

DES MOINES RIVER BASIN  
**05484500 RACCOON RIVER AT VAN METER, IOWA**

LOCATION.--Lat 41°32'02", long 93°56'59" referenced to North American Datum of 1927, in SE 1/4 SW 1/4 SW 1/4 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<sup>2</sup>.

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.

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.

A summary of all available data for this streamgage is provided through the USGS National Water Information System web interface (NWISWeb). The following link provides access to current/historical observations, daily data, daily statistics, monthly statistics, annual statistics, peak streamflow, field measurements, field/lab water-quality samples, and the latest water-year summaries. Data can be filtered by parameter and/or dates, and can be output in various tabular and graphical formats.

[http://waterdata.usgs.gov/nwis/inventory/?site\\_no=05484500](http://waterdata.usgs.gov/nwis/inventory/?site_no=05484500)

The USGS WaterWatch Toolkit is available at:

[http://waterwatch.usgs.gov/?id=ww\\_toolkit](http://waterwatch.usgs.gov/?id=ww_toolkit)

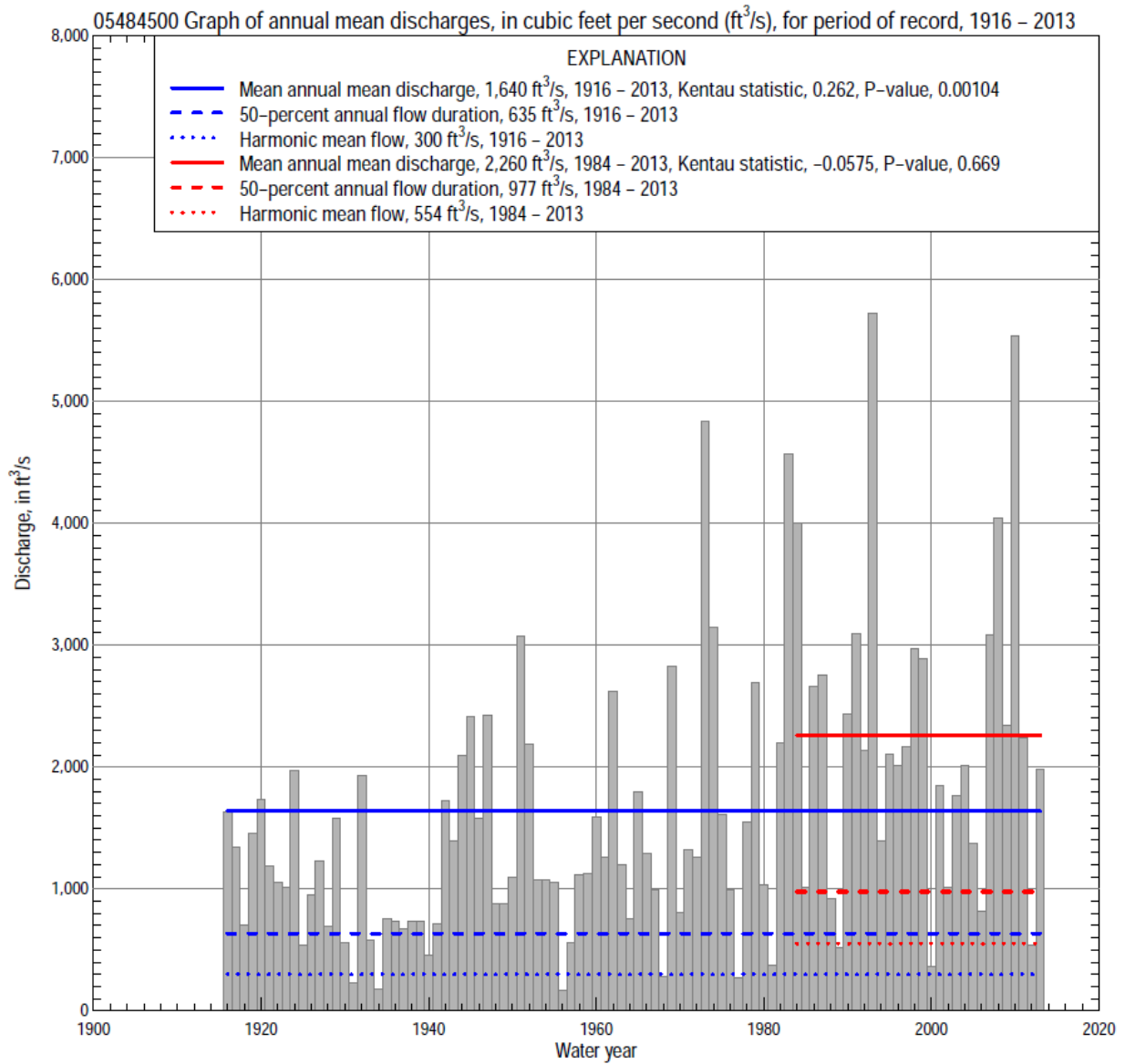
Tools for summarizing streamflow information include the duration hydrograph builder, the cumulative streamflow hydrograph builder, the streamgage statistics retrieval tool, the rating curve builder, the flood tracking chart builder, the National Weather Service Advanced Hydrologic Prediction Service (AHPS) river forecast hydrograph builder, and the raster-hydrograph builder. Entering the above number for this streamgage into these toolkit webpages will provide streamflow information specific to this streamgage.

