700	Jul 15, 1993
MAXIMUM PEAK STAGE			22.57	May 28	24.78	Jul 15, 1993
ANNUAL RUNOFF (AC-FT)	529,800		889,600		744,700	
ANNUAL RUNOFF (CFSM)	0.448		0.749		0.629	
ANNUAL RUNOFF (INCHES)	6.08		10.20		8.54	
10 PERCENT EXCEEDS	2,060		2,630		2,550	
50 PERCENT EXCEEDS	254		641		440	
90 PERCENT EXCEEDS	74		184		58	

e Estimated



05472500 NORTH SKUNK RIVER NEAR SIGOURNEY, IA

LOCATION.--Lat 41°18'03", long 92°12'16", in NE¼ SE¼ sec.14, T.75 N., R.12 W., Keokuk County, Hydrologic Unit 07080106, on right bank 10 ft downstream from bridge on State Highway 149, 1.2 mi downstream from Cedar Creek, 2.2 mi south of Sigourney, 4.0 mi upstream from Bridge Creek, and 16.2 mi upstream from confluence with South Skunk River.

DRAINAGE AREA.--730 mi^2.

PERIOD OF RECORD.--October 1945 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1558: 1946-47 (M).

GAGE.--Water stage recorder. Datum of gage is 651.53 ft above NGVD of 1929. Prior to June 10, 1953, nonrecording gage at same site and datum.

REMARKS.--Records good except those estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1944 reached a stage of 22.8 ft, from floodmark, discharge, 14,500 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	23	109	212	e112	638	971	438	1,960	329	188	379
2	22	34	136	200	e141	616	868	424	1,380	298	261	298
3	25	88	112	189	e129	574	792	402	1,190	301	360	244
4	20	118	102	e153	e123	575	723	389	1,080	362	992	225
5	21	1,530	109	e122	e131	1,450	666	363	998	462	941	212
6	19	1,590	112	e111	e135	1,280	626	335	931	369	677	190
7	20	858	113	e131	e130	1,040	595	312	877	474	381	166
8	19	597	112	e153	e146	932	563	300	805	415	279	206
9	18	441	111	e140	e159	943	518	290	722	331	239	160
10	17	350	176	e150	e167	817	474	287	691	323	205	131
11	17	302	e159	e153	e167	699	441	285	706	532	180	118
12	17	272	e203	e157	e166	604	415	278	895	654	146	110
13	17	245	e252	e162	e152	573	398	270	719	837	133	104
14	19	214	e316	e145	e152	583	381	274	721	633	123	96
15	21	191	e247	e130	e146	579	366	289	673	450	112	93
16	25	180	e185	e130	e159	580	355	272	641	371	103	91
17	35	171	e154	e148	e154	596	350	253	670	333	96	86
18	42	165	e136	e237	e171	930	352	315	825	325	99	84
19	39	156	e130	e205	e172	1,490	377	834	702	291	212	80
20	34	160	e159	e181	e492	1,550	351	849	609	253	191	75
21	30	149	e190	e200	e1,050	1,310	811	680	565	232	138	72
22	26	136	e152	e161	e1,350	1,050	1,080	621	533	335	114	69
23	24	154	e127	e179	e1,520	900	993	859	816	280	101	64
24	22	153	e114	e156	e1,340	838	778	2,010	653	246	100	63
25	23	154	e115	e148	e1,070	795	677	2,800	556	230	114	60
26	22	132	e118	e151	e746	918	630	2,830	493	209	161	59
27	22	132	e135	e139	e431	880	586	3,020	437	180	135	59
28	23	137	e275	e130	e680	1,180	534	3,160	404	166	586	59
29	22	130	e222	e117	825	1,340	494	2,240	376	151	1,230	57
30	23	104	e201	e108	---	1,310	458	1,560	361	145	849	53
31	23	---	e241	e100	---	1,120	---	2,590	---	146	524	---
TOTAL	727	9,066	5,023	4,798	12,316	28,690	17,623	29,829	22,989	10,663	9,970	3,763
MEAN	23.5	302	162	155	425	925	587	962	766	344	322	125
MAX	42	1,590	316	237	1,520	1,550	1,080	3,160	1,960	837	1,230	379
MIN	17	23	102	100	112	573	350	253	361	145	96	53
AC-FT	1,440	17,980	9,960	9,520	24,430	56,910	34,960	59,170	45,600	21,150	19,780	7,460
CFSM	0.03	0.41	0.22	0.21	0.58	1.27	0.80	1.32	1.05	0.47	0.44	0.17
IN.	0.04	0.46	0.26	0.24	0.63	1.46	0.90	1.52	1.17	0.54	0.51	0.19

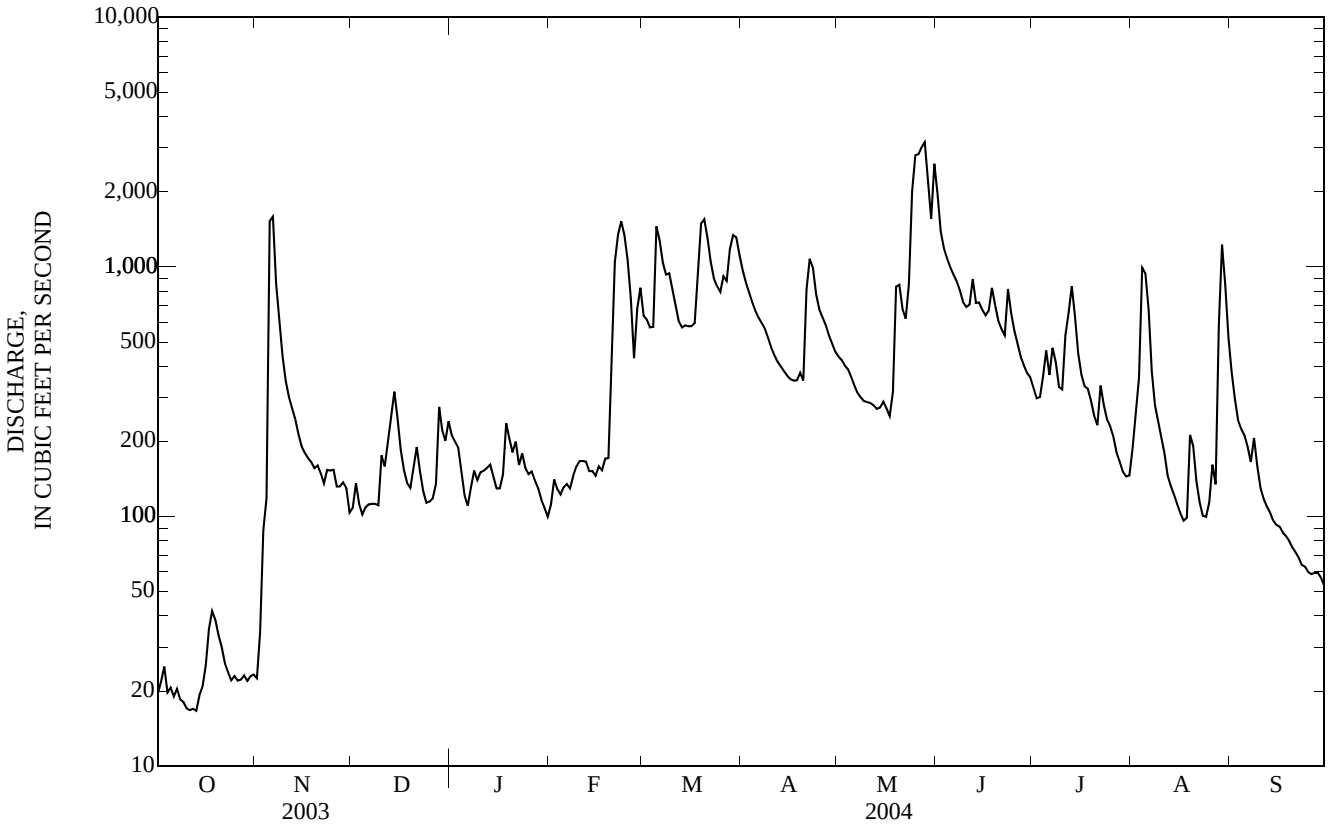
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2004, BY WATER YEAR (WY)

MEAN	219	281	219	248	414	844	761	836	799	540	284	271
MAX	1,603	1,890	1,208	1,767	1,311	2,996	2,826	4,170	4,145	5,098	3,668	2,708
(WY)	(1987)	(1962)	(1983)	(1946)	(1973)	(1979)	(1993)	(1974)	(1947)	(1993)	(1993)	(1993)
MIN	0.13	3.38	2.58	2.26	12.8	17.0	11.2	14.4	20.1	11.2	7.90	4.35
(WY)	(1957)	(1957)	(1956)	(1954)	(1954)	(1954)	(1956)	(1956)	(1977)	(1977)	(1955)	(1956)

05472500 NORTH SKUNK RIVER NEAR SIGOURNEY, IA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1946 - 2004	
ANNUAL TOTAL	92,709		155,457			
ANNUAL MEAN	254		425		476	
HIGHEST ANNUAL MEAN					2,041	1993
LOWEST ANNUAL MEAN					27.7	1956
HIGHEST DAILY MEAN	2,770	May 11	3,160	May 28	23,200	Mar 31, 1960
LOWEST DAILY MEAN	17	Oct 10	17	Oct 10 a	0.10	Oct 7, 1956
ANNUAL SEVEN-DAY MINIMUM	18	Oct 8	18	Oct 8	0.10	Oct 7, 1956
MAXIMUM PEAK FLOW			3,200	May 28	27,500	Mar 31, 1960
MAXIMUM PEAK STAGE			14.95	May 28	25.33	Mar 31, 1960
INSTANTANEOUS LOW FLOW			15	Oct 10		
ANNUAL RUNOFF (AC-FT)	183,900		308,300		345,100	
ANNUAL RUNOFF (CFSM)	0.348		0.582		0.653	
ANNUAL RUNOFF (INCHES)	4.72		7.92		8.87	
10 PERCENT EXCEEDS	614		951		1,170	
50 PERCENT EXCEEDS	111		240		166	
90 PERCENT EXCEEDS	26		59		20	

a Also Oct. 11-13.
e Estimated



05473400 CEDAR CREEK NEAR OAKLAND MILLS, IA

LOCATION.--(revised) Lat. 40°55'31", long 91°40'27", in SE¼ NW¼ sec.28, T.71 N., R.7 W., Henry County, Hydrologic Unit 07080107, on left bank 30 ft upstream from bridge on county highway H46, 3.0 mi west of Oakland Mills, 2.9 mi upstream from Wolf Creek, and 4.3 mi upstream from mouth.