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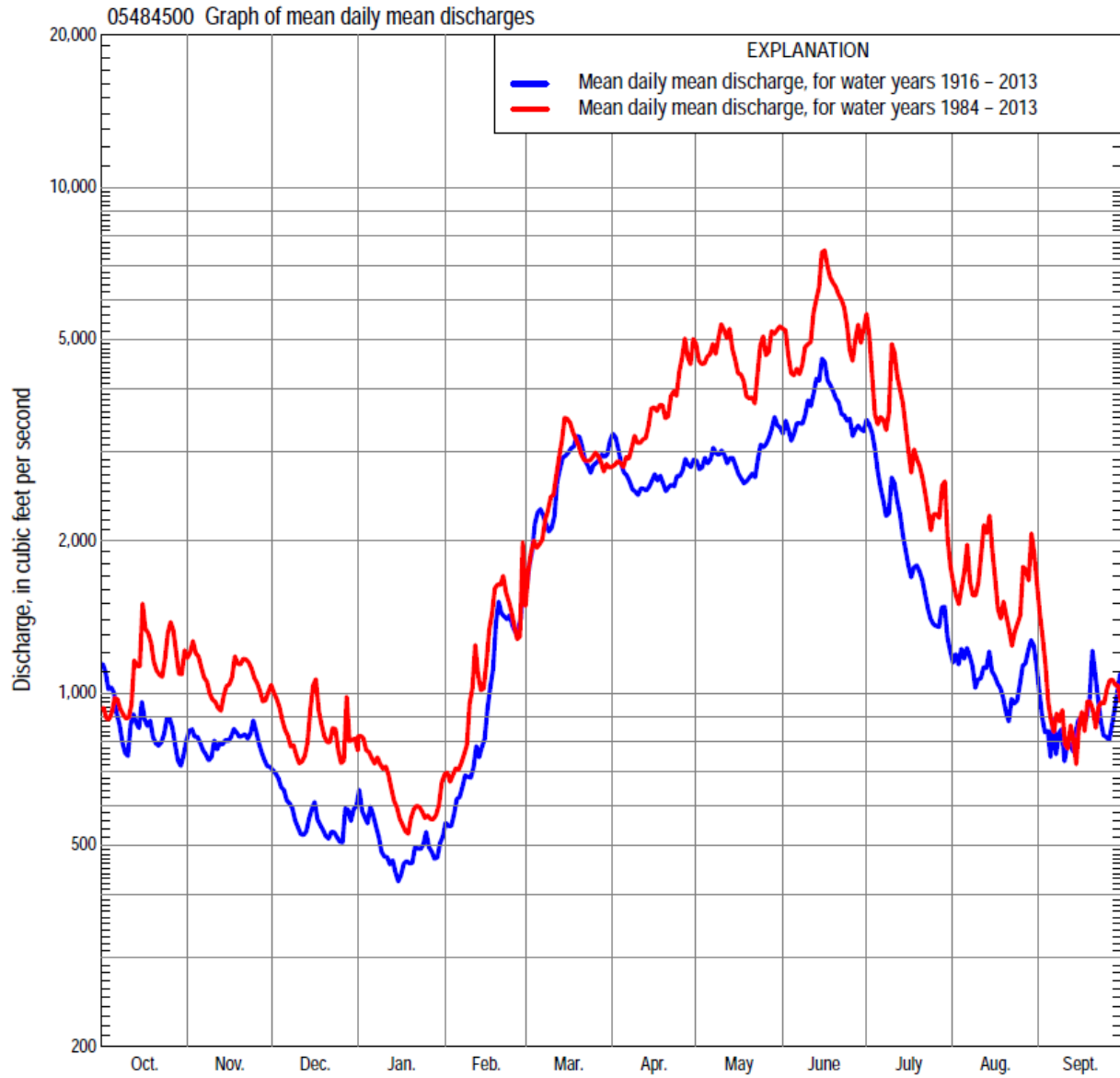
A description of the statistics presented for this streamgage is available in the main body of the report at:

<http://dx.doi.org/10.3133/ofr20151214>

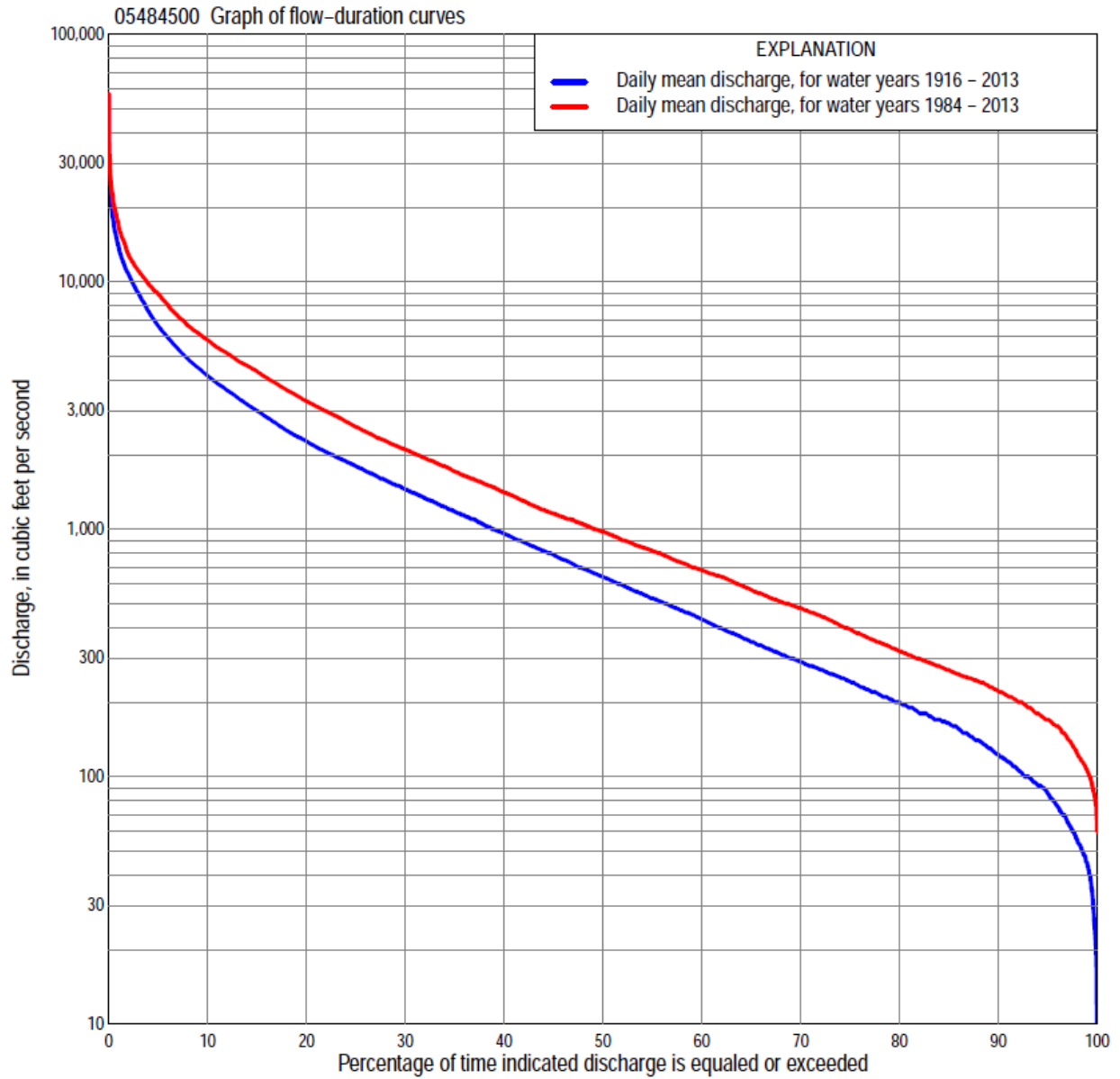
A link to other streamgages included in this report, a map showing the location of the streamgages, information on the programs used to compute the statistical analyses, and references are included in the main body of the report.