DRAINAGE AREA.--530 mi^2.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1957 to 1977. July 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 565.07 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Occasional high-water measurements were made by U.S. Army Corps of Engineers in 1965, 1966, 1970, and 1974 and by U.S. Geological Survey in 1966 and 1967. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 22, 1973 reached a stage of 24.09 ft, discharge not determined. Flood of June 1905 reached a stage approximately 2 feet higher from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	3.2	14	72	e27	279	306	65	5,920	e71	34	166
2	2.8	3.3	13	56	e31	234	249	66	3,250	e66	32	107
3	2.5	44	12	50	e34	186	208	58	1,480	60	28	78
4	1.9	76	11	e35	e36	387	177	54	1,020	71	211	62
5	1.7	50	12	e26	e37	3,770	151	50	657	78	1,130	51
6	1.4	27	12	e28	e38	3,440	132	49	370	66	564	44
7	1.6	25	12	e23	e38	968	122	50	250	76	214	49
8	1.8	21	12	e19	e39	569	114	48	215	66	122	44
9	1.6	16	29	e16	e38	394	102	43	148	54	82	50
10	1.5	13	990	e16	e37	302	93	39	236	48	60	38
11	1.6	11	1,100	e18	e36	238	82	42	752	48	46	31
12	1.8	9.1	e163	e20	e34	199	75	42	903	285	38	28
13	1.7	7.0	e99	e20	e34	164	70	61	333	429	32	25
14	5.2	5.1	e80	e23	e34	178	69	57	1,440	201	29	22
15	6.6	4.3	e74	e25	e34	245	66	54	4,310	107	26	22
16	15	4.9	e79	e26	e32	238	65	51	3,620	73	24	23
17	13	5.6	e72	e92	e32	346	64	44	e800	60	24	27
18	8.2	6.4	e57	e159	e35	938	61	41	525	45	23	25
19	5.3	6.4	e43	e202	e55	1,140	56	45	376	39	25	24
20	3.5	7.6	e40	e141	e384	873	70	57	292	34	48	19
21	2.9	15	e39	e107	e638	523	176	71	235	30	80	17
22	2.8	12	e38	e79	e844	329	183	65	216	32	49	17
23	2.7	13	e36	e60	e825	255	129	101	e155	35	33	16
24	2.3	230	e29	e45	e684	228	96	321	137	46	34	16
25	2.3	195	e35	e35	e603	209	84	1,050	112	83	42	15
26	2.5	71	e40	e32	e542	221	79	1,700	97	54	112	15
27	2.7	40	e42	e39	515	690	80	614	e85	40	710	14
28	2.4	26	83	e34	434	536	71	400	e82	33	2,800	14
29	2.6	19	176	e29	298	654	60	315	e79	34	1,460	13
30	2.7	17	196	e26	---	592	62	1,010	e76	e33	558	13
31	2.7	---	108	e26	---	400	---	4,610	---	e33	291	---
TOTAL	109.9	983.9	3,746	1,579	6,448	19,725	3,352	11,273	28,171	2,430	8,961	1,085
MEAN	3.55	32.8	121	50.9	222	636	112	364	939	78.4	289	36.2
MAX	15	230	1,100	202	844	3,770	306	4,610	5,920	429	2,800	166
MIN	1.4	3.2	11	16	27	164	56	39	76	30	23	13
AC-FT	218	1,950	7,430	3,130	12,790	39,120	6,650	22,360	55,880	4,820	17,770	2,150
CFSM	0.01	0.06	0.23	0.10	0.42	1.19	0.21	0.68	1.76	0.15	0.54	0.07
IN.	0.01	0.07	0.26	0.11	0.45	1.38	0.23	0.79	1.97	0.17	0.63	0.08

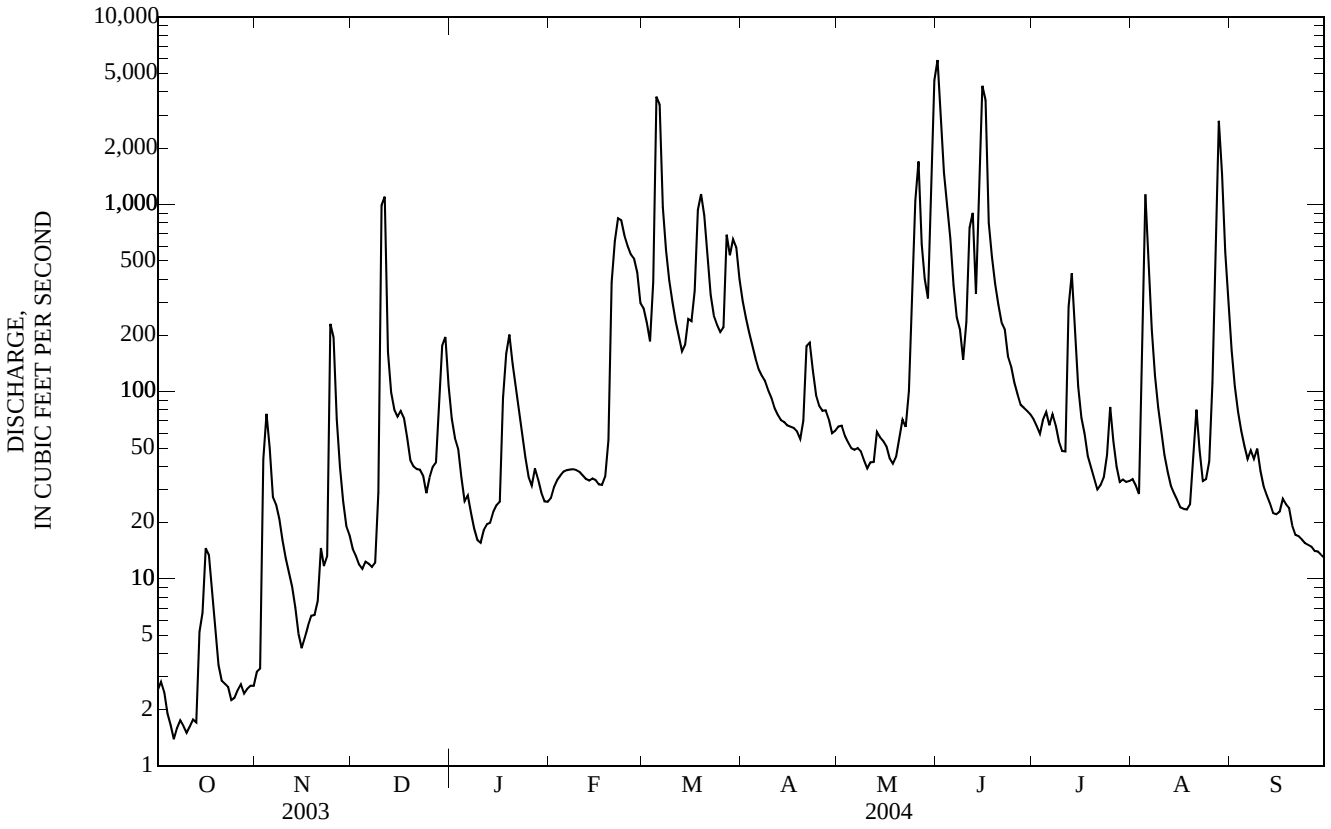
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2004, BY WATER YEAR (WY)

MEAN	219	266	213	95.4	324	599	590	734	620	517	180	199
MAX	1,711	1,340	1,364	545	1,091	1,987	1,863	3,116	2,199	4,565	2,186	1,245
(WY)	(1987)	(1993)	(1983)	(1993)	(1985)	(1979)	(1983)	(1996)	(1990)	(1993)	(1993)	(1986)
MIN	3.55	5.45	4.43	7.25	6.36	25.6	34.3	21.6	14.6	3.52	4.23	4.63
(WY)	(2004)	(2003)	(1990)	(2003)	(1989)	(2000)	(2000)	(2000)	(1988)	(1988)	(2003)	(2002)

05473400 CEDAR CREEK NEAR OAKLAND MILLS, IA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1978 - 2004	
ANNUAL TOTAL	20,441.25		87,863.8			
ANNUAL MEAN	56.0		240		380	
HIGHEST ANNUAL MEAN					1,424	1993
LOWEST ANNUAL MEAN					44.5	2003
HIGHEST DAILY MEAN	1,260	May 11	5,920	Jun 1	11,500	May 28, 1996
LOWEST DAILY MEAN	0.87	Sep 12	1.4	Oct 6	0.42	Sep 17, 1988
ANNUAL SEVEN-DAY MINIMUM	1.6	Oct 5	1.6	Oct 5	0.55	Sep 14, 1988
MAXIMUM PEAK FLOW			6,300	Jun 1	12,300	May 28, 1996
MAXIMUM PEAK STAGE			17.48	Jun 1	21.27	Jul 9, 1993
INSTANTANEOUS LOW FLOW			1.4	Oct 6 a		
ANNUAL RUNOFF (AC-FT)	40,550		174,300		275,100	
ANNUAL RUNOFF (CFSM)	0.105		0.450		0.712	
ANNUAL RUNOFF (INCHES)	1.43		6.13		9.68	
10 PERCENT EXCEEDS	110		576		869	
50 PERCENT EXCEEDS	14		51		72	
90 PERCENT EXCEEDS	2.7		6.9		7.3	

a Also Oct. 10, 11.
e Estimated.