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**05484500 RACCOON RIVER AT VAN METER, IOWA**  
**Statistics Based on the Entire Streamflow Period of Record**

05484500 Monthly and annual flow durations, based on 1916–2013 period of record (98 years)

Percentage of days discharge equaled or exceeded	Discharge (cubic feet per second)												Annual flow durations		
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Annual	Kentau statistic	P-value
99	40	52	40	20	35	123	136	98	78	55	29	44	44	0.362	0.000
98	49	62	45	35	42	150	160	118	123	72	56	49	55	0.362	0.000
95	72	90	65	48	58	175	200	167	217	134	92	76	85	0.346	0.000
90	94	120	82	68	94	255	281	282	396	218	124	100	122	0.311	0.000
85	117	146	105	85	120	328	400	448	565	288	150	121	163	0.286	0.000
80	142	170	130	100	155	490	527	655	730	342	180	141	198	0.258	0.000
75	167	195	160	120	175	601	693	808	912	405	217	170	241	0.254	0.000
70	189	230	180	160	210	705	841	1,020	1,110	480	257	200	290	0.235	0.001
65	210	258	210	180	270	878	981	1,220	1,320	563	298	226	350	0.215	0.002
60	240	287	240	205	310	1,040	1,160	1,400	1,520	665	335	262	429	0.195	0.004
55	273	329	275	220	380	1,240	1,340	1,590	1,780	800	387	295	522	0.190	0.006
50	324	383	313	255	475	1,460	1,500	1,800	2,040	925	442	335	635	0.196	0.004
45	380	460	365	300	560	1,680	1,760	2,060	2,370	1,100	513	386	780	0.197	0.004
40	445	550	431	350	680	1,940	2,090	2,330	2,800	1,320	602	448	950	0.219	0.001
35	558	657	500	410	805	2,200	2,500	2,650	3,300	1,560	726	509	1,170	0.231	0.001
30	678	834	580	500	953	2,600	3,020	3,100	3,820	1,860	866	602	1,440	0.235	0.001
25	850	1,000	689	590	1,110	3,140	3,540	3,720	4,470	2,250	1,070	761	1,780	0.265	0.000
20	1,100	1,190	836	690	1,400	3,800	4,150	4,370	5,430	2,800	1,350	963	2,250	0.266	0.000
15	1,540	1,490	1,050	850	1,700	4,870	5,080	5,520	6,720	3,540	1,720	1,330	3,000	0.270	0.000
10	2,200	1,950	1,320	1,140	2,200	6,580	6,440	7,180	9,060	4,680	2,460	2,110	4,150	0.271	0.000
5	3,520	2,860	1,980	1,770	3,800	9,720	9,500	9,790	12,700	6,990	4,340	3,620	6,600	0.245	0.000
2	5,710	4,230	2,810	2,810	6,380	14,100	12,500	13,100	17,800	12,200	7,380	6,100	10,700	0.187	0.007
1	9,020	5,190	3,530	3,480	8,100	17,000	14,500	16,500	21,400	16,500	9,980	8,300	13,700	0.143	0.038

DES MOINES RIVER BASIN  
**05484500 RACCOON RIVER AT VAN METER, IOWA**

05484500 Annual exceedance probability of instantaneous peak discharges, in cubic feet per second (ft<sup>3</sup>/s), based on the Weighted Independent Estimates method,

Annual exceedance probability	Recurrence interval (years)	Discharge (ft <sup>3</sup> /s)	95-percent lower confidence interval (ft <sup>3</sup> /s)	95-percent upper confidence interval (ft <sup>3</sup> /s)
0.500	2	15,100	13,200	17,200
0.200	5	25,300	22,200	28,800
0.100	10	31,900	27,700	36,800
0.040	25	41,200	34,800	48,800
0.020	50	47,900	39,300	58,300
0.010	100	54,500	43,400	68,400
0.005	200	63,100	48,600	81,900
0.002	500	70,600	51,900	95,900

and based on the expected moments algorithm/multiple Grubbs-Beck analysis computed using a historical period length of 99 years (1915–2013)

0.500	2	15,100	13,200	17,200
0.200	5	25,200	22,100	29,100
0.100	10	32,500	28,200	38,600
0.040	25	42,100	35,600	52,900
0.020	50	49,500	40,800	65,400
0.010	100	57,000	45,700	79,500
0.005	200	64,700	50,200	95,500
0.002	500	75,000	55,600	120,000
Kantau statistic		0.163		
P-value		0.017		
Begin year		1915		
End year		2013		
Number of peaks		99		

DES MOINES RIVER BASIN  
**05484500 RACCOON RIVER AT VAN METER, IOWA**

05484500 Annual exceedance probability of high discharges, based on  
 1916–2013 period of record (98 years)

Annual exceedance probability	Recurrence interval (years)	Maximum average discharge (ft <sup>3</sup> /s) for indicated number of consecutive days				
		1	3	7	15	30
0.990	1.01	2,250	1,750	1,220	797	585
0.950	1.05	3,950	3,240	2,430	1,660	1,210
0.900	1.11	5,250	4,390	3,400	2,370	1,730
0.800	1.25	7,310	6,230	4,970	3,530	2,570
0.500	2	13,200	11,500	9,420	6,880	5,020
0.200	5	22,400	19,500	16,100	11,900	8,750
0.100	10	29,000	25,100	20,400	15,200	11,200
0.040	25	37,500	32,100	25,700	19,100	14,200
0.020	50	43,900	37,200	29,400	21,800	16,200
0.010	100	50,300	42,200	32,800	24,300	18,200
0.005	200	56,800	47,000	36,000	26,600	20,000
0.002	500	65,300	53,300	40,000	29,300	22,200
Kantau statistic		0.125	0.133	0.143	0.162	0.195
P-value		0.069	0.052	0.038	0.018	0.004

05484500 Annual nonexceedance probability of low discharges, based on April 1916  
 to March 2013 period of record (97 years)