05473450 BIG CREEK NEAR MT. PLEASANT, IA

LOCATION.--Lat. 45°00'26", long 91°33'05", in NW¼ SE¼ sec.28, T.72 N., R.6 W., Henry County, Hydrologic Unit 07080107, on right bank 20 ft upstream from bridge on old U.S. highway 218 (Mt. Pleasant business route) about 2 miles north of Mt. Pleasant, 1.6 miles upstream from Brandy Wine Creek, and 2.3 miles upstream from Lynn Creek.

DRAINAGE AREA.--58 mi^2.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1957 to 1977. Oct. 1, 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 643.00 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Geological Survey data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 21, 1973, discharge 9,580 ft^3/s, on basis of contracted-opening measurement.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.10	0.24	0.53	14	e6.0	35	67	19	79	7.4	1.9	4.0
2	0.09	0.34	0.51	15	e10	32	55	17	53	7.4	2.0	2.8
3	0.10	8.2	0.48	15	e13	24	47	16	38	43	1.9	2.3
4	0.10	3.3	0.47	11	e9.0	79	39	15	32	42	9.8	2.0
5	0.11	1.5	0.65	e8.1	e10	473	34	16	30	26	3.0	1.8
6	0.10	0.88	0.90	e5.2	e14	200	32	14	28	67	2.4	1.9
7	0.09	0.68	0.73	e4.6	e13	130	31	13	24	40	1.9	1.7
8	0.10	0.56	0.73	e4.4	e12	92	28	11	20	22	1.6	1.4
9	0.12	0.47	9.6	e4.4	e13	73	23	12	17	16	1.6	1.3
10	0.13	0.41	210	e4.6	e12	56	21	12	44	13	1.6	1.4
11	0.14	0.44	117	e7.0	e12	48	19	12	166	30	1.4	1.3
12	0.20	0.46	e44	e9.1	e10	34	19	11	84	100	1.4	1.2
13	0.21	0.50	e32	e9.2	e9.4	31	18	196	52	40	1.3	1.3
14	0.89	0.44	22	e8.3	e10	42	18	178	172	23	1.4	1.4
15	0.36	0.53	19	e6.8	e9.9	44	17	97	121	15	1.2	1.8
16	0.24	0.55	23	e9.7	e9.9	47	17	70	68	12	1.2	2.2
17	0.16	0.60	e20	e26	e12	76	16	55	52	11	3.9	1.5
18	0.19	0.99	e17	e40	e13	148	14	50	38	7.6	2.7	1.3
19	0.17	1.0	e14	e25	e34	116	15	52	30	6.2	5.1	1.3
20	0.15	0.74	e13	e20	e128	88	19	47	26	5.5	2.6	1.3
21	0.18	0.76	e14	e19	e103	57	46	38	25	4.8	2.3	1.3
22	0.18	0.77	18	e12	e58	47	42	37	22	11	1.8	1.4
23	0.18	1.5	21	e12	e49	44	30	44	17	10	1.5	1.4
24	0.18	1.0	e15	e14	e40	41	26	49	15	9.0	18	1.5
25	0.22	0.70	e19	e11	e35	35	29	126	13	5.7	18	1.4
26	0.27	0.70	e12	e11	e29	175	24	109	12	4.3	10	1.2
27	0.25	0.70	12	e9.8	e29	180	20	75	11	3.5	16	1.2
28	0.29	0.65	38	e6.3	26	131	19	53	11	3.2	37	1.2
29	0.27	0.59	37	e4.1	28	137	20	39	9.1	2.8	33	1.2
30	0.25	0.58	23	e4.0	---	105	19	94	8.0	2.5	15	1.2
31	0.25	---	18	e4.1	---	81	---	130	---	2.2	7.3	---
TOTAL	6.27	30.78	772.60	354.7	757.2	2,901	824	1,707	1,317.1	593.1	209.8	48.2
MEAN	0.20	1.03	24.9	11.4	26.1	93.6	27.5	55.1	43.9	19.1	6.77	1.61
MAX	0.89	8.2	210	40	128	473	67	196	172	100	37	4.0
MIN	0.09	0.24	0.47	4.0	6.0	24	14	11	8.0	2.2	1.2	1.2
AC-FT	12	61	1,530	704	1,500	5,750	1,630	3,390	2,610	1,180	416	96
CFSM	0.00	0.02	0.43	0.20	0.45	1.61	0.47	0.95	0.76	0.33	0.12	0.03
IN.	0.00	0.02	0.50	0.23	0.49	1.86	0.53	1.09	0.84	0.38	0.13	0.03

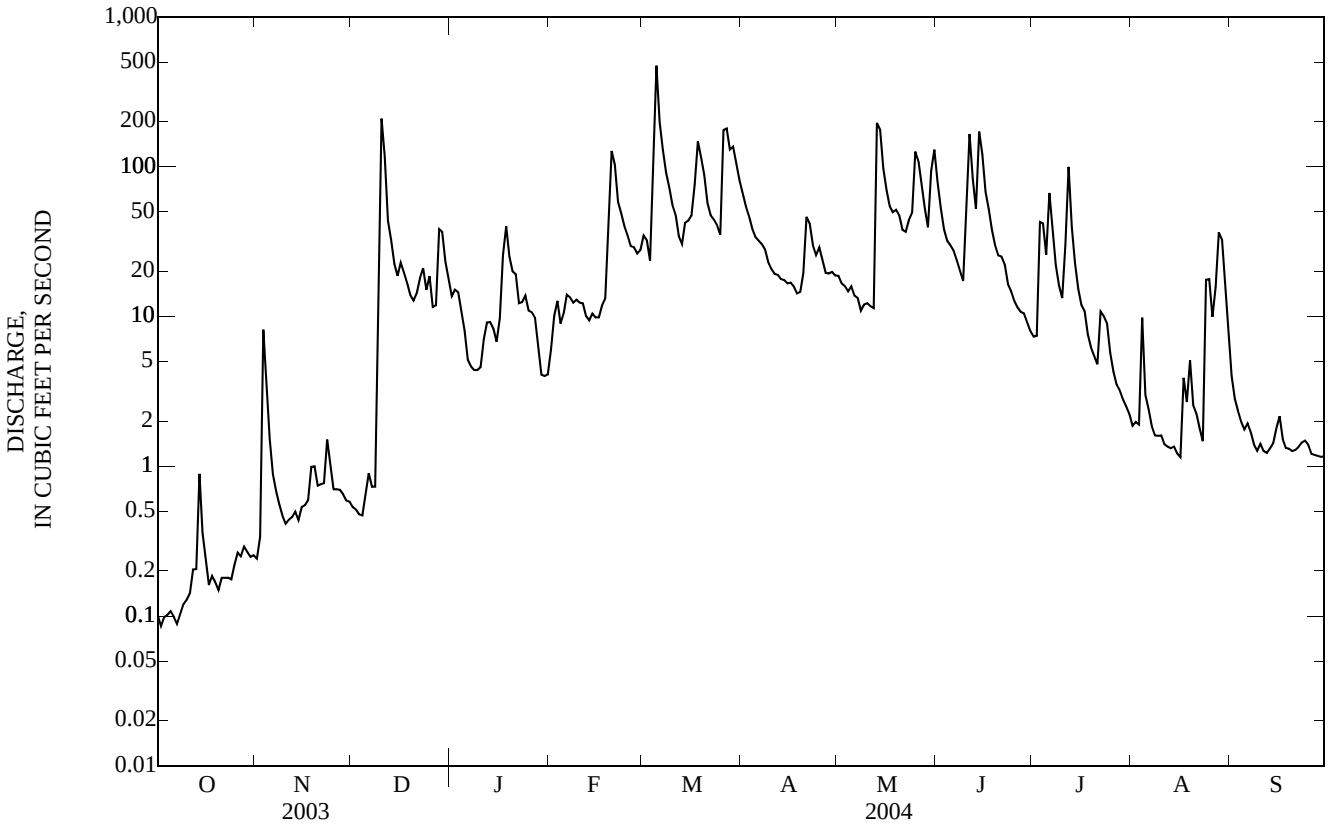
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2004, BY WATER YEAR (WY)

MEAN	19.8	14.5	10.4	19.0	67.1	69.0	75.5	91.9	78.6	17.0	3.47	2.32
MAX	110	78.6	25.6	83.0	215	176	201	221	141	49.1	8.61	8.41
(WY)	(1999)	(1999)	(1999)	(1998)	(2001)	(1998)	(1998)	(2001)	(2002)	(2000)	(1998)	(1998)
MIN	0.20	0.63	0.68	0.50	3.91	6.40	5.81	26.2	22.1	2.67	0.23	0.13
(WY)	(2004)	(2003)	(2000)	(2003)	(2003)	(2003)	(2003)	(2000)	(2003)	(1999)	(2003)	(2002)