Annual nonexceedance probability	Recurrence interval (years)	Minimum average discharge (ft <sup>3</sup> /s) for indicated number of consecutive days								
		1	3	7	14	30	60	90	120	183
0.01	100	15	16	16	17	21	30	38	42	48
0.02	50	19	20	21	22	26	37	46	52	61
0.05	20	27	29	30	32	38	51	64	73	89
0.10	10	37	39	42	45	53	69	86	99	124
0.20	5	54	58	62	67	79	101	125	144	185
0.50	2	112	121	130	142	167	208	259	304	406
0.80	1.25	231	251	271	297	350	440	557	666	895
0.90	1.11	339	366	397	433	512	657	843	1,020	1,360
0.96	1.04	509	548	594	645	767	1,020	1,320	1,610	2,130
0.98	1.02	663	711	771	832	994	1,350	1,790	2,190	2,850
0.99	1.01	840	897	972	1,040	1,250	1,750	2,350	2,890	3,700
Kantau statistic		0.355	0.379	0.396	0.402	0.367	0.314	0.261	0.219	0.175
P-value		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.011

DES MOINES RIVER BASIN  
**05484500 RACCOON RIVER AT VAN METER, IOWA**

05484500 Annual nonexceedance probability of seasonal low discharges, based on May 1915 to  
September 2013 period of record (98–99 years)

Annual nonexceedance probability	Recurrence interval (years)	Minimum average discharge (cubic feet per second) for indicated number of consecutive days							
		1	7	14	30	1	7	14	30
		January-February-March				April-May-June			
0.01	100	15	16	17	20	35	44	53	69
0.02	50	21	22	23	27	51	63	76	99
0.05	20	33	35	36	42	88	107	126	166
0.10	10	47	51	54	63	141	168	194	260
0.20	5	73	81	86	100	239	281	323	436
0.50	2	168	190	205	245	599	698	799	1,100
0.80	1.25	380	431	474	591	1,330	1,560	1,830	2,570
0.90	1.11	581	650	725	930	1,930	2,290	2,730	3,870
0.96	1.04	909	998	1,130	1,500	2,770	3,350	4,100	5,850
0.98	1.02	1,210	1,310	1,500	2,040	3,450	4,210	5,270	7,560
0.99	1.01	1,570	1,660	1,920	2,680	4,140	5,130	6,550	9,420
Kentau statistic		0.233	0.276	0.283	0.231	0.283	0.279	0.271	0.277
P-value		0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000
		July-August-September				October-November-December			
0.01	100	21	25	29	39	23	24	28	34
0.02	50	27	32	37	48	29	31	35	43
0.05	20	39	45	52	68	40	44	49	61
0.10	10	54	62	71	93	54	60	68	83
0.20	5	80	92	104	136	77	89	100	123
0.50	2	173	196	222	293	156	190	216	266
0.80	1.25	382	427	487	660	324	413	477	600
0.90	1.11	583	648	742	1,030	478	625	729	931
0.96	1.04	920	1,020	1,170	1,670	727	975	1,150	1,510
0.98	1.02	1,240	1,370	1,590	2,300	958	1,300	1,560	2,070
0.99	1.01	1,630	1,780	2,090	3,080	1,230	1,700	2,050	2,760
Kentau statistic		0.265	0.244	0.221	0.181	0.238	0.263	0.267	0.234
P-value		0.000	0.000	0.001	0.008	0.001	0.000	0.000	0.001

DES MOINES RIVER BASIN  
**05484500 RACCOON RIVER AT VAN METER, IOWA**

**Statistics Based on the 1984–2013 Streamflow Period of Record**

05484500 Monthly and annual flow durations, based on 1984–2013 period of record (30 years)

Percentage of days discharge equaled or exceeded	Discharge (cubic feet per second)												Annual flow durations		
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Annual	Kentau statistic	P-value
99	91	129	78	85	89	170	254	245	421	182	111	112	105	0.014	0.929
98	102	140	89	98	99	230	264	302	460	226	119	115	123	0.007	0.972
95	153	160	130	160	150	297	376	488	552	291	148	130	170	0.009	0.957
90	173	190	168	190	180	462	565	955	739	391	192	163	222	-0.030	0.830
85	198	237	210	210	228	542	700	1,230	990	505	252	199	270	-0.103	0.432
80	222	257	242	230	264	618	881	1,640	1,270	633	307	220	321	-0.099	0.454
75	250	284	272	260	314	698	1,090	1,930	1,570	740	366	244	394	-0.120	0.363
70	271	322	309	293	379	842	1,260	2,150	1,940	846	425	270	480	-0.131	0.318
65	313	366	360	314	480	1,040	1,470	2,350	2,250	995	485	293	568	-0.117	0.372
60	352	427	407	356	546	1,230	1,660	2,700	2,670	1,180	548	317	682	-0.149	0.254
55	403	489	469	400	634	1,470	2,010	3,010	3,210	1,400	622	351	818	-0.161	0.218
50	479	584	520	450	736	1,620	2,420	3,460	3,630	1,680	700	400	977	-0.154	0.239
45	594	676	581	500	845	1,800	2,940	3,870	4,170	1,970	809	443	1,160	-0.133	0.309
40	688	836	661	620	929	2,030	3,290	4,280	4,690	2,370	945	487	1,410	-0.131	0.318
35	785	1,000	825	707	1,000	2,300	3,700	4,760	5,390	2,800	1,100	550	1,710	-0.126	0.335
30	933	1,170	1,020	789	1,100	2,740	4,410	5,400	6,200	3,250	1,280	689	2,100	-0.129	0.326
25	1,130	1,480	1,150	860	1,260	3,160	4,960	6,260	7,140	3,870	1,530	903	2,590	-0.071	0.592
20	1,480	1,810	1,350	977	1,500	3,900	5,620	7,300	8,460	4,620	1,840	1,240	3,290	-0.074	0.580
15	1,900	2,300	1,560	1,080	1,800	4,920	6,560	8,730	9,870	5,750	2,540	1,900	4,330	-0.048	0.721
10	2,560	2,690	1,900	1,300	2,330	5,980	8,220	10,000	12,500	7,390	4,000	2,590	5,820	0.016	0.915
5	4,440	3,340	2,330	1,700	3,840	8,480	10,900	12,500	17,600	11,900	6,790	3,900	8,910	0.085	0.521
2	6,660	4,250	3,130	2,410	6,660	13,200	13,000	16,400	22,500	16,100	11,600	5,900	12,900	0.057	0.669
1	9,910	5,100	4,150	2,920	7,930	17,800	15,100	20,600	27,400	20,100	15,900	6,530	16,600	0.067	0.617

DES MOINES RIVER BASIN  
**05484500 RACCOON RIVER AT VAN METER, IOWA**

05484500 Annual exceedance probability of high discharges, based on  
 1984–2013 period of record (30 years)

Annual exceedance probability	Recurrence interval (years)	Maximum average discharge (ft <sup>3</sup> /s) for indicated number of consecutive days				
		1	3	7	15	30
0.990	1.01	2,370	1,550	1,140	831	651
0.950	1.05	4,200	3,130	2,430	1,810	1,420
0.900	1.11	5,630	4,430	3,530	2,640	2,070
0.800	1.25	7,950	6,600	5,370	4,050	3,170
0.500	2	14,900	13,100	10,900	8,340	6,460
0.200	5	26,700	23,800	19,900	15,200	11,700
0.100	10	35,700	31,500	26,000	20,000	15,200
0.040	25	48,100	41,300	33,700	25,800	19,400
0.020	50	57,900	48,600	39,100	30,000	22,400
0.010	100	68,100	55,800	44,300	34,000	25,200
0.005	200	78,700	62,800	49,300	37,700	27,900
0.002	500	93,400	71,900	55,500	42,400	31,100
Kantau statistic		0.053	0.034	0.062	0.076	0.090
P-value		0.695	0.803	0.643	0.568	0.498