05473450 BIG CREEK NEAR MT. PLEASANT, IA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1997 - 2004	
ANNUAL TOTAL	5,163.16		9,521.75			
ANNUAL MEAN	14.1		26.0		38.8	
HIGHEST ANNUAL MEAN					68.1	1998
LOWEST ANNUAL MEAN					12.1	2003
HIGHEST DAILY MEAN	370	May 5	473	Mar 5	1,600	Mar 31, 1998
LOWEST DAILY MEAN	0.00	Aug 23	0.09	Oct 2 a	0.00	Aug 23, 2003 b
ANNUAL SEVEN-DAY MINIMUM	0.02	Aug 19	0.10	Oct 1	0.02	Aug 19, 2003
MAXIMUM PEAK FLOW			556	Mar 5	2,450	Jun 1, 2002
MAXIMUM PEAK STAGE			6.92	Mar 5	14.29	Feb 9, 2001
INSTANTANEOUS LOW FLOW			0.08	Oct 2 c	0.00	Aug 22, 2003
ANNUAL RUNOFF (AC-FT)	10,240		18,890		28,110	
ANNUAL RUNOFF (CFSM)	0.244		0.449		0.669	
ANNUAL RUNOFF (INCHES)	3.31		6.11		9.09	
10 PERCENT EXCEEDS	31		67		91	
50 PERCENT EXCEEDS	1.5		12		8.5	
90 PERCENT EXCEEDS	0.14		0.47		0.44	

a Also Oct. 7.
b Also Aug. 24, 25.
c Also Oct. 6, 7.
e Estimated



05474000 SKUNK RIVER AT AUGUSTA, IA

LOCATION.--Lat 40°45'13", long 91°16'37"(revised), in NE¼ NE¼ sec.26, T.69 N., R.4 W., Des Moines County, Hydrologic Unit 07080107, on left bank 300 ft upstream from bridge on State Highway 394 at Augusta, 2.0 mi upstream from Long Creek, and at mile 12.5.

DRAINAGE AREA.--4,303 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September to November 1913, October 1914 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1308: 1915 (M), 1919-27 (M), 1932-34 (M), 1936, 1937-38 (M), 1942 (M). WSP 1438: Drainage area. WDR IA-71-1: 1966 (M).

GAGE.--Water-stage recorder. Datum of gage is 521.24 ft above NGVD of 1929. Prior to Nov. 15, 1913, nonrecording gage at site 400 ft upstream at datum about 0.7 ft higher. May 27, 1915 to Jan. 14, 1935, nonrecording gage at site 400 ft upstream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers data collection platform with satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1903, reached a stage of about 21 ft, discharge, about 45,000 ft^3/s. Stage and discharge for flood of April 1973 are believed to be the greatest since 1851.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164	134	514	996	e438	e3,580	5,320	2,580	21,600	2,620	1,070	2,330
2	152	150	467	899	e475	4,100	4,840	2,400	22,100	2,390	1,050	1,660
3	141	424	441	898	e500	4,140	4,240	2,260	18,100	2,400	1,050	1,310
4	140	451	457	881	e495	3,840	3,780	2,120	15,300	3,470	1,290	1,070
5	137	415	493	600	e471	11,200	3,440	2,010	13,100	2,990	2,080	915
6	136	645	478	234	e459	14,200	3,160	1,930	10,800	3,180	4,460	811
7	135	4,050	451	e215	e454	10,800	2,930	1,850	8,970	3,240	3,190	741
8	131	3,440	454	e230	e451	8,310	2,740	1,760	7,840	2,960	2,390	681
9	130	2,100	515	e243	450	6,890	2,580	1,680	6,840	3,190	2,090	660
10	132	1,550	3,310	e270	448	5,890	2,430	1,620	6,030	3,090	1,740	786
11	133	1,250	3,850	381	444	4,790	2,270	1,590	6,100	2,770	1,440	978
12	135	1,060	2,230	441	432	4,000	2,140	1,700	6,920	3,230	1,240	822
13	130	913	1,080	441	434	3,480	2,050	2,020	5,650	e3,940	1,090	706
14	155	839	641	422	436	3,190	1,880	2,010	6,750	4,800	988	635
15	177	796	701	408	428	3,050	1,830	1,880	8,980	4,970	907	591
16	164	743	734	432	410	3,030	1,790	1,800	9,660	4,830	842	580
17	152	682	852	492	407	3,040	1,750	1,800	7,070	4,320	800	530
18	161	681	809	625	395	4,130	1,700	2,040	5,390	3,440	866	494
19	160	664	e784	685	401	5,840	1,650	2,110	5,100	2,880	819	e481
20	174	629	e829	846	823	6,770	1,750	2,260	5,180	2,480	892	473
21	185	590	e1,090	954	2,200	5,840	2,190	3,480	5,330	2,190	984	452
22	176	581	900	922	4,240	5,250	2,200	3,260	5,250	2,000	974	432
23	164	586	874	788	e5,440	4,590	2,780	3,510	4,890	2,000	828	419
24	157	740	820	678	e6,290	4,060	3,500	4,370	4,710	2,650	783	406
25	158	1,350	654	559	e6,390	3,700	3,390	6,680	4,870	2,180	880	384
26	151	958	741	534	e5,790	3,940	3,020	9,940	4,690	1,910	869	365
27	140	735	690	503	e4,660	6,540	2,700	9,320	4,200	1,650	1,710	349
28	136	632	920	e492	e3,530	6,360	2,630	8,730	3,720	1,470	3,070	335
29	135	545	953	e462	e3,310	5,150	2,610	8,930	3,300	1,330	4,520	321
30	130	524	1,420	e437	---	5,310	2,640	10,700	2,930	1,220	2,780	313
31	136	---	1,290	e421	---	5,180	---	18,400	---	1,140	3,360	---
TOTAL	4,607	28,857	30,442	17,389	51,101	170,190	81,930	126,740	241,370	86,930	51,052	21,030
MEAN	149	962	982	561	1,762	5,490	2,731	4,088	8,046	2,804	1,647	701
MAX	185	4,050	3,850	996	6,390	14,200	5,320	18,400	22,100	4,970	4,520	2,330
MIN	130	134	441	215	395	3,030	1,650	1,590	2,930	1,140	783	313
AC-FT	9,140	57,240	60,380	34,490	101,400	337,600	162,500	251,400	478,800	172,400	101,300	41,710
CFSM	0.03	0.22	0.23	0.13	0.41	1.27	0.63	0.95	1.87	0.65	0.38	0.16
IN.	0.04	0.25	0.26	0.15	0.44	1.47	0.71	1.09	2.08	0.75	0.44	0.18

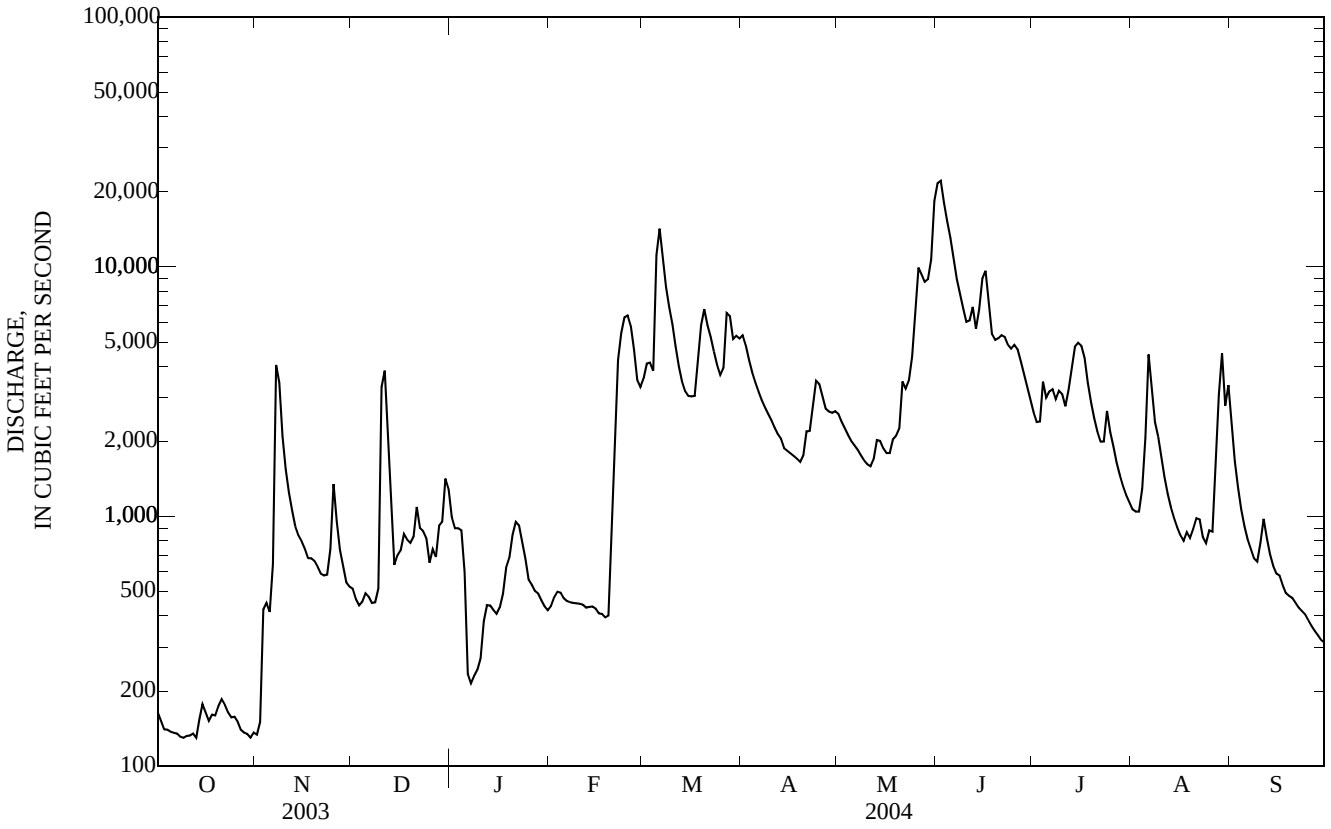
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2004, BY WATER YEAR (WY)

MEAN	1,343	1,519	1,248	1,270	2,332	4,323	4,101	4,177	4,435	2,837	1,650	1,567
MAX	11,560	10,020	8,387	8,090	7,306	16,560	18,770	16,780	19,800	26,860	18,550	15,460
(WY)	(1987)	(1962)	(1983)	(1946)	(1984)	(1979)	(1973)	(1996)	(1947)	(1993)	(1993)	(1926)
MIN	15.5	20.5	21.2	21.3	56.5	191	104	92.5	130	122	25.8	71.4
(WY)	(1957)	(1957)	(1957)	(1940)	(1940)	(1957)	(1956)	(1934)	(1977)	(1988)	(1934)	(1953)

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1915 - 2004	
ANNUAL TOTAL	472,473		911,638			
ANNUAL MEAN	1,294		2,491		2,565	
HIGHEST ANNUAL MEAN					10,200	1993
LOWEST ANNUAL MEAN					152	1934
HIGHEST DAILY MEAN	11,000	May 11	22,100	Jun 2	62,600	Apr 23, 1973
LOWEST DAILY MEAN	47	Feb 16	130	Oct 9 a	7.0	Aug 27, 1934
ANNUAL SEVEN-DAY MINIMUM	54	Feb 13	132	Oct 7	7.4	Aug 26, 1934
MAXIMUM PEAK FLOW			22,600	Jun 2	66,800	Apr 23, 1973
MAXIMUM PEAK STAGE			16.40	Jun 2	27.05	Apr 23, 1973
INSTANTANEOUS LOW FLOW			122	Oct 30	7.0	Aug 7, 1934
ANNUAL RUNOFF (AC-FT)	937,200		1,808,000		1,858,000	
ANNUAL RUNOFF (CFSM)	0.300		0.578		0.595	
ANNUAL RUNOFF (INCHES)	4.08		7.86		8.08	
10 PERCENT EXCEEDS	3,700		5,800		6,740	
50 PERCENT EXCEEDS	570		1,320		1,060	
90 PERCENT EXCEEDS	130		240		150	

a Also Oct. 13, and 30.
e Estimated.



05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

WATER QUALITY RECORDS

LOCATION.--Samples collected at bridge on State Highway 394, 300 ft downstream from gage.

PERIOD OF RECORD.--October 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to current year.
WATER TEMPERATURES: October 1975 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1975 to current year.

REMARKS.--During periods of ice effect, sediment samples are collected in open water channel. Records of specific conductance are obtained from suspended-sediment samples at time of analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 950 microsiemens Dec. 20, 1979, Feb. 12, 1980; minimum daily, 149 microsiemens Mar. 6, 1993.
WATER TEMPERATURES: Maximum daily, 34.0°C July 20, 1980, Aug. 15-17, 1988, July 10-13, 1989, and July 15, 1995, and July 30, 1999; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 8,550 mg/L June 25, 1981; minimum daily mean, 1 mg/L Mar. 8, 9, 12, 1978, Jan. 5, 6, 1984.
SEDIMENT LOADS: Maximum daily, 499,000 tons Mar. 21, 1978; minimum daily, 0.93 tons Feb. 11, 2003.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 692 microsiemens Feb. 4; minimum daily, 262 microsiemens May 31.
WATER TEMPERATURES: Maximum daily, 30.0°C Aug. 3, Sept. 5; minimum daily, 0.0°C many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,270 mg/L Mar. 6; minimum daily mean, 5.0 mg/L Feb. 7.
SEDIMENT LOADS: Maximum daily, 126,000 tons Mar. 6; minimum daily, 5.8 tons Feb. 7.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Temperature, water, deg C (00010)	Suspnd. sediment, sieve diametr percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
NOV 13...	0955	911	4.1	99	105	258
DEC 15...	1310	639	--	99	60	104
MAY 12...	1355	1,560	--	94	98	413
JUN 09...	1045	6,580	--	89	311	5,530
JUL 20...	1330	2,470	--	98	233	1,550
AUG 31...	0940	3,470	--	97	476	4,460

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Bed sediment, dry svd sve dia percent <.063mm (80164)	Bed sediment, dry svd sve dia percent <.125mm (80165)	Bed sediment, dry svd sve dia percent <.25mm (80166)	Bed sediment, dry svd sve dia percent <.5 mm (80167)	Bed sediment, dry svd sve dia percent <1 mm (80168)	Bed sediment, dry svd sve dia percent <2 mm (80169)	Bed sediment, dry svd sve dia percent <4 mm (80170)	Bed sediment, dry svd sve dia percent <8 mm (80171)	Bed sediment, dry svd sve dia percent <16 mm (80172)	Number of sampling points, count (00063)
MAR 16...	1120	.0	.0	10	68	90	96	98	99	100	2
MAY 12...	1400	.0	.0	12	84	98	99	100	100	--	2
JUN 09...	1115	.0	.0	9	82	95	98	99	99	100	2
JUL 20...	1400	.0	.0	3	65	96	98	99	99	100	3
AUG 31...	1000	4	7	25	63	87	95	98	100	--	2

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, LABORATORY, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	594	639	602	514	690	382	550	607	301	644	549	346
2	603	638	607	529	690	412	562	624	351	644	534	410
3	617	537	622	557	655	418	586	631	419	632	538	458
4	614	---	610	571	692	304	600	629	462	519	568	508
5	605	556	597	582	639	338	601	637	486	540	586	535
6	604	619	612	---	---	330	609	608	513	554	405	536
7	569	409	628	---	655	344	610	627	522	564	352	484
8	597	305	618	---	616	449	607	---	534	538	432	471
9	621	376	---	648	634	476	605	614	543	566	485	445
10	622	430	326	654	616	488	606	608	558	590	544	443
11	623	465	392	630	640	514	606	582	546	521	556	489
12	597	496	431	658	586	539	554	590	546	533	581	518
13	606	511	446	594	---	553	594	598	476	600	610	502
14	580	540	467	672	616	562	575	592	504	495	596	486
15	612	557	495	687	628	570	553	583	384	406	565	489
16	648	545	534	658	612	573	553	565	361	478	498	447
17	638	553	556	690	643	565	540	544	471	529	491	450
18	616	569	---	---	650	521	524	587	513	580	469	460
19	614	569	---	633	635	462	533	618	564	---	465	474
20	601	575	636	614	594	438	539	599	545	613	458	440
21	609	582	649	610	524	448	592	582	554	644	479	439
22	619	596	664	613	400	514	567	537	488	534	492	451
23	628	576	662	617	327	545	578	558	548	533	471	449
24	635	599	651	605	319	565	546	352	577	601	483	451
25	633	572	644	578	292	573	537	505	608	548	500	445
26	642	461	636	606	304	579	532	372	547	554	495	459
27	649	489	498	625	338	477	581	333	561	611	342	457
28	634	514	625	633	356	435	596	341	594	572	392	472
29	654	556	600	667	368	503	619	352	626	617	284	469
30	657	582	581	687	---	524	599	354	633	554	393	488
31	666	---	547	678	---	517	---	262	---	552	419	---

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
(Large Rivers Mass Contaminents Station)

Date	Time	Instantaneous discharge, cfs (00061)	Stream width, feet (00004)	Turbidity, wat unf lab, Hach 2100AN NTU (99872)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)
MAR													
17...	1430	3,020	310	57	--	12.8	--	8.2	527	4.4	177	216	--
APR													
15...	1345	1,830	275	30	--	16.5	--	8.7	503	14.2	175	189	12
MAY													
18...	0730	1,990	260	28	748	10.7	123	8.4	508	21.2	166	195	4
JUN													
16...	0900	9,710	--	460	749	5.3	63	7.6	355	22.6	107	130	--
JUL													
20...	0800	2,540	330	100	740	7.4	94	8.2	577	25.9	209	255	--
AUG													
16...	1615	830	250	30	--	22.8	--	8.7	477	23.9	153	174	6
SEP													
13...	1530	693	250	41	--	16.2	--	8.8	491	25.3	182	190	16

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Chloride, water, fltrd, mg/L (00940)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Particulate nitrogen, susp, water, mg/L (49570)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, wat flt by anal ysis, mg/L (62854)	Total nitrogen, wat unf by anal ysis, mg/L (62855)	Total carbon, suspnd sedimnt total, mg/L (00694)
MAR													
17...	24.9	13.5	42.7	.06	8.13	.018	E.35	.132	.147	.31	8.36	9.12	2.6
APR													
15...	27.0	2.2	41.5	<.04	7.20	.015	.74	.010	.019	.20	7.47	8.61	6.2
MAY													
18...	27.4	5.3	31.3	E.02	8.81	.032	--	.008	.017	.23	8.62	9.99	--
JUN													
16...	12.4	12.7	15.7	<.04	6.77	.052	.95	.167	.175	1.07	7.39	8.88	8.2
JUL													
20...	22.2	18.8	30.8	<.04	9.57	.009	.41	.207	.22	.44	10.1	8.79	3.5
AUG													
16...	22.4	12.1	41.0	<.04	4.66	.015	.97	.006	.024	.197	4.66	5.96	7.4
SEP													
13...	24.5	12.2	42.5	<.04	2.08	.015	.65	.050	.052	.23	2.41	3.26	5.3

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a phytoplankton, fluoro, ug/L (70953)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atrazine, water, fltrd, ug/L (39632)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)
MAR													
17...	.7	1.9	3.5	1.6	2.1	<.006	E.037	.019	<.005	<.005	.099	<.050	<.010
APR													
15...	<.1	6.2	2.7	38.0	99.1	<.006	E.038	.013	<.005	<.005	.093	<.050	<.010
MAY													
18...	--	--	--	55.4	91.5	<.006	E.113	.549	.006	<.005	2.56	<.050	<.010
JUN													
16...	.1	8.1	6.0	9.1	7.8	<.006	E.433	.279	.011	<.005	2.53	<.050	<.010
JUL													
20...	<.1	3.5	3.1	5.1	9.1	<.006	E.079	.021	<.005	<.005	.363	<.050	<.010
AUG													
16...	<.1	7.3	3.0	44.7	139	<.006	E.056	.017	<.005	<.005	.244	<.050	<.010
SEP													
13...	<.1	5.3	3.0	31.9	69.6	<.006	E.051	.011	<.005	<.005	.150	<.050	<.010

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulfinyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)
MAR													
17...	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009
APR													
15...	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009
MAY													
18...	<.004	<.041	<.020	<.010	<.006	E.007	<.003	<.012	<.005	<.009	<.02	<.004	<.009
JUN													
16...	<.004	<.041	<.020	<.005	<.006	E.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009
JUL													
20...	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009
AUG													
16...	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009
SEP													
13...	<.004	<.041	<.020	<.005	<.006	<.018	<.003	<.012	<.005	<.009	<.02	<.004	<.009

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Desulfinyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)
MAR													
17...	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.228	<.006	<.003
APR													
15...	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.085	<.006	<.003
MAY													
18...	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	1.19	<.006	<.003
JUN													
16...	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.930	.009	<.003
JUL													
20...	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.126	<.006	<.003
AUG													
16...	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.085	<.006	<.003
SEP													
13...	<.005	<.029	<.013	<.024	<.016	<.003	<.004	<.035	<.027	<.015	.067	<.006	<.003

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Napropamide, water, fltrd 0.7u GF ug/L (82684)	p,p-' DDE, water, fltrd, ug/L (34653)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)
MAR													
17...	<.007	<.003	<.010	<.004	<.022	<.011	<.01	<.004	<.025	<.011	<.02	<.005	<.02
APR													
15...	<.007	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	.006	<.02
MAY													
18...	<.007	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	.011	<.02
JUN													
16...	<.007	<.003	<.010	<.004	<.022	<.011	.04	<.004	<.025	<.011	<.02	.018	<.02
JUL													
20...	<.007	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	<.010	<.02
AUG													
16...	<.007	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	.012	<.02
SEP													
13...	<.007	<.003	<.010	<.004	<.022	<.011	.01	<.004	<.025	<.011	<.02	.010	<.02

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	Suspended sediment concentration mg/L (80154)	Number of sampling points, count (00063)
MAR							
17...	<.034	<.02	<.010	<.002	<.009	252	11
APR							
15...	<.034	<.02	<.010	<.002	<.009	103	11
MAY							
18...	<.034	<.02	<.010	<.002	<.009	108	12
JUN							
16...	<.034	<.02	<.010	<.002	E.005	949	10
JUL							
20...	<.034	<.02	<.010	<.002	<.009	286	11
AUG							
16...	<.034	<.02	<.010	<.002	<.009	63	10
SEP							
13...	<.034	<.02	<.010	<.002	<.009	92	10

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	10.0	5.0	2.0	0.0	4.0	12.0	18.0	23.0	27.0	28.0	25.0
2	13.0	11.0	2.0	6.0	1.0	3.0	13.0	15.0	20.0	28.0	28.0	25.0
3	13.0	11.0	4.0	1.0	0.0	4.0	11.0	18.0	22.0	27.0	30.0	27.0
4	14.0	---	2.0	0.0	2.0	5.0	14.0	17.0	20.0	25.0	27.0	28.0
5	12.0	11.0	3.0	0.0	2.0	5.0	15.0	20.0	24.0	27.0	28.0	30.0
6	19.0	11.0	2.0	---	---	5.0	17.0	24.0	24.0	25.0	26.0	29.0
7	20.0	6.0	4.0	---	0.0	6.0	17.0	21.0	25.0	24.0	25.0	26.0
8	21.0	5.0	5.0	---	0.0	7.0	15.0	23.0	27.0	23.0	27.0	25.0
9	18.0	4.0	---	1.0	2.0	6.0	13.0	24.0	24.3	25.0	28.0	27.0
10	22.0	5.0	1.0	0.0	1.0	6.0	14.0	22.0	24.0	26.0	24.0	27.0
11	21.0	7.0	0.0	3.0	1.0	4.0	14.0	24.0	26.0	25.0	23.0	27.0
12	17.0	6.0	0.0	0.0	2.0	6.0	12.0	23.0	25.0	27.0	22.0	26.0
13	18.0	3.0	0.0	1.0	---	5.0	13.0	21.0	28.0	28.0	22.0	28.0
14	17.0	5.0	0.0	1.0	0.0	6.0	13.0	19.0	25.0	27.0	22.0	28.0
15	16.0	5.0	1.0	1.0	0.0	4.0	17.0	20.0	24.0	27.0	24.0	28.0
16	13.0	6.0	1.0	0.0	0.0	4.0	18.0	21.0	24.0	27.0	25.0	24.0
17	14.0	7.0	0.0	---	0.0	5.0	19.0	23.0	25.0	27.0	26.0	26.0
18	12.0	8.0	---	---	2.0	5.0	21.0	21.0	24.0	28.0	26.0	24.0
19	20.0	10.0	---	0.0	4.0	8.0	21.0	23.0	24.0	---	29.0	27.0
20	21.0	10.0	0.0	0.0	5.0	8.0	17.0	26.0	23.0	27.0	25.0	25.0
21	19.0	9.0	3.0	0.0	3.0	5.0	18.0	26.0	23.0	29.0	24.0	25.0
22	17.0	7.0	1.0	0.0	4.0	8.0	17.0	25.0	24.0	28.0	27.0	24.0
23	18.0	9.0	0.0	2.0	1.0	8.0	17.0	25.0	25.0	25.0	26.0	25.0
24	17.0	3.0	1.0	0.0	0.0	11.0	9.0	24.0	23.0	23.0	25.0	25.0
25	14.0	4.0	0.0	0.0	2.0	12.0	15.0	23.0	23.0	25.0	24.0	24.0
26	8.0	5.0	1.0	0.0	3.0	13.0	18.0	20.0	23.0	24.0	27.0	22.0
27	10.0	5.0	3.0	2.0	2.0	18.0	18.0	21.0	21.0	26.0	24.0	25.0
28	11.0	2.0	5.0	2.0	4.0	13.0	19.0	21.0	23.0	26.0	23.0	22.0
29	9.0	1.0	1.0	0.0	6.0	15.0	18.0	22.0	24.0	26.0	25.0	20.0
30	14.0	3.0	2.0	0.0	---	11.0	---	22.0	25.0	25.0	25.0	21.0
31	12.0	---	2.0	0.0	---	10.0	---	22.0	---	28.0	26.0	---

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

SUSPENDED-SEDIMENT
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

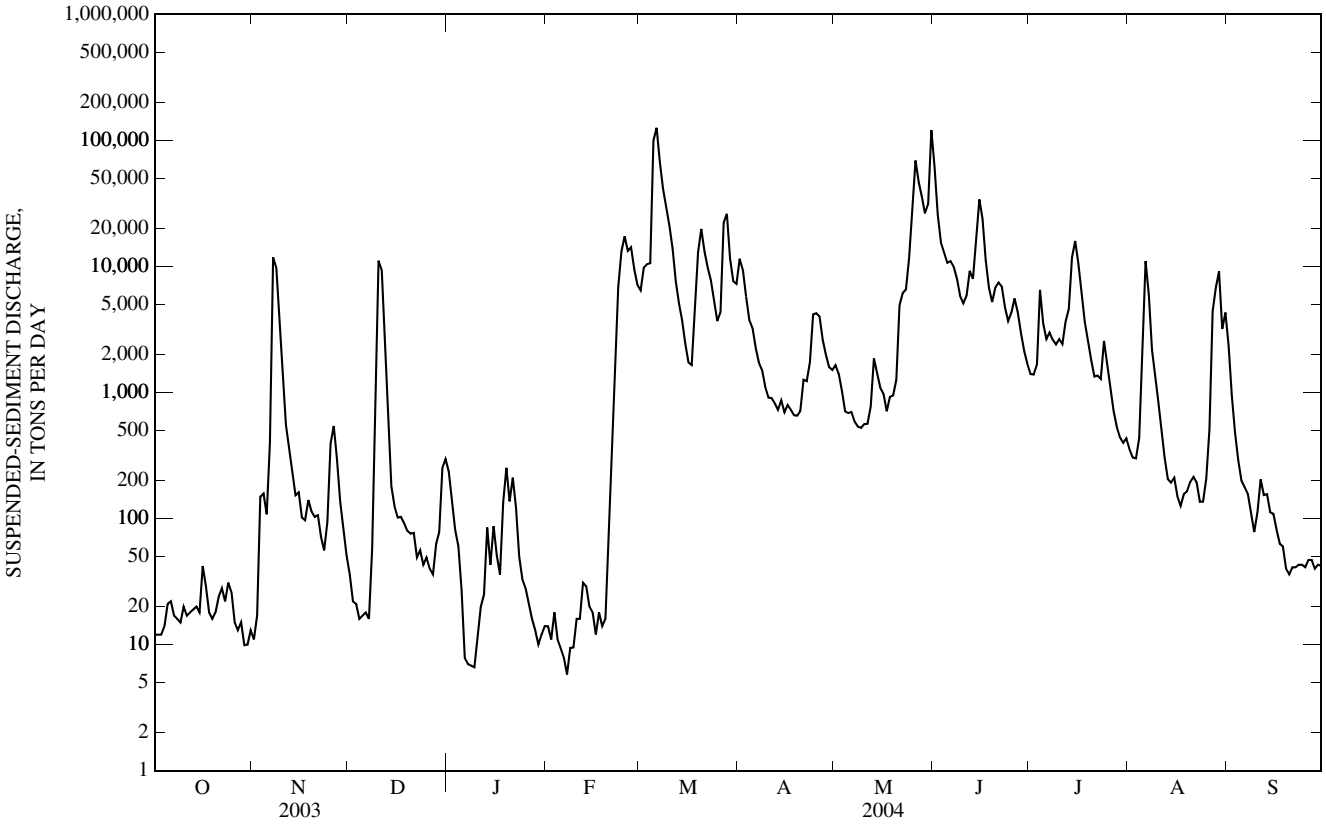
Day	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	28	12	31	11	26	36	87	235	12	14	669	6,470
2	28	12	40	17	18	22	57	138	8	11	883	9,830
3	31	12	120	149	18	21	33	81	13	18	930	10,400
4	38	14	129	158	13	16	25	60	8	11	1,000	10,600
5	57	21	95	108	13	17	16	27	7	9.4	3,160	100,000
6	59	22	137	400	14	18	12	7.8	6	7.9	3,270	126,000
7	47	17	1,050	11,800	13	16	12	7.0	5	5.8	2,290	67,400
8	46	16	1,040	9,790	47	58	11	6.8	8	9.4	1,830	41,200
9	41	15	594	3,440	572	833	10	6.6	8	9.5	1,570	29,200
10	57	20	323	1,370	1,200	11,100	15	11	13	16	1,320	21,000
11	46	17	163	554	897	9,380	20	20	13	16	1,060	13,800
12	49	18	127	362	494	3,110	21	25	27	31	694	7,540
13	53	19	94	232	242	740	71	85	25	29	537	5,050
14	49	20	67	153	102	180	39	43	17	20	435	3,750
15	39	18	75	161	66	125	79	87	15	18	297	2,440
16	95	42	51	102	52	102	44	51	11	12	211	1,730
17	70	29	53	97	45	103	27	36	16	18	200	1,650
18	41	18	76	140	42	92	78	135	13	14	464	5,290
19	36	16	64	114	38	80	136	253	14	16	809	13,000
20	39	18	61	103	34	76	61	137	31	74	1,080	19,800
21	49	24	66	106	26	77	81	211	48	295	837	13,200
22	59	28	46	72	20	49	49	122	122	1,500	693	9,830
23	50	22	36	56	24	56	24	50	468	6,870	627	7,780
24	74	31	45	94	19	43	18	33	780	13,200	496	5,450
25	61	26	108	392	28	49	18	28	1,000	17,300	369	3,690
26	37	15	212	542	20	40	14	21	850	13,300	389	4,320
27	34	13	148	297	19	36	12	16	1,130	14,200	1,240	22,200
28	41	15	80	137	25	63	10	13	1,000	9,530	1,520	26,100
29	27	9.9	56	83	30	78	8	10	800	7,150	824	11,500
30	28	10	36	51	65	251	10	12	---	---	532	7,630
31	36	13	---	---	85	296	12	14	---	---	519	7,260
TOTAL	---	582.9	---	31,091	---	27,163	---	1,982.2	---	83,705.0	---	615,110

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued

SUSPENDED-SEDIMENT—CONTINUED
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Day	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)	Mean concentration (mg/l)	Load (tons/day)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	801	11,500	238	1,650	1,070	61,800	198	1,400	123	354	364	2,340
2	718	9,410	218	1,410	429	25,700	215	1,390	108	305	207	942
3	502	5,770	169	1,030	315	15,500	254	1,660	106	300	135	480
4	368	3,770	124	709	311	12,800	685	6,520	123	435	100	290
5	351	3,260	127	687	304	10,700	434	3,530	275	1,670	81	200
6	265	2,270	134	699	380	11,000	309	2,650	910	11,000	81	178
7	218	1,730	117	586	408	9,900	342	2,990	681	6,010	79	157
8	205	1,510	113	536	377	7,990	328	2,620	335	2,180	60	111
9	159	1,110	116	524	316	5,840	280	2,410	233	1,320	44	78
10	139	912	128	561	314	5,100	318	2,650	177	836	52	112
11	147	902	131	564	355	5,850	324	2,420	127	497	78	205
12	141	818	161	774	494	9,240	420	3,660	90	303	69	154
13	131	728	343	1,860	524	7,980	432	4,600	70	206	82	156
14	171	866	266	1,440	840	15,900	911	11,800	72	193	65	112
15	141	698	214	1,090	1,400	34,000	1,180	15,900	86	211	68	109
16	165	796	201	976	910	23,700	804	10,500	66	150	52	81
17	154	729	146	709	571	11,100	528	6,190	58	126	44	63
18	143	660	166	924	465	6,780	387	3,620	67	156	45	60
19	147	655	166	947	378	5,220	334	2,600	74	164	31	40
20	150	713	202	1,260	486	6,810	269	1,810	81	195	28	36
21	213	1,260	516	4,920	517	7,450	226	1,340	81	214	33	41
22	207	1,230	700	6,150	489	6,940	253	1,360	74	194	35	41
23	229	1,740	690	6,550	360	4,760	237	1,280	61	136	38	43
24	438	4,160	986	11,700	290	3,680	360	2,570	64	136	39	43
25	463	4,250	1,640	30,400	326	4,290	271	1,610	87	206	39	41
26	491	4,010	2,560	69,100	440	5,570	204	1,050	214	509	48	47
27	359	2,620	1,850	46,800	381	4,330	160	714	914	4,390	50	47
28	280	1,990	1,530	36,100	294	2,960	135	534	834	6,800	45	40
29	226	1,590	1,100	26,400	240	2,140	123	441	743	9,140	50	43
30	212	1,510	1,050	31,200	213	1,690	121	399	429	3,190	49	42
31	---	---	2,420	121,000	---	---	141	433	478	4,310	---	---
TOTAL	---	73,167	---	409,256	---	336,720	---	102,651	---	55,836	---	6,332
YEAR	1,743,596.1											

05474000 SKUNK RIVER AT AUGUSTA, IA—Continued



05474500 MISSISSIPPI RIVER AT KEOKUK, IA

LOCATION.--Lat 40°23'37", long 91°22'27", in SE¼ SW¼ sec.30, T.65 N., R.4 W., Lee County, Hydrologic Unit 07080104, near right bank in tailwater of dam and powerplant of Union Electric Co. at Keokuk, 0.2 mi upstream from bridge on U.S. Highway 136, 2.7 mi upstream from Des Moines River, and at mile 364.2 upstream from Ohio River.

DRAINAGE AREA.--119,000 mi^2, approximately.

PERIOD OF RECORD.--January 1878 to current year.

GAGE.--Water-stage recorder. Datum of gage is 477.41 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers). Jan. 1, 1878 to May 1913, nonrecording gage at Galland (formerly Nashville), 8 mi upstream; zero of gage was set to low-water mark of 1864, or 496.52 ft above sea level.

REMARKS.--Discharge computed from records of operation of turbines in powerplant and spillway gates in dam. Minor flow regulation caused by powerplant since 1913 and navigation dams. Records for May 1913 to September 1937 adjusted for change in contents in Keokuk Reservoir, those after September 1937 unadjusted.

COOPERATION.--Records provided by Ameren-Union Electric Co.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 6, 1851, reached a stage of 21.0 ft, present site and datum, estimated as 13.5 ft at Galland, discharge, 360,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17,100	20,900	33,800	42,600	22,900	55,500	118,800	86,700	252,300	146,700	46,600	49,600
2	22,800	23,900	33,400	40,100	22,900	61,800	119,300	88,100	261,300	134,500	48,200	44,900
3	21,900	33,800	31,400	35,000	24,900	68,400	125,700	86,300	262,000	125,800	44,600	41,600
4	20,100	40,100	29,700	35,000	25,500	79,200	123,900	81,600	257,500	110,800	49,800	37,500
5	15,800	43,600	29,700	34,300	25,000	104,400	124,700	79,100	246,100	92,700	51,300	35,700
6	17,600	50,800	29,000	21,100	27,500	114,100	130,900	69,400	236,300	89,300	54,200	32,400
7	24,500	54,800	30,300	16,800	27,100	128,100	130,200	67,900	226,000	90,100	58,900	32,500
8	23,300	52,000	32,800	18,200	27,800	137,600	131,600	63,700	215,800	87,500	61,300	34,000
9	22,000	41,500	35,500	20,500	27,600	130,900	134,600	60,900	204,300	91,000	54,700	36,500
10	21,100	39,400	65,000	22,200	27,500	107,500	134,800	55,200	200,300	97,900	48,400	35,500
11	20,900	38,700	61,300	23,900	27,800	103,500	129,200	53,700	191,100	102,900	46,700	35,000
12	21,700	38,100	59,400	30,500	28,500	98,600	123,600	56,100	192,800	108,700	46,300	36,200
13	21,900	32,300	44,200	36,100	28,700	84,600	112,400	65,200	192,400	109,300	44,800	37,100
14	23,600	30,300	37,700	33,900	28,600	75,400	95,100	71,400	191,100	110,400	44,400	36,300
15	23,100	26,500	36,500	30,100	28,300	68,800	84,600	70,800	193,900	110,600	43,600	41,000
16	29,900	32,200	33,300	29,400	28,400	74,600	79,300	72,100	196,000	106,100	43,300	39,900
17	32,800	33,500	31,000	32,500	27,400	71,500	78,500	68,500	201,400	100,600	40,400	41,400
18	22,500	37,200	29,800	32,000	26,000	75,000	69,400	74,700	201,000	93,600	41,300	56,600
19	16,700	38,100	30,300	25,000	28,600	74,900	70,200	88,000	201,100	92,400	42,300	56,500
20	18,400	35,400	33,800	24,000	30,600	82,600	65,700	97,100	207,000	89,800	45,600	54,400
21	20,300	37,600	33,400	26,800	34,100	79,400	66,000	98,100	214,600	84,100	46,200	61,000
22	22,400	38,300	34,700	24,300	40,500	74,700	71,100	98,000	217,300	84,900	40,400	73,400
23	23,200	37,200	37,900	23,400	44,500	70,900	76,200	99,600	217,900	83,700	35,500	74,700
24	24,000	34,300	38,100	23,700	53,400	68,100	75,600	122,300	221,500	81,500	37,400	80,300
25	24,300	33,000	37,900	24,300	65,300	73,100	73,000	153,900	218,200	78,300	37,700	79,100
26	25,600	40,100	36,700	25,700	62,200	82,200	78,200	177,100	211,900	69,600	38,900	75,800
27	25,300	39,300	36,500	22,700	63,000	97,900	87,200	190,400	204,600	57,800	48,200	72,400
28	22,600	37,900	36,700	21,200	57,800	109,000	82,900	202,300	192,700	55,500	53,300	68,800
29	21,300	37,000	36,900	22,000	52,400	103,900	82,400	206,700	177,200	51,300	54,100	64,800
30	20,400	33,700	38,400	23,000	---	108,100	88,800	212,100	161,900	45,700	58,100	60,900
31	20,800	---	42,700	22,800	---	112,700	---	230,000	---	41,200	56,200	---
TOTAL	687,900	1,111,500	1,157,800	843,100	1,014,800	2,777,000	2,963,900	3,247,000	6,367,500	2,824,300	1,462,700	1,525,800
MEAN	22,190	37,050	37,350	27,200	34,990	89,580	98,800	104,700	212,200	91,110	47,180	50,860
MAX	32,800	54,800	65,000	42,600	65,300	138,000	135,000	230,000	262,000	147,000	61,300	80,300
MIN	15,800	20,900	29,000	16,800	22,900	55,500	65,700	53,700	162,000	41,200	35,500	32,400
AC-FT	1,364,000	2,205,000	2,296,000	1,672,000	2,013,000	5,508,000	5,879,000	6,440,000	12,630,000	5,602,000	2,901,000	3,026,000
CFSM	0.19	0.31	0.31	0.23	0.29	0.75	0.83	0.88	1.78	0.77	0.40	0.43
IN.	0.22	0.35	0.36	0.26	0.32	0.87	0.93	1.02	1.99	0.88	0.46	0.48

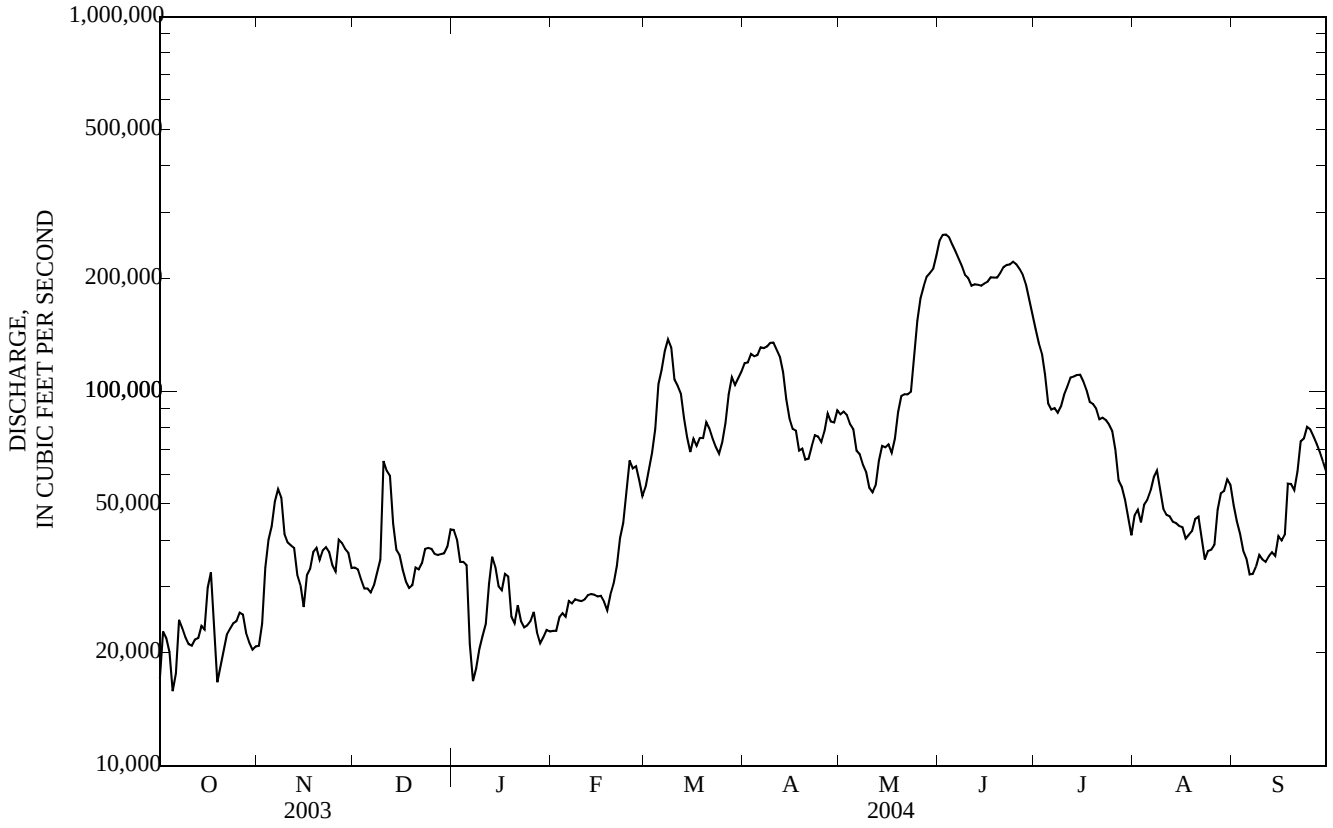
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1879 - 2004, BY WATER YEAR (WY)

MEAN	50,900	51,100	38,710	36,030	42,740	80,390	119,600	109,600	95,450	75,210	49,780	47,390
MAX	221,100	211,300	125,600	101,600	95,620	185,400	250,100	260,700	227,300	385,800	223,000	163,300
(WY)	(1882)	(1882)	(1983)	(1973)	(1984)	(1973)	(1993)	(1888)	(1892)	(1993)	(1993)	(1993)
MIN	16,060	16,020	13,450	14,650	15,790	21,780	32,930	27,600	17,400	16,280	13,030	15,530
(WY)	(1934)	(1934)	(1934)	(1940)	(1899)	(1934)	(1895)	(1934)	(1934)	(1988)	(1936)	(1976)

05474500 MISSISSIPPI RIVER AT KEOKUK, IA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1879 - 2004	
ANNUAL TOTAL	19,713,400		25,983,300			
ANNUAL MEAN	54,010		70,990		66,460	
HIGHEST ANNUAL MEAN					162,500	1993
LOWEST ANNUAL MEAN					21,540	1934
HIGHEST DAILY MEAN	181,000	May 25	262,000	Jun 3	434,000	Jul 10, 1993
LOWEST DAILY MEAN	13,500	Sep 10	15,800	Oct 5	5,000	Dec 27, 1933
ANNUAL SEVEN-DAY MINIMUM	15,500	Sep 6	20,000	Oct 1	8,270	Dec 25, 1933
MAXIMUM PEAK FLOW					446,000	Jul 10, 1993
MAXIMUM PEAK STAGE					27.58	Jul 10, 1993 a
ANNUAL RUNOFF (AC-FT)	39,100,000		51,540,000		48,150,000	
ANNUAL RUNOFF (CFSM)	0.454		0.597		0.558	
ANNUAL RUNOFF (INCHES)	6.16		8.12		7.59	
10 PERCENT EXCEEDS	116,000		156,000		134,000	
50 PERCENT EXCEEDS	36,900		51,300		51,000	
90 PERCENT EXCEEDS	21,800		23,400		23,000	

a From floodmark.



05474500 MISSISSIPPI RIVER AT KEOKUK, IA—Continued