05484500 Annual nonexceedance probability of low discharges, based on April 1983 to March  
 2013 period of record (30 years)

Annual nonexceedance probability	Recurrence interval (years)	Minimum average discharge (ft <sup>3</sup> /s) for indicated number of consecutive days									
		1	3	7	14	30	60	90	120	183	
0.01	100	44	50	56	61	68	75	82	80	84	
0.02	50	52	60	67	73	81	91	100	101	106	
0.05	20	67	78	87	95	106	120	135	137	152	
0.10	10	85	99	110	120	135	154	175	183	208	
0.20	5	113	132	146	160	180	208	240	259	304	
0.50	2	199	229	251	276	314	368	440	504	618	
0.80	1.25	358	398	434	477	548	653	802	981	1,240	
0.90	1.11	492	532	577	637	734	880	1,100	1,390	1,770	
0.96	1.04	696	724	782	866	1,000	1,210	1,530	2,020	2,590	
0.98	1.02	874	885	953	1,060	1,220	1,480	1,890	2,570	3,300	
0.99	1.01	1,080	1,100	1,140	1,260	1,460	1,780	2,290	3,190	4,100	
Kantau statistic		-0.126	-0.085	-0.103	-0.103	-0.117	-0.094	-0.103	-0.094	-0.117	
P-value		0.335	0.521	0.432	0.432	0.372	0.475	0.432	0.475	0.372	

DES MOINES RIVER BASIN  
**05484500 RACCOON RIVER AT VAN METER, IOWA**

05484500 Annual nonexceedance probability of seasonal low discharges, based on October 1983 to September 2013 period of record (30 years)

Annual nonexceedance probability	Recurrence interval (years)	Minimum average discharge (cubic feet per second) for indicated number of consecutive days							
		1	7	14	30	1	7	14	30
		January-February-March				April-May-June			
0.01	100	42	67	73	80	142	154	172	189
0.02	50	53	81	89	98	181	199	222	258
0.05	20	75	108	119	133	258	290	324	406
0.10	10	102	139	154	174	353	402	450	595
0.20	5	146	188	210	240	511	592	666	926
0.50	2	286	339	379	436	1,020	1,210	1,380	2,020
0.80	1.25	541	610	677	778	1,980	2,390	2,800	4,040
0.90	1.11	746	830	914	1,050	2,780	3,370	4,020	5,620
0.96	1.04	1,040	1,150	1,260	1,430	3,950	4,810	5,850	7,810
0.98	1.02	1,280	1,430	1,540	1,740	4,950	6,030	7,440	9,540
0.99	1.01	1,550	1,730	1,850	2,070	6,040	7,350	9,190	11,300
Kentau statistic		-0.193	-0.122	-0.126	-0.149	-0.062	-0.076	-0.048	0.025
P-value		0.138	0.353	0.335	0.254	0.643	0.568	0.721	0.858
		July-August-September				October-November-December			
0.01	100	79	87	91	106	52	59	61	64
0.02	50	86	94	99	116	62	71	75	81
0.05	20	99	110	117	136	80	96	103	114
0.10	10	116	129	139	162	101	125	136	154
0.20	5	146	162	178	207	136	173	191	222
0.50	2	257	284	320	383	246	318	362	441
0.80	1.25	543	596	683	867	459	583	686	865
0.90	1.11	871	948	1,100	1,450	644	801	955	1,220
0.96	1.04	1,540	1,650	1,920	2,680	934	1,120	1,360	1,770
0.98	1.02	2,300	2,450	2,860	4,160	1,190	1,390	1,710	2,240
0.99	1.01	3,390	3,570	4,170	6,330	1,500	1,690	2,090	2,760
Kentau statistic		-0.048	-0.071	-0.076	-0.092	-0.115	-0.103	-0.113	-0.117
P-value		0.721	0.592	0.568	0.486	0.382	0.432	0.392	0.